INTRODUCTION

Infrastructure is the foundation of a stable and productive society, and the combination of population growth and rapid urbanisation are driving a global demand for infrastructure to unprecedented levels.

Asia’s infrastructure needs vary widely, given the region’s economic, political and geographical diversity. The infrastructure needed to support the growing population and booming economies in emerging Asia is particularly acute. The Global Infrastructure Hub’s (GI Hub’s) Global Infrastructure Outlook forecasts the need for infrastructure investment globally as US$94 trillion in aggregate between now and 2040, with over half of that need in Asia.¹

Given this enormous need for infrastructure and the vast cost of developing it, governments across the region recognise that their ability to finance the growing demand is limited by fiscal and budgetary constraints and are increasingly looking to the private sector to help provide finance and deliver efficient and sustainable projects, most notably through public private partnerships (PPPs).

To date, over 70% of infrastructure investment in Asia has been funded by public resources.² Understanding the value in both financing and expertise that the private sector can bring, governments around the region are increasingly considering PPPs as an alternative.

It was in this context that the GI Hub held a Regional PPP Risk Allocation Workshop in Bangkok, Thailand on 18 July 2017, with participants from various public sector representatives across South-East Asia and South Asia as well as multilateral organizations operating in the region.

1 The GI Hub’s Global Infrastructure Outlook is available at https://outlook.gihub.org.
United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP).

At the Bangkok Workshop, the GI Hub, in collaboration with the international law firm, Norton Rose Fulbright, led the discussions on the allocation of public and private sector risks in PPPs, and the regulatory challenges and advancements experienced by the emerging Asian countries in undertaking PPP projects.

**INGREDIENTS FOR SUCCESS IN INFRASTRUCTURE**

The GI Hub’s InfraCompass\(^3\) identifies the following as some of the most important policy drivers to rapidly improve the quality of infrastructure in emerging markets:

- better governance through lowering corruption levels and enhancing the rule of law;
- improved regulatory quality; and
- simplifying permit procedures and land administration.

Specifically, key factors for successfully implementing PPP as a means of procuring infrastructure include:

- an effective and consistent PPP regulatory framework – whether through a single PPP law or series of laws addressing key areas of interest for private sector investors;
- capacity across all public sector stakeholders to understand all aspects of PPP procurement, as major infrastructure projects inevitably require collaboration across multiple governmental agencies and ministries;
- thorough project preparation and feasibility studies, including proper evaluation of all procurement modalities to identify optimal solution from a value for money perspective;
- open, transparent and fair tender processes;
- international dispute resolution procedures and an appropriate enforcement regime; and
- the political will to support long-term investments.

The feedback from the participants at the Bangkok Workshop was that the PPP environment in emerging Asia has presented each country with their own sets of challenges, including, amongst others, difficulties in attracting international investors, a lack of capacity/experience within and coordination between governmental bodies, macro-economic risks, political risks and a lack of an effective PPP regulatory framework.

However, the participants at the Bangkok Workshop also agreed that various countries had taken significant steps to address some of these challenges, including by establishing centralised PPP Units, enacting PPP legislation, publishing pipelines of upcoming projects and introducing increasingly attractive legal, financial and regulatory reforms. A representative from India, for example, noted that India has procured around 1,600 PPP projects since 2005. While certain countries were considered to be at an earlier stage of development of their PPP policy, all countries represented at the Bangkok Workshop are actively working to attract private sector financing and facilitate the development of infrastructure through PPPs.

Some examples of the measures being taken by the countries represented at the workshop included:

- **Thailand** – Thailand enacted a PPP Act which came into effect in April 2013, with an aim to streamline the project approval process. The State Enterprise Policy Office is the central PPP coordinating body which introduced further procedural rules for the selection and implementation of PPP projects in 2016. Further, the government established the Thailand Future Fund, which will have its US$2.92 billion initial public offering in late 2017.

- **Philippines** – The government made infrastructure a strategic priority in 2010 and established the PPP Centre which is the coordinating and monitoring agency for the country’s PPP programs and projects. The PPP Centre has created a searchable database of pipeline projects and also manages the Project Development and Monitoring Facility. The government increased its infrastructure spending from 2.2% of GDP in 2012 to 5.1% in 2016.

In addition to achieving effective political, regulatory and market conditions, the Bangkok Workshop participants also recognised that the success of taking an individual project to market is dependent, to a large degree, on the allocation of risks in the concession agreement between the public and private partners involved with the transaction.

While the temptation within the public sector is often to transfer as much risk as possible to the private sector, the overriding principle should be that risk sits with the party best able to manage it. In other words, only those risks that the private sector can either control or insure against can readily be assumed by the private sector. If risks are not appropriately allocated, the result is likely to be higher up-front costs, longer procurement processes, fewer bidders, less competition, less competitive tariff bids, lack of equity, reduced financing options (i.e bankability\(^4\)), poor value for

---

\(^3\) Available at http://infracompass.github.org.
money and a higher chance of market failures (i.e. insolvencies and/or renegotiations).

Helping governments with developing PPP markets to better understand effective risk allocation in PPP projects is a key focus for the GI Hub. In 2016, the GI Hub, in collaboration with Norton Rose Fullbright, developed an interactive online tool (freely accessible at https://ppp-risk.gihub.org/) that provides information on risk allocations between the public and private sectors in PPP transactions for 12 sample projects, in the transport, energy and water and sanitation sectors, including related information on measures to mitigate issues and typical government support arrangements.

KEY ISSUES IN PPPS
The Bangkok Workshop also included a session covering the key risks in PPPs in the region. Of these, the following risks were identified as being of particular significance, based on the participants’ practical experience in the region.

Land acquisition and resettlement
The participants identified issues surrounding (i) the acquisition of land in PPP transactions, particularly in the absence of compulsory acquisition powers for procuring authorities; and (ii) resettlement risks, including the timeline for the relocation of affected communities.

A potential solution put forward – based on experience in more developed PPP markets – was that the allocation of risk should be split between the public and private sectors, with the public sector being responsible for the risk during the period before the handover of the land, and the private sector being responsible for the risk after the acquisition of the land.

Government capacity and experience in PPP transactions
The participants identified that an obstacle in practice was the different levels of understanding, communication and experience between various government departments in relation to undertaking PPP transactions.

Whilst not essential, the general consensus was that there was significant value in having:

- a designated PPP unit within government to lead the capacity building and drive policy reform; and
- a centralised budget or project development fund to ensure that projects are properly conceived and implemented in the early stages to maximise the chance of success and build investor confidence.

Attracting foreign investment
The participants identified the difficulties in attracting foreign investment for PPP projects. The key factors for promoting PPP projects to foreign investors that were discussed included:

- the need for a clear and viable pipeline of projects, given that the investment cost associated with bidding for projects is considerable and will not be recoverable by the investors if unsuccessful;
- political risk protection to address risks such as expropriation of the asset in the future, change in law, currency convertibility and repatriation of funds – to be addressed either through implementing policy reform or, potentially, through the availability of political risk cover from international financial institutions; and
- appropriate risk allocation in the concession agreement which reflects international norms, subject to any adjustment required to reflect the changes in risks associated with operating in emerging versus developed markets and other jurisdiction-specific considerations.

There was also discussion of alternate methods of financing, and the more innovative sources of funding which are available in mature markets, such as the use of rated bonds offered in debt capital markets to attract institutional investors.

SPECIFIC PROJECT ISSUES
Disruptive technology
The participants identified the important and disruptive role that technology plays in the PPP environment; particularly in the context of photovoltaic solar projects where newer, more cost-effective technology means that the tariff under most recent solar power purchase agreements is more competitive than the earlier power purchase agreements, affecting dispatch priorities and ultimately investor returns on the earlier projects. The participants agreed that PPP projects, which are structured as long-term investments, must be prepared for change brought about by advances in technology.

Technology is increasingly offering innovative, efficient and market-changing solutions across critical areas such as transportation, energy and water supply. It is also challenging even the most basic of services: cities around the world struggle to manage the disruption created by Uber in the provision of decades-old taxi services, which has
implications for governments considering upgrading or expanding their mass public transit infrastructure.

The advent of digital technology is transforming the way that people live and work. Embedded sensors combined with cloud computing, data analytics and mobile technology offer the next generation of networked transport infrastructure. Autonomous vehicles, drones and robotics, electric vehicles and charging infrastructure, intelligent parking systems, asset mapping and monitoring, renewable energy, micro-grids and energy storage, smart street lighting, digitization of payments and ticketing, demand-driven pricing mechanisms, and ride sharing will all impact the policy and planning decisions of governments looking to future-proof infrastructure.

Demand risk in light rail projects
The participants discussed the issue of demand risk in the context of light rail projects in view of the difficulties of accurately predicting demand and ridership, and the challenges in seeking to allocate this risk to the private sector, particularly where the public sector retains the right to set ticket prices.

Possible solutions to mitigating demand risks were discussed, and included providing minimum revenue guarantees and offering the ability to generate third-party revenue by, for example, building shopping centers along the railway.

Managing handover in water distribution projects procured on a Rehabilitate-Operate-Transfer model
Finally, the session considered the specific challenges associated with projects where the asset is transferred back to the procuring authority at the end of the concession term.

The discussion highlighted the need to have clear handback provisions in the concession agreement where:

- the procuring authority has audit and inspection rights 12-24 months prior to the expiry to verify the condition of the asset;
- based on the outcome of the inspection, the private sector party must, if necessary, develop and implement a maintenance plan to ensure that the asset will be in the requisite condition upon expiry; and
- the procuring authority is entitled to withhold monies from the monthly payment, so as to build a maintenance reserve account as security in the event that, upon expiry, the asset does not meet prescribed standards.