

ISSUES ON INSTITUTIONAL REFORM OF INFRASTRUCTURE DEVELOPMENT IN INDONESIA

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This policy brief is the result of an activity entitled “Economic Policymaking in Indonesia” which is jointly conducted by Centre for Strategic and International Studies (CSIS) and Economic Research Institute for ASEAN and East Asia (ERIA). This activity is a contribution from research community that is expected to assist the government in formulating more effective economic policies in the future. In this activity, CSIS and ERIA invited 16 economists with specific fields of expertise from some leading research institutions to conduct in-depth discussions on seven strategic issues facing Indonesian economy (infrastructure development, competitiveness, investment climate, food policy, services sector policy, fiscal policy, and social protection policy), which is then summarized into policy briefs covering each of the topics.

Dissemination of the findings and recommendations produced by this activity is conducted through several channels. First, this activity has made efforts to engage the relevant government officials through some Focus Group Discussions (FGD), the publication of High Level Policy Notes, and hearings with some strategic policymakers with regard to each of the strategic issues mentioned above. Secondly, this activity also conducts widespread public disseminations through Public Seminars on each of the strategic issues, along with publications of the Policy Briefs and supporting multimedia that can be accessed online through www.paradigmaekonomi.org.

INTRODUCTION

The poor state of infrastructure now represents a major constraint to the country's growth and development. Various reports and analysis have identified poor infrastructure as the main factor preventing Indonesia's economy from growing at its potential rate of 7-8%. For example the World Bank estimates that had Indonesia's real infrastructure capital stock expanded by 5% annually (versus actual growth of just 3%) then real GDP growth over the 2001-2011 period would have been 0.5 percentage points higher, i.e. 5.8% instead of 5.3%. If the capital stock grew by 10% annually, then the GDP growth would have averaged a very healthy 7% for the same period.

Poor infrastructure constrains growth in a number of ways, most critically by inhibiting connectivity - across suppliers, producers and consumers, both domestically and internationally. Symptoms of Indonesia's current connectivity problems are evident throughout the country: crowded airports and delayed flights, congested seaports, eroding local roads, high inter-island cargo costs, long commute times, slow inter-urban travel speeds, and high fatality rates associated with transport accidents.

Poor infrastructure also impacts negatively upon general quality of life, especially for lower income groups. This is particularly applicable in the water and sanitation sector (Watsan), where improvements in infrastructure, such as access to piped drinking water, or access to onsite or offsite sewerage facilities, can lead to much better hygiene and general health outcomes, which in turn also lead to improved economic opportunities.

CHANGING THE BUSINESS MODEL: THE EMERGING ROLE OF COMPETITIVE MARKETS

After years of under-investment and poor asset management, Indonesia is now left with major infrastructure development backlog. Continuing economic growth coupled with demographic changes is likely to result in demand outstripping supply. Without major changes to the way in which infrastructure is currently planned and delivered the infrastructure gap will persist and the backlog will continue to expand. Indonesia's growth will be further constrained and efforts to improve living standards will be compromised.

Closing the infrastructure gap in the short-medium term, and addressing the backlog in the longer term is a major priority for the current national administration. Decisions need to be taken about the overall level of expenditure on infrastructure capacity, its allocation between infrastructure sectors, its mode of delivery and the balance between new supply, maintenance of the existing capital stock and demand management.

To the extent possible, these decisions are best made by users/customers and a private sector that seeks, under pressure of competition, to meet their needs in the most efficient way. The alternative is government decision-making. However experience here in Indonesia and elsewhere shows that governments are not always effective at making the right choices in the allocation of scarce resources.

This shortcoming in the ability and flexibility of governments to respond to needs – and, by contrast, the ability of the private sector to do so, if under competition – was a key foundation for RPJPN (to 2025). It envisaged the major infrastructure supply role being taken by the private sector. With a few

exceptions this has not yet happened. A very high priority should be placed on facilitating a private-sector response to infrastructure needs. This would mean a role that goes beyond merely financing the infrastructure gap, and extending to a broad range of planning and delivery activities. Importantly it will also mean a changing role for government.

Whilst infrastructure is a key priority for the current administration, we have yet to see any major change in the business model in the way infrastructure is planned and delivered. Important measures, such as freeing up subsidy funds for infrastructure investment, have not been carried out within the context of a comprehensive longer term plan that necessarily emphasises the role of the private sector. Instead the response has been both state-led and short term in nature. This is best characterised by the large injection APBN funds into SOEs coupled with the assignment (*penugasan*) of a number of key projects. This is driven by the political imperative to immediately accelerate infrastructure expenditure and to show visible progress. However this has led to the crowding out of private sector investment, and this is likely to continue for the short-medium as the most feasible projects are cherry picked by SOEs. More generally, it raises concerns both domestically and internationally, that it is 'business as usual' with Indonesia yet to pursue a truly open and competitive infrastructure market.

Changing the business model from a state-led to private sector driven model is now imperative. The need for this role change becomes apparent when we examine the pattern of efficiency and productivity in the infrastructure sector, both here in Indonesia and elsewhere. Where government has stepped back into a more regulatory role and allowed private-sector competition to flourish, the gains have been impressive: examples include civil aviation, telecommunications, as well as select sections of the ports, road transport, housing, and health sectors. Where government has retained a monopoly, pockets of inefficiency and poor market responsiveness remain: airports, ferries, the railways, many ports, as well as the water and sanitation sector.

These pockets of inefficiency arise because of inconsistencies in the pattern of incentives. The incentives to provide attractive services and operate efficiently are strong in a competitive market, but they hardly exist for a monopoly supplier. There needs to be clarity about what services should be offered by the market and what should fall to the public sector as a last resort. This will also help focus debate on whether non-commercial services traditionally considered to be the domain of the public sector might not be better provided by the private sector under competitively tendered performance-based contracts.

REFORM OF THE ROAD SECTOR NEEDS TO BE THE PRIORITY

Poor connectivity is undermining national competitiveness and the overall quality of the transport needs urgent improvement. While the government's strategic focus has turned to much needed improvements in maritime and rail transport, 70% of freight and 80% of non-urban passenger movements are carried by road. Ports, airports, factories, farms, markets, villages, towns, cities and consumers are all connected by road. Whilst the other transport sectors are very important, it is the road sector that needs most attention, and where there is greatest need to change the business model.

Congestion on the national road network is slowing the economy. Corridor travel times are 2-3 times that of regional competitors. Lack of finances

is not the primary problem. Budget allocations for the national road network have increased 4-fold over the 2007-2015 period. The key problem is that the current planning and delivery model is providing poor value for money with spending focussed on relatively high cost road rehabilitation and incremental widening along existing alignments – delivering projects that are quick to prepare and implement, but tend to only have only a short term contribution to the network. Moreover, contracts are typically single-year and relatively small, and tend not to be managed well. This has contributed to a highly fragmented road industry, with little or no focus on construction quality.

There is arguably too much focus on the short term – on individual projects – and not enough on the longer term planning necessary for Indonesia to reach its development goals in the coming 20-30 years. As a result large amounts of resources are diverted into an expensive rehabilitation-deterioration-reconstruction cycle delivering poor value for money.

The urgency for a new approach to national roads has been highlighted in some recent modelling work by IndII which simulates traffic conditions in the national network in 2030 for both Java and Sumatra. The model was constructed based on forecast changes in economic and demographic circumstances (including rapid rates of motorisation).

In Java, traffic will have tripled from today's level, growing at 7-8 percent per annum on most routes. With no major new development of the network, conditions will be intolerable, with average speeds on inter-city routes failing from the current 30-35 km/h to approximately 10-12 km/h by 2030. Finishing the Trans-Java toll road will not be enough. The level of the congestion on the arterial (non-toll road) network will be worse than it is today, even with traffic diverted to the completed Trans-Java toll.

Considerable more capacity is required. Meeting demand just in Java will require at least 1,150 km of additional expressways, beyond what is already planned plus over 3000 km of major improvements to existing arterial roads (primarily upgrading to 2-4 laned highways in each direction). For Indonesia as a whole nearly 5800 km of new expressways are needed, as well as 10,000 km of upgraded arterial roads on new alignments and 18,000 km on existing alignments. At current prices, the expected cost of this additional capacity is approximately Rp 300 trillion for Java; or just over Rp 720 million for the national network.

This presents a huge and somewhat unprecedented challenge for the Indonesian government. In the last 20 years, barely 200km of tolls roads have been built and national roads capacity grew at only 1-2 percent per annum. To meet the challenge in 2030, expressway construction needs to rise to over 500 km per annum, and national road capacity increased by over 5 percent per annum. For this to happen, key constraints will need to be overcome on planning, land access, budgeting and industry delivery capacity.

Even with recent changes to the land law, which injects much greater certainty into the land clearance process, the gestation period from preliminary design of new roads, through to finalisation of construction is at least 5-8 years. To ensure that much needed new capacity can come online in the 2020-25 period, important design and planning tasks would need to be commenced immediately. However in the rush to expedite visible projects in 2015 and 2016, this urgent planning task – of securing the corridors for future expressways and upgraded arterials – has been given less priority. Land for projects is still being acquired on a piecemeal, project-by-project basis, instead of being guided by a long term comprehensive national plan for road development.

Another key constraint is the limited delivery capacity of the local road construction industry. It is a highly fragmented sector with a few large (mainly state-owned) players and a large group of smaller players with extremely limited in-house capacity. This is both a product and cause of a highly fragmented approach to contracting, which sees the road program split into a large number of small contracts¹. To an extent, fragmentation is driven by industry pressure to ensure small players can compete, however this in turn constrains industry development which requires consolidation and better scale economies to improve productivity and efficiency. It also results in a bloated and relatively high cost bureaucracy.

Consider the comparison of how national roads are managed in South Africa and Indonesia (Box1). The South African National Road Agency (SANRAL) delivers a far superior national network with average travel speeds more than twice that on the roads managed by Bina Marga, the Indonesia National Road Agency. Importantly, SANRAL only needs to employ just under 300 staff to deliver a 21400 km network (approx. 1.4 employees per 100 km) whilst Bina Marga employs over 7300 employees to deliver 38,500 km of national roads (approx. 19 employees for 100 km). Despite delivering an inferior network, on a per kilometre basis Bina Marga requires 13.5 times more staff than SANRAL.

These and other international comparisons suggest there is an urgent need to change the current model for delivering national roads. Most importantly, there is a great opportunity for the private sector, both national and international, to play a key role in delivering the road network necessary to ensure Indonesia can reach its development goals in the coming decades. By 2030, as noted above, total required investment in expressways and arterial road renewal will amount to over Rp 720 trillion in today's prices. Roughly 60-75% of that could be leveraged from the private sector if effective financing and risk models were available and the enabling environment was in place.

The current range of models – tollroads, viability gap financing (VGF) and SOE assignment (penugasan) needs to be broadened to avoid the impasse of the past 15 years and ensure effective private sector engagement. Models such as availability payments or PBAS (performance based annuity payments) in which the private sector finances design, construction, operation and maintenance in return for regular performance based government payments after project opening are attractive to the private sector, under the right governance arrangements – and have performed well elsewhere.

¹ As of August 2015 Bina Marga had 3266 active contracts, with a total value consistent with the agency's annual budget – roughly 11-12 km of road length per contract.

Box 1: Comparison of national roads management in South Africa and Indonesia

In South Africa, the South African National Roads Agency Limited (“SANRAL”) has a mandate to finance, improve, manage and maintain the national road network⁽¹⁾. This includes the responsibility of acting as a contracting agency for toll roads procured under South Africa’s public-private scheme.

In Indonesia, the Directorate General of Bina Marga (“Bina Marga”) has the largely the same functions as SANRAL; although, SANRAL’s function as a PPP contracting agency is delegated to the Indonesian Toll Road Regulatory Authority.

The table below compares the size of the network managed by each institution, the number of employees that manage it, budgetary allocations and relative performance.

Country	Institution	Length of network (km)	Number of employees	Employees per kilometre	Number of contracts	Average Speeds km/h ⁽⁶⁾	Budget Allocations (mill. USD)	Allocations per network km (USD)
Indonesia	Bina Marga	38,570 ⁽¹⁾	7,372 ⁽²⁾	0.190	3266 ⁽⁴⁾	46	3,593 ⁽⁷⁾	79,317
South Africa	SANRAL	21,403 ⁽³⁾	295 ⁽⁵⁾	0.014	175 ⁽⁵⁾	98	1,011 ⁽⁸⁾	47,246

Sources: (1) BPS webpage, (2) MPW&H webpage, (3) SANRAL webpage, (4) Active/open Bina Marga contracts as of Aug 2013 covering almost all the Bina Marga budget allocation for 2015 – only 7% were new/ongoing multi-year contracts, (5) SANRAL Annual Report 2014 – number of new contracts issued in 2014 (over the previous 5 years SANRAL issued on average 180 contracts a year), (6) Calculated using Googlemaps, based on main national network routes in Indonesia (across main routes in Java, Sumatra, Kalimantan, Sulawesi: totalling 7650 km) and South Africa (entire N1-N8 routes : totalling 7500 km), departing origin at 5 pm, (7) 2016 budget allocation for Bina Marga - Rp 41,3 trillion, (8) 2014/15 budget allocations for SANRAL – ZAR 10.96 billion, does not include loans or toll concession funds

The table shows that **Indonesia has more than 13 times as many employees per kilometre of road network managed than South Africa**. Sectoral experts attribute the bulk of the difference to the differing contracting practices implemented by the respective institutions.

IMPROVED ASSET MANAGEMENT IS CRUCIAL

Asset management is a systematic process to guide the planning, acquisition, operation and maintenance, renewal and disposal of assets. Its primary objective is to maximise service delivery potential and manage related risks and costs over the economic life of an asset.

Asset management, in particular its maintenance and renewal dimensions, is arguably the crucial missing ingredient in much of the policy and public discourse on Indonesia’s infrastructure. There is little awareness and understanding of the economic benefits of whole-of-life management of assets. As a result, budgeting, planning and investment decisions are typically taken with little regard for ongoing maintenance of the assets being procured. A basic regulatory framework for asset management is in place. Beyond compliance

with this framework, this is little real commitment. No central or local government agency has well-articulated and/or functioning asset management policies, plans and strategies. For many officials, at both the national and local level, asset management extends only as far as developing a registry of assets; and many agencies (perhaps most) have difficulty identifying their list of assets.

Much of the general narrative on Indonesia's infrastructure problems centres on the need for new investment. However, major efforts to increase the stock of productive infrastructure are being undermined by the rapid depreciation and premature failure of installed assets. To borrow a local term, Indonesian infrastructure is to a large extent *jalan di tempat* (showing no progress): just as fast as new infrastructure comes online, existing capacity is lost elsewhere. The water sector is a good example. Recent analysis by IndII shows that on a yearly basis, over 40% of PDAMs (water utilities) see their overall stock of assets degrade, as depreciation exceeds new investment. Moreover, for two-thirds of those PDAMs with positive net investment, the new investment is insufficient to cover the annual capex costs associated with organic growth of their distribution network.

Public frustration with the poor standard of infrastructure provision is often more associated with the rapid decay of existing infrastructure, rather than the need for new investment. Key examples include the annual outcry over the poor standard of local and national roads to accommodate the large movement of people of to/from the cities during Idul Fitri, as well as catastrophic events such as the collapse of the Kutai Kartanegara bridge in 2011, just 10 years after initial construction.

Poor asset management translates into high costs for government and users. Lack of effective maintenance on assets (typically coupled with poor initial construction work and often inappropriate design standards) shortens economic lives, resulting in inefficient and wasteful spending on new construction and re-habilitation. In the case of local roads, for example, pavements often start failing within two to three years, instead of the 10-15 years or more usually assumed when roads are better managed. Moreover, underinvestment in ongoing maintenance makes eventual road construction three to five times more expensive. But such costs are greatly exceeded by the costs to users, particularly if a road is left in disrepair for an extended period. IndII analysis has shown that if the response time to repair a road stretches to 12 months rather than 2 months, then overall additional costs to road users could be 10 times that of the additional road agency costs.

A broad range of factors contribute to Indonesia's infrastructure asset management problem, many of which are sector-specific, e.g. in roads: overloading and inappropriate design standards. Discussed below are two common themes, drawn from different technical contexts, relating to incentives and accountability.

First, current incentive structures play a key role in explaining why infrastructure assets tend to be poorly managed. Initial construction is often done by one party, and maintenance and other downstream renewal work performed by another. This incentivises shortcuts during construction, as downstream risks will be borne by others, generating what is known as a "moral hazard" problem. Moreover, often key assets such as roads are maintained by publicly employed *swakelola* (force account) managers and labourers who lack overall productivity and performance incentives to ensure effective maintenance practices.

One strategy to realise better life-cycle economies of infrastructure investment is to consider performance-based delivery modalities, including making one

party responsible for designing, building, operating and maintaining an asset, and periodically remunerating them based on the performance of that asset. For existing assets, performance-based contracting arrangements can be explored for operations and maintenance tasks. Likewise, performance incentives could be utilised to enhance delivery through more traditional public sector procurements; e.g. remunerating swakelola road units per unit of output, such as length of drains cleaned or number of potholes repaired.

Also, incentives for improved asset management policies and practices could be mainstreamed into inter-government grant conditionality. Notably, the DAK (Dana Alokasi Khusus, or special allocations fund, which is the current main source of locally implemented infrastructure grant funding from the centre) does not cover investment in routine and periodic maintenance. In the current moves to upgrade the DAK to provide far greater financial resources for LGs, there is a great opportunity to inject performance incentives into the grant arrangements, building upon the success of the water hibah.

Second, lack of accountability and responsibility for asset condition, use and performance is another crucial problem undermining asset management. Infrastructure agencies are typically not held accountable for their performance in asset management. Various regulatory and incentive-based options could be used to increase accountability, including penalties for infrastructure managers that neglect to take reasonable action to preserve the productive capacity of assets under their direct control. Transparency-based measures involving community and user groups may also be helpful initiatives to promote accountability.

Confusion or uncertainty as to which agency is responsible for an asset further diminishes accountability. This applies both horizontally across agencies within the same government and vertically across different levels of government. As an example of the former, there is uncertainty over which agency has ownership of, and hence responsibility for, much of Transjakarta's corridor infrastructure, such as shelters, pedestrian bridges and walkways. This in turn diminishes the incentive for preservation of those assets.

Vertically, a common problem occurs when an infrastructure asset is provided by the central government, but with little engagement or ownership by the receiving LG. Moreover, the transfer status is often sufficiently vague that the asset remains essentially ownerless. LGs often complain of having unwanted or inappropriate infrastructure assets imposed on them from above, and tend not to provide ongoing budget support for their maintenance and preservation. A common approach is to let the asset rapidly deteriorate, and then get a replacement provided from above, perhaps in just a few years.