THEMATIC CASE STUDY

Lessons from INOVASI's Phase One Work on Disability-Inclusive Education

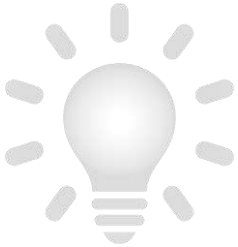
What has worked and not worked to improve disability-inclusive education?

June 2020

INOVASI
Innovation for Indonesia's School Children
Australia Indonesia Partnership

KEMENTERIAN PENDIDIKAN DAN KEBUDAYAAN

Australian Government



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June 2020

Suggested citation: Sprunt, Beth. 2020. *Lessons from INOVASI's Phase One Work on Disability-Inclusive Education.* Jakarta: INOVASI. https://www.inovasi.or.id/en/publication/lessons-from-inovasis-phase-1-work-on-disability-inclusive-education

Acknowledgement: The author would like to thank Said Jufri Baabud who provided contextual interpretation for all data and intellectual input into the theoretical framework, sourced key documents and data, analysed qualitative data from SIPPI, the spot check and the pre and post tests, and translated the document at multiple points; George Sukoco and Esa Asyahid who helped to interpret and analyse the SIPPI data; Lanny Octavia who analysed the qualitative data and sourced relevant MERL studies; Senza Arsendy who implemented, analysed and interpreted the pre and post test study; Robertus Yustinus Sodo who implemented, analysed and interpreted the spot-check study; Annisaa Rachmawati who helped establish and interpret the WhatsApp group; Rasita Purba who provided overarching support in understanding and contextualising the breadth of MERL data available to the study; the West Nusa Tenggara and East Java provincial teams who sourced relevant data and contributed intellectually in interpreting the data; and the grants team and other INOVASI staff members who were responsible for the program and administrative arrangements.

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The governments of Australia and Indonesia are partnering through the Innovation for Indonesia's School Children (INOVASI) program. INOVASI seeks to understand how to improve student learning outcomes in literacy and numeracy in diverse schools and districts across Indonesia. The first phase of the program (AUD49 million) began in January 2016 and will continue until June 2020. Working with Indonesia's Ministry of Education and Culture, INOVASI has formed partnerships with 17 districts in four provinces namely West Nusa Tenggara, East Nusa Tenggara, North Kalimantan, and East Java.

INOVASI is an Australia-Indonesia Government partnership, managed by Palladium

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List of Acronyms, Abbreviations and Bahasa Indonesia Terms

APBD	Local government budget (*Anggaran Pendapatan dan Belanja Daerah*)
BOS	School operational assistance fund (*Bantuan Operasional Sekolah*)
BOSDA	District school operational assistance fund (*Bantuan Operasional Daerah*)
BPS	National Bureau of Statistics (*Badan Pusat Statistik*)
CIS Timor	Circle of Imagine Society Timor
DAPODIK	Basic education management information system (*Data Pokok Pendidikan*)
EMIS	Education management information system
ICF	World Health Organisation's International Classification of Functioning, Disability and Health
INAP	Indonesian National Assessment Program
KKG	Teachers' working group (*kelompok kerja guru*)
KKS	Principals' working groups (*kelompok kerja kepala sekolah*)
madrasahs	Religious primary schools
MERL	Monitoring, Evaluation, Research and Learning
MoEC	Indonesian Ministry of Education and Culture
MoRA	Ministry of Religious Affairs
NTB	West Nusa Tenggara (*Nusa Tenggara Barat*)
NTT	East Nusa Tenggara (*Nusa Tenggara Timur*)
PBS	Student Learning Profile (*Profil Belajar Siswa)*
PDIA	Problem-driven Iterative Adaptation approach
SIPPI	Indonesian education and learning innovation survey (*Survei Inovasi Pendidikan dan Pembelajaran Indonesia*)
Susenas	National socioeconomic survey (*Survei Sosial Ekonomi Nasional*)
TASS	Technical Assistance for Education System Strengthening program
UN	United Nations
UNESA	Surabaya State University (*Universitas Negeri Surabaya*)
UNRAM	University of Mataram (*Universitas Mataram*)

[1]

Executive summary

The purpose of this study is to assemble and examine early findings from the disability inclusion aspects of INOVASI's work in phase one. The study focuses on the activities in the three pilot districts of Central Lombok, Probolinggo and East Sumba, and covers activities within partnerships as well as those involving systems and policy engagement. The study explores what has worked and has not worked to improve disability-inclusive education in INOVASI, and what enablers and barriers we need to take note of in progressing Indonesia's inclusive education reforms.

Indonesia's legal and policy framework supports the right for children with disabilities to access quality, inclusive education. This is most clearly outlined in Law No 8 of 2016 on Disability and the related Government Regulation No 13 of 2020 regarding reasonable accommodation for students with disabilities. Despite a supportive legal framework, various datasets, including most recently the Indonesian Bureau of Statistics' 2018 National Socioeconomic Survey, *Susenas*, show concerningly low rates of school enrolment, completion and progression for Indonesia's children with disabilities.

During phase one, INOVASI focused on: piloting teachers' capacity development programs for disability-inclusive education; developing and testing the Student Learning Profile (*Profil Belajar Siswa* – PBS*);* and participating in an extensive multi-stakeholder policy analysis and development process to develop the Central Lombok Regency Inclusive Education Roadmap (2019–2021). The data used for this study was drawn from three quantitative studies and an extensive document analysis. The studies included a pre and post test for teachers in the inclusion pilot schools, the Indonesian Education and Learning Innovation Survey (SIPPI) and the spot-check assessments involving classroom observation and interviews.

[1] Word cloud developed by analysing endline teacher qualitative data on students with disabilities

The study revealed impressive improvements in learning outcomes among students with disabilities in the INOVASI pilot schools and highlighted the value of strengthening disability data systems and policy tools to enable inclusive education. Numerous effective strategies were identified including: building teachers' skills in differentiated instruction; training teachers through simple and practice-based programs through the teachers' working group (KKG) system; investing in multi-stakeholder policy development work; working with village leaders, parents and community stakeholders; considering financial mechanisms and incentives for inclusion; and interrogating where disability data and definitions create barriers and how they can become enablers.

> 'Initially students with disabilities at my school felt inferior, ashamed and insecure. They were also often criticised by other students. However, after being given an understanding, now other students are friends of those with disabilities. After the teachers received guidance through the (INOVASI) pilot, they also became smarter at guiding students with disabilities, more patient and diligent in educating students with disabilities. With the change in teaching methods, students – especially children with special needs – who were previously quiet, lacking self-confidence, ashamed and who had difficulty absorbing lessons, are now transformed into cheerful, confident, independent and easy-to-absorb students'
>
> - Head of primary school in Central Lombok

The findings also highlighted the following areas for improvement:

- more proactively using and strengthening the work of disabled people's organisations and Disability Service Units in supporting the inclusive schools;
- designing pilots that have a broader focus than just teacher capacity development since most children with disabilities are out of school;
- building capacity also among principals and supervisors to ensure accessible infrastructure, resources and greater support for teachers;
- addressing the system and teaching capacity required to implement assessments inclusively.

Further implications from the study included the need to:

- strengthen partnerships with universities and other teacher training institutions;
- update the *General guidelines for the implementation of inclusive education* document to incorporate the obligations outlined in Government Regulation No 13 of 2020 regarding reasonable accommodation for students with disabilities;
- continue supporting the disability identification mechanisms that inform decisions about resources;
- monitor and evaluate inclusive education policy development and implementation efforts;
- develop a range of communications materials to increase awareness of policies and systems, such as guidance for school leaders on accessing resources for inclusion through schools operational funds (BOS);
- strengthen linkages between schools and early intervention, health and specialist services;
- work with communities and other stakeholders to address non-school barriers to inclusive education.

1 Introduction

UNESCO's global analysis of multiple national datasets showed that people with disabilities worldwide are less likely to ever attend school or complete primary or secondary education. This means they have lower levels of basic literacy skills and are more likely to be out of school. Women or girls with disabilities experience greater disadvantages in accessing education than their male counterparts (UNESCO, 2018). Indonesians with disabilities experience similar challenges. Data from the UNESCO study showed that primary school enrolment, attendance and completion rates for children with disabilities in Indonesia are comparatively low. Using data from the 2010 census, results indicated that only 53 per cent of people with disabilities ever attended school compared to 98 per cent of people with no disability (UNESCO, 2018).

The fundamental human right for children with disabilities to access quality, inclusive education is clearly articulated in many treaties, most recently and explicitly in the United Nations Convention on the Rights of Persons with Disabilities (UN, 2006). Disability-inclusive education enables children with disabilities to access education within mainstream schools or within environments that best correspond to their requirements and preferences (UN, 2016). Article 24 of the Convention recognises disability-inclusive education as the means of fulfilling the right to education for people with disabilities.

Indonesia has a long history of efforts to strengthen the quality of education for students with disabilities. The *Salamanca Statement and Framework for Action on Special Needs for Education* in 1994 (UNESCO and MoES Spain, 1994) was an early influence in implementing inclusive education in Indonesia. Subsequently, Indonesia's commitment to inclusive education has been reaffirmed through a series of laws, regulations and policies, including its commitment at the World Education Forum in 2000 to achieve Education for All, through its ratification of the Convention on the Rights of Persons with Disabilities in 2007 and through its commitment to the Sustainable Development Goals.

Law No 20 of 2003 on the national education system outlines the legal basis for inclusive education and, in 2009, the policy framework to implement inclusive education was established through the Ministry of Education and Culture's (MoEC) Regulation No 70, which covered kindergarten, primary schooling and junior-secondary schooling. In line with this, district governments made efforts to implement inclusive education programs, with each district designating one primary school and one junior-secondary school in each sub-district to provide inclusive education.

The most recent and clear-cut mandate is the Indonesian Law No 8 of 2016 on Disability[2] that enshrines the rights of people with disabilities to inclusive education. The law gives them the right to access a quality education in all levels and types of

[2] Law of the Republic of Indonesia No 8 of 2016 concerning people with disabilities. An English language version of the law is available at https://www.academia.edu/35141416/LAW_OF_THE_REPUBLIC_OF_INDONESIA_NUMBER_8_OF_2016_ON_PERSONS_WITH_DISABILITIES_WITH_THE_BLESSING_OF_THE_ONE_ALMIGHTY_GOD_THE_PRESIDENT_OF_THE_REPUBLIC_OF_INDONESIA.

educational facilities, both mainstream and special, and to be provided with appropriate student accommodation. This law has a confluence with the recent school zoning system established by the Ministry of Education and Culture (MoEC) that strengthens the opportunity for students with disabilities to enrol in the schools closest to their homes or neighbourhood.

Purpose and outline of this study

The purpose of this study is to assemble and examine early findings from the disability inclusion aspects of INOVASI's work in phase one. The study focuses on the activities in three pilot districts and covers activities within partnerships as well as those involving systems and policy engagement. The study captures what we learned about 'what does and does not work – and why' to improve educational outcomes for students with disabilities in classrooms, schools and districts.

The term 'inclusive education' is sometimes used to refer to the inclusion of a wide variety of learners at risk of educational exclusion, not only people with disabilities. However this study is about inclusive education as it relates to children with disabilities, so the term 'disability-inclusive education' is used to clarify and emphasise this in some places.

This report begins by describing the context of disability-inclusive education in Indonesia and in the sub-national contexts where the work was piloted – Central Lombok, East Sumba and Probolinggo. The next section outlines the scope of INOVASI's disability inclusion interventions and practices, its partnerships and its systems and policy engagement work. The systems work focuses on two areas: developing and testing a method for teachers to identify disability in children and to determine learning and support needs; and developing policy to ensure systems are in place to finance and allocate resources for inclusive education. A brief overview of the methodology of this study is presented, with more detailed information provided as an annex.

The findings section presents the data as it relates to the seven domains in the study's theoretical framework, including: curriculum, pedagogy and assessment; supported teachers; learning friendly environments; data and monitoring; the whole systems approach; partnerships; and effective transitions. We discuss the implications for policy, practice and programming, and finally recommend areas for action.

2 The context of disability-inclusive education in Indonesia

2.1 What do the numbers tell us – are children with disabilities in school?

The Ministry of Social Affairs in 2010 reported that 60 per cent of people with disabilities in Indonesia had never enrolled in schools and that 75 per cent of those who attended school only went to primary school (Irwanto *et al.*, 2010). In 2014 Adioetomo *et al.* showed that Indonesian youth aged 15–24 years with no schooling had two or three times the rate of disability as youth with schooling, and that disability was associated with the vastly reduced probability of completing primary school relative to non-disabled peers. This was supported by Mizunoya *et al.* in 2016 who reported that 66.5 per cent of out-of-school children in Indonesia have disabilities. MoEC's 2017 estimations indicated that out of the 1.6 million children with disabilities in Indonesia, only 18 per cent access education through either special schools (115,000 children) or inclusive schools (299,000 children). Most recently, UNICEF (2020) reported on data from the Indonesian Bureau of Statistics' 2018 National Socioeconomic Survey, *Susenas*, showing that 28 per cent of children with disabilities have never been to school, 54 per cent of children with disabilities have completed primary school (compared to 95 per cent of non-disabled children) and that by junior secondary school, this drops to 26 per cent (compared to 62 per cent of non-disabled children). Notably, this *Susenas* data showed a total disability prevalence of only 0.8 per cent of children aged 7–18 years, implying that the definition used for disability in the *Susenas* analysis is likely to include only children with severe disabilities. This means that the ratios of children with disabilities out of school are higher than they would be if the definition included children with milder disabilities.

While disability definitions and approaches to measurement vary across datasets, the pattern throughout the studies undoubtedly highlights a serious challenge for realising Indonesia's aspirations to achieve Education for All.

2.2 Barriers and enablers of disability-inclusive education in Indonesia

Various enablers and barriers affect access to quality education for children with disabilities in Indonesia.

The numerous factors to enable disability-inclusive education in Indonesia include: the comprehensive legal and policy context; many government staff members who are experienced in special and inclusive education; expertise within several universities and teacher training institutions; the wide range of training materials and programs available; a willingness amongst senior education officials to instigate and support incentives that advance inclusive education; sophisticated data management systems and capacity to develop data technology solutions that support inclusion; an established disabled people's organisation (DPO) sector with strong links to government and development agencies; concurrent progress towards disability rights outside of the education sector that expediates linkages with relevant services and civil society organisations; and a mobile phone network that provides internet-based connectivity and information access for a large and growing proportion of the population.[3]

[3] Internet penetration across Indonesia was 53.7 per cent, as of February 2019: https://www.statista.com/topics/2431/internet-usage-in-indonesia/

Despite the array of enabling factors, the sheer size of the population and variety of geographic and cultural contexts mean that gaps remain in Indonesia's efforts to achieve inclusive education.

Barriers related to the education system include: a lack of teachers trained in inclusive education that results in children with disabilities being enrolled but feeling excluded because teachers struggle to teach them (Rombot, 2017); inaccessible school infrastructure, including toilets (INOVASI, 2019); limited access to specialist teachers (*guru spesial*) or teacher aides (*pembimbing khusus*); teachers' perception that 'special children require a special curriculum'; the unwillingness of some regular schools to enrol children with disabilities (UNICEF, 2018); challenges in adapting the existing general education curriculum to meet the needs of students with disabilities (Rombot, 2017); low capacity among teachers to identify disability due to the existing impairment-based categorisation (INOVASI, 2019); some teachers' knowledge and skills are based on inclusive education socialisation (awareness-raising) programs, rather than on competency-based programs, and this limits their practical classroom skills (Arawindha and Thohari, 2018); greater challenges in secondary school as fewer teachers have inclusion training, facilities are often inaccessible and reasonable accommodation during exams is rarely provided; and limited data on children with disabilities available making educational planning difficult (Surbakti, 2019).

Family and community stigma around disability results in families keeping children with disabilities hidden and thus excluding them from education and social participation (INOVASI, 2019). Parents' perceptions of children with disability as being unable to learn exacerbate their exclusion. However parents may also keep children with disabilities out of regular schools due to fear of abuse or bullying (Adioetomo *et al.*, 2014) and this is substantiated by evidence that peer attitudes can be the main barrier to educational participation for some Indonesian students (Poernomo, 2016). Financial constraints can also pose barriers to education and parents may consider the costs of educating children with disabilities (including transport) as not a good investment in terms of the chances of subsequent employment (Mitra *et al*., 2011).

2.3 Law No 8 of 2016 on disability – as it relates to disability-inclusive education

Law No 8 of 2016 on Disability[4] outlines the right of people with disabilities to receive quality education in any type, branch and level of educational unit, either in inclusive or in special education, and to reasonable accommodation (article 10). Articles 40–44 detail the obligations of national and local governments, education providers, Disability Service Units and higher education institutions and universities to administer and facilitate education for people with disabilities through inclusive education and special education. Some of the government obligations include:

- facilitating education for persons with disabilities in each path, type and level of education in accordance with their authority;
- including children with disabilities in the 12-year compulsory education program and prioritising these children going to school in a location near where they live;
- allocating an education budget for children of parents with disabilities who cannot afford to send their children to school;

[4] *Undang-Undang Republik Indonesia Nomor 8 Tahun 2016 Tentang Penyandang Disabilitas*

- facilitating the development of the basic skills that disabled people need for independence and full participation, including: braille; orientation and mobility; peer support and mentoring for fellow persons with disabilities: augmentative and alternative modes, means and formats of communication; and sign language skills and recognition of a linguistic identity for the deaf community.

Local governments need to establish Disability Service Units to support inclusive primary and secondary education. The role of these units is to train teachers and assist students with disabilities at regular schools. They also develop compensatory (remedial) programs, provide learning media and assistive devices as required, conduct early detection and early intervention, provide data and information on disabilities, provide consultation services, and cooperate with other parties to improve the quality of education for students with disabilities. Higher education providers are also expected to establish Disability Service Units.

Article 43 stipulates that national and local governments must facilitate education providers to provide reasonable accommodation, as outlined in Government Regulation No 13 of 2020 regarding reasonable accommodation for students with disabilities.[5] Article 44 obliges higher education institutions and universities that offer teaching and education degrees to include inclusive education in their curriculum.

2.4 Disability identification within Indonesian education systems

Disability has been identified in the education systems in Indonesia using a medical model approach that categorises children based on health conditions or impairments. This is the approach in many low and middle income countries and is still used in some high income countries.

This approach lends itself to an 'integration' approach within education where the emphasis is on 'fixing' the child (through rehabilitation, remedial education and other services) so he or she can fit in with a regular school. This is in contrast to addressing the environmental factors that cause barriers to education, for example by improving curricula and teaching to enable differentiated instruction (UNESCO, 2011).

Another problem with medically-based disability categories in education settings is the inconsistency in how the terms are used and interpreted, particularly for children with learning difficulties, intellectual disabilities and emotional or behavioural problems (Florian and McLaughlin, 2008). Categorical disability labels and diagnoses can compress the child's difficulties into a single category, masking the character and severity of the problems (Daley *et al*., 2009). While diagnosis or impairment based categories can be useful to understand the cause of the difficulties, they are not adequate to understand the everyday functioning of children (Lillvist and Granlund, 2010; Hayes and Bulat, 2017) or to advise on support for individual children (Klein and de Camargo, 2018). Medical diagnoses of categories such as autism spectrum disorder, attention deficit hyperactivity disorder and learning disorders have been shown to be poor predictors of participation compared with environmental and personal factors (Anaby *et al*., 2013). Additionally, functional abilities are diverse within and across these categories (Lee, 2011).

[5] *Peraturan Pemerintah Nomor 13 Tahun 2020 Tentang Akomodasi Yang Layak Untuk Peserta Didik Penyandang Disabilitas*, available at: https://www.hukumonline.com/pusatdata/detail/lt5e58e75eac3e8/node/534/peraturan-pemerintah-nomor-13-tahun-2020#

The alternative to using medical and impairment categories is to use functioning data. Research into the World Health Organisation's *International Classification of Functioning, Disability and Health* in education settings supports the use of a functioning profile instead of a medical diagnosis to inform educational design (Silveira-Maia *et al*., 2017; Hollenweger, 2011; Norwich, 2008).

DAPODIK (*Data Pokok Pendidikan*), MoEC's education management information system and MoRA EMIS, the Ministry of Religious Affairs' (MoRA's) education management information system both hold an extraordinary quantity of school data. They also include individual student identifiers that make it possible to analyse across fine-grained variables. The implication of the level of sophistication of these two systems is that if the approach to identifying disability in students is strengthened (ideally using a feasible teacher-driven system), the ministries can plan the resources required accurately and in advance, and also monitor progress against the disability-inclusive education policies and objectives.

2.5 Situational contexts for disability-inclusive education in the INOVASI pilot districts

Central Lombok

In West Nusa Tenggara, the inclusive education pilot was undertaken in the district of Central Lombok. Literacy and numeracy assessments in the Indonesian National Assessment Program (INAP) in 2016 showed that low literacy and numeracy capability amongst primary school students in Central Lombok correlated with the low competency of primary teachers. Teacher competency testing in 2015 reported an average score of 50.54 for primary teachers in Central Lombok, compared to the provincial average score of 50.63 and the national average score of 54.33. The minimum score to pass (*Kriteria Kelulusan Minimal)* was 80.

Central Lombok was declared an inclusive education district in 2012 and the entire province of West Nusa Tenggara was declared inclusive in 2015. Since then there have been various inclusive education efforts in West Nusa Tenggara, including: developing government regulations; establishing an inclusive education working group; collecting relevant data; socialising and promoting inclusive education; training teachers; sending teachers on short courses in Australia; collaborating with the Surabaya State University (UNESA) on teacher training; capacity building for inclusive education managers; capacity building for staff of resource centres; and visiting teachers in their classrooms (MoEC NTT, 2018).[6]

A Handicap International[7] program worked on raising awareness and making school environments accessible and also conducted some localised teacher training. They implemented an initiative to use special schools (SLB) as a resource for teachers in the inclusive schools to share materials and collaborate with the specialist teachers. Those who received this support considered the program successful but the special schools were unable to reach all schools. In 2015, the Strengthening School Quality program worked in 20 religious primary schools (*madrasahs)* to raise awareness on the right to education for children with disabilities and to develop inclusive, learner-friendly environments.

Identification of disability in Central Lombok has historically been based on children having visible impairments or a medical diagnosis and there has been a lack of clarity for schools and parents about which schools children with disabilities should enrol in.

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[6] Roadmap of Inclusive Education in Central Lombok District 2019–2021
[7] A non-governmental organisation now called Humanity and Inclusion

East Sumba

In East Nusa Tenggara (NTT), the inclusive education pilot was undertaken in East Sumba, a relatively under-developed district in the province. Teacher competency testing in 2015 showed that most primary teachers in districts in Sumba had lower scores than the provincial average of 48.68 and far lower than the national average of 54.33. Likewise, socioeconomic levels are lower than the provincial average which is again lower than the national average (INOVASI, February 2019).[8] Some of the educational challenges include: a lack of qualified and competent teachers; insufficient numbers of permanent civil servant teachers; inadequate school facilities and infrastructure; low competencies among school principals, managers and supervisors; insufficient textbooks and learning materials; unequal distribution of teachers; and lack of functioning school libraries.

Parents generally place a low value on education and particularly on education for children with disabilities. Most families do not speak Bahasa Indonesia in the home and this becomes a barrier for children at school but child labour and being hungry also affects students' attendance and their concentration.

Many schools are in remote locations with hilly terrain that creates challenges for supervisors' monitoring visits and for accessibility by people with disabilities. Students often walk long distances to school (5–7kms) through hilly and mountainous areas and this affects their participation in school, particularly in the early grades. With the combination of hunger and tiredness, the students are unable to concentrate. High absentee rates together with lack of concentration may be playing a role in the low levels of literacy and numeracy in the early grades.

Local governments are trying to provide inclusive schools but few teachers have been trained to include children with disabilities in their classrooms.

Probolinggo

In East Java the inclusive education pilot was undertaken in Probolinggo. According to the East Java baseline report[9] (INOVASI, July 2019), local stakeholders consider the quality of education and literacy in Probolinggo as below average in contrast to other districts in East Java. Probolinggo struggles with issues such as: a shortage and uneven distribution of teachers; poor school infrastructure and facilities; language barriers as Bahasa Indonesia is not the local mother tongue; and the impact of child labour on learning outcomes.

The percentage of qualified teachers in Probolinggo is below the provincial average and in *madrasahs* the proportion is substantially lower than in regular schools across the province. Probolinggo has one of the lowest levels of teacher qualifications among the five INOVASI districts in East Java (INOVASI, July 2019). However, teacher competencies across East Java are higher than national averages so in Probolinggo district they are roughly equivalent to the national average.

Challenges specific to inclusive education include: too few teacher aides,[10] teachers untrained in teaching students with disabilities; inaccessible school infrastructure; mountainous topography; and distances that increase the challenge for children with disabilities to get to school. While useful government policies and programs exist, Probolinggo district government cannot always allocate funds to implement them.

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[8] East Nusa Tenggara baseline study
[9] INOVASI's East Java baseline report (July 2019)
[10] Known as *pembimbing khusus* – special advisor

Special schools exist and the provincial government has endeavoured to promote inclusive education through the East Java governor regulation No 6 of 2011. Probolinggo has declared itself an inclusive district and the government has established inclusive education at many schools from primary to senior secondary levels. The district has an inclusive education working group and provides support such as hearing aids and glasses for children with hearing and vision problems. Challenges in Probolinggo include a lack of supervision and support as well as inadequate infrastructure and facilities.

3 The scope of INOVASI's interventions in relation to disability-inclusive education

INOVASI worked through pilots and partnerships as well as systems and policy engagement. This section summarises the scope of this work.

3.1 Inclusive education pilots

This section describes the inclusive education pilots undertaken in Central Lombok, Probolinggo and East Sumba.

First pilot: Inclusive literacy/SETARA – Central Lombok

The first inclusive education pilot was implemented in 19 schools, including four *madrasahs*, in three sub-districts of Central Lombok: Jonggat, Pujut and Batukliang. The pilot commenced under the name SETARA, focusing on children with learning difficulties and using the problem-driven iterative adaptation approach (PDIA) to help teachers identify learning strategies for their students with disabilities. Baseline assessments showed that teachers had difficulty identifying disabilities and knowing how to support children with disabilities. The baseline data also showed concerningly low teacher competence in literacy and numeracy, creating a potential confounder in teacher assumptions that students had disabilities (rather than acknowledging that difficulties may relate to poor teaching). On that basis, the first pilot design was restructured to focus on strengthening teacher competencies in literacy, with a strong but secondary emphasis on inclusive teaching skills. Teachers received literacy training over ten sessions in the teachers' working groups (KKG), each lasting three to five hours, and three sessions on disability-inclusive education. The initial version of the Student Learning Profile (PBS) was trialled in these 19 schools (see section 3.5).

Second pilot: Inclusive education for children with disabilities

The second pilot implemented INOVASI's five-unit training module on disability-inclusive education, designed to train teachers through the teachers' working group sessions. The module was implemented in Central Lombok through the University of Mataram (see section 3.3), in Probolinggo directly through INOVASI and in East Sumba through a partnership with the Circle of Imagine Society (CIS) Timor (see section 3.2). Delivery of the training in Probolinggo and Central Lombok was through locally-recruited facilitators which was important in sustainability and preparation for subsequent government-led scale out.

The module equips teachers with the knowledge, skills and tools to identify and more effectively teach students with disabilities. Learning for all is emphasised, with a focus on managing the class for individual differences and providing opportunities for all students to be included and engaged in learning.

The units in the module cover: (i) concepts of disability and inclusion; (ii) the Student Learning Profile, (iii) differentiated instruction and cooperative learning; (iv) inclusive classroom settings; and (v) learning adaptation and individual learning plans. The program

follows the in-on-in model where each teachers' working group (*KKG*) session is followed up with teachers applying the task or teaching strategy in the classroom and being observed by the facilitator and fellow teachers for discussion in teacher groups. The importance of sharing, learning and reflecting together is emphasised in a community of practice in the school.

All materials in the module were developed collaboratively with input from representatives at national and sub-national level, including special teachers, universities and disabled peoples' organisations. The materials were trialled in schools and refined to ensure they were appropriate.

Partnership pilot – Circle of Imagine Society Timor, East Sumba

In East Sumba, INOVASI partnered with the civil society organisation, the Circle of Imagine Society (CIS Timor) over two pilot periods, to pilot an approach to literacy, numeracy and inclusion in nine schools in Rindi district in East Sumba.

The first period of the partnership targeted teachers, principals, school supervisors, parents, village communities and local government stakeholders. The program aimed to: develop schools' commitment to inclusive education; train parents in how to support their children with disabilities' development and education; garner village leadership support to enable the children's education; and create a coalition for change by encouraging local government stakeholders to improve the quality of inclusive education in East Sumba. The team helped teachers design and conduct lessons tailored to the conditions and needs of individual students. In the second period, INOVASI worked with CIS Timor to train teachers using INOVASI's five-unit module on inclusive education.

Institutional partnership – the University of Mataram

The University of Mataram (UNRAM) in Lombok implemented the second pilot phase in Central Lombok, training teachers in teachers' working groups (*KKG)* using INOVASI's disability-inclusive education five-unit module. Alongside the teachers' working group sessions, UNRAM undertook teacher coaching sessions, monthly reflection meetings and monitoring in the schools. Additionally, they revised the university's primary school teacher education curriculum to improve the content on inclusive education and to incorporate an inclusive education component into the student teacher practicum.

Partnership with the Writer's Forum – *Forum Lingkar Pena*

The Writer's Forum (*Forum Lingkar Pena* – FLP) implemented a pilot on inclusive book development and training in Central Lombok with the aim of providing literacy support to deaf students. The Writer's Forum team cooperated with the Yogyakarta Deaf Art Community to produce a series of children's books incorporating sign language. The Deaf Art Community helped translate written language into sign language that was subsequently illustrated. The team produced 21 titles in the *Si Bintang* (The Star) series and these were printed and disseminated with training in their use.

The partnership also had a strong gender equality and social inclusion aspect. INOVASI trained the designers, illustrators and authors in gender equality and social inclusion issues and the training for teachers using the series included how to ensure inclusion values are reinforced for children through the books. A similar follow-up program was initiated independently by the Central Lombok district government.

3.2 Systems and policy engagement

Student Learning Profile – identifying disability and disaggregating the education management information systems

Early problem exploration in Central Lombok (discussed in section 3.1), showed that teachers were unable to identify disabilities. Moreover, at a national level, MoEC had difficulties with its existing approach to identifying disability within its data system, DAPODIK (as outlined in section 2.4).

To address these problems, INOVASI worked with MoEC to develop, finalise and scale-out a new tool called the Student Learning Profile (*Profil Belajar Siswa* or PBS) that identifies disability as well as children's learning and support needs. The Student Learning Profile was reviewed by a stakeholder group including representatives from universities, the Directorate of Secondary Education and Special Education Development, the Directorate of Basic Education, MoRA, disability organisations, MoEC's Centre for the Development and Empowerment of Teachers and Education Personnel of Kindergartens and Special Education (*P4TK TKLB*), the Office of Education and INOVASI's pilot partners.

INOVASI and its sister program, Technical Assistance for Education System Strengthening (TASS) worked with MoEC and Brawijaya University[11] to develop the Student Learning Profile as an Android application within the Professional Development Management Information System and pilot it across Indonesia. In addition to MoEC's current aim of gathering data on learning and support needs to inform human resource planning, the Student Learning Profile data in DAPODIK and MoRA's education management information system (EMIS) will help overcome current challenges related to the validity and reliability of existing impairment-based disability categorisations.

Roadmap for inclusive education – Central Lombok

INOVASI supported an extensive multi-stakeholder policy analysis and development process to develop the Central Lombok Regency Roadmap for Inclusive Education (2019-2021*)*.[12] This outlines strategies such as drafting regulations, technical guidance, data collection, capacity development, infrastructure and financial support. The roadmap is a reference for the regional government, the house of representatives (*DPRD*), the Office of Education, the education unit and other stakeholders in achieving the vision of being an inclusive district.

[11] Brawijaya University was responsible for data synchronisation with DAPODIK data, and input and analysis of disability data

[12] *Penyelenggaraan Pendidikan Inklusif di Kabupaten Lombok Tengah 2019-2021*

4 Methodology

This study has two overarching research questions:

- What has worked and has not worked to improve disability-inclusive education in INOVASI?
- What enablers and barriers are important to understand in relation to Indonesia's inclusive education reforms?

The methods used for this study are summarised here with further details in annex 1. Data were drawn from three quantitative methods and an extensive document analysis. The quantitative studies included:

- The inclusion pilot pre and post tests of teachers in the pilot schools that included questions related to attitudes, concerns, knowledge and confidence regarding disability-inclusive education;
- SIPPI, the *Indonesian education and learning innovation survey*, used for baseline and endline data from a representative sample of INOVASI pilot schools. It covered 75 per cent of the inclusion schools and assessed three teachers per school. The instruments included a students' test (mathematics, Bahasa Indonesia and Raven – that measures students' innate ability similar to an IQ test), a students' survey, a parents' survey, a teachers' survey, teachers' classroom observation, teachers' subject matter tests, a school principals' survey, a school supervisors' survey and school facility observation. For some of the analysis, control schools were identified based on matching various school characteristics (details provided in annex 1);
- The spot-check assessment that was undertaken in all of the second-round inclusion pilot schools in the middle of the implementation period, with a sample of one teacher per school, using class observations and interviews. It consisted of two main parts. The first, common to all types of INOVASI pilot, identified changes that occur at school and teacher levels, mainly focusing on learning atmosphere and teacher–student interaction. The second part involved pilot-specific changes.

The document analysis included: a range of reports from INOVASI's monitoring, evaluation, research and learning (MERL) unit, presenting qualitative and quantitative data on the pilots as well as district and provincial reports and studies; a commissioned research study titled: *The status of children with disabilities and inclusive education in Central Lombok* (INOVASI, 2019); relevant laws and policies; and a transcript of a WhatsApp group established to facilitate communication between teachers, principals and facilitators about implementing the Student Learning Profile.

The theoretical framework used for this study (table 1) is adapted from the framework that UNICEF developed for the *Review and roadmap of disability-inclusive education programming in East Asia and the Pacific region (*Grimes *et al.*, 2020*).* The original framework had seven domains and 28 dimensions, with a comprehensive approach to reviewing a broad ecosystem within which disability-inclusive education occurs. This study retained the seven domains to attempt a wide lens reflection on the requirements for disability-inclusive education reform but reduced the number of dimensions to reflect the narrower focus of INOVASI and the feasibility limitations of this thematic study.

Table 1: UNICEF's theoretical framework, including the seven domains and (selected) dimensions of an inclusive education system; mapped to research questions for this study

UNICEF framework ***domains*** and dimensions	Research questions for this disability thematic study
Curriculum, pedagogy and assessment	
• Inclusive curriculum • Inclusive assessment • Learning materials	• How have teachers applied pedagogical approaches to ensure the curriculum, assessment and learning materials are inclusive? • Have learning outcomes improved among students with disabilities in INOVASI's disability pilot schools?
Supported teachers	
• Pre-service and in-service teacher education • Professional competency standards	• How has change occurred in knowledge, concerns and confidence related to disability-inclusive education? • What lessons have been learned in building capacity for disability-inclusive education?
Learning friendly environment	
• Physical accessibility of learning environment • Safe and child-friendly learning environment	• To what extent is school infrastructure accessible in schools where INOVASI disability pilots were run? • How have principals been involved in supporting disability-inclusive education at INOVASI schools? What are their perspectives on disability-inclusive education? • How did attitudes among teachers and peers change in relation to educating students with disabilities?
Data and monitoring	
• Identification system • Education management information system (EMIS)	• How has INOVASI contributed to improving Indonesia's system for identifying children with disabilities, in alignment with the International Classification of Functioning, Disability and Health? • How has INOVASI contributed to ensuring Indonesia's EMIS includes valid data that informs planning for enrolment, participation and achievement of children with disabilities in education? • What lessons have been learned in implementing the Student Learning Profile?
Whole systems approach	
• Inclusive education law • Equitable financing and resource allocation • Awareness raising and community involvement	• How has INOVASI contributed to policy development and systems for financing and resource allocation that enable implementation of inclusive education laws and regulations? • How have parents and communities' attitudes to disability-inclusive education changed?

UNICEF framework ***domains*** and dimensions	Research questions for this disability thematic study
Partnerships	
• Cross-sectoral coordination • Coordination between national and local education units • Participation of civil society / disabled peoples' organisations	• How did INOVASI contribute to coordination between national and local education units to improve inclusive education? • What successes and limitations were identified in relation to cross-sectoral coordination to enhance inclusive education? • To what extent have disabled peoples' organisations been involved in INOVASI programming? • How have strategic partnerships strengthened inclusive education? • How have grantee projects improved inclusion of students with disabilities?
Effective transitions	
• Early intervention and support services • Transition pathways	• Has INOVASI strengthened access to early intervention and support services? • What factors impact on transition pathways for students with disabilities?

5 Findings and discussion

The study explores what has worked and what has not worked to improve disability-inclusive education in INOVASI, and what enablers and barriers are important to understand in relation to Indonesia's inclusive education reforms. This chapter presents the findings related to these questions, drawing on data from various methods and following the sequence of the theoretical framework.

5.1 Curriculum, pedagogy and assessment

Inclusive curriculum, assessment and learning materials

How have teachers applied pedagogical approaches to ensure the curriculum, assessment and learning materials are inclusive?

Monitoring, evaluation, research and learning (MERL) data showed increased general capacity among teachers to teach inclusively as well as in specific skills. These included their ability to: undertake Student Learning Profiles; develop individual learning strategies; and adapt their teaching approaches for students with disabilities. Figure 1 summarises the main approaches applied and supports provided by teachers, drawing on data from across the methods in this study. Examples of observed inclusive teaching are: using cooperative learning; seating students with disabilities in groups with other students and positioning these groups close to the teacher's desk; peer-to-peer practices where students help their friends with disabilities during learning tasks; adapted tasks, for example, while other students were writing longer pieces, some students were given sentences to arrange; and teachers providing additional teaching to students with disabilities during breaks.

Increased use of inclusive or adapted learning plans

The endline of the first round inclusive pilot in Central Lombok found that two thirds of teachers had developed an adapted learning plan (*Rencana Pelaksanaan Pembelajaran* – RPP) for students with disabilities and 61 per cent had provided special assistance to them. Among schools across the second round pilot districts, the average proportion of teachers who implemented inclusive learning plans increased from 67 per cent at baseline to 76 per cent at endline.[13] The greatest improvement was in Probolinggo schools that jumped from 43 per cent to 79 per cent. In comparison, in the control schools only 40 per cent of teachers did this and this proportion was unchanged from the baseline to endline surveys. There was no significant difference between teachers with and without qualifications in special education. Although not all teachers prepared adapted lesson plans in East Sumba, many applied differentiated learning approaches (INOVASI, 2019b).

A critical point was noted during the commissioned research study in Central Lombok (INOVASI, 2019), consistent with previous literature (Achyar, 2020). While lesson plans were modified, this was seen to have limited benefit because assessment tasks were not adapted to the changes. The learning gains of some students with disabilities were not picked up by the assessment tasks with the results simply showing failure. Note that data were collected prior to the second round of pilots and that the findings from this study do not reflect the practices across all teachers in the pilot schools.

[13] SIPPI baseline – endline data

Figure 1: Pedagogical approaches and other supports that teachers commonly applied in the disability-inclusive education pilot schools

Classroom management for inclusion

- Seating children near the board or teacher as needed
- Grouping students to enable cooperative learning and peer learning
- Incorporating teaching methods such as *think-pair-share*

Additional time and attention

- Paying more attention during class to students with difficulties
- Providing additional teaching during breaks or after school
- Giving additional time to complete tasks

Differentiated learning and learning materials

- Adapting lesson plans (RPP) and learning methods to enable all students to participate and learn
- Developing specific learning materials and media such as word cards, bottle caps
- Adapting assessment methods (less commonly implemented)

Developmental activities and individualised support

- Developing individual learning plans (PPI)
- Fine motor activities to strengthen and improve coordination
- Providing additional tasks to some students with attention difficulties, to avoid disrupting others

Building inclusive learning friendly environments

- Disability sensitisation activities with peers including values-based discussion
- Helping communication between students with disabilities and peers

Linking with parents and services

- Motivating parents of students with disabilities to support their school attendance, and their development and learning when at home
- Working with health services to arrange treatment for vision and other difficulties

Increased support to students with disabilities

SIPPI data showed a higher proportion of teachers providing particular assistance to students with disabilities across all districts (Probolinggo 86 –100 per cent; East Sumba 87–93 per cent; and Central Lombok from 71–76 per cent). While there was no difference based on whether teachers had special education qualifications, what sex the teacher was had a significant impact with more women than men teachers providing assistance (women went from 87 per cent to 95 per cent, men from 43 per cent to 57 per cent).

Figures 2 and 3 show the proportions of teachers using and varying the learning media and organising classrooms according to how the students function. The trends across the three districts show that at this mid-way point in the pilot, East Sumba teachers had not yet begun to implement these practices. Central Lombok teachers performed best on these skills.

Figure 2: Learning media and classroom organisation appropriate to students' function, spot-check data, second round pilots

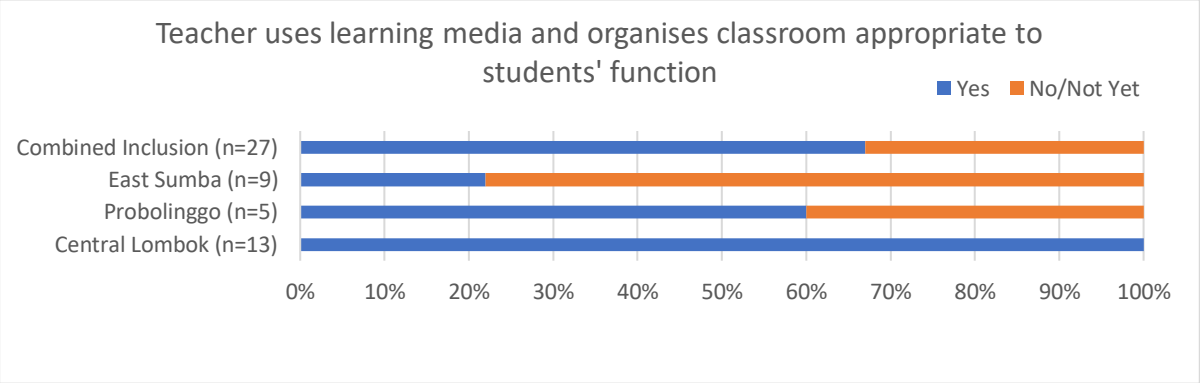
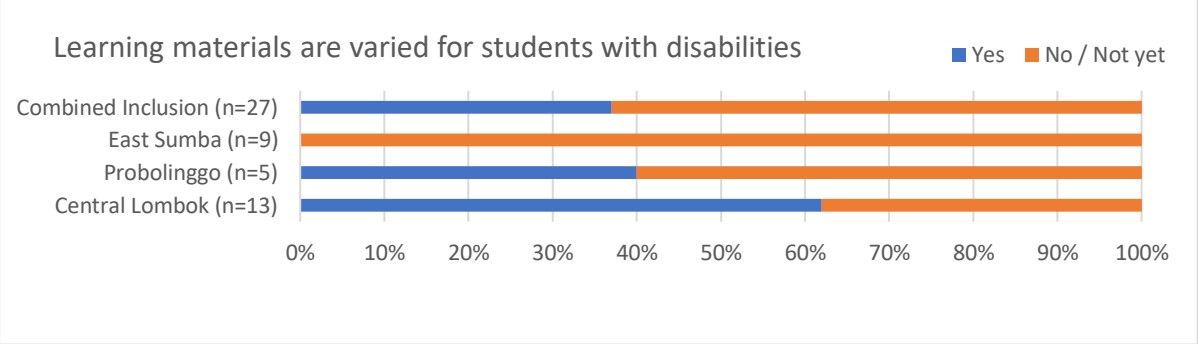


Figure 3: Proportion of teachers varying the learning materials for students with disabilities, spot-check data, second round pilots



Comparing the various types of pilots

Several of the items in the spot checks undertaken across all pilots enable a comparison of teaching approaches that can be useful in ensuring students with disabilities are included (figures 4–7). The literacy and numeracy pilots made more use of media and learning aids than the inclusion pilots and the numeracy pilots used group assignments more but did not vary the tasks. The literacy pilots were better at differentiation practice than both the inclusion and numeracy pilots. Teachers gave more attention to students with greater learning needs in the inclusion pilots, followed closely by the literacy pilot teachers. The inclusion training modules could be further refined by incorporating some of the training practices used in both the literacy and numeracy modules (note that the results may have

been affected by one of the three inclusion pilots implemented by an organisation that did not have strong teaching skills as their core expertise).

Figure 4: Teachers' use of media and learning aids to explain what they are teaching – comparing the inclusion, literacy and numeracy pilots

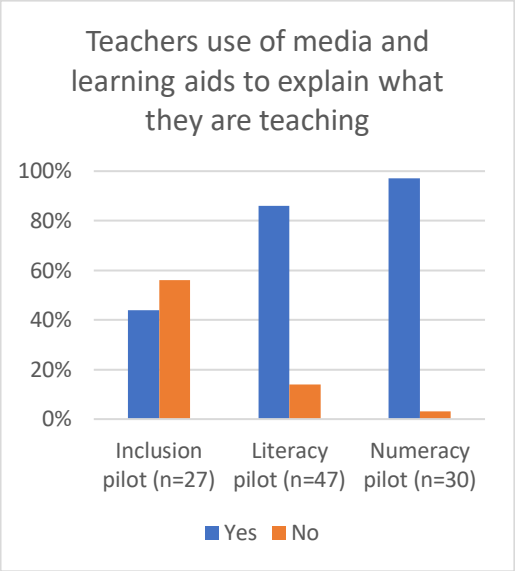


Figure 5: Teachers' use of group assignments during the observation period – comparing the inclusion, literacy and numeracy pilots

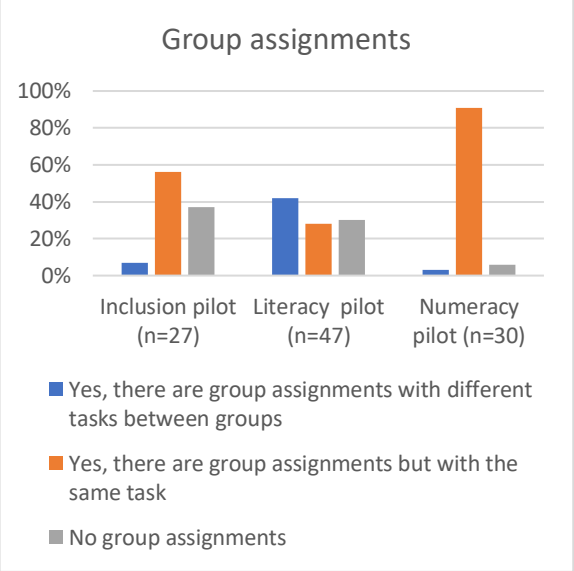


Figure 6: Proportion of classes in which class assignments differed according to students' learning needs, as observed in the spot check – comparing the inclusion, literacy and numeracy pilots

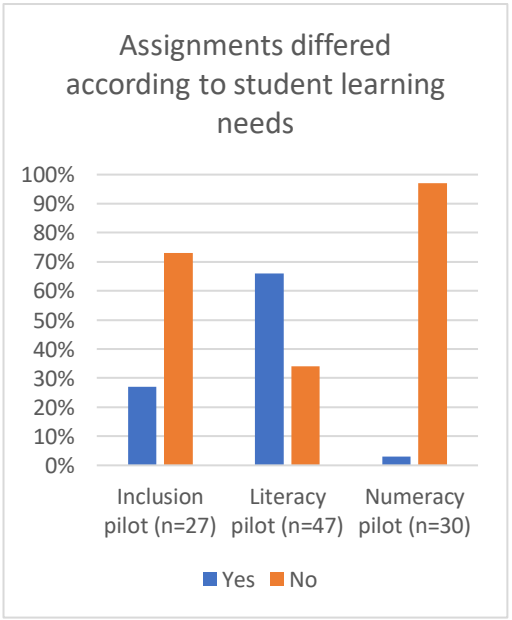
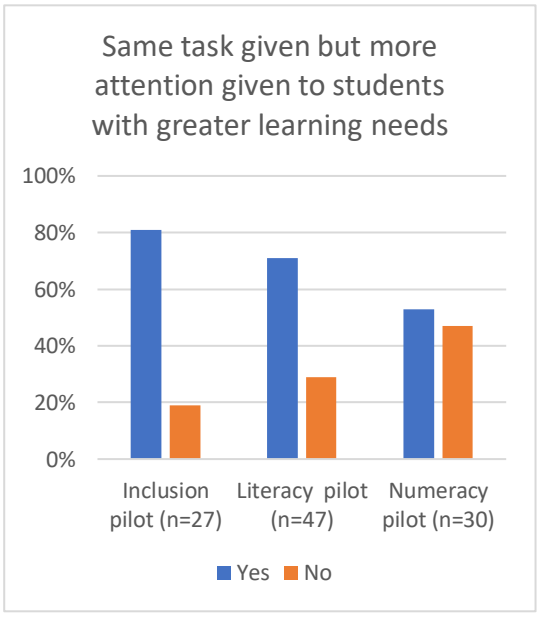


Figure 7: Classes observed to have the same task given to students but more attention given to students with greater learning need, as observed in the spot check – comparing the inclusion, literacy and numeracy pilots



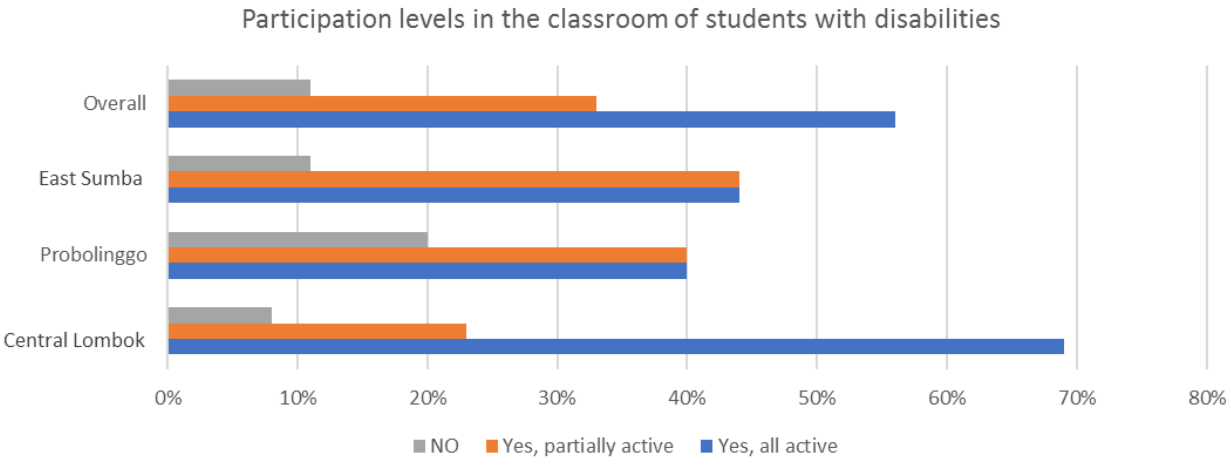
Participation by students with disabilities

Classroom observations during the baseline survey in West Nusa Tenggara indicated that there were many classrooms where children with a disability or even 'struggling learners' (who may or may not have disabilities) were not engaged in learning activities for a large portion of the school day (INOVASI, December 2017). This also applied to advanced learners who were not given an extra challenge but simply sat at their desks while other children participated. Learning outcomes for these children are significantly hindered.

> 'I adapt the work. For example, when I planned to teach the class about fractions using an orange, I asked (the student with disability) about the colour and texture of the orange. When I asked the class to make examples of imperative sentences, I would provide (the student with disability) with pictures to match with the words or sentences instead. After being mentored by INOVASI, I was taught how to teach children with disabilities. Apparently, it should not be one approach for all, we need to guide them individually'
>
> - Teacher, Central Lombok

Spot-check observations showed that despite being present in the classroom, some students with disabilities did not appear to be fully active in classroom activities. Of the 64 students who were not active during the observations, 29 had disabilities. These children had a range of problems including behaviour, attention, intellectual functioning and specific learning difficulties. Figure 8 highlights that schools in Central Lombok achieved the highest rate (69 per cent) of active participation of students with disabilities, followed by East Sumba (44 per cent) and Probolinggo (40 per cent) which had proportionately higher rates of 'partially active' students with disabilities. In Probolinggo 20 per cent of students with disabilities were not active at all, pointing to an area for further work.

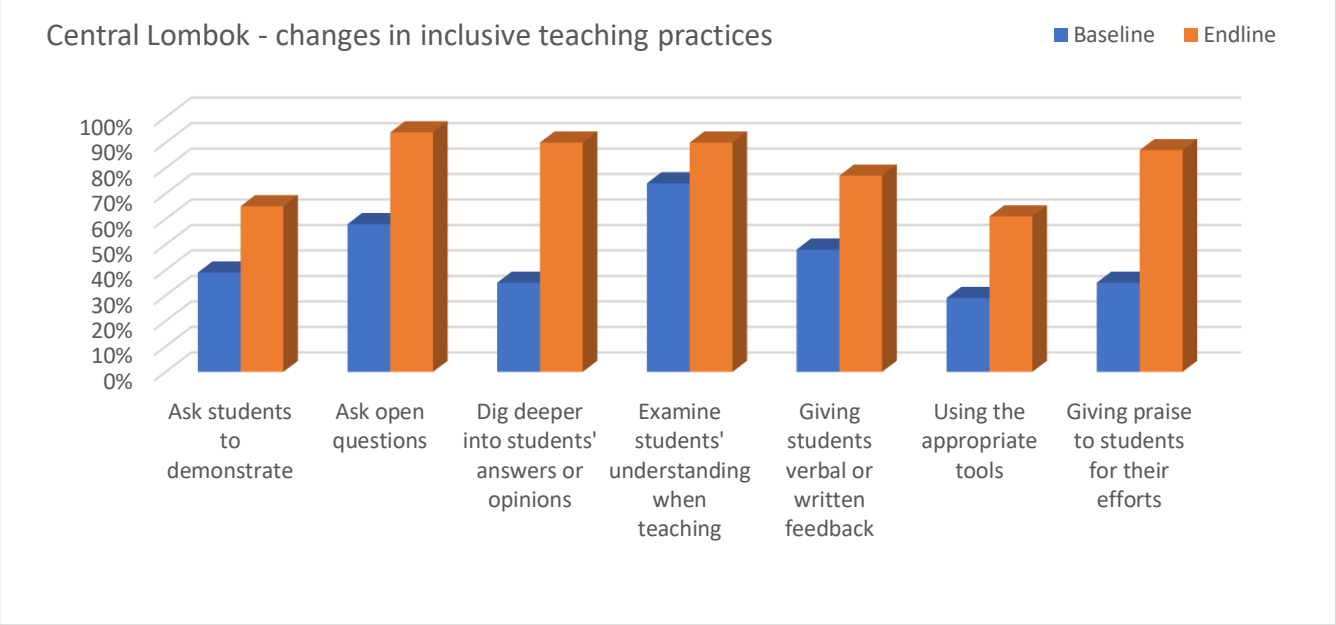
Figure 8: Levels of participation of students with disabilities during spot-check classroom observations



Central Lombok insights

Data from Central Lombok MERL documentation provides an insight into some of the improved teaching practices that make it possible to include students with additional educational needs. Figure 9 shows significant improvements in positive teaching practices, most notably: praising students for their efforts; delving into students' answers or opinions; asking open questions; using appropriate tools or media; and giving feedback to students.

Figure 9: Teachers' changes in classroom practice, Central Lombok inclusion pilot – baseline and endline survey results



Source: SIPPI data

In one classroom observed in Central Lombok, the grade two teacher was using various learning media to guide her seven students with learning difficulties. Using cards she focused on their respective abilities, introducing them to letters, arranging syllables into words and reading the words in simple sentences. As a result, two students learned many of the letters, two students learned to read and compose words with two to three syllables, and three students were able to arrange syllables into words, spell words and read simple sentences. All the children also appeared confident when asked to read in front of the class, even if some were only able to spell out the words.

With the teacher using a range of teaching methods introduced in the literacy component of the pilot, matched with inclusion strategies, the students with learning disabilities became more enthusiastic about participating and are steadily increasing their skills.

Challenges in applying inclusive teaching methods

The challenges teachers face include: facilitating group work when some students with behavioural or attention difficulties argue with or disturb their friends; taking into consideration many variables in deciding on classroom layout and management including students' needs, facilities and availability of resources; improving students' learning outcomes; adapting learning scenarios or lesson plans; completing the Student Learning Profiles; involving all students in learning; working with other staff in the classroom; and explaining disability to students without disabilities.[14] Other challenges included: gaining

[14] Local facilitators' reflections during the first inclusion pilot in Central Lombok

parents' support; achieving cooperation between parents, teachers and the principal; applying differentiated learning methods for students with different conditions and characteristics; time limitations; teachers' skill and knowledge levels; students' motivation; lack of learning aids and assistive devices; the need for teacher aides; and communicating with students who need sign language.[15]

Learning outcomes among students with disabilities in INOVASI disability pilot schools

Learning outcomes in the inclusion pilot schools – as measured by the literacy and numeracy results in the SIPPI tests – improved significantly for students with and without disabilities during the pilot period (table 2 and figure 10). An important finding is that among the students who passed the basic literacy and/or numeracy tests and went on to do the comprehension test, the students with disabilities performed approximately as well as their non-disabled counterparts, particularly by the endline (red circles on the figure highlight this finding). This goes some way in advocating to families, communities and other stakeholders about the capacity of students with disabilities and the value of investing in their education.

Girls' baseline literacy and numeracy scores were consistently higher than the boys' scores among students without disabilities (see table 4) but not among the students with disabilities.

Figure 11 compares students with 'physical' disabilities (vision, hearing, gross and fine motor, speech) to students with cognitive, behavioural or attention related disabilities. Percentages passing the basic literacy test improved in both groups and average scores on the comprehension test also increased. Unsurprisingly, a lower percentage of students with cognitive, behavioural or attention difficulties passed the literacy test and the numeracy basic test. Lower numeracy comprehension test results among students with physical disabilities may relate to more significant challenges in teaching numeracy to children with sensory and movement disabilities. The sample size is too small to draw any definite conclusions but this area may require further attention – for example training techniques and learning media for teaching numeracy to students with sensory and movement disabilities.

The study would have benefitted from a deeper inquiry into how students with different disabilities fared. One particular condition that requires further work is dyslexia. This condition is highly prevalent and generally debilitating in a world that relies on the written word. It impacts on students in challenging ways. For these reasons and because improving literacy is a central mission for INOVASI, it is recommended that phase two focuses on identifying students with dyslexia and working on scalable methods to support their reading.

In Central Lombok, baseline–endline results from the first round inclusive literacy pilot implemented by INOVASI showed more students with disabilities (18 per cent) and students without disabilities (16 per cent) passing the basic literacy test. Only students who passed the basic literacy test went on to do the comprehension test. Average comprehension scores of students with and without disabilities were almost the same, rising from 51 at baseline to 68 at endline.[16] The percentage of students without disabilities passing the basic numeracy test remained high at 98 per cent at baseline and endline. However, those figures among students with disabilities improved from 81 per cent to 94 per cent. Numeracy comprehension scores improved for students with disabilities by 18.9 points and by 17.4 points for students without disabilities.

[15] Pre and post tests, and East Sumba evaluation report
[16] See table 2 for figures; 50.6 and 50.8 compared to 66.6 and 66.8.

The Central Lombok second round pilot was implemented by the University of Mataram (UNRAM) but still used INOVASI's training materials. The results also showed improvements in the proportion of all students passing the basic literacy test as well as an increase in average comprehension test scores for all students.

In the first pilot in East Sumba, conducted by CIS Timor without using the INOVASI teacher training modules, there was no improvement in the proportion of students with disabilities who passed the basic literacy test. However in the second pilot that used the INOVASI inclusive education modules, substantial improvements were evident from baseline to endline for both students with disabilities (17 per cent) and students without disabilities (25 per cent). This suggests that the INOVASI training materials are effective in improving inclusive teaching.

Probolinggo showed a drop in the percentage of students with disabilities passing the basic literacy test and no change in the percentage of students with or without disabilities passing the numeracy basic test but achieved improvements in both literacy and numeracy comprehension scores.

Table 2: The education and learning survey (SIPPI) data, student results comparing baseline (B/L) to endline (E/L), literacy and numeracy, students with and without disabilities[17]

	Inclusive education – round 1 – implemented by INOVASI (Central Lombok)		CIS Timor – round 1 – using own materials (East Sumba)		UNRAM – round 2 – using INOVASI inclusive education training materials (Central Lombok)		Inclusive education – round 2 – implemented by INOVASI (Probolinggo)		CIS Timor – round 2 – using INOVASI inclusive education training materials (East Sumba)		Round 2 (three districts combined data)							
											By disability type				By students' gender			
											Physical[18]		Non-physical		Female		Male	
	B/L	E/L	B/L	E/L	B/L	E/L	B/L	E/L	B/L	E/L	B/L	E/L	B/L	E/L	B/L	E/L	B/L	E/L
Basic literacy test – percentage of non-disabled students who passed	67	83	32	55	62	79	81	88	44	69					73	88	54	72
Basic literacy test –percentage of students with disabilities who passed	41	59	17	17	50	56	67	44	33	50	67	83	39	47	75	75	36	42
Literacy comprehension test average score – non-disabled students	50.8	66.6	38.6	61.6	53.4	69.0	64.5	74.7	41.0	61.6					56.7	70.1	53.5	68.6
Literacy comprehension test average score – students with disabilities	50.6	66.8	27.2	56.2	57.5	71.3	52.0	69.3	45.5	64.8	61.0	73.8	48.8	66.7	52.0	68.5	52.9	69.1
Percentage of non-disabled students who passed numeracy basic test	98	98	95	97	94	100	98	98	91	99					96	100	93	98
Percentage of students with disability who passed numeracy basic test	81	94	88	75	78	89	78	78	78	94	100	100	78	92	75	83	79	91
Numeracy comprehension test average score (non-disabled students)	51.5	68.9	44.7	66.0	57.2	67.1	71.9	75.3	61.0	66.6					62.8	69.4	61.7	68.8
Numeracy comprehension test average score (students with disability)	49.3	68.2	38.8	63.9	76.1	81.2	56.7	71.0	60.9	68.0	46.6	58.5	70.4	67.9	66.8	74.5	66.1	73.8

[17] Only students who pass the basic literacy test do the literacy comprehension test.
[18] 'Physical' includes students with seeing, hearing, movement and speaking difficulties; 'Non-physical' includes students with cognitive, behavioural and attention difficulties.

Figure 10: Learning outcomes in inclusion pilots, SIPPI data, by district, comparing students with and without disabilities, percentage passing basic literacy and numeracy tests, and average test scores for literacy and numeracy comprehension tests

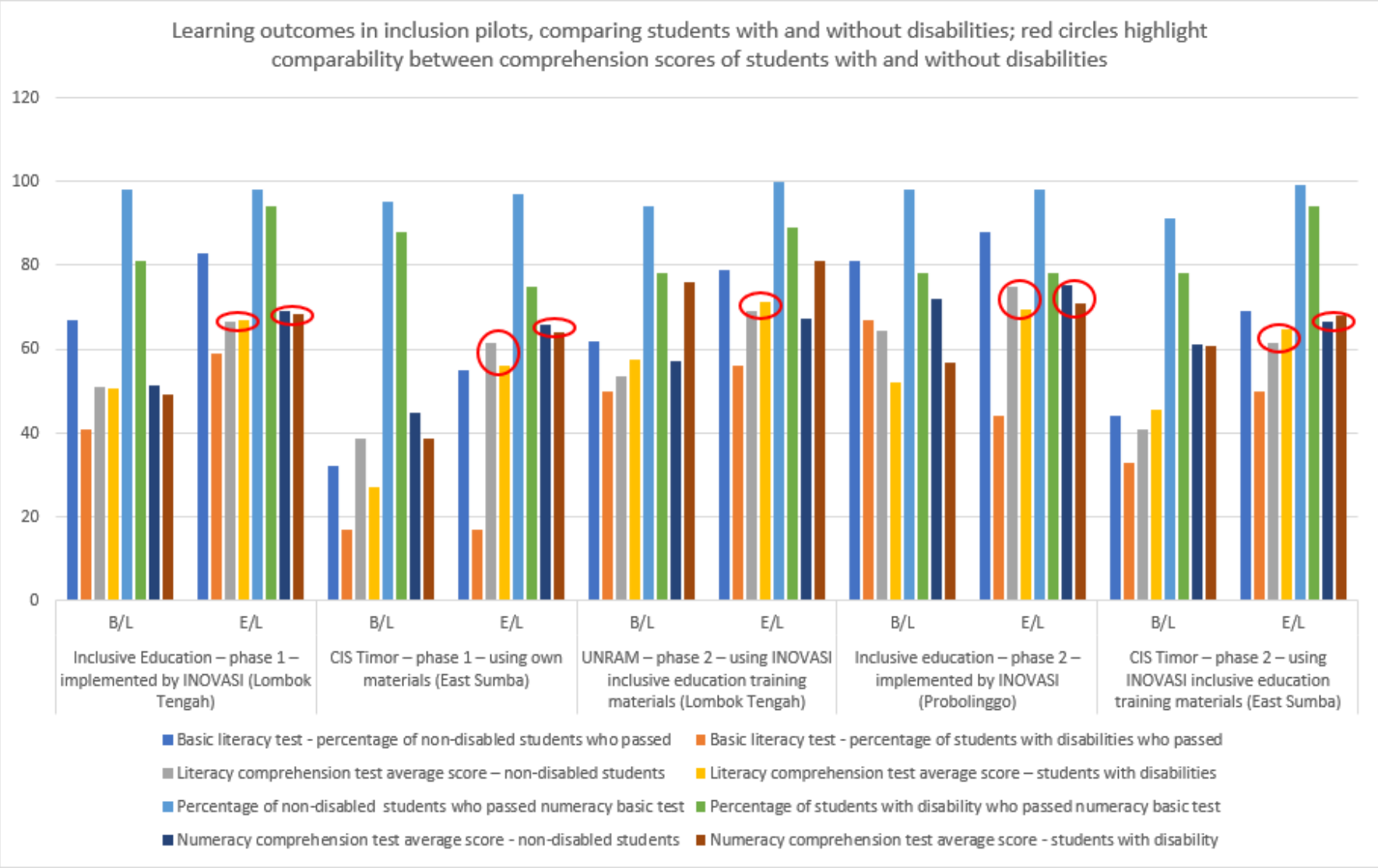
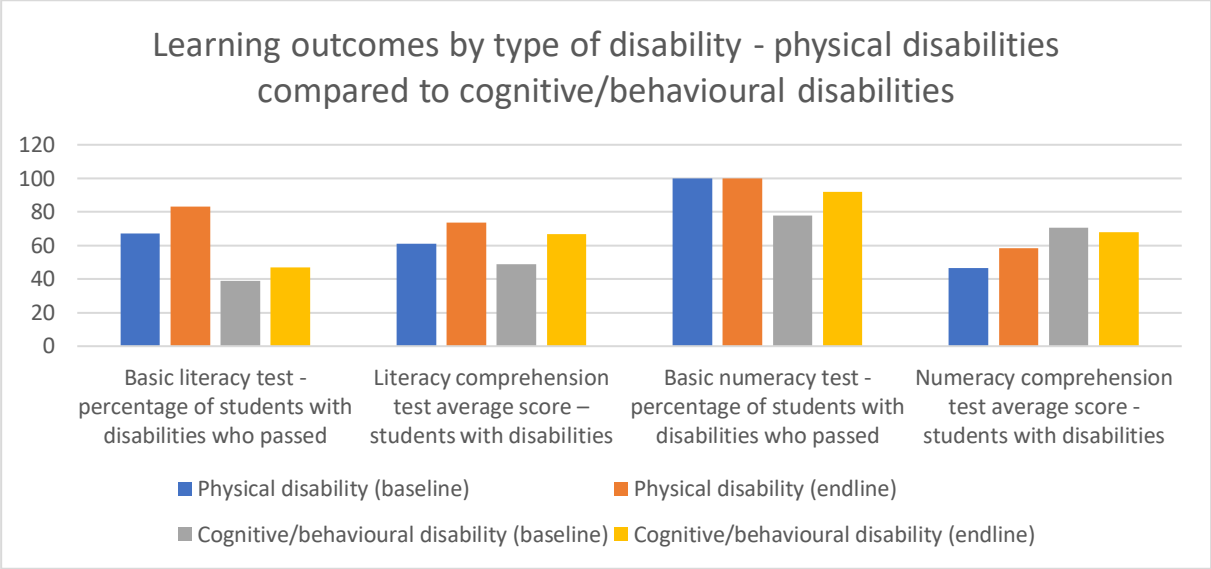


Figure 11: Comparing learning outcomes of students with physical disabilities and those with cognitive or behavioural disabilities



However, learning goes beyond literacy and numeracy and there are various other ways that the students with disabilities demonstrated successful learning during the pilots. In East Sumba,[19] some parents acknowledged improvements such as increased confidence and improved attitudes and behaviour among their children with disabilities. A female student with gross motor and cognitive difficulties learned how to say some words more clearly, performed dance on the stage and insisted on walking to school despite difficulties. Another child with speech and hearing difficulties used to disturb the family's neighbours before being enrolled at the school but over the course of the pilot, he became 'well-behaved' as well as good at drawing.

Additionally, SIPPI results showed that students with disabilities participated more, were more enthusiastic and interested, their behaviour improved, they were happier in the classroom and felt more loved. Fewer students were afraid at school or unenthusiastic about going to school. These factors enable students with disabilities to participate effectively in school and achieve better learning outcomes, as well as to participate in broader society and have a higher quality of life.

[19] MERL observation in August 2019

5.2 Supported teachers

Pre-service education, in-service teacher education, professional competency standards

In the three pilot areas, 95 per cent of teachers had never had training on special or inclusive education other than the training they received through INOVASI.[20] The 5 per cent of teachers who had participated in other training had attended a single workshop.

Has change occurred in knowledge, concerns and confidence related to disability-inclusive education?

The pre and post test study of 77 teachers and 11 principals in the second round inclusion pilot schools measured confidence, knowledge and concerns or anxiety related to disability-inclusive education. Around 62 per cent of teachers increased their confidence over the pilot period, 55 per cent showed increased knowledge and 64 per cent had reduced their concerns or anxiety. Women teachers improved more than their male counterparts (see table 3).

> Despite disability-inclusive education mandates in law and policy for many years, and the existence of specialist training institutes, the training is not reaching the majority of teachers.

Table 3: Pre and post test results showing percentage of teachers who improved in confidence and knowledge, and reduced their concerns or anxiety about disability-inclusive education, by sex and district

Domain – % of sample who improved	Male (n=31)	Female (n=57)	Central Lombok (n=40)	Probolinggo (n=23)	East Sumba (n=25)
Confidence	58%	65%	62%	48%	76%
Knowledge	48%	58%	62%	43%	52%
Concerns/anxiety	48%	72%	70%	70%	48%

All districts showed improved knowledge (see figure 12), with Central Lombok and East Sumba increasing the most, and East Sumba achieving the highest knowledge level. On the other hand, the level of concern (figure 7) among East Sumba teachers about implementing disability-inclusive education remained high, unlike in Central Lombok and Probolinggo where concerns decreased to a level significantly lower. This implies that while their knowledge increases, teachers are still aware of some seemingly intractable factors that make inclusive education difficult, meaning their concerns persist.

[20] Pre and post test results

Figure 12: Pre and post test results showing changes in teachers' knowledge about disability-inclusive education, by sex and district

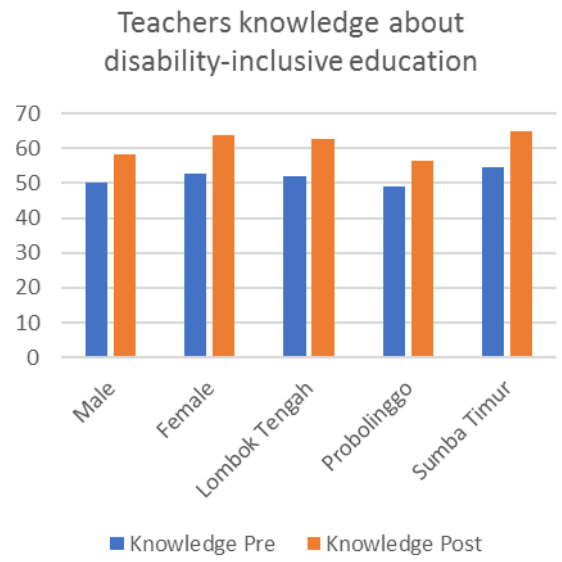
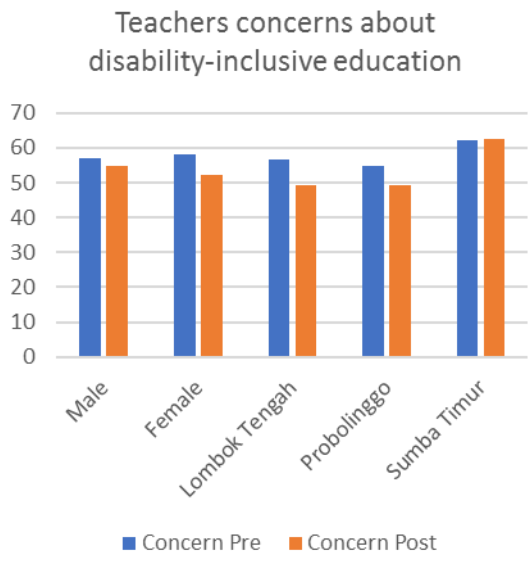


Figure 13: Pre and post test results showing changes in teachers concerns about disability-inclusive education, by sex and district



The pre-test survey highlighted that at the beginning of the pilot, teachers were most worried about two issues: (i) their performance being affected by having students with disabilities in the classroom and (ii) difficulties managing students who may not be able to care for themselves, for example, go to the toilet independently. Concerns particular to districts were: that students without disabilities would not easily accept students with disabilities (Central Lombok, East Sumba); that the teachers' workload would increase (Central Lombok, Probolinggo); that it would be difficult to give equal attention to all children in the classroom (Central Lombok, Probolinggo); and that the presence of students with disabilities in the classroom would affect the teachers' minimum service standards (*KKM*).[21]

School supervisors play an important role in supporting schools and teachers in creating a welcoming, inclusive and effective learning environment. Supervisors' own perceptions of how an ideal supervisor operates changed significantly during the course of the INOVASI pilots. For example, in the first Central Lombok inclusion pilot, baseline findings showed that approximately 40 per cent of supervisors assumed that the ideal school supervisor is able to: (i) help the school solve learning problems; (ii) help teachers improve teaching skills; and (iii) help improve the quality of student learning. The endline survey showed that this had risen to 71 per cent, 100 per cent and 86 per cent respectively.

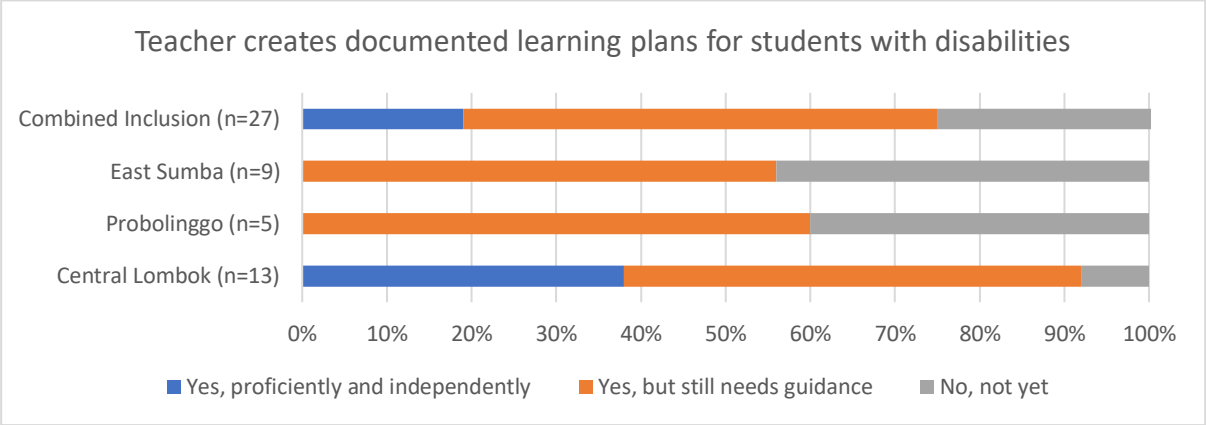
What lessons have been learned in building capacity for disability-inclusive education?

The data in figure 14 from the spot check (undertaken halfway through the second round pilots) shows that while many teachers were already adapting learning plans by that point, most teachers still required guidance. Developing competencies for inclusion takes time and, importantly, requires a support structure. The pilot approach of having facilitators visit the

[21] These are the standards that teachers should achieve in relation to the curriculum.

schools in between the teachers' working group sessions offers important lessons for capacity development.

Figure 14: Use of adapted learning plans for students with disabilities, across second round pilot schools, spot-check data



In between teachers' working group training sessions, the local facilitators (*fasda*) visited schools to observe the learning processes in the classroom and discuss any issues with teachers. During these feedback discussions other teachers (who had not joined the teachers' working group) could also learn and practise the ideas in their own classes.

Teachers felt that a number of elements would help them implement disability-inclusive education. The most commonly mentioned elements included: support from principals, supervisors and parents; skills in identifying disability; teaching practices incorporating differentiated instruction; developing teaching aids and media; developing Individual learning plans and adapting lesson plans; inclusive learning assessments; and sign language.

Probolinggo facilitators reflected positively on various aspects of the inclusive education teachers' working group training. Learning about various types of disabilities was important, as was flexibility in the way mentors explained the material. The training on differentiated instruction and cooperative learning was particularly well received due to the games and easy-to-understand learning strategies, as was training on adjusting lesson plans. This included their appreciation of the benefits of participants bringing along examples of adapted lesson plans. The facilitators recommended that the training include: more content about disability law; more discussion about methods to address severe educational

barriers; information on building student independence and communication skills; and practice on filling in the Individual Learning Plan (*PPI*) form.

Central Lombok facilitators reflected that the training 'was useful because teachers could select a teaching technique and plan the learning objective for students with disabilities; teach, learn and assess; and then follow up.' They felt the training activity was successful because participants could directly practise it at their respective schools. Participants' understanding of concepts taught in the teachers' working group, such as the Individual Learning Plan, benefitted from ongoing support during mentoring visits as it may not have been enough to just teach the concepts in the teachers' working group.

The commissioned research study in Central Lombok identified a significant challenge due to honorary (non-permanent) teachers receiving specialist inclusive education training through the district government. This happened because the training was not accredited as regular teaching hours, so the regular teachers were reluctant to leave the classroom. This led to problems when the honorary teachers were transferred to other schools so a solution is required to mitigate the loss of capacity in the school (INOVASI, 2019).

In East Sumba, a common issue was that training participants arrived late for the training because they were taking care of administrative issues with the education office. This may relate to the schools being remote and the teachers having limited opportunities for face-to-face communication with government education officials. This needs to be taken into account in planning training, with time allowed for this.

Through the University of Mataram (UNRAM) partnership with INOVASI, the teacher training faculty improved its coverage of inclusive education within the subjects in its teacher education program and focused on inclusive education in the student teacher practicums. According to project reports, the lecturers described deep changes of mindset on enabling learning for students with functional difficulties and several of them had initiated research to assess inclusive education and this work is currently pending publication.

Prior to the project, for the compulsory teacher training practicum subject (*PLP*), UNRAM had never sent student teachers outside the capital, Mataram. Through a partnership between Central Lombok District Education Office and the teacher training faculty (*PGSD*), 'vacancies' were announced for students who wanted to do their teaching practicum in Central Lombok and focus on inclusive education. More than 50 students applied for the 39 places. Most of the students were from Central Lombok, so the opportunity to do the practicum in their home town may have influenced their choice. The students benefitted from the visiting facilitators mentoring in the schools and worked with teachers to complete the Student Learning Profiles, write adapted lesson plans, develop adapted media and work closely with students with disabilities. Additional benefits from this partnership for the student teacher practicum included the opportunity for schools to receive additional staff (student teachers) to support the educational activities of students with disabilities and their classroom peers, and to have a direct relationship with a university, which they did not have otherwise.

Institutionally, through the partnership with INOVASI, the teacher training faculty began to realise the challenges they face in integrating the inclusive education principles in their own academic life on campus. This has encouraged the department to map out the facilities and tools required for students with disabilities to access a quality tertiary education on the campus. Presently there are no ramps or accessibility features on campus. There is currently only one student (with hearing impairment) but the department wants to be ready when they accept new students in the upcoming semester.

UNRAM conducted an inclusive education seminar at the completion of the pilot program to share lessons and raise awareness about the issue. Prior to the INOVASI partnership, inclusive education was not well known or understood by most faculty members since just one lecturer had been teaching a two-hour session per week over one semester. The seminar attracted 576 participants, around 65 per cent of whom were UNRAM students from various departments in the teacher training faculty (*FKIP*). The other 35 per cent of participants were from: the provincial and Central Lombok education office; local parliaments; different teacher training institutions around Lombok; primary and secondary schools around Lombok; the pilot schools; and some from Sumbawa. For the seminar, three teachers from the pilot schools collaborated with the teacher training faculty lecturers and presented action research papers. As UNRAM is the largest university and teacher training institution in West Nusa Tenggara, this seminar was an important event for influencing inclusive education across the province.

5.3 Learning friendly environment

Physical accessibility and a safe, child-friendly learning environment

To what extent is school infrastructure accessible in schools where INOVASI disability pilots were run?

INOVASI did not directly include activities and funding to improve the accessibility of school infrastructure. However, funds for this are available in existing government mechanisms and with the increased awareness we anticipated heads of schools making the most of this funding. Table 4 shows that the presence of ramps is the most common element of accessibility in schools, with handrails and accessible bathrooms being less common. The proportion of schools with ramps from all the pilots (not only the inclusive pilots) in West Nusa Tengara (NTB) increased from 12 per cent to 26 per cent and this may relate to more awareness among schools of the availability of schools operational funding (BOS) for this work. However in East Nusa Tengara (NTT) the rate fell from 17 per cent to 12 per cent and in East Java there was a drop from 3 per cent to 2 per cent. In the first round pilot in Central Lombok, an additional four schools had ramps and one had accessible bathrooms by the endline. However, in the second round pilot in Central Lombok there was almost no change.

The presence of handrails to support access to classrooms rose from 0 per cent to 8 per cent but no schools had accessible toilet facilities.

These findings clearly show that accessible infrastructure requires more effort in future inclusive education programming.

Table 4: Changes in accessible infrastructure, data from the SIPPI baseline and endline surveys

Schools with disability accessible facilities							
	No of schools in sample	Ramps		Handrail into classroom		Accessible bathrooms	
		Baseline	Endline	Baseline	Endline	Baseline	Endline
NTT province	78	13	9	0	0	1	3
NTB province	100	12	26	1	6	1	3
East Java province	146	4	3	1	0	1	1
Central Lombok round 1 inclusion schools	12	1	5	0	1	0	1
Central Lombok round 2 inclusion schools	10	2	2	0	0	0	0
Probolinggo round 2 inclusion schools	5	0	0	0	0	0	0
East Sumba phase 2 inclusion schools	5	1	1	0	0	0	0

Principals' role and perspectives

SIPPI results from the principals' questionnaire indicate a positive increase in inclusive education activities and policies, and in principals' knowledge of these. This jumped from 35 per cent at baseline to 85 per cent at endline in inclusion pilot schools, compared to 0 per cent at the baseline and 13 per cent at endline in control schools. Over 50 per cent of principals listed inclusion activities being implemented by endline, in stark contrast to the baseline, where only three principals recorded examples for this question citing the activities of counselling and spiritual guidance.

One principal interviewed in East Sumba highlighted a significant outcome from the collaboration between INOVASI and CIS Timor. He said that previously they were confused about whether it was prohibited to mix students with disabilities and other children but that issue is now clear and he has opened his school so teachers can include students with disabilities in their regular classrooms.

SIPPI data showed an increase in the proportion of school principals who had made an effort to increase the participation of students with disabilities. This increased from 60 to 90 per cent in Central Lombok, 40 to 80 per cent in Probolinggo and 80 to 100 per cent in East Sumba. This is in contrast to control schools where the proportion fell from 25 per cent at baseline to 13 per cent at endline. Examples of the efforts principals made include: visiting

the homes of children with disabilities; improving the quality of inclusion in their schools; and adapting school facilities to make the school more accessible.

While principals are taking various actions to support disability-inclusive education, SIPPI data showed that only 10 per cent of principals in the inclusion pilot schools had regular meetings with teachers to discuss students with disabilities (with 0 per cent at control schools). This is an area for improvement.

The proportion of principals rating inclusive education as one of the top three priorities was low, staying at 5 per cent between baseline and endline surveys in pilot schools and shifting from 0 per cent to 6 per cent in the control schools. The only district where some principals considered inclusive education as a priority was Central Lombok (10 per cent baseline and endline). However most principals rated infrastructure as one of the top three priorities (75 per cent at baseline to 90 per cent at endline; with 100 per cent of principals in Probolinggo and East Sumba at endline). Principals listed a number of other factors as being one of the top three priorities and in decreasing order of proportion these were: learning facilities; support to teachers; numbers of teachers; and budget. Few principals rated student learning outcomes as being among the top three priorities (0 per cent in Central Lombok and Probolinggo, and 20 per cent in East Sumba).

The first Central Lombok pilot SIPPI survey indicated that none of the school principals' working groups (KKS) had raised the topic of inclusive education for students with disabilities. The most common topics raised at baseline were implementing the curriculum and specific learning methods; and the most common by endline were developing school management strategies and skills. On the other hand, 33 per cent of principals at endline considered inclusive education to be one of the three main education problems that are a focus at their schools, up from 0 per cent at baseline. And 75 per cent reported that learning outcomes of students with disabilities still needed to be improved, compared to just 17 per cent at baseline.

INOVASI also made inroads during the first inclusion pilot in Central Lombok in strengthening principals' capacity for transparent school planning and budgeting that involved school committee members and parents of children with disabilities. The head of a pilot school had allocated budget to improve facilities and infrastructure and make the school environment friendlier for children with disabilities. The school budget plan also included an allocation for office supplies to improve the quality of teaching.

Changes during the INOVASI program, largely related to budget cuts, meant that a planned pilot focusing on school principals was not implemented. This would have included topics such as: methods of accessing funding for accessible infrastructure; human resources including professional support and development for staff; linkages with health and community services; and school planning and budgeting for inclusion. The role of principals is key in achieving an inclusive school and developing professional development modules for principals is recommended in any future programming. The work done with principals during

the first round pilot appears to have had a greater impression than work in the second round and preparations for INOVASI's second phase should draw lessons from this.

Attitudes of teachers and peers

Teachers' attitudes

Results from the pre and post tests for the second round of inclusion pilots showed an overall improvement in attitudes towards inclusive education across the three districts and among both men and women teachers. Attitude scores in Probolinggo increased the most, finishing with comparable levels across all three districts by the endline. The positive attitudes with the highest levels of approval from teachers were those showing an understanding that: inclusive education benefits students with disabilities and can benefit all students' academic outcomes; students with lower basic skills should be in regular classrooms; non-disabled children will not be disadvantaged if there are students with disabilities in the classroom; and inclusive education should be implemented in the school even if the parents of children without disabilities object. While 78 per cent of teachers felt that the participation of students with disabilities added a slight problem to teaching they felt that this could be addressed.

A number of specific areas showed particular improvements in teacher attitudes, including: 19 per cent improvement in the belief that students who communicate using sign language or communication symbols should be enrolled in the regular classroom;[22] 14 per cent improvement in a similar item in relation to students who have lower basic skills;[23] and 11 per cent improvement related to including students with disruptive behaviour.[24] The percentage improvement relates to the shift in the average score across the whole cohort of teachers for the item.

Noting that spot-check data were collected halfway through the pilot, it is nonetheless interesting to compare the data emerging from classroom observations with data from the self-report questionnaire used in the pre and post tests. Teachers were observed to see whether they treat students with disabilities well and were graded either 'Yes, very well', 'Yes', or 'No, not well'. As seen in table 5, Probolinggo scored well, with 40 per cent of students with disabilities treated very well, and the remaining 60 per cent treated well. East Sumba was the only district where, according to observations, students with disabilities were not treated well, with 33 per cent of students with disabilities being recorded in this category.

[22] Of 88 teachers, 41 showed more inclusive attitudes, 33 stayed the same, and 14 had a less inclusive attitude regarding this item.
[23] Of 88 teachers, 32 showed more inclusive attitudes, 52 stayed the same, and 4 had a less inclusive attitude regarding this item.
[24] Of 88 teachers, 31 showed more inclusive attitudes, 39 stayed the same, and 18 had a less inclusive attitude regarding this item.

Table 5: Teachers' treatment of students with disabilities, spot-check classroom observations

Do teachers treat students with functional difficulties well?[25]	Districts			Overall
	Central Lombok	Probolinggo	East Sumba	
Yes, very well	0%	40%	11%	11%
Yes	100%	60%	56%	78%
No, not well	0%	0%	33%	11%

Peer attitudes

The attitudes of student peers in the pilot inclusion schools improved in all districts but particularly in East Sumba. Spot-check observations showed 100 per cent of peers across all three pilot districts treated students with disabilities well. SIPPI data (table 6) showed an increase in the proportion of students who stated they 'love *playing* with anyone, including friends who cannot see, hear or walk' on average from 75 per cent to 86 per cent. The degree of improvement varied across the pilot areas: Central Lombok increased from 80 per cent to 88 per cent, Probolinggo from 78 per cent to 90 per cent and East Sumba from 65 per cent to 79 per cent. There was a 13 per cent increase among schools where activities on disability inclusion had been undertaken, compared to 6 per cent increase where these had not happened.

> 'Initially, students with disabilities were shy, lacking confidence. Many friends humiliated them. But after the pilot, the students are given the understanding that they need to help the students with disabilities. Now they're getting along together'
>
> - Principal, primary school, Central Lombok

Table 6: Peer attitudes towards students with disabilities, SIPPI data

	Central Lombok (n=162)		Probolinggo (n=162)		East Sumba (n=117)	
	Baseline	Endline	Baseline	Endline	Baseline	Endline
Proportion of students stating they love playing with anyone including friends who can't see, can't hear or can't walk	80%	88%	78%	90%	65%	79%
Proportion of students who reported they love helping their friends who can't walk or can't see the blackboard clearly	89%	98%	94%	96%	80%	94%

[25] Observation guidelines defined: 'Yes, very well' as teachers doing a lot to help students with disabilities. 'Yes' is if teachers in general are treating students with disabilities well or if there is a special assistant teacher (GPK) delegated to help the teacher which would explain why the main teacher is not paying particular attention to the student with disability. 'No/less' is defined as teachers appear to ignore the existence or needs of the student with disability or labels/calls the child inappropriately or is rude to them.

Proportion of students who reported they do not like to study together with children who can't see, can't hear or who get angry	31%	10%	41%	41%	44%	33%

The proportion of students who love *helping* their peers with disabilities (table 6) was also high across the board, with an average shift from a baseline result of 88 per cent to an endline of 96 per cent. East Sumba increased the most, from 80 to 94 per cent; Central Lombok shifted from 89 to 98 per cent and Probolinggo from 94 to 96 per cent. The presence of each additional student with disability in the school was associated with a rise in the probability of improvement in this indicator by 2 percentage points.

In contrast to the high proportion of children who like playing with and helping peers with disabilities, the third indicator in table 6 outlines how many classmates *do not like studying together* with students with disabilities. On average, a healthy drop was found, from 38 per cent at baseline to 28 per cent at endline (compared to control schools that dropped from 45 per cent to 44 per cent). Probolinggo did not change at all, East Sumba saw a drop from 44 to 33 per cent and Central Lombok improved the most with a drop from 31 per cent to 10 per cent. We need to examine further the various classroom dynamics, teaching approaches, types of disabilities and communications with the student body about disability to take the lessons from these district-specific findings.

5.4 Data and monitoring

Identification system, education management information system

How has INOVASI contributed to improving Indonesia's system for identifying children with disabilities, in alignment with the International Classification of Functioning, Disability and Health?

The development of the Student Learning Profile has been an important contribution to improving MoEC's definition of disability, aligning it with the World Health Organisation's International Classification of Functioning, Disability and Health (ICF). This uses 'functioning' at the heart of the definition and incorporates student learning and support needs which are the 'environmental' factors included in the ICF definition of disability.

Following awareness of the development and piloting of INOVASI's Student Learning Profile / PBS, MoEC formed a partnership with INOVASI and TASS to implement a pilot targeting data collection on 10 per cent of the children recorded in DAPODIK as having disabilities.

To achieve this, several activities were carried out:

i. Engaging a variety of stakeholders including several sub-directorates (Directorate of Special Education Development, the Centre for Culture and Education Data and Statistics (*PDSPK*), DAPODIK, the Directorate of Basic Education, the Centre for Data and Information (*PUSDATIN*) from the Djuanda University Bogor and the Communication Technology Centre); along with state universities in Surabaya, Malang and Mataram; disability organisations such as *Dria Manunggal*; and staff from several special schools in Jakarta;

ii. Reviewing and trialing the Student Learning Profile / PBS instruments, the teacher PBS guidelines, and the SIMPKB Android application, based on lessons from the INOVASI pilot sites;
iii. Engaging 94 provincial, district and city governments, particularly those already declared as inclusive education centres;
iv. Training for the 94 provincial, district and city partners and for respective teachers;
v. Socialising and promoting the use of the application through online media (see annex 3);
vi. Developing the algorithm for analysing the data and determining disability from the Student Learning Profile app data.

Developing and testing the means to identify disability in line with the ICF is the first step in achieving the ultimate goal of using the data to inform systems and achieving the right to education for more children with disabilities, as discussed in the next section.

How has INOVASI contributed to ensuring Indonesia's education management information system (EMIS) includes valid data that informs planning for enrolment, participation and achievement of children with disabilities in education?

INOVASI and TASS have contributed significantly to the government being able to use disability data in DAPODIK to estimate requirements for human resources, accessible infrastructure, assistive devices, and other accommodations and specialist services. The previous method for identifying disability was based on the DAPODIK impairment categories and, aside from limited validity and reliability, it did not produce the information needed for planning.

The process of strengthening the basis of these decisions has been done quickly (see annex 4). This started from a fundamental shift in the approach to determining and therefore defining disability (within the Student Learning Profile) leading to the dramatic change in how disability data are collected from teachers (via an application), to the rapid uptake by MoEC in using the data to plan resource decisions. While the data can and will be used for a variety of purposes, the impetus for the rapid testing and uptake of the system came from MoEC's two directorates for the advancement for secondary and special education teachers (*Directorate PG Dikmensus*) and the advancement for special education (*Directorate PK*). The purpose driving the system change related to human resourcing – the need for data to inform staffing level projections and teacher competencies required to meet the needs of students with disabilities.

Between mid-October and December 2019, Student Learning Profiles were completed for more than 10,000 students (who had disabilities according to DAPODIK categorisation), across 1,700 schools, including primary, junior secondary and senior or vocational high schools.

While at this stage data are used primarily to inform on teacher competencies, training and recruitment, MoEC has plans to expand data collection and make wider use of the Student Learning Profile data. Further analysis is pending and will provide information on service and staffing needs, infrastructure and other resource requirements. The vision is for all provincial and district governments, training institutions and other disability organisations, including local and international non-governmental organisations, to plan their programs in synergy with the actual problems that local schools face, as identified through the Student Learning Profile dataset.

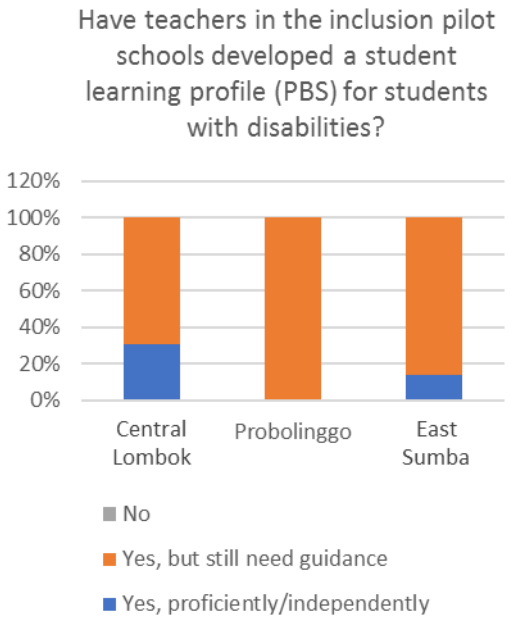
After analysing the data, 25 per cent of the 10,000 students were found to not have a disability, according to the Student Learning Profile algorithm. This drop in teacher estimates of disability is consistent with INOVASI's own findings within the three districts of the second round pilot. At the outset of the pilot, teachers estimated there were 264 children with disabilities across the classes. Once their teaching methods had improved and they had learned about disability, how to complete the Student Learning Profile, and how to vary their teaching according to the natural diversity of abilities in a class of students, the number dropped to 149.

Accurate and widescale information about learning outcomes, disaggregated by disability, will become available over time as the Student Learning Profile disability identification process is scaled up and results are entered into DAPODIK and the MoRA EMIS. Further work is needed to synchronise the data with other data in DAPODIK to track changes in learning achievement, enrolment, attendance and participation of students with disabilities.

What lessons have been learned in implementing the Student Learning Profile?

Findings from the trialing of teacher training in the Student Learning Profile fed directly into improvements in the profile form and within the application. Probolinggo local facilitators' reflections were mixed. Some teachers readily learned how to complete a Student Learning Profile within the one teachers' working group training session and found the application useful for filling in the data and this created enthusiasm among the teachers. The guidance matrix to assist teachers in categorising the students was also considered useful. On the other hand, some teachers had difficulty understanding how to complete the Student Learning Profile and found the sentences on the form and in the application too long. This variation in participant experience is inevitable and local facilitators followed up with mentoring in schools to support teachers and strengthen their understanding of how to use the Student Learning Profile.

Figure 15: Proportion of teachers in inclusion pilot schools who completed Student Learning Profiles (*PBS)* for their students with disabilities



Spot-check data[26] showed that all teachers in the inclusion pilot schools had developed a Student Learning Profile for students with disabilities (figure 15). In Central Lombok, 31 per cent of teachers were proficient at this and 14 per cent in East Sumba but the rest of the teachers still needed guidance. In the plans for rapidly expanding the Student Learning Profile across Indonesia, this initial support and mentoring will be vital for teachers to become competent at using this new tool. Assuming that MoEC and MoRA continue to use the Student Learning Profile in the long term, it would be a useful skill to build into teacher training institute curriculums. Not only is it useful for new teacher graduates to be able to identify disability but learning to complete the profile engenders a culture of observing students and thinking about their individual needs.

Two examples of the unanticipated use of the Student Learning Profile emerged during INOVASI phase one. The first was in Sidoarjo district, East Java, where the inclusive education working group used it to establish the number of students with disabilities in grade six and estimate the number of students who may transition to junior secondary school. This allowed for forward planning and budgeting to ensure inclusion in junior secondary schools. Transitions between school levels are common drop-out points for students with disabilities and any work to strengthen these transitions is worthwhile. The second example was in Nagekeo district in Flores where there are high rates of childhood stunting. The Student Learning Profile is being rolled out with all students to generate profiles of children's functional status and assess individual children's learning and support needs.

Despite the exciting and rapid progress with disability identification and use of the data, a number of areas need further work.

A serious limitation that needs to be noted with the 10,000 plus student dataset is that the application to enter Student Learning Profile data had a hurdle requirement that the student must first be identified in DAPODIK as having a disability. This means that students who teachers now recognise as having functional difficulties but who were not previously recorded in DAPODIK (using the impairment categorisation) could not be entered into the application. It is likely that large numbers of students with disabilities – identified by teachers now trained to observe functional difficulties in line with the ICF – cannot be registered through this application.

At the time data was collected, this hurdle was unknown to INOVASI staff who assumed that students with disabilities in the INOVASI schools could have their Student Learning Profile data entered using the application rather than doing it in paper form. This misunderstanding was identified late and created a major gap in data for INOVASI. In phase two, disabling this

[26] The spot check was undertaken mid-way through the pilots.

hurdle needs to be discussed with MoEC so that all children can be assessed for disability using the Student Learning Profile, irrespective of previous teacher classifications using impairment-based categories.

Areas for ongoing development include:

- Features of the application and the training need to be improved to encourage teachers to refer to the guidelines, ensuring they categorise disability accurately and maintain the quality of the data;
- The algorithm needs to be embedded in the SIMPKB application to mitigate the need for manual spreadsheet calculations and to enable the data to appear automatically in the MoEC planning dashboard;
- Videos and other communications materials need to be developed to socialise the Student Learning Profile and encourage its uptake; and
- The system needs to be able to accept Student Learning Profile data from new students, beyond those already listed in DAPODIK as having a disability.

5.5 Whole systems approach

Legislation, policies, financing, resource allocation, awareness raising and community involvement

How has INOVASI contributed to policy development and systems for financing and resource allocation that enable implementation of inclusive education laws and regulations?

A high order challenge in facilitating the financing and resourcing of inclusive education is ensuring that inclusive education features in MoEC's Strategic Plan (known as *Renstra*) for the 2020–2024 period. To date, this has not been achieved but it is an advocacy objective of INOVASI's sister program, TASS, that is working closely with MoEC in developing the plan.

Two examples related to INOVASI's contribution to inclusive education policy development and resource allocation are useful to examine. The first is in Central Lombok and the second in East Sumba.

INOVASI supported an extensive multi-stakeholder process to develop the *Central Lombok Regency Inclusive Education Roadmap (2019–2021)*[27] which is a reference for the regional government, the house of representatives, the education office, the education unit and other stakeholders. It is a key tool in expanding inclusive education beyond pilot areas and in establishing sustained funding sources for human and other resources within existing budgetary mechanisms. The roadmap means local authorities can develop detailed action plans and mobilise resources towards inclusive education. It will also inform the education department's 2021 work plan and budget. The objectives of this roadmap are as follows:

- To increase the number of children with disabilities who access education services;
- To increase early grade students' literacy and numeracy levels, particularly in the inclusive schools;
- To increase teachers' capacity to identify and work effectively with children with disabilities;
- To increase the quality and quantity of infrastructure required for inclusive education;

[27] *Penyelenggaraan Pendidikan Inklusif di Kabupaten Lombok Tengah*

- To increase community participation in developing and implementing inclusive education;
- To provide local regulations as the legal umbrella for implementing inclusive education.

The implementation strategies to be achieved in the roadmap period, include: (i) drafting regulations and technical guidance on inclusive education; (ii) establishing an Inclusive Education Working Group[28] to ensure the roadmap is implemented, including data collection and assessment of children with disabilities; (iii) undertaking capacity development initiatives, including for teacher aides (*Pembimbing Khusus*); (iv) developing a model of curriculum and learning that focuses on learning and classroom management methods for students with disabilities; (v) supporting accessible infrastructure, assistive devices[29] and learning materials; and (vi) strengthening financial support, including providing additional funding for students with disabilities through regional school operational assistance (BOSDA) and corporate social responsibility funds.

Following the launch of the roadmap, the head of Central Lombok district issued Regulation No 31 of 2019 on implementing inclusive education. Within this regulation, article 4 states that all primary and secondary schools (including the Islamic-based schools – *madrasahs*) must implement inclusive education. Article 5 outlines the right of all students with disabilities to education according to their capacities, including in special schools if necessary. Article 6 states that inclusive schools must be supported by teachers with inclusive education competencies who will plan, implement and evaluate the learning program together with class and subject teachers. Article 7 outlines the obligations of the district authority to provide capacity building through systematic and continuous training. Articles 8, 9 and 10 state that the regular curriculum is to be applied in the inclusive schools with adjustments in the learning process and assessment depending on students' different needs and characteristics. Article 11 outlines the obligations of the district authority to guarantee availability of teachers, including teacher aides, to provide the infrastructure and funding to implement inclusive education. Article 14 highlights the responsibilities of the community and family to provide education for children with disabilities according to their needs and abilities. Family or community who neglect or prevent children with disabilities from accessing education services will be sanctioned. Article 18 outlines the strict administrative sanctions that will be imposed on education institutions that do not implement inclusive education appropriately.

Local inclusive education roadmaps can make a significant contribution and the learning from Central Lombok in this endeavour is critical in extending the process to other areas. In an effort to inform the national level of these noteworthy processes and outcomes, INOVASI invited the head of the Lombok education office to share the outcomes during an education policy parallel 'pitch' session at the national *Temu INOVASI* event in Jakarta in November 2019. In phase two INOVASI needs to prioritise support for developing inclusive education roadmaps in more districts.

The second policy-related learning comes from East Sumba. This example is useful for its complexity. INOVASI's partner, CIS Timor, significantly improved attitudes among communities, parents and local village authorities and, during the program, the village authority issued a regulation related to inclusive villages. This elicits village authorities' support in ensuring health, education, economic and social improvements for people with

[28] Known as *Pokja (kelompok kerja)*
[29] For example: wheelchairs, hearing aids, and alternative and assistive communication devices

disability. In contrast to Central Lombok's regulation, the East Sumba regulation is relatively general and does not include technical guidance on implementation, other than the requirement to provide learning media for students with disabilities, financial incentives for teacher aides and accessible school infrastructure.

A distinct challenge in implementing the regulation is that village funds can only be allocated for early childhood education services and not for primary schools. Furthermore, the district governments in Sumba are in the process of transferring authority for managing 'informal education' – that includes education for children with disabilities – from the district to the East Nusa Tenggara provincial government. According to national regulations, provincial governments are only responsible for special schools while district governments are responsible for supporting inclusive education in mainstream schools. The confusion in responsibility in Sumba has led to long delays in establishing who is responsible for education of children with disabilities and a lack of inclusive education initiatives in primary schools. Most children with disabilities have consequently slipped through the education net completely.

The East Sumba example highlights remarkable attitude changes and local village leadership support as well as lessons about the potential confusion in the roles of different levels of government and the need for high-level government coordination.

How have parents and communities' attitudes to disability-inclusive education changed?

INOVASI's disability-inclusive education largely focused on building capacity within school staff. While this is critical, it is just one aspect of successful inclusive education. An acknowledged limitation of INOVASI's pilots and an important reflection was that a proactive approach of working with families, communities and community organisations would strengthen the program in future. This lesson was highlighted clearly by the experience of INOVASI's grantee partner in East Sumba, CIS Timor, where positive attitudinal shifts resulted from their work in the community.

Interviews in East Sumba from the education partnership study (Amalia, Arsendy & Purba, 2020) indicated important changes in villages where CIS Timor implemented the inclusive education pilot. Targeted parents and community members showed greater awareness of the rights of students with disabilities, particularly the right of all children to access education. Significant change stories and interviews[30] indicated shifts in their attitudes and actions, for example: sending their children with disabilities to school; realising that children's education is part of the parents' responsibility and they need to get involved in supporting their children's learning at home; managing children at home with more patience and less violence; and some parents providing treatment and developmental activities at home through therapy and methods recommended by CIS Timor's therapist and psychologist.

Many people in one area thought that children with disabilities could only go to the special school, 90 kms away. In another village, children with disabilities did not go to school because parents were ashamed and believed their children 'would not become someone' (INOVASI, 2019b). Through the program, families who had kept their children with disabilities home started sending them to local schools. One village secretary commented:

> *'For the community here, having children with disabilities is a shameful disgrace and therefore they used to hide their children's identities. Now I'm happy and feel that this is the time to change the community's mindset and perception toward people with*

[30] CIS Timor project report and stories of change

disabilities. I explained carefully that children with disabilities also need to go to school because they have a future'

- *Village secretary, East Sumba*

As a result parents now bring their children with disabilities out of the house to meet other people and also send them to school.

Changes have also taken place in village policy. Two village heads who were interviewed indicated strong support for school participation of children with disability. One explained that:

'The village government intervened through the village fund about the (needs and situation of) people with disabilities. One of the things we do is about training, training about disabilities, and it was carried out yesterday'

- *Village head, East Sumba*

The head of a neighbouring village in East Sumba used village funds to distribute piglets to families of children with disabilities. He expected that families could sell the pigs when they were older, enabling the families to buy hearing aids, eyeglasses, wheelchairs or other assistance that their children need.

In Central Lombok attitudes to disability-inclusive education and relationships between schools and parents also changed. Previously, many parents of children with disabilities just dropped them off at the school and there was little communication with the teacher (INOVASI, 2019).

As one principal noted:[31]

'Sometimes parents were ashamed and uncomfortable to send their [disabled] children to school. But after we explained to them that each child has the right to obtain appropriate education, parents are willing to send them to schools. Even now these parents patiently wait for their children who are learning at schools'

- *Principal, Central Lombok*

5.6 Partnerships

Coordination between national and local education units, cross-sectoral coordination, participation of civil society and disabled peoples' organisations

INOVASI assisted coordination between national and local education units through its work on the *Central Lombok Roadmap for Inclusive Education*, its support to ensuring local district budget (APBD) allocation for teacher training in Probolinggo and Central Lombok districts, through the Student Learning Profile development and piloting process, and in the ongoing development of the regent's regulation in Probolinggo. An unresolved challenge with the

[31] https://www.inovasi.or.id/id/story/mengajar-anak-dengan-hambatan-belajar-di-lombok-tengah/

APBD budget generally is that it covers capacity development but not the costs of accessible infrastructure. A potential solution lies in sharing lessons from Central Lombok's roadmap about sources of infrastructure funding.

Arising from the work in East Sumba, an important strategy in achieving equitable resource allocation for students with disabilities is the pending Sumba inclusive education working group that will cover four districts. The project partner, CIS Timor, prioritised socialisation activities with a range of multisectoral stakeholders, including government personnel, to increase knowledge and awareness about the needs of children with disabilities and about inclusive education. Advocacy was targeted at the Sumba education forum (*FPPS*) that is led by the deputy regent of East Sumba and includes the regional development planning agency (*Bappeda*) and the East Sumba education office. The Sumba Inclusive Education Working Group will include the Social Welfare Department, the Women and Children Empowerment Office, and the Community Village Empowerment Office.

INOVASI also facilitated coordination and communication between district, provincial and central governments through forums such as the *Temu INOVASI* and a joint coordination meeting forum with central, provincial and district governments, plus disability organisers and several universities.

Disabled peoples' organisations and individuals with disabilities have played a role throughout the design and implementation of INOVASI's inclusion programs in various ways, for example: data gathering and discussion to inform the inclusion strategy design; participating in workshops to test and refine the inclusive education teacher training module, and to develop and test the Student Learning Profile and its guideline for teachers; training school survey enumerators on disability; being resource speakers in the local facilitators' MERL training in North Kalimantan; providing input into the disability instruments for SIPPI; working as consultants on the commissioned disability study in Central Lombok; and participating in learning and information dissemination events.

However, a key limitation in INOVASI's program was lack of a planned and structural role for disabled peoples' organisations at the implementation level in the districts and with the schools. It is acknowledged that in the pilot districts there was a lack of disabled peoples' organisations with either an orientation on education or with capacity for engagement. However, these organisations are generally strong at the national level and potentially at the provincial or district level. Networks of people with disabilities in districts or villages are emerging but they often lack experience, organisational capacity and expertise. Development programs need to see local disabled peoples' organisation capacity development as part of the work of strengthening networks and systems to improve the quality of life for people with disabilities. Budget lines should be included to support this capacity development.

Strategic partnerships

At the local level, the experiences in Probolinggo in developing the regent's regulation, in Central Lombok with the roadmap and with the pending Sumba inclusive education working group highlighted the centrality of developing partnerships between a wide range of stakeholders to achieve inclusive education. Given the size of the task of developing inclusive education systems, as well as supporting the large numbers of out-of-school children with disabilities to overcome barriers, the enterprise clearly requires a consortium of active stakeholders.

At a national level, MoEC is helping to synchronise programs with the Ministry of Villages, Development of Disadvantaged Areas and Indonesian Transmigration to identify out-of-school children with disabilities, and with the Ministry of Social Affairs to coordinate with

social protection services for people with disabilities and their families. Additionally, the recently launched government program '*Organisasi penggerak*'[32] (local organisations), aims to increase literacy and numeracy achievements including in schools that implement inclusive education.

MoEC has also begun to expand another essential area of work – developing cooperative partnerships with training institutions and universities, including: the Indonesian Education University, Surabaya University, Mataram University, Padang University, Jakarta University and Yogyakarta University.

How have grantee projects improved inclusion of students with disabilities?

The nature of INOVASI's grantee process means that CIS Timor's project proposal in East Sumba could include a variety of strategies that were not in the INOVASI-led pilots. This provided some critical lessons. One lesson was that community awareness programs, working with village stakeholders and training parents in the communities surrounding schools can effectively increase access to education for students with disabilities. The grantee partnership also led to the development of additional modules and stories including a module on parenting of children with special needs, success stories about inclusive education and a video, as well as the village regulation. Whilst CIS Timor had strengths in many areas, they lacked experience in training teachers in literacy skills. This led to a solution during the second grant period whereby INOVASI trained CIS Timor staff to use the inclusive education training module.

Key learning through the partnership with CIS Timor, particularly for INOVASI's provincial staff, was that inclusive education relates to many aspects and that 'the solution is not only in the classroom'.

5.7 Effective transitions

Has INOVASI strengthened access to early intervention and support services?

Identifying disability early in children's lives gives them a better chance of achieving successful transitions into and through an educational pathway. Early intervention and inclusive early childhood education is important to maximise children's preparedness for school. This helps to improve parental and community understanding of the right to and capability for education of children with disabilities. It also increases socialisation and co-learning between children with and without disabilities at a young age and normalises the experience of inclusive education and inclusive societies.

However, INOVASI's disability inclusion strategy did not focus on early intervention and support services[33] although the pilot training modules include information about the need to link with these services. Another program funded by the Australian Department of Foreign Affairs and Trade (DFAT), KOMPAK, works on these issues but the location of the project areas did not overlap with INOVASI's inclusion pilot schools, meaning linking across projects was not possible. In East Sumba, INOVASI's partner organisation, CIS Timor, included therapeutic services for children with disabilities. The MERL team did not collect information

[32] https://www.organisasipenggerak.com/. MoEC has created a discussion forum for observer institutions which aims to disseminate information on the achievements of the participant institutions. These institutions are yet to be selected.
[33] Support services include: therapies, audiology and vision services, orthopaedic, child and educational psychology, assistive technologies, paediatric and other specialist services

on the extent to which schools had made linkages, although the WhatsApp group data from the pilot schools indicated that a small number of schools developed partnerships with the local public health service for vision screening.

More positively, some progress has been made in developing options for collecting data on younger children with disabilities. MoRA plans to collect data on children with disabilities in the early years in the *madrasahs*. Also, while MoEC has no current plan to collect data on children in kindergartens, it has opened discussions with the villages ministry and with KOMPAK, TASS and INOVASI on collecting data on out-of-school children with disabilities.

Future work priorities must include supporting processes to identify children with disabilities who are out-of-school and of pre-school age, and efforts to increase access to early intervention and connect with health and community services.

What factors impact transition pathways for students with disabilities?

The commissioned research in Central Lombok explored the critical challenge related to transitions from primary to secondary school (INOVASI, 2019). Many students with disabilities drop out at this point of transition due to a number of factors, for example:

i. Secondary schools are often much further from home than primary schools creating a challenge for students with disabilities who face inaccessible transport options and the distance, logistics and cost of getting children to school can be too much for busy, working parents;
ii. Some children have conditions that require medical treatment that may disrupt daily schedules and school attendance;
iii. As the level of complexity of learning content in secondary school increases and if teachers are not trained in inclusive pedagogy or do not have time or support to adapt learning plans and develop learning media, learning can become too difficult for some students with disabilities; and
iv. Adolescence, together with the transition to secondary school, is a challenging time socially for many children, irrespective of disability. Bullying can escalate and teachers may not be able to mitigate the effects on students with disability as much in secondary school as they could in primary school.

The other transition pathway that requires further consideration is between special schools and mainstream schools. It is recommended that in phase two INOVASI prioritises transition pathways both in programming and in MERL activities to ensure these points in the educational journey are not points of exclusion for students with disabilities.

5.8 Limitations

This study had a number of limitations important to note.

Firstly, the sample sizes are small and so findings should be interpreted conservatively, particularly in comparing the three district pilots. The effort to triangulate various data sources helps to overcome this limitation to some extent.

The study did not include methods to explore particular education challenges common to certain types of disability. Further work would be useful, for example, in relation to how students with dyslexia (a highly prevalent but frequently undetected disability) are faring with current approaches to literacy.

In the SIPPI analysis, the control group included INOVASI schools that had not had the inclusive education pilot modules. However, all pilot training courses had some degree of inclusion built into them. This meant that comparison results appear somewhat diluted as the control schools were not representative of many regular schools in Indonesia that have not had any inclusion training at all.

The methods used to identify disability in INOVASI's first SIPPI baseline survey did not accommodate comparisons of data across the entire INOVASI SIPPI dataset, that is, beyond the inclusion pilots. For phase two, this facility would make it possible to track learning improvements among students with disabilities in all of the pilots – literacy, numeracy and so on.

6 Implications for policy, practice and programming

Chapter 5 identified numerous effective strategies for inclusive learning, including: using differentiated instruction as a core approach; simplifying the teacher training materials used in teachers' working groups and building in opportunities for practical application; investing in multi-stakeholder policy development work such as the Central Lombok roadmap for inclusive education; working with village leaders, parents and community stakeholders; considering the financial mechanisms and incentives for inclusion; and interrogating where disability data and definitions create barriers and how they can be made into enablers.

The findings also highlighted areas that did not work well in the efforts towards inclusive education, such as: failing to proactively use and strengthen the work of disabled peoples' organisations and Disability Service Units in supporting the inclusive schools; designing pilots around improving teacher skills without couching this in a broader approach to address most children with disabilities who are out of school; underestimating the need for appropriate definitions of disability and methods that work for teachers; requiring teachers to identify students with disabilities without considering core teacher (lack of) competence;[34] overlooking the gaps in the system and teachers' capacity to implement assessments inclusively; and failing to build the capacity of principals that would ensure access to existing resources and greater support for teachers.

This chapter reflects on the practical implications of these findings for policy, practice and programming and offers various recommendations arising from this study. A list of detailed recommendations is provided in annex 5.

Being welcome to participate

The data showed impressive improvements in learning outcomes among students with disabilities in the INOVASI pilot schools. Before assuming we need to probe nuanced dynamics of precisely which teaching methods work for which types of disabilities, we need to acknowledge that this improvement may relate more to an overarching sense of being welcome to participate. When students with disabilities are enabled to contribute, when their (occasionally small) achievements are recognised and valued, when teachers smile encouragingly instead of using derogatory terms and when their peers support them instead of bullying them, children thrive and engage in learning. When children with disabilities feel comfortable and not afraid of raising their voices to answer questions, learning can take place. Importantly, in classrooms where all efforts are welcomed by teachers, students without disabilities also thrive.

Teacher capacity development

In general, Indonesian teachers in the workforce and those graduating from typical teacher training courses have not been equipped with adequate knowledge or skills for successful disability-inclusive education. Additionally, special education teachers are scarce and most schools do not have access to teachers with this training.

[34] This relates to the failed attempt in the first Central Lombok pilot when teachers were identifying many children as having disability, when they were simply struggling to learn because of poor teaching competence.

Universities and other teacher training institutions have a critical role in building inclusive education skills within Indonesia's teaching workforce. Graduates of all teacher training courses need to have core skills of disability inclusion and greater numbers of specialist teachers need to be trained to support a successful system. Partnerships between district governments and universities have helped raise awareness and interest in inclusive education, provided important practicum placements for student teachers, supported schools, increased research in the field and provided in-service inclusive education training. If MoEC and MoRA continue to use the Student Learning Profile to identify children with disabilities and their learning and support needs, it would be a useful competency to include in teacher training institute curriculums. Teachers' courses would be further enhanced through partnerships between universities and disabled people's organisations. Disability awareness and rights training is generally most effective when undertaken by people with lived experience of disability. The opportunity for student teachers to hear stories and to ask questions of people with disabilities can be pivotal in creating supportive and understanding attitudes that are critical for inclusive education.

The national institution responsible for building special education knowledge and competencies is the Centre for Development and Empowerment of Educators and Education Personnel for Kindergarten and Special Education (*P4TK TKLB*).[35] Despite an impressive array of courses,[36] including online methods, the sheer size of the task of building capacity across all of Indonesia's schools and early childhood education settings appears to be at the heart of the challenge. This was evidenced by this study's findings – only a tiny proportion of mainstream teachers had ever received training in education for children with disabilities and the two teachers who had, had attended a single workshop.

Another factor that may diminish the effectiveness of current training approaches is the technical nature of the courses. Many training materials on special education include a lot of theoretical material that is hard to apply at scale, given teachers' limited professional development time. This approach also relies on the availability of people who can be in-school mentors to convert the theoretical content into practical classroom application. This study shows that simplified teacher training modules designed to take knowledge straight to classroom practice can achieve better teaching practices and learning outcomes for children with and without disabilities.

It is important to take into account the spread of inclusive education skills across *types* of teachers and the dynamics that enable or prevent them sharing that knowledge. Central Lombok created a challenge by investing in specialist inclusive education training for honorary teachers. The training could not be accredited as regular teaching hours and so regular teachers were reluctant to leave the classroom to attend this training. The problem arose when the honorary teachers were transferred to other schools, taking the inclusion capacity away with them. This highlights the need for training approaches (a) that recognise all teachers as eligible for continuous professional development and (b) that are simple and scalable enough for the target audience to include 'all teachers'. If all teachers have a base

[35] https://tkplb.kemdikbud.go.id/

[36] *Blindness, Deafness, Developmental/Intellectual Disabilities, Autism, General disabilities, Training for Alternative and Augmentative Communication Development for Children with Compound Obstruction of Vision, Child Growth and Development Detection (Bidang Tunanetra, Bidang Tunarungu, Bidang Tunagrahita, Bidang Tunadaksa, Bidang Autis, Diklat Pengembangan Komunikasi Alternatif dan Augmentatif bagi Anak dengan Hambatan Majemuk Penglihatan, Diklat Deteksi Tumbuh Kembang Anak,etc)*. https://file-p4tktkplb.kemdikbud.go.id/Katalog/PLB/mobile/index.html#p=2

level of knowledge on inclusive education, the risks of building all the skills in one staff member will be mitigated.

Mentoring

Another implication from the findings relates to the importance of skilled and regular mentoring visits to teachers in general but also particularly between teachers' working group learning sessions during an inclusion training module. It is vital that as teachers are learning new skills and techniques, they can talk through initial challenges and queries *in situ* as they try to apply them. MoEC and the Centre for the Development and Empowerment of Educators and Educational Personnel (*P4TK TKLB*) are planning to work closely with provincial and district governments to appoint local resource people as mentors (*guru penggerak*) and to use teachers' working groups as the medium for the training. The mentors could potentially come from a variety of sources, depending on the context. For example, they may be staff from the Disability Service Units, trained supervisors or staff from nearby special schools. It may also be useful to network with the non-government sector to establish whether there are experienced organisations in the area, and to link with disabled peoples' organisations that may provide useful advice on specific areas. Universities with special and inclusive education courses in the area may also be a source of mentors.

The importance of differentiated instruction

For most teachers, skills for inclusive education need to start with core competencies simply focused on differentiated instruction approaches based on students' capacity and learning support needs. If teachers apply this core competency, most students with disabilities will immediately feel the benefits. However, teachers require support to master such skills such as differentiating instruction and adapting lesson plans.

This study showed that INOVASI's literacy teacher training modules resulted in effective differentiated teaching. Future improvements to the disability inclusion training modules could include incorporating the methods used in the literacy pilots. INOVASI's numeracy module may also benefit from an addendum providing techniques to enable children with sensory and movement disabilities to access the numeracy activities.

Equally important is to ensure teachers' competencies in literacy and numeracy where needed, as a precursor to their training in disability inclusion. An important lesson during INOVASI was that teachers assumed that children who were struggling to learn must have a disability. The reality was that many of the teachers themselves had low literacy and numeracy competencies and, once their literacy teaching skills were improved, they realised that many of the students did not actually have disabilities.

Specialist skills

While general inclusive education skills such as differentiated instruction are critical, this does not negate the need for specialist skills to support teachers in meeting the varied needs of students with disabilities. Once teachers are working inclusively and have begun to see progress in their students, the question often arises about how to provide more specific support for some students. Examples of additional specialist skills that schools need access to are: sign language; augmentative and alternative communication; positive behaviour management; learning techniques and media that support students with vision impairments (particularly with mathematics); specific skills related to identifying and supporting students

with dyslexia; as well as teacher aides with experience in disability-inclusive education. In future, INOVASI should strengthen its working relationship with the Disability Service Units and facilitate linkages between inclusive schools and these critical resources.

Resources for teachers

A valuable contribution to teacher resources would be a disability-inclusive education handbook for teachers using practical content and simplified theoretical information to ensure it is accessible for teachers with limited knowledge on disabilities. This is a priority and lessons from this study highlight some of the content requirements. In addition to information and examples on general inclusion skills, the study findings support the plan for the handbook to include disability-specific chapters for each major area including: difficulties in seeing, hearing, speaking, moving, thinking (intellectual functions), specific learning disabilities such as dyslexia, as well difficulties with behaviour, attention and emotions. Additionally, teachers requested more information on managing severe educational barriers and developing student skills for independence and communication. Feedback from the local facilitators during training highlighted the benefit of each handbook chapter incorporating multiple examples of disability-specific Individual Learning Plans (*PPI*). The study also showed the benefits of teacher resources that provide examples of adapted lesson plans (*RPP*) linked to the curriculum and clear documentation of how to implement *Government Regulation No 13 of 2020 on reasonable accommodation for students with disabilities*[37] in relation to assessments.

Principals and supervisors

The study highlighted the importance of developing working group (*KKS*) training materials for principals and supervisors to strengthen their roles in enabling disability-inclusive education. The content should include: how to apply relevant laws and regulations, including the stipulation on reasonable accommodation;[38] how to use existing funding streams, such as BOS funds, to access support for infrastructure upgrades to improve accessibility; staffing requirements, including how to maximise teacher aides for inclusion; networking with health, social welfare, disabled peoples' organisations and other civil society services; collaborating with communities, village structures and parents; mentoring teachers and facilitating teacher reflection and support groups for inclusion; and how to keep DAPODIK or the MoRA education management information system up to date and accurate.

Disability identification and data systems

A critical issue to understand in relation to Indonesia's inclusive education reforms is the centrality of defining disability and the methods for determining disability. Section 2.1 of this report referenced varying estimates on the numbers of children with disabilities out of school.

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[37] *Peraturan Pemerintah Nomor 13 Tahun 2020 Tentang Akomodasi Yang Layak Untuk Peserta Didik Penyandang Disabilitas*. Available at https://www.hukumonline.com/pusatdata/detail/lt5e58e75eac3e8/node/534/peraturan-pemerintah-nomor-13-tahun-2020#

[38] Government Regulation Number 13, 2020 regarding appropriate accommodation for students with disabilities (*Peraturan Pemerintah Nomor 13 Tahun 2020 Tentang Akomodasi Yang Layak Untuk Peserta Didik Penyandang Disabilitas*) https://www.hukumonline.com/pusatdata/detail/lt5e58e75eac3e8/node/534/peraturan-pemerintah-nomor-13-tahun-2020#

If a mild definition of disability is used, the ratio of in-school to out-of-school children with disabilities will be higher than if disability is only defined to include severe levels of difficulty. This has implications for planning and the potential for error, both for the education sector and for social welfare and community-based services. A key area for collaboration is to establish consistent disability definitions between MoEC, MoRA, the national Bureau of Statistics (BPS) and other partner agencies. The national Bureau of Statistics uses the Washington Group approach to measuring disability that is also the basis for the Student Learning Profile. The statistics bureau figures need to be drawn from the Washington Group Child Functioning Module (rather than the adult module) and consistent response category cut-offs must be applied across the datasets being compared.

This study highlights the contribution that INOVASI and TASS have made through their work on the Student Learning Profile. The education management information systems of two vast ministries can now potentially inform appropriate channelling of funding and resources as well as help monitor and evaluate policy development efforts and implementation. However, while the levels of uptake and momentum for scaling up the use of the Student Learning Profile have been exciting, we need to add a note of caution. Sustained effort is required to ensure this major system reform succeeds. Commitment is also needed to thoroughly analyse data, cross-check findings with samples of students in different contexts and language groups, refine the system (including the algorithm) accordingly, then socialise, embed and ensure its application is maximised. Introducing a system that is sophisticated enough to base funding decisions on brings the responsibility to ensure that some children are not wrongfully excluded. INOVASI, TASS, DFAT, MoEC and MoRA must continue to prioritise efforts to ensure the success of this system.

As our findings showed, without an effective, evidence-based approach to identifying disability, teachers can be quick to label students incorrectly and subsequently pay less attention and provide inadequate learning support to those students. Building capacity to identify disability among students has to go hand in hand with teacher competencies in subject teaching methods and in inclusive methods such as differentiated instruction. When teachers understand that students normally learn at different paces and in different ways, they realise that disability is not the only explanation for a child not learning effectively. While it is critical to build teachers' capacity to identify disability, there are risks with rolling out substandard approaches for this – there is likely to be a spike in false positive disabilities reported. To successfully identify disability, teachers must improve their own skills in teaching literacy and numeracy, recognise the natural diversity of learning abilities and styles, and be able to use a standardised evidence-based approach to identifying disability, such as the Student Learning Profile (*PBS*).

Inclusive education reforms – it won't happen overnight

Despite many encouraging results from the INOVASI inclusion pilots, there were also less positive findings: some students with disabilities did not participate in class; teachers reported various challenges and concerns; principals rarely discussed inclusion with teachers; the uptake of inclusive teaching skills, such as using cooperative learning, was mixed; and ongoing confusion among some government officials was evident about who is responsible for educating children with disabilities. This highlights the major system reform required for inclusive education and the sustained commitment required on many levels. It is clear from this study that deep and effective change, where 'education for all' means children with disabilities fully engaged in and effectively learning, will take more than a six-month pilot period.

Furthermore, inclusive education needs to be approached comprehensively. Building skilled teachers is an essential element but this has to be backed up with other change levers. The findings showed that in the absence of a direct focus on it, accessible infrastructure work did not happen. Unless principals are engaged, aware of the priorities and the mechanisms for funding, and motivated to put efforts into this, change will be limited.

Leadership and policy development

Leadership is vital in progressing inclusive education. The study highlighted a policy development process in East Sumba that drove important action through local leaders becoming inspired. Through their engagement in the issue during the pilot, village leaders took action that resulted in significant and positive outcomes for disability inclusion.

The study also featured an important leadership example in the head of the district education office in Central Lombok who has been an advocate for inclusive education over many years. This continued leadership has been catalytic in achieving sustainable reforms such as the development of the pivotal and comprehensive *Central Lombok Regency Roadmap for Inclusive Education*. This lays the legal foundation for an inclusive budget structure and mandates a wide range of actions necessary for inclusive education. The work of the multisectoral Inclusive Education Working Group is essential to ensure progress by all relevant parties in the actions outlined in the roadmap. Future work should include disseminating the Central Lombok roadmap as a useful example for other districts, facilitating communication between peer education leaders to motivate change in other districts and supporting the multisectoral collaborative processes required to develop these key policy tools.

Embedding inclusive education in MoEC's strategic plan would strengthen the reforms required to ensure quality education for children with disabilities.

The study brought together a variety of ways that INOVASI successfully partnered with disabled people's organisations throughout the program. However, it also emphasised a key shortcoming in the lack of a planned and structural role for these organisations at the implementation level in the districts and with the pilot schools. In future, it is recommended that local disabled peoples' organisations are identified as partners. Where required, mutual design of a capacity development approach should be undertaken, acknowledging the possibility of limited experience in the disabled peoples' organisation staff in some areas. Budget lines should be included to support this capacity development.

Out-of-school children with disabilities

INOVASI tried to improve access to quality education for children with disabilities but a critical limiting factor in this endeavour was the focus on in-school improvements. Efforts to address the factors that cause so many children with disabilities to be out of school were excluded from the program due to this focus on schools.

Drawing on these lessons and on INOVASI's relative advantages, INOVASI and TASS can contribute significantly to meeting the needs of out-of-school children with disabilities through their experience in identifying disability and including disability within data systems. Efforts are underway to conceptualise how to adapt the disability identification process to suit the community context and to fit within emerging data systems of other ministries and agencies. Close communication with the statistics bureau is vital to ensure disability definitions are consistent so population estimates of children with disabilities are useful in gauging how

comprehensive the identification processes are. Partnering with disabled peoples' organisations for this work on identifying out-of-school children with disabilities has obvious advantages.

Another vital improvement is to link with organisations that work in inclusive early childhood education. Similarly, strengthening access for young children with disabilities (of pre-school age) to early interventions and other community and health services will give them the best chance of succeeding once they get to primary school. Establishing partnerships with these agencies must be part of an inclusive education approach. Future work priorities need to include supporting processes to identify children with disabilities who are out of school and those of pre-school age, and to increase their access to early intervention and connection with health and community services.

The transition between primary and secondary school is a point when many children with disabilities end up out of school. INOVASI needs to work with MoEC and district education partners to devise locally-relevant strategies to: monitor children at risk of dropping out; prepare secondary schools for inclusive education; and ensure that examination processes are inclusive and give children with disabilities a fair chance of graduating to secondary school.

Intersectoral collaboration and partnership

Achieving successful disability-inclusive education is complex due to the diverse issues that contribute to the challenge. Consequently, success requires intersectoral and multi-stakeholder collaboration and coordination. National, provincial and district governments all have a role, as do: universities, community institutions and communities; health and social welfare services; civil society and disabled peoples' organisations; parents and parent groups; special schools; Disability Service Units; religious organisations; assistive devices services; local and international non-governmental organisations; development partners and partner programs; the media; and transport services.

A valuable lesson learned during INOVASI phase one was the unexpected and beneficial lessons learned by funding inclusive education through grantee partners. Enabling creative and contextually-specific approaches to inclusive education in phase two is highly recommended.

Communication

A number of areas requiring communication products and activities arose through the study. Firstly, there are many laws, regulations and policies that define inclusive education and outline who is responsible for various aspects. For many stakeholders this may appear complex, legalistic, challenging and time consuming to sift through and integrate the different layers of policies.

The study showed confusion among some stakeholders in relation to: whether inclusive education was only relevant for certain disability types; the difference between provincial and district responsibilities; and the differences between special and inclusive education. These confusions resulted in children with disabilities falling through the net. Future work between INOVASI, MoEC and MoRA should include collaborating to develop clear communications to explain these issues in plain language. Additional work between these stakeholders should

focus on updating MoEC's *General guidelines for the implementation of inclusive education*[39] to incorporate implications from the more recent Law No 8 of 2016 on disability[40] and Government Regulation No 13 of 2020 regarding reasonable accommodation for students with disabilities.[41]

Additionally, campaigns and materials to raise general awareness about the right to education and the capability of children with disabilities are important to identify and amplify, or if they do not already exist, to develop and implement. The data from this study provides useful evidence of how capable children with disabilities are of achieving strong learning outcomes and how children without disabilities also improve when they are in inclusive classrooms.

Additional communication work should include: (i) clear and simple guidance for principals on how to access funding for accessible infrastructure and other resources; (ii) locally-developed communications products around how to access local referral services, assistive devices, vision and audiology services, and so on; (iii) products to support the scale-out of the Student Learning Profile; (iv) information explaining to teachers, principals and district education officers how learning assessment tasks and examinations can be made inclusive; and (v) products to explain the role of Disability Service Units, specialist teachers, teacher aides and special schools in supporting mainstream schools to be inclusive.

[39] *Pedoman Umum Penyelenggaraan Pendidikan Inklusif (Sesuai Permendiknas No 70 Tahun 2009)*
[40] *Undang-Undang Republik Indonesia Nomor 8 Tahun 2016 Tentang Penyandang Disabilitas*
[41] *Peraturan Pemerintah Nomor 13 Tahun 2020 Tentang Akomodasi Yang Layak Untuk Peserta Didik Penyandang Disabilitas*. Available at https://www.hukumonline.com/pusatdata/detail/lt5e58e75eac3e8/node/534/peraturan-pemerintah-nomor-13-tahun-2020#

Annexes

Annex 1: Detailed description of the methods used in this study

Quantitative studies

Pre and post pilot survey – teacher attitudes, concerns, knowledge and confidence regarding disability-inclusive education

Each inclusive education pilot had two tests, one administered before the pilot implementation (pre-test) and one that was given to teachers after all the teachers' working group (*KKG*) training was complete (post-test). Both tests used a similar instrument based on the content of the pilot module and what changes were expected from teachers. The table below shows the categorisation of items in the instrument that was also used as a framework for analysis.

Part	Domains	Number of questions	Type of questions
1	Identity	5	Open questions
2	Teachers' attitude towards inclusive education	11	Closed questions with 5 Likert scale
3	Teachers' concerns about inclusive education	12	Closed questions with 4 Likert scale
4	Teachers' knowledge of inclusive education module	7	Multiple choice
5	Teachers' self confidence to implement inclusive education	9	Closed questions with 6 Likert scale
6	Background and demographic	8	Mix of both open and closed questions

Data was collected manually using a printed instrument. The process was facilitated by the INOVASI team in the implementing districts, Central Lombok, East Sumba and Probolinggo. Facilitators then sent teachers' responses to the Jakarta MERL team through an online form. Data cleaning was performed and analysis undertaken using the framework. This test enables us to treat scores as: (1) individual scores on each item; (2) cumulative scores on each domain; (3) cumulative scores on all domains.

SIPPI: baseline – endline surveys

SIPPI is the *Indonesian education and learning innovation survey* used for baseline and endline data from a representative sample of INOVASI schools. It covered 75 per cent of the inclusion pilot schools and assessed three teachers per school. The instruments included the students' tests (mathematics, Bahasa Indonesia and a Raven test that measures students' innate ability, similar to an IQ test), a students' survey, a parents' survey, a teachers' survey, teachers' classroom observations, teachers' subject matter test, school principals' survey, school supervisors' survey and school facility observation. Independent research institutions implemented SIPPI with training and monitoring by INOVASI's MERL team. Enumerators

were trained for five days and every field team included local and non-local enumerators. Details of data collection for the inclusion partnership are outlined here:

Pilot	# schools in SIPPI	Baseline	Endline	Control schools
1st round pilots				
Central Lombok (inclusive literacy, implemented by INOVASI)	2	March–May 2018	August–September 2019	Bulungan (6 schools, intervention in both phases)
East Sumba (Implemented by partner CIS Timor using their own program design)	5	September–October 2018	May–June 2019	
2nd round pilots				
Central Lombok (implemented by Mataram University using INOVASI pilot methods and materials)	10	August–September 2019	January–February 2020	Sumbawa[42] (6 schools, Numeracy 2)
East Sumba (through CIS Timor, using INOVASI materials)	5			East Sumba[43] (4 schools, Multigrade)
Probolinggo (inclusive education, implemented by INOVASI)	5			Probolinggo (6 schools, Literacy 2 and Multigrade pilots)

Of the 42 schools involved in INOVASI inclusion programs, 30 schools were randomly selected to participate in the SIPPI, including 912 panel students and 97 panel teachers. The teachers and students who participated in the SIPPI in the inclusion pilots were from grades one to six.

[42] Sumbawa is the most similar regency in West Nusa Tenggara to Central Lombok in terms of socioeconomic status and results on the student learning assessment testing.
[43] Multigrade schools were chosen as controls (instead of Literacy 2 schools) because they also included not only early grade students.

Table 7: Sample characteristics from the inclusion schools involved in the SIPPI

	All	Female	Male
Schools	30	-	-
Teachers	97	75	22
Students	912	404	508
Students with disability	45	12	33

Spot check

The spot-check assessment was undertaken in all of the second round inclusion pilot schools, in the middle of the pilot implementation period, sampling one teacher per school. It contains two main parts. The first, common to all types of INOVASI pilots, not only inclusion, seeks to identify changes that occur at school and teacher levels, mainly focusing on learning atmosphere and teacher–student interaction. The second part looks at pilot-specific changes. Spot-check items were mostly closed-ended questions but did include a small number of short answer questions. The data collection was undertaken by project facilitators and done through class observation and interviews. In the classroom observation process, one teacher in one sample school was randomly selected to be observed.

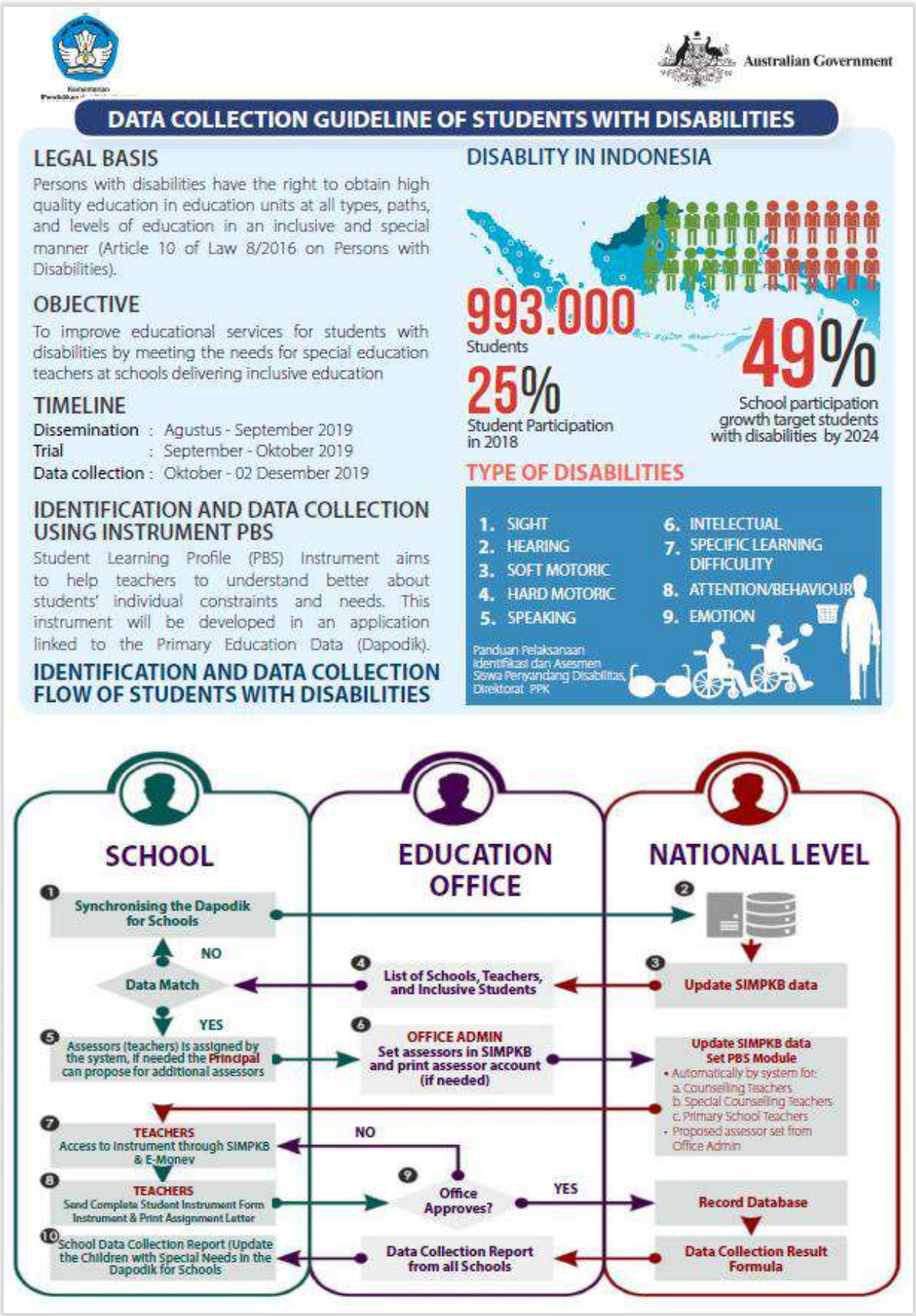
Sample description – across INOVASI, the spot check was undertaken in 293 schools, with a total of 6,293 students enrolled in the classes sampled (2,976 girls and 3,317 boys). The attendance rate during the spot check was 85 per cent (female 85 per cent, male 84 per cent). The spot check was undertaken in 27 inclusion pilot schools, with a total enrolment of 199 students in the sampled classes (female 86, male 113). The attendance rate during the spot check was 80 per cent (female 81 per cent, male 79 per cent).

Annex 2: Spot-check data referred to in the findings – curriculum, pedagogy and assessment

Spot-check questions	Inclusion pilot districts			Combined Inclusion (n=27)	Non-inclusion pilots	
	Central Lombok (n=13)	Probolinggo (n=5)	East Sumba (n=9)		Literacy 2nd round pilot (n=47)	Numeracy 2nd round pilot (n=30)
Does the teacher mentor students who have functional difficulties?						
Yes, very well	8%	40%	11%	15%	-	-
Yes	92%	40%	44%	67%	-	-
No/Less	0%	20%	44%	19%	-	-
Do teachers create documented learning plans for students who have functional difficulties?						
Yes, proficiently and independently	38%	0%	0%	19%	-	-
Yes but still needs guidance	54%	60%	56%	56%	-	-
No, not yet	8%	40%	44%	26%	-	-
Does teacher use learning media and organise classes appropriate to student function?						
Yes	100%	60%	22%	67%	-	-
No/Not yet	0%	40%	78%	33%	-	-
Are learning materials varied for students who have functional difficulties?						
Yes	62%	40%	0%	37%	-	-
No / Not yet	38%	60%	100%	63%	-	-
Does the teacher organise classes so that student activity is facilitated in the classroom?						
Yes	69%	80%	56%	67%	-	-
No/Not yet	31%	20%	44%	33%	-	-
Does the teacher use media and learning aids to explain what s/he is teaching? **						
Yes	69%	40%	11%	44%	86%	97%
No	31%	60%	89%	56%	14%	3%
Does learning involve group assignments?						
Yes, there are group assignments with different tasks between groups	15%	0%	0%	7%	42%	3%
Yes, there are group assignments but with the same task	69%	100%	11%	56%	28%	91%
No group assignments	15%	0%	89%	37%	30%	6%
Does the teacher give different assignments according to students' learning needs?						
Yes	42%	40%	0%	27%	66%	3%
No	58%	60%	100%	73%	34%	97%
Does the teacher give the same task to all students but gives more attention to students with greater learning need?						
Yes	92%	80%	67%	81%	71%	53%
No	8%	20%	33%	19%	29%	47%

** There were no significant differences between male and female teachers in most items, except for use of media and learning aids to explain what they are teaching. This is done by 85 per cent of female teachers and only 58 per cent of male teachers.

Annex 3: Flyer used to promote uptake of the Student Learning Profile application across Indonesia



9 COMPONENTS

OF COLLECTING DATA OF STUDENTS WITH DISABILITIES IN SCHOOL

IDENTIFICATION OF TYPES OF DISABILITIES

Referring to Washington Group Discussion and Special Education Guideline of the Ministry of Education and Culture

SPECIAL AID TOOLS

Tools currently owned for all types of disabilities and
Tools needed by all types of disabilities

MOBILITY WITHIN THE SCHOOL

Required school accessibility

STRENGTHS AND SKILLS

Students' academic performance and other social skills

LEARNING AND SUPPORT

The needs of special education teachers at school
Learning adaptation for students with disabilities

HEALTH INFORMATION (DIAGNOSIS AND TREATMENT)

Completing students' health records

OTHER INFORMATION

General information within the family

TEMPORARY CONCLUSION

INDIVIDUAL LEARNING PROGRAM

Adapting learning program with students' specific needs

ZONING-BASED INCLUSIVE NEW STUDENT ADMISSION

The result of inclusive mapping is shared with the government of the relevant area of the Original School and Potential Destination Schools
Establishing Inclusive PPDB committee consisting of teachers/principals of the Original School and Potential Destination Schools
Students with disabilities have begun to be informed and introduced to potential destination schools and facilities that can be used in the intended schools.
Admission process is done 'proactively' by potential destination schools.

This Information is distributed through the cooperation between the Ministry of Education and Culture (Kemendikbud) and the Australian Embassy through the Technical Assistance for Education System Strengthening (TASS) and INOVASI programs.

#PendidikanInklusif

Detail Information:
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Or login to SIMPKB application
http://gtk.belajar.kemdikbud.go.id
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TASS Technical Assistance for Education System Strengthening

INOVASI Inovasi untuk Anak Sekolah Indonesia

Annex 4: Data collection of students with disabilities in schools delivering inclusive education

EXECUTIVE SUMMARY

KEMENTERIAN PENDIDIKAN DAN KEBUDAYAAN

Australian Government

Data Collection of Students with Disabilities in Schools Delivering Inclusive Education

SUMMARY

The number of regular schools delivering inclusive education at all educational levels, both primary and secondary schools, is increasing. This is evidence of the government's commitment, both at the national and local levels, to achieve education for all students, particularly for students with disabilities. The implementation of school zoning system unlocks the opportunity for children with special needs to go to school in the ones close to their home or neighborhood.

The high number of students with special needs in regular schools or schools delivering inclusive education must surely be accompanied by the availability of corresponding services in order to achieve high quality education in school, including the availability of special counselling teachers and special education teachers, aid tools, accessible environment, and other services required in these schools.

The Ministry of Education and Culture (Kemdikbud) through its Directorate of Advancement for Secondary and Special Education Teachers (Dit. PG Dikmensus) and Directorate of Advancement for Special Education (Dit. PK) conducts an initiative to perform data collection of students with disabilities at schools delivering inclusive education, by engaging other relevant directorates, government agencies, including the Ministry of Religion (Kemenag), and universities. The data collection instrument, dissemination, and data analysis is conducted by cooperating with the Government of Australia through the TASS (Technical Assistance for Education System Strengthening) and INOVASI (Innovation for Indonesia's School Children) programs.

Law Number 20 Year 2003 on National Education System and Law Number 8 Year 2016 on Persons with Disabilities mandate the provision of quality educational services for persons with disabilities. Every citizen has the right to obtain education without being discriminated on, without looking at differences, including those with physical, emotional, mental, and intellectual disabilities. Everyone deserves to receive high quality education.

Based on Primary Education Data (Dapodik) in 2018, there are around 126,060 students with special needs accessing education at schools delivering inclusive education and 130,152 students with disabilities accessing special education at Extraordinary Schools, or 25% of the total of children with special needs are in school, including persons with disabilities.

The availability of students with disabilities data remains a challenge for the Ministry of Education and Culture (Kemdikbud). The data collection process will be continued this year. The data collection result will serve as a reference to project the needs for teachers and meet the needs for high quality education for students with disabilities.

The student data collection system uses SIMPKB (Sustainable Profession Development Management Information System) application by utilising Student Learning Profile (PBS) equipped with guideline for teacher to develop PBS, including identifying functional disability and student needs in school. This has been implemented in 2019.

This instrument is the adaptation of the Washington Group Disability (WGD) instrument and the identification and assessment instrument developed by Dit. PK in 2007. The dissemination of information and implementation of data collection are targeted in 93 areas (provinces, districts, and cities declaring their commitment to inclusive education) at primary school, junior high school, and senior/vocational high school.

From the initial data collection process, more than 10 thousand students with disabilities have been entered into the SIMPKB application. However, it is found that ±25% were not students with disabilities, even after taking out the data of brilliant students and students with special talents, indigo, and students who use drugs. In Dapodik, these are included as students with special needs.

The persons with disabilities data in Dapodik is a reference data that will be verified through PBS data entered into SIMPKB application.

Series Activities in 2019

The measure taken to acquire data with high validation is by promoting teachers to be assessors in identifying students' functional disabilities, such as determining the needs for aid tools, assistants, including counselling and/or special education teachers, and adapting the school environment to be accessible to students. The main reason to appoint teachers as assessors is that they understand more about the difficulties in the learning process and the needs that can support learning and students' behavior in the classroom. This will help the government to obtain a highly validated data spread of disability and service needs.

Student Learning Profile (PBS) Instrument Review

This instrument was used in INOVASI program's partner schools and Islamic schools in Central Lombok District, West Nusa Tenggara (NTB) Province in 2018 as well as in East Sumba District, East Nusa Tenggara (NTT) Province and Probolinggo District, East Java Province in 2019, by integrating it into one of the cluster-based teacher training module units.

In its implementation, teachers made PBS a reference in adapting Lesson Plans (RPP), including materials, learning methods, and so on, into the context of inclusive classes. The review on PBS instrument involved universities, Dit. PG Dikmen Diksus, Directorate of Basic Education, Dit. PK, disability organisations, P4TK TKLB, Education Office, relevant international organisations, and TASS Program.

Development of teacher guideline and PBS instrument

Dit. PK, Dit. PG Dikmendiksus, Directorate of Basic Education, Center for Data and Information (PUSDATIN), disability organisations, in cooperation with INOVASI and TASS programs, are preparing the initial draft of the guideline document for teachers in developing PBS.

The result of this activity is the improvement of PBS instrument and the draft of guideline for teachers in developing PBS. Dissemination is conducted through Kemendikbud's website, Dit. PG Dikmendiksus and Dit. PK, and by opening a complaint service as a space to receive inputs from the local government, teachers, schools, and the community.

Development of PBS – SIMPKB Application

Dit.PG Dikmendiksus developed the instrument and guideline for teachers to develop PBS through SIMPKB application, and conducted synchronization with Dapodik data.

SIMPKB application was also used as the government's strategy to collect data of students with disabilities. This application was also very easy to use and made it easier for teachers as assessors to complete and input students with disabilities data according to students' profile.

In the process, Dit.PG Dikmendiksus involved the SIMPKB application developer team from Brawijaya University as technical persons in charge for data synchronization, input, and analysis of students with disabilities, and also engaged Dit. PK, Directorate of Basic Education, Center for Data and Information (PUSDATIN), and INOVASI and TASS programs.

The result of this activity is a dedicated page (menu) on the data collection of students with special needs/ disabilities in the SIMPKB application both used by teachers and monitored by the Provincial, District, or City Education Office.

PBS – SIMPKB application trial

The PBS instrument trial in SIMPKB application was intended to examine the accessibility and utility of using the instrument and completion instruction, including instruction in the instrument by teachers and operators of the Education Office. This activity was conducted in INOVASI's partner districts, namely Probolinggo District, East Java Province, Central Lombok District, NTB Province, and East Sumba District, NTT Province.

During the process, local facilitators and INOVASI staff were equipped with the overview of how to use the PBS instrument in the SIMPKB demo application using dummy data. Next, facilitators and staff, along with 48 teachers from primary schools and Islamic primary schools performed trials in their respective cluster activities. Specifically for East Sumba District, INOVASI engaged a local partner, namely CIS Timor organisation, in testing this application.

Data collection program dissemination

After the SIMPKB application and guideline for teachers in developing PBS were completed, Dit. PG Dikmendiksus and Dit. PK along with INOVASI and TASS programs conducted dissemination activity to all levels of Education Office, both in the provincial and district/ city level. The forms of dissemination included:

1. **Instruction on collecting the data of students with disabilities** to all levels of Education Office, both at the Provincial and District/ City levels through a circular letter issued and signed by Directors of Dit. PG Dikmendiksus and Dit. PK.
2. **Training 03 SIMPKB Operators** at the Provincial and District/City Education Office that have declared themselves as implementers of inclusive education.
3. **Dissemination to all dikmen (secondary education) and diksus (special education) division heads,** and to Heads of Education Offices both at the Provincial and District/City levels.
4. **Training to teachers and education staff** through regional activities and using online media.
5. **Dissemination of PBS** in formal and non-formal activities at Dit. PG Dikmendiksus and PK.
6. **Dissemination through the media,** both the official Kemdikbud media and the national as well as online media.

PBS data collection

On mid-October to December 2019, Dit. PG Dikmendiksus began data collection with primary targets consisting of districts, cities, and provinces delivering inclusive education.

In a short time, the application managed to collect data with PBS instrument of +10,000 students with disabilities in more than 1,700 regular schools at the primary school, junior high school, and senior/vocational high school levels.

Algorithm formulation for PBS – SIMPKB application

One of the results found after performing analysis using the algorithm formula was 25% of +10,000 students in the data were not persons with disabilities.

Despite this result, the analysis still required in-depth examination. A more comprehensive analysis will be conducted in 2020 to provide an overview of the service needs for students with disabilities in school, including the needs for special education teachers and/or special counsellors, aid tools, adapting the accessibility of the school's environment, and planning for learning suitable for students' needs, so that a high quality education services can be attained in accordance with the mandate of Law Number 8 Year 2016 on Persons with Disabilities.

Challenge in 2020

During the data collection of students with disabilities, the following challenges were found;

01 The need to maximize dissemination activity and strategy so that the data obtained from other provinces and districts/cities can be more optimal

02 Completion of data analysis to obtain a more comprehensive information, especially the need for counselling and/or special education teachers

03 Engagement of multi-stakeholders from relevant directorates within the Ministry of Education and Culture

04 There needs to be an overview (data projection) of the number of school age children in villages that have yet to access school education, both in extraordinary schools and schools delivering inclusive education

This information is distributed through the cooperation between the Ministry of Education and Culture (Kemendikbud) and the Australian Embassy through the Technical Assistance for Education System Strengthening (TASS) and INOVASI programs.

Design: TASS & INOVASI ■ Photos: TASS, INOVASI, & freepik

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TASS Technical Assistance for Education System Strengthening

INOVASI Inovasi untuk Anak Sekolah Indonesia

Annex 5: Recommendations arising from the study

The recommendations are presented in alignment with the domains of the theoretical framework and thus the sequence of recommendations does not imply an order of priority. The recommendations have implications for a range of stakeholders, however several of them are specific to INOVASI. As suggested, an early step in phase two of INOVASI is collaboration between MoEC, MoRA, DFAT and disability stakeholders to develop a strategy delineating INOVASI's role and the role of other stakeholders in progressing these and other recommendations towards Indonesia's disability-inclusive education reform agenda.

Curriculum, pedagogy and assessment

Curriculum, pedagogy and assessment	
Manual of example Student Learning Profile (PBS), individual education plans (PPIs) and lesson plans (RPPs), with curriculum adaptations	1) Develop a resource with multiple completed examples of the Student Learning Profile with corresponding individual education plans and adapted lesson plans linked to the curriculum.
Adapted learning assessments	2) Undertake formative inquiry into how learning assessments are being made inclusive; work with universities, government and other stakeholders to develop materials to communicate and train schools in how to implement Government Regulation No 13 of 2020 on reasonable accommodation for students with disabilities[44] in relation to assessments.
Dyslexia	3) Undertake a formative inquiry into how students with dyslexia are faring with current approaches to literacy teaching. Work with MoEC, universities and other stakeholders to develop (or distribute) materials to support teachers in enhancing learning outcomes for students with dyslexia.
Supported teachers	
Practical and simple teacher training	1) Expand the program of building teachers capacity for inclusive education through simple and application-based training modules in teachers' working groups (KKG). Note the importance of teaching competency prerequisites (such as literacy teaching) before training in disability-inclusive education.
Video-based training	2) Develop video-based training materials on inclusive education to enable wider scale-out of the KKG training, including on using the Student Learning Profile, differentiated instruction, accessible infrastructure, cooperative learning, and so on.
2nd inclusive education module – impairment-specific needs	3) Complete and test the 2nd inclusive education module, focused on impairment-specific learning and support needs; include dyslexia.

[44] *Peraturan Pemerintah Nomor 13 Tahun 2020 Tentang Akomodasi Yang Layak Untuk Peserta Didik Penyandang Disabilitas*. Available at https://www.hukumonline.com/pusatdata/detail/lt5e58e75eac3e8/node/534/peraturan-pemerintah-nomor-13-tahun-2020#

Centre for the development and empowerment of educators and educational personnel (P4TK TKLB)	4) Strengthen INOVASI's collaboration with the Centre for the development and empowerment of educators and educational personnel.
Teacher training institutions	5) Expand INOVASI's collaboration with universities. Support collaborative efforts to strengthen and expand existing pre-service teacher training programs by including inclusive education into the curriculums, to enable all teacher training institutes to provide inclusive education training for all teachers.
Mandate for teachers and principals' working groups (KKGs and KKS)	6) Work with MoEC and MoRA to promote teachers and principals' working groups and supervisor forums as key institutions for improving inclusive education competence for both regular and religious schools.
Disability Service Units	7) In all pilot areas, establish connection with the Disability Service Unit to ensure access to supports for the schools.
Learning-friendly environment	
Training for principals and supervisors	1) Develop inclusive education training modules for principals and supervisors, including instructional guidelines on policies and regulations, BOS funding, specialist services, role of Disability Service Units, and so on.
BOS funding	2) Work with MoEC to develop instructional guidelines for school leaders to ensure awareness of and appropriate access to BOS and other funding.
Accessible infrastructure and learning media	3) Develop communications materials and processes to inform schools about adapting or building accessible infrastructure and providing appropriate equipment and learning resources for inclusive education. Link this to planning processes to meet minimum service standards.
Data and monitoring	
Scale up use of the Student Learning Profile	1) Continue the work between INOVASI, TASS and MoEC to improve the quality and use of data on children with disabilities in DAPODIK. Implement strategies to increase data entry. Develop videos and other communication materials to increase socialisation and uptake.
Improvements to the Student Learning Profile application	2) Enable the application to take data from children who do not have a pre-existing DAPODIK disability identifier. Improve features of the application and the training to trigger cross-checking with the guidelines, so categorisation is more accurate and quality is maintained; the algorithm needs to be embedded in the SIMPKB application to mitigate the need for manual spreadsheet calculations and to enable the data to appear automatically in the MoEC planning dashboard.
Disability data in the MoRA education management information system (EMIS)	3) Increase efforts to strengthen the MoRA EMIS with Student Learning Profile based disability data.
Algorithm refining	4) Student Learning Profile – once a broader dataset is available (not just based on pre-existing DAPODIK lists), compare the datasets to investigate how the impairment categories are being used, matched with functional data. Adjust the algorithm if required.

Improving accuracy of school infrastructure data in DAPODIK	5) Investigate the accuracy of DAPODIK data in a sample of schools in relation to school facilities and infrastructure. If required, work with MoEC to develop communications products to support principals in ensuring accurate data.
Identifying out-of-school children with disabilities	6) INOVASI and TASS to continue working with relevant government and village partners to support the identification of out-of-school children with disabilities using lessons learned from the student profile; strengthen village data systems, facilitate linkages between these and school data, design systems so the data is used to strengthen access to early intervention and other services and facilitate enrolment of children with disabilities in early childhood education.
Collaborate with the National Bureau of Statistics (*BPS*)	7) Work with the national bureau of statistics to document disability definitions used in relevant datasets, so that users of the education disability data can select relevant population data to enable comparisons and ratios.
Whole systems approach	
Strategic plan (*Renstra*)	1) INOVASI and TASS to support MoEC in incorporating inclusive education in the MoEC strategic plan.
Update guidelines for inclusive education implementation	2) Update the *General guidelines for the implementation of inclusive education*[45] to incorporate implications of Law No 8 of 2016 on disability[46] and Government Regulation No 13 of 2020 regarding reasonable accommodation for students with disabilities.[47]
Role definitions	3) Create communication tools that clearly outline the roles of different levels of government, head teachers, schools, families and communities (clarification of laws and regulations); clarify the way the provincial government, including special schools and Disability Service Units, support the district governments in the inclusive education work.
MoRA capacity	4) Expand work with MoRA to build capacity across its system, including awareness for *madrasahs* about inclusive education and methods for identifying disability.
Local government	5) Strengthen the commitment and capacity of local government, particularly in terms of budget alignment to support inclusive education implementation.
District education office	6) Strengthen the role of district education offices in: (1) implementing external and internal education quality assurance checks to monitor against the national education standards, including strengthening the monitoring system for the education process in schools as conducted by education officers and school supervisors; (2) consider developing a training module focused on the role of the offices in inclusive education implementation.
Community awareness of inclusive education	7) Develop a mechanism to disseminate information on inclusive education in stages to stakeholders and communities to increase community support and participation

[45] *Pedoman Umum Penyelenggaraan Pendidikan Inklusif* (*Sesuai Permendiknas No 70 Tahun 2009*)
[46] *Undang-Undang Republik Indonesia Nomor 8 Tahun 2016 Tentang Penyandang Disabilitas*
[47] P*eraturan Pemerintah Nomor 13 Tahun 2020 Tentang Akomodasi Yang Layak Untuk Peserta Didik Penyandang Disabilitas*. Available at https://www.hukumonline.com/pusatdata/detail/lt5e58e75eac3e8/node/534/peraturan-pemerintah-nomor-13-tahun-2020#

District government scale out	8) A core objective of phase two has to be around supporting district governments to scale out inclusive education, including supporting district planning processes; the process of developing methods towards this objective should include a PDIA approach that enables district governments to work out what they need and how they're going to get there; share the Central Lombok inclusive education roadmap as an example of useful policy development; a concomitant research process may be useful regarding how this process works effectively to enable sustainability.
Multi-stakeholder linkages	9) Strengthen linkages, collaboration and involvement of parents, communities, local organisations, village structures, district governments, schools and government in developing inclusive schools and enabling out-of-school children with disabilities to enrol.
Handbook for parents	10) Work with CIS Timor, disabled people's organisations and other relevant stakeholders to develop a handbook for parents, focused on working with children with disabilities to support educational participation and achievement.
Partnerships	
Disability Service Units (resource centres)	1) Link with or strengthen Disability Service Units / resource centres (or adapt existing resources such as early childhood centres or health clinics) to enable access to inclusive education mentors, knowledge sharing and to identify and provide specialists in the required areas.
Disabled peoples' organisations as partners	2) Local disabled peoples' organisations should be systematically involved as partners in the inclusive education work.
Disabled peoples' organisation capacity	3) Development programs need to see local disabled peoples' organisation capacity development as part of the work of strengthening networks and systems for improved quality of life of people with disabilities. Budget lines should be included to support this capacity development.
District-wide education forums	4) Build inclusive education awareness and commitment through education forums. Facilitate sharing and learning processes across districts to encourage cross-learning, including from local innovation in education.
Grantee partners	5) Work closely and regularly with grantee partners, in particular to share lessons and approaches.
Effective transitions	
Early intervention and health and specialist services	1) Facilitate district education offices and schools to establish active networks and relationships with early intervention, health, rehabilitation, assistive devices and other specialist services. Work with community, social welfare, health, religious, village and other programs to identify young children with disabilities and enable linkages to these services.
Inclusive early childhood education	2) Formative inquiry to establish existing work that may be happening to ensure early childhood education services are inclusive for children with disabilities. Work with MoEC to develop a strategy on the basis of the results.
Transition to secondary school	3) Work with MoEC and MoRA to develop (or implement existing) strategies and tools for preparing secondary schools to enrol and educate students with disabilities successfully. Work with district education offices to identify strategies and policies that will support successful transitions and reduce the rates of drop-out at the end of primary school.

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Local and national legislation

East Sumba Regulation on inclusive villages

Probolinggo Regent's Regulation on inclusive education (in preparation)

East Java Governor Regulation No 6 of 2011 on inclusive education

Central Lombok Regulation No 31 of 2019 on implementing inclusive education

Ministry of Education and Culture's (MoEC) Regulation No 70 of 2009 on inclusive education (covering kindergarten, primary schooling and junior-secondary schooling)

Government Regulation No 13 of 2020 regarding reasonable accommodation for students with disabilities

Law of the Republic of Indonesia No 8 of 2016 concerning people with disabilities. An English language version of the law is available at

Law of the Republic of Indonesia No 20 of 2003 on the national education system

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