Indonesia has urbanized rapidly since its independence in 1945, profoundly changing its economic geography and giving rise to a diverse array of urban places. These places range from the bustling metropolis of Jakarta to rapidly emerging urban centers in hitherto largely rural parts of the country. Although urbanization has produced considerable benefits for many Indonesians, its potential has only been partially realized.

*Time to ACT: Realizing Indonesia’s Urban Potential* explores the extent to which urbanization in Indonesia has delivered in terms of prosperity, inclusiveness, and livability. The report takes a broad view of urbanization’s performance in these three key areas, covering both the monetary and nonmonetary aspects of welfare. It analyzes the fundamental reforms that can help the country to more fully achieve widespread and sustainable benefits, and it introduces a new policy framework—the ACT framework—to guide policy making. This framework emphasizes the three policy principles of Augment, Connect, and Target:

- **Augment** the provision and quality of infrastructure and basic services across urban and rural locations
- **Connect** places and people to jobs and opportunities and services
- **Target** lagging areas and marginalized groups through well-designed place-based policies, as well as thoughtful urban planning and design.

Using this framework, the report provides policy recommendations differentiated by four types of place that differ in both their economic characteristics and the challenges that they face—multidistrict metro areas, single-district metro areas, nonmetro urban areas, and nonmetro rural areas.

In addition to its eight chapters, *Time to ACT: Realizing Indonesia’s Urban Potential* includes four spotlights on strengthening the disaster resilience of Indonesian cities, the nexus between urbanization and human capital, the “invisible” crisis of wastewater management, and the potential for smart cities in Indonesia.

If Indonesia continues to urbanize in line with global historical standards, more than 70 percent of its population will be living in towns and cities by the time the country celebrates the centenary of its independence in 2045. Accordingly, how Indonesia manages this continued expansion of its urban population—and the mounting congestion forces that expansion brings—will do much to determine whether the country reaches the upper rungs of the global ladder of prosperity, inclusiveness, and livability.
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Time to ACT

Realizing Indonesia’s Urban Potential

Mark Roberts, Frederico Gil Sander, and Sailesh Tiwari, Editors
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Indonesia, the world’s fourth most populous country, is becoming increasingly urban. Today over half of the population lives in cities and towns; by 2045, the centenary of Indonesia’s independence, nearly three-quarters will. Urbanization promises a better life for Indonesians: around the world, major global cities are centers of economic prosperity and desirable places to work and live. No large country has ever reached high-income status without also becoming urbanized.

Although urbanization has been, on balance, a positive force in Indonesia, the country can do more to fully reap its benefits. For every one percent increase in the level of urbanization, Indonesia’s income per capita has risen less than in other developing countries in East Asia and the Pacific. And even with over half of the population residing in urban areas, Indonesia remains a lower-middle-income country. What can policy makers do to ensure that the promise of urbanization is realized in the most effective, inclusive, and sustainable manner?

This report explores the challenges and opportunities associated with Indonesia’s urbanization. Honoring the diversity of the archipelago, the report offers a novel way of classifying the different types of urban and rural places across the country. The face of urbanization ranges from large, thriving metropolises spanning multiple districts such as Jakarta and Bandung (“multi-district metro areas”) to smaller metropolitan areas, such as Lampung (“single-district metro areas”), and even smaller towns such as Manado and Ambon (“non-metro” urban areas). Distinctions are also made between the experiences of Indonesians living and working in city centers (“cores”) and those who live on the outer edges of metropolitan areas (“peripheries”).

Drawing on a wide range of data sources, Part 1 of the report takes stock of the extent to which urbanization in Indonesia has delivered on three key outcomes—prosperity, inclusiveness, and livability. Indeed, the benefits of urbanization are tangible and substantial: urban areas are more productive and provide better access to services and infrastructure, on average, compared to rural areas. However, not all places and all people have benefitted to the same degree. The gap between rich and poor has risen within all types of places, and disparities in well-being between metro and non-metro areas remain...
large by international standards. Even within metro areas, those living on the fringes have more difficulties accessing amenities than those living in the core. Furthermore, many urban areas in Indonesia are strained by congestion forces: choked roads, polluted air and slums are common phenomena, even in some smaller cities.

While cities everywhere face challenges of congestion and inequality, good policies can help shape the future of Indonesia’s urban areas for the better. Part II of the report proposes three basic policy principles for Indonesia to leverage the promise of urbanization: Augment, Connect, and Target (“ACT”). Augment refers to expanding and equalizing access to high-quality basic services across all places, both urban and rural. Connect refers to enhancing the connections between places and between people and jobs, opportunities, and services. Target refers to addressing persistent inequalities across regions and groups of people that may endure even if the first two policy principles were fully enacted.

Key to implementing the ACT principles are institutional reforms to subnational governance and finance. These include expanding options for subnational financing to meet basic infrastructure and service needs; building local capacity to better plan, implement, and finance urban development; and improving institutional coordination across all levels of government and across jurisdictions. In addition to these reforms, specific actions in the policy areas of housing and transportation can help to spread the benefits of urbanization within and across places.

The report recognizes that no one-size-fits-all approach can tackle the challenges faced by Indonesia’s diverse “portfolio of places” and hence offers tailored advice to policymakers. Regardless of the approach, now is the time to ACT to ensure that Indonesia benefits fully from urbanization. As more and more Indonesians settle in urban areas, it will become increasingly difficult and costly to alter the trajectory of urbanization. This report hopes to help policy makers chart a roadmap of integrated, coordinated actions that will foster prosperous and livable cities that can be enjoyed by all Indonesians.

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The World Bank
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Abbreviations

ACT augment, connect, target
AP1 Angkasa Pura 1
AP2 Angkasa Pura 2
ATR/BPN Kementerian Agraria dan Tata Ruang/Badan Pertanahan Nasional (Ministry of Agrarian Affairs and Spatial Planning / National Land Agency)
BNBP Badan Nasional Penanggulangan Bencana (National Disaster Management Authority)
BPS Badan Pusat Statistik (Statistics Indonesia)
BRT bus rapid transit
BSPS Bantuan Stimulan Perumahan Swadaya (Self-Help Housing Stimulus)
CAGR compound annual growth rate
DKI Jakarta Daerah Khusus Ibukota Jakarta
EMS energy management system
FLPP Fasilitas Likuiditas Pembiayaan Perumahan (Housing Loan Liquidity Facility)
GDP gross domestic product
GHSL Global Human Settlement Layer
HCI human capital index
HRD-FP high-resource districts in favored provinces
HRD-UP high-resource districts in unfavored provinces
IFLS Indonesia Family Life Survey
INPRES instruksi presiden (presidential instruction program)
<table>
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<th>Abbreviation</th>
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<tr>
<td>KAPET</td>
<td>Kawasan Pengembangan Ekonomi Terpadu (integrated economic development zone)</td>
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<tr>
<td>KK</td>
<td>Kartu Keluarga (identification card)</td>
</tr>
<tr>
<td>KTP</td>
<td>Kartu Tanda Penduduk (identification card)</td>
</tr>
<tr>
<td>LRD-FP</td>
<td>low-resource districts in favored provinces</td>
</tr>
<tr>
<td>LRD-UP</td>
<td>low-resource districts in unfavored provinces</td>
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<tr>
<td>LSCI</td>
<td>Liner Shipping Connectivity Index</td>
</tr>
<tr>
<td>MOHA</td>
<td>Ministry of Home Affairs</td>
</tr>
<tr>
<td>PISA</td>
<td>Programme for International Student Assessment</td>
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<tr>
<td>PODES</td>
<td>Potensi Desa (Survey of Village Potential)</td>
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<tr>
<td>PPP</td>
<td>public–private partnership</td>
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<tr>
<td>Rp</td>
<td>Indonesian rupiah</td>
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<td>RPJMD</td>
<td>Rencana Pembangunan Jangka Menengah Daerah (district-level medium-term development plan)</td>
</tr>
<tr>
<td>RPJMN</td>
<td>Rencana Pembangunan Jangka Menengah Nasional (national medium-term development plan)</td>
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<tr>
<td>RT</td>
<td>Rukun Tetangga (neighborhood association)</td>
</tr>
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<td>RTBL</td>
<td>Rencana Tata Bangunan Lingkungan (local-level urban design guidelines)</td>
</tr>
<tr>
<td>RTRW</td>
<td>Rencana Tata Ruang Wilayah (district-level spatial plan)</td>
</tr>
<tr>
<td>SAKERNAS</td>
<td>Survei Angkatan Kerja Nasional (National Labor Force Survey)</td>
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<tr>
<td>SDG</td>
<td>Sustainable Development Goal</td>
</tr>
<tr>
<td>SEZ</td>
<td>special economic zone</td>
</tr>
<tr>
<td>SI</td>
<td>Survei Industri (Industrial Survey)</td>
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<tr>
<td>SIM</td>
<td>subscriber identity module</td>
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<tr>
<td>SNG</td>
<td>subnational government</td>
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<tr>
<td>SSB</td>
<td>Subsidi Selisih Bunga (Interest Rate Buy-Down Subsidy)</td>
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<tr>
<td>SSL</td>
<td>sector-specific law</td>
</tr>
<tr>
<td>SUSENAS</td>
<td>Survei Sosial Ekonomi Nasional (National Socio-Economic Survey)</td>
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<tr>
<td>TFP</td>
<td>total factor productivity</td>
</tr>
<tr>
<td>UNCTAD</td>
<td>United Nations Conference on Trade and Development</td>
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Indonesia stands as a country transformed by urbanization. When its independence was proclaimed in 1945, only one in eight Indonesians lived in towns and cities, and the country’s entire urban population stood at about 8.6 million, roughly equal to that of London today. By contrast, today about 151 million, or 56 percent, of Indonesians live in urban areas, roughly 18 times the population of London.¹

As Indonesia has urbanized, so has it climbed the ladder of development and prosperity. Since 1950, average gross domestic product (GDP) per capita has increased almost ninefold in real terms, and the average Indonesian today enjoys a standard of living far surpassing that of previous generations.² In part, a more prosperous Indonesia today is due to the productivity benefits that arise from urban agglomeration and the associated transformation from an agrarian society to one more based on industry and services.

That climb, however, has been slower and more arduous than the rapid pace of urbanization. Hence, Indonesia remains a lower-middle-income country, and although almost everyone has benefitted in absolute terms, the relative gains from urbanization have been uneven within cities and across the country. The unprecedented growth of urban areas has given rise to negative congestion forces, associated with the pressure of urban populations on infrastructure, basic services, land, housing, and the environment, that are undermining the livability of cities and dampening the prosperity gains from urbanization.

Put differently, urbanization has not fulfilled its potential to drive sustainable improvements in prosperity, inclusiveness, and livability in Indonesia. This, in turn, can be traced to a failure to adequately ACT:

• **Augment** the coverage and quality of basic services and urban infrastructure to better manage congestion forces and address large disparities in human capital outcomes both across and within places.

• **Connect** urban areas of different sizes with each other, with surrounding rural areas, and with international markets—and to connect people with jobs and basic services within urban areas—to enhance inclusiveness both within and among areas.

• **Target** places and people that may be left behind by the urbanization process to ensure that they share in the prosperity benefits of urbanization and that urban areas are livable for everyone.
To overcome these shortcomings and ensure that Indonesia gets the most out of urbanization, policy makers need to undertake bold institutional reforms and implement decisive policies to ACT. This improvement involves reforming the ways urban areas are governed and financed, with a focus on expanding options for financing infrastructure and basic services, as well as improving coordination between different levels and sectors of government and between districts that belong to a common metropolitan area. It also involves building stronger capacities to plan, implement, and finance urban development. Across the board, it will be necessary to tailor many of the policy actions required to ACT according to the type of place—for example, according to whether an urban area is a large metropolis such as Jakarta or Surabaya or a smaller, less connected urban area such as Bima.

Even though such measures provide the foundations to ACT, they are unlikely to be sufficient to connect people with jobs and services in urban areas, for which additional policies and investments are needed. These include policies to facilitate the supply of well-located affordable housing, better urban public transport, and the better management of traffic within a framework of more effective urban and spatial planning. Adequately connecting urban areas with each other, with surrounding rural areas, and with international markets will also require addressing key regulatory issues in transportation markets.

Finally, making sure that no island and no place are left behind will require Indonesia to rethink its approach to place-based policies, putting a stronger emphasis on human capital in the design of those policies. A paradigm shift in urban planning and design is also needed to ensure that all groups of society—especially women and girls, the elderly, and people with disabilities—fully benefit from all that urban areas have to offer.

To succeed, Indonesia needs to ACT now. By 2045, the centenary of Indonesia’s independence, approximately 220 million people—or more than 70 percent of its population—will live in towns and cities. Because the urban environment is difficult and costly to change once built, delays in action will risk locking Indonesia further into a suboptimal trajectory of urban development. In the meantime, policy makers can do plenty to ensure that urbanization delivers a prosperous and inclusive Indonesia of livable cities.

By 2045, 220 million Indonesians will live in urban areas

Although Indonesia urbanized rapidly in the past, its current pace of urbanization can be described as near “normal” or “typical.” In the 1980s and 1990s, Indonesia’s urbanization growth rate averaged more than 3 percent a year—faster than in other developing East Asian countries at the time, including China. Since the turn of the century, however, the pace of urbanization has begun to slow, returning close to that seen in the 1950s and 1960s. Between 1990–2000 and 2010–17, Indonesia’s pace of urbanization more than halved, lagging other countries in the region but in line with its level of urbanization. When benchmarked against the historical experiences of countries globally, the recent moderation represents a return to what can be regarded as a “typical” pace of urbanization for the country (figure O.1).

In Indonesia, the urbanization process has primarily been driven by the densification of settlements and their acquisition of infrastructure and amenities, leading to their reclassification from rural to urban, followed by the natural growth of population in urban areas. These factors accounted for more than 80 percent of Indonesia’s urban population growth between 2000 and 2010. By contrast, net rural–urban migration contributed less than 20 percent of overall urban population growth. The role of migration in explaining urban population growth is relatively small in Indonesia compared to India and especially China, where migration contributed
56 percent of urban population growth between 2000 and 2010 (World Bank and DRC 2014).

The urban transformation has given rise to a diverse and vibrant “portfolio of places” (box O.1). Today, about 57 percent of Indonesia’s urban population lives in metropolitan areas that span multiple districts (“multidistrict metro areas”) or that comprise only a single district (“single-district metro areas”). The remaining 43 percent of the urban population lives outside metropolitan areas.

The experience of urbanization can differ not just between metropolitan and nonmetropolitan areas, but even within each type of area. In multidistrict metro areas, for example, many Indonesians live in the “periphery” districts, commuting to the “core” to work and to access services. These periphery areas can be predominantly urban or rural. Outside metropolitan areas, most Indonesians live in “nonmetro rural” areas, but some also live in “nonmetro urban” areas—districts in which most of the population lives in small cities and towns that provide, for example, market

**BOX O.1 Indonesia’s portfolio of places**

Four broad types of urban and rural places can be distinguished in Indonesia (figure BO.1.1).a

**Multidistrict metro areas** are large metropolitan areas, such as Jakarta, Surabaya, Medan, and Makassar, with labor markets that cut across multiple districts, as defined using commuting flow data. A multidistrict metro, in turn, consists of the following types of subareas:

- **Metro core** corresponds to the district within the metro area that exhibits the highest average population density, except for Jakarta, where the core is taken to be Daerah Khusus Ibukota (DKI, or special capital region) Jakarta.b
- **Metro periphery** corresponds to districts linked to the core through strong commuting flows. Metro periphery districts can be either predominantly urban (“urban periphery”) or predominantly rural (“rural periphery”), where a predominantly urban district is one with at least 50 percent of the population living in urban settlements.

**Single-district metro areas** are **kota** districts with a population of at least 500,000 and average population densities that resemble those of multidistrict metro areas, but whose labor markets are largely confined within the boundaries of a single district. Examples include Palembang, Pekanbaru, and Samarinda.

**Nonmetro urban areas** are districts that do not meet the criteria to be classified as either a single-district metro area or part of a multidistrict metro area, but within which most of the population lives in urban settlements. Such districts may be either **kota** or **kabupaten**. Thirty-two of 57 nonmetro urban areas are **kota**.
Examples include Cirebon, Manado, and Mataram.

Nonmetro rural areas are nonmetro districts in which most of the population lives in rural settlements. The majority (354 of 377) are kabupaten. Examples include Kabupaten Ciamis, Kabupaten Kampar, and Kabupaten Kupang.

Nonmetro urban areas are nonmetro districts in which urbanization is at an intermediate stage for Indonesia as a whole, as well as for the Jawa-Bali region, it is still at an incipient stage in the rest of the country. By 2045, when Indonesia will celebrate the centenary of its independence, approximately 220 million people—or more than 70 percent of its population—will live in towns and cities. The promise of urbanization is that this process can lead to a more prosperous and inclusive Indonesia of livable cities.

Delivering on the promise of urbanization requires managing congestion forces

Urbanization can boost economic prosperity. This is because urbanization fosters positive agglomeration forces, creating an environment that is conducive to innovation and enhanced productivity. As people and firms cluster in settlements, it becomes easier to match talent to jobs, exchange ideas and knowledge, share
inputs, and access markets. With economies of scale, larger cities can provide more and better-quality services and infrastructure, because the fixed costs of doing so are spread over more beneficiaries. With greater mobility and connectivity among places, labor and capital can be allocated more efficiently, creating more opportunities for people to prosper.

Realizing the promise of urbanization, however, requires managing negative “congestion forces” that intensify as areas urbanize and that threaten to limit the benefits of agglomeration. These congestion forces arise from the pressure of urban populations on basic services, infrastructure, land, housing, and the environment. The failure to adequately manage these forces gives rise to, among other things, grid-locked streets, slums and overcrowded housing, and inequitable access to good schools and hospitals. Such congestion forces directly undermine the livability of urban areas, reducing their attractiveness as places to live and work. They also undermine human capital accumulation and encourage urban areas to sprawl outward, with negative implications for knowledge spillovers and other prosperity-enhancing agglomeration forces.

Not everyone may benefit from the prosperity and livability generated by urbanization. In many countries around the world, larger cities are more unequal, while some cities lead and others lag. The benefits of urbanization may also fail to spill over to those who remain in the countryside, creating widening gaps between urban and rural areas, which can threaten social cohesion. Along with investments aimed at the universal provision of basic services, the inclusiveness of urbanization rests on connectivity both across and within places, and therefore on integration. Without adequate connectivity between places, prosperity may remain largely “locked up” in the cores of metropolitan areas rather than being shared more broadly. Likewise, disconnected growth within urban areas is associated with residential segregation between the high and the low skilled. Such segregation exacerbates inequality, hampers the ascension of the poor to the middle class, and reduces the strength of knowledge spillovers.

This report therefore assesses whether urbanization in Indonesia has delivered prosperity, inclusiveness, and livability. Figure O.2 describes the report’s analytical framework.

Urbanization has led to prosperity in Indonesia, but has not reached its full potential

To some extent, urbanization and economic prosperity have gone together in Indonesia. Districts with higher shares of their populations living in urban settlements have higher per capita incomes. This is partly due to better labor market opportunities in urban areas, which offer more jobs in industry and services than rural areas. These sectors tend to generate more formal, better-paid, and stable jobs than those in the agricultural sector.

Consistent with the existence of positive agglomeration forces, workers in more urban areas are also more productive, and thus better paid, than otherwise identical workers in less urban areas. A person who works in a multi-district metro core or a single-district metro area earns 25 percent more than a comparable worker—of the same age, gender, marital status, and education level—who is employed in the same industry in a nonmetro rural area. Workers in urban periphery areas also enjoy a
similar, albeit slightly smaller, “wage premium” due to their greater productivity (figure O.3).

Better economic opportunities in more urban areas have also helped many Indonesians escape poverty. Rates of poverty and vulnerability to poverty in multidistrict metro cores, urban peripheries, and single-district metro areas are substantially lower than those in nonmetro rural areas (figure O.4). Nonetheless, significant pockets of poverty persist in urban areas, as reflected by the 38 percent of the population—equivalent to 21.5 million Indonesians—in nonmetro urban areas who are poor or vulnerable to poverty.

Urban areas have also provided a robust pathway to the middle class. Nonmetro rural households that moved to multidistrict metro areas have better prospects of becoming middle class than those that moved to other rural areas. The odds of a migrant to a multidistrict metro core entering the middle class have weakened since 2010, but the chances have remained robustly high for those moving to

![FIGURE O.3 Workers in more urban areas earn higher wages than comparable rural workers](image)

Source: The wage premium was estimated using data from the August 2008–August 2015 rounds of Indonesia’s National Labor Force Survey (SAKERNAS) following the methodology described in chapter 3. Note: The values reported in the figure are the average wage premium that workers in districts that belong to a given type of place command over observationally equivalent workers in nonmetro rural districts, controlling for the island-region that a district belongs to. A district’s wage premium is estimated using an augmented Mincerian wage regression (Mincer 1974) that controls for both the observable characteristics of workers (gender, marital status, age and its square, and educational attainment) and the jobs (industry of employment, average number of hours worked per week, and the length of the worker’s tenure with the current employer and its square) they occupy.

![FIGURE O.4 Better economic opportunities in urban areas have led to less poverty and vulnerability to poverty](image)

Source: Calculations using data from Indonesia’s 2017 National Socio-Economic Survey (SUSENAS). Note: Poverty rates are based on official poverty lines of the government of Indonesia. Vulnerability is defined as having per capita household consumption above the poverty line, but below 1.5 times the poverty line.
urban peripheries. This finding suggests that urban peripheries have retained the advantages of being close to the prosperity of the metro cores while avoiding the worst of the costs of congestion.

Notwithstanding these gains in prosperity, Indonesia has not benefitted as much from urbanization as some other East Asia and Pacific (EAP) countries (figure O.5). Between 1996 and 2016, every percentage point increase in the share of Indonesia’s population living in urban areas was associated with a 1.4 percent increase in GDP per capita, but for developing EAP countries, the corresponding increase in GDP per capita was 2.7 percent. For China, the “growth return” to urbanization was even higher, with every percentage point increase in the level of urbanization being associated with a 3.0 percent increase in GDP per capita.

Benefits of urbanization have spread, but inequality remains high, especially within places

To what extent have all households in Indonesia, regardless of where they live, been able to benefit from the prosperity that urbanization generates? Looking at real consumption per capita as a measure of welfare, households in more urban areas remain significantly better-off than those in rural areas. Although the gap has narrowed over time, the level of welfare in nonmetro rural areas remained 43 percent lower than that of Jakarta’s metro core (Daerah Khusus Ibukota [DKI] Jakarta) in 2015. Rural periphery areas and nonmetro urban areas also suffer large welfare penalties of 35 percent and 27 percent respectively, relative to DKI Jakarta. Urban periphery areas, by contrast, suffer a much smaller welfare penalty—only 7 percent relative to DKI Jakarta—partly because of their proximity to the prosperity of the multidistrict metro cores.

Despite these large welfare disparities between urban and rural areas, the bulk of consumption inequality is accounted for by inequality within places. Indeed, within-place inequality accounted for nearly 86 percent of total inequality in 2017, up from 82 percent in 2001. Moreover, since 2001, the gap between the rich and the poor has increased within all types of place and it is highest in exactly the most prosperous areas—that is, in multidistrict metro cores and their urban peripheries (figure O.6).

That more prosperous places are more unequal is not unusual. Globally, within
countries, larger and more prosperous cities tend to be more unequal than smaller, less prosperous, cities. This is true, for example, within both the United States and within Latin American and Caribbean countries (Ferreyra 2018). In both cases, higher inequality in larger cities is driven by the fact that they are home to more-skilled populations. This phenomenon is driven, in part, by the greater tendency of skilled workers to migrate, which leads to their being disproportionately concentrated in larger cities, creating a larger spread of skills and thus wages in those cities. Furthermore, even though both low- and high-skilled workers might benefit from higher overall levels of human capital in larger cities, they may not do so equally, thus further contributing to higher inequality.

In Indonesia, as in the United States and other countries, more densely populated places also have more highly educated workforces and hence are more productive. High-skilled workers also benefit more from being in such a place. Whereas a one-year increase in an area’s average years of schooling yields a 10 percent return in earnings for high-skilled workers, the corresponding returns for medium- and low-skilled workers are about 6 and 3 percent, respectively. Larger cities therefore tend to be more unequal in Indonesia.

Uneven learning outcomes among children are a further indication that the benefits of urbanization are not equally spread within cities (figure O.7). Although children in urban areas generally have better access to schools and average educational attainment is higher than in other types of area, children from lower-income households appear to be falling behind. Looking at science test scores on the Programme for International Student Assessment (PISA), the gap between children in the bottom 20 percent of the socioeconomic distribution and those in the top 20 percent is largest in cities. In 2015, children in the top 20 percent scored about 86 points higher than children in the bottom 20 percent in large cities, whereas in other cities, children in the top 20 percent scored 103 points higher. As this generation enters the labor market, such learning gaps may compound within-place inequalities, further limiting the potential of urbanization to bring more prosperity to all Indonesians.

With better management of congestion forces, Indonesian cities can become more prosperous and livable

Around the world, people are drawn to the bright lights of large cities, not only because of the better economic opportunities they offer but also because of the perceived excitement that goes along with their bustle. However, with bustle also comes congestion of infrastructure and markets that, without the right policies and investments, can undermine both livability and prosperity. In Indonesia, many urban areas are showing signs of strain from their inability to manage congestion forces. Negative congestion forces are especially prevalent in multidistrict metro cores and single-district metro areas, which suffer from a lack of affordable housing, severe traffic congestion, and unacceptable air pollution levels. These conditions are helping to push people and firms to the peripheries of cities as they search for cheaper land and housing, contributing to disconnected and low-density urban growth that limits the productivity gains of agglomeration.

Although reliable and comparable data are difficult to come by, evidence suggests that house price-to-income ratios in

FIGURE O.7 Learning gaps between the top and the bottom socioeconomic groups are largest for cities

Source: Calculations based on 2015 science test score data from the Programme for International Student Assessment (PISA), (http://www.oecd.org/pisa/).

Note: Villages have fewer than 3,000 people, a small town has 3,000–15,000 people, a town has 15,000–100,000 people, a city has 100,000–1,000,000 people, and large cities have more than 1,000,000 people. These definitions cannot be mapped into the portfolio of places.
Bandung, Denpasar, and Jakarta are higher than in New York. Along with a lack of adequate access to mortgage financing, the high cost of housing contributed to one-fifth of Indonesia’s urban dwellers living in slums in 2015. Although this share is substantially lower than the share of the urban population living in slums in countries such as Kenya, the Lao People’s Democratic Republic, and the Philippines, it still equates to 29 million Indonesians—roughly equivalent to three times the entire population of Sweden—living in slums (figure O.8, panel a). There is also significant overcrowding of housing in multidistrict metro cores and single-district metro areas, especially in Jakarta’s core, where 35 percent of households lived in overcrowded housing in 2016, up from 28 percent in 2002 (figure O.8, panel b).

Traffic congestion is another congestion force that undermines the livability and productivity of Indonesia’s metro areas. Jakarta is consistently rated one of the 10 most congested cities in the world. On the TomTom Traffic Congestion Index, Jakarta was the third-most congested of 18 megacities worldwide with an estimated 58 percent extra travel time needed for any trip, anywhere in the city, at any time compared with a free-flow situation. Indonesian cities are also among the most congested on the Inrix Global Traffic Scorecard (figure O.9). Even in smaller cities such as Padang and Yogyakarta, drivers spend about a quarter of their driving time stuck in congestion. According to new estimates prepared for this report, the total cost of traffic congestion for Indonesia’s 28 multi- and single-district metro areas is at least US$4 billion (equivalent to 0.5 percent of national GDP) a year in excess travel time and fuel consumption, with US$2.6 billion for Jakarta’s core alone.

Such traffic congestion, together with the use of polluting fuels in motorized vehicles and industrial coal plants that power urban areas, means that pollution is yet another congestion force that afflicts Indonesia’s metro areas. Twenty of 28 multi- and single-district metro

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**FIGURE O.8** One-fifth of Indonesia’s urban population lives in slums, and overcrowded housing is commonplace in metro cores and single-district metro areas

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Sources: Panel a calculations based on data from World Bank World Development Indicators (http://datatopics.worldbank.org/world-development-indicators/); panel b calculations based on data from Indonesia’s 2002 and 2016 National Socio-Economic Surveys (SUSENAS).

Note: EAP = East Asia and Pacific.
areas had unsafe ambient outdoor air pollution in 2015 (figure O.10, panel a). Jakarta’s air is fouler to breathe than that of Ho Chi Minh City, Kampala, Mexico City, and São Paulo; Pekanbaru’s air is also more polluted than that of Mumbai and Shanghai (figure O.10, panel b). These high pollution levels are associated with a host of diseases and other health-related effects that undermine the livability of metro areas. In Jakarta, an estimated 60 percent of the population suffers from air pollution–related diseases, and, in a perceptions survey conducted for this report, 70 percent of surveyed city dwellers identified “less pollution” as the most important urban environment issue (World Bank 2018c).

In addition to pollution, severe traffic congestion has combined with the limited availability of affordable housing to help create metro areas in Indonesia that are highly residentially segregated. Multidistrict metro areas are strongly sorted into high- and low-skill neighborhoods (map O.1, panel a), with high-skill neighborhoods centrally located close to both the best jobs and services (map O.1, panel b). High-skill workers therefore face relatively little inconvenience from congestion in their daily commutes from home to the office and in travelling to access basic services. By contrast, low-skill households and workers, priced out of good-quality housing in the cores, are concentrated in less central neighborhoods disconnected from both the best jobs, and health and education services.

Not only is this strong residential sorting a source of heightened inequality and hence a lack of inclusiveness within metro areas, but it may also be undermining the aggregate strength of human capital spillovers between high- and low-skilled workers, with detrimental effects for productivity and prosperity. Empirical evidence undertaken for this report shows that multidistrict metro areas with more residential segregation between high- and low-skilled workers generate weaker aggregate human capital externalities.

Closing service delivery gaps would extend the livability and prosperity benefits of urbanization to all

Although metro and larger urban areas in Indonesia struggle with issues of slums and overcrowding, traffic congestion, and pollution, urban residents tend to do better, on average, than their rural counterparts in terms of access to hospitals and schools, clean water, and safe sanitation, all of which are important determinants of both an area’s livability and its level of human capital and, therefore, prosperity. Virtually all Indonesians in multidistrict metro cores and single-district metro areas have easy access to primary care facilities (puskesmas), delivery facilities, and hospitals. By contrast, more than 20 percent of those residing in nonmetro rural areas do not have easy access to hospitals, and over 80 percent lack easy access to a private practice doctor.
With better access to basic services, children in urban areas are healthier and better educated. Even after controlling for differences in access to services, as well as household characteristics, children in multidistrict metro cores are taller and heavier for their age than children in nonmetro rural areas. \(^{21}\) Individuals living in households in multidistrict metro cores and single-district metro areas are also more likely to be literate and to have finished primary school than those in rural areas.

Over time, some convergence has occurred in access to services across Indonesia’s portfolio of places. This convergence, in turn, has reduced the pressure for “push” migration—stimulated by the push of distress rather than the pull of opportunity—to the metro areas. Nevertheless, significant gaps remain between urban and rural areas in access to education, health, water, sanitation, and hygiene services (figure O.11).

Access to basic services continues to be more challenging for both households living on the rural fringes of large metro areas and households in nonmetro rural areas. These areas continue to significantly lag urban areas on health and educational outcomes,

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**FIGURE O.10  Unsafe to breathe: Most Indonesian metro areas have unacceptable air pollution**

![Chart showing annual average PM\(_{2.5}\) concentration for Indonesian cities and international cities.](chart)

Source: Calculations based on satellite-derived data from Dalhousie University where, for global consistency, cities are defined as “high-density clusters” using the algorithm of Dijkstra and Poelman (2014) as applied to Landscan-2012 gridded population data.

Note: PM\(_{2.5}\) is particulate matter of 2.5 microns or less in diameter. In panel a, dark blue—colored bars indicate PM\(_{2.5}\) levels that exceed the World Health Organization’s standard of 10 micrograms per cubic meter for safe air. In panel b, red—colored bars indicate Indonesian cities.
MAP O.1  Neighborhoods in Jakarta are highly segregated by skill level with more-skilled residents living closer to basic services

a. Spatial distribution of adults with tertiary education

b. Travel times to Jakarta core’s nine regional public hospitals

Better connectivity would further help in spreading prosperity from more urban to less urban places

Although service delivery gaps provide part of the explanation for disparities in prosperity and well-being across Indonesia’s portfolio of places, another important part of the story is a lack of connectivity. There is inadequate infrastructure to connect the core and periphery areas of multidistrict metro areas, and metro and nonmetro areas. This is partly due to underinvestment in transport infrastructure. Total transport investment fell from about 2 percent of GDP in 1995 to less than 1 percent in 2000; since then, it has slowly recovered to pre-Asian financial crisis levels, reaching 2.2 percent in 2016. By contrast, during this period, other major developing countries were investing heavily in improving their transport connectivity between cities. In recent decades, China has constructed a 96,000 kilometer network of highways connecting the country’s largest cities and is building the world’s longest high-speed rail network to connect its main population centers (Bosker, Deichmann, and Roberts 2018). Meanwhile, between 2001 and 2012, India built its Golden Quadrilateral highway network, which, at nearly 6,000 kilometers in length, links the country’s four major metro areas—namely, Delhi, Kolkata, Mumbai, and Chennai (Ghani, Goswami, and Kerr 2016, 2017). Although transport investment in Indonesia has recovered since the Asian financial crisis, the current level of investment is unlikely to be sufficient to meet the demand for transport, and, relative to population, Indonesia’s stocks of both main roads and railways are low compared to many other countries (figure O.12).

Of course, as the world’s largest archipelagic country, Indonesia and its portfolio of places could never be fully connected by roads alone, especially outside Jawa. Both maritime and air transport connectivity are also important, but here, too, Indonesia suffers from issues that hamper integration. In the maritime transport sector, which is especially important for goods market integration, insufficient investment and an inadequate legal and regulatory framework contribute to poor performance of the ports.
**FIGURE O.11** Despite convergence, significant urban–rural gaps remain in access to basic services

![Graphs showing access to basic services](image)


**FIGURE O.12** Indonesia’s road and railway networks are not as extensive as in many other countries

![Graphs showing road and railway networks](image)

Sources: For panel a, calculations based on roads data from the Global Roads Inventory Project v4 (GRIP4) dataset (https://www.globio.info/download-grip-dataset) (Meijer, Huijbegts, and Schipper 2018); for panel b, calculations based on railway data from World Bank World Development Indicators (http://datatopics.worldbank.org/world-development-indicators/). Population data for both panels is from World Bank World Development Indicators. Note: In panel a, main roads include both highways and primary roads; roads data are for various years between 2010 and 2015 with population data chosen to match the year of the roads data.
and operations that link Indonesia’s islands. This poor performance, in turn, translates into wide differences in shipping costs: sending a 6-meter container within Indonesia from Tanjung Priok to Jayapura, Banjarmasin, and Padang costs approximately US$1,000, US$650, and US$600, respectively, compared with shipping costs from Tanjung Priok to Guangzhou (China) of about US$400.

Similarly, domestic air travel remains extremely concentrated along a few routes between Jakarta and other major metro areas such as Surabaya. Although Indonesia’s market for domestic air travel is both large and growing rapidly, a lack of competition, compounded by relatively weak regulatory enforcement, adversely affects safety and service standards, and is likely to become an increasingly important constraint as the market undergoes further growth.

Policies to realize Indonesia’s urban potential

Basic policy principles for getting more out of urbanization: Augment, Connect, and Target

Within the next quarter of a century, Indonesia will have reached an advanced stage of urbanization, with more than 70 percent of its population living in towns and cities. As time goes by, the costs of shifting the country’s urban development trajectory increase because, once built, the urban environment is very difficult to change. To sustainably shift Indonesia to a trajectory that brings more prosperity, inclusiveness, and livability, policy makers can follow the basic ACT principles of Augment, Connect, and Target (box O.2):

- **Augment** refers to expanding the coverage and quality of basic services and infrastructure for all people in all places.

**BOX O.2 The basic policy principles: Augment, Connect, and Target**

Three basic policy principles—**Augment**, **Connect**, and **Target**—can guide the central and subnational governments in Indonesia as they work to ensure that urbanization brings more prosperity, inclusiveness, and livability to the country.

- **Augment** refers to expanding and equalizing access to high-quality basic services across all places. Ensuring that all Indonesians have access to good-quality health and education services, safe water, proper sanitation, and other basic services would mean that people move to urban areas because of the opportunities these areas offer rather than because of the lack of basic services in rural areas. Expanding access to basic services and infrastructure in line with the population would also reduce the speed at which negative congestion forces mount as cities grow in population. As such, augmenting basic service access and local infrastructure provides the foundation for economic prosperity and for improving the livability of cities.

- **Connect** refers to enhancing the connections between places through investments in transport infrastructure and reforms that increase the spatial integration of markets for goods, services, labor, and capital. It also refers to better connecting people to jobs, opportunities, and services within places. By contributing to the spread of prosperity and facilitating access to basic services whose provision it might make sense to centralize in certain locations, connecting helps make the urbanization process more inclusive, both within urban places and across urban and rural places.

- **Target** refers to using customized policies to address stubborn and lingering inequalities, which may persist even if the first two policy principles of augment and connect were fully enacted. Taking account of the needs of lagging regions and groups of people (for example, women and girls, the elderly, and people living with disabilities) whose needs require extra consideration in urban planning and design would help ensure that the urbanization process benefits all people in all places.
• Connect to integrate both across and within places.
• Target any places and any people left behind.

These three principles matter in different ways for different types of place (table O.1).

For all types of place, actions to **augment** the coverage and quality of basic services are important to close the gaps between those who do and do not currently have access to such services. Doing so would also raise the livability of all types of place, ensuring that, when people move to the metro areas, they do so not out of distress but out of opportunity. Moreover, to the extent that improving the coverage and quality of basic services lifts human capital, such actions would improve productivity and therefore prosperity, thus contributing to the overall inclusiveness of the urbanization process. For **multidistrict metro cores and single-district metro areas**, ensuring universal access to good-quality basic services would also help ease the strong congestion pressures already so evident in these areas.

The **connect** principle matters for **rural and nonmetro areas** because it provides the main channel for such places to benefit from the higher productivity of the multidistrict metro cores and the single-district metros, contributing to a more inclusive urbanization process. The connect principle is also important in facilitating the access of residents in rural and nonmetro areas to more advanced services—for example, hospitals with advanced facilities for the treatment of complicated illnesses and universities that provide a world-class tertiary education—that it might not make sense to provide locally. Finally, improving connectivity within **multidistrict metro areas** is especially important for their prosperity and inclusiveness, because the

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**TABLE O.1** Importance of the ACT principles to different types of place

<table>
<thead>
<tr>
<th>Principle</th>
<th>Type of place</th>
<th>Why it matters</th>
</tr>
</thead>
</table>
| **Augment** | All types | • Close gaps in access to basic services between individuals.  
• Elevate human capital as people get better access to services that directly (for example, health and education services) or indirectly (for example, better wastewater management) boost skills and health.  
• Expand infrastructure and basic services in line with population growth to counter growing congestion forces. |
| | Multidistrict metro cores; single-district metro areas | • Help to ease strong congestion forces as already reflected in a lack of affordable housing, severe traffic congestion, and high pollution. |
| **Connect** | Nonmetro urban areas; nonmetro rural areas | • Integrate these areas with the multi- and single-district metro areas, allowing for the spillover of prosperity and, therefore, a more inclusive urbanization process.  
• Facilitate access to more advanced services in multi- and single-district metros. |
| | Multidistrict metro cores; single-district metros | • Connect people with jobs and services, creating more integrated labor markets and boosting positive agglomeration forces. |
| | Urban peripheries; rural peripheries | • Integrate these areas with multidistrict metro cores, countering the negative effects of residential segregation. |
| **Target** | Nonmetro rural areas | • Provide extra assistance to places where the policy principles of augment and connect are not by themselves enough to generate prosperity. |
| | Multidistrict metro cores; urban peripheries; single-district metros; nonmetro urban areas | • Ensure benefits of urbanization are fully shared with women and girls, the elderly, and people with disabilities through urban planning and design that take account of the needs of all. |
strong residential segregation between high- and low-skilled households and workers in metro areas is a source of inequality, as well as of diminished productivity and prosperity. For the peripheries of multidistrict metro areas, it is also important because empirical evidence presented in this report shows that enhanced access to domestic markets, which can be achieved through strategic investments in transport infrastructure, is a significant driver of their underlying productivity.

Finally, the target principle, to reach lagging places through better-designed place-based policies, is of most importance to nonmetro rural areas, especially those outside Jawa-Bali. These areas are most likely to fall behind even if the policy principles of augmentation and connect are fully implemented. When it comes to improving urban planning and design to address the needs of women, girls, the elderly, and people living with disabilities, however, the target principle applies to all types of urban area. It takes on an extra dimension in the multi- and single-district metro areas, at least for transport, because travel patterns for women in these areas tend to be more complex (Greed and Reeves 2005), and the risk of social isolation of the elderly and people living with disabilities is greatest.

The key to ACT-ion: Institutional reforms to subnational governance and finance

Successfully implementing the ACT principles requires fundamental reforms to Indonesia’s system of subnational governance and finance, particularly in three key areas:

- Expanding options for subnational financing to meet basic infrastructure and service needs
- Building capacity for planning, implementing, and financing urban development
- Improving institutional coordination vertically and horizontally at all levels of government.

Again, the exact ways these policy action areas apply partly depend on the type of place, but their implementation would ultimately enable Indonesia’s urbanization process to deliver more prosperity, inclusiveness, and livability.

Expanding subnational financing options would increase the envelope for much-needed investments in basic infrastructure services

The needs for basic infrastructure and services in Indonesia’s urban areas are enormous. As an indication of the costs, a 2015 market assessment of 14 large Indonesian cities estimated an overall subnational infrastructure investment financing gap of US$11.1 billion (map O.2). Meanwhile, during 2011–13, total infrastructure investment in Indonesia stood at only about 3–4 percent of GDP, having fallen from approximately 7 percent for 1995–97 (World Bank 2017b). This level of investment is unlikely to bridge the urban infrastructure gap, especially considering that neighboring countries such as China, Thailand, and Vietnam were each investing between 7 and 10 percent of their GDP in infrastructure annually during 2011–13.

The potential sources of additional financing to bridge the infrastructure and service delivery gaps depend on the type of place. For multidistrict metro cores, urban peripheries, and single-district metro areas, considerable scope exists for improving own-source revenues, especially through property taxes. Indeed, at 11–12 percent, own-source revenues already account for at least double the share of total revenue for these areas than for other types of area. Even so, political considerations have led Indonesia to focus fiscal decentralization on the expenditure side. The “money follows function” principle stipulates that subnational governments are mainly responsible for spending, whereas the central government generates most of the revenue. Even in the most urbanized areas, therefore, the revenue raised through property tax pales in comparison to advanced countries such as the United States, where 30 percent of local government revenues came from property tax in 2014. Nationwide, property tax revenue is equivalent to 0.57 percent of GDP in Indonesia, which is among the lowest for G20 countries (figure O.13). Issues that will need to be addressed by districts to expand property tax revenue include low coverage of the cadaster, low tax rates for urban areas, and low collection rates.
Beyond property tax, metro areas can also draw on alternative sources of own-source revenue through transparent and sustainable urban development practices. Land value capture and transfers of development rights are instruments that subnational governments could explore for raising infrastructure development funds. Using these types of instruments will, in turn, require building the familiarity of district government staff with the tools of real estate development.

Financing investments in urban infrastructure, especially public transport, may also require going beyond resources available from the annual budget, particularly in multidistrict metro areas where the investment requirements are higher. For example, in a large metro like Jakarta, a mass rail system may be required, but such a system costs 12 times more per kilometer than a bus rapid transit system, which might suffice to meet the transportation needs of a smaller city. Currently, subnational government debt in Indonesia is very low at only 0.04 percent of GDP. Developing a framework

**MAP O.2**  Indonesian cities face large infrastructure investment financing gaps, 2014

Source: Joshi et al. 2015.
Note: Investment needs gaps are expressed in millions of U.S. dollars (2014 prices).

**FIGURE O.13**  Indonesia has lower property tax revenue than most other G20 countries

Source: Prakash 2013.
Note: Figure omits the European Union and Saudi Arabia due to missing data.
to gradually empower financially sound subnational governments to access capital markets and official financing would help them to meet their infrastructure needs.

A case can also be made for revamping Indonesia’s fiscal transfer system, which was put in place by the “big bang” decentralization in 2001. The reforms not only shifted resources for service delivery and infrastructure provision from the central to subnational governments but also skewed the allocation of those resources more toward less populous, nonmetro, and more remote areas. This skewing is a consequence of the transfer formula for the Dana Alokasi Umum (DAU, or General Allocation Grant), in which the size of the transfer that a district receives is largely independent of its population. Although such a design would seem to promote improvements in basic service delivery and infrastructure in the most lagging areas, regression evidence presented in this report suggests that it has failed to translate into results—less populous districts favored by the decentralization reforms and transfer formula have failed to improve basic services and infrastructure at a faster pace than less favored, more populous districts. Districts favored by the post–big bang transfer system have likewise failed to improve their stocks of roads and access to markets through transportation networks at a faster pace than less favored districts, which suggests that the more intense spatial targeting of nonmetro areas has not helped to improve their relative connectivity and integration with metro areas. They also failed to experience significant improvements in manufacturing firm outcomes in response to the “windfall” in transfer revenues. Indeed, the extra revenues failed to halt an already evident downward trend in firm performance for less populous districts in relation to more populous districts.

The transfer formula also penalizes places where population growth, driven by urbanization, is occurring. This is because, all else equal, population growth translates into declining per capita transfers. Unless these places can plug the gaps through increased own-source revenue, it will be harder for them to expand infrastructure and basic services in line with their populations, contributing to the mounting of congestion forces.

The fact that increased resources to less populous districts have not translated into results suggests that resources may not be the binding constraint for nonmetro rural areas when it comes to the provision of infrastructure and basic services. Indeed, there may be capacity constraints for implementation, implying that the resources may be more efficiently directed elsewhere. Gradually moving toward a transfer formula that places more weight on population could improve the ability of growing urban areas—most notably, the urban peripheries of multidistrict metro areas—to tackle mounting congestion forces without adversely affecting infrastructure and service provision in rural areas.

Building capacity for planning, implementing, and financing infrastructure and urban development

The failure of fiscal transfers and infrastructure spending in less populous districts to translate into results suggests that resources may not be everything. A more important constraint for nonmetro areas in implementing the ACT principles may be related to local capacity issues in planning and executing infrastructure projects. More generally, capacity needs to be improved across the portfolio of places in three interrelated areas:

1. The capacity of subnational government staff to address issues of urban and regional development
2. The capacity to use information systems and data for both transparent and informed decision making
3. The capacity to regulate and monitor subnational government performance.

Building staff capacity to manage urban and regional development issues. With Indonesia’s “big bang” decentralization in 2001, administrative and fiscal responsibilities were transferred quickly from central to subnational governments without transitional staff training. Between 1999 and 2001, the share of civil servants on subnational government
payrolls increased from just over 12 percent to almost 67 percent (World Bank 2003). In addition, the total civil service expanded by 25 percent from 2006–17, from about 3.6 million to more than 4.5 million (World Bank 2018b).

Although the quality of the Indonesian civil service has also improved because of more meritocratic hiring and promotion practices (World Bank 2018b), most district-level public works departments still have too few professionally qualified staff, and the quality of available training is questionable (World Bank 2012). Many staff are also unfamiliar with calculating the fiscal needs of complex projects. Often, when subnational staff members improve their skills, they are rotated to other departments for political or administrative reasons, leaving capacity gaps behind.

Building capacity to use information systems and data. The absence of consistent, reliable base maps and data impedes production of local spatial plans in Indonesia. Similarly, the lack of access to reliable land records and spatial data inhibits infrastructure investments and service delivery. Moreover, there is no common framework to integrate different plans from different ministries and agencies, creating confusion that undermines urban development and investment.

A systemic lack of capacity also hampers local taxation, particularly the management of property taxes, which, as argued earlier, are an underleveraged source of own-source revenue for metropolitan areas. Subnational governments lack the expertise, capacity, and cadastral information from the Ministry of Agrarian Affairs and Spatial Planning/ National Land Agency (ATR/BPN) to manage property taxes.

Policy options to improve capacity include establishing well-designed, on-the-job training programs to improve data quality and management in urban and spatial planning (World Bank 2017a), improving geospatial education (through, for example, professional courses, organized with leading Indonesian universities), and delivering training in tax collection and management. Upstream skill development at the university level will also prepare future government staff in these core areas. Financial support for such training could come from capacity-building grants to subnational governments. Moreover, reducing the frequency of rotation of government staff among departments would create more incentives to invest in skills specific to a department and to allow for retaining specific capacities.

With respect to information systems and data, ATR/BPN, together with the National Geospatial Information Agency, is well-placed to take on the responsibility of providing an integrated data and mapping platform for spatial planning and analysis. Meanwhile, districts should integrate currently disparate statutory plans into a common spatial development framework. On tax administration, relevant government agencies could use satellite imagery, unmanned drones, and automated methods to prepare effective cadasters. The central government should also support subnational governments in building and enhancing their current tax information and management system (Sistem Informasi dan Manajemen Objek Pajak or SISMIOP).

Building capacity to regulate and monitor subnational government performance. To improve regulatory and monitoring capacity at both the central and subnational levels, the central government could consider the following:

- Setting up an accountability system requiring subnational governments to report to the central government on their performance. This could be in the form of a web-based system to standardize reporting by subnational governments.
- Having an independent body such as the government’s auditor or the relevant line ministry verify such reports, following the lead of the Local Government and Decentralization project.
- Aligning the incentives of local government leaders to deliver better services and provide a basis for central government intervention by conditioning fiscal transfers to subnational governments on the verification of such performance reporting.
Improving institutional coordination vertically and horizontally at all levels of government

The decentralization of decision making for providing basic services and infrastructure has had many benefits. It was, however, almost inevitably accompanied by inertia in the functioning of central public institutions, so that the new decentralized decision-making process coexisted with the pre–big bang centralized decision culture. Even today, the old central planning process is still in place, with annual, five-year, and long-term plans; and a large fraction of the administrative staff across the country is centrally managed by the Ministry of State Apparatus Empowerment and Bureaucratic Reform (PANRB).

Although decentralization has served the invaluable function of bringing the management and planning of places, especially urban places, closer to the people, it has also multiplied the number of decision points, increasing the complexity of coordinating across different sectors, levels of government, and, crucially for multidistrict metro areas, jurisdictional boundaries. Finding effective solutions to these coordination challenges is central to the successful implementation of the ACT policy principles.

More specifically, policy needs to better address three key coordination challenges (box O.3). Overcoming these challenges will require addressing their underlying origins—namely, the excessive complexity of decision making in Indonesia that has resulted from the successive addition of new institutional layers on top of existing ones. The first step to doing this will be to identify redundancies and simplify the country’s governance structure—an enormous task requiring strong commitment, but essential for improving efficiency.

**BOX O.3  The three coordination challenges**

**Challenge 1: Vertical coordination**

In Indonesia, 32 types of activity are shared among the central, provincial, and district governments, with each level playing a different role depending on the sector. Districts play the largest role in education, health, and infrastructure, whereas the central government plays the largest role in general administration, social protection, and housing and public facilities (figure BO.3.1). Sectoral departments at the subnational level, however, do not map hierarchically to the corresponding national ministries.

The consequence is that “everybody’s business is nobody’s business.” Often, neither the central nor the provincial nor the district government takes responsibility for vertical coordination and ensuring that activities in each sector deliver the intended results. For example, in urban water, the lack of coordination between central, provincial, and district governments and the poor prioritization of subnational government capital expenditure have led to disappointing increases in the number of homes connected to pipes. The Ministry of Public Works and Housing plans, designs, and implements water infrastructure development projects in subnational government jurisdictions. It later hands over these assets to subnational water utilities, but follow-up investment in distribution networks and connections may not occur, leading to increased idle capacity of the utilities (World Bank 2015).

**Challenge 2: Horizontal coordination across sectors**

Urban development is a cross-cutting issue that requires the involvement of many ministries and agencies. In Indonesia, at least eight ministries and agencies, each in charge of different sectors, need to coordinate on this issue. An interministerial steering committee on urban development under the stewardship of the Ministry of National Development Planning/National Development Planning Agency, Bappenas, includes representatives from relevant ministries and agencies. The committee is chaired, however, by an Echelon 1–level official (a deputy minister) who reports to the Minister of National Development Planning, whereas other
committee members report to their respective ministers, hampering intersectoral coordination.

**Challenge 3: Horizontal coordination within multidistrict metro areas**

Whereas the first two coordination challenges affect all types of place, the third—horizontal coordination of neighboring jurisdictions—applies especially to multidistrict metro areas. This challenge affects the efficient delivery of large-scale infrastructure at the metro level, including the delivery of urban transport networks to connect and integrate metro areas, sewage treatment, storm-water systems, and solid waste treatment facilities. One example of the problem is the increased flooding risk in Jakarta’s core, which is associated with the failure to prevent haphazard and often illegal development in the upstream water catchment areas of Kabupaten Bogor in the south of metro Jakarta. This contributed to major floods in the capital in February 2007, causing more than 70 deaths and displacing 340,000 residents (World Bank 2008a).

**FIGURE BO.3.1** Distincts account for about half the public spending in education, health, and infrastructure

<table>
<thead>
<tr>
<th>Sector</th>
<th>Central</th>
<th>Province</th>
<th>District</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education</td>
<td>35</td>
<td>8</td>
<td>57</td>
</tr>
<tr>
<td>Health</td>
<td>28</td>
<td>18</td>
<td>54</td>
</tr>
<tr>
<td>Infrastructure</td>
<td>33</td>
<td>16</td>
<td>48</td>
</tr>
<tr>
<td>General administration</td>
<td>51</td>
<td>14</td>
<td>33</td>
</tr>
<tr>
<td>Social protection</td>
<td>59</td>
<td>27</td>
<td>25</td>
</tr>
<tr>
<td>Housing and public facilities</td>
<td>67</td>
<td>8</td>
<td>25</td>
</tr>
</tbody>
</table>

it would carry more authority than the existing coordinating committee and, therefore, be more effective in bringing about coordination and elevating the urban agenda more broadly.\textsuperscript{33}

Finally, to improve horizontal coordination of neighboring districts—most notably, within multidistrict metro areas—the central government has several policy options. These include, for example, elevating metropolitan management functions to provincial government(s).\textsuperscript{34} The options also include encouraging greater contracting between subnational governments to deliver complementary services and promoting the establishment of multigovernment enterprises for specific purposes, such as transport or solid waste disposal.\textsuperscript{35}

Additional policy actions are required to ACT and deliver on the promise of urbanization

Although institutional reforms to subnational governance and finance provide the backbone for implementing the ACT policy principles and, hence, the better leveraging of urbanization for prosperity, inclusiveness, and livability, they are not, by themselves, sufficient for the full implementation of the Connect and Target principles. Improved connectivity and integration of urban areas—especially metro areas—also requires additional policy actions at the interface of housing and urban transportation, and connecting places requires additional actions to address regulatory issues in transportation markets. Finally, targeting any places and any people left behind requires a rethinking of Indonesia’s approach to place-based policies and a paradigm shift in the country’s approach to urban planning and design.

Enhancing the connectivity and integration of urban areas—especially metro areas—also requires specific policy interventions at the interface of housing and urban transport

In addition to reforms in governance and finance, specific policy actions to ensure a sufficient supply of well-located affordable housing, to promote more mixed-income development, and to combat severe traffic congestion are needed. Such measures are central to making places more inclusive and prosperous, countering the residential segregation of high- and low-skilled workers that is undermining the beneficial spillover of ideas between workers.

For housing, key actions include scaling up current efforts to improve the fluidity of land and housing markets, as well as to enhance local technical capacity for coordinated and spatially appropriate land and housing planning. This could involve measures to improve land administration, the complexity of which currently constrains the availability of land in well-located areas for infrastructure and housing development. It could also include a review of existing regulations by subnational governments to remove artificial constraints on well-located land, to simplify procedures for land acquisition, and to accelerate (and reduce costs) for building registration and permits, and to implement occupancy certificate processes. An integrated housing platform—like Mexico’s National Housing Registry—could also be considered.\textsuperscript{36} Such a platform would combine housing and land market information to improve accountability and efficiency across all levels of government and support transparent sharing of market information about housing demand, supply, location, prices, and finance. Finally, measures could be implemented to strengthen subnational government capacity to develop and enforce regulatory systems relating to, for example, zoning and construction quality that support integrated and resilient urban growth.

Policy makers could also explore scaling up examples of innovative mixed-use, mixed-income development like Vida Bekasi,\textsuperscript{37} located in Bekasi City in West Java, to counter strong residential sorting of workers by income and skill level. Vida Bekasi is a new sustainable urban development of 15,000 residents, designed with a master plan that integrates mixed-use design with place-specific considerations. It also integrates a public transportation system to connect with Bekasi’s train station and a bus terminal—and has a school, shopping center, and marketplace. To promote integrated growth more
generally, subnational governments can encourage the development of varied housing typologies, such as two-story townhomes, incremental strategies, and midrises that cater to different income (and skill) groups in the same development. The supply of affordable rental housing could also be increased.

Finally, reforming housing finance would help the government to target unserved groups and crowd in the private sector. This requires continuing efforts to improve Indonesia’s current credit-linked subsidy programs—the Housing Loan Liquidity Facility (Fasilitas Likuiditas Pembiayaan Perumahan, FLPP) and the Interest Rate Buy-Down Subsidy (Subsidi Selisih Bunga, SSB)—which currently focus on middle-income households and generate high fiscal costs. To the extent that schemes such as FLPP have helped promote affordable housing in metro areas, it has often been in their peripheries. One option is to use the BP2BT (Bantuan Pembiayaan Perumahan Berbasis Tabungan) savings-linked down-payment subsidy program, which provides unserved informal and self-built sectors access to subsidies and intends to crowd in private sector funding and participation at market-based pricing.

Tackling severe traffic congestion, an issue that particularly afflicts multi- and single-district metro areas, will similarly require a coordinated and spatially driven approach to planning and developing transport infrastructure. Such an approach requires strong coordination in increasing the supply of infrastructure and services, and the use of demand management instruments to reduce congestion and ensure that the use of private vehicles is priced to correctly reflect their true social costs. Key actions include strengthening the central government’s role in guiding urban transport policy; enhancing local capacity to plan, operate, and maintain urban transport systems; and promoting transit-oriented development.

To strengthen the central government’s role, a national urban transport policy—a subject discussed in the Ministry of Transportation for several years—needs to be brought to a successful conclusion. Such a policy is key to developing transport-related guidelines for subnational governments. These guidelines will help ensure that transport system designs are based on robust and reliable demand forecasts for the medium to long term, and that investments are proposed under a well-defined funding and financing framework and targeted to the most effective modes of transport for different places. A comprehensive transport policy would outline actions that improve supply and manage demand, while discouraging private vehicle use.

To manage traffic demand, subnational governments in metro areas may want to revisit Jakarta’s 3-in-1 high-occupancy vehicle (HOV) policy. Although it was revoked because of its unpopularity, the HOV policy was successful in reducing congestion while it was in place (Hanna, Kreindler, and Olken 2017). A better-designed variant of the policy, if introduced, might prove more long lasting. The reduction of explicit and implicit subsidies to private car use can also be considered. For example, in Vienna, reorganizing parking spaces in the city, eliminating free parking, removing parking from historic places, and instituting street and parking permissions for residents were key actions for reducing car use (Buehler, Pucher, and Altshuler 2017). In addition, congestion charges, such as those in cities like London, may also form part of the policy mix for better demand management, especially in multidistrict metro cores and single-district metro areas.

To enhance local capacity to plan, operate, and maintain urban transport systems, key actions along three lines are important:

- Strengthen transit regulatory and management authorities so that they can better coordinate public transport services across administrative boundaries.
- Introduce measures to improve operations, including optimized routing and scheduling, together with actions to prioritize allocation of space to public transport.
- Implement technological improvements that can considerably improve the quality of service, such as smart ticketing or fare collection systems, fleet management systems, and user information systems.
Finally, promoting transit-oriented development may involve redeveloping residential structures or encouraging new buildings with more vertical development by permitting higher floor-area ratios, thereby loosening height restrictions, or allowing greater density in target zones. Target zones can be selected to promote local objectives, such as reduced dependence on private vehicles or development of mixed-use, pedestrian-friendly areas. Indonesian metro areas could follow the examples of Hong Kong and Seoul, which have already intensified land use around transit stops (MGI 2016).

Although some policies, such as the reform of the housing finance programs and the national urban transport policy, are national policies, many of the detailed policy actions for affordable housing and urban transport will, again, need to be tailored across the portfolio of places. Multi-district metro areas, as evidenced by their higher inequality and the strong residential sorting of workers by skill level, face the most complicated challenges to successfully connect people with jobs, opportunities, and basic services. For these areas, policy makers need to focus on ensuring that housing is available in both core and peripheral areas—ideally, in mixed income developments—and that traffic congestion is combatted by using the full range of instruments on both the supply and the demand sides. That includes expanding the supply of high-quality mass transit, implementing parking charges and restrictions, and (re-)introducing HOV and congestion charging policies.

For single-district metro areas, where housing supply constraints may be more binding than demand pressures, a focus on making serviced land available for development will be important. In those areas, it may not be necessary to use congestion charging on the demand side of traffic management. Nonmetro areas, where urban population growth is strong, will need to ensure that new development remains connected with the city and that infill development for new housing is possible for, and attractive to, the private sector.

Connecting places requires additional actions to address regulatory issues in the maritime and air transport markets

Ensuring connectivity and integration across the portfolio of places will also require additional actions to address regulatory issues in the maritime and air transport sectors. In the maritime sector, domestic connectivity across island-regions is hampered by, among other things, the small size of vessels and, consequently, the fact that the fleet is larger than necessary; the low fleet use and low service frequency; and a domestic network that consists of single-port-to-single-port routes rather than multiport itineraries.

Encouraging more private participation in maritime transport is crucial to easing these constraints. Since 1992, all Indonesian commercial ports have been operated by four state-owned enterprises, known as Pelindo I to IV, each covering a designated region. The 2008 shipping law was intended to change this by introducing a new public body as the Port Authority to regulate the sector and by the easing of entry of private operators through the obligation to concession port operations. The transition to private operation has been slow, however, with the main issue stalling progress being distortions in the tariff structure. Current tariffs for domestic users appear too low to justify necessary port investments. One obstacle to adjusting tariffs is the need to consult with all port stakeholders, including associations for domestic shipping lines, freight forwarders, and importers and exporters. These stakeholders tend to resist tariff increases, so policy action is needed to redefine the perimeter and attribution of the regulator—the Port Authority.

For air transport, related issues apply. The sector is facing growing demand that capacity is unlikely to be able to keep up with, absent significant changes in the sector’s governance aimed at increasing competition and private sector participation. Indonesian airports are operated by two state-owned companies, Angkasa Pura 1 (AP1) and Angkasa Pura 2 (AP2), which have more than 90 percent of seats and act as de facto monopolies in their respective territories. On the basis of successful

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experiences in other countries, the possibility of allowing private participation in some of the main airports could be considered (World Bank 2018a).

Targeting any places and any people left behind requires a rethinking of place-based policies and a paradigm shift in urban planning and design.

Even if all the institutional reforms and policies discussed above are successfully implemented to provide good, universal coverage of basic services across a well-connected portfolio of places where those places themselves are highly integrated, some places and people may still be left behind. Even the most developed countries have places considered “lagging” and for which governments often deem additional policy measures necessary. Similarly, even if a place has a well-developed and extensive public transport system that, in theory, provides good connectivity of people with jobs, opportunities, and basic services, subgroups of the population may still face barriers to using the system. This will be the case if the system is not planned and designed in a way that considers the needs of people with disabilities or if the system is considered unsafe to use by women and girls—say, because of fear of harassment. Challenges with sidewalks and access to hospitals, clinics, and so forth may likewise constrain the ability of people with disabilities and the elderly to access services, even if those services are in principle available.

The places most likely to be left behind are remotely located nonmetro rural areas outside Jawa-Bali, especially those lacking the advantage of natural resources. The evidence in this report suggests that, although these places fail to experience other types of positive agglomeration forces, they do benefit from positive human capital externalities. Spatially targeted policies to help these places should be designed with these results in mind. Rather than using targeted incentives to attract firms to remote regions, which has been shown to have little impact outside Jawa-Bali, the government could consider focusing more on developing human capital. Such a strategy may be complemented by incentives for firms (through dedicated infrastructure development or reduced red tape, for example), but specifically based on their contribution to the human capital agenda by investing in skills, especially skills that align with an area’s comparative and competitive advantages, and creating jobs with significant learning content. Rigorous but transparent criteria for selecting targeted industries, as well as monitoring and evaluating the effectiveness of these policies, are important, since their cost can be high.

Finally, for urbanization to be truly inclusive for women, girls, the elderly, and people living with disabilities, urban planning needs to apply design principles and construction standards for public spaces, sidewalks, transit facilities, and buildings that recognize the needs of all, not only the few.

Within the next quarter of a century, Indonesia’s transition to an urban society will be almost complete. To realize urbanization’s full potential to deliver sustainable gains in prosperity, inclusiveness, and livability, Indonesia’s policy makers need to ACT now to better augment urban infrastructure and basic services, to connect the country’s portfolio of places and integrate its cities, and to target lagging places and the needs of women, children, the elderly, and those living with disabilities. This transition will require, first and foremost, reforms to Indonesia’s system of subnational governance and finance. It will further require regulatory reforms to key transportation markets, policy actions to improve the supply of well-located affordable housing within urban areas and to tackle traffic congestion, a rethinking of place-based policies with a focus on human capital, and a paradigm shift in urban planning and design to better recognize the needs of all segments of the population. By acting now, Indonesia’s policy makers can help ensure that, when the country celebrates the centenary of its independence in 2045, it does so as a prosperous, inclusive, and livable urban society.
Annex OA Tailored policy options by type of place

**KEY TO TABLES**

**Time horizon**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>S</td>
<td>Short term (next 2 years)</td>
</tr>
<tr>
<td>M</td>
<td>Medium term (next 2–5 years)</td>
</tr>
<tr>
<td>L</td>
<td>Long term (&gt; 5 years)</td>
</tr>
</tbody>
</table>

**Symbols**

✓ in a cell indicates that a recommendation applies to the type of place

↔ in a row indicates that a recommendation applies to all types of place

**Leading institution(s)/Champion(s)**

<table>
<thead>
<tr>
<th>Institution</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATR/BPN</td>
<td>Ministry of Agrarian Affairs and Spatial Planning/National Land Agency</td>
</tr>
<tr>
<td>Bappeda</td>
<td>Local Development Planning Agency</td>
</tr>
<tr>
<td>Bappenas</td>
<td>Ministry of National Development Planning/National Development Planning Agency</td>
</tr>
<tr>
<td>BI</td>
<td>Bank of Indonesia</td>
</tr>
<tr>
<td>BIG</td>
<td>Geospatial Information Agency</td>
</tr>
<tr>
<td>BKPR</td>
<td>Spatial Planning and Coordination Agency</td>
</tr>
<tr>
<td>BPK</td>
<td>National Audit Agency</td>
</tr>
<tr>
<td>BPN</td>
<td>National Land Agency</td>
</tr>
<tr>
<td>CMEA*</td>
<td>Coordinating Ministry for Economic Affairs</td>
</tr>
<tr>
<td>CMMA**</td>
<td>Coordinating Ministry of Maritime Affairs</td>
</tr>
<tr>
<td>Core</td>
<td>Multidistrict metro core</td>
</tr>
<tr>
<td>MCIT</td>
<td>Ministry of Communication and Information Technology</td>
</tr>
<tr>
<td>MFI</td>
<td>Microfinance Institutions</td>
</tr>
<tr>
<td>MOF</td>
<td>Ministry of Finance</td>
</tr>
<tr>
<td>MOHA</td>
<td>Ministry of Home Affairs</td>
</tr>
<tr>
<td>MOT</td>
<td>Ministry of Transportation</td>
</tr>
<tr>
<td>MPWH</td>
<td>Ministry of Public Works and Housing</td>
</tr>
<tr>
<td>MSOE</td>
<td>Ministry of State-Owned Enterprises</td>
</tr>
<tr>
<td>OJK</td>
<td>Financial Services Authority</td>
</tr>
<tr>
<td>Perum Perumnas</td>
<td>National Housing Development Corporation</td>
</tr>
<tr>
<td>SDM</td>
<td>Single-district metro area</td>
</tr>
<tr>
<td>SMF</td>
<td>Sarana Multigriva Finansial – State-owned secondary mortgage financing company</td>
</tr>
<tr>
<td>SNGs</td>
<td>Subnational governments</td>
</tr>
</tbody>
</table>

* Finance; Industry; Trade; Agriculture; Manpower; Cooperation and Small & Medium Enterprises; State-Owned Enterprises; Public Works and Housing; Land and Spatial Planning; Environment and Forestry

** Transportation; Maritime Affairs and Fisheries; Tourism; Energy and Mineral Resources**
<table>
<thead>
<tr>
<th>BROAD RECOMMENDATION</th>
<th>Multidistrict metro</th>
<th>Nonmetro</th>
<th>Leading institution(s) / champion(s)</th>
<th>Time horizon</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Core</td>
<td>Periphery</td>
<td>Urban</td>
<td>Rural</td>
</tr>
<tr>
<td>1. Expand opportunities for urban financing</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Own-source revenue:</strong> Support vertical development, more collection of property taxes, and use of real estate instruments</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td><strong>Transfers:</strong> Keep supporting through transfers with increasing portion of results-based transfers</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Own-source revenue:</strong> Allow to keep a larger portion of income tax</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td><strong>Borrowing:</strong> Increase debt financing from both public and private sources</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Private financing:</strong> Continue regulatory reforms to encourage and support PPPs</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Transfers:</strong> Change transfer formula to place more weight on population</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Build capacity for urban planning, management, and finance</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Personnel:</strong> Build capacity for planning, geospatial analysis, project management, and public finance</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Monitoring:</strong> Establish a system that enables subnational governments to report on their outputs and benchmark their performance</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Information system:</strong> Strengthen common data and mapping platforms for capital investment and property tax management</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Information system:</strong> Strengthen common data and mapping platforms for development control (monitoring of spatial plan)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Monitoring:</strong> Enable local internal audit officers to play a larger monitoring role</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Enhance institutional coordination</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Interjurisdictional coordination:</strong> Engage actively in interdistrict cooperation to deliver complementary services</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td><strong>Interjurisdictional coordination:</strong> Take anticipatory coordination measures with surrounding or nearby districts</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Vertical coordination:</strong> Work with provincial government to improve vertical alignment across levels of government</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Intersectoral coordination:</strong> Integrate local sectoral plans into a common data and mapping platform</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Intersectoral coordination:</strong> Establish a national-level platform for urban transformation led by the president</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### TABLE OA.2  Matrix B: Policies for more connected places

<table>
<thead>
<tr>
<th>BROAD RECOMMENDATION</th>
<th>Multidistrict metro</th>
<th>Nonmetro</th>
<th>Leading institution(s) / champion(s)</th>
<th>Time horizon</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Periphery Core</td>
<td>Urban</td>
<td>Rural</td>
<td>Core</td>
</tr>
<tr>
<td><strong>1. Enhance integration within urban areas through operationalization of spatial planning including land management</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>To support alignment of spatial and sectoral plans, consider aligning their preparation process timelines</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Scale up current efforts to improve technical capacity at the local level, strengthening data collection and analysis for evidence-based decision making in contexts of rapid urbanization</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Continue efforts to clarify property rights and improve efficiency of land-management practices (including reforms to reduce transaction costs)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Ensure operationalization of plans by explicitly linking socioeconomic development outcomes to spatial planning</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Apply spatially enabled prioritization of city investments to match funding</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Strengthen local government capacity to develop and enforce regulatory systems that support integrated growth</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Expand use of capital investment planning and asset management tools to strengthen links between planning and financing decisions</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td><strong>2. Promote a holistic housing agenda</strong> to ensure access to adequate, affordable, and resilient housing with good access to basic urban services</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strengthen local capacity to prioritize coordinated and spatially driven actions in the housing sector, including effective land management</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Strengthen local capacity to accelerate permitting processes and to enforce construction quality and resilience standards</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Carry out an assessment of rental housing demand, supply, and challenges to explore opportunities for expanding rental markets</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Expand support to mixed-used, mixed-income solutions to enhance integration and prevent segregation</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Improve availability of well-located housing through information system and tools for spatial planning including location guidelines</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

Table continued on next page
**TABLE OA.2 Continued**

<table>
<thead>
<tr>
<th>BROAD RECOMMENDATION</th>
<th>Multidistrict metro</th>
<th>Single-district metro</th>
<th>Non metro</th>
<th>Leading institution(s)/champion(s)</th>
<th>Time horizon</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Core</strong></td>
<td><strong>Periphery</strong></td>
<td><strong>Urban</strong></td>
<td><strong>Rural</strong></td>
<td><strong>Core</strong></td>
<td><strong>Periphery</strong></td>
</tr>
<tr>
<td>Collaborate across ministries to design incentives for development of land for housing in suitable areas, closest to availability of existing infrastructure and services and where exposure to risks are minimized (such as tax undeveloped land or constrain subsidies to central locations)</td>
<td>✓ ✓ ✓ ✓</td>
<td>✓ ✓ ✓ ✓</td>
<td>✓ ✓ ✓ ✓</td>
<td>MPWH, MOT; Bappeda; Bappenas</td>
<td>M</td>
</tr>
<tr>
<td>Support expansion of rental solutions to increase the supply of affordable housing for low-income households</td>
<td>✓ ✓ ✓ ✓</td>
<td>✓ ✓ ✓ ✓</td>
<td>✓ ✓ ✓ ✓</td>
<td>MPWH, Bappeda; BKPR; BPN; Perum Perumnas</td>
<td>M</td>
</tr>
<tr>
<td>Continue efforts to improve the efficiency of the credit-link housing subsidy</td>
<td>✓ ✓ ✓ ✓</td>
<td>✓ ✓ ✓ ✓</td>
<td>✓ ✓ ✓ ✓</td>
<td>MPWH, Bappeda; MOF; SMF; Banks</td>
<td>M</td>
</tr>
<tr>
<td>Jump-start the housing microfinance sector to support the housing needs of the informal sector</td>
<td>✓ ✓ ✓ ✓</td>
<td>✓ ✓ ✓ ✓</td>
<td>✓ ✓ ✓ ✓</td>
<td>BI, MPWH; OJK; SMF; MFIs/Banks</td>
<td>L</td>
</tr>
</tbody>
</table>

3. **Strengthen involvement of national government guidance of urban transport policy**

and systematically support a sustainable public transport investment program

<table>
<thead>
<tr>
<th>BROAD RECOMMENDATION</th>
<th>Multidistrict metro</th>
<th>Single-district metro</th>
<th>Non metro</th>
<th>Leading institution(s)/champion(s)</th>
<th>Time horizon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Develop a National Urban Transport Program to provide clear policy, institutional, investment, and operational guidelines for sustainable urban transport programs at the local level</td>
<td>✓ ✓ ✓ ✓</td>
<td>✓ ✓ ✓ ✓</td>
<td>✓ ✓ ✓ ✓</td>
<td>MOT, CMMA; Bappeda; Bappenas; MPWH</td>
<td>S</td>
</tr>
<tr>
<td>As part of the National Urban Transport Program, systematically strengthen financial support from national government to sustainable urban transport projects</td>
<td>✓ ✓ ✓ ✓</td>
<td>✓ ✓ ✓ ✓</td>
<td>✓ ✓ ✓ ✓</td>
<td>MOT, CMMA; Bappeda; Bappenas; MPWH</td>
<td>S</td>
</tr>
<tr>
<td>Design incentives (or legal mechanisms) to promote coordination across jurisdictions in metropolitan areas, for example, through a single management authority</td>
<td>✓ ✓ ✓ ✓</td>
<td>✓ ✓ ✓ ✓</td>
<td>✓ ✓ ✓ ✓</td>
<td>MOT, CMMA; Bappeda; MPWH</td>
<td>S</td>
</tr>
<tr>
<td>Implement actions to manage demand and reduce explicit and implicit subsidies to private car use (such as congestion pricing)</td>
<td>✓ ✓ ✓ ✓</td>
<td>✓ ✓ ✓ ✓</td>
<td>✓ ✓ ✓ ✓</td>
<td>MPWH, MOT; CMMA; Bappeda; Bappenas; BPN</td>
<td>S</td>
</tr>
<tr>
<td>Increase investments in nonmotorized transport and improve links to public transport systems</td>
<td>✓ ✓ ✓ ✓</td>
<td>✓ ✓ ✓ ✓</td>
<td>✓ ✓ ✓ ✓</td>
<td>MOT, CMMA; Bappeda; MPWH</td>
<td>S</td>
</tr>
<tr>
<td>Reform public transport to promote high-quality service that fosters city connectivity and integration and reduces private vehicle use intensity</td>
<td>✓ ✓ ✓ ✓</td>
<td>✓ ✓ ✓ ✓</td>
<td>✓ ✓ ✓ ✓</td>
<td>MOT, CMMA; Bappeda; MPWH; BPN</td>
<td>M</td>
</tr>
<tr>
<td>Develop financing mechanisms to incentivize local governments toward coordinated land use and transport planning, coordination of supply and demand-side policies, and cross-jurisdiction coordination</td>
<td>✓ ✓ ✓ ✓</td>
<td>✓ ✓ ✓ ✓</td>
<td>✓ ✓ ✓ ✓</td>
<td>Bappedas; MOT; CMMA; Bappeda; MPWH</td>
<td>M</td>
</tr>
<tr>
<td>Promote transit-oriented development that encourages densification in transport corridors of high demand</td>
<td>✓ ✓ ✓ ✓</td>
<td>✓ ✓ ✓ ✓</td>
<td>✓ ✓ ✓ ✓</td>
<td>Bappeda; BPN; MOT; CMMA; MPWH; BKPR</td>
<td>M</td>
</tr>
</tbody>
</table>

*Note: Leading institutions are shown in boldface. PPP = public–private partnership.*
Notes

1. All urban population figures cited in this paragraph are based on data from the United Nations World Urbanization Prospects: 2018 revision database (https://population.un.org/wup/).


3. A country’s urbanization growth rate is given by the growth rate of the share of its population that lives in urban areas. For a discussion of why this rate rather than, for example, the simple growth rate of urban population, represents the most appropriate metric of the pace of urbanization, see box 1.2, chapter 1.


5. Indonesia’s national statistics office, Badan Pusat Statistik (BPS, also known as Statistics Indonesia), classifies settlements as urban or rural using a composite scoring system that considers population density, the structure of the local economy, and the extent to which a settlement has certain types of infrastructure and amenities (see chapter 1).

6. The decompositions of Indonesia’s urban population growth are by Wai-Poi et al. (2018).

7. The World Bank’s 2009 World Development Report (World Bank 2009b) defines areas of incipient urbanization as those in which about 25 percent of the population lives in urban settlements. Areas with urban population shares of about 50 percent are at an “intermediate” stage of urbanization, and those that are at an “advanced” urbanization stage have urban shares of about 75 percent or higher.

8. As described in more detail in chapter 4, real consumption per capita is calculated by using the ratio of the poverty line of a given province to the poverty line of Jakarta’s core (that is, DKI Jakarta) as a spatial price deflator.

9. This finding also holds true for island-regions and districts. Indonesia’s island-regions, as defined in this report, are Jawa-Bali, Kalimantan, Maluku-Papua, Nusa Tenggara, Sulawesi and Sumatera.

10. As is evident from figure O.6, the bulk of the increase in within-place inequality took place prior to 2012; since that time, inequality levels have stabilized.

11. Workers are considered low skilled if they have education below the elementary level, medium skilled if they have education between junior secondary and secondary levels, and high skilled if they have education above the upper secondary level.

12. Similar results hold for PISA math test scores.

13. Based on calculations using BPS data, house price-to-(median) income ratios for Bandung, Denpasar, and Jakarta are 12.1, 11.9, and 10.3, respectively. In contrast, data from Demographia and Nomura point to house price-to-income ratios of 7.7, 5.7, and 4.8 for Bangkok, New York, and Singapore, respectively.


15. Following Health Ministerial Decree (Kepmenkes) No. 829/1999, a house is considered overcrowded if the floor area per person is less than 8 square meters.

16. A megacity is defined as a city with 10 million or more inhabitants.

17. For more information, see https://www.tomtom.com/en_gb/trafficindex/. Rankings based on 2016 data.

18. In the analysis, congestion was defined as occurring when a journey’s travel time exceeds the “free flow” travel time by 25 percent, where the “free flow” travel time is the fastest reported travel time, according to the Google Maps API, at which the journey can be undertaken during a typical day (typically, between the hours of 2 a.m. and 3 a.m.). Redefining congestion so that it occurs whenever a journey’s travel time exceeds the “free flow” time would result in an approximate fourfold increase in the estimated costs of congestion. These figures represent lower-bound estimates of the true costs of congestion because they exclude estimated costs associated with travel time uncertainty (additional time that must be allocated to a trip to ensure that the vehicle reaches its destination at a specific time), vehicle operating costs due to additional starts and stops, carbon monoxide and other emissions, public health impacts from emissions, traffic collision damage, and losses due to excess freight transport time. Crucially, they also exclude indirect costs arising from the impacts of traffic congestion on both urban form and the overall level of urbanization that may constrain the realization of positive agglomeration forces.

19. See chapter 4 for a detailed discussion of this evidence.
20. For health facilities, accessibility is rated by respondents to Indonesia’s Village Potential Statistics (PODES) survey as very easy, easy, difficult, or very difficult. Households lacking “very easy” or “easy” access to a facility are classified as “deprived.”

21. Controlling for access to services and household characteristics, children in multidistrict metro cores are taller and heavier for their age than children in nonmetro rural areas by 0.21 and 0.15 standard deviations, respectively.

22. See chapter 1 of the report for a detailed discussion of urban population growth trends for the different types of place.

23. Similar results hold when comparing Indonesia’s densities (per square kilometer of land area) of main roads and railways with those of other countries.

24. Annex OA sets out the tailoring of detailed policy actions by type of place.

25. In chapter 3 of the report, it is estimated that a doubling of a measure of access to domestic markets for urban periphery districts is associated with a statistically significant 2.9 percent increase in worker productivity in regression analysis that controls for a wide range of observable characteristics of both workers and the jobs they occupy. For rural periphery districts, the effect of access to domestic markets on productivity is significant at the 12 percent level.

26. For nonmetro urban areas in 2014–16, own-source revenues accounted for about 5 percent of total revenue. The corresponding figures for rural periphery and nonmetro rural areas were 3.4 percent and 1.2 percent, respectively.

27. Using U.S. case studies, mass rail system costs are US$104.5/km versus US$8.4/km for bus rapid transit (Cervero 2013).

28. This figure is based on December 2018 Ministry of Finance data.

29. This is particularly true for transport investment. The share of subnational governments in total transport investment increased from about 25 percent in the mid-1990s to more than 50 percent in the second half of the 2000s, whereas the central government share underwent an inverse evolution.

30. See chapter 6 for a full discussion of this analysis.

31. For example, partly because of the lack of base maps, only 90 of 1,400 detailed spatial plans for targeted priority areas nationwide have been developed and issued.

32. The Local Government and Decentralization project was a World Bank–funded loan project worth US$770 million that ran from 2011 to 2017. Before the project, no reporting or independent verification process was mandated on subnational government use of specific purpose funds or compliance of completed work with technical guidelines. Governments only submitted financial reports to the Ministry of Finance stating that the funds had been spent, and no technical reporting was required. Because financial reports were submitted manually, sharing them among relevant ministries was delayed. The project was designed to improve reporting, transparency, and accountability in the use of specific purpose funds.

33. This platform would need to include all relevant ministries such as the Ministry of Finance, Ministry of Home Affairs, Ministry of Agrarian Affairs and Spatial Planning, Ministry of Public Works and Housing, Ministry of Transportation, Ministry of Communications and Information, and the National Geospatial Information Agency. Meanwhile, Bappenas could be assigned the critical role of technical secretariat and hub of the platform.

34. This move would require a change in the overall decentralization hierarchy and Law 23. It would also require specific transfers to the provincial governments that take on such functions. Finance could be achieved through the voluntary agreement of districts to allocate some part of their funding to provinces, in accordance with the functions being taken on.

35. These multigovernment enterprises would have the constituent district governments on their boards. Financing could come through a mix of user fees, contributions from member subnational governments, precept powers, central transfers, and borrowing.

36. For a description of Mexico’s National Housing Registry, see Kim and Zangerling (2016).

37. For more information, see http://vidabekasi.com/.

38. See chapter 3 of the full report.

References


——. 2018c. “People’s Perspectives of Urban Poverty and Rural-to-Urban Migration.” Background paper for this report, World Bank, Washington, DC.

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Indonesia has urbanized rapidly since its independence in 1945, profoundly changing its economic geography and giving rise to a diverse array of urban places. These places range from the bustling metropolis of Jakarta to rapidly emerging urban centers in hitherto largely rural parts of the country. Although urbanization has produced considerable benefits for many Indonesians, its potential has only been partially realized.

Time to ACT: Realizing Indonesia’s Urban Potential explores the extent to which urbanization in Indonesia has delivered in terms of prosperity, inclusiveness, and livability. The report takes a broad view of urbanization’s performance in these three key areas, covering both the monetary and nonmonetary aspects of welfare. It analyzes the fundamental reforms that can help the country to more fully achieve widespread and sustainable benefits, and it introduces a new policy framework—the ACT framework—to guide policy making. This framework emphasizes the three policy principles of Augment, Connect, and Target:

- Augment the provision and quality of infrastructure and basic services across urban and rural locations
- Connect places and people to jobs and opportunities and services
- Target lagging areas and marginalized groups through well-designed place-based policies, as well as thoughtful urban planning and design.

Using this framework, the report provides policy recommendations differentiated by four types of place that differ in both their economic characteristics and the challenges that they face—multidistrict metro areas, single-district metro areas, nonmetro urban areas, and nonmetro rural areas.

In addition to its eight chapters, Time to ACT: Realizing Indonesia’s Urban Potential includes four spotlights on strengthening the disaster resilience of Indonesian cities, the nexus between urbanization and human capital, the “invisible” crisis of wastewater management, and the potential for smart cities in Indonesia.

If Indonesia continues to urbanize in line with global historical standards, more than 70 percent of its population will be living in towns and cities by the time the country celebrates the centenary of its independence in 2045. Accordingly, how Indonesia manages this continued expansion of its urban population—and the mounting congestion forces that expansion brings—will do much to determine whether the country reaches the upper rungs of the global ladder of prosperity, inclusiveness, and livability.