

Efficient Deployment of Teachers: A Policy Note

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Abbreviations

Bappeda	Regional Planning Agency
BKD	<i>Badan Kepegawaian Daerah</i> , Regional Personnel Office (RPO)
BKN	<i>Badan Kepegawaian Nasional</i> , National Personnel Office (NPO)
BOS	<i>Biaya Operasional Sekolah</i> , School Operational Assistance
Dapodik	<i>Data Pokok Pendidikan</i> , MoEC's single data source
DKI Jakarta	<i>Daerah Khusus Ibukota</i> , Special Capital Region of Jakarta
EETED	efficient and effective teacher employment and deployment
E-Formasi	<i>Formasi berbasis elektronik</i> , electronic-based civil service job posts
e-PUPNS	<i>Sistem Pendataan Ulang Pegawai Negeri Sipil Berbasis Elektronik</i> , electronic-based civil servant data reprocessing system
GGD	<i>Guru Garis Depan</i> , Frontline Teachers program
GTT	<i>Guru Tidak Tetap</i> , non-civil service teacher
ICT	information and communication technology
IDR	Indonesian rupiah
JSE	junior secondary education
JSS	junior secondary school
KKG	<i>Kelompok Kerja Guru</i> , teacher working group for primary education level
KKKS	<i>Kelompok Kerja Kepala Sekolah</i> , principals working group for primary education level
KemenPAN-RB	<i>Kementerian Pendayagunaan Aparatur Negara dan Reformasi Birokrasi</i> , Ministry of Administrative and Bureaucratic Reform (MoABR)
LPDP	<i>Lembaga Pengelolaan Dana Pendidikan</i> , Education Endowment Fund Management Institution
MoEC	Ministry of Education and Culture
MoF	Ministry of Finance
MoHA	Ministry of Home Affairs
MoRTHE	Ministry of Research, Technology and Higher Education
MGMP	<i>Musyawah Guru Mata Pelajaran</i> , teacher working group for junior and senior secondary education levels
MKKS	<i>Musyawah Kerja Kepala Sekolah</i> , principals working group for junior and senior secondary education levels
PE	primary education
Permendikbud	<i>Peraturan Menteri Pendidikan dan Kebudayaan</i> , Minister of Education and Culture Regulation
PNS	<i>Pegawai Negei Sipil</i> , civil servant
PP	<i>Peraturan Pemerintah</i> , government regulation
PPG	<i>Pendidikan Profesi Guru</i> , teacher professional education program
P3K	<i>Pegawai Pemerintah dengan Perjanjian Kerja</i> , government employees appointed through performance-based contracts
SAPK	<i>Sistem Aplikasi Pelayanan Kepegawaian</i> , online employment service, contains the administrative database of civil servants

SD	<i>Sekolah dasar</i> , primary school
SIM-RASIO	<i>Sistem Informasi Manajemen RASIO</i> , MoEC's teacher management information system
SMA	<i>Sekolah Menengah Atas</i> , senior secondary school
SMK	<i>Sekolah Menengah Kejuruan</i> , vocational senior secondary school
SMP	<i>Sekolah Menengah Pertama</i> , junior secondary school
SSE	senior secondary education
SSS	senior secondary school
SM3T	<i>Sarjana Mendidik di Daerah Tertinggal, Terluar, Terdepan</i> , Bachelor's of Education in Underdeveloped, Border, and Outermost Areas
TSR	teacher:student ratio
UN	<i>Ujian Nasional</i> , national exam
VSSE	vocational senior secondary education
VSSS	vocational senior secondary school
3T areas	<i>tertinggal, terluar, terdepan</i> areas—underdeveloped, border, and outermost areas

Executive summary

This report aims to provide concrete policy options for improving identification of the demand for teachers as well as for the allocation, recruitment, and distribution of teachers in Indonesia. It captures three review areas: (1) diagnosis of the effectiveness of existing mechanisms for identifying the need for teachers and of the teacher allocation system at the central level through discussions with key stakeholders, (2) review of good practices in hiring and distributing teachers as implemented in 13 districts in 13 provinces in Indonesia, and (3) review of international experience and good practices in recruiting and deploying teachers through desk reviews of studies undertaken in several countries. This study was conducted from October 2016 to August 2017 and used both quantitative and qualitative approaches. Information and data collection involved 156 local government representatives, 127 principals, and 170 teachers (of which 154 were civil servants and 16 were not civil servants) from 127 schools.

Overall, there is an over-supply of teachers. However, deploying qualified teachers to areas in need is still a challenge due to conflicts in the signals received about the needed quantity of qualified teachers. Over half of the excess teachers are non-civil service. This trend began when the government issued Law No. 43/1999 which allowed for the appointment of honorary personnel, including honorarium teachers. Law No.22/1999 and Law No. 32/2004 on the implementation of decentralization also allow local governments to appoint local government employees as needed. The issuance of PP 48 of 2005, PP 43 of 2007, and PP 56 of 2012 strengthens the existence of non-civil service teachers since the PPs regulate the transfer of non-civil service to civil service status. These regulations provided a strong legal basis for the appointment of a large non-civil service workforce. In 2010, there were six times as many non-civil service teachers as in 2001. While KemenPAN-RB attempted to verify teacher data in 2010, it put civil servant teacher recruitment on hold. Local governments expressed concerns about the lack of civil servant teacher caused by attrition (retirement, resignation, and transfer). To respond to the deficit of teachers in the field, district governments and schools resorted to hiring non-civil service teachers to fill vacancies using various selection processes and criteria, and used various available sources of funding to pay their salaries. KemenPAN-RB, with input from MoEC and BKN, should issue national guidelines to be used by local governments for the appointment of non-civil service teachers (for example, number, qualifications, required competencies, selection process and its requirements, appointment arrangement, and performance assessment).

There are continued challenges in supplying adequate numbers of high-quality teachers to the underdeveloped, border, and outermost areas of Indonesia (3T) and to vocational senior secondary schools (SMKs). Although the government of Indonesia has implemented programs such as the Bachelor's of Education in Underdeveloped, Border, and Outermost Areas (SM3T) and the Frontline Teachers program (GGD), some teachers simply do not want to be deployed to remote areas. In addition, 3T districts do not have the financial capacity to finance the deployment of the numbers of teachers that they need. Some 3T districts have also rejected teachers from the SM3T and GGD programs in favor of hiring local and non-civil service teachers. One way that the government could attract new GGD teachers to teach in 3T areas would be to provide them with full civil servant teacher status as well as monetary incentives so that during their first year of teaching they would receive not only their base salary, but also a professional allowance and a remote area hardship allowance. Another incentive could come from more intensive implementation of the mandate in Law 14/2005 on Teachers and Lecturers that includes an option for a reward program for teachers (Article 29 of Law 14/2005). If this was to be pursued, then eligible SM3T and GGD teachers who have dedicated themselves to teaching in remote or 3T areas should be provided

with at least health and life insurance during the course of their teaching careers. To counteract the lack of qualified teachers who can deliver specialized content and skills to students at SMK, starting in 2016, MoEC assigned 91,861 productive teachers to receive additional training in several subjects so that they were capable of teaching them. The subjects include marine studies, agriculture and food security, tourism, and creative industries. In 2016–17, the government also accelerated the supply of vocational teachers by instituting a short-term program for teachers with dual subject specialization (*Guru Berkeahlian Ganda* or the GBG program) and putting in place a new and longer-term Teacher Professional Education program (PPG) for 2017–19. MoEC should proactively identify the need for SMK teachers, in addition to teachers that are needed in other schools, and develop comprehensive short-, medium-, and long-term plans to fill these needs. Such comprehensive plans will ultimately contribute to the efficiency and effectiveness of teacher employment and deployment across different types of schools and yield better learning outcomes.

Each stakeholder institution—the Ministry of Education and Culture (MoEC), the Ministry of Administrative and Bureaucratic Reform (KemenPAN-RB), and the National Personnel Office (BKN)—has its own teacher management information system and database. Since October 2017, the government has been working on overcoming challenges related to inaccuracies in the data and has been spearheading a data synchronization effort through the launch of a “Command Center,” a web-based database of civil servants, including teachers, that connects data from MoEC, KemenPAN-RB, and BKN. Even though this is a promising start, more needs to be done to strengthen the institutional arrangements for the Command Center, including identifying clear roles and responsibilities of all stakeholders and developing accountability mechanisms for fulfilling their roles.

A proliferation of central government regulations on teacher workforce management has created gaps in the fulfillment of the demand for teachers. In 2011, the central government instituted a moratorium on hiring any new civil servant teachers, and in 2013, MoHA issued a letter prohibiting the use of local government budgets for hiring contract teachers. However, MoEC’s BOS (school operational assistance funds) could be used to pay the honorarium for contract teachers.¹ MoEC requires teachers to teach a minimum of 24 hours per week and to teach classes with a minimum of 20 students to be eligible for a professional allowance. The adoption of the new curriculum in 2013 and the subsequent reduction in teaching hours for certain subjects has led to an overall surplus of teachers in these subjects. As mentioned below, local governments and schools also resorted to recruiting non-civil service teachers to procure additional teaching services using various selection processes and criteria to fill the vacancies created by teachers who had either retired, resigned, or been transferred. Since 2011, the central government has also continued appointing civil servant teachers to serve in remote areas. Thus, despite the moratorium on hiring new civil servant teachers and the restrictions around hiring of contract teachers, the number of teachers as a whole has actually increased. This situation calls for the development of joint regulations (similar to the issuance of the Joint Decree of Five Ministers in 2011 on Teacher Management and Distribution), including preparing technical guidelines and providing technical assistance at both the central and local government levels to ensure a uniform approach to managing the demand for and supply of teachers.

Currently, coordination meetings between central-level institutions involved in identifying the demand for and supply of teachers are conducted on an ad hoc basis. Demand for teachers, as compiled by MoEC, is not communicated regularly to the Ministry of Research Technology and Higher Education (MoRTHE) and to the higher education institutions that are the main suppliers of professional teachers. This gap calls

¹ In the Indonesian system, auxiliary personnel are known as “honorarium employees.”

for the establishment of a structured mechanism at the central level, such as a joint team involving representatives from MoEC, KemenPAN-RB, BKN, MoRTHE, the Ministry of Home Affairs (MoHA), and the Ministry of Finance (MoF), to ensure better coordination of efforts and to foster regular and timely communications to comprehensively address issues related to public sector demand for teachers, and their allocation, recruitment, deployment, and distribution in Indonesia.

Examples of good practices in identifying the demand for teachers and in employing and deploying teachers have been identified in Semarang city, Gorontalo district, and East Jakarta municipality. Some common good practices from these districts that have been successful in determining the demand for teachers include (1) raising awareness among all relevant stakeholders, all the way from the executive to the legislative level, about the teacher redistribution process; (2) collecting data on the demand for teachers from all public schools; and (3) conducting in-depth verification of the collected data. For teacher selection for employment, these districts used local government budget resources to contract non-civil service teachers. Semarang, Gorontalo, and East Jakarta used the civil servant teacher selection criteria to select non-civil servant teachers and required them to have the same level of qualification and competencies, but paid them a monthly salary that was slightly less than that of civil servants and also withheld any expectation that they could become civil servant teachers. For effective teacher deployment, East Jakarta and Gorontalo mapped out learning achievement across schools associated with the performance of all civil servant teachers. East Jakarta deployed high-performing teachers to low-performing schools and low-performing teachers were assigned to average or high-performing schools for immersion and improvement. Gorontalo paired high-performing civil servant subject teachers with low-performing subject teachers to increase the capacity of the low-performing teachers. Gorontalo also assigned high-performing teachers to schools in rural areas, highlighting the commitment of civil servant teachers to teach in remote areas.

Lessons can be learned from the good practices in these three locations that can have an impact on efficient and effective teacher employment and deployment (EETED) in Indonesia. At the regional level, the most important lesson is the need for solid support and political commitment from key stakeholders. The assistance needed includes (1) strong coordination with and support from the mayor or governor of the region; (2) strong collaboration between the Education Office, the Regional Personnel Office (BKD), the Regional Planning Agency (Bappeda), the Finance Office, and the Regional Secretary; (3) strong political support from the local parliament incorporating the same vision for teacher management; and (4) availability of supporting regulations; and (5) the required budget. The most crucial determinant of effective implementation is strong managerial capacity within the regional or provincial Education Office team and its commitment to finding solutions by being innovative while adhering to established rules and regulations. To scale up implementation of EETED, such good practices need to be diffused nationwide, and, in particular, throughout districts and provinces across Indonesia that have either low or high student-teacher ratios and low student learning achievement (as measured by scores on the national exams, the *Ujian Nasional*). Diffusion of these good practices to these stakeholders, together with provision of necessary technical assistance, will encourage them to implement the lessons learned and in so doing, improve their performance.

The combination of the centralized and decentralized employment and deployment systems for civil servant teachers in Indonesia can be maintained with some improvements. The necessary enhancements include intensifying coordination between and communication about the demand for teachers among relevant institutions (MoEC, KemenPAN-RB, BKN, MoRTHE, MoHA, MoF); ensuring that central-level determination of the need for teachers is based on school proposals verified by the Education Offices in the district or province and by MoEC; ensuring that district- and province-level implementation

of the teacher selection system conforms to central-level standards; and improving data accuracy of the Dapodik (*Data Pokok Pendidikan*, MoEC's Single Data Source) and the SIM-RASIO (*Sistem Informasi Manajemen RASIO*, MoEC's Teacher Management Information System). The selection of civil servant and non-civil service teachers should be based on a performance-based appointment system. Implementation of teacher distribution that ensures equitable education quality needs to be intensified by (1) ensuring that newly qualified teachers are granted full civil servant status, faster career paths, health and life insurance, and adequate housing if they teach for about four years in remote schools; and (2) assigning high-performing teachers to teach in low-performing schools as a way to share and transfer their knowledge and skills with other school teachers, as well as deploying low-performing teachers to average or high-performing schools for immersion. An intensive national effort is needed to disseminate and implement the identified good practices to different districts and provinces across Indonesia to scale up their adoption of these good practices.

Introduction

The 2018 World Bank report *Growing Smarter: Learning and Equitable Development in East Asia and the Pacific* highlights that selecting and supporting teachers throughout their careers to allow them to focus on the classroom is one of five core factors² that are driving learning. It argues that education systems perform best when they have teachers who are respected, prepared, and selected, and who advance in their careers on the basis of merit (World Bank 2018). This aptly summarizes the importance of teachers and of equitable teacher deployment to ensuring high-quality education. The report also states that sound policies with respect to teachers are key to promoting learning, emphasizing the need to raise the selectivity of those who become teachers, provide support to new teachers, and devise ways to keep experienced teachers in the classroom.

This report highlights that decentralization of decision-making to districts in Indonesia is expected to lead to improvements in teacher recruitment and deployment, which in turn is a necessary condition for improving the quality of teaching and learning.

In 2014, the government of Indonesia issued Law No. 23/2014 on Local Government as a refinement to previous decentralization regulations.³ Decentralization of roles and responsibilities from the central to the local government includes management of civil servants. The law also states that in carrying out their mandate and responsibilities, local governments should be assisted by local government employees (civil servants). Local government is responsible for the job posts and composition of the civil servant work force, including organizational structure, detailed tasks and functions, and working procedures. Thus, while the central government provides guidance and control for the management of provincial employees, the provincial government is responsible for providing guidance and control for the management of district employees.⁴

Following this regulation, in 2016 the BKN (*Badan Kepegawaian Nasional*, National Personnel Office) changed the employment status of civil servant teachers from central government to local government.⁵ The rationale is that local governments are in a better position to know the need for teachers (types, number, and the placement in schools) so the central government would find it easier to communicate and coordinate the management of its teacher workforce with the local governments. In line with Law 23/2014, since 2016 districts in Indonesia have been responsible for managing education services at the primary and junior secondary schools, while provinces have been responsible for the senior secondary level schools as well as senior secondary vocational schools.⁶

² The five factors are (1) aligning institutions to ensure basic conditions for learning; (2) concentrating effective, equity-minded public spending on primary education; (3) ensuring children are ready to learn in school; (4) selecting and supporting teachers throughout their careers to allow them to focus on the classroom; and (5) assessing students to diagnose issues and inform instruction.

³ Law 32/2004 on Local Government, ref. Articles 1, 2 (2) and (3), 12 (1), 12–14, and 129–131 and Law 22/1999 ref. Articles 11 (2), 76.

⁴ Law 23/2014, Articles 208–212, 374–375.

⁵ *Surat Kepala Badan Kepegawaian Nasional* or the Letter from the Head of BKN No. K.26-30/V.71-1/99 dated July 15, 2016.

⁶ Law 23/2014, Articles 12 (1A) and 15 (1) and (2), Annex Part I.A.1, p.1.

Civil servant teacher employment, deployment, and transfer is a mandate of the Teacher and Lecturer Law No. 14/2005.⁷ According to Article 24 of this law, it is the responsibility of the government at all levels and of the schools to provide qualified and competent teachers to ensure quality teaching and learning. Articles 28 (1) and (2) state that teachers can be transferred or can ask for a transfer when they are needed to support teaching and learning in a school in a selected area. As per Government Regulation (*Peraturan Pemerintah* [PP]), PP 74/ 2008 Article 62 law,⁸ a teacher transfer can be implemented only after a teacher has served in the existing area for at least four years. In addition, Law 14/2005 Article 29 (1) states that teachers who serve in a special area (the 3T areas) are entitled to automatic career promotion every four years, a one-time special career promotion, and a host of protections (legal, professional, and health and safety) in delivering their services. But this law is not applied consistently. Under PP 74/2008 Article 33, however, teachers were only entitled to a one-time special career promotion. Law 14/2005 Article 29 (2) states that teachers who dedicate themselves to teaching in a special area should serve a minimum of two years, after which time the teacher is entitled to move on to another school after a replacement teacher becomes available. However, in the latest revised PP (PP 19/2017 Article 59⁹), this two-year duration has been changed to 10 years. As stated in Law 14/2005 Article 18 and in the previous PP 74/2008, as well as in the current PP 19/2017 Article 60, teachers that teach in a special area are also entitled to receive a hardship allowance (called a Special Allowance) that is provided by the central government as well as official housing that is provided by the local government.

The authority of districts over how to identify the need for civil servant teachers and teaching personnel, as well as over how to employ and deploy them, refers to MoEC's regulation or Permendikbud No. 20/2010.¹⁰ Under this regulation, a teacher is defined as a professional educator whose tasks include educating, teaching, guiding, directing, training, assessing, and evaluating students attending formal education at the early childhood, primary, and secondary education levels.¹¹ Teachers are grouped into three categories based on specific work features and tasks: (1) classroom teachers, (2) subject matter teachers, and (3) counselor teacher.¹² This MoEC regulation provides detailed norms, standards, procedures, and criteria, including how districts are to project the need for teachers; employ and deploy teachers, including required qualifications, competencies, and certification; and manage teacher transfers. The MoEC regulation also includes guidelines for improved remuneration, rewards, and protection; competency development; and dismissal procedures.

In Indonesia's current civil servant teacher recruitment and deployment system (figure 1), the Ministry of Administrative and Bureaucratic Reform (KemenPAN-RB)¹³—using school data received from Education Offices at the district and province level (sent in by BKD and confirmed by the BKN)—is responsible for identifying the need for teachers and for determining the appointment of any new civil servant teachers. MoEC, using data from the district and provincial Education Offices, is responsible for annual monitoring of the existing number of teachers in each school and for updating the data on schools' needs for teachers.

⁷ Law 14/2005 on Teacher and Lecturer.

⁸ Government Regulation or *Peraturan Pemerintah* (PP) No. 74/2008 on Teachers. PP is a legal derivation of a law.

⁹ Government Regulation No. 19/2017 on Teachers, Articles 58, 59, 60, 62.

¹⁰ Minister of Education and Culture's Regulation or *Peraturan Menteri Pendidikan dan Kebudayaan* (Permendikbud) No. 20/2010, Annex 1. Point 5. (1 to 4) on Education Norms, Standards, Procedures, and Criteria. Ministerial regulation is a legal derivation of PP (Government regulation).

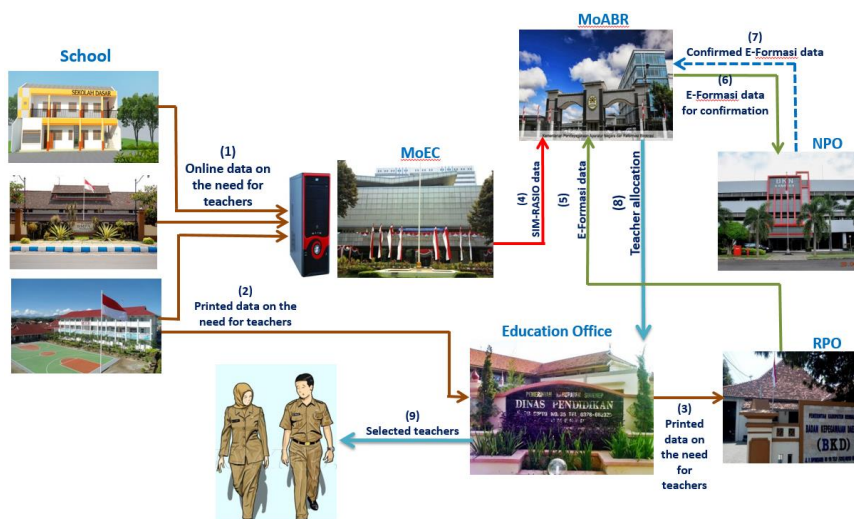
¹¹ The definition derives from Government Regulation No. 74/2008 on Teachers.

¹² This grouping follows the arrangement stated in the Ministry of Education and Culture, Permendikbud No. 35/2010 on Teacher Functional Posts and Credit Scores.

¹³ KemenPAN-RB: *Kementerian Pendayagunaan Aparatur Negara dan Refomasi Birokrasi* or Ministry of Administrative and Bureaucratic Reform.

The district and province Education Offices in turn are responsible for processing the employment and deployment of teachers. Based on the allocation of a specific number of teachers provided by KemenPAN-RB, the Education Offices manage the selection process (conforming to KemenPAN-RB standards) by applying the minimum set of requirements, including possession of an undergraduate degree, and by administering KemenPAN-RB's online standardized civil service exam on basic competencies and MoEC's grade and subject-specific exams. Implementation of these exams is coordinated by BKN. Based on the test results provided by these two ministries, Education Offices can either conduct additional exams or conduct interviews as part of the final exam. They can then announce the candidates that have been selected to serve as teachers and deploy them to the assigned schools in each district or province. Each school is then responsible for supplying data on the need for teachers, that is, the number of teachers required and the subject matter. Civil servant teachers are paid by the central government through a General Allocation Fund (*Dana Alokasi Umum*), which is transferred to the local government annual budget (*Anggaran Pendapatan dan Belanja Daerah*) and distributed at the district and province level.

Figure 1. Flow of Identification of the Demand for Teachers and Teacher Recruitment

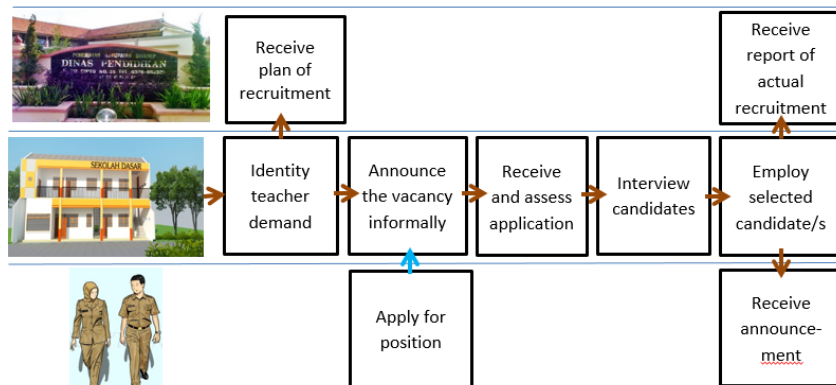


Sources: Directorate General of Teachers and Teaching Personnel, Ministry of Education and Culture (MoEC), 2016; and Rakyatku News May 31, 2017.

Note: MoABR = Ministry of Administrative and Bureaucratic Reform; NPO = National Personnel Office; RPO = Regional Personnel Office.

The supply of non-civil service teachers is usually managed by the provinces, districts, and the schools themselves through the contract teacher scheme, which is essentially an informal scheme. The recruitment process and criteria for hiring non-civil service teachers vary; however, the procedures implemented by 30 percent of the sampled Education Offices in this study follow civil-servant recruitment guidelines. For the hiring of non-civil service teachers at the school level, the school team (generally consisting of the principal, vice principal, and one or two senior teachers) is fully in charge of the entire recruitment process. The recruitment flow at the school level is shown in figure 2.

Figure 2. Flow of Recruitment of Non–Civil Service Teachers



Source: Interviews with the respondents of the visited schools in 13 sample districts.

The challenges of employing, deploying, and managing teachers

Over the past several years, multiple studies (World Bank 2008, 2010, 2012; Chen 2009; Chang and others 2014) have been conducted and many government regulations¹⁴ have been put in place focusing on equitable teacher distribution in Indonesia. So far, however, the efforts have not resulted in measurable improvement in the efficiency of employing, deploying, and managing teachers.

The education system in Indonesia has expanded rapidly since 2005. This has led to higher enrollment, from about 40 million students in 2005 to 45 million in 2016 (an 11.8 percent increase) and an increase in the number of teachers from about 2.4 million in 2005 to 2.8 million in 2016 (a 12.5 percent increase).¹⁵ About 55 percent of teachers in 2016 were civil servant teachers while the remaining 45 percent were non–civil service teachers.

The government began implementing a teacher certification program in 2005.¹⁶ Teachers who meet specified requirements are awarded a certification and are entitled to receive a professional allowance. By 2017, 51 percent of teachers of all types were certified. The average teacher:student ratio (TSR) in Indonesia in 2005 was the same as in 2016, 1:16,¹⁷ which is one of the lowest TSRs in Southeast Asia.

¹⁴ Government Regulation, PP No. 19/2005 on Education National Standard; Peraturan Menteri Pendidikan Nasional (Permendiknas) Ministerial Regulation of MoEC No. 16/2007 on Academic Qualification and Competency of Teachers; PP 17/2010 on Management and Implementation of Education, Permendikbud 15/2010 and Permendikbud 23/2013 both on Minimum Service Standard of Basic Education; UU No. 14/2008—Public Information Disclosure Act; PP No. 74/2008 on Teachers; Permendikbud No. 63/2009 on Education Quality Assurance System; Permendikbud No. 62/2013 on Teacher Certification; Joint Decree of Five Ministers (Education, PAN-RB, Home Affairs, Finance, and Religion) on Teacher Management and Distribution No. 05/X/PB/2011, No. SPB/03/M.PAN-RB/10/2011, No. 48 Tahun 2011, No. 158/PMK.01/2011, No. 11 Tahun 2011.

¹⁵ *Statistik Pendidikan 2005/2006*, MoEC and *Dapodik 2016/2017*, MoEC.

¹⁶ According to Rosser and Fahmi (2016), the enactment of Law 14/2005 on Teachers and Lecturers led to the introduction of a teacher certification program that linked generous pay raises to improvements in qualifications and skills. However, studies have shown that this program has had little, if any, positive impact on teacher subject knowledge or pedagogical skills or, indeed, student learning.

¹⁷ The ratio is the result of dividing the total number of students by the total number of teachers.

Nationwide TSRs in Indonesia are 1:17, 1:16, 1:15, and 1:16 in primary education (PE), junior secondary education (JSE), senior secondary education (SSE), and vocational senior secondary education (VSSE), respectively.¹⁸ However, these averages mask a widely uneven distribution. As one measure of the scale of the distribution problem, TSRs in 2015/16 ranged from 13, 15, and 10 in PE, JSE, and SSE, respectively, in urban Gunung Kidul, Yogyakarta province, to 274, 101, and 29 in PE, JSE, and SSE, respectively, in the remote rural district of Lanny Jaya, Papua province.¹⁹

Thus, with 1 teacher for every 16 students at the primary school level, Indonesia has, on average, a more generous supply of teachers than the Republic of Korea (1 per 21 students), Cambodia (1 per 48), and Brazil (1 per 22). Indonesia's TSR is lower than that of Vietnam (1 per 17 students)—a country that achieved a significant improvement in scores on the Programme for International Student Assessment over the recent past—as well as than that in middle-income countries and in Asian countries (1 per 19 students).²⁰ This ratio is not a coincidence, given that the government has been actively involved in regulating the ratio of teachers to students in the classroom. According to government policy, a classroom should include a minimum 20 and a maximum of 28 students at the PE level, 32 students at the JSE level, and 36 students at the SSE and VSSE levels.

Even though the system is in place and supporting regulations exist, as, for example, on TSRs, Indonesia faces challenges regarding the number, cost, quality, and distribution of teachers. In particular, the country faces the challenge of rising civil servant teacher salary costs, driven by big increases in teacher pay that have crowded out spending in other areas of education needed to improve education quality (World Bank 2008). Indonesian teachers are also poorly distributed between schools, especially between schools in urban versus rural and remote areas. Data from MoEC at the national coordination meeting in February 2016 revealed that about 76 percent of teachers were in the urban areas (cities) while 24 percent were teaching in remote areas.²¹

A key source of inequality and inefficiency in the Indonesian education system arises from compromised recruitment processes and poor teacher management. These factors result in frequent failures to hire the best candidates as well as in large inequalities in the distribution of teachers between schools serving different socioeconomic groups. A large body of work documenting the scale, underlying causes, and possible technical solutions is available but has not resulted in significant improvements in efficiency even when some of the technical solutions were written into regulations, such as the provision of professional allowances for certified teachers (World Bank 2015a). There are also major disparities in employment conditions and recruitment procedures between civil servant teachers and school-hired contract teachers. This contributes further to inequalities and inefficiencies in teacher distribution and management. In January 2017, MoEC also highlighted several issues related to the recruitment and distribution of teachers and teaching personnel, including social and geographical challenges, weak recruitment mechanisms, and

¹⁸ *Rembuk Nasional (Rembuknas) Pendidikan* (National Coordination Meeting for Education), February 21–22, 2016, MoEC.

¹⁹ National Indicators for Education Planning (NIEP), 2015/2016, retrieved from <http://niep.data.kemdikbud.go.id/index.php?r=Indikator/SiswaGuruKualifikasi&bpid=5&ta=2015&akses=1>.

²⁰ UNESCO, Education: Pupil-teacher ratio by level of education (headcount basis), 2016, <http://data.uis.unesco.org/?queryid=180#>.

²¹ *Rembuk Nasional Pendidikan 21-22 Februari 2016*, MoEC, retrieved from https://www.kompasiana.com/idrisapandi/rembug-nasional-pendidikan-dan-kebudayaan-2016-sebuah-catatan-pinggir_56c9c78ac1afbda11b9e88d4.

lack of synchronization between the demand for teachers in the field and the supply from higher education institutions.²²

Aim of the study

The main aim of this study is to inform policy makers of concrete policy directions and options for improving systems related to the identification of teacher need, and for the equitable allocation, recruitment, and distribution of teachers. The study also aims to improve the way that the central government works with local governments in the area of teacher appointment and deployment.

This study captures three review areas: (1) diagnosis of the effectiveness of the existing central-level system for identifying the need for teachers and the system for allocating teachers, based on discussions with key stakeholders in the central government²³; (2) a review of good practices in hiring and distributing teachers, as implemented in 13 districts and 13 provinces in Indonesia²⁴; and (3) an analysis of international experience and good practices in recruiting and deploying teachers using desk reviews of studies conducted in several countries and regions (Utz 2017). The focus of the first and second review areas is to assess whether the existing mechanisms, procedures, and processes are being implemented correctly, and if not, to identify ways to refine them to improve system efficiency (Noordzij 2013).

Using both quantitative and qualitative approaches, information and data were collected in 2016–17 in 13 provinces and 13 districts (Annex 1) of Indonesia involving 156 local government representatives (Annex 2) and 127 principals and 170 teachers (154 civil servants and 16 non-civil servants) from 127 schools—both regular and special schools at the primary, junior secondary, and senior secondary levels. Study sites were selected based on a district's TSR level, capturing districts with low (1:<20), sufficient (1:20–30), and high (1:>30) TSRs.²⁵ The study sites were also selected based on geographical representation of western, central, and eastern Indonesia, as well as the site characteristics of districts, municipalities, and remote districts or underdeveloped, frontier, and outermost regions, also known as “3T” regions. In addition, this study also ensured alignment with the sites of other studies that have been undertaken in the past to paint a comprehensive picture.

Interview respondents from the national level included key staff from MoEC, MoRTHE, KemenPAN-RB, and BKN. At the provincial and district levels, interviews, focus group discussions, and questionnaires involved key Education Office staff in each district or province, the Regional Planning Agency (Bappeda), the Regional Personnel Office (BKD), school principals, and teachers. The study team also conducted school visits to 30 of 127 sample schools in the 13 chosen districts (Annex 3) for more in-depth interviews, including with the principal and with two teachers—one senior and one new teacher—at each school.

²² *Rencana Aksi Sidang Hasil Sub Komisi 2D, Tata Kelola GTK, Rembuk Nasional Pendidikan 24-26 Januari 2017*, retrieved from <http://sim pandata.kemdikbud.go.id/public.php?service=files&dir=%2Fbpkln.kemdikbud%2Ffiles%2FRNPK+2017&path=/26%20Januari%202017%20RNPK%20Hari%20%232/E.%20Sidang%20Komisi/E.6%20Sub%20Komisi%20II.D%20-%20Peningkatan%20Kualitas%20%26%20Tata%20Kelola%20GTK>.

²³ Data were gathered through focus group discussions with relevant institutions at the central level from August 2016 to July 2017.

²⁴ Data were collected in the 13 sample districts during the data collection period for this study.

²⁵ Reference is made to Law No. 14/ 2005, PP No. 74/2008 on Teachers – Article 17 (Teacher Student Ratio), and Permendikbud No. 22/2016 on Process Standard of Basic and Secondary Education, Section VI, A.2.

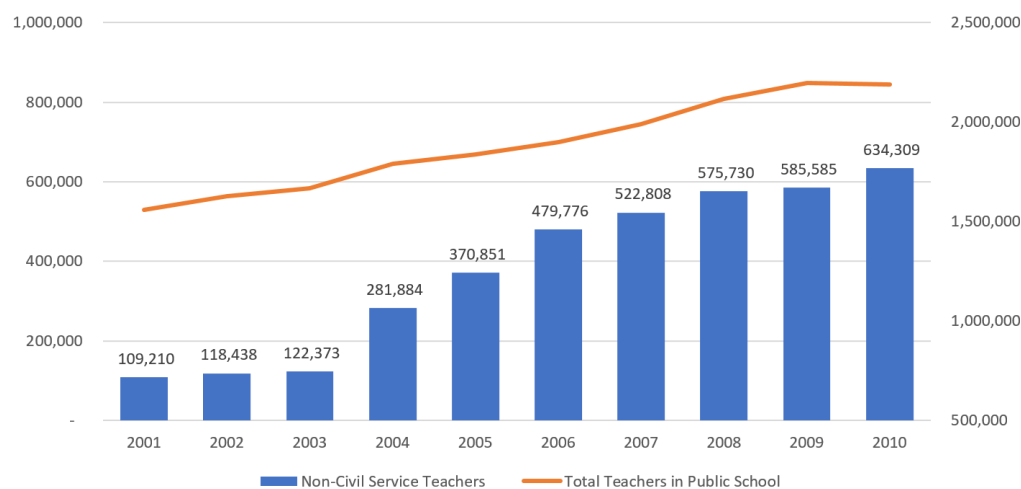
Main findings

Review Area 1: Identification of the Demand for and Allocation of Teachers

Four main issues have been identified to enable GoI meet the demand for and allocation of teachers:

First, overall, there is an over-supply of teachers. However, deploying qualified teachers to areas in need is still a challenge due to conflicts in the signals received about the needed quantity of qualified teachers. Over half of the excess teachers are non-civil service. This trend began when the government issued Law No. 43/1999 during the period of Indonesia's centralized government system. Article 2 (3) of the Law, stated that the national government (ministries and agencies at national level) and local government are allowed to appoint honorary personnel, including honorarium teachers. Honorary personnel are assigned to carry out administrative as well as technical and professional tasks in accordance with the needs and fiscal capacity of each organization. Law No.22/1999 as revised through Law No. 32/2004 on Local Government Administration were issued to supporting the implementation of the decentralized government system. The Laws also allow local government to appoint local government employees as required. Beginning in 2005, the existence of non-civil servants was strengthened through the issuance of three Government Regulations (PP 48 of 2005, revised through PP 43 of 2007, and revised again through PP 56 of 2012) on the Appointment of Honorary Personnel to be Civil Servants. In addition, MoEC also issued Permendiknas 19/2007 Attachment (Part 6.c) that allows schools to assign additional teachers when needed.

The implementation of these regulations compounded by the absence of central government guidelines on the right size of the workforce and non-civil service recruitment process led to local governments appointing a large number of non-civil servants through varied selection processes. This increase in workforce meant that local governments spent about 70-80% of their budgets on personnel. As shown in Figure 3, the number of non-civil service teachers also increased significantly between 2001 (one year after the passage of Law 43/1999) to 2010 (when KemenPAN-RB asked local governments to submit accurate data on the number of non-civil service personnel). The number of teachers in 2010 was 1.5 times higher than the number in 2001. On the other hand, the number of non-civil service teachers in 2010 was six times higher than the number in 2001.



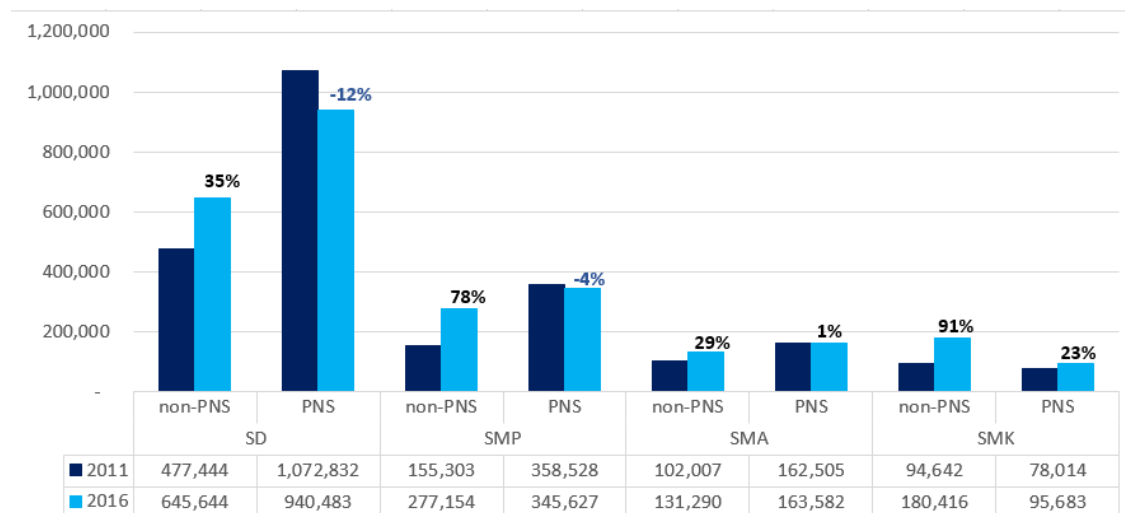
The appointment of a non-civil service workforce including teachers does indeed bring some localized benefits. It increases the local government budget on personnel and capacity building, expands employment opportunities for the local populace and increases opportunities for non-civil service teachers who meet the requirements to become civil servants. In fact, after the implementation of the three PPs until 2014, in line with the termination of PP 56/2012 in December 2014, the government has appointed one million government funded non-civil service teachers who meet the administrative requirements of being civil servants. 200,000 non-government funded honorary teachers were also appointed to be civil servant teachers after going through tests. Since then, the government has not appointed non-civil service teachers to be civil servants. Instead, the government, in the Law on State Civil Administration (Law No. 5 of 2014) reduced the maximum age of non-civil applicants to 35 years and required prospective teachers to undertake the formal civil servant recruitment process. Another incentive for non-civil service teachers was the opportunity to obtain teacher certification. According to Teacher Law No. 14/2005 Articles 8 to 13, civil and non-civil service teachers who meet the requirements are eligible for teacher certification and its benefits.

While KemenPAN-RB attempted to verify teacher data in 2010, it put civil servant teacher recruitment on hold. In 2011, the central government instituted a moratorium on hiring any new civil servant teachers. Local governments expressed concerns about the lack of civil servant teacher caused by attrition (retirement, resignation, and transfer). To respond to the deficit of teachers in the field, district governments and schools resorted to hiring non-civil service teachers to fill vacancies using various selection and criteria; paying such teachers using national BOS and school committee funds²⁶; exchanging teachers with other schools, as needed; assigning retired teachers for little or no payment; and even temporarily hiring parents to teach subjects such as religious studies. To ensure teacher quality, the appointment of non-civil service teachers should be regulated nationally. These differing selection processes have created a ladder of varying qualifications and competencies among the non-civil service teachers who have been hired. Thus, despite the central government's moratorium on hiring civil servant teachers, the number of teachers as a whole has actually kept increasing. The increase in civil servant teachers has been related to the central government's continued appointment of such teachers to serve in remote areas since 2011, while the increase in non-civil service teachers is a result of their appointment by local schools and by local governments to fulfill their need for teachers.

Figure 4 illustrates that between 2011 and 2016, the number of civil servant teachers nationally has risen much more slowly than the number of non-civil service teachers. In addition, central-level regulations requiring that a teacher must teach a minimum of 24 hours per week and must teach classes with a minimum of 20 students to receive the professional allowance, combined with the reduction of teaching hours in certain subjects in the curriculum, has led to a surplus of teachers in certain subjects.

²⁶ A school committee is an independent agency consisting of representatives from the community, including parents and community leaders. Its function is to (1) provide advice on the implementation of education policy in schools; (2) provide support to schools by providing finance, participating in school education activities, and creating ideas for strengthening the school community; and (3) mediate, where needed, between government policies as they affect education in the school and school community. In so doing, it brings about a measure of transparency and accountability in the school's functioning. A school committee fund is composed of part of the tuition fee that is paid by students (except by poor students who are exempt from paying school fees). The school's decision to charge students for these funds must be agreed to by the school committee.

Figure 4. Number of Teachers (civil servant and non–civil service) and Percentage Change between 2011 and 2016



Note: PNS = civil servant; SD = primary school; SMA = senior secondary school; SMK = vocational senior secondary school; SMP = junior secondary school.

The implementation of the staffing formula at school level can contribute to the over-supply of teachers. The need for teachers at every level of education, as regulated in Permendiknas 23/2013 and PP 32/2013, is calculated based on the following: (1) numbers of student enrolled at the school (2) learning hours for each subject as required in the curriculum, (3) teaching hours per teacher as required in teaching standards (24 hours/week), and (4) numbers of learning groups in the school.²⁷ Therefore, a primary school (*Sekolah Dasar* or SD) with six grades (1 to 6) and six learning groups should have six classroom teachers, one religion teacher, and one sports education teacher. A primary school in remote areas should have at least four teachers. A junior secondary school (*Sekolah Menengah Pertama* or SMP) should have one teacher for each subject. There are 10 subjects in SMP. A SMP with three grades (7 to 9) and three learning groups should have 10 teachers per grade. An SMP in a remote area should have a teacher for a group of relevant subjects. SMPs have four subject groups. In principle, the same formula is applied for senior secondary school (*Sekolah Menengah Atas* or SMA) and vocational senior secondary school (*Sekolah Menengah Kejuruan* or SMK).

The school proposal for requesting new teachers is based on the existing condition of the teacher workforce at school level and the staffing norms described earlier. To ensure that school requests are accurate, the Education Office and BKD need to verify the request against the school's data in Dapodik and conduct field verification regularly. Each aspect of the staffing formula has been fixed except the number of learning groups. Based on the current regulation, PP 17/2017, learning groups should have 20 to 28 students, 20 to 32 students, 20 to 36 students, 15 to 36 students, and maximum of 5 students for SD, SMP, SMA, SMK, and special needs schools (*Sekolah Luar Biasa* or SLB) respectively. The provision on the range of student numbers gives schools the flexibility to choose whether to use the minimum student number or the optimum student number for each learning group. When a school chooses to apply the minimum number of students per learning group then more teachers are needed in the school. MoEC

²⁷ Learning group is a group of learners enrolled in a classroom in school (Permendikbud No. 17/2017, Part 1 General Terms, Article 1 (5)).

needs to consider to use only the optimum student number for learning group in calculation of the need for teachers.

In December 2017,²⁸ given the projected national need for some 980,000 teachers for primary and secondary education, the government announced that it would lift the moratorium on the hiring of teachers that had been in place since 2011 and would start hiring new teachers in 2018. It has not been decided whether the hiring will take place through the appointment of civil servant teachers or through performance-based contract teachers (*Pegawai Pemerintah dengan Perjanjian Kerja* [P3K]). Teachers recruited through the P3K system must (1) have an undergraduate degree and an educational background that fits the subject being taught and (2) undergo testing through the national civil servant standardized test. Once recruited, P3K teachers will receive a salary based on the civil servant salary scale, receive a one-year contract, and be accorded the status of a government employee. Such teachers will also receive contract extensions based on satisfactory performance assessments.

According to KemenPAN-RB, the number of civil servant teachers to be appointed depends not only on the numbers proposed by MoEC but also on the government's fiscal capacity. The availability of qualified candidates must also be considered, especially if almost a million teachers need to be hired within a very short time frame. Stakeholders need to work together to develop a comprehensive plan to ensure the availability of the required number of teachers and to ensure that these teachers meet quality standards.

The government has undertaken multiple affirmative action policies in an attempt to provide the requisite number of teachers for remote areas as well as for vocational senior secondary education. To accelerate the development in the disadvantaged regions, every five years, the government defined a list of disadvantaged areas. For the period 2015 to 2019, there are 122 districts in 24 provinces that fall into the underdeveloped area category and another 43 districts in 13 provinces are deemed to be border and outermost areas.²⁹ All 165 districts are categorized as the Tertinggal (underdeveloped), Terluar (Border), or Terdepan (Outermost) (or 3T) areas or districts. They all face significant challenges in education development with a very low learning culture, a minimum of education facilities such as books for students, and a scarcity of needed infrastructure such as libraries and laboratories.

MoEC has been implementing two main affirmative action programs for outreach to these remote areas: the *Sarjana Mendidik di Daerah Tertinggal, Terluar, Terdepan* (SM3T, or Bachelor's of Education in Underdeveloped, Border and Outermost Areas) and *Guru Garis Depan* (GGD, or Frontline Teachers programs). The SM3T program is a community service program attended by teachers with Bachelor's degrees (S1 degrees) who have relevant knowledge and skills to fulfill the demand for teachers. It is a preparatory program to be taken before embarking on the *Pendidikan Profesi Guru* (PPG) or Teacher Professional Education program. The SM3T program was launched in 2011 and is jointly managed by MoEC, MoRTHE, LPDP, the 3T districts, and schools. The GGD program has been implemented to extend and strengthen the SM3T program. Upon completion of the SM3T program, teacher candidates undertake a one-year PPG program and receive certification at the end of this year of study. Upon completion of the PPG, they can continue to teach as GGD teachers (civil servant teachers) by going through the selection process. GGD teachers receive three types of incentives: a basic salary, a professional allowance, and a hardship area allowance. In addition, PPG graduates can also teach in private schools. In 2015, the

²⁸ Kompas 23 Desember 2017. *Perekrutan Guru Dapat Disesuaikan Kondisi Daerah*. Retrieved from <https://www.pressreader.com/indonesia/kompas/20171223/281779924491188>.

²⁹ Refer to Presidential Decree No. 131/2015.

government assigned more than 795 GGD teachers to 28 districts in the four provinces of Aceh, West Nusa Tenggara, East Nusa Tenggara, and Papua. In 2017, the program sent an additional 6,296 teachers to 93 districts in 14 provinces across Indonesia. And according to data from MoEC, another 2,086 teachers will be appointed as GGD teachers in 2018.³⁰

But there have been challenges in GGD implementation. During the first year of implementation (in 2015), these teachers received only 80 percent of their basic salary because their status was not that of a civil servant. Not until August 2017 did they receive their decision letters (*Surat Keputusan*) as civil servants. Also, after deployment in 2017, 96 teachers (1.5 percent of the 6,296 teachers) refused to teach in their designated schools for various reasons (too far apart from the family, mentally unprepared, the area was too difficult, and so on). MoEC also found that the willingness of some districts to accept the teaching candidates was low. For example, one district needed 51 GGDs but proposed only 25 candidates because of the local government's weak financial capacity for paying for the deployment of teachers, such as travel costs to the remote areas and provision of housing for these teachers. In several districts, non-civil service teachers, students from teaching colleges, and the local government also refused the incoming cohort of teachers, either because they were not local to the area or because they would reduce the chances for existing non-civil service teachers to become civil servants.³¹ As a consequence, MoEC reported to KemenPAN-RB that many districts were not supportive of the GGD program and recommended a reduction in teacher allocation to these districts.

Thus, even though the government has made significant efforts, the challenges of placement, local uptake, and deployment financing have hampered implementation. This calls for a rethinking of the affirmative action programs and policies for teachers that are teaching in 3T areas. To attract GGD teachers to the 3T areas, the government should consider providing an extra incentive so that during their first year of teaching, GGD teachers that work in these areas are fully assigned as civil servant teachers and are entitled to receive the three types of incentives: their base salary, a professional allowance, and the hardship allowance. The government should also implement an additional reward program for GGD teachers, as stipulated in Law 14/2005 Article 29, focusing on those teachers who have dedicated themselves to teaching in the 3T areas for 10 years or more, entitling them to a one-time special career promotion as well as health and life insurance in delivering their tasks.

Revitalizing SMK teachers is another type of government affirmative action program. Starting in 2016, the government began working to enhance the performance of SMK, or senior secondary vocational schools.³² However, many SMKs lack teachers in the "productive" subject matter areas who could deliver the enhanced level of teaching and learning. In Indonesia, these are teachers that focus on delivering specialized content and skills as the core subject areas of the SMKs,³³ for example, programming and hardware for information and communication technology (ICT) SMKs; technologies for agricultural processing, textiles, maritime and fishing; design and production of various crafts; and tourism. It was

³⁰ MoEC press conference, October 20, 2017. Retrieved from pojoksatu.id/pendidikan/2017/10/20/program-guru-garis-depan-mendapat-penolakan-tempat-kerja-gagal/.

³¹ About 352,000 existing non-civil service teachers have been active in the teaching force for about 10 years (National Teacher Association or PGRI's presentation in Rembuknas 2018). Retrieved from <http://rnpk.kemdikbud.go.id/materi-rnpk-2018/>. About 19,317 of them have dedicated themselves to the 3T areas and meet the age requirement to become civil servants, www.harianterbit.com/m/iptek/read/2018/02/13/93561/33/22/Kemendikbud-Data-Guru-Honorar-di-Daerah-3T. All non-civil service teachers are striving to become civil servants. However, according to the current regulation (Law 5/2015 Article 58 (3) on Civil Service) every civil servant candidate should follow the standardized selection process for a civil servant appointment.

³² This program is supported by Presidential Instruction No. 9/2016.

³³ Minister of National Education Regulation, Permendikbud No. 22/2006 on SMK Content Standards.

found that both public and private SMKs would still need to recruit as many as 91,861 productive subject matter teachers until 2019. In response to this demand, MoRTHE has been accelerating SMK teacher supply through recognition of previous learning initiatives; by the end of 2017, MoRTHE had rolled out the PPG program for 3,500 SMK teachers, and the same number is planned for 2018.

In 2016 and 2017, MoEC also implemented a teacher program with dual subject specialization (*Guru Berkeahlian Ganda* [GBG] program) to support the redistribution and fulfillment of the needed numbers of SMK teachers. This program is geared toward fulfilling the need for teachers for productive subjects by allowing teachers who teach general subjects, such as civics, Indonesian language, religion, and art, to also teach productive or vocational subjects. In 2016, 12,741 general subject teachers (of 52,692 total SMK teachers³⁴) were recruited and trained with dual subject specialization. In the second stage of the program in 2017, MoEC announced its intention to recruit an additional 15,000 dual subject matter teachers in four priority fields: maritime, agriculture, creative industries, and tourism. As part of this program, successful candidates undertake intensive training for almost a year, including a two-month internship in relevant industries. Any SMK teacher can directly apply to the MoEC for dual subject specialization training. When discussed with sampled SMK teachers in the 13 districts, they advised that MoEC verify the selection of teachers for this program with school principals to avoid a potential shortage of general subject matter teachers (selected teachers must attend intensive training, after which time they are busy with their new tasks). In addition, MoEC should proactively identify the need for SMK teachers and develop comprehensive short-, medium-, and long-term plans to fill the need. Such a comprehensive teacher employment and deployment plan will avoid a patchwork solution to providing the required teachers and will ultimately contribute to the efficiency and effectiveness of teacher employment and deployment and yield better learning outcomes.

Second, there has been a lack of consistent data for effective teacher management with each stakeholder institution—MoEC, KemenPAN-RB, and BKN having its own teacher management information system and teacher database. These databases, namely, Dapodik and SIM-RASIO (MoEC), E-Formasi (KemenPAN-RB), SAPK and e-PUPNS (BKN)³⁵ are managed separately with no interlinkages. Figure 1 illustrates how data from these different institutions converge to identify the demand for teachers. Teacher databases, mainly from Dapodik, are first filtered and analyzed by MoEC using the SIM-RASIO application (specifically used for TSR data management) and are then reported to KemenPAN-RB and BKN as a basis for further teacher recruitment. In addition to sending updated data to Dapodik, each school sends in printed data on civil servant teachers monthly and to the district Education Office (*Dinas Pendidikan*) on demand. The district Education Office submits this data to BKD; after review, BKD sends it to KemenPAN-RB through its E-Formasi application. KemenPAN-RB sends the teacher allocation plan to BKN for review. Using data on existing civil servants, BKN either verifies the allocation plan or provides

³⁴ Presentation of Dit.Gen. GTK MoEC in *Rembuknas Pendidikan dan Kebudayaan* 2016. Retrieved from <http://simpandata.kemdikbud.go.id/public.php?service=files&dir=%2Fbpbkln.kemdikbud%2Ffiles%2FRNPK+2017&path=/26%20Januari%202017%20RNPK%20Hari%20%232/E.%20Sidang%20Komisi/E.6%20Sub%20Komisi%20II.D%20-%20Peningkatan%20Kualitas%20%26%20Tata%20Kelola%20GTK>.

³⁵ Dapodik: *Data Pokok Pendidikan* (MoEC's Single Data Source of MoEC). SIM-RASIO: *Sistem Informasi Manajemen* (MoEC's Management Information System for the teacher:student ratio); E-Formasi: *Formasi berbasis elektronik* (KemenPAN-RB's electronic-based civil service job posts); SAPK: *Sistem Aplikasi Pelayanan Kepegawaian* (BKN's online employment service), which contains the administrative database of civil servants; e-PUPNS: *Sistem Pendataan Ulang Pegawai Negeri Sipil Berbasis Elektronik* (BKN's Electronic-Based Civil Servant Data Reprocessing System). Individual PNS's input their data through this online system; started in December 2016 and to be completed by December 2017. The data update is done by BKN.

technical recommendations. At times, BKN also conducts data verification on civil servant teacher data as well as on the demand for teachers (from SIM-RASIO and E-Formasi) with the line ministries.

In 2017, the data on teachers in Dapodik was re-checked by KemenPAN-RB, BKN, and MoEC, and the evaluation found as much as 20 percent of the data to be inaccurate (such as one teacher having two identity numbers, or two teachers having the same identity number, or one teacher being registered at two or more schools, and so on). To avoid such inaccuracies, the mechanisms for entering data on new teachers into Dapodik has been revised. Previously, all schools were responsible for entering any new teacher data (in addition to school data and student data) into Dapodik; now, the responsibility has shifted to the Education Offices in the districts to minimize errors (such as double counting if a teacher teaches in more than one school). Data correction and cleansing of Dapodik were completed in December 2017. Efforts to synchronize and integrate the four databases have also been initiated. In November 2016, Dapodik was made accessible to BKN and BKD. The most current and promising development is the October 2017 launch of a “Command-Center”: a web-based database of civil servants connecting the KemenPAN-RB, MoEC, and BKN systems.³⁶

Third, the proliferation of central government regulations on teacher workforce management creates gaps in the fulfillment of the demand for teachers. These regulations include KemenPAN-RB’s moratorium on the hiring of teachers, as issued in three rounds in 2011,³⁷ 2015,³⁸ and 2016³⁹; Government regulation PP48/2005 Article 8; and MoHA’s 2013 letter prohibiting the use of the local government annual budget for hiring non–civil service teachers. It should be noted that despite the moratorium on civil servant intake, the government continues to employ and deploy civil servant teachers for remote or 3T areas. In addition, MoEC’s BOS funds can be used to pay the honorarium for non–civil service teachers. Table 1 shows regulations that prohibit or allow the employment of non–civil service teachers.

Table 1. Regulations That Prohibit or Allow the Employment of Non–Civil Service Teachers

Regulations that prohibit	Regulations that allow
<ul style="list-style-type: none"> Government regulation PP48/2005 Article 8^a on Appointment of Honorarium Staff to be Civil Servants states that government institution officials are prohibited from appointing honorarium teachers. 	<ul style="list-style-type: none"> Law on Teachers and Lecturers (Law 14/2005 Article 29 (4)) states that if teachers are not available at a particular school, the central government or local government shall provide a replacement teacher to ensure the sustainability of the learning process at the school.
<ul style="list-style-type: none"> MoHA circular No. 814.1/169/SJ 2013 on the hiring of honorarium staff. 	<ul style="list-style-type: none"> Permendikbud No. 8/2017 on BOS Technical Guideline states that MoEC’s BOS funds^b can

³⁶ Command center is managed by the Secretary General of KemenPAN-RB, the data is supplied by all deputies of the ministry. The human resources to operate the system and the required infrastructure have been sufficient, but the ministry is always improving both aspects for accurate and updated data provided.

³⁷ Joint Decree of Three Ministers (KemenPAN-RB, MoHA, MoF) on Temporary Postponement of Civil Servants Recruitment No. 02/SPB/M.PAN-RB/8/2011, No. 800-632/2011, No. 141/PMK.01/2011.

³⁸ Minister of State Apparatus and Bureaucracy Reform (KemenPAN-RB) Circulation Letter to Governors and Head of Districts on Recruitment of Civil Servants (for certain positions) No. B/2163/M.PAN-RB/06/2015.

³⁹ Minister of State Apparatus and Bureaucracy Reform (KemenPAN-RB) Circulation Letter to Governors and Head of Districts on Recruitment of Civil Servants (for certain positions) No. B/2631/M.PAN-RB/07/2016 and No. B/3656/M.PAN-RB/11/2016.

	be used to pay the honorarium for contract teachers.
a. PP 48/2005 on Appointment of Honorarium Staff to be Civil Servants.	
b. <i>Petunjuk Teknis Biaya Operasional Sekolah – Juknis BOS</i> (technical guidelines of school operational assistance funds) issued by MoEC manually. The BOS guidelines issued through Permendikbud No. 8/2017 allow schools to use the BOS funds (15 percent maximum for public schools and 50 percent maximum for private schools) to pay the salary of existing contract teachers.	

Another MoEC regulation related to the teacher certification allowance requires teachers to teach a minimum of 24 hours per week and to teach classes with a minimum of 20 students. Yet another MoEC regulation on the new curriculum (issued in 2013) reduced the number of teaching hours per week delivered by a teacher for English, mathematics, physics, chemistry, and natural science and deleted ICT as a subject. This resulted in teachers lacking teaching hours in these subjects and they were thus unable to meet the regulations to get the teacher certification allowance.

The above analysis shows that to improve the identification of the need for teachers and the teacher allocation system, the following actions should be taken:

1. Ensure better coordination among relevant institutions on teacher employment and deployment at the central level by establishing a joint coordination team consisting of representatives from MoEC, KemenPAN-RB, BKN, MoRTHE, MoHA, and MoF. This team should take on the role of lead coordinator to resolve issues and to develop improvement programs related to teacher distribution and management.
2. KemenPAN-RB should continuously coordinate the development and improvement of the web-based teacher management information system and database and the Command Center.
3. MoEC should continuously work to improve the accuracy of the data contained in Dapodik, which is the main data source for civil servant teachers, and enhance its coverage to include comprehensive information on non-civil service teachers.
4. MoEC should share timely information on the number and type of teachers needed with MoRTHE and higher education institutions so they can develop comprehensive short-, medium-, and long-term plans and reorient their study programs to produce the needed teachers. This will ensure that the required teachers are available on time and decrease the emergence of sudden and impromptu affirmative action hiring programs.

Fourth, a more structured mechanism is needed for coordination and regular meetings among relevant institutions at the central level on managing teacher deployment. Such a mechanism will also help more efficiently identify the supply of demand for teachers. Currently, coordination meetings involving interested stakeholders (MoEC, KemenPAN-RB, MoRTHE, MoHA, MoF) are conducted on an ad hoc basis based on immediate needs. Past experience shows that MoEC was not able to share timely information on the number and type of teachers needed; thus, MoRTHE and higher education institutions had no clear information on these key aspects and did not have sufficient time to reorient their study programs to produce the needed teachers to meet market demand. This situation changed in September 2016 when MoEC provided data to MoRTHE on the need for professional teachers in 10 *Sekolah Menengah Kejuruan* (SMK, or vocational senior secondary school) subjects and for 6 other types of teachers. MoRTHE has responded well to this request, and by initiating work with 43 higher education institutions as a start, it has financed professional improvement for 39,061 teachers by allowing them to attend the PPG (Teacher Professional Education program, which is being implemented from 2016 to 2020). Independent PPGs of interest to self-funded teacher candidates are also growing. This example shows that close coordination

and communication between MoEC (as the user of teachers) and MoRTHE (as the supplier of professional teachers) can ensure a more efficient response to the supply of and demand for teachers.

Coordination between MoEC, KemenPAN-RB, BKN, MoRTHE, MoHA, and MoF is also needed as the reality is that no single ministry has been assigned to play the lead coordination role for discussions regarding teacher distribution. As is evident, there are many players: MoEC provides regulations on teachers' roles and functions; KemenPAN-RB provides teacher civil servant formation; BKN administers civil servant teacher data; and local governments (and schools) identify teacher candidates, and employ, deploy, redistribute, or terminate the teachers.

Thus, having a joint coordination team consisting of representatives from the MoEC, KemenPAN-RB, BKN, MoRTHE, MoHA, and MoF at the central level to take up the role of lead coordinator will help resolve teacher-related issues, be they related to teacher distribution, gaps, or identification of the number and subject types of teachers needed by region. It will also help control the appointment and deployment of non-civil service teachers. This joint coordination team can also develop a road map to fill in the gaps and to promote better accountability on the part of all stakeholders. Since teacher employment and implementation of their deployment is the responsibility of local governments, such a central lead coordination team must also intensively clarify central policies and regulations related to teacher employment and deployment as well as sanction any district or province that does not provide updated and accurate data or manage its teacher distribution effectively. To ensure implementation, regulations on teachers, when needed, should be issued at the presidential level.

Review Area 2: Good Practices in Teacher Hiring and Distribution

Current district practices in teacher hiring and distribution

Identification of the demand for teachers. This review of practices in hiring and distributing teachers was conducted in 13 districts in 13 provinces of Indonesia between October 2016 and August 2017. In all districts sampled, the process for regularly updating the data has been established, including assigning staff with key roles on data entry. The process is as follows: First, teachers update the data required by schools each month through a paper-based process; an administrative staff school operator for Dapodik (MoEC's single data source), with the principal's agreement, then enters and uploads the lists of existing teachers and lists of shortages into MoEC's online Dapodik system; the school principal also submits the teacher data (existing and teacher demand lists) on the paper-based form to the district Education Office on a monthly basis.⁴⁰ Second, the Education Offices identify the number and types of teachers needed by each school, calculate the demand for teachers, and enter this into the Teacher Request Form (*Daftar Kebutuhan Guru*) book, again through a paper-based form.⁴¹ This form is submitted by each Education Office to BKD every three to six months, and BKD collects them and sends them on to KemenPAN-RB to be recorded.

⁴⁰ In the Maluku Tenggara Barat district, the district helps the school upload the data to MoEC's Dapodik online system. The school submits teacher data monthly, but because of limited Internet connectivity, the data update into Dapodik has been very slow. This issue of slow connectivity may affect other districts as well.

⁴¹ Education Offices did not use the data generated from SIM-RASIO because there was no opportunity to hire civil servant teachers during the civil servant moratorium.

It should be noted that schools are inputting raw teacher data into Dapodik. MoEC then analyzes this raw data and generates reports. Therefore, the accuracy of the raw data is critical to ensuring the quality of subsequent data analysis. In practice, the accuracy of data entry depends heavily on the school's Dapodik operator. The data are often not verified by the school principal or cleared by the Education Office before being uploaded into Dapodik. This situation needs to be remedied, and data verification needs to be undertaken before it is uploaded into Dapodik.

Profile of the distribution of teachers in the sampled districts. The study's findings show that most of the sampled schools in all 13 districts are experiencing teacher shortages. The lowest percentage (30 percent) of schools suffering from teacher undersupply are in East Jakarta, while 55 to 100 percent of sampled schools in the other 12 districts suffer from teacher undersupply. In all districts except Payakumbuh, 10 to 30 percent of sampled schools stated that they have an oversupply of teachers. Only between one and three schools in 11 sampled districts responded that they have a sufficient number of teachers (table 2).

Table 2. Schools with Undersupply, Oversupply, and Sufficient Teachers

	District	Sampled schools	Schools undersupply with of teachers		Schools with oversupply of teachers		Number of schools with sufficient numbers of teachers
			Number	%	Number	%	
1	Semarang	10	10	100	3	30	0
2	East Jakarta	10	3	30	1	10	1
3	Denpasar	9	8	89	2	20	1
4	Payakumbuh	11	8	73	0	0	3
5	Gorontalo	9	8	89	1	11	1
6	Gowa	12	10	83	2	17	2
7	Lombok Barat	13	12	92	3	23	1
8	Bandung Barat	10	7	70	2	20	1
9	Gunung Kidul	10	7	70	4	40	2
10	Maluku Tenggara Barat	6	4	67	1	17	1
11	Ogan Komering Ilir	11	6	55	4	36	3
12	Hulu Sungai Selatan	7	7	100	3	43	0
13	Merauke	9	7	78	1	11	2
	Total		97		27		18

Note: Five schools in East Jakarta did not provide responses.

In all sampled schools, it was found that the schools have over supply of teachers in certain subjects and also under supply of teachers in other subjects. The undersupply of teachers in sampled schools is varied and seems to depend on the specific case of each school. Data show that the shortfall of teachers occurred in a wide range of teaching subjects. At the primary education level, schools lack classroom teachers as well as teachers for religion and sport education. At the JSE, SSE, and VSSE levels, schools have shortfalls of subject matter teachers in core subjects tested on the Indonesian national exam, such as Indonesian language, mathematics, natural science, social science, and English, as well as in other subjects such as religion, sport education, art-culture-handicraft, local content (local languages), and guidance and counseling, in addition to specific subjects in VSSE. In addition, at special needs schools, schools lack classroom teachers as well as teachers for mathematics, Indonesian language, English, art and culture, therapists, religion, sport education, and local content

This shortage of teachers in various subjects occurred in schools that were located not only in urban areas and cities but also in remote areas, and not only in districts with high or average TSRs but also in low TSR districts. In one district, it was found that the highest number of teacher shortages occurred in the SMKs; in another district, the highest shortage was at the special needs schools; while in yet another district, the shortages manifested themselves at the JSE level. All districts, however, experienced similar reasons for teacher shortages, which included the moratorium on hiring civil servant teachers along with teacher retirement and transfer.

On the other hand, in many cases, the surplus of teachers in schools is related to those who teach core subjects with reduced teaching hours⁴² such as English, mathematics, physics, chemistry, natural science, civics, art-culture-handicraft, guidance and counseling, and ICT. However, some schools also have surplus teachers for other subjects as well, such as for Indonesian languages or for social science. There are also some favored locations: teachers from a school located in downtown Gowa district observed that their school received extra teachers that were not requested from the Education Office. In Denpasar, some schools reported having many more Islam religion teachers than needed because they were provided by the central level, while the actual need and request was for more Hindu religion teachers. To maintain the quality of teaching and learning, the identification of teacher shortages or surpluses in schools should be based on accurate and updated data starting from the school level, and should be based on objective and comprehensive analyses and intensive communication and verification by the Education Offices.

Based on the analysis of SIM-RASIO data (table 3), consistent with the findings at the school level, all 13 districts experienced an undersupply of teachers, ranging from 7 to 29 percent. However, contrary to the findings at the school level, no district reported having an oversupply of teachers. Table 3 shows that the undersupply of teachers occurred in all districts included in this study, regardless of TSR level. This discrepancy with the school-level data calls for more regular field verification of the data on teacher distribution and for regular data updates. However, the 3T and high TSR areas (with undersupply of teachers) seem to have low numbers of teachers at the S1 level as well as low numbers of certified teachers. Thus, Maluku Tenggara Barat and Merauke (the 3T areas) need to redistribute some teachers with S1-level qualifications, certain certified teachers, as well as some GGD teachers⁴³ to the needed schools to ensure equal distribution of teachers across schools. Any non-civil service teachers that are assigned in these areas should also meet the required qualifications and competencies. This shows that more detailed and regular examination of the specific need for teachers at the school level and intensive verification of any proposed request are needed to ensure the accuracy of the distribution of teachers to the needed schools.

Table 3. Profile of Teacher Distribution in 13 Districts

No.	District	Region type	Undersupply	Oversupply	Below S1 bachelor degree	Not certified
			% of schools in the district		% of teachers in the district	
	Low TSR					
1.	Payakumbuh	Municipality	7		10	45
2.	Gunung Kidul	District	16		10	42

⁴² A 2013 MoEC regulation on the new curriculum reduced the teaching hours for those subjects.

⁴³ See next section for more on GGD teachers.

3.	Hulu Sungai Selatan	3T area	7		30	57
4.	Lombok Barat	District	10		14	48
	Sufficient TSR					
5.	Semarang	Municipality	19		11	48
6.	DKI Jakarta	Municipality	22		8	45
7.	Denpasar	Municipality	15		10	60
8.	Gorontalo	District	29		19	49
9.	Gowa	District	16		14	56
10.	Bandung Barat	District	27		15	56
11.	Ogan Komering Ilir	3T area	12		25	66
	High TSR					
12.	Maluku Tenggara Barat	District	20		40	67
13.	Merauke	3T area	26		33	65

Source: SIM-RASIO data, MoEC, 2016.

Note: 3T = underdeveloped, border, and outermost areas; DKI = Special Capital Region of Jakarta; TSR = teacher to student ratio.

A variety of teacher hiring practices are used to fulfill the shortages. In the main, local governments have been responding to the shortage of civil servant teachers at schools by hiring non-civil service teachers informally. The analysis shows that 30 percent of sampled districts manage teacher shortages through non-civil service teachers (rather than civil servant teachers) and appoint the non-civil service teachers through local government regulations adopting civil servant selection processes. In this case, the district Education Office (1) develops the selection process and criteria (teachers must have an S1 undergraduate degree and an educational background that fits the subject being taught), (2) administers the national civil servant standardized test, (3) issues the legal basis for hiring teachers, (4) offers local minimum wages as the monthly salary, (5) offers a one-year contract, and (6) assesses teacher performance and extends the contracts of teachers who perform well. The other 70 percent of districts let local schools take the initiative to (1) hire non-civil service teachers using various selection process and criteria, frequently without having an S1 degree or commensurate educational background or relevant experience; and (2) pay non-civil service teachers using national BOS funds and school committee funds;⁴⁴ (3) manage teacher sharing⁴⁵ on their own to fill in shortages (the district issues the required approvals for such teacher sharing); (4) assign retired teachers (with small or no payments) and parents (especially for religion) to teach temporarily; and (5) assign existing non-civil service teachers at schools to teach subjects for which there are teacher shortages, regardless of the non-civil service teacher's educational background. To ensure that qualified and competent teachers are selected, the good recruitment practices of non-civil service teachers implemented by the 30 percent of sampled districts should be adopted by the remaining 70 percent, especially since recruitment takes place through civil servant recruitment procedures.

The study's findings show that the majority of the sampled districts have not put in sufficient effort to manage teachers and to ensure that quality teachers are provided in the classrooms. Teachers in various districts suggested that if the civil servant teacher hiring moratorium continues, the need for teachers should be fulfilled by assigning formal contract teachers, such as P3K teachers, where they are appointed as government employees under performance-based contracts.

⁴⁴ Temporary teachers supported by the national BOS and school committee funds are hired using a variety of selection criteria and receive only minimum wages.

⁴⁵ Teacher sharing means teachers taught the same subject in one or two other schools to meet the required teaching hours (24 hours per week) to receive the teacher professional allowance.

In line with the numbers at the national level (table 3), the number of non–civil service teachers in the 13-district sample is also slightly higher than the number of civil servant teachers (table 4). However, 74 of 92 sampled school are staffed mostly with civil servant teachers (between 51 and 75 percent). Only in Bandung Barat district, 3 schools (all senior secondary schools) of 10 have fewer than 50 percent civil servant teachers.

Table 4. Numbers of PNS and GTT Teachers, Fiscal Year 2016

No.	District or municipality	PNS		GTT		Total teachers
		Teachers	%	Teachers	%	
1	Semarang	7,018	38	11,221	62	18,239
2	East Jakarta	12,048	44	15,299	56	27,347
3	Denpasar	3,424	37	5,732	63	9,156
4	Payakumbuh	1,696	61	1,088	39	2,784
5	Gorontalo	3,060	59	2,161	41	5,221
6	Gowa	4,777	52	4,426	48	9,203
7	Lombok Barat	3,806	50	3,767	50	7,573
8	Bandung Barat	6,263	45	7,771	55	14,034
9	Gunung Kidul	6,053	62	3,726	38	9,779
10	Maluku Tenggara Barat	1,771	71	719	29	2,490
11	Ogan Komering Ilir	5,184	51	5,007	49	10,191
12	Hulu Sungai Selatan	2,584	71	1,066	29	3,650
13	Merauke	2,237	65	1,206	35	3,443
	Total	5,9921	49	63,189	51	123,110

Note: GTT = non–civil service teacher; PNS = civil servant.

Teacher sharing between schools and other teacher-level initiatives have been growing in importance to meet the minimum teaching hour requirement. To ensure that teachers meet the required teaching hours and number of students, schools have started to initiate teacher-sharing programs for different subjects or classrooms. The study showed that to meet the required teaching hours and student numbers, some teachers taught the same subject in one or two other schools that were located quite a distance from the home school, the farthest being about 40 kilometers from the home school. Teaching in two or more schools also required teachers to undertake more preparation and spend more time travelling, causing them to have less time to focus on learning activities. A primary school teacher stated that two teachers in her school also tried to get students back to the classroom (by using her own money to pay for students' transportation, books, uniforms, and shoes) to fulfill the 20 students per class size requirement. In addition, some teachers moved to other schools that had met the minimum class size. Thus, schools and teachers focused on meeting the minimum number of 20 students per class, not on reaching the optimum student numbers per class as required in the Minimum Service Standard for maximum efficiency (28 students for PE, 32 for JSE, and 36 for SSE levels).

The requirement that teachers meet the minimum size of a learning group to receive the professional allowance seems to be related to the increased number of learning groups that have been formed over the past few years (table 5). Learning group is a group of learners enrolled in a classroom in school. Education statistics show that the increase in the number of learning groups nationally between 2013 and 2016 mainly occurred at the primary and JSE levels. In primary education, even though the number of

students decreased by about 621,355 (a 2 percent decrease), the number of learning groups increased by 30,892 (a 3 percent increase over 2013). At the JSE level, the number of students increased by about 325,074 (3 percent), and the number of learning groups increased by 15,772 (5 percent more than in 2013). The increase in the number of learning groups indicates that learning group sizes are smaller because schools attempt to meet the minimum of 20 students per class so that every teacher has a class to teach. At the SSE level, even though the number of students increased slightly (20,119 students), the number of learning groups decreased by about 3,752 (a 2 percent decrease). The small increase in the number of SSE students can be accommodated because the optimum number of students in a learning group is 36.

Table 5. Increased Learning Group Numbers at the Primary and Junior Secondary Education Levels

Education level	2013		2016		Percent increase	
	Students	Learning groups	Students	Learning groups	Students	Learning groups
Primary	26,504,160	1,069,205	25,882,805	1,100,097	(2)	3
Special needs	101,918	25,739	114,085	28,493	12	11
Junior secondary	9,715,203	326,884	10,040,277	342,656	3	5
Senior secondary	4,292,288	150,645	4,312,407	146,893	0	(2)
Vocational senior secondary	1,576,056	147,799	1,631,511	153,150	4	4
Total	42,189,625	1,720,272	41,981,085	1,771,289		

Source: Education Statistics, MoEC, 2013 and 2016.

To control the growth of learning groups (which requires additional teachers), MoEC issued Regulation, Permendikbud No. 17/2017,⁴⁶ which regulates (1) the number of learning groups per school, (2) the minimum and maximum number of students in a learning group per school at each education level, (3) the maximum number of learning groups that are allowed to not comply with the size requirements, and (4) the sanctions for having a class or learning group of less than the minimum number or more than the optimum number of students. Moving forward, when reviewing school proposals for the need for teachers, districts and provinces should only approve schools that successfully reach the optimum student numbers per learning group.

Issues in civil servant teacher recruitment and deployment. When this study was conducted, no district had five years of experience appointing civil servant teachers (given that the decree to stop hiring civil servants was issued in 2011), but since then (except in 2015 KemenPAN-RB decided not to appoint teachers) they have gained the authority to appoint civil servant teachers, with the exception of teachers who teach in schools in 3T areas (underdeveloped, border, and outermost areas). To improve the civil servant recruitment process, teacher respondents to this study were asked to provide insights and suggestions based on their experience during the recruitment and deployment process. While all 154 civil servant teachers (91 percent of the total sample) stated that they had not experienced significant problems during the teacher selection process, they did, however, suggest that a more transparent selection system should be put in place that follows established rules and procedures.

⁴⁶ Permendikbud No. 17/2017, Articles 24 to 31 (requirement on learning group and its sanction); Articles 11–13 and 15–17 on school registration based on student domicile zone.

The above discussion shows that uneven teacher management practices have led the government to employ unneeded teachers, some with questionable competencies, because of selection processes that have not been standardized. This has most importantly hampered the delivery of quality teaching and learning. If unchecked, these uneven practices will have an impact on overall student learning achievement.

Thus, to improve employment and deployment of teachers, the following actions should be taken:

- (1) Ensure the accuracy of the raw data provided by schools by empowering school principals to verify the quality of the data. This data should be cleared by the Education Office before it is uploaded into Dapodik.
- (2) Identification of teacher shortages or surpluses should be based on accurate and updated data from the school level. The data need to be verified by the Education Offices, and due consideration should be given to equal education quality distribution across schools.
- (3) Non-civil service teachers should be hired according to the same procedure used for hiring civil servant teachers to ensure that teachers meet the requirements. Appointment of performance-based contract teachers may also induce teachers to perform better.

Good practices in teacher hiring and distribution

Although limited, good practices in teacher hiring and distribution have been identified in East Jakarta (DKI Jakarta),⁴⁷ Semarang, and Gorontalo (see boxes 1 to 3), particularly regarding their processes for identifying the demand for teachers, teacher employment, and teacher deployment. Interestingly, given that these three districts have average TSR levels, it can reasonably be assumed that the desired TSR was an outcome of these districts' efficiently managing their teacher distribution. Other districts that have made a good start in identifying and implementing good practices include Merauke in Papua, Maluku Tenggara Barat in Maluku, and Gowa in South Sulawesi. MoEC should disseminate these good practices widely and provide clear implementation guidelines along with the necessary technical assistance so that other districts can improve their performance.

Identification of the demand for teachers. The 3 districts that are implementing good practices follow the same three-stage process in identifying demand for teachers as the other 10 districts. The differences are that (1) they ensure that all stakeholders (district planning office, finance office, personnel office, local parliament) are made aware of the teacher redistribution program; (2) they undertake data collection for demand for teachers across all schools in their districts and involve all stakeholders; and (3) the planning divisions of the Education Offices conduct in-depth verification of each school's proposal for the number of teachers it requires, verify the accuracy of the school data, and examine each school's requests for the number and types of teachers. If a school's proposal lacks clarity, the planning team contacts the school, or even visits the school, and requests supporting documents and data to ensure consistency with the data in the proposal.

Teacher employment. The goal is to have sufficient numbers of qualified and competent teachers in schools to ensure the delivery of quality education. The three districts with good practices are addressing the issue of shortages of teachers in different ways: Semarang provides local School Operational Assistance (local BOS grants) from which schools themselves procure teaching services; East Jakarta

⁴⁷ The administrative city of East Jakarta is a subgovernment of the *Daerah Khusus Ibukota* (DKI, Special Capital Region) of Jakarta province. Therefore, teacher management practices in this area are the same as in the other four administrative cities of DKI Jakarta because it is centrally managed by the Education Office of DKI Jakarta province.

allocates a provincial budget to procure teaching services, which is managed by the provincial government rather than by the schools (box 1); and Gorontalo allocates a district budget to contract non–civil service teachers, and hiring is managed by the district government. These three districts also use the civil servant teacher selection system in selecting non–civil service teachers and require the same level of qualification and competencies, even though the wages paid are slightly below the basic salary of civil servants. Through these mechanisms, these three districts are putting forth their best efforts to deploy qualified and competent teachers to the schools that need them.

Box 1. DKI Jakarta’s Teacher Employment and Deployment Program

DKI Jakarta’s redistribution program started in 2013 and has been conducted every semester (every six months) for both civil servant and non–civil service teachers. For DKI Jakarta province, teacher redeployment serves multiple objectives: it ensures equity of education quality in all DKI Jakarta schools; it energizes teachers to avoid burnout; and it rotates teacher and educational personnel (for example, vice principals) postings.

This task is performed by a specific “redistribution” team, involving school principals and supervisors, and is based on identification of the demand for teachers in each submunicipality. However, the issuance of the civil servant moratorium circular in 2011 poses a new challenge. Each year, about 2,000 teachers in DKI Jakarta retire, creating vacancies in schools. To address this challenge, teachers are contracted through the procurement process for individual teaching services, based on DKI Jakarta Governor Regulation No. 249/2016. Selected contract teachers are hired on an annual basis and go through another selection process for yearly contract renewal. These contract teachers receive the minimum wage based on DKI Jakarta’s local standards for minimum wages, and are paid from the provincial budget. Currently, there are about 15,000 teachers on this type of contract, or about 22 percent of all teachers in the province. Thus, even though DKI Jakarta has had to hire contract teachers because it was unable to hire civil servant teachers, the selection process ensures that contract teachers meet the qualification and competency requirements. The contract system also encourages teachers to perform better. Finally, the employment of contract teachers did not violate MoHA’s decree prohibiting the use of local government budgets to appoint non–civil service teachers.

Of the three local governments deemed 3T regions, the Merauke district in Papua receives SM3T and GGD teachers as part of a central government program. To strengthen this program, the district government allocates counterpart funds to pay additional honoraria for these teachers with the intention of increasing their commitment to teach. The Gowa district in Central Sulawesi allows principals to establish cooperation agreements with other neighboring schools to meet the demand for teachers and to meet the requirement that teachers must teach a minimum of 24 hours per week, particularly for specific subjects in SMKs and in special needs schools. In the Gunung Kidul district in Yogyakarta province, schools have initiated “teacher sharing” through memoranda of understanding agreed to by the schools and signed by the district Education Office. Furthermore, Maluku Tenggara Barat district has developed a manual, or Standard Operating Procedure on Teacher Transfer. It states that the local government is authorized to manage teacher mobility or transfer based on demand for teachers at the school level. When needed, the local government and teachers would sign memoranda of understanding stating their consent to the terms and conditions.

Box 2. Semarang’s Teacher Employment and Deployment Program

Semarang city has suffered from a teacher deficit because more than 1,300 teachers have retired since 2012. When no new teachers are deployed by the central government, Semarang allocates *Pendamping BOS* (P-BOS) funds,^a or School Operational Assistance funds provided by the local government, to hire contract teachers. The P-BOS fund and the contract teacher employment process are managed by the school principals. The process of hiring contract teachers starts with Semarang’s Education Office request to all school principals to complete the questionnaire on

the demand for teachers; each school's request is verified by the Education Office, and the Education Office determines the number of teachers that need to be hired and proposes the plan to Bappeda.

Prospective teachers go through a rigorous selection process based on detailed planning for the numbers of teachers that are needed for various subjects. The city uses the national civil servant standardized test for selecting teachers. The local government (1) issues supporting regulations for hiring teachers, (2) provides the local minimum wage as the monthly salary, and (3) offers a one-year contract to the teachers. The Education Office and the schools review teacher performance annually as the basis for contract extension. Since 2015, the city has employed more than 2,500 contract teachers for public schools using the P-BOS funds. In addition to teachers, this program is also available to schools to hire contract administrative staff. Like their civil servant teacher colleagues, contract teachers are also required to teach a minimum of 24 to a maximum of 40 hours per week. It should be noted that schools are prohibited by the local Education Office from using national BOS funds for hiring teachers even though this is allowed in the BOS guidelines. But some schools use it to hire extracurricular teachers (who teach fewer than 24 hours per week).

a. P-BOS: *Pendamping Biaya Operasional Sekolah* is the local BOS, which functions as a counterpart fund of the national BOS (School Operational Assistance).

Teacher deployment. Qualified and competent teachers are deployed to schools to enhance the quality of education services across schools. The Education Offices of East Jakarta, Semarang, and Gorontalo merge schools that do not have sufficient students; they thus do not meet education service standards in terms of the number of students served. These regions then distribute teachers to ensure equal quality of education in all schools. To even out the quality of education, East Jakarta and Gorontalo have implemented an “open teacher sharing” program. In this program, the Education Office publicly announces a list of schools (including the school location) that need teachers in specific subjects. Teachers then choose the schools that closely meet their preferences for transfer. Therefore, the transfer is based on teachers' own choices rather than on an instruction from the Education Office.

East Jakarta and Gorontalo have also designed equitable teacher deployment programs across schools to ensure that every school has qualified and competent teachers. They have mapped out learning achievement levels across schools using the national exam score and have also mapped out the performance of all civil servant teachers on the teacher competency test. As part of its equal education quality distribution program, East Jakarta deploys high-performing civil servant teachers to low-performing schools for permanent positions and deploys low-performing teachers to average or high-performing schools for immersion. Gorontalo (box 3) deploys high-performing civil servant subject teachers to teach classes together with low-performing subject teachers as a temporary measure to increase the subject teacher's capacity. Gorontalo also assigns high-performing teachers to schools in rural areas and provides a bonus of about half of the teacher's basic salary to elicit the commitment of civil servant teachers to teach in remote areas.

Box 3. Gorontalo's 360 Degree Coordination

To ensure sufficient teacher distribution and to reduce the competency gap, Gorontalo district has gradually implemented the following measures:

- Since 2008, BKD (the Regional Personnel Office) has been conducting a re-selection of existing non-civil service teachers to obtain only qualified teachers. The re-selection process uses the national civil servant standardized test.

- The district has undertaken teacher transfer. Since 2015, 634 teachers and principals have been rotated to ensure optimal education service delivery across schools. Socialization on the transfer has been conducted with all stakeholders in the district, including communities and the local parliament to ensure the program is accepted, funded, and legalized.
- It has instituted a teachers' marketplace (*Bursa Guru*). To ensure that the placement of teachers fulfills both schools' and teachers' needs, Gorontalo district has devised mechanisms to overcome teacher dissatisfaction. A checklist of circumstances that warrant teachers' asking for transfer of duties has been developed and has been publicized to help teachers better understand and accept the conditions related to their appointment or rotation. The service hours for the teachers' marketplace are posted at the Education Office of Gorontalo District (Monday–Friday after 1 pm) to ensure that teachers do not miss teaching classes to process administrative matters (including handling of complaints about unsatisfactory placement or transfer).
- It has developed the Rolling Teachers program to anticipate and mitigate the unequal distribution of teachers by assigning core teachers to teach in low-performing schools and to encourage knowledge sharing with other teachers. The program is designed to reduce capacity gaps between urban area and rural area teachers.
- The district is implementing multigrade teaching for schools with fewer than 90 students.
- The district has allocated funds for non–civil service teacher scholarships (IDR 4 million to IDR 7 million) to encourage them to undertake bachelor's (S1), master's (S2), and doctoral (S3) programs. The budget is managed by BKD instead of the Education Office.
- It provides a reward to high-performing teachers by sending them for Umroh (the pilgrimage of Muslims to Mecca).
- The district has also issued six local government regulations to support the implementation of reforms to employment and deployment: Local Government Regulation 1/2009 on education management, the Head District Regulations No. 30/2009 on multigrade teaching, No. 31/2009 on teacher transfer and employment, No. 32/2009 on education mapping, No. 34/2009 on school regrouping, and No. 36/2009 on the rolling out of teachers.

Some social, political, and cultural challenges have been encountered in implementing the above initiatives. First, in 2007, teacher transfers were conducted at the same time as a major a political event, the governor's election. Some of the 634 transferred teachers perceived their reassignments to remote areas to be punishment; they sued the district government but the district won the case. Second, teachers prefer to work in the city to be close to their families and relatives. Third, in most cases, teachers are not willing to live in remote areas. Redistribution of teachers has an impact on teachers' career development, competency development, and continued professional development.

a. Pemkab: *Pemerintah Kabupaten* or Local Government.

Observations on good practices

A series of positive effects have been observed from the above-mentioned good practices. For example, Gorontalo's good practices with regard to teacher distribution were reported by respondents to be successful in enhancing teachers' welfare, careers, and competencies; establishing equitable education quality such that there is no difference in students' national exam scores between rural and urban areas; and building the commitment of stakeholders from the local government, local parliament, teachers, and the community at large in enhancing education quality.

Good practices that have had an impact on EETED in the three regions are characterized by several factors. At the managerial level, the solid support and political commitment from various stakeholders in the region is key. Such support includes strong coordination with and support from the mayor or governor; strong collaboration between the Education Office, BKD, Bappeda, the Finance Office, and the Regional

Secretary⁴⁸; strong political support from local parliament incorporating the same vision for teacher management; and availability of a legal basis, supporting regulations, and the required budget.

At the implementation level, the most crucial determinant is that the Education Office team have good managerial capacity and be committed to finding solutions by being innovative while adhering to the prevailing rules. In addition, Education Office teams need to maintain coordination with the central government, and at the district level, with the provincial Education Office. In Gorontalo and Semarang, the teacher redistribution regulations were issued at the district government and district head level, while in DKI Jakarta, the regulations were issued by the provincial Education Office. This shows that no central government regulations are needed; the main requirement is the local government's initiative, willingness, and authority to ensure better management of teacher distribution.

During the study, teachers were also asked about which institutions were better placed to be managing teacher employment and deployment. Most teachers (74 percent) in the three regions that are implementing good practices expressed the view that they were happy to be managed by the local government because they believe that teacher management affairs would be effectively and objectively handled with timely communications. The rest believed that management at the central level would add a certain smoothness to the teacher certification process, they would receive more and additional allowances, and they would be able to take part in regular professional development. However, most teachers that responded in the other 10 districts (59 percent) expected to be managed by the central government, 2 percent preferred to be managed by the provincial government. They believe that the central or provincial government would provide faster, more uniform, and clearer information and regulations related to their professional allowances and promotions; would not engage in collusion and nepotism; would provide regular and more professional development programs; would not cut or take their professional allowances; and would not penalize or transfer them for making small mistakes.

Teachers were asked that if they could propose moving to other schools, what would be their reasons for doing so. Of the 170 teachers in the sample, 22 mentioned the need for a transfer because of their desire to live close to home or to go back to their hometowns and to have the opportunity to teach in better schools. In all of the sampled districts, including both those that are implementing good teacher distribution and management practices and others that are lacking initiative, most teachers (about 70 percent) responded that they had no intention to move to other schools because they were comfortable teaching in their current schools. The rest responded that they would move to schools that were closer to their houses or hometowns and to those schools that provide better opportunities for career development. Of teachers that are teaching in a very remote district (Maluka Tenggara Barat), 77 percent would want to move to other schools or areas that provide more opportunities for career development. The bottom line is that many teachers, especially those who expect to be managed by the central level, are willing to be rotated within the district, the province, and at the national level, with the proviso that they can also have the chance to teach in schools close to their families or hometowns sometime during their teaching careers and also be given opportunities for career development.

⁴⁸ Regional Secretary is a supporting office of the local government that is in charge of assisting the local government head in drafting policies and coordinating regional offices and technical agencies.

Review Area 3: International experience and good practices in recruiting and deploying teachers

Teacher deployment system. Globally, experience shows that two systems exist for teacher deployment: the first is a centralized system in which deployment is undertaken by a central authority, and the second is deployment by a free market system (Mulkeen 2010).

- *Centralized planning.* Centralized deployment has been a longstanding model in many countries, and is widely believed to allow the rational deployment of teachers. Central planning has the advantage of being far from local pressures and being easier to make fair and transparent. However, highly centralized systems depend on the quality of information they receive from schools and tend to suffer from a lot of decision-making and inattention to the individual needs of education staff. The major weakness of centralized systems is that they are often undermined in practice by an inability to implement rational deployment, which can have serious consequences. Teachers may circumvent the Ministry of Education's (MOE) posting policy by claiming fictitious health problems, exploiting poor record keeping, or just failing to take their assigned posting. Teachers who fail to take up a rural posting present a difficulty for policy makers. If they are allowed to take up a desirable post later on, they undermine the posting system. If they are not, then the system loses a trained teacher.
- *Market system.* In this system, teachers are not sent to schools; instead, they apply for posts in a specific school. This system removes from the central authorities the burden of deploying teachers. By searching for jobs in the open market, teachers in effect deploy themselves. This gives each school more autonomy in selecting its teachers. Schools are more likely to select teachers who will accept the position and often recruit local people. However, "market effects" occur, and the most desirable (best qualified) teachers tend to get the most desirable jobs.

In practice, many countries use a combination of centralized and decentralized teacher deployment systems. The ways in which teachers are managed is not always clear cut; different levels of government make decisions regarding teachers, which often leads to confusion and market and system inefficiencies. These decisions range from teacher training to recruitment, deployment, performance evaluation, human resources databases, payroll, and redeployment.

Many countries, particularly in East Asia, have considered decentralizing the process for hiring teachers to the local level. This implies recruiting teachers locally which can increase accountability, particularly in countries with evidence on and concern about teacher absenteeism. Locally recruited teachers are also more likely to be socially and culturally akin to the students and parents in the schools where they teach. But decentralization brings both benefits and risks. The more local the system, the more likely it is to keep in touch with the needs of the schools and to respond quickly and flexibly to those needs. However, a local deployment structure may also be vulnerable to the undue influence of powerful individuals, especially in countries with weak administrative capacity at the district and local levels. Improved systems of "checks and balances" are needed to ensure countrywide equity and efficiency in teacher deployment.

Some countries decentralize some functions, such as hiring and firing of teachers, while keeping others effectively centralized, such as setting compensation levels. For example, in **Chile** and **Mexico**, control over contracts is centralized, and a national salary scale standardizes teachers' pay (King and Guerra 2005). In the **Philippines**, the Department of Education's Central Office determines the number of new teacher positions that will be allocated to each elementary school and high school (World Bank and

Australian Aid 2016a). In **Sri Lanka**, the responsibility for appointing and transferring teachers under the central government is vested with the Public Service Commission, while each of the nine provinces has its own Provincial Public Service Commission. Currently, all teachers are provided by the central government, even to those schools managed by provincial commissions (Balasooriya 2012–13). In the **United Kingdom**, while the national level sets a minimum pay scale and qualifications for educators, public schools are responsible for hiring and paying their own teachers (Hutchings et al. 2006).

Other countries have encouraged greater local participation. In **El Salvador**, community education associations are legally responsible for hiring and firing teachers. In **Brazil**, communities across an increasing number of municipalities rely on direct elections to select school directors (King and Guerra 2005). The **Scottish government** is also implementing “community hubs” in rural areas to share staff across schools, early learning, vocational education, and other services, meaning that students have access to specialist staff that no single school in these areas would be able to provide alone (The Scottish Government Commission on the Delivery of Rural Education 2013).

The aim of good teacher policies is to ensure that teaching is attractive to highly qualified candidates from diverse backgrounds, with good subject knowledge, who are ready to live and work in remote areas, and are also willing to teach disadvantaged children. A review of international experience shows that improving pay, including through a combination of incentives, such as good housing and extra allowances or bonuses, improving working conditions, and providing an attractive career path are the best ways to retain good teachers, and to encourage and maintain their commitment to teaching. Based on this review, some promising policy options include the following to assure the equitable deployment of qualified, motivated, and well-supported teachers.⁴⁹

1. Provide and use incentives. According to Bruns and Luque (2015), incentives can be grouped into three broad categories: (a) professional rewards, including intrinsic satisfaction, recognition and prestige, professional growth, intellectual mastery, and pleasant working conditions; (b) accountability pressure; and (c) financial incentives. There are also in-kind incentives, and teacher housing is one of the most frequently used example of such incentives to encourage teachers to locate in rural areas. Although this can be expensive to provide, is clearly required in areas where suitable housing is not available for rent. The availability of safe housing is particularly important in encouraging female teachers to locate particularly to rural areas, especially in Sub-Saharan Africa (Mulkeen and Chen 2008).

Many countries are using a range of targeted incentives to attract teachers into the teaching profession. In **Scotland**, teachers who complete their coursework successfully receive a year-long paid internship with school-based mentoring and peer-teacher support. In the **United Kingdom**, a program of scholarships to highly prestigious institutions to lure top science students into teaching led to an increase of over 10 percentage points between 2010 and 2012 in the share of teacher education entrants with honors degrees. In **Chile**, in 2010, the Beca Vocación de Profesor (BVP) program began offering full tuition for students who score 600 or higher on the university entrance examination, agree to study education, and work as a full-time teacher for at least three years in public or subsidized schools after their graduation. About 3,500 students per year have qualified for BVP since 2010. Though this is a relatively small share of the 130,000 students in teacher education in Chile, BVP has succeeded in its first stage goal of attracting more academically qualified students into teacher education programs. A second impact ministry officials

⁴⁹ For more details see: Utz (2017). This section includes evidence as presented in Mulkeen and Chen (2008); Mae Chu Chang et al (2014); Dundar et al. (2014); Mulkeen (2010); UNESCO (2015); Bruns and Luque (2015); and Liang, Kidwai and Zhang (2016).

report is feedback from top universities that the introduction of the “BVP cohort” of students into their programs has raised the quality of academic interaction and stimulated higher performance from all students (Bruns and Luque 2015). In **China**, six nationally affiliated teacher preparation colleges have, since 2007, offered free tuition and living stipends to teacher candidates who agree to stay in the teaching profession for more than 10 years after graduation (at least 2 years in rural areas). **Shanghai**, in particular launched two talent recruitment plans in 2014 to proactively recruit high-quality candidates who do not necessarily have a teaching degree: one plan recruit candidates from Shanghai’s four top universities, and the other hosts teacher recruitment fairs in Beijing’s top universities to encourage candidates to come to Shanghai Liang, Kidwai, and Zhang 2016).

2. Reward good teachers. Bonus pay is an instrument that can be used to provide financial rewards for teaching. This can be politically and technically easier to implement than career path reforms and does not have long-term fiscal or pension implications. Bonus programs typically offer a one-time reward for teachers (or schools) for specific results achieved during the prior school year. The only two rigorously evaluated cases of bonus pay programs operating at scale (**Chile’s Sistema Nacional de Evaluación de Desempeño [SNED] and the school bonus in Pernambuco, Brazil**) are both from Latin America, and both have demonstrated positive results on student learning and grade attainment. A reasonable hypothesis is that bonus pay incentives—which focus schools on student learning results—can be productive in systems where other accountability pressures and teacher professionalism are weak (Bruns and Luque 2015).

3. Invest resources in teacher professional development. Cross-country studies show that high-performing school systems offer their teachers abundant opportunities for continued mastery and professional growth and that outstanding teachers receive substantial recognition and prestige. **Singapore’s** 100 hours annually of paid professional development for every teacher is a leading example. Singapore also pays special attention to providing teachers with multiple options for rising in the profession. Its Education Service Professional Development and Career Plan (Edu-Pac) has three parts: a career path, recognition through monetary rewards, and an evaluation system. The program provides for teachers with different aspirations by promoting three tracks. The Teaching Track allows teachers to continue in the classroom while advancing to the new level of Master Teacher. The Leadership Track gives teachers opportunities to take on leadership positions in schools and at ministry headquarters. The Senior Specialist Track allows teachers to move to ministry headquarters to become part of a “strong core of specialists with deep knowledge and skills in specific areas in education that will break new ground and keep Singapore at the leading edge.” Each teacher’s performance is monitored through the Enhanced Performance Management System, which incorporates planning (for teaching goals, innovations instruction, school improvements, and personal and professional development); regular support and coaching; and an intensive performance evaluation. The evaluation leads to a performance grade, which is linked directly to the annual bonus of the teacher and to promotion decisions (Dundar 2014).

High-performing systems also support teachers’ professional growth by promoting constant interaction and peer collaboration among teachers. **Finland’s** teachers spend only 60 percent as much time as the OECD average in the classroom teaching; the rest of their time they work jointly on new curriculum content, learning materials, and ways of assessing students’ progress. **Peru’s** teacher mentoring program and **Rio de Janeiro** municipality’s Ginásio Experimental Carioca programs are promising new examples in the LAC region of efforts to promote teachers’ professional mastery through peer collaboration (Bruns and Luque, 2015).

The education system in **Shanghai** also recognizes the need for teachers to spend time outside the classroom. On average, teachers in Shanghai report spending 14 hours per week on actual teaching, that

is, more than 5 hours less than the Teaching and Learning International Survey (TALIS) 2013–14 average of 19.3 hours per week. However, teachers in Shanghai report spending more time per week than in other TALIS countries on planning their lessons and student counselling. Teachers with outstanding achievement in both teaching and nonteaching tasks are honored with the title of “model teacher” and a monetary reward (Liang, Kidwai and Zhang, 2016).

4. *Recruit teachers for specific locations.* Location-specific recruitment may improve teacher retention in that it provides teachers seeking employment with a strong incentive to accept a position, also in remote location, and allows them some choice of location. This enables some teachers to work in their home areas or areas where they have some relatives, thus increasing the probability of retention. Similarly, the element of choice enables female teachers to apply for jobs in areas close to their families, and may increase the proportion of female teachers in rural schools. Where schools have a say in the selection of teachers, they are likely to favor local candidates, further improving take-up and retention. A successful program was introduced in the **Gorontalo district in Indonesia** in 2006. The local government introduced a policy to employ only those teachers who agreed to be posted to schools that required that particular teacher’s skill set. Teachers also agreed, through an eight-year contract with the local government, to be redeployed with the changing staffing needs of schools within the district. This policy allowed new teachers to be deployed to schools with the greatest need while also giving the local education office the flexibility to move teachers according to changing needs. The Gorontalo district also established a teacher management information system at the district level (Mae Chu Chang et al 2014).

5. *Require newly qualified teachers to serve some time in remote schools before taking up urban jobs.* According to Mulkeen and Chen (2008), young, newly qualified teachers tend to be more mobile than older teachers and may be willing to move to a remote school, especially if they see it as a temporary move. Combined with a system of scholarships for teacher training, this option could provide a channel for people from poor rural backgrounds to complete teacher training and return to their home area. This requirement should also be disclosed clearly to the pre-service teacher training entrants, so that those unwilling to accept a rural post may self-select themselves out of teaching. Putting this option into operation will require good information and management.

The authors also add that it is important to recognize teachers’ preferences in deployment. Some teachers may be more willing to move to their home area than to other rural areas. This is particularly true where various languages are spoken. Teachers who are married will value the possibility of being placed in a “tandem posting” or at least being posted close to their spouse. Posting newly qualified teachers with a classmate may also be another way to help the newcomer teacher to settle into an area.

6. *Link deployment to rural areas to career progression.* Typically, this requires that newly trained teachers work for a number of years in a rural area or teachers that are seeking a promotion work for a certain period in a rural area. Successful implementation of such systems depends on careful management. Even if successful, it is the case that this would concentrate the least experienced teachers in the rural areas (there is some evidence that young, newly qualified teachers have more difficulties in rural areas and achieve poorer results). Despite these difficulties, systems where a defined period in a rural area is required may be an effective strategy for getting qualified teachers in rural schools. Teachers may be more likely to accept a rural post if they see it as temporary and a path to a more desirable job or if they are provided incentives. **Shanghai**, for example, offers teachers incentives to teach in hard-to-staff rural and semi urban schools. Teachers who choose to work at rural schools could receive priority in admission to graduate schools and therefore accreditation to higher teacher ranks, one-time monetary stipends, as well as compensation (Liang, Kidwai, and Zhang 2016).

7. Improve teacher education both before and during teachers' careers and encourage professional development. In **Shanghai**, teacher education programs at three-year and four-year tertiary institutions generally have a six-month classroom teaching component built into the curriculum. This pre-service classroom experience allows teacher entrants to apply their pedagogical methods and gain concrete skills in classroom management. Shanghai also designs professional development activities to be collaborative and to focus on instructional improvement. Professional development is often a substantial part of schools' operational expenditure. School principals are responsible for creating targeted teacher training plans based on each teacher's evaluation results.

In terms of enhancing professional development, Shanghai also pairs weak and inexperienced teachers with high performing and experienced ones. Platforms for teacher professional development and performance evaluation, including teaching-research groups and lesson observations are being practiced in schools. Teachers are expected to be researchers who would evaluate and modify their own pedagogy in relation to student outcomes. The city requires new teachers to complete at least 360 hours of professional development in their first five years of service, and an additional 540 hours to be considered for a senior rank. It also transfers and rotates teachers to help underperforming schools and disadvantaged student populations. Every year about 20 outstanding teachers from central districts are placed in twinning schools in rural or suburban districts. Teachers and principals working in hardship areas can also advance more quickly in their careers (Liang, Kidwai, and Zhang 2016).

8. Provide professional development opportunities to contract teachers. Acute teacher shortages may prompt some governments to recruit contract teachers, especially when pressed to reduce public sector spending. But this should not be at the expense of quality, even when recognizing the benefits that contract teaching offers, such as flexibility and local responsiveness. Thus, professional development should be provided to contract teachers to benefit from the same career path, professional programmes, promotion opportunities and professional status as other teachers. They should receive adequate training with a good balance between theory and practice. Teachers should also be prepared to help learners with diverse learning needs and backgrounds, to impart reading skills to children in early grades, and to teach in a language that children understand (UNESCO 2015).

9. Improve teacher administration and management. There is a need to monitor and foster good-quality teaching in general and to guide young, untrained teachers. Providing sufficient monitoring and support from central services is very costly, both in terms of personnel and transport. Strengthening management within the school is therefore important. The following directions are promising:

- Develop teacher management/monitoring tools that can easily be used within schools.
- Monitor teacher performance using multiple mechanisms, not just students' academic achievement. In **Shanghai**, these include frequent district-level inspections of teachers' work and classroom observations by senior teachers and principals (Liang, Kidwai, and Zhang 2016).
- Provide training for head teachers and senior teachers that specifically equips them to mentor other teachers and focus on the quality of teaching (head teachers, in particular, often see their role as purely administrative); senior teachers could be asked to take responsibility for both mentoring and supervising colleagues. It is also important to focus inspection visits on quality and build the capacity of inspectors to make a meaningful contribution.
- Streamline administrative procedures within the MoE to enable head teachers to spend less time dealing with the ministry and more time managing their school. Given appropriate support and training, communities could also be involved in monitoring their school.

- At the MOE level, it is important to include the rural-urban divide in routine monitoring of the education system. When schools are classified appropriately in terms of their geographic isolation, issues related to gender, attrition, repetition, and learning may become evident. Careful monitoring of these issues will help to keep the rural-urban divide on the policy agenda and foster both the formulation and the evaluation of policy measures to alleviate the divide
- Make support services work well. Rural teachers often have less access to support services than their urban counterparts and fewer opportunities to attend in-service courses. Ensuring, for example, that administrative processes do not discriminate against teachers in remote schools will help to reduce the relative disadvantage of working in a rural location. Efficient systems of payment (including awarding of increments) and equitable access to opportunities for further study, promotion, or transfer can also reduce the disincentives for teachers to locate in a rural area (Mulkeen and Chen 2008).

11. *Groom school leaders.* According to Bruns and Luque (2015), grooming teachers so they develop their full potential and contribute to the professional growth of their colleagues is a direct responsibility of school leaders. Global research shows that school directors have a large impact on teacher quality, both by screening and selecting high-talent teachers for their schools and by engendering a school climate of peer collaboration, supportive feedback, and collaboration that makes those teachers even better. High-performing education systems pay close attention to how school directors are selected, trained, and developed, placing special emphasis on their ability to gauge and develop the quality of their teachers. For example:

- Principals are trained in-house in **Singapore**, where young teachers are evaluated for leadership potential early in their careers and follow a specialized leadership track. Singapore also ensures that experienced principals mentor new ones in a systematic manner.
- **Ontario, Canada** has strict requirements to become a director, including classroom experience and a graduate degree.
- **Australia's** 2010 Institute for Teaching and School Leadership develops standards, accreditation, and training for teachers and school leaders.
- Principals in **Shanghai** participate in various leadership programs, based on the "Professional Standards for Basic Education Principals," over the course of their tenure and have opportunities for career advancement. The city links part of principals' pay to the overall performance of their schools and also explicitly expects principals to be instructional leaders. Most principals in Shanghai observe between 30 and 50 classes per semester and provide feedback to teachers (Liang, Kidwai and Zhang, 2016).
- **Chile** also provides a good example of an incremental strategy for raising the quality of school leaders. The "Framework for Good School Leadership" (Marco para la Buena Dirección), developed in 2004, established criteria for the training and assessment of principals in the areas of leadership, curriculum management, resource management, and organizational environment management and established a competitive process for principal selection. A 2011 law strengthened the selection process and increased principals' autonomy and accountability. Principals may dismiss up to 5 percent of their schools' teachers each year on performance grounds and must sign performance agreements with the local governments that hire them. The government also introduced the Program for the Training of Excellent Principals (Programa de Formación de Directores de Excelencia) in 2011, which has provided leadership training to more than 1,600 of the country's 7,000 principals. The program subsidizes fees and subsistence costs for graduate programs (master's degrees, diplomas, and courses) and externships focused on school leadership (Bruns and Luque 2015).

Conclusions and recommendations

Based on the discussion above, the following policy recommendations should be considered at the central, local, and school levels:

At the central level

- Similar to the practice in many countries, the combination of centralized and decentralized employment and deployment of civil servant teachers in Indonesia can be maintained with some improvement. The central level should intensify coordination and communication on the demand for teachers (in the short, medium, and long term) among relevant institutions, including MoEC, KemenPAN-RB, BKN, MoRTHE, MoHA, and MoF. The central level should determine the number and types of teachers needed based on school proposals that have been verified by district and provincial Education Offices and by MoEC, taking into account the state's fiscal capacity. The district and provincial Education Offices would implement the selection system by conforming to the central standards so that the government can guarantee the quantity and quality of recruited civil servant teachers. Relevant parties, such as schools, districts and provinces, and MoEC, would also implement comprehensive and timely verification of teacher data to improve the accuracy of data in Dapodik and SIM-RASIO.
- The establishment of the Command Center in October 2017 is a notable step toward facilitating access to teacher data and exchange of that data among key institutions. The institutional arrangements now need to be crystallized with clear roles and responsibilities for all stakeholders: KemenPAN-RB, BKN, MoEC, MoRTHE, and MoHA. Dapodik should be used as the main data source, but data accuracy needs to be improved. In this regard, it would be useful for MoEC to issue guidelines requiring that school principals review their school data and that districts review and approve the data before it is uploaded by the school into Dapodik, and that each district or provincial Education Office review school data frequently and update district data regularly.
- To ensure qualified civil servant teachers are selected, the government should consider appointing teacher candidates through the P3K system. After serving for two years, teachers could be selected through civil servant recruitment procedures that include testing their competencies in the required fields, and selected candidates could be assigned to be civil servant teachers. Existing non-civil service teachers should also be given the opportunity to apply and go through the selection process.
- To control the quantity and quality of non-civil service teachers recruited by schools and districts using their own funds, the central government needs to issue clear regulations and guidance on minimum requirements and hiring processes. This guidance should be coordinated by KemenPAN-RB and be used by local governments and schools. The national guidelines should include teachers' required competencies and qualifications, the selection process and its requirements, appointment and payment arrangements, and performance assessments. If necessary, the P3K system's performance-based contracts can be applied nationally in recruiting non-civil service teachers.
- To ensure accuracy in determining schools' needs for teachers, MoEC should ensure that districts and schools upload the following information semi-annually into Dapodik: (1) number of teachers needed, (2) the budget needed to pay teachers (honoraria), and (3) potential budget sources to be used (for example, BOS funds or School Committee funds). MoEC should also conduct an annual coordination meeting with the districts to verify the data. When data inaccuracies are discovered, the MoEC team should verify these and make the necessary corrections with the districts and, when necessary, with the schools.

- Assigning civil servant teachers to teach in remote areas is quite costly; however, this is the fastest way to close the education quality gaps between cities and 3T areas in Indonesia. Other countries have been able to manage such a process. For example, Shanghai offers teachers incentives to teach in hard-to-staff rural and semi-urban schools. It transfers and rotates teachers to help underperforming schools and disadvantaged student populations. Teachers and principals working in hardship areas can advance more quickly in their careers (Liang, Kidwai, and Zhang 2016). Two rigorously evaluated cases of bonus pay programs operating at scale (Chile's Sistema Nacional de Evaluación de Desempeño [SNED] and the school bonus in Pernambuco, Brazil) are both from Latin America, and both have demonstrated positive results on student learning and grade attainment (Bruns and Luque 2015). The current GGD program in Indonesia ensures that teachers sent to remote areas meet the qualification and competency requirements. Requiring newly qualified teachers to serve about 4 years in remote schools (not the current 10 years) before taking up urban jobs is another option. These teachers should transfer their knowledge to existing school teachers through the school *Kelompok Kerja Guru* (KKG, teacher working group at the primary education level) and *Musyawarah Guru Mata Pelajaran* (MGMP, teacher working group at the junior and senior secondary education levels). Combined with a system of scholarships for teacher training, this option could provide a channel for people from poor rural backgrounds to complete teacher training and return to their home areas. This requirement should also be clearly disclosed to pre-service teacher training entrants so that those unwilling to accept a rural post may self-select out of teaching. Another approach could be national scale-up of Gorontalo's Rolling Teachers program, which assigns core teachers to teach in low-performing schools in rural areas and encourages knowledge sharing with other school teachers. Those who serve in low-performing schools, as practiced in DKI Jakarta, are assigned to high-performing schools for apprenticeships. This approach will help reduce capacity gaps between urban area and rural area teachers.
- Given that several districts demonstrated the capacity and a strong commitment to independently manage teacher distribution based on school needs and the capability to maintain an equitable distribution of quality across schools, Indonesia could potentially give local governments the authority to independently manage employment and deployment of teachers. However, before implementing such an approach, supporting systems such as district and provincial performance-based budgeting and the application of incentives and penalties to high-performing and low-performing districts and provinces need to be established.

At the local government level

- The Education Offices in each province and district should be the central point for data collection on civil servant and non-civil service teachers. They should review school data on a quarterly basis and update district data every six months. MoEC should include these regulations in a circular letter as a supplement to Permendikbud 79/2015 on Dapodik or in the National BOS guidelines. But before such national guidelines become available, the Education Offices should advise schools to use the civil servant standardized testing instruments to select non-civil service teachers as a means for ensuring the quality of recruited teachers. The Education Office should review each school's proposal for recruiting non-civil service teachers and provide approval only when all requirements are met. The Education Office should also encourage school supervisors and principals to supervise the performance of teachers more intensively.
- District governments should enforce Government Regulation (PP) No. 11/2017 on local-government-driven implementation of teacher performance evaluation and distribution. Teacher performance appraisal has also been highlighted in KemenPAN-RB No. 16/2009 and MoEC's No. 35/2010. As such, stronger enforcement by the district government is needed, as through the following:

- MoEC should develop teacher management and monitoring tools that can easily be used by schools.
- Each district should monitor teacher performance using multiple mechanisms, not just students' academic achievement, but also (as in Shanghai) through frequent district-level inspection of teachers' work and classroom observations by senior teachers and principals.
- Districts should provide training for principals and senior teachers that specifically equips them to mentor other teachers and focus on the quality of teaching. Senior teachers could be asked to take responsibility for both mentoring and supervising junior colleagues.
- Inspection visits should focus on quality and the capacity of inspectors should be improved to make a meaningful contribution. Intensified inspection visits can be used to focus efforts by empowering existing school inspectors and recruiting qualified inspectors.
- Based on the existing system in Indonesia, the most applicable monitoring system would be for the Education Office to train principals on how to mentor teachers focusing on the quality of teaching through the principal working group (*Kelompok Kerja Kepala Sekolah*, or KKKS, for the PE level and the *Musyawarah Kerja Kepala Sekolah*, or MKKS, for the JSE and SSE levels). It also means training senior teachers through the KKG for the PE level and the MGMP for the JSE and SSE levels.
- To scale up the implementation of EETED as practiced in three of the sample districts, the spread of good practices nationally needs to be coordinated by MoEC, in particular, in districts and provinces that have either low or high TSRs and low student learning achievement (measured by scores on the national exam *Ujian Nasional*, or UN). The diffusion of these good practices to the intended recipients and the provision of necessary technical assistance will encourage these districts and provinces to implement the good practices.
- Therefore, to get better results overall, MoEC should consider intensively disseminating and implementing the identified good practices nationally, supported by implementation guidelines, a sound legal basis, and sufficient budgetary resources for conducting the necessary technical assistance. Districts should then plan to implement the good practices that would be suitable for them, including setting the desired TSR to be achieved annually and in three years (mid-term), in accordance with the provisions in the Minimum Service Standard as described in relevant ministerial regulations;⁵⁰ developing necessary activities and calculating the budget necessary to achieve the targets; and reporting the targets to be achieved in district proposals for new teachers. The results should be used by KemenPAN-RB to determine the allocation of teachers to these districts.
- In sum, **solid support, strong coordination, and the commitment of local government institutions**, namely the Education Offices, Planning Office, Finance Office, the head of the district or province, and local parliament are key to ensuring effective and efficient teacher management. Therefore, dissemination of good practices should involve these parties.

At the school level

⁵⁰Relevant ministerial regulations: (1) Permendikbud No. 15/2010 on Minimum Service Standard of Basic Education, Article 2 states that (1) the calculation of the number of teachers in primary school is based on learning groups (20 to 32 students) plus 1 principal, 1 religion teacher, and 1 sport education teacher; (2) a guidance and counseling teacher should be available at all levels of primary and secondary education, where one teacher serves 150 students; (3) the calculation of the numbers of teachers for JSS, SSE, and VSSS is based on learning groups consisting of 20 to 28, 20 to 32, and 20 to 36 students, respectively, multiplied by the number of subjects, and divided by 24 hours; (2) Permendikbud No. 22/2016 on Standard of Basic and Secondary Education, sufficient TSRs as required in the Minimum Service Standard where the TSRs are 1:28, 1:32, 1:36 for primary education, junior secondary education, and senior secondary education, respectively.

- Schools need to continue to update teacher data monthly. The data should include plans to recruit civil servants and non–civil service teachers, the budget needed to pay the non-civil service teachers, the potential budget source, and the National Education Standards to be achieved by the provision of such teachers. This data should be uploaded in Dapodik in a timely manner so that it can be monitored by MoEC and by other stakeholders.
- Schools should set their desired annual and mid-term (three year) TSR as required in the Minimum Service Standard, develop necessary activities in the school plan to achieve the TSR, calculate the required budget, and report whether the target has been achieved in any proposal requesting new teachers and in reports on the use of the BOS. The results can be used by the district or province to recommend the allowable percentage of the BOS that a particular school can use to pay the honorarium teachers.
- Any planned proposal to recruit civil servant teachers and non–civil service teachers should first be reviewed and cleared by the school committee, teacher representatives, and the school supervisor. The approved plan should be outlined in the proposal to request new teachers and only then should the proposal be submitted to the Education Office for its review and approval.
- Based on the knowledge and skills obtained in the KKKS or MKKS, principals should mentor teacher performance, focusing on the quality of teaching. Senior teachers should implement the knowledge and skills obtained from the KKG or MGMP to mentor and supervise junior colleagues. These results should be used to identify areas of teaching that need to be improved by certain teachers or areas where professional development would be needed.
- Principals should also apply for MoEC’s principal exchange program. Those who serve in high-performing schools should be encouraged to apply to serve in low-performing schools to share their knowledge and experience in managing teachers. Those who serve in low-performing schools should be proposed to serve in high-performing school for apprenticeships. In Shanghai, school leaders (usually principals) from strong schools are deployed to participate in the management of weak schools. Through this pairing, weak schools gain capacity in school management and instructional practices. Funds are released upon satisfactory achievement of performance indicators specified in the contract (Liang, Kidwai, and Zhang 2016).

Next steps

Collaborative action between the World Bank and relevant ministries will need to be conducted in selected districts and provinces in 2018, to support improvements to the teacher employment and deployment system and to ensure equitable distribution of education quality:

1. Support will be provided to district teams in developing improved policies to implement the efficient and effective teacher employment and deployment (EETED) system. This system will consider good practices observed in Gorontalo, East Jakarta, and Semarang, which were part of this study, as well as in other districts and provinces, such as Surabaya and Yogyakarta, that are were not included in this study. The EETED system will include the development of national guidelines by MoEC and KemenPAN-RB along with local regulations for implementation, will invest in capacity building, and will provide technical assistance to stakeholders during EETED implementation.
2. Socialization efforts to raise awareness of the EETED system in 50 selected districts, provinces, and cities (still to be determined) will be undertaken. Locations with high STRs and low UN scores should be included in the pool. This effort includes working with the MoEC team to present the EETED system

and related instruments to relevant stakeholders. The socialization approach will be conducted by teams consisting of representatives from Gorontalo, DKI Jakarta, and Semarang, highlighting the challenges faced and lessons learned by these teams in managing teacher distribution.

- Support will be provided to develop and use an online management information system (MIS) to connect districts and provinces to the Civil Servant Teacher Management Information System⁵¹ used by KemenPAN-RB, BKN, and MoEC. The aim is to provide the necessary support for the establishment of an updated and accurate MIS and to furnish the necessary technical assistance to these three institutions for the establishment, operation, and development of the MIS.

Annex 1. Study Sites

No.	Province	District or municipality	TSR level
		Municipality	
1.	Central Java	Semarang municipality	Sufficient
2.	DKI Jakarta	East Jakarta administrative city	Sufficient
3.	Bali	Denpasar municipality	Sufficient
4.	West Sumatera	Payakumbuh municipality	High
		Districts	
5.	Gorontalo	Gorontalo district	Sufficient
6.	South Sulawesi	Gowa district	Sufficient
7.	Nusa Tenggara Barat	Lombok Barat district	
8.	West Java	Bandung Barat municipality	Sufficient
9.	DI Yogyakarta	Gunung Kidul district	High
10.	Maluku	Maluku Tenggara Barat district	Low
		3T or remote region	
11.	Sumatera Selatan	Ogan Komering Ilir district	Sufficient
12.	Kalimantan Selatan	Hulu Sungai Selatan district	High
13.	Papua	Merauke district	High

Note: 3T = tertinggal, terluar, terdepan areas—underdeveloped, border, and outermost areas; DKI = Special Capital Region of Jakarta; TSR = teacher:student ratio.

Annex 2. Study Sample: Local Government Participants

No.	District or municipality	Education Office, province	Education Office, district	Planning Office, province	Planning Office, district	BKD, Province	BKD, District	Total
	Municipalities							
1.	Semarang	1	4	1			1	7
2.	Jakarta Timur	1	3				1	5
3.	Denpasar	5	6	1	2	2		16
4.	Payakumbuh	4	8		1		1	14
	Districts							
5.	Gorontalo	3	5		3	1	1	13

⁵¹ The web-based civil servant monitoring and information system and database, including for teachers, is managed by KemenPAN-RB and connects data from MoEC, KemenPAN-RB, and BKN.

6.	Gowa	4	4					8
7.	Lombok Barat	7	1	1		1		10
8.	Bandung Barat	5	5			2	1	13
9.	Gunung Kidul	3	2	1	1	1	2	10
10.	Maluku Tenggara Barat	4	8				1	13
	3T Areas							
11.	Ogan Komering Ilir	6	6	1	1	1	1	16
12.	Hulu Sungai Selatan	5	7		1		1	14
13.	Merauke	7	5		1	3	1	17
	Total	55	64	5	10	11	11	156

Note: 3T = tertinggal, terluar, terdepan areas—underdeveloped, border, and outermost areas; BKD = Regional Personnel Office.

Annex 3. Study Sample: Schools, Principals, and Teachers

No.	District	School and principal sample size			Teacher sample		
		Total	FGD	Visited	Teacher	Civil Servant	Non-Civil Servant
1	Semarang	10	8	2	15	13	2
2	Jakarta Timur	10	8	2	14	13	1
3	Denpasar	9	7	2	12	12	0
4	Payakumbuh	11	7	4	12	11	1
5	Gorontalo	9	7	2	15	12	3
6	Gowa	12	10	2	16	16	0
7	Lombok Barat	13	11	2	17	14	3
8	Bandung Barat	10	8	2	13	11	2
9	Gunung Kidul	10	8	2	14	14	0
10	Maluku Tenggara Barat	6	4	2	6	5	1
11	Ogan Komering Ilir	11	9	2	15	14	1
12	Hulu Sungai Selatan	7	3	4	9	8	1
13	Merauke	9		2	12	11	1
	Total	127	97	30	170	154 (91%)	16 (9%)

Note: PNS = civil servant.

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