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INTRODUCING WAPPP'S 2026 THEME: NATIONAL INFRASTRUCTURE FINANCING INSTITUTIONS

INSIDE THIS ISSUE

- How PPPs can unlock the trillions needed for climate adaptation
- Resilience innovations reshaping cities, coasts and communities
- New models turning public pledges into bankable, scalable projects

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WAPPP

TABLE OF CONTENTS

From the Editor

Dear Reader and WAPPP Member,

PPPs have never been more relevant. Recent events have shown that governments alone cannot meet the scale of global challenges.

COP30 preparatory meetings confirmed a public-sector adaptation finance gap of over US$400 billion a year. Floods in Europe, drought in the Horn of Africa, and ongoing reconstruction in Ukraine and Gaza all underline one truth: as public budgets tighten, public purpose and private capital must work together.

At the policy level, momentum is accelerating. The G20 has called for greater public–private investment to meet the SDGs. The African Union is exploring a continental PPP framework under AfCFTA, and the European Commission's €35 billion *'Just Transition Partnerships Facility'* signals a clear push toward faster, fairer partnership models.

Amid this global shift, WAPPP continues to lead. We have expanded our regional, global, and sectoral webinars; advanced new guidelines and technical notes; and grown our membership across both PPP professionals and institutions.

None of this progress would be possible without the energy of our members, the support of our partners, and the commitment of our chapter leaders turning ideas into action.

"PPPS HAVE NEVER BEEN MORE RELEVANT. RECENT EVENTS HAVE SHOWN THAT GOVERNMENTS ALONE CANNOT MEET THE SCALE OF GLOBAL CHALLENGES."

Inside this issue, you'll find the full breadth of PPP practice: real projects, real lessons, real impact.
Our contributors are practitioners building, financing, regulating, and improving projects that change lives. We begin with bold questions—Are emerging markets now the most fertile ground for PPPs? What did Africa's philanthropists and investors align on in Kigali?—before moving to the front lines: Ulaanbaatar's streets, Punjab's irrigation networks, and innovative water solutions across continents.

Our technical features unpack transparent land allocation, asset management, and catalytic capital. And we look ahead: how can private finance close the adaptation gap? How will AI reshape PPP governance? Why do mindsets matter as much as money?

The journey is only beginning—and it's one we must walk together.

Thibaut Mourgues

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WAPPP 2026 Theme: National Infrastructure Financing Institutions

BY PETER M. KABUKI

WAPPP is proud to unveil its 2026 global theme: National Infrastructure Financing Institutions (NIFIs).

This theme represents a natural progression from WAPPP's recent focus on Small-Scale PPPs (2024) and Blended Finance (2025)—two themes that collectively highlighted the importance of inclusive infrastructure delivery and innovative financing approaches in fiscally constrained environments.

The 2024 theme underscored the transformative impact of empowering local governments, SMEs, and domestic contractors in infrastructure delivery. It demonstrated that small and mid-size PPPs, when properly structured and financed, can strengthen domestic supply chains, expand access to essential services, and build local institutional and private-sector capacity. In 2025, WAPPP's focus on Blended Finance deepened this momentum by showcasing how catalytic public and philanthropic capital can be strategically deployed to reduce risks, crowd in private investment, and improve the bankability of infrastructure projects across diverse markets.

The 2026 theme builds directly on these achievements by shifting the conversation to the institutional architecture required to implement what the last two themes set out conceptually.

Across regions, governments are increasingly establishing dedicated National Infrastructure Financing Institutions (NIFIs), aimed at mobilizing long-term capital for infrastructure, anchoring national infrastructure pipelines and expanding opportunities for local enterprise participation. These entities include National Infrastructure Development Banks, National Infrastructure Funds, and hybrid financing vehicles operating under national mandates.

"THE 2026 THEME BUILDS DIRECTLY ON THESE ACHIEVEMENTS BY SHIFTING THE CONVERSATION TO THE INSTITUTIONAL ARCHITECTURE REQUIRED TO IMPLEMENT WHAT THE LAST TWO THEMES SET OUT CONCEPTUALLY."

By placing National Infrastructure Financing Institutions at the center of the 2026 agenda, WAPPP aims to accelerate global understanding of how different institutional models can be deployed to strengthen domestic PPP ecosystems and support sustainable & inclusive infrastructure delivery.

Throughout 2026, WAPPP will deliver a six-part webinar series and a final flagship publication translating this theme into practical, actionable insights.

The program will explore the design and governance of NIFIs, capitalization strategies, and the range of financial instruments they deploy—from debt and guarantees to equity and blended finance tools. It will also examine how these institutions can strengthen local supply chains, enable SME participation, and coordinate effectively with PPP Units, project preparation facilities, and development finance institutions.

By championing this timely and forward-looking theme, WAPPP reaffirms its commitment to advancing innovative, locally driven, and financially resilient approaches to infrastructure development, helping countries build stronger and more coherent national infrastructure financing ecosystems worldwide.

KEY POINTS

National Infrastructure Financing Institutions (NIFIs)

- **Focus:** Dedicated institutions to mobilize long-term infrastructure finance.
- **Continuity:** Builds on Small-Scale PPPs (2024) and Blended Finance (2025).
- **Impact:** Improves project bankability, anchors infrastructure pipelines, and attracts private capital.
- **Inclusion:** Expands opportunities for SMEs and strengthens local supply chains.
- **Programme:** Six-part webinar series and a flagship publication.

2024 Small-Scale PPPs → 2025 Blended Finance → 2026 National Infrastructure Financing Institutions

Why PPPs are so relevant now?

Are Emerging Markets a better place to do Public-Private Partnerships?

Co-investing in Africa's Future: What PPP Professionals should know from Africa Philanthropy Day 2025

Aerial view of Gaborone, Botswana: main road and bridge flyover

Dubai Metro railway, United Arab Emirates

Are Emerging Markets a Better Place to do Public-Private Partnerships?

BY MARK MOSELEY

On 10 September 2025, Owen Hayford published a thought-provoking paper examining the decline in Public-Private Partnership (PPP) projects in Australia. The paper, *A legal practitioner's reflections on Australia's privately financed PPP market*, is available via Clarifying[1] the PPP value proposition (Infralegal).Owen is a very experienced PPP lawyer based in Sydney, and his paper presents a penetrating analysis of the reasons for the drop-off in Australian PPP activity from the levels that existed a decade ago.

The Key Points in Owen Hayford's Analysis of Australian PPPs

In his paper, Owen Hayford asserts that governments in Australia – at both the national and state levels – have found that most of the advantages of PPPs can be achieved without the use of expensive private finance. Specifically, he argues that Design-Build-Operate-Maintain (DBOM) contracts can yield benefits for government procuring authorities that are comparable to those achievable with a PPP DBFOM contract but at a reduced

cost, due to the ability of Australian governments to obtain financing for less than that offered by private sector investors.

Owen notes that the Australian national government has a triple A credit rating, and that Australian states have ratings that are similarly high: AAA or AA+. In contrast, an Australian PPP project company is normally rated at BBB+, which means that government procuring authorities in Australia can acquire debt financing at a better rate than companies. When combined with the costs associated with the equity component of project company financing, this means that procuring authorities can achieve considerable savings by eliminating the 'F' component of a DBFOM transaction.

Owen acknowledges that foregoing private financing means foregoing the benefit of the rigorous supervision of the project provided by private financiers. In addition, he notes that, in the past, governments in Australia have been able, on user-pay PPP projects (such as toll roads), to transfer demand risk to the private sector – but he presents data showing that companies are now very reluctant to accept such demand risks on PPP projects.

All of this drives Owen Hayford to the conclusion that, in Australia, the privately-financed PPP model should only be used in selective circumstances, where the relatively limited benefits of the model outweigh the additional cost of private sector debt and equity financing.

Applicability to Emerging Markets

As I was reading Owen's paper, the question which stayed with me was: What are the implications of this for PPPs in emerging markets? In my view, the conditions faced by most emerging market governments are significantly different than those which pertain in Australia, and there are still compelling reasons for emerging market procuring authorities to use the PPP model for a wide variety of infrastructure projects.

Let us begin with the cost of financing. Most emerging market countries do not enjoy the credit ratings held by the Australian national government and its states. Indeed, a strong argument can be made that emerging market sovereign credit ratings are unreasonably low, a point I discussed in a LinkedIn post dated 20 March 2025.[2]

In addition, a number of emerging market countries face severe restrictions on their ability to borrow. Accordingly, the 'gap' between the cost of government financing in an emerging market country and project company financing for a high-quality PPP project in the same country may be quite small, or even non-existent.

For some projects in emerging markets, it may also be possible to use blended financing, combining commercial financing with concessional financing – provided by a multilateral or bilateral aid agency, or by a national development bank.

A recent example of a PPP financed project by a combination of a development bank loan and commercial bank support is the São Paulo Metro Line 6 Project, which reached financial close in 2022.[3]

Another differentiator as between Australia and emerging markets is, potentially, the willingness of emerging market investors to accept demand risk in user-pay projects.

In countries with rapidly growing economies, investors may well be willing to accept the risk of user demand for much-needed infrastructure – such as a toll highway.

As a result, the use of a conventional PPP model for this type of project would allow an emerging market country to make such a public service available, without having to finance it and without having to accept the demand risks.

A good example of the private sector's willingness to develop such a project is the cross-border N4 Toll Route project in South Africa and Mozambique. [4]

A further distinguishing factor is the level of government capacity in most emerging markets, relative to that which exists in Australia. Managing a major DBOM project after financial close is a very complex undertaking, which would be challenging for many emerging market procuring authorities.

"THIS LEAVES US WITH AN INTERESTING PROPOSITION: ARE EMERGING MARKETS ACTUALLY A BETTER PLACE TO BE DOING PUBLIC-PRIVATE PARTNERSHIPS?"

Accordingly, the benefit of the supervision provided by private financiers in a DBFOM project is especially significant in the context of most emerging markets. Again, this benefit is illustrated by the above-noted São Paulo Metro Line 6 Project, where J.P. Morgan, acting on behalf of the consortium of commercial lenders, provided advice to the project in regard to measuring and monitoring key development impacts, such as environmental sustainability and job creation (see Page 12 of the KPMG presentation). [5]

In summary, privately-financed PPPs can provide real advantages for emerging markets – more than might exist in an advanced economy such as Australia.

Some Concluding Thoughts

Owen Hayford's analysis of the PPP landscape in Australia contains some very cogent points. However, many of the arguments he makes for being highly selective in the use of the PPP model in that country do not apply in most emerging markets.

This leaves us with an interesting proposition: Are emerging markets actually a better place to be forming Public-Private Partnerships?

FOOTNOTES

1 **Owen Hayford, A legal practitioner's reflections on Australia's privately financed PPP market, published via Clarifying the PPP Value Proposition (Infralegal).** LINK: https://infralegal.com/clarifying-the-ppp-value-proposition/

2 **Mark Moseley, LinkedIn post, Public-Private Partnerships, Sovereign Risk and Emerging Markets, 20 March 2025.** LINK:https://www.linkedin.com/posts/mark-moseley-3459941b_publicprivatepartnerships-ppp-soverignrisk-activity-7308381883958976512

3 **Acciona, Acciona secures €12.8 billion in financing for São Paulo's Subway Line 6, 2022.**LINK: https://www.acciona.com/updates/news/acciona-secures-128-billion-euro-in-financing-for-saos-paulos-subway-line-6

4 **Global Infrastructure Hub, N4 Toll Route Project (South Africa–Mozambique).**LINK: https://cdn.gihub.org/umbraco/media/3753/n4-toll-route.pdf

5 **KPMG, Sustainable Infrastructure Financing (presentation), p. 12.LINK:**https://assets.kpmg.com/content/dam/kpmgsites/uk/pdf/2023/09/sustai.pdf

Co-investing in Africa's Future: What PPP Professionals Should Know from Africa Philanthropy Day 2025

BY MAX VON ABENDROTH

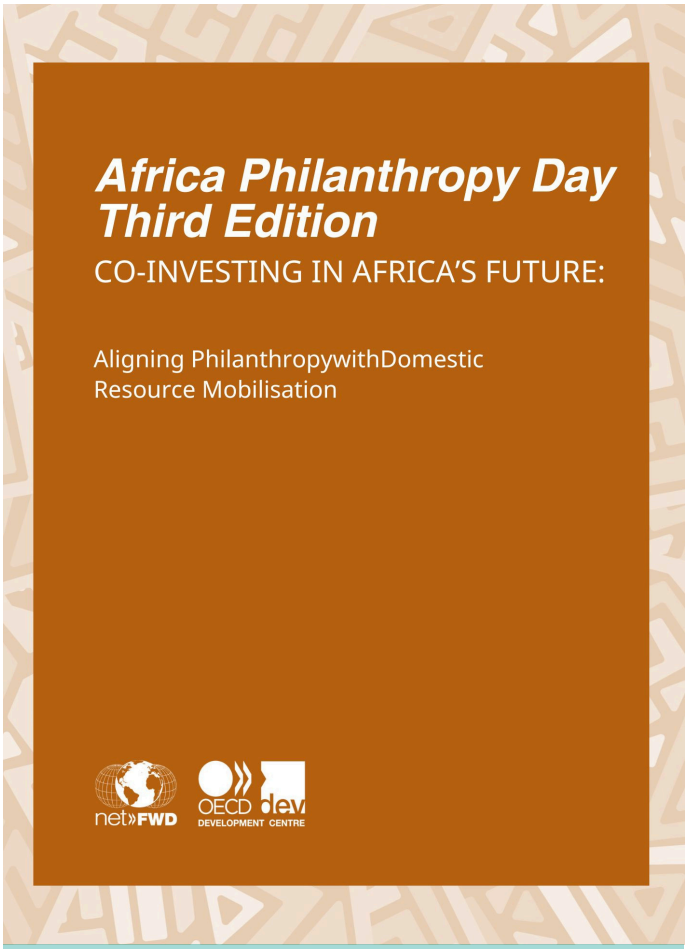
Africa Philanthropy Day (APD3), held on 26 November 2025 at OECD Headquarters in Paris, delivered a clear takeaway for the PPP community: *Africa's path to fiscal sovereignty will not be achieved through public and private capital alone - philanthropy must become a formal third partner in the continent's development financing architecture*.

With the 2025 theme - Co-Investing in Africa's Future: Aligning Philanthropy with Domestic Resource Mobilisation - the convening placed Public-Private-Philanthropy Partnerships (PPPPs) at the centre of the discussion, highlighting their essential role in tackling Africa's USD 194 billion sustainable financing gap. This framing appeared repeatedly throughout the event and guided the structure of the day's program.

PPPs Need a Third Pillar — and Philanthropy is Ready

The opening sessions made an unmistakable argument: traditional PPPs alone cannot carry the full weight of Africa's development ambitions.

Rising debt burdens, shrinking ODA and volatile capital flows require a new configuration - PPPPs - where philanthropy acts not as a funder of isolated projects, but as a derisking engine for public and private investment.



Africa Philanthropy Day: Spotlighting how philanthropy and domestic resource mobilisation can work hand-in-hand to strengthen Africa's development agenda

Speakers pointed to philanthropy's unique ability to:

- finance upstream policy and regulatory reforms,
- support feasibility studies and ecosystem building,
- strengthen public-sector capacity, and
- back early-stage innovations too risky for commercial investors.

All of these functions align directly with PPP project lifecycles and can improve bankability significantly. In effect, philanthropy can expand the pipeline of PPP-ready projects.

Max von Abendroth (WAPPP), Sophie Faujour (Water.org), Clare Woodcraft , Facundo Etchebehere (Ambition Loop), Priscilla Boiardi (OECD netFWD)

At the AFD3 WAPPP supported the launch of the book *Catalytic Capital: Unleashing Philanthropy for Systems Change*, co-edited by Clare Woodcraft (left)

DRM + LLD = A New Opportunity Space for PPPPs

A strong through-line in Paris was the convergence of Domestic Resource Mobilisation (DRM) and Locally Led Development (LLD). DRM enhances fiscal space, while LLD ensures public spending reflects community priorities. For PPP professionals, this pairing is highly relevant: stronger public systems translate into clearer regulatory frameworks, more predictable contracting environments, and more credible long-term partners.

Philanthropy, participants argued, can catalyse both agendas simultaneously by strengthening revenue authorities, supporting civil society oversight, and backing local organisations engaged in fiscal accountability - all enabling conditions for effective PPP ecosystems.

Workshops Show PPPPs in Action

Breakout sessions, spanning energy access (Mission 300), nutrition system reform, and agriculture finance, illustrated how PPPPs can generate investible pipelines. In each case, philanthropy played the early-risk role, government anchored policy, and private actors brought scale. These are precisely the kinds of blended mechanisms PPP experts are calling for globally.

A Final Word: Catalytic Capital as a PPP Accelerator

APD3 closed with the launch of the book Catalytic Capital: Unleashing Philanthropy for Systems Change, reinforcing the day's core message: philanthropy's capacity to shoulder risk is not peripheral — it is critical infrastructure for the future of PPPs.

For WAPPP's community, APD3 was more than an event. It was a reminder that the next generation of PPPs will be built not by two sectors, but by three.

Success stories from the front lines

Côte d'Ivoire: Inside the role of PPP units

Mongolia: Advancing PPPs in Ulaanbaatar

Pakistan: A new PPP mindset emerging in Punjab

West Balkans: PPP tools for post-conflict recovery

+

Water PPPs: Innovation as a delivery enabler

17 PARTNERSHIPS FOR THE GOALS

LEADING THE PPP AGENDA: Moussa Kouyaté Chairperson of Côte d'Ivoire's CNP-PPP

Presentation of the National Steering Committee for Public-Private Partnerships and its Mandate (CNP-PPP):
The National Steering Committee for Public-Private Partnerships (CNP-PPP) is a structure under the authority of the Presidency of the Republic, responsible for developing Public-Private Partnership (PPP) projects in Côte d'Ivoire.

This is achieved through the coordination, evaluation, implementation, and monitoring of all forms of contractual agreements between the State and the Private Sector pertaining to PPPs.

Our primary mission is to support technical ministries, institutions, and local authorities in the identification, structuring, procurement, and execution of PPP contracts, ensuring their legal, financial, technical, and economic viability.

We are involved from the preliminary project phases—feasibility analysis, technical structuring, and legal packaging—through to their execution, providing support to public project owners.

As an expert body, we play a cross-cutting role between the State and the Private Sector, guided by principles of performance, transparency, and good governance, to deliver projects that serve a public service mission or public interest.

The Institutional and Legal Frameworks Governing PPPs in Côte d'Ivoire:

- Institutionally, the CNP-PPP is attached to the Presidency and Vice-Presidency of the Republic.
- Legally, for the time being, Decrees No. 2018-358 and 359 of March 29, 2018, govern Public-Private Partnership contracts and the functioning of the National Steering Committee for Public-Private Partnerships.

The Possibility of Implementing PPPs in All Sectors in Côte d'Ivoire:
Yes, all sectors in Côte d'Ivoire are conducive to PPPs.

Concrete Support from the CNP-PPP to Ministries and Local Authorities in Structuring and Managing PPP Projects:
Our involvement in supporting ministries, local authorities, and other government entities in the context of PPPs is primarily based on providing these entities with specific expertise.

in the legal, financial, and sometimes technical structuring of PPP contracts, in order to conclude balanced contracts that ensure the success of the PPP project.

More concretely, this support is evident in:

- Guiding Contracting Authorities in identifying, structuring, and evaluating the appropriateness of using a PPP by presenting the advantages and/or risks associated with projects.
- Validating and making decisions on the PPP process, notably by issuing No-Objection opinions from the selection of the procurement method through to contract signature.

Furthermore, we also contribute to mobilizing financial stakeholders (investment funds, donors, financial institutions) to make the sector even more attractive.

Iconic PPP Projects Completed in Côte d'Ivoire in Recent Years:

- Biometric enrollment of beneficiaries of the Universal Health Coverage scheme;
- Ground handling services at Abidjan International Airport;
- Sanitation services for the Abidjan metropolitan area;
- Construction of the largest technical landfill site in Kossihouen;
- The University of San-Pedro; etc.

The Impact of PPP Projects on the Economy is significant in that the Côte d'Ivoire National Development Plan (PND) is largely financed by the private sector thanks to the dynamism of PPPs, which are an engine of economic growth.

Furthermore, the completion of flagship projects through PPPs across all sectors enhances the economic stature of Côte d'Ivoire, akin to other countries.

Côte d'Ivoire's Positioning on the African and International Stage Regarding PPPs:

Côte d'Ivoire is now considered one of Africa's most advanced countries in terms of PPPs, thanks to a modernized legal framework, a dedicated unit (the CNP-PPP) recognized for its expertise, and substantial experience in large-scale projects.

On the African stage, it is often cited as a model of PPP governance, attracting numerous private investors and international institutions.Globally, Côte d'Ivoire positions itself as a dynamic emerging market, benefiting from economic stability, growing technical capabilities, and a portfolio of structured projects, which strengthens its credibility and competitiveness in infrastructure financing through PPPs.

Criteria Attracting Foreign Investors to Côte d'Ivoire:

These include, among others:

- A favorable legal and institutional framework for PPPs;
- A strong state commitment to implementing PPPs;
- Guaranteed political stability;
- A continuously improving business environment; etc.

The Main Challenges for the CNP-PPP:

The CNP-PPP faces several challenges, including the lack of maturity of some projects and financing constraints. It also faces significant political pressure, which can influence priorities or accelerate project timelines to the detriment of preparation quality.

Finally, coordination among public actors, risk management, and maintaining a credible PPP framework remain central issues.

The CNP-PPP's contribution to strengthening national capacities in technical, legal, and financial expertise lies in project structuring and management, particularly in supporting Contracting Authorities. This is an opportunity for the CNP-PPP to share its experience and know-how.

Furthermore, in contract drafting, certain clauses explicitly obligate PPP contractors to emphasize local labor in staff recruitment during contract execution.

The potential is vast; Côte d'Ivoire has much to offer in terms of opportunities. They should come and invest to make the most of it!

DEVELOPMENT OF PPPS IN THE CAPITAL CITY OF MONGOLIA

BY DR. BAASANJAV GANBAATAR

Public Private Partnerships (PPPs) are a relatively new phenomenon in Mongolia. Institutional regulatory framework has been created since 2009: including the state policy on PPPs has been ratified in 2009, the law of Mongolia on Concessions was approved in 2010 respectively.

Altogether 33 concession projects were awarded and concluded a contract with a total amount of 296 million US dollar from 2010 to 2022. One third of these concession projects were cancelled due to several reasons. By collaborating with international organizations, institutional regulatory environment of PPPs has been tremendously transferred in Mongolia. In particular, law on public private partnerships of Mongolia was approved in 2022, and a government resolution on PPPs projects' preliminary assessment and comprehensive analysis; the selection of private sector partners and consultancy services; establishment of partnership agreements, conducting negotiations; and implementation, financing, organization, reporting, and partnership projects were approved in 2024.

The article will investigate the development history of Mongolia's PPPs' regulatory framework from an institutional theory perspective, and the current situation of PPPs project implementation in the capital city.

The Public Private Partnerships in Mongolia

According to the Article 5.1.11 of the Law on Public Private Partnerships of Mongolia from 2022, "public-private partnership" is a cooperation in the long-term sustainable and efficient implementation of the project through financing a partnership depending on the type of the partnership private, providing public infrastructure and public services to the public and the state partner in the long term according to a partnership agreement signed with a public-private partners, and optimally distribution of risks by the partners (7).

The Government of Mongolia has taken prompt actions to build an institutional regulatory environment of PPPs throughout the years at both the national and local administrative levels. The State Policy on PPPs of Mongolia was ratified by the Parliament Resolution No.64 from 2009 followed by the Law of Mongolia on Concessions from 2010. The concession law of Mongolia regulates matters related to the organization of tenders for granting investors concessions over state and local own property, the conclusion, revision and termination of concession agreements, and the settlement of disputes.

The Law of Mongolia on Public private partnerships was enacted in 2022 and it allows governing broader framework for all public-private partnerships, establishing a central PPPs Unit, introducing structured risk allocation principles, ang enhancing transparency.

Then regulations on PPPs project implementation were ratified by the Government of Mongolia at the national level (the Government resolution No.404 from 2023) and at local level (the Government resolution No.210 from 2024).

With the adoption of the above laws and regulations, the legal basis for implementing PPP projects were fully established in Mongolia.

The Regulatory Organizations: PPPs Unit

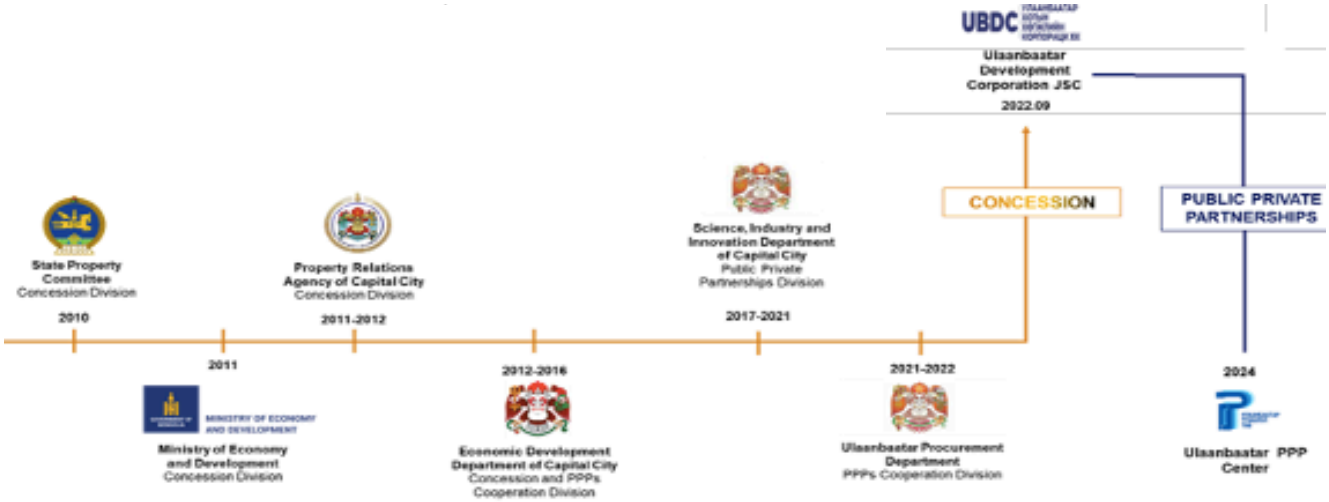
Mongolia has created an integrated PPPs unit at the national level; however, the structure of the units has been constantly shifted from one to another administrative organizations (9).

The affiliation of the Public–Private Partnerships Unit at the capital city level has been transferred from one institution to another. The Concession Division of the State Property Committee was responsible for PPP-related matters until 2011, when its duties and functions were briefly transferred to the Ministry of Economy and Development of Mongolia.

At the capital city level, the responsibility for implementing concession projects was transferred to the Ulaanbaatar city development corporation JSC in September 2022. Nowadays, both the Ulaanbaatar city development corporation JSC and the Ulaanbaatar PPPs Center are legitimate PPPs Units at the capital city level in Mongolia. They support the implementation of public-private partnership projects, promote private sector participation and investment, and ensure long-term, effective collaboration based on optimal risk management in PPPs arrangements.

Public Private Partnerships Projects

Public private partnerships projects were approved and included in the “List of PPPs Projects” in accordance with the resolutions of the Government of Mongolia and the Capital City’s Citizens’ Representative Council. The initial list of concession items was ratified by Government Resolution No. 198 of 2010, which included 121 concession items and has since been continuously reviewed and amended. In total, 242 projects were approved in the “List of Concession Items” ratified by subsequent resolutions of the Government of Mongolia in 2013 and 2017 (10).



The PPPs Unit at the capital city level

Source: Based on the presentation of the Ministry of Economic Development: ‘Public private partnerships of Mongolia’, PPPs forum on 13 March 2025

Out of the 242 projects included in the list, project implementation contracts have been concluded for 57 projects. Among these, 42 projects were implemented under the "build–operate" method. Twenty-two projects have already been completed; even 20 projects had been implemented through the "Build-Transfer" method.

Altogether 16 resolutions were approved by the Resolution of the Capital City Citizens' Representative Council from 2010 to 2022.

In total, 33 project agreements with the title amount of 253 million MNT were concluded in the health, construction and housing, education, culture, arts, physical education, and sports, road and transport, engineering infrastructure and others sectors.

According to the Law on Public-Private Partnership, which was adopted in 2022 and came into force in 2024, a preliminary assessment of partnership projects shall be conducted and reflected in development policy documents (11).

A total of 41 projects have been included in the Government's Action Program for 2024–2028 and Mongolia's Development Plan for 2025, covering the sectors of road and transport, construction, industry, free zones, energy, tourism, water resources, and communications. Certain projects, including the Murun–Uliastai road project, the Renewable Energy Project (including a hydropower plant), and the 300 km railway construction project along the Shiveekhuren–Nariinsukhait–Shinejinst route, are being conducted in comprehensive analysis phase (12).
In 2024, the Governor's office of capital city announced 24 mega projects with a total value of 16,520.1 million dollars, scheduled for implementation from 2024 to 2028 (13).

Those mega projects aim to enhance the city's infrastructure, socio-economic development, and investment-attracting capacity. Furthermore, lists of PPPs projects were approved by the Resolution No. 25/01 dated January 27, 2025 and the Resolution No. 25/109 dated September 08, 2025 of the Citizens' representative's council of capital city.

All the 33 projects will be implemented in the following sectors.

- Social infrastructure sector – 12 projects,
- Road and transport sector – 10 projects,
- Energy sector - 6 projects,
- Infrastructure and engineering networks sector – 4 projects,
- Agriculture sector – 3 projects,
- Information technology sector – 2 projects, and
- Tourism sector – 1 project.

Those projects will be financed through foreign aid and loans (including a concessional loan from the Asian Development Bank), the state and capital city budgets, and private sector investments.

In October 2025, a partnership agreement was signed for two projects — the Fifth Thermal Power Plant and the Waste-to-Energy Plant — following the successful completion of comprehensive analyses and private partner selection procedures (14).

These are the first-ever projects to be developed and implemented in accordance with the Law of Mongolia on Public Private Partnerships and the relevant regulations adopted pursuant to it. Overall, eight projects from aforementioned list, which are being implemented by the Ulaanbaatar PPPs center, are in the comprehensive analysis phase (15).

The feasibility studies of five of these projects have already been approved by the Scientific and Technological Council under the respective line ministry.

LESSONS LEARNED FROM THE CAPITAL CITY LEVEL PPPS IN MONGOLIA

1 Regulatory framework of PPPs

PPPs are understood as long-term project implementation agreements in which public and private partners are involved in optimally sharing risks in order to achieve goals that focus on project outcomes and results. The public sector has made efforts to establish PPPs regulatory framework by ratifying the State Policy on PPPs (2009) and the Law of Mongolia on Concession (2010) and the Law of Mongolia on PPPs (2022). The Government of Mongolia has created an enabling environment for PPPs.The structure of PPP units at the capital city level has been unstable, undergoing frequent changes over the past 15 years.

2 PPP units

The organization responsible for PPPs project implementation has shifted from one institution to another approximately every two years. Two organizations - the Ulaanbaatar Development Corporation JSC and the Ulaanbaatar PPPs Center - are both tasked with project development, conducting analyses, selecting private sector partners, and overseeing project implementation and monitoring.

3 PPP projects

PPP projects are now integrated into the capital's development plans. From 2010 to 2022, 33 concession agreements were signed, mainly in road and transport; most used the build–transfer method, which was later banned under the 2022 PPP Law due to high public-sector risk. Since 2024, the capital has announced 24 mega projects and approved a new PPP project list under the 2022 law.

Two partnership agreements have been signed, about one-quarter of projects are under analysis. International partners such as the World Bank, ADB, and JICA are supporting the project development.

Mongolia is striving to improve the efficiency of public–private partnership (PPP) projects by adopting several regulatory measures, including Order No. A/267 of the Minister of Finance (2023), "On the approval of a model for calculating the fiscal impact and budget risks of public–private partnerships."

4 Risk sharing, efficiency and transparency

In addition, the Law of Mongolia on PPPs authorizes the establishment of an integrated database system for PPP projects in order to enhance transparency.

This article sought to investigate current PPPs situation of the capital city of Mongolia. The Law of Mongolia on PPPs from 2022 expands the scope of PPPs by introducing various project implementation models. The capital city of Mongolia has the right to implement PPP projects according to the Law of Mongolia on the legal status of Ulaanbaatar, capital city of Mongolia and the amendment of the Law of Mongolia on PPPs.

The Ulaanbaatar Development Corporation JSC and the Ulaanbaatar PPPs Center provide professional and technical support, conduct project assessments, and work closely with private partners. As a result, approved projects have increased and implementation approaches have diversified, marking a clear shift from concession-based projects to a more mature PPP phase at the city level.

REIMAGINING PARTNERSHIP: A NEW PPP MINDSET TAKING SHAPE IN PUNJAB, PAKISTAN

BY DR. MUHAMMAD ZEESHAN HANIF & MARYAM NASEER

Strong legal frameworks alone do not create successful Public Private Partnerships. The true test of a PPP system lies in the readiness of public institutions to adopt new approaches to work, ones that call for shared responsibility, commercial discipline, and a collaborative mindset. In many developing economies, including Punjab, Pakistan, government departments often gravitate toward traditional public-sector delivery models that feel familiar, predictable, and fully state-controlled. Yet traditional ways of delivering public projects are increasingly unable to keep pace with the fast-evolving needs of development.

With government resources stretched thin, the growing needs of modern infrastructure, technology, digital connectivity, urban development, water and sanitation, solid waste management, health, education, transportation, energy, agriculture, housing, and other essential public services simply cannot be met through traditional public sector projects alone. Inviting private partners into the development process is therefore not just an administrative shift; it is a strategic necessity and a transformation in institutional culture.

Punjab, Pakistan's PPP journey began in 2007 with promise but progressed slowly. Although a legal structure existed, only a handful of projects moved to execution in more than a decade.

Departments were hesitant: PPPs were viewed as complex, high-risk, and less controllable than conventional public expenditure. The idea of sharing risks and returns with private sector was still maturing. What Punjab experienced is common across emerging markets—the realization that laws do not automatically produce results. What was missing was not the framework, but institutional ownership.

By 2024, a renewed commitment to reform gave fresh momentum to PPPs in Punjab, Pakistan. The provincial leadership recognized that small, incremental changes would not unlock the system's potential; a comprehensive restructuring was needed. Guided by this direction, the Punjab Public Private Partnership Authority (P4A), Pakistan undertook an extensive study of PPP models from over one hundred countries.

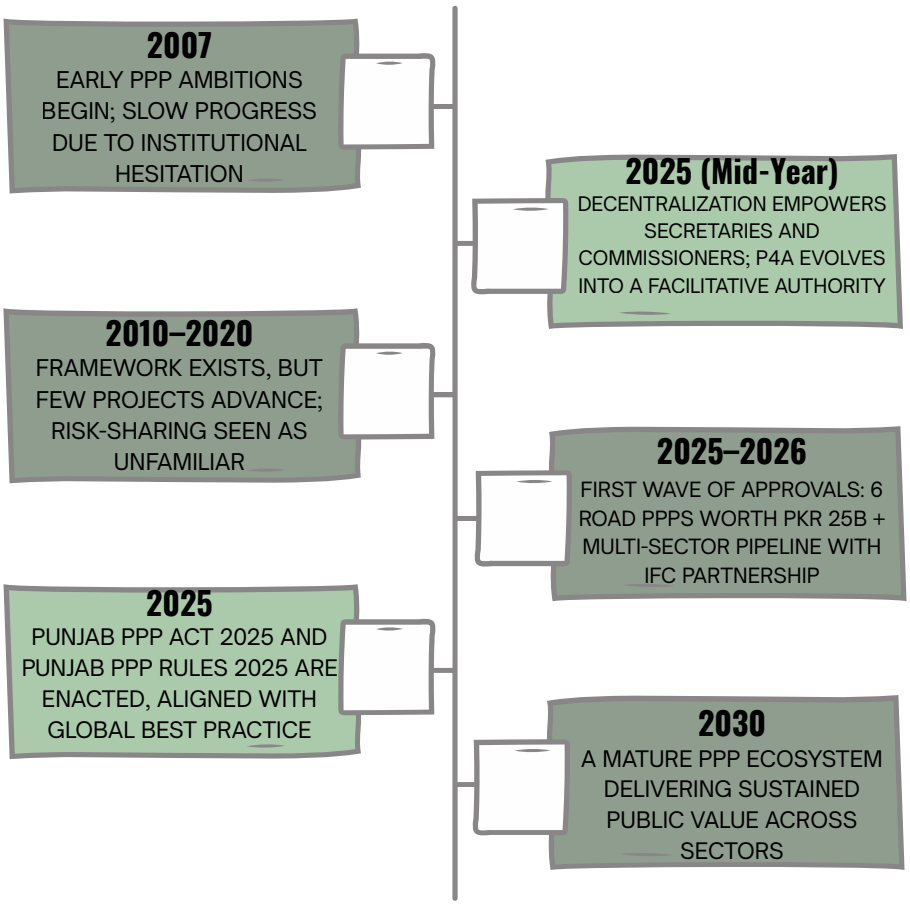
The aim was not to copy others but to understand the global diversity in PPP practice identifying which principles could be adapted to Punjab's governance structure and development priorities. This effort culminated in the Punjab Public Private Partnership Act 2025 and the Punjab Public Private Partnership Rules 2025, a framework aligned with international good practice yet finely attuned to local realities.

The new law represents a decisive shift in how PPPs are governed. It introduces meaningful decentralization, empowering Administrative Secretaries and Divisional Commissioners to initiate and manage projects within defined financial limits. This delegation has replaced bottlenecks with greater agility and has given departments a sense of ownership essential for PPP success. P4A, meanwhile, has evolved from a purely approving authority into a facilitative institution, one that provides oversight, technical expertise, and quality assurance while enabling faster decision-making. This transition has been further strengthened by P4A's placement under the Finance Department, which has enhanced alignment, discipline, and institutional coherence across the PPP process.

This governance evolution is already reshaping how institutions perceive partnership and project delivery.

The early results speak for themselves. Within months of the new framework's implementation, six projects worth over PKR 25 billion were approved in the road sector. Five focus on the operation and maintenance of nine important road segments, creating sustainable models for asset management. Another project involves dualization combined with maintenance of an existing corridor, structured so that toll revenues support the private partner's investment recovery. These projects demonstrate not only improved efficiency but also a shift toward financially balanced solutions that reflect the principles of mature PPP systems.

TIMELINE: PUNJAB, PAKISTAN'S PPP EVOLUTION



Building on this momentum, P4A is now advancing a diversified pipeline of PPPs across critical public service sectors, including health, education, energy, local government, and urban development. Collaboration with the International Finance Corporation (IFC) marks a significant milestone, ensuring that each sector benefits from globally benchmarked project preparation, financial modeling, and risk evaluation. This partnership underscores a shared commitment to create PPPs that deliver not only infrastructure but measurable social and economic value for the citizens of Punjab, Pakistan.

Still, investor confidence requires more than a progressive law. It demands clarity, predictability, and fair risk allocation. The PPP Act 2025 and the Punjab PPP Rules 2025 provide a comprehensive suite of project-support mechanisms: administrative and financial facilitation, procedural exemptions, concession and licensing rights, tax considerations, access to land and utilities, and instruments such as viability gap funding, grants, and guarantees. In addition, risk-sharing features including minimum revenue guarantees, debit authority, and protection against inflation or exchange-rate volatility ensure stability across the project lifecycle. Together, these tools send a clear message: Punjab, Pakistan offers a partnership environment where government commitments are transparent, enforceable, and aligned with long-term investment interests.

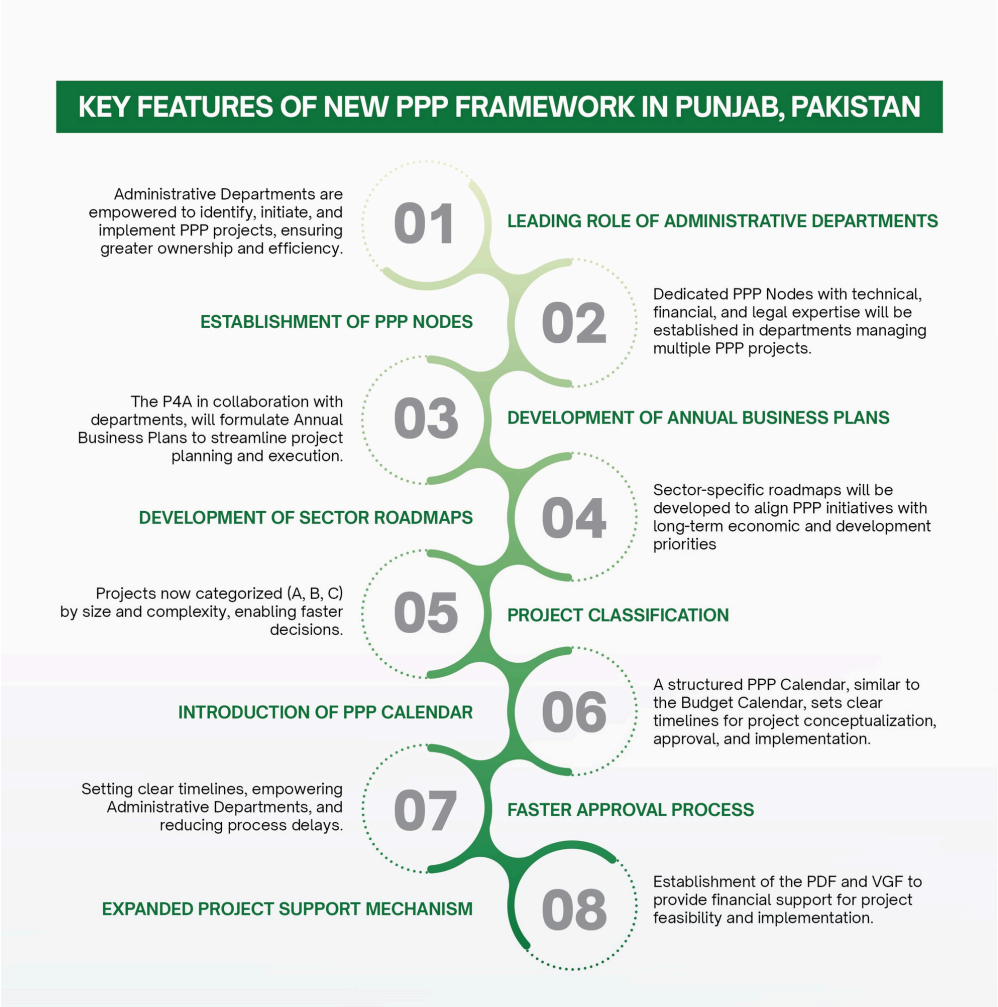
Yet the greatest transformation is unfolding not in legislation but in people. Sustainable PPP systems depend on champions within government professionals who understand that partnership is not a compromise but a pathway to efficiency, innovation, and improved public service delivery.

To cultivate this mindset, P4A is investing heavily in capacity building through training programs, advisory support, and peer learning. As a result, departments that once hesitated are now engaging with PPPs with increasing clarity and confidence. The shift from skepticism to ownership is becoming visible, tangible, and consequential.

The Punjab PPP Act 2025 and the Punjab PPP Rules 2025 have established a strong foundation; their most significant impact, however, lies in shifting the question from whether PPPs can work to how they can work better. Each new project approved under the reformed framework reflects institutional maturity and strengthens the culture of partnership. It demonstrates that the synergy of public purpose and private capability can produce outcomes neither sector could achieve alone.

As Punjab, Pakistan continues to expand its PPP program particularly in sectors that touch the daily lives of citizens the emphasis will remain on transparency, sustainability, and public value. The challenge ahead is to deepen this collaborative culture so that PPPs become an integral part of public investment, not an occasional alternative. In the coming years, success will be measured not only by contracts signed, but also by the quality of services delivered, investor confidence earned, and trust built with communities.

INVESTOR CONFIDENCE REQUIRES MORE THAN A PROGRESSIVE LAW. IT DEMANDS CLARITY, PREDICTABILITY, AND FAIR RISK ALLOCATION.



Punjab, Pakistan's evolving PPP landscape is a reminder that development is not driven by policy documents alone. It requires leadership that listens, institutions that adapt, and partnerships that endure. Through a forward-looking legal framework, empowered institutions, and a commitment to responsible governance, Punjab is shaping a PPP model that reflects ambition, integrity, and shared progress. Its journey demonstrates that when law, leadership, and institutional culture align, partnership becomes more than a mechanism, it becomes a catalyst for sustained and inclusive development.

PUNJAB IS DEMONSTRATING THAT THE SYNERGY OF PUBLIC PURPOSE AND PRIVATE CAPABILITY DELIVERS MORE THAN EITHER CAN ALONE.

PPP INSTRUMENTS IN POST-CONFLICT COUNTRIES: LESSONS FROM THE WEST BALKAN CASE

BY MONICA BERTODATTO

The use of Public-Private Partnerships (PPPs) in post-conflict reconstruction is of considerable interest, given the urgency of addressing the needs of war-torn regions, as well as the risks posed by the fragility of the environment. This topic has gained renewed attention in light of the ongoing conflicts in Ukraine and the Middle East, where post-conflict recovery will inevitably require significant investment and infrastructure rebuilding.

Post-conflict states often face severe challenges that predate the onset of conflict. Economic deterioration prior to war typically leads to reduced foreign investment, capital flight, emigration of skilled workers, inflation, sanctions, and the accumulation of public debt. The onset of conflict further exacerbates these issues, causing extensive physical damage to both public and private infrastructure and fragmenting political structures. After a conflict ends, the most urgent needs—such as housing, sanitation, and transportation—are compounded by the emigration of the working-age population and the reluctance of private investors to engage in reconstruction. This creates a critical need for strategies that can address immediate needs while also stimulating local economic recovery and creating employment opportunities.

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"POST-CONFLICT PPPS CAN ONLY OCCUR ONCE THE INSTITUTIONAL FRAMEWORK ALLOWS AND WITH SUPPORT OF DONOR AND CATALYTIC FUNDS."

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From a sectoral perspective, IFC reckoned that the first four years following the end of the conflict typically see the development of PPS in the field of telecoms, followed by transports. Energy and water projects tend to be developed at a later stage, usually after 6 years with grid and distribution projects being the last to be implemented.

Lessons from the West Balkans

The post-conflict experience of the Western Balkans offers valuable insights into the challenges and opportunities of using PPPs in reconstruction. After the internal conflicts of the 1990s, countries in the Western Balkans—Bosnia and Herzegovina, Serbia, Kosovo, North Macedonia, Montenegro, and Albania—embarked on PPP initiatives even though their institutional frameworks were not fully developed. The initial phase of PPP implementation was marked by opaque procurement processes, fiscal mismanagement, and frequent contract renegotiations, which hindered the successful closure of many projects.

The prospect of EU accession provided an external impetus for institutional reforms, particularly in the areas of the rule of law and transparency.

Over time, these reforms enhanced investor confidence and attracted more funding. The EU's influence, alongside multilateral programs like the IMF's Financial Sector Assessment Program (FSAP) and the IFC's Fragile Markets Initiative, helped anchor these reforms and build a more conducive environment for PPPs.

Another challenge faced by the Western Balkans was the misevaluation of the likelihood that the guarantees implied by PPP agreements might have translated from "off balance liabilities" into significant fiscal liabilities and finally outright public debt increases. To avoid the risk of excessive guarantees being triggered in the future, it is crucial to set explicit ceilings on PPP-related guarantees, alongside a requirement for transparent fiscal risk disclosure finally ensuring the preservation of debt sustainability.

To address this, IMF suggests the inclusion of PPP fiscal risk monitoring and the incorporation of the PPP commitments into the medium-term fiscal frameworks, which are the basis for the yearly public budgets. (further details in: Fiscal Risk Management)

A final key lesson from the region's experience was the initial reluctance of private investors to engage in PPPs until multilateral agencies such as the European Bank for Reconstruction and Development (EBRD), IFC, and MIGA offered partial risk guarantees, political risk insurance, and blended finance instruments. These tools played a pivotal role in the improvement of the institutional framework of the countries involved via the reforms that they triggered through loan conditionalities. Such gradual (and sometimes slow) process finally led to a reduction in the institutional risks and paved the way for attracting private investments.

The Western Balkans' experience highlights the importance of a common project, with countries collaborating on infrastructure projects to rebuild trust across national borders in the spirit of the SDG17 criteria. Similarly, also the current post-conflict regions would face comparable reconstruction challenges, and should explore joint infrastructure projects supported by PPP models. However, for these projects to succeed, they must be underpinned by a robust legal framework, transparent monitoring mechanisms, inclusion of civil society agents, and international oversight to ensure sustainable investment and debt management. In addition, such partnerships require well-established and mutually recognized governments on both sides of the border, with limited internal fragmentation, in order to provide the stability and institutional coherence necessary for long-term joint infrastructure planning.

“PRIVATE INVESTORS WERE RELUCTANT TO ENGAGE IN PPPS UNTIL MULTILATERAL AGENCIES SUCH AS THE EUROPEAN BANK FOR RECONSTRUCTION AND DEVELOPMENT (EBRD), IFC, AND MIGA OFFERED PARTIAL RISK GUARANTEES, POLITICAL RISK INSURANCE, AND BLENDED FINANCE INSTRUMENTS.”

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Reconstructed Mostar Bridge
Source: *Canva*

HOW WATER INNOVATIONS ENABLE SUCCESSFUL PPPS

BY AMANDA LOEFFEN & GAETANE SUZENET

Water treatment facility with multiple tanks and filtration units. Vital infrastructure for sustainable water management and distribution

INTRODUCTION

Local governments and utilities are on the front lines of today's water challenges, including tighter budgets, and growing water demand. While Public-Private Partnerships (PPPs) offer new resources and expertise, many still struggle with complexity, risk-sharing, and long-term sustainability (OECD, 2025). As explained by the World Economic Forum, innovative water technologies can shift that dynamic and make PPPs more efficient, accountable, and resilient (WEF, 2025). This briefing provides an outline of how innovation can help local governments and utilities build stronger partnerships and deliver better water services to their communities, presents key barriers that currently impede innovation in PPPs, and puts forward recommendations to increase the uptake of water innovations in PPPs.

THE ROLE OF WATER INNOVATIONS IN PPPS

Improve efficiency with AI

Water innovations are transforming the efficiency and financial viability of PPPs in the water sector. Water innovations can help utilities and local governments reduce operational costs (OPEX). Digital, AI-based technologies, including sensors and advanced data analytics can help optimise the whole cycle – from managing water resources to monitoring and managing water and wastewater networks – including leakage and non-revenue water detection. AI-driven platforms and solutions can assist in optimising water and wastewater treatment plants (GWP, 2025). These need to be well regulated and underpinned by human rights. As stated by a Chatham House report, human rights law provides a means to define the harm that AI should avoid, offering a framework for regulating AI that is an existing system of international, regional and domestic law (Chatham, 2023).

Real-time monitoring

The same GWP report concludes that water innovations can support outcome-based contract models by enabling real-time performance monitoring. They enable both public and private entities to track and verify the delivery of services, increase accountability and demonstrate clear impacts on e.g., improving water quality and enhancing water efficiency.

De-risking investments with reduced uncertainty

Water innovations can also play a critical role in de-risking investments and enhancing project delivery. Predictive and proactive maintenance solutions and digital twin technologies offer real-time insights into infrastructure conditions and real-time operational decision-making (Ghorbani Bam et al., 2025). They support reducing uncertainty and operational risks that often deter private sector involvement.

Nature-based solutions for longer-term, lower cost solutions

There is growing momentum toward adopting nature-based solutions (NbS) in the water sector—such as constructed wetlands, urban retention parks, bio-retention systems, and natural infiltration zones—because they deliver long-term, cost-effective and sustainable water management outcomes. According to UN-Water (2018), NbS can often outperform or complement grey infrastructure at lower cost while delivering multiple co-benefits for people and ecosystems. Similarly, the OECD (2021) finds that NbS for water can reduce capital and operational costs compared to conventional built infrastructure while improving resilience and climate adaptation.

Climate Resilience technologies for sustainability

Many risks associated with climate change will be felt hardest by lower income countries, as their ability to prevent and respond to the impacts of climate change is limited (World Bank, nd). Climate-resilient technologies, including rainwater harvesting, water reuse, sub-sea freshwater harvesting, resource recovery and decentralised treatment systems, are increasingly recognised as essential tools for adapting to water scarcity and over-extraction. According to UN-Water and UNESCO (2020), non-conventional water resources, including rainwater harvesting, wastewater reuse and desalination, are becoming indispensable for climate-resilient water security in water-stressed regions.

The World Bank recognises the urgent need for climate-smart technologies with PPPs brining the combined financial and technological expertise of public and private sectors. These innovations therefore open new, and potentially more sustainable, opportunities for PPPs, particularly in regions facing chronic water shortages and high vulnerability to climate risks.

💧 Replicable and scalable modular units

Scalable and replicable Innovations can significantly expand water access to underserved communities. For instance, modular and portable treatment units enable cost-effective water delivery in rural and remote areas where traditional large-scale infrastructure is not feasible or cost prohibitive.

Scalable and replicable water innovations have the potential to dramatically expand water access for underserved communities. Low cost and affordable solutions that can provide sustained access to rural water services are within reach, yet effective implementation at-scale is lagging. (World Bank, 2021) WHO and UNICEF (2022) highlight that portable and containerised water treatment units allow cost-effective delivery of safely managed drinking water in remote and rural settings where permanent infrastructure is not viable (p. 42).

Because they require lower upfront investment and can be installed incrementally, such solutions offer a pragmatic and cost-efficient alternative to traditional large-scale systems that are often unaffordable or impossible to construct in dispersed rural areas (World Bank, 2021).

CASE STUDY 1: INNOVATION FOR DECENTRALISED SYSTEM

Indra Water, India, delivers electrically driven, decentralized wastewater treatment systems that require no added chemicals in primary treatment. Their solution recovers up to 99% of wastewater for non-potable reuse – ideal for industrial, commercial and domestic users seeking on-site water circularity. Based in India, Indra emerged to tackle the high cost and operational complexity of traditional wastewater treatment. Its smart systems are fully automated and benefit from smart monitoring, dynamic treatment optimization and predictive maintenance. Its vision is to enable wastewater reuse in contexts where centralized treatment infrastructure is limited or struggling (WEF, 2025).

Policy Aligned with Execution

Finally, to address escalating water challenges, policy must move beyond small-scale experimentation and toward systemic deployment of proven water innovations. As the OECD argues, the challenge is not a lack of solutions, but a failure to mobilise and align finance, policy and regulation at the scale required to implement them (OECD, 2022, p. 11). Embedding such innovations directly into PPP models can accelerate impact by enabling faster deployment, reducing long-term costs, and strengthening the resilience of water infrastructure to future climate and demand pressures. In doing so, PPPs can shift from purely financing mechanisms to innovation-scaling platforms that mainstream technologies with demonstrated effectiveness.

CASE STUDY 1: INNOVATION FOR DECENTRALISED SYSTEM...CONTINUED

WHY IS INNOVATION NOT YET FULLY EMBEDDED IN PPPS WATER PROJECTS?

Innovations in water innovation have the ability to transform Public-Private Partnerships (PPPs). However, there are key barriers to their effective deployment that need to be addressed first. The right conditions are not yet in place to unlock the full value of innovation.

NON-TRADITIONAL FUNDING

The deployment of water innovations is often constrained by the absence of dedicated, reliable project-based funding, particularly for solutions that go beyond traditional infrastructure investments. Current financing systems continue to prioritise conventional capital works, leaving innovative, nature-based and decentralised approaches under-resourced (OECD, 2022). Creating a specialized fund would ensure a targeted and consistent source of capital that would de-risk projects including innovative solutions.

By enabling local governments and utilities to apply for project funding, the mechanism empowers local actors to take initiative while ensuring alignment with on-the-ground realities. One proposal that could feed the fund is to channel net profits from public and private entities into this fund. It would ensure financial sustainability over time. (Oliveira, D, 2025)

CASE STUDY 2: SPECIALISED FUNDING TO DE-RISK PROJECTS

With $39 billion in annual losses, rising regulatory pressure and a shrinking workforce, water utilities are being forced to modernize globally. Yet most water networks remain unmonitored, with utilities losing on average 30% of the water they source and treat. WEF's open innovation platform, UpLink, started a new initiative called Aquapreneur in 2022, to support entrepreneurs to scale up to solve problems like this.

PYDRO is an innovator which empowers utilities, through a sensor enabled service model, to detect leaks early, reduce losses and modernize operations without batteries, maintenance overheads or complex integration. It helps utilities reduce the time and cost required to find and fix leaks by 30–40%. PYDRO aims to tackle the lack of real-time, data-driven visibility that makes it currently nearly impossible to manage these challenges proactively.

Selected as an aquapreneur in 2024 and supported by UpLink, PYDRO closed an oversubscribed $1.3 million pre-Series A in May 2025. The round was led by Connect the Drops, with support from the EIC Fund, Berlin Angel Fund and several business angels. The solution is already being trialled by major utilities in Italy and industry leaders such as SUEZ. With funding in place to scale operations and enter new markets, the team is now focused on securing strategic partners and investors ahead of their Series A, with the EIC Fund committed to matching and Connect the Drops ready to lead again. (WEF,2025, p.15)

CASE STUDY 2: SPECIALISED FUNDING TO DE-RISK PROJECTS...CONTINUED

LOW ROI DUE TO LONG PAYBACK

High upfront costs and long payback periods often deter utilities and local governments from investing in and adopting innovative solutions, even when they present long-term operational efficiency. Long asset life cycles, regulatory hurdles and public procurement processes deter investors who are looking for shorter-term, high-growth opportunities (WEF, 2025, p.12). Developing new forms of financing like concessional financing – including low interest rates, extended repayment periods – could make innovative solutions financially more attractive. It would also enable lower-income or cash-strapped utilities to invest in critical upgrades without overburdening their finances.

Innovative revenue models such as water-as-a-service, performance-based contracts and outcome-based financing enable quicker, more predictable returns on water investments by tying payments to delivered results or ongoing service. These approaches reduce upfront capital barriers and attract investors seeking steady revenue streams and manageable risk (OECD 2010).

PROCUREMENT NOT INCENTIVISED FOR INNOVATION

Traditional procurement models often prioritize cost over innovation. Outcome-based procurement would shift the focus to results, such as efficiency and performance.

The World Bank Turnaround Framework shows that internal capacity (including procurement, technical operations, commercial operations) is a prerequisite for innovation (e.g., smart systems, new business models) to succeed (Soppe, G. et al, 2018). Including innovative solutions in procurement, such as digital monitoring tools would enable to materialize efficiency and performance, ensure that expected results are adequately monitored, and ultimately build trust between innovation providers and public and private authorities.

LACK OF ENABLING REGULATORY ENVIRONMENT

Regulation often does not incentivize the adoption and scaling of innovative solutions. Innovation is also seen as increasing compliance costs. Building a clear and flexible regulatory, innovation-friendly framework can reduce uncertainty, streamline adoption and build investor and market confidence in new water solutions.
In the case of decentralised rainwater technology, a 2009 study analysed how traditional regulatory frameworks (in Germany) hinder the uptake of decentralized water technologies, because obligations to connect to centralised systems and do not accommodate innovative models. The same paper proposes regulatory reform as one of three major steps to foster innovation: adjusting pricing, reforming regulation to allow new business models, and creating public-funding mechanisms (Ajami 2014).

Globally, IHE-Delft states that a lack of proper infrastructure or a lack of capable water professionals are not the only challenges - the main culprit is often a lack of strong institutions and good governance, leading to a weak water sector (IHE-Delft, n.d.)

NEED FOR UPSKILLING

The public sector is a key player in water infrastructure development, yet there is a need to enhance the technical skills of public sector workers to effectively implement and manage new solutions. Upskilling staff and building an internal innovation capacity are required. A technically competent workforce is better equipped to negotiate and manage performance-based contracts and ensure that investments deliver intended outcomes.

One industry report on renewing the water workforce in the USA, argues that infrastructure jobs offer considerable promise due to competitive salaries and low educational barriers to entry, the valuable transferable skills that cut across multiple disciplines, and the coming wave of retirements in the sector, opening new opportunities. (Glauber, M., & Khan, S., 2016). This is not the case in the Global South, and there is a strong need to upskill the workforce in water utilities, Accordingly, IHE-Delft states on its website that a lack of strong institutions and professional capacity at all levels is often the main barrier to effective water management and SDG6 achievement (IHE-Delft, n.d.).

GENDER INCLUSION

Gender mainstreaming adds business value. Women are still underrepresented in leadership and decision-making bodies in irrigation committees, basin organisations and user associations for water projects globally (UN Water, 2021), and yet, their inclusion significantly improves the sustainability and adoption of new water innovations.

As FAO explains, closing the gender gap in farm productivity and the wage gap in agrifood systems would increase global gross domestic product by 1 percent (or nearly USD 1 trillion). This would reduce global food insecurity by about 2 percentage points, reducing the number of food-insecure people by 45 million (FAO, 2023). Women are constrained by multiple barriers related to limited access to land and water rights, entrenched cultural norms, lower literacy and education levels, and fragmented policy frameworks (Exposito, A, in press). Overcoming these barriers requires adopting policy that supports up-skilling and leadership of young women, both at community level and through educational programmes.

These findings align with decades of qualitative research stressing that women are not only water users or “beneficiaries,” but political actors and knowledge-holders in water governance.

COMMUNITY PARTICIPATION

Co-creation with the community is an enabling factor when introducing new technologies, operating and maintenance process and a ‘different way of doing things’.

The Living Laboratory has become a rapidly accepted constructive approach by the European Commission for water projects, and if conducted well, it motivates end-users to adopt new practices, based on their ownership of the process.

What this means for increasing innovation in water infrastructure PPPs

The lack of investable PPP projects in the water sector is connected to an array of issues related to risk, ROI, efficiency and organisational capacity. Innovative improvements can be a step-changing opportunity to address several of these barriers, providing different ways to lower costs, reduce water losses, increase sustainability, and improve operability. However, the barriers to innovation itself are inherent in many of the existing obstacles to investment.

As this paper demonstrates, there is a wide array of technological innovations ranging from AI-based tools to advanced decentralized systems. Their differentiation lies in their scalability and modularity that can enhance flexibility and mitigate financial risks by better controlling costs in future PPP projects.

Addressing only one of these barriers is not going to solve the challenge, so water PPPs need to think more holistically about the reasons for what is inhibiting innovation for their particular project.An analysis of national and organisational policy, and how it encourages or inhibits new approaches, especially at the procurement stage, is a valuable first step.

In order to encourage innovation, there is an array of reforms to be considered, both in attitude and policy.

Organisations must adopt a mindset open to change and address barriers to innovation, whether in the external enabling environment or within internal structures, policies, and culture. The enabling environment—governance frameworks, community acceptance, and local context—requires distinct public funding, while innovation itself depends on targeted investment. If these conditions are in place, capital will follow. In the water sector, reducing risk, strengthening regulation and procurement, enabling supportive financing mechanisms, and ensuring community ownership are all critical to scaling innovation beyond pilot projects.

Section 5 outlines seven recommendations that can create an enabling framework to ensure innovation is better considered and effectively deployed in water infrastructure PPPs.

KEY POLICY RECOMMENDATIONS

Creating an enabling environment for investment by addressing these barriers is crucial for leveraging water innovations within PPPs and ensuring sustainable infrastructure development. The following recommendations are suggested:

Support the Creation of a Specific (Project-based) Fund for (Innovative) Water Supply and Sanitation

Channel net profits of public and private companies to the Fund as a sustainable financing mechanism. Enable local governments and utilities to apply to the Fund for projects that will include water innovations and support the enabling environment.

Develop Concessional Credit Line/Loans to Enable Access to Water Innovations

Reduce financial risk by granting subsidized interest rates or longer-term repayment terms to afford innovative solutions that improve efficiency and resilience.

Adopt Outcome-Based Procurement Models

Shift from traditional input-based contracts to outcome-based models that tie compensation to systems and capital efficiency. Mandate the use of innovative digital tools to monitor and verify performance in real time, ensuring transparency and accountability.

Develop Innovation-Friendly Policy and Regulatory Frameworks

Encourage adoption of innovation by streamlining permitting for new technologies, allowing sandbox and first deployment projects. Work with regulators and International Financing Institutions to design an enabling framework for the increased uptake of innovations.

Build Innovation Capacity Within Local Governments and Utilities

Invest in upskilling local government and utility staff to understand, procure, and manage innovative solutions. Strong technical expertise within the public sector is essential to adopt, evaluate technologies and oversee performance.

Support Gender Mainstreaming Governance Frameworks

Enable the constructive contribution of women as leaders and decision-makers through gender mainstreaming policy that supports the technical training and education of women at all levels: river basin, community and educational programmes.Evidence has shown that participation alone is not sufficient and can be seen as tokenism rather than adding real value.

Involve Communities and End-users in the Design Process

Adopt a co-creative approach as an enabler for new innovations, to aid in acceptance and ownership of the final solution. Mandate the inclusion of multiple stakeholders, including end-user and impacted communities, throughout the design process to fine-tune the optimal technology.

ENABLERS FOR SCALING INNOVATION IN WATER PPPS

- Specialist innovation funds for water
- Concessional and blended financing
- Outcome-based procurement & performance verification
- Sandboxes and flexible regulatory frameworks
- Upskilling & technical capacity for public utilities
- Gender-responsive governance frameworks
- Community co-creation & living labs

TOOLS FOR BETTER PARTNERSHIPS: Effective Asset and Operational Management for PPP Success

BY WAYNE COLLINS & DAVID BAXTER

Effective asset management in Public-Private Partnerships (PPPs) represents an essential determinant of project success, driving operational and maintenance sustainability, governance, accountability, and the achievement of long-term public interest objectives. As PPP projects shift from traditional procurement models focused primarily on upfront capital costs to holistic lifecycle approaches, the strategic management of infrastructure assets becomes paramount. The integration of artificial intelligence (AI) and digital technologies further amplifies these capabilities, enabling predictive and proactive maintenance, data-driven decision-making, and enhanced transparency throughout the asset lifecycle.

WHOLE-LIFE ASSET MANAGEMENT

At the core of successful PPP implementation lies the principle of whole-life asset management, which fundamentally distinguishes PPPs from conventional procurement methods. Unlike traditional projects that concentrate on asset development with separate considerations for operations, PPPs require private partners to design, build, finance, operate, and maintain infrastructure over contract periods typically spanning 20 to 30 years or longer.

This integrated approach creates powerful incentives for lifecycle optimization, as the private sector partner must recover its capital investment through operational cash flows while maintaining performance standards throughout the concession period so that viable assets can be handed back to the public sector at the end of the project-lifecycle.

The lifecycle management framework addresses all stages of asset existence—from planning and acquisition through operation, maintenance, renewal, and eventual handback to the public sector. Research demonstrates that PPP projects applying lifecycle principles achieve superior cost efficiency, and substantial reductions in operating expenditures compared to traditional delivery methods when properly structure.

THE ADOPTION OF INTERNATIONAL STANDARDS

ISO 55000 standards (asset management) provide an internationally recognized framework for asset management excellence within PPPs, emphasizing risk-based, information-driven planning and decision-making processes that transform organizational objectives into comprehensive asset management plans.

Organizations implementing ISO 55000 principles achieve more accurate decision-making supported by reliable performance data, better coordination between maintenance teams and operations, efficient resource allocation to high-impact activities, and noticeable performance improvements with reduced operational risks.
ISO 41000 (facilities management, especially ISO 41001) can be used in PPPs as a common facilities/asset management management-system framework that aligns the private O&M provider's practices with the public owner's service, risk and whole-life performance objectives. It is most powerful when referenced explicitly in the PPP project agreement (FM schedules, KPIs, handback, and governance clauses) and then used as the O&M provider's auditable FM system backbone.

ENSURING OPERATIONAL EFFICIENCIES

Operational efficiency in PPPs depends fundamentally on effective asset management strategies that prevent premature deterioration while maximizing service availability. The allocation of O&M responsibilities and accountability to private partners, coupled with economic rights tied to asset performance, creates alignment between asset condition and financial outcomes. This alignment incentivizes optimal asset utilization, cost-effective maintenance strategies, and innovation in operational approaches.
Whole-life costing methodologies embedded in PPP frameworks enable sophisticated analysis of capital expenditure (and investment) versus operational costs trade-offs.

By considering not only immediate maintenance expenses but also long-term implications including energy efficiency, spare parts availability, and eventual disposal, asset managers make informed decisions that reduce total cost of ownership. Studies indicate that implementing comprehensive lifecycle costing allows organizations to extend asset lifespans by 30-50%, achieve higher returns on investment, and maintain compliance with industry regulations and ongoing desired outcomes while reducing unplanned downtime by up to 55%.

GOOD GOVERNANCE GOES A LONG WAY

Good governance in PPP asset management requires robust mechanisms for transparency, accountability, and performance monitoring throughout the project lifecycle. Effective governance structures ensure that PPP projects serve public interest objectives and desired outcomes while managing risks proactively, minimizing risk, and maintaining value for money. The establishment of clear roles, accountability, responsibilities, and decision-making protocols forms the foundation for successful contract management and stakeholder coordination.

Performance monitoring through well-designed Key Performance Indicators (KPIs) represents a critical mechanism for ensuring PPPs deliver contracted services and achieve sustainable project objectives. The principal objective of performance monitoring is confirming that the procuring authority receives the service quality the private partner agreed to deliver while maintaining agreed risk allocation throughout the contract term.
Performance monitoring also allows proactive mitigation of emerging risks that could prove detrimental to project success.

TECHNOLOGY UTILIZATION

Artificial intelligence represents a transformative advancement in PPP asset management, enabling unprecedented capabilities in predictive maintenance, performance optimization, and decision support by analyzing large amounts of data effectively and consistently without human bias or error. . AI-powered systems process vast operational and maintenance data to provide actionable insights, predict equipment behavior patterns invisible to human analysis, and optimize maintenance strategies in real-time. Organizations implementing comprehensive AI-driven predictive maintenance achieve 50-70% reductions in maintenance costs while improving overall equipment effectiveness by 35-55% compared to traditional approaches.

AI technologies deployed in asset management encompass several interconnected capabilities. Machine learning algorithms analyze historical performance data, sensor readings, and operational patterns to predict asset failures weeks or months in advance, typically achieving 85-97% accuracy for well-defined failure modes. Natural language processing examines unstructured data sources including maintenance reports, inspection notes, and technical documentation to extract failure insights and recommend corrective actions. Computer vision systems conduct automated and unbaised visual inspections, detecting anomalies and structural defects that might escape manual observation.

Digital twins—virtual representations of physical assets that mirror their real-world counterparts throughout the lifecycle—provide powerful platforms for integrating AI capabilities with asset management processes. Digital twins combine data from Building Information Modeling (BIM)systems, IoT sensors, geographic information systems, and historical maintenance records to create comprehensive digital replicas that support simulation, performance analysis, and predictive maintenance. Research indicates that governments can achieve approximately $9-30return on investment for every $1 spent on digital twin implementation for infrastructure with benefits including 50% design cost reductions. Proactive assessments of AI management tools must take place to ensure operational integrity, integration with institutional legacy systems and the avoidance of technological obsolescence.

CLOSING COMMENT

Consideration of Environmental, Social, and Governance (ESG) factors must not be ignored and are progressively being incorporated into the asset management mandate of Public-Private Partnerships (PPP) and their role in achieving SDGs. This shift indicates a rising awareness that delivering sustainable infrastructure supported by innovative practices and tools, such as AI, not only generates long-term project value, but also tackles immediate challenges related to climate change, social justice, and the need for accountability that delivers a project's desired outcomes effectively.

Asset management with the utilization of best practices and proven technologies is the key to ensuring a viable project with long-term success.

Reimagining Land-Based PPPs: The APIIC Conditional Allotment Model as a Transparent & Investor-Friendly Alternative to DBFOT & DBFOS

BY RAHUL REDDY TALAKOLA

1 THE LIMITATIONS OF TRADITIONAL PPP MODELS

While DBFOT and DBFOS have proven their worth for complex public utilities like highways, airports, and ports, they remain administratively heavy and legally rigid.

Common challenges include:

- Long gestation periods for financial closure.
- Concession agreements laden with dozens of KPIs, often difficult to enforce.
- Title uncertainty limiting access to private financing.
- Costly disputes and arbitration on termination or revenue sharing.

Such hurdles have increasingly discouraged small and mid-sized developers—particularly in industrial, logistics, and urban redevelopment sectors from participating in PPP tenders. In the context of India's Scheme for Special Assistance to States for Capital Investment (SSASCI), which promotes faster state-level project execution, it has become imperative to reimagine simpler models rooted in statutory control and performance accountability rather than concession complexity.

2 THE APIIC CONDITIONAL ALLOTMENT MODEL

The Andhra Pradesh Industrial Infrastructure Corporation (APIIC), constituted under the Andhra Pradesh Industrial Areas (Development) Act, 1977, developed a conditional allotment framework that legally and operationally bridges public control with private ownership incentives.

Under this model:

- Land is allotted transparently—through e-auction or open application.
- An Agreement for Sale or Lease-cum-Sale Deed is executed, prescribing development conditions such as:
  - Commencement of construction within a fixed timeline.
  - Operationalization of industry or facility within 2–3 years.
  - Restriction on non-industrial use or resale without prior consent.
  - Upfront financial parameters disclosure (eg: premium with one time payment or fixed timeline payments)
- Absolute ownership is conferred only after the developer meets these obligations.
- On default, APIIC exercises statutory reversion powers, cancelling allotment and resuming the land.

This approach resembles a "conditional development right" rather than a concession or outright sale striking the ideal balance between private freedom and public oversight.

3 ANDHRA PRADESH (2019–2025): MODERNISING GOVERNANCE UNDER Y.S. JAGANMOHAN REDDY

The Y.S. Jagan Mohan Reddy administration revitalized APIIC's traditional model into a modern, technology-driven, and globally comparable PPP alternative. Its reforms transformed APIIC from a procedural land agency into a strategic development facilitator.

a) Digital Governance & Transparency
APIIC during this period has introduced GIS-based industrial land banks, online allotment systems, and e-payment mechanisms, ensuring full transparency and zero discretion in allotments. Every transaction became publicly traceable, aligning with the World Bank's Ease of Doing Business (EoDB) benchmarks.

b) Standardization of Legal Instruments
The government introduced uniform lease-cum-sale agreements across industrial estates, defining clear milestones, reversion clauses, and compliance verification mechanisms. This enhanced investor confidence and administrative consistency.

c) Compliance-Based Title Transfer
Developers received possession immediately upon allotment but could obtain the final sale deed only upon successful compliance. This created a direct link between performance and ownership, preventing land banking or speculation.

d) Integration with Financing Institutions
APIIC's restructured agreements were recognized by banks as legitimate instruments for raising finance once initial compliance milestones were met—boosting liquidity for developers and lowering project risk.

e) Alignment with Central Missions of Government of India
By aligning APIIC's operations with central schemes like SSASCI, NIMZ, and PM Gati Shakti, the state government demonstrated how conditional allotments could coexist within India's national PPP ecosystem, enhancing both flexibility and accountability.

f) Results on the Ground
Between 2019 and 2025, APIIC recorded record industrial land allotments, attracting investments across EV manufacturing, logistics, and food processing sectors. The projects saw quicker ground-breaking and lower litigation rates compared to conventional DBFOT projects elsewhere validating the model's efficiency. The state ranked No.1 in Ease of doing business and in attracting the Small & medium scale projects to the state.

A GLOBAL SHIFT IN PPP THINKING

FROM:
Long concessions • complex KPIs • arbitration-heavy enforcement

TO:
Conditional ownership • milestone-based compliance • statutory control

4 GLOBAL PARALLELS: CONDITIONAL OWNERSHIP AS A MODERN PPP INSTRUMENT

The APIIC approach is not an isolated Indian experiment—it mirrors a global policy evolution toward conditional property rights and performance-based land transfer.

- **Singapore:** JTC Corporation grants long-term industrial leases with strict compliance clauses. Title or renewal depends on project performance.
- **Dubai (UAE)**: Master developers like TECOM allocate land with performance-linked obligations, retaining reversion powers for default.
- **United Kingdom:** Post-PFI reforms, the UK moved from DBFO models to Development Agreements, focusing on shorter terms and outcome-based accountability.
- **United States:** City authorities like the NYC Economic Development Corporation (NYCEDC) use Disposition and Development Agreements (DDAs)—conditional sales based on construction and use milestones.

All these demonstrate a shared trend: governments worldwide prefer conditional development structures that simplify administration, attract private finance, and preserve the public interest, precisely the logic underpinning APIIC's model.

COUNTRY/ REGION	MECHANISM	KEY FEATURES
Singapore (JTC)	Industrial land leases	Milestone-based renewals, strict usage covenants
Dubai (UAE)	TECOM & Dubai Holding land grants	Deferred title; automatic reversion for default
United Kingdom	Post-PFI Development Agreements	Outcome-based, short-term ownership transfer
United States	DDAs under NYEDC & city agencies	Conditional sale; compliance triggers conveyance

5 COMPARATIVE ANALYSIS: APIIC VS DBFOT/DBFOS

Parameter	APIIC Conditional Model	DBFOT/DBFOS
Ownership	Deferred; title transfers post-compliance	Retained (DBFOT) or post-concession transfer (DBFOS)
Legal Basis	Statutory (AP IAD Act, 1977)	Contractual under PPP policy
Termination	Statutory reversion— quick enforcement	Arbitration-heavy and time-consuming
Ease of Financing	High–land becomes collateral post-KPI compliance	Moderate – concession rights are intangible
Administrative Burden	Low–single agency, single monitoring stage	High–multiple audits and approvals
Best Fit	Industrial parks, logistics, TODs, MSME estates	High-value, service-based assets (roads, airports)
Public Safeguard	Reversionary control and statutory cancellation	Contractual enforcement

6 INVESTOR PERSPECTIVE: CERTAINTY, SIMPLICITY, AND SPEED

For Small, Medium scale projects (Infrastructure / Social Sector) investors and developers, the APIIC model offers three crucial advantages:

- Certainty: The development pathway and compliance conditions are transparent, reducing approval ambiguity.
- Simplicity: A single-stage agreement replaces multi-agency concession contracts.
- Speed: Developers can begin construction immediately after allotment; ownership formalities follow compliance rather than precede it.

This structure creates a clear exit horizon and bankable land rights, both vital for private capital participation. By comparison, DBFOT and DBFOS models sometimes burden investors with multi-decade obligations and complex revenue models unsuited for smaller, land-centric developments.

7 GLOBAL RELEVANCE AND REPLICABILITY

The APIIC framework can be replicated across Indian states and internationally, provided there is statutory empowerment of the implementing authority. The key features of replication include:

1. Transparent land bank management through digital systems.
2. Conditional development agreements that link title to KPIs.
3. Defined reversion mechanisms for default.
4. One-stop digital clearance and compliance systems.

This structure could easily be adapted by urban development authorities in Asia, Africa, and Latin America, where land-based PPPs are critical for industrial, Social and housing infrastructure but conventional concessions have proven too slow or rigid.

8 TRANSPARENCY AND PUBLIC ACCOUNTABILITY

A frequent concern with land-based PPPs is the risk of cronyism or speculative hoarding. APIIC's post-2019 framework directly mitigates these risks through:

- Digital land databases accessible to the public.
- E-auction-based allotments eliminating discretion.
- Time-bound compliance milestones monitored online.
- Automatic cancellation for non-performance.

These mechanisms satisfy both public trust requirements and international transparency standards such as the OECD Principles for Public Governance of PPPs.

"BY COMPARISON, DBFOT AND DBFOS MODELS SOMETIMES BURDEN INVESTORS WITH MULTI-DECADE OBLIGATIONS AND COMPLEX REVENUE MODELS UNSUITED FOR SMALLER, LAND-CENTRIC DEVELOPMENTS."

9 POLICY RECOMMENDATION: A DUAL-TRACK PPP ECOSYSTEM

Rather than discarding DBFOT/DBFOS, governments should institutionalize dual-track PPP frameworks that align the model with project typology:

Type of Asset	Preferred Model
Public utilities and large infrastructure projects like • Large transport/utility concessions (major highways, airports, ports) where continuous long-term operation, complex revenue sharing, and tariff regimes are central. • Projects with complex user-fee models or where state needs to retain operation control for long periods (e.g., metro O&M where public subsidies and service continuity are paramount). • Projects requiring specialized regulatory/performance oversight across the concession life that a single conveyance-based KPI check cannot adequately secure	DBFOT/ DBFOS
Industrial estates, Logistics Parks / Multi-Modal Logistics Parks (MMLPs) – small/medium scale, TOD projects, Real estate clusters, Social Infrastructure, IT / ITEs Infrastructure projects (Data Centres & Cloud Campus Parcels etc.), Specialised Manufacturing Clusters (EV, Pharma, Medical Devices etc.), Affordable / Mid-Income Housing Projects, Business / Incubation Parks and Co-working Campuses, Industrial Support Utilities (STPs, CETPs, Common Effluent Treatment Plants), Renewable Energy Parks (solar/wind land parcels with developer-led build), Tourism & Hospitality Parcels (eco-tourism, heritage zones) — small/medium scale	Conditional Allotment

This strategic differentiation ensures governance flexibility, investor comfort, and faster project cycles, enhancing the overall effectiveness of PPP programs.

10 CONCLUSION: A SCALABLE, GLOBAL BLUEPRINT FOR NEXT-GENERATION PPPS

The APIIC conditional allotment model, revitalized under the then Chief Minister Y.S. Jagan Mohan Reddy government, demonstrates that PPP innovation need not rely on elaborate concession frameworks. Instead, it shows how statutory conditional ownership, rooted in transparency and performance, can achieve the same objectives faster and with fewer disputes.

In global PPP discourse, where the balance between public accountability and private efficiency remains a perennial challenge, the APIIC model represents an elegant synthesis. It safeguards public assets while empowering private enterprise an approach now validated by international precedents in Singapore, Dubai, and the United States.
As nations and subnational governments rethink their PPP strategies in the post-COVID era of constrained public finance, APIIC's model offers a replicable blueprint:

- Legally secure, because it rests on statute.
- Operationally efficient, because it minimizes transaction layers.
- Economically inclusive, because it welcomes varied investor scales.

In an era where governments must do more with less, this model exemplifies how public trust and private enterprise can converge on shared accountability—a vision entirely consistent with pursuit of sustainable, transparent, and innovative PPP practices with a legally secure, investor-friendly, and administratively light framework that advances both the Ease of Doing Business and the principle of public trust.

In short, it is not merely a state-level innovation but a global lesson in simplifying PPPs without compromising integrity, a model worthy of adoption, adaptation, and recognition.

A REPLICABLE BLUEPRINT FOR NEXT-GENERATION PPPS

"As nations and subnational governments rethink their PPP strategies in the post-COVID era of constrained public finance, APIIC's model offers a replicable blueprint:"

"Legally secure, because it rests on statute."

"Operationally efficient, because it minimizes transaction layers."

"Economically inclusive, because it welcomes varied investor scales."

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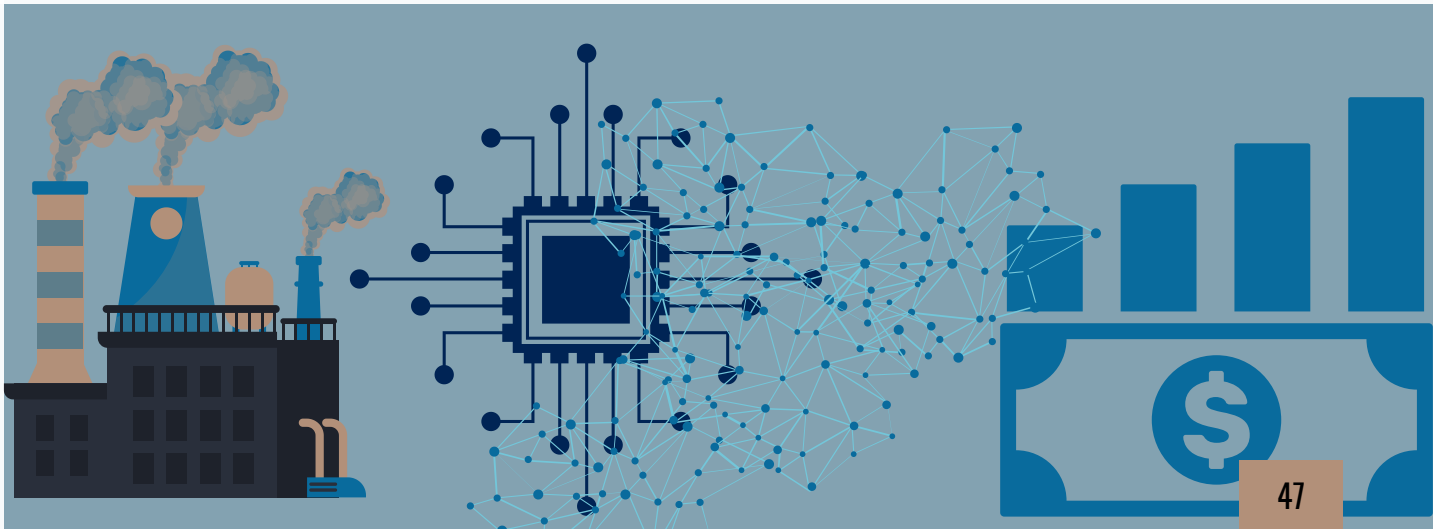
The Next Frontier – Climate, Tech and Catalytic Capital

The New Adaptation Agenda: Leveraging private capital through Public-Private Partnerships to close the climate adaptation Funding Gap

Catalytic Capital and the PPP Mindset: A conversation with Clare Woodcraft and Facundo Etchebehere

AI, Data Entitlement and the next frontier of PPP Governance



The New Adaptation Agenda: Leveraging Private Capital Through PPPs

BY DAVID A. DODD

Following the conclusion of COP30 in Belém, Brazil, the conference delivered a notable increase in adaptation finance commitments, yet these pledges remain orders of magnitude below the trillions required to protect vulnerable communities and economies from escalating climate hazards—floods, droughts, heatwaves, and rising seas. While governments, multilateral development banks (MDBs), and philanthropies stepped forward with new targets, the fundamental challenge is clear: current public and philanthropic commitments are still inadequate. Public-private partnerships (PPPs) now represent the most powerful mechanism to mobilize private capital at scale, amplifying official pledges and moving far closer to the level of investment the world actually needs.

For years, adaptation has been the poor cousin of climate finance. Despite promises made at COP26 to double adaptation funding to $40 billion annually by 2025, actual flows hovered between $20–26 billion. Developing countries alone require $310–365 billion per year by 2035 simply to adapt, creating an annual gap that the United Nations estimates is 10–18 times larger than current finance. Even the impressive 120% rise in philanthropic adaptation funding since 2021—reaching $870 million in 2024—is woefully inadequate.

LCOP30 did produce tangible progress: MDBs reported having doubled adaptation finance since 2019 and committed to further increases; the European Investment Bank pledged to double its adaptation portfolio to €30 billion by 2030; the Gates Foundation announced $1.4 billion over four years for smallholder farm resilience; and negotiations on the New Collective Quantified Goal (NCQG) coalesced around a $300 billion annual public-finance target, though experts insist $1.3 trillion total climate finance per year is required. These are welcome steps, but they still fall dramatically short, and much of the funding continues to arrive as loans rather than grants, adding to debt burdens in the most vulnerable nations.

Climate Finance Reality Check

- **$310–365 billion needed annually by 2035 for developing countries**
- **Current flows: $20–26 billion**
- **Philanthropic adaptation finance: +120% since 2021 but still under $1B**
- **The gap: 10–18× underfunded**

This is precisely where PPPs enter as the game-changer. By harnessing private-sector expertise, innovation, and capital, PPPs can extend limited public resources to deliver resilient infrastructure that withstands climate shocks while generating economic returns. Unlike pure public funding, which often struggles with fiscal constraints, PPPs create structured incentives for long-term asset management, risk-sharing, and performance-based outcomes. This approach not only addresses immediate adaptation needs but also builds systemic resilience, aligning with Sustainable Development Goals (SDGs) like SDG 13 (climate action) and SDG 9 (resilient infrastructure).

The World Economic Forum's November 2025 white paper, The Resilience Opportunity: Unlocking Climate Resilience through Public-Private Collaboration, estimates that $320–500 billion annually will be needed by 2050 for large-scale resilience infrastructure—flood barriers, urban drainage systems, resilient agriculture platforms, and coastal protection—exactly the type of projects that lend themselves to PPP structures. Unlike traditional infrastructure PPPs that rely on user-fees alone, climate-resilience collaborations create value by combining public-good outcomes (risk reduction for entire communities and economies) with revenue-generating elements (tolls, carbon credits, insurance premium savings, maintaining/increasing real-estate values, or verified reduction in losses tied to parametric insurance).

Why PPPs Matter for Adaptation

PPP'S bring the following benefits:

- Long-term asset management
- Structured incentives
- Private innovation
- Risk-sharing
- Performance-based delivery

Outcome: scalable, resilient infrastructure that withstands climate shocks.

Six Archetypes for Private-Sector Engagement

(Adapted from WEF 2025)

1. Joint protection of shared assets
2. Bundling resilience into existing infrastructure
3. Monetising co-benefits (carbon, insurance)
4. Aggregating small-scale projects
5. Ecosystem service revenue models
6. Blended capital for resilience pipelines

"STACKING THESE ARCHETYPES CREATES BANKABLE ADAPTATION PPPS."

The WEF report identifies six practical archetypes for private-sector engagement and shows how “stacking” them delivers bankable propositions. These archetypes provide a flexible framework for integrating resilience into PPPs across planning, design, construction, and operation phases, as outlined in related guidelines like those from UNECE.

- Joint protection of shared assets (e.g., industry clusters co-investing in seawalls): This archetype emphasizes collaborative risk mitigation. A prime example is the DERRIS Project in Italy, a public-private partnership led by insurer Unipol Gruppo, the City of Turin, and SMEs. Launched in 2015 under the EU LIFE program, DERRIS focuses on disaster risk reduction for urban areas vulnerable to floods and extreme weather. Through risk assessments, adaptation plans, and insurance incentives, it has helped over 30 SMEs implement resilience measures, such as elevated storage and flood barriers, reducing potential losses by up to 50% in pilot areas. This model demonstrates how PPPs in the planning and assessment phase can transfer insurance expertise to build community-wide resilience.

- Bundling resilience with commercial infrastructure (Malaysia’s SMART Tunnel—a tolled motorway that doubles as a flood-diversion system): This 9.7km tunnel, completed in 2007 through a PPP between Gamuda Berhad, MMC Berhad, and Malaysian government agencies, diverts monsoonal floods while serving as a traffic artery. Financed with $510 million (one-third private), It generates toll revenue in dry periods and has prevented $337 million in flood damages since inception.

By stacking flood control (public good) with transport revenue, it exemplifies design and engineering for resilience, offering a blueprint for urban areas facing similar dual challenges of congestion and flooding.

- Monetizing co-benefits (Philippines’ RISCO platform, which restores mangroves and sells verified carbon credits and lower insurance premiums): RISCO, launched by Conservation International with philanthropic support, aggregates community-led mangrove restoration into an investable platform. It monetizes flood mitigation (reducing premiums) and carbon sequestration (credits sold to corporates), while financing local SMEs in aquaculture and ecotourism. Early pilots have restored thousands of hectares, protecting coastal communities from storms. This archetype highlights operation and maintenance strategies, showing how PPPs can create ongoing revenue from ecosystem services in vulnerable regions.

- Aggregating small-scale projects into investable portfolios: This scales local initiatives for broader impact. The West Africa Coastal Areas (WACA) Resilience Investment Project, a World Bank-led PPP involving governments, DFIs, and private firms, aggregates coastal protection efforts across six countries. With $500 million in funding, it includes mangrove restoration, seawalls, and livelihood programs, attracting private investment through risk-sharing. In Benin, for instance, it has protected 10,000 households from erosion while creating jobs in eco-tourism.

Three enabling levers make these models scalable: **(1)** designing clear revenue or value-capture mechanisms, **(2)** achieving sufficient project size through aggregation or bundling, and **(3)** aligning risk-return expectations between public and private actors.

Beyond the WEF framework, real-world PPPs illustrate these principles in action. In the U.S. Virgin Islands (USVI), post-Hurricanes Irma and Maria (2017), PPPs drove infrastructure recovery. The Virgin Islands Water and Power Authority partnered with private firms like AES and ArcLight Capital in a $1.4 billion deal to modernize the grid with renewables and microgrids, enhancing resilience to future storms. This case underscores standards, compliance, and construction phases, reducing outage times by 70% in subsequent events.

In Goa, India, the Panaji Coastal Infrastructure project exemplifies coastal resilience through PPPs. Partnering with private developers, the state government is investing in seawalls, beach nourishment, and eco-tourism facilities under a $200 million initiative. This addresses erosion and flooding while generating revenue from tourism, aligning with operation and maintenance for long-term sustainability.

Complementing these insights, the Investor's Resilience Challenge—launched by leading development finance institutions under the Adaptation & Resilience Investors Collaborative (ARIC)—provides standardized criteria that make adaptation and resilience investments legible and attractive to private capital, smoothing the path for PPP deal-flow.

For instance, ARIC's Case 5 highlights a $20M catalytic equity investment into a $1B blended resilient infrastructure fund targeting water, waste, and coastal projects in Africa, Asia, and Latin America.

Dona Paula cape is a viewpoint in Panjim city in Goa state of India

This fund meets all five criteria by managing physical risks, enabling adaptation activities, and mobilizing private capital at scale.

Other notable PPPs include Japan's resilient infrastructure post-2011 earthquake and tsunami, where PPPs rebuilt ports and roads at higher grades, with enhanced seismic standards, preventing $10 billion in potential losses from subsequent events. In Seychelles, a debt-for-climate swap PPP with The Nature Conservancy converted $21 million in debt into marine protection, funding mangrove restoration and fisheries resilience.

Existing funding windows are already PPP-ready: the Adaptation and Resilience Fund ($50 million+ for locally led action in Asia and Africa), the Green Climate Fund's accelerated approvals, the Adaptation Fund's 2025 mobilization target of $300 million, and the EU Mission on Adaptation (€100 million+ in 2025 calls) all explicitly invite private co-investment and partnership structures.

The conclusion is straightforward. COP30's public and philanthropic commitments, while historically ambitious, remain insufficient on their own. Public-private partnerships, guided by proven archetypes and supported by emerging alignment tools, offer the most direct route to leverage those official pledges into the trillions of dollars of total investment the world urgently requires. By co-designing bankable projects that deliver both resilience outcomes and reasonable private returns, PPP practitioners can transform climate adaptation from an unmet obligation into a shared economic opportunity—and finally begin to close the gap.

Catalytic Capital in Action Examples to highlight:

- DERRIS Project, Italy — 50% loss reduction through SME resilience
- SMART Tunnel, Malaysia — $337M in flood damages prevented
- RISCO, Philippines — mangrove restoration + carbon revenue
- WACA, West Africa — 10,000+ households protected
- USVI grid modernisation — 70% reduction in storm outages

"RESILIENCE ISN'T A SECTOR—IT'S A SYSTEM. PPPS ARE THE BRIDGE CONNECTING CLIMATE RISK REDUCTION TO REAL ECONOMIC RETURNS."

CATALYTIC CAPITAL AND THE PPP MINDSET: A CONVERSATION WITH CLARE WOODCRAFT AND FACUNDO ETCHEBEHERE

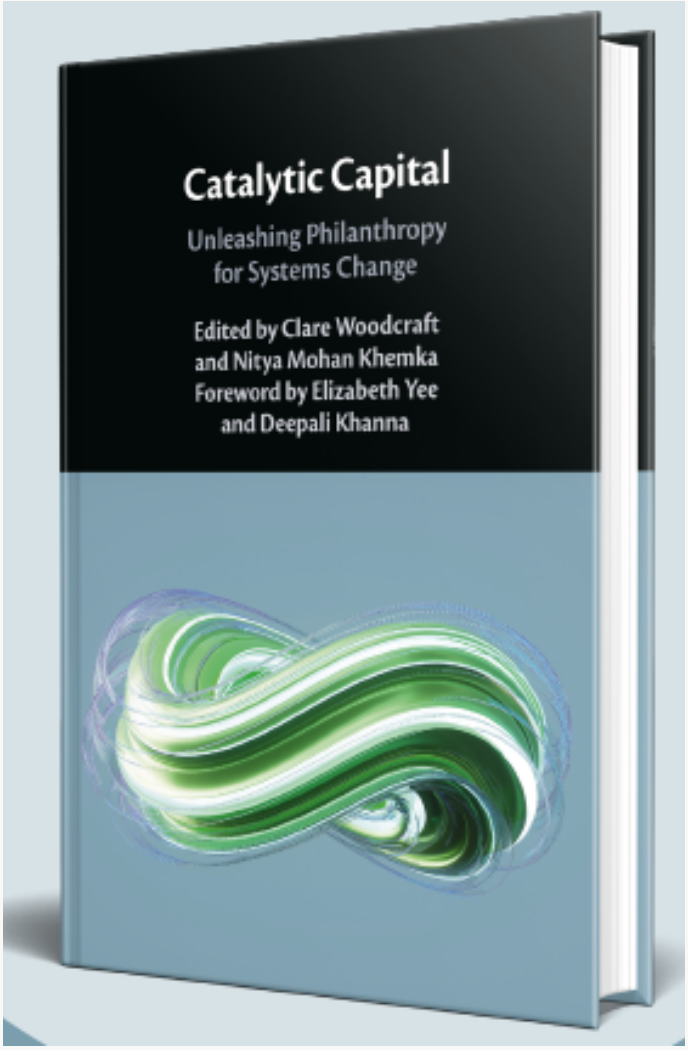
BY MAX VON ABENDROTH

On a brisk evening in Paris, as the doors closed on the OECD/NetFWD's Africa Philanthropy Day, I had the opportunity to speak with Clare Woodcraft and Facundo Etchebehere – two outstanding experts for Public-Private-Philanthropy Partnerships (PPPPs). The occasion? The global launch of *Catalytic Capital: Unleashing Philanthropy for Systems Change*, published by Cambridge University Press on November 26, 2025.

The book, co-edited by Clare Woodcraft, brings together more than thirty thinkers to ask a deceptively simple question: What if philanthropy finally stepped fully into its power to take risks?
Among the contributors is Facundo Etchebehere, a co-author, corporate sustainability veteran, and member of WAPPP's Philanthropy in PPPs Chapter's Leadership Committee.
I sat down with the pair for a candid, wide-ranging conversation that flowed from global "permacrisis" to the mechanics of blended finance, and, most importantly for WAPPP's community, how catalytic capital might reshape the future of public-private partnerships.

"WE WANTED TO CHALLENGE PHILANTHROPY TO BE BRAVER."
-CLARE

Clare Woodcraft:
The idea for this book came from a growing frustration. The world is facing a $6.4 trillion annual SDG financing gap - yet philanthropic capital remains timid, fragmented, and underleveraged.



Less than 2% of philanthropic money goes to climate solutions, for example. We wanted to challenge philanthropy to be braver, more intentional, and more collaborative.

Facundo Etchebehere:
And more catalytic. We kept coming back to that word because catalytic capital isn't about the size of the cheque - it's about what that cheque unlocks. Philanthropy can absorb risks that governments cannot and that private investors will not. That is the entire logic of Public-Private-Philanthropic Partnerships - PPPPs.

Q&A

"PPPS NEED A RISK-ABSORBER—
AND THAT'S PHILANTHROPY."
- FACUNDO

Interviewer:
The PPP community - WAPPP members included - often talks about de-risking mechanisms. How does catalytic capital shift the equation?

Facundo:
Traditionally, PPPs rely on governments and private companies sharing risk. But many of the world's most urgent challenges - climate adaptation, health systems in fragile states, nature-based solutions - are simply too risky at early stages for a PPP to even form.
Philanthropy becomes the critical third pillar. It can be the pure risk-absorber. It can pay for feasibility studies, build the regulatory scaffolding, strengthen institutions, or even take a junior equity position. Without that, many PPP ideas never leave the pitch deck.

Clare:
Chapter after chapter in the book highlights this. Whether it's pooled funds, the Green Development Investment Accelerator, Water Funds in Latin America, or health financing in the Global South- philanthropy consistently shows up as the enabler. It de-risks not just projects but entire markets.

"WE'RE NOT HERE TO FIX THE MARKET - WE'RE HERE TO FIX THE PLANET."
- CLARE (QUOTING SATYA TRIPATHI)

Clare:
One of the quotes I love from the book is Satya Tripathi's line: "We aren't here to fix the market; we're here to fix the planet." That is catalytic capital in a nutshell. It requires philanthropy to shift from ad hoc transactional funding to long-term systemic problem-solving.

Facundo:
This is where PPPPs become so critical. They recognize that no single actor can fix a systemic issue—neither the public sector, nor the private sector, nor philanthropy. But together they can move markets, create incentives, and build entire ecosystems.

When we examined case studies for the chapter I co-authored, the pattern was obvious: successful PPPPs had a catalyst. Someone willing to take the early risk. And that someone was usually a philanthropic actor.

"WE CANNOT KEEP FUNDING ISOLATED PROJECTS." - CLARE

Interviewer:
The book argues that philanthropy is underperforming—despite its potential. Why?
Clare:
Culturally, foundations often prefer autonomy. They like to fund their own programmes and control their own strategies.

Thanks to Rockefeller Foundation the online version of this book is available for free at this QR code.

Q&A

Facundo:
And PPP practitioners need philanthropy to open the space so that governments and private investors feel safe entering risky markets.
Catalytic capital is the match. PPPPs are the bonfire.

"THIS BOOK IS A MANIFESTO FOR A MORE COURAGEOUS, COLLABORATIVE FUTURE."
- CLARE

As our conversation winds down, Clare offers one last reflection:

Clare:
We hope this book equips practitioners with tools—not just ideas. The message is simple: catalytic capital is not a niche approach. It is a pathway to rebuilding systems. But only if we embrace collaboration and risk appetite, as non-negotiable.

Facundo:
And for the PPP community, this is your moment. The world needs structures that blend risk, return, and impact. Catalytic capital gives you the leverage to build them.

FINAL WORD

Catalytic Capital: Unleashing Philanthropy for Systems Change is more than a book. It is a call to redesign how societies finance their future. And as Clare and Facundo make clear, the frontier of this redesign will be built not by any single sector, but by the power of Public-Private-Philanthropic Partnerships.

For the WAPPP community, the message is unmistakable: catalytic capital is an invitation to reimagine PPPs - not as contractual arrangements, but as instruments of systemic change.

CLARE WOODCRAFT

Clare Woodcraft is a philanthropy advisor with extensive experience in social investment, sustainability, and international development.

She previously led the Centre for Strategic Philanthropy at Cambridge Judge Business School and served as CEO of Emirates Foundation, where she introduced a venture philanthropy model. Clare also held senior roles at Shell Foundation, Royal Dutch Shell across MENA, and Visa International in emerging markets. A trilingual speaker and published expert, she advises organisations advancing sustainable and inclusive development.
She serves on the Advisory Panel of WAPPP's Philanthropy in PPPs Chapter.

FACUNDO ETCHEBEHERE

Facundo Etchebehere is co-founder of Ambition Loop, an NGO driving systemic solutions to climate, biodiversity, plastics, food systems, and water challenges.

With decades of leadership in sustainability and public affairs, he helped advance Danone's B Corp certification and global sustainability strategy. An economist, he has worked as a researcher, consultant, and senior public-sector leader in Argentina.
He serves on the Leadership Committee of WAPPP's Philanthropy in PPPs Chapter.

***The interview took place in Paris on 26 November 2025**

AI, Data Entitlement and the Next Frontier of PPP Governance

Why data rights now define modern PPP governance

BY MICHAEL THOMSON

Artificial intelligence is rapidly reshaping how infrastructure is planned, delivered, and operated. Predictive maintenance, real-time performance analytics, risk forecasting, and financial optimisation are already becoming standard across major transport, energy, health, and defence programmes. Yet, despite this accelerated technological adoption, one structural issue persists in Public–Private Partnerships (PPPs): governments frequently lack access to the very data needed to use AI effectively.

It is a paradox sitting at the heart of modern PPP governance. AI promises more transparency, better decision-making, and improved value for money — but without an underlying legal right to operational data, the public sector cannot benefit from the technology driving that progress. As PPP portfolios become more complex, and as expectations around transparency and ESG intensify, this data entitlement gap is no longer a technical oversight. It is a strategic barrier.

This article explores why governments must incorporate clear data rights into PPP agreements going forward, how doing so enables responsible and effective use of AI, and why data entitlement is now fundamental to safeguarding long-term public value.

The Invisible Gap: PPP Governance Without Data

Traditional PPP contracts were drafted to allocate risk and establish performance frameworks, not to treat operational data as a shared asset. Historically, the focus was on outputs, service levels, and payment mechanisms rather than the underlying datasets that evidence compliance and performance. As a result, in many long-term partnerships today:

- Private operators control and retain detailed operational and performance data.
- Governments receive summary reports that may be high-level, lagging, or incomplete.
- Project companies apply sophisticated analytics internally, while the Authority has limited visibility into the dataset that produces those insights.

> “AI PROMISES TRANSPARENCY AND BETTER DECISIONS — YET GOVERNMENTS OFTEN LACK THE DATA NEEDED TO UNLOCK THOSE BENEFITS.”

PPP portfolios are expanding — and aging
Many governments now oversee vast networks of PPPs spanning decades. Institutional memory erodes, amendments accumulate, and the operational landscape shifts. Portfolio-level insight is impossible without structured, accessible, comparable data.

Transparency and ESG reporting obligations are intensifying
Carbon performance, social impact metrics, and sustainability reporting all require data-driven evidence. Governments cannot credibly report what they cannot independently verify.

Public expectations for accountability are rising
If decisions affecting public assets and public budgets are increasingly supported by AI, then public authorities must be able to demonstrate how those decisions were formed — and the data they relied on.

Together, these trends point to a single conclusion: data is now central to PPP performance, accountability, and long-term public value. The contract must explicitly recognise it as such.

The Case for a Data Rights and Access Clause

To enable modern, AI-ready oversight, new PPP agreements should incorporate a robust data rights and access clause. This clause should clearly establish:

Data Entitlement and Ownership
The Authority must be entitled to access all operational, maintenance, and performance data generated in relation to the project — not just the summaries or reports prepared for periodic review.

Format and Technical Standards
Data must be delivered in structured, machine-readable, non-proprietary formats to enable independent analysis, long-term storage, and integration with government systems.

Continuous, Real-Time Access
Annual or quarterly reports are insufficient for AI-enabled governance. Authorities require ongoing, or near real-time, access to ensure risks are identified early and performance is monitored accurately.

"AS PPP PORTFOLIOS EXPAND AND AGE, INSTITUTIONAL MEMORY FADES — BUT THE NEED FOR RELIABLE DATA ONLY INTENSIFIES."

Portfolio-Level Use Rights
Authorities must be permitted to aggregate and analyse data across their full PPP portfolio. This supports benchmarking, policy development, and the refinement of future project design.

Protection of Legitimate Commercial Sensitivities
The clause must balance transparency with protection of intellectual property and commercially sensitive information — a balance that is both achievable and essential.

A well-drafted data clause does not undermine the private partner. On the contrary, it builds shared confidence, reduces disputes, and strengthens the partnership through clarity and alignment.

From Oversight to Intelligence: What AI Enables When Data Is Accessible

With structured access to operational data, governments can unlock powerful capabilities:

Active Performance Monitoring
AI can analyse performance in real time, flagging anomalies before they lead to service failures or contractual breaches.

Predictive Asset Management
Patterns across the portfolio can reveal early warning signs of asset degradation, optimising lifecycle interventions and improving long-term asset value.

Value-for-Money Validation
Authorities can independently verify whether performance payments reflect actual service outcomes and risk allocation.

Business data analytics dashboard and KPI performance.
Source: Canva

Portfolio Learning and Policy Improvement
Data across projects can surface systemic issues, inform future procurement models, and elevate overall sector maturity.

These benefits flow only when data is accessible. Without entitlement, AI becomes unevenly distributed — operators benefit internally, but governments remain dependent on their reporting.

Embedding Accountability Into AI-Driven PPPs
As AI becomes embedded in the machinery of infrastructure delivery, one truth becomes unavoidable: **public trust hinges on transparency.** Authorities must be able to explain and evidence how decisions are made, particularly when those decisions are influenced by AI systems managed by private partners.

In AI-enabled PPPs, the contract is the backbone of that transparency. If authorities can trace insights back to the clause, the data, and the evidence, they maintain the control and accountability expected of public institutions. If they cannot, AI risks amplifying opacity rather than clarity.

High-quality contract data is not a technical luxury — it is a precondition for the next generation of PPP governance.

The Way Forward

As governments prepare the next generation of PPPs, incorporating data entitlement into contractual frameworks is no longer optional — it is essential. It enables responsible AI adoption, strengthens long-term project governance, and ensures that public authorities retain ownership of the knowledge required to protect public value.

In the era of intelligent infrastructure, data is not an ancillary output. It is the infrastructure that enables transparency, accountability, and informed decision-making.

Governments that recognise this now will build PPP portfolios capable of harnessing AI safely and effectively. Those that do not risk locking themselves out of the insights that will define the next decade of infrastructure delivery.

This article was written by Michael Thomson, Managing Director of Affinitext.

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Affinitext uses AI to simplify post-execution contract management, enhancing collaboration, mitigating risk, and driving operational excellence for complex, high-value agreements. Its platform transforms static contracts into structured, searchable digital assets, enabling real-time obligation management, improved visibility, and stronger compliance for major programmes such as PPPs and Giga projects.

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