ICLEI Local Governments for Sustainability

100% RENEWABLES CITIES & REGIONS ROADMAP

Supported by:

Federal Ministry for Economic Affairs and Climate Action

IKI INTERNATIONAL CLIMATE INITIATIVE

on the basis of a decision by the German Bundestag

Capacity Building Module: Public-Private Partnerships

CONTENTS

INTRODUCTION

FUNDAMENTALS OF PPP

FINANCING LOCAL ENERGY TRANSITIONS

Urgent investment needed at the local and regional level to tackle twin crises: climate change mitigation, and energy access.

The private sector has a key role to play, but local contexts can make business risky.

Partnerships between the public and private sectors have a key role to play – but capacities to develop them may be low.

Multilevel action is also a critical enabler.

PPP BUILDING BLOCKS

PPP Definition: A public-private partnership (PPP) can be broadly defined as a **contractual agreement between the government or a government-owned entity and a private firm.**

PPP main objective: Financing, designing, implementing, or operating infrastructure facilities and services that are traditionally provided by the public sector.

PPP BUILDING BLOCKS

Based on two principles:

Both parties invest in the project, whether through materials acquisition or manpower allocation, and in an expertise-related sense, exchanging knowledge and networks

Parties contribute to a societal, and often also commercial, purpose. The partnership embodies optimal risk allocation between the parties, allowing investments that the public partner would not be able to afford on its own while also realizing developmental objectives.

ADVANTAGES AND CHALLENGES OF A PPP

POTENTIAL ADVANTAGES

- Efficient use of resources and capabilities
- Capital and risk allocation
- Increased public sector investment in priority sectors
- Innovative potential
- Economic and social growth
- Faster implementation

POTENTIAL CHALLENGES

- High costs and risk allocation
- Lack of appropriate regulations
- Uncertainty
- Technical and capacity constraints

PPP ROLES AND PARTICIPATION

Tasks, obligations and risks are distributed among the public and private sector in **an optimal way**, corresponding to each party expertise and the resources they can bring to the project.

Stakeholder	Role
Political decisionmakers (national or local government)	- Establish and prioritize goals of the PPP and communicate these to the public - Approve criteria for selecting the preferred PPP option - Approve the recommended PPP option - Approve regulatory and legal frameworks
Company management and staff	- Identify company-specific needs and goals of the PPP - Provide company-specific data - Assist in marketing and due diligence process - Implement change
Consumers	- Communicate ability and willingness to pay for service - Express priorities for quality and level of service - Identify eisting strengths and weaknesses in service
Investors	- Provide feedback on attractiveness of various PPP options - Follow rules and procedures of the competitive bidding process - Perform thorough due diligence resulting in competitive and realistic bidding
Strategic consultants	- Provide unbiased evaluation of options for the PPP - Review the existing framework and propose reforms - Act as a facilitator for cooperation among stakeholders

PART 1

TYPES OF PPP CONTRACTS

TYPES OF PPP CONTRACTUAL ARRANGEMENTS

Public ownership	Operation & maintenance	Leases (and affermages)	Concessions	Joint ventures	Full privatization
• Publicly owned and operated assets • Not a PPP definition	• The private sector is hired to operate or maintain certain services • Private sector is paid a fixed fee to cover staff and expenses	• Private sector does not receive a fixed fee for his services but charges a fee to consumers, and pays the public sector a lease payment	• The public sector gives the right to use all utility assets, including responsibility for operations, maintenance and some investments	• An existing public entity sells a share in the utility to a private company. • Typically, the private sector managers operations while the public sector is involved in governance	• Transfer of company's ownership to the private sector • Private ownership and operation

Duration of partnership/agreement

2-5 years — 20-30 years — 30-50 years

Level of private sector engagement

LOW — HIGH

Level of risk transfer from public to private sector

LOW — HIGH

OPERATION AND MAINTENANCE (O&M)

Public ownership	Operation & maintenance	Leases (and affermages)	Concessions	Joint ventures	Full privatization

- **Full-coverage service contract:** Covers the total costs of workforce, parts and materials, as well as emergencies
- **Full-labor service contract:** Covers all the costs to repair, replace, and maintain most mechanical equipment
- **Preventive-maintenance contract:** Generally, involves a fixed fee and includes a number of scheduled and rigorous activities
- **Inspection contract:** Also known as a 'fly-by' contract, this is entered into by the facility owner for a fixed annual fee and includes a fixed number of periodic inspections

CASE STUDY

O&M AS A WASTE MANAGEMENT TOOL (ITALY)

In 2021, the company Acciona was awarded three O&M contracts to operate and manage 300 wastewater treatment plants and 600 pumping stations in Italy by a government owned enterprise in Sardinia. Due to the focus on the circular economy, the sludge produced would be used in the agriculture sector

Photo: Massimo Virgilio

LEASES (AND AFFERMAGES)

Public ownership	Operation & maintenance	Leases (and affermages)	Concessions	Joint ventures	Full privatization

- **Build-Operate-Lease-Transfer (BOLT):** In this approach, the government gives a concession to a private entity to build a facility on leased public land and operate the facility for the duration of the lease. Once the lease is completed, ownership is transferred back to the public entity or client. The BOLT model is commonly employed on infrastructure projects.
- **Lease-Develop-Operate (LDO):** In this type of investment model, either the government or the public sector entity retains ownership of the newly created infrastructure facility and receives payments in terms of a lease agreement with the private promoter. It is mostly followed in the development of airport facilities

LEASES (AND AFFERMAGES)

Public ownership	Operation & maintenance	Leases (and affermages)	Concessions	Joint ventures	Full privatization

Build-Lease-Operate-Transfer (BLOT): A facility which already exists and is under operation is entrusted to the private sector partner for efficient operation, subject to the terms and conditions decided by mutual agreement. The contract period is usually sufficiently long, and the asset is usually transferred back to the government at the end of the contract. For example, leasing a school building or a hospital to the private sector along with the staff and all facilities by entrusting the management and control, subject to predetermined conditions, could come under this category.

CASE STUDY

NEW INDIA, NEW RAILWAYS

The initiative, created in 2020 by the Indian government, aims to modernize and increase the efficiency in Indian public transport.

Through a BOLT model, the private entity is responsible for financing, procuring, operating and maintaining the trains, with the option of procuring trains through a leasing model.

Indian Railways, a state-owned company, provides the infrastructure, such as access to tracks, statios, watering and cleaning lines. The private entity pays Indian Railways fixed haulage and energy charges, as well as a share in gross revenue

CONCESSIONS

Public ownership	Operation & maintenance	Leases (and affermages)	Concessions	Joint ventures	Full privatization

Build-Operate-Transfer (BOT): The public sector grants to a private company the right to develop and operate a facility or system for a certain period (the "project period"), in what would otherwise be a public sector project. The operator finances, owns and constructs the facility or system and operates it commercially for the project period, after which the facility is transferred to the public authority. Depending on the ownership structure, the public authority may also be required to raise its share of equity.

Variations include if/when the private sector retains ownership, and how long it operates the asset before transferring the asset back to the public sector (if at all), such as in the following:

- **Build-Own-Operate (BOO)**
- **Build, Own, Operate and Transfer (BOOT)**

EXPLAINED: ONE CONCESSION WITH TWO VARIATIONS

Public ownership	Operation & maintenance	Leases (and affermages)	**Concessions**	Joint ventures	Full privatization

Design-Build-Operate (DBO): In this model, the entire responsibility for the design, construction, finance, and operation of the project for the period of concession lies with the private party. For example, if parts need to be replaced during the operations period prior to its assumed life span the operator is likely to be responsible for replacement. However, the public sector owns and finances the construction of new assets.

Variations on this model include the responsibilities of the private party, including maintenance or operations of the asset, or securing finance, if/when the private sector retains ownership, and how long it operates the asset before transferring the asset back to the public sector (if at all):

- Design-Build-Maintain (DBM)
- Design-Build-Finance (DBF)
- Design-Build-Finance-Maintain (DBFM)
- Design-Build-Finance-Maintain-Operate (DBFMO)

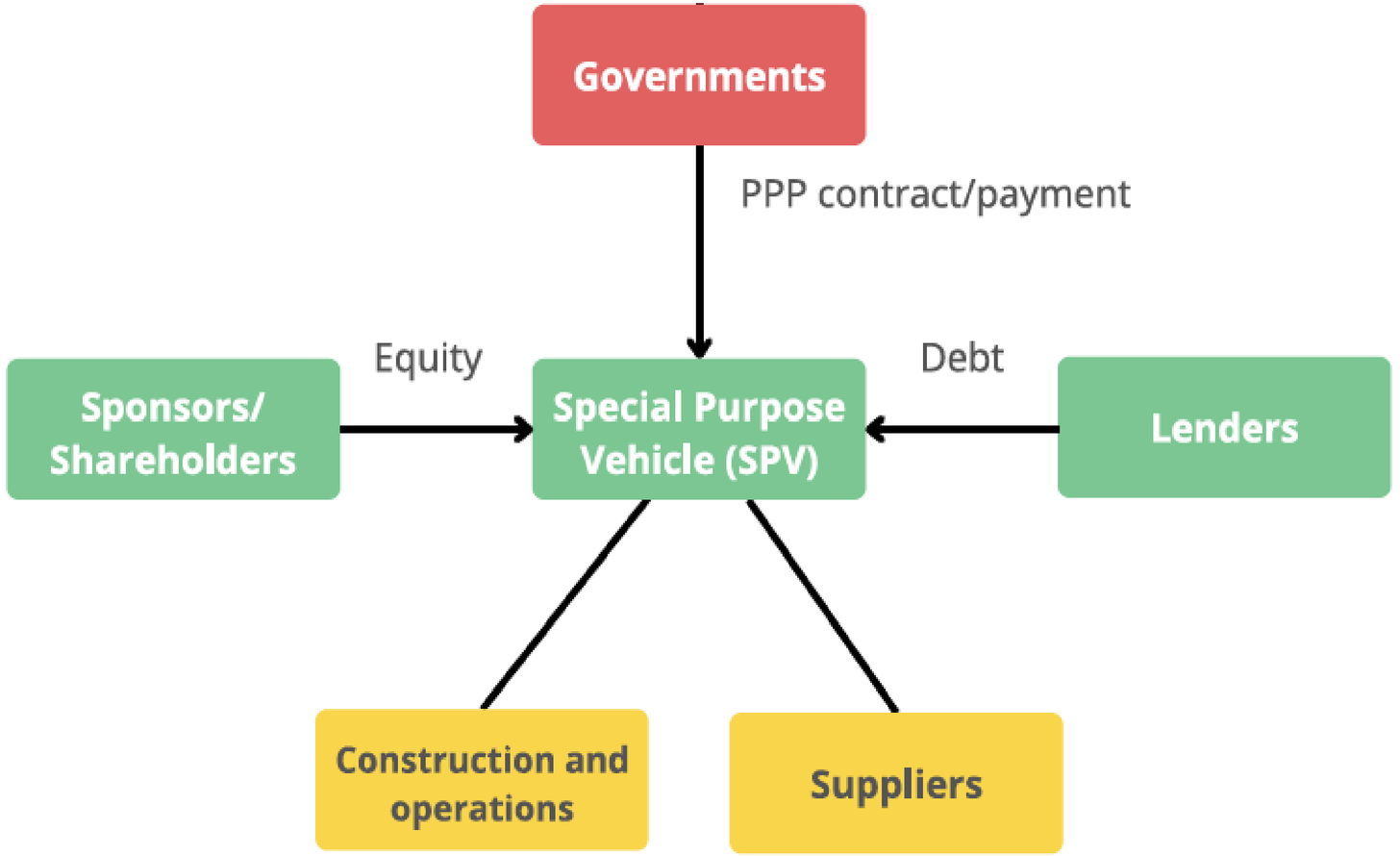
JOINT VENTURES

Public ownership	Operation & maintenance	Leases (and affermages)	Concessions	Joint ventures	Full privatization

- Joint ventures between entities in a PPP arise when the **contracting authority may require to have an equity stake ("shares") in the project** with the private company/operator.
  - In the case of an existing company or utility, shares are either divested to the private sector, or a new holding company is created under a joint ownership structure which holds the assets of the company/utility.
- In the case of a financed project, the project company (i.e. the special purpose vehicle) will be **established with a joint share ownership structure** with limited scope (usually focused on delivering the project with limited ability to diversify).
  - The level of share ownership will differ depending on whether the government is seeking to get the project off balance sheet and whether the government wishes to retain management control of the company/utility.

STRUCTURE OF A PPP: SPECIAL PURPOSE VEHICLE (SPV)

An SPV is the legal entity that undertakes a project, working as a managing and operating company



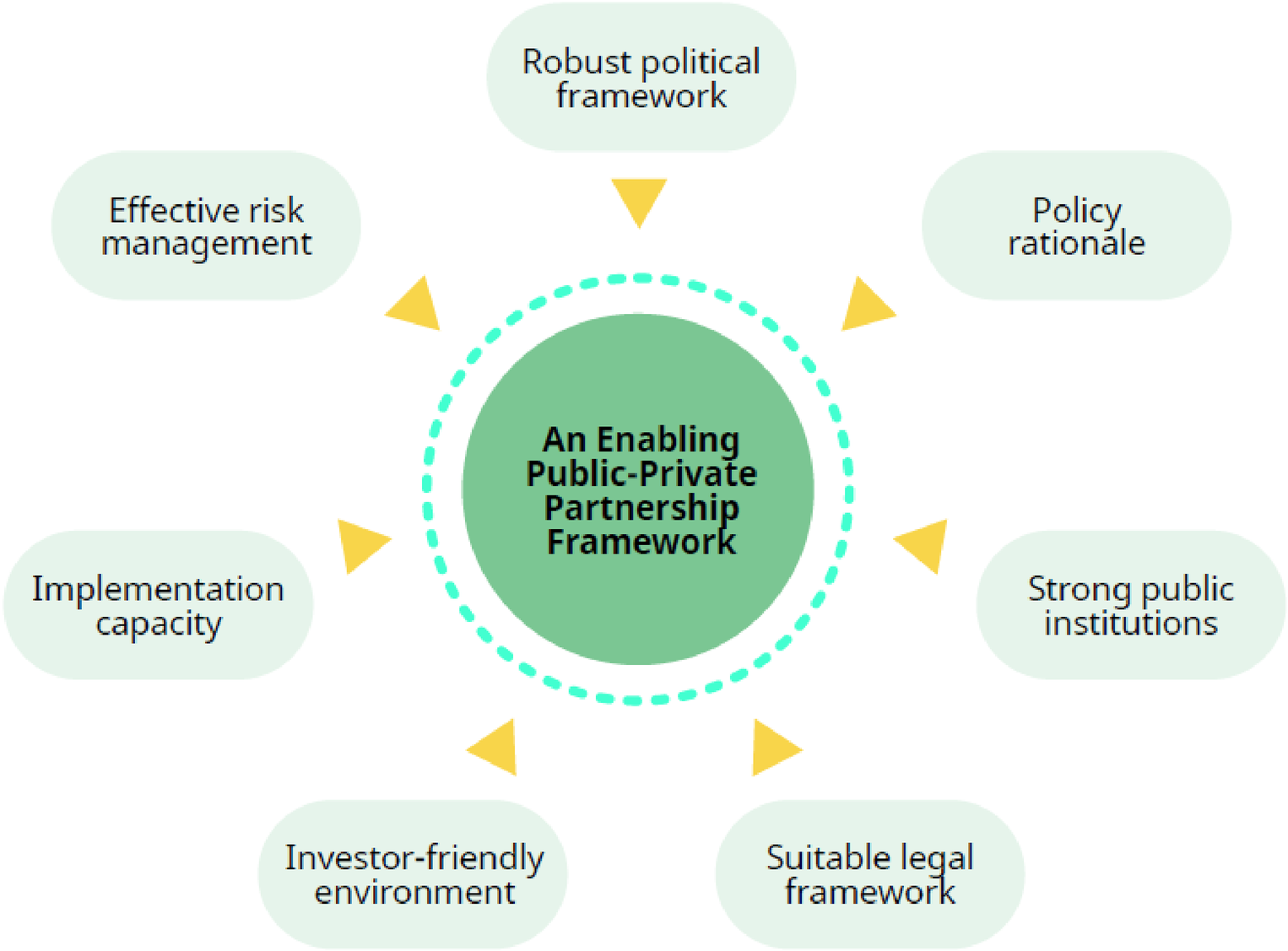
CREATING AN SPV

Define the project type and potential contracts	Plan project finance	Define the type of corporation	Finalize the operating agreement	Prepare fiscal documentation
Definition will allow understanding on the technical specificities and the needs to be addressed by the SPV	For an SPV to be viable, the cash flows from the project itself would need to be sufficient to cover its costs including debt-servicing requirements	Once the SPV has been opted for, it is important to determine the type of corporation. In most cases, private partners choose whether a limited liability company (LLC) or a limited partnership (LP).	The operating agreement is an important step of the establishment of an SPV since it outlines the main sponsors i.e. the public or private sector actor(s) and other consortium members including construction contractors, as well as their roles and responsibilities.	All necessary documentation should be prepared, and a bank account should be opened for the SPV

PART 2

AN ENABLING LANDSCAPE

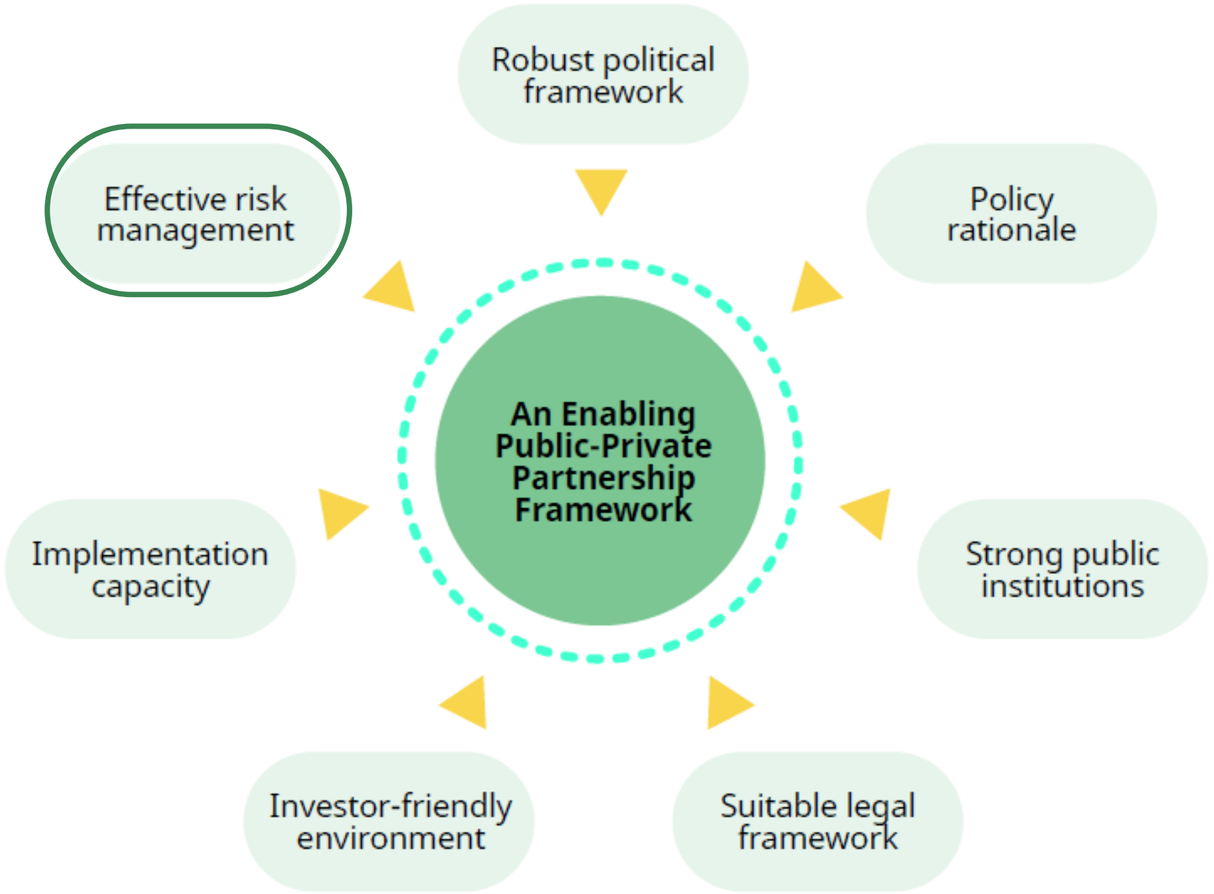
ENABLING CONDITIONS



ENABLING CONDITIONS

Effective risk management: Risk management is at the core of PPPs, due to its impact in the delivery of services. It involves risk identification, assessment, allocation and mitigation. As the ultimate manager of assets and regulations, the public sector should ensure that risks are identified and mitigated, which would guarantee the efficiency in the delivery of the services and attract private investors.

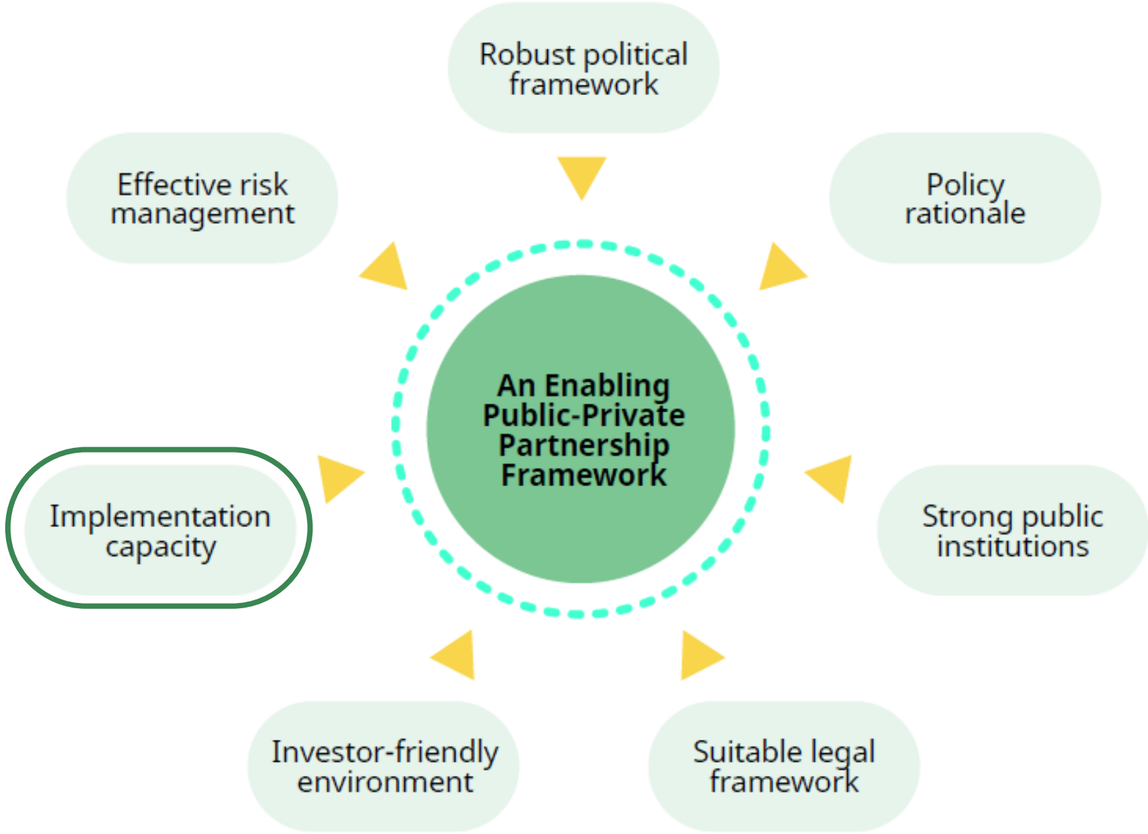
This can be achieved through a risk assessment or feasibility study, complemented by a mitigation strategy. An effective risk management strategy shows the government's commitment and transparency, allowing better planning and enhancing confidence in the process.



ENABLING CONDITIONS

Implementation capacity: When engaging in PPPs, the private sector needs assurances that the government has capacity to plan, manage the agreement, coordinate key stakeholders and implement the proposed project. Besides, a clear understanding of the complex processes of a PPP, the partners ability to clearly understand their roles, necessary skills, and resources to deliver them are also crucial to the project implementation. On the other hand, public authorities need to have full confidence in their private partner's capacity, since the latter assumes considerable risks in terms of services of general economic interest.

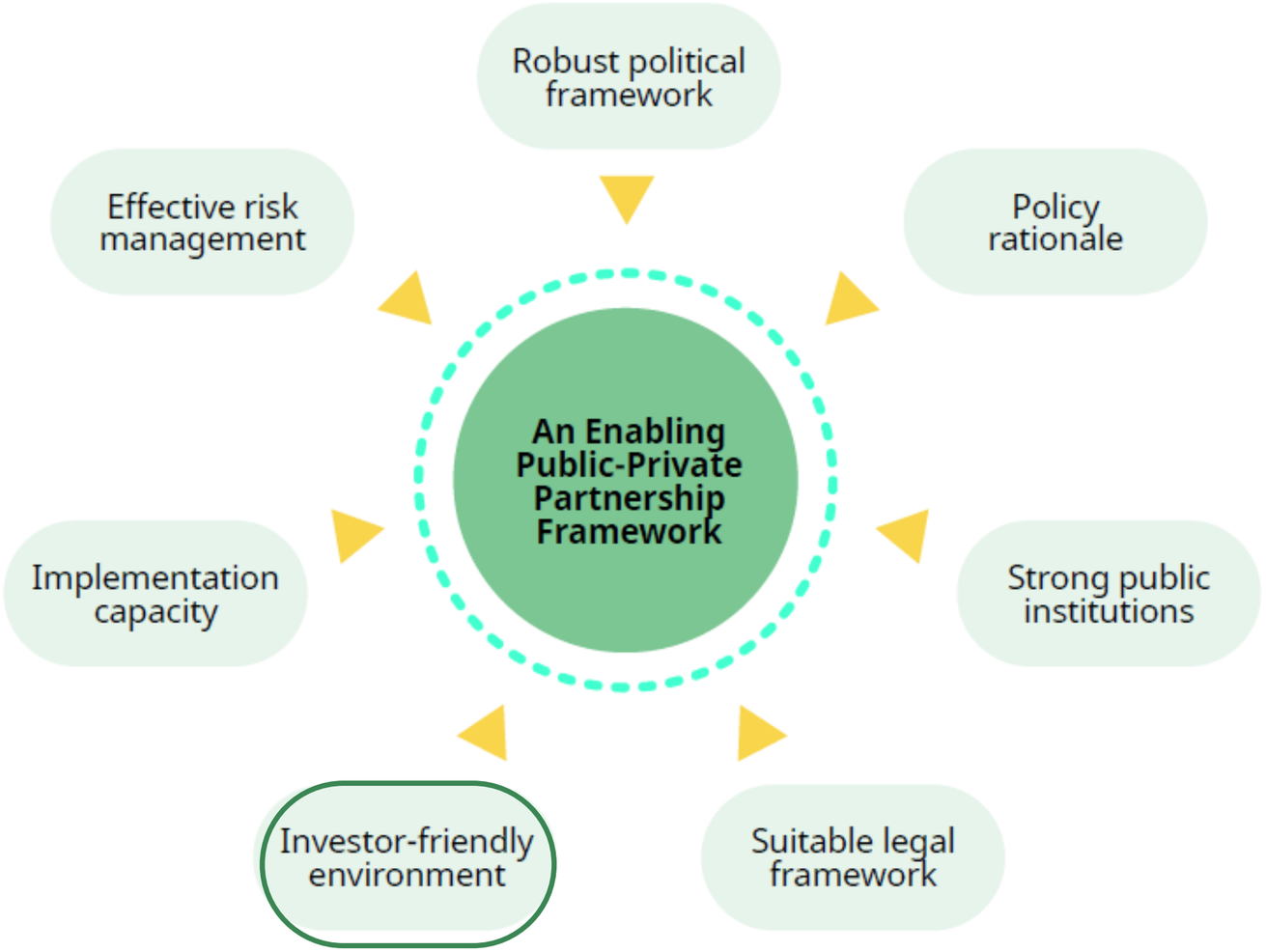
This will ensure an effective partnership and the protection of the public interest (World Bank 2017). Implementation capacity can be managed in different ways, depending on the government's profile and organizational structure. It can be in a centralized form, which usually includes the creation of a central agency or secretariat to manage the project, facilitating the harmonization of policies, or
the distribution of roles and responsibilities through the existing agencies and organizations inside the governmental structure. In case of large scale projects that are focused on the provision of high quality services over a long period of time, there might be a need to create or engage sector-specific agencies.



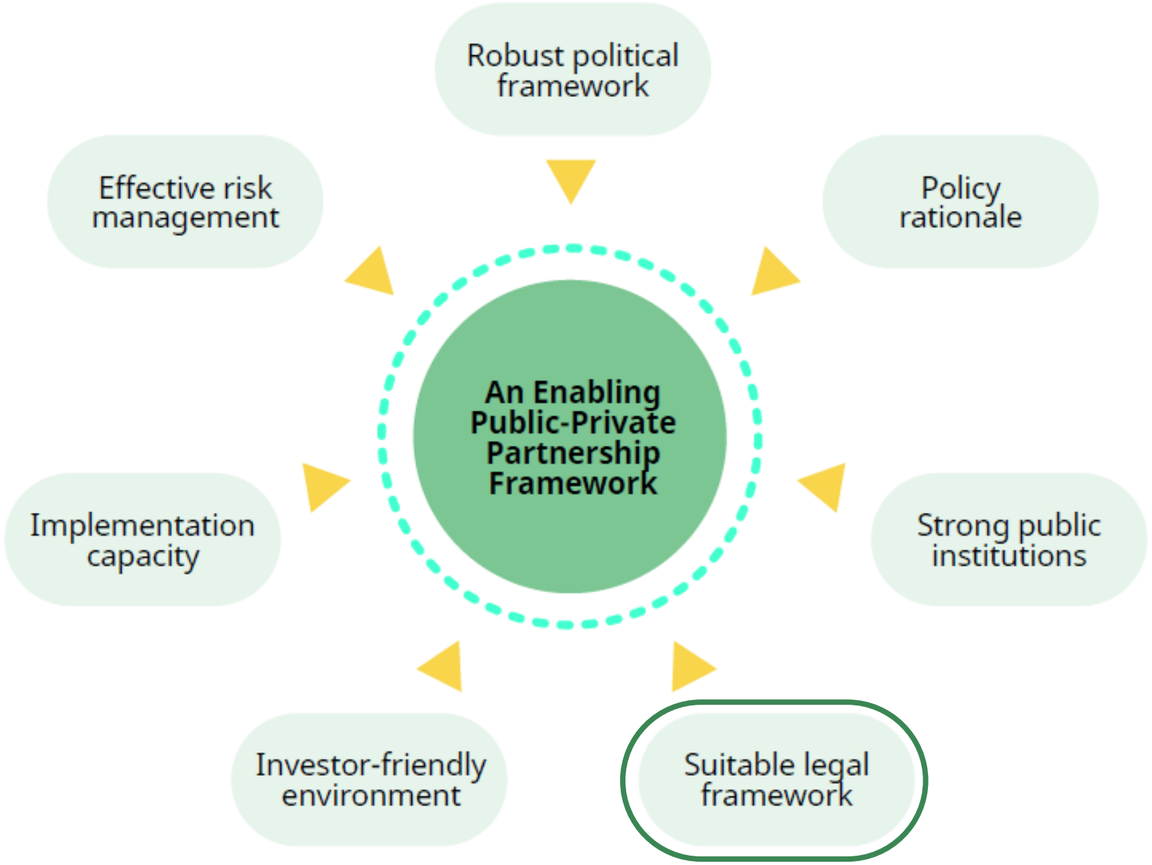
ENABLING CONDITIONS

Investor-friendly environment: A favorable investor climate ensures a solid understanding of the project and investment rationale, facilitating private funding under optimal conditions for the public sector.

This involves having a jointly agreed and clear investment plan, where the public sector demonstrates its priorities and targeted sectors, project pipelines, the amount of investment needed and the desired split between public and private finance



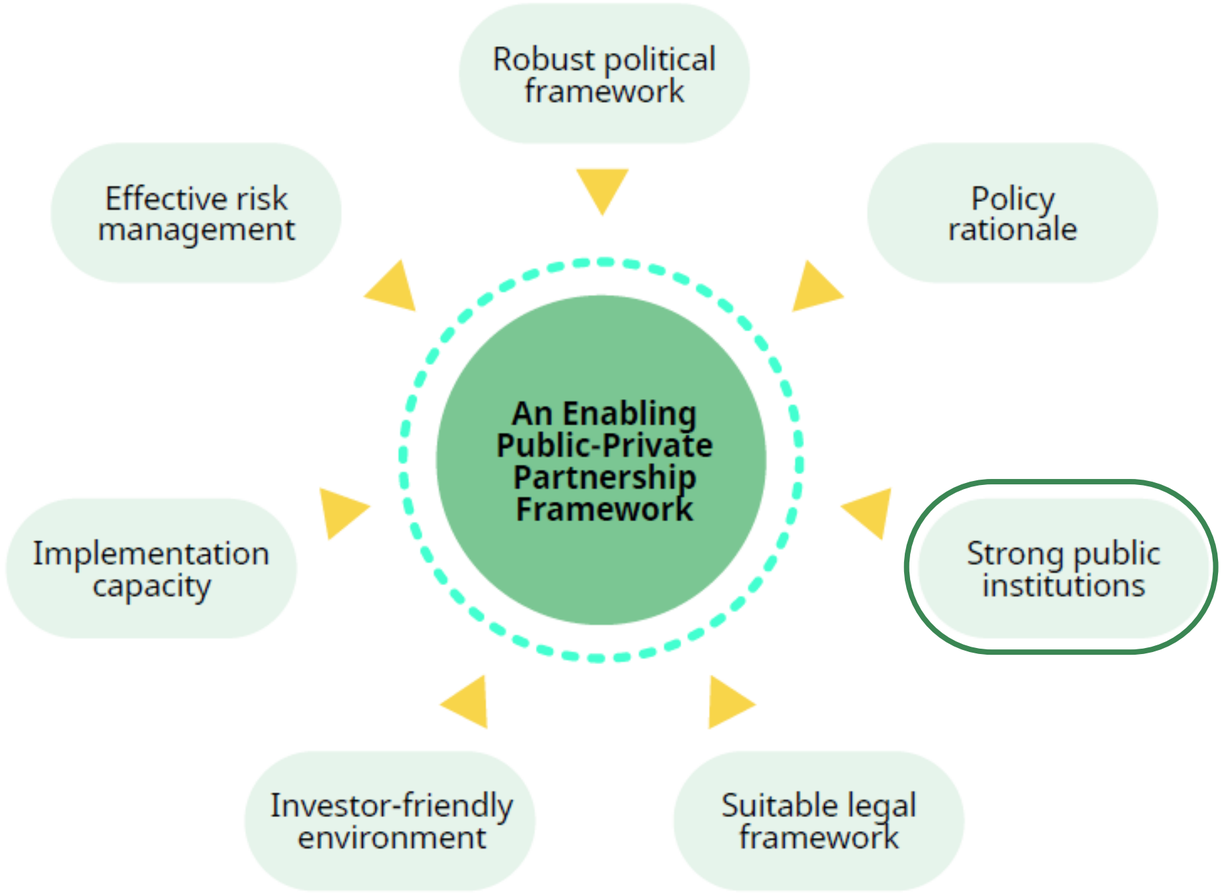
ENABLING CONDITIONS



Legal framework: Legislation that defines the financial viability of PPPs—for instance, stating if the private sector can charge fees or if the public sector will offer subsidies—is a critical enabling condition for the establishment and implementation of PPPs. Sector-specific policies are also necessary to define such a framework to support the development of projects in priority areas. A well-defined legal framework needs to be determined with certainty to enable the parties to understand the boundaries of their interaction, thereby increasing the private sector's confidence in the public counterpart.

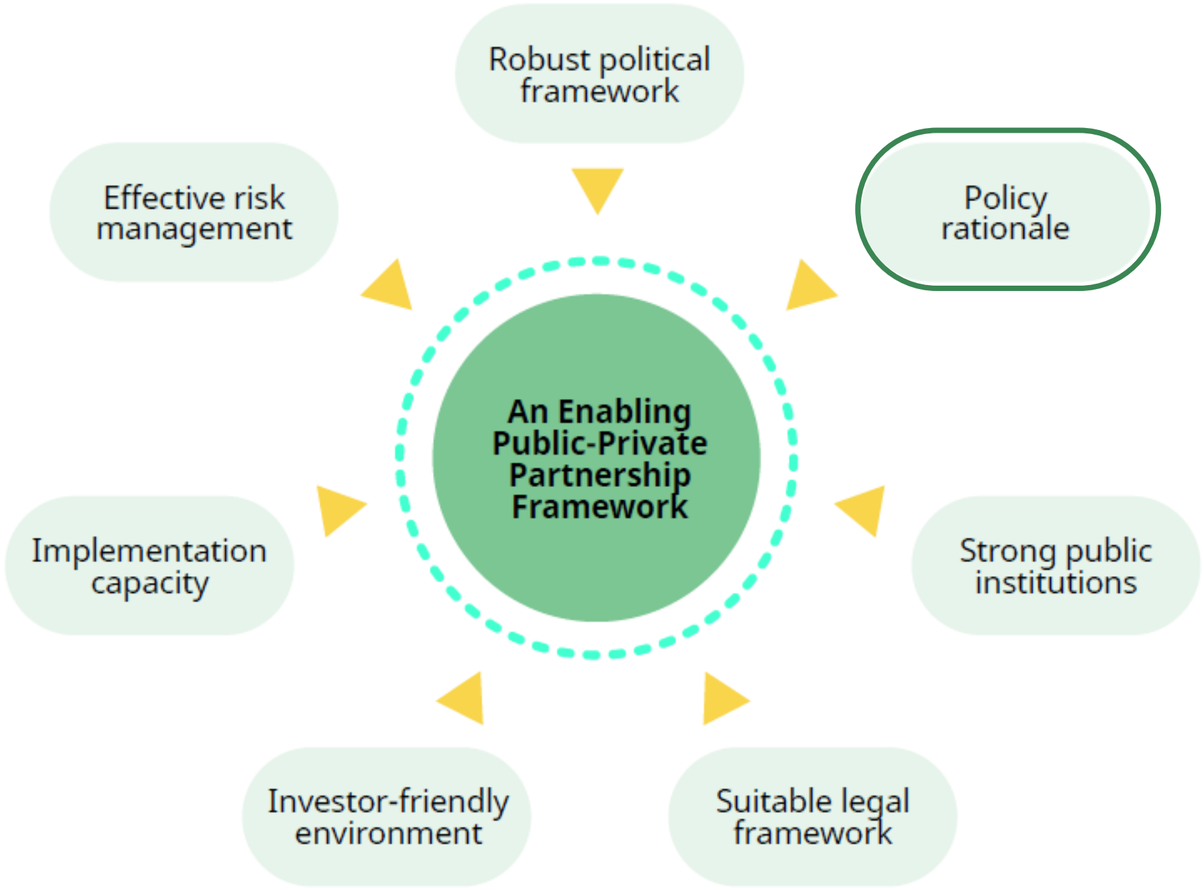
In some cases, the establishment of PPP may require reforms in the current legislation, which should reflect international best practices and the public sector priorities and objectives (World Bank 2017). In practice, the legal framework will be enforced by solid political institutions and operationalized through guidelines, regulations, standards and enforcement capacity, increasing the public sector's capacity to not only regulate, but also monitor the implementation of PPP models.

ENABLING CONDITIONS



Strong public institutions: Solid and stable public institutions facilitate the identification of capacities, guarantee continuation and enable a smooth operation and maintenance of the project in the long term.

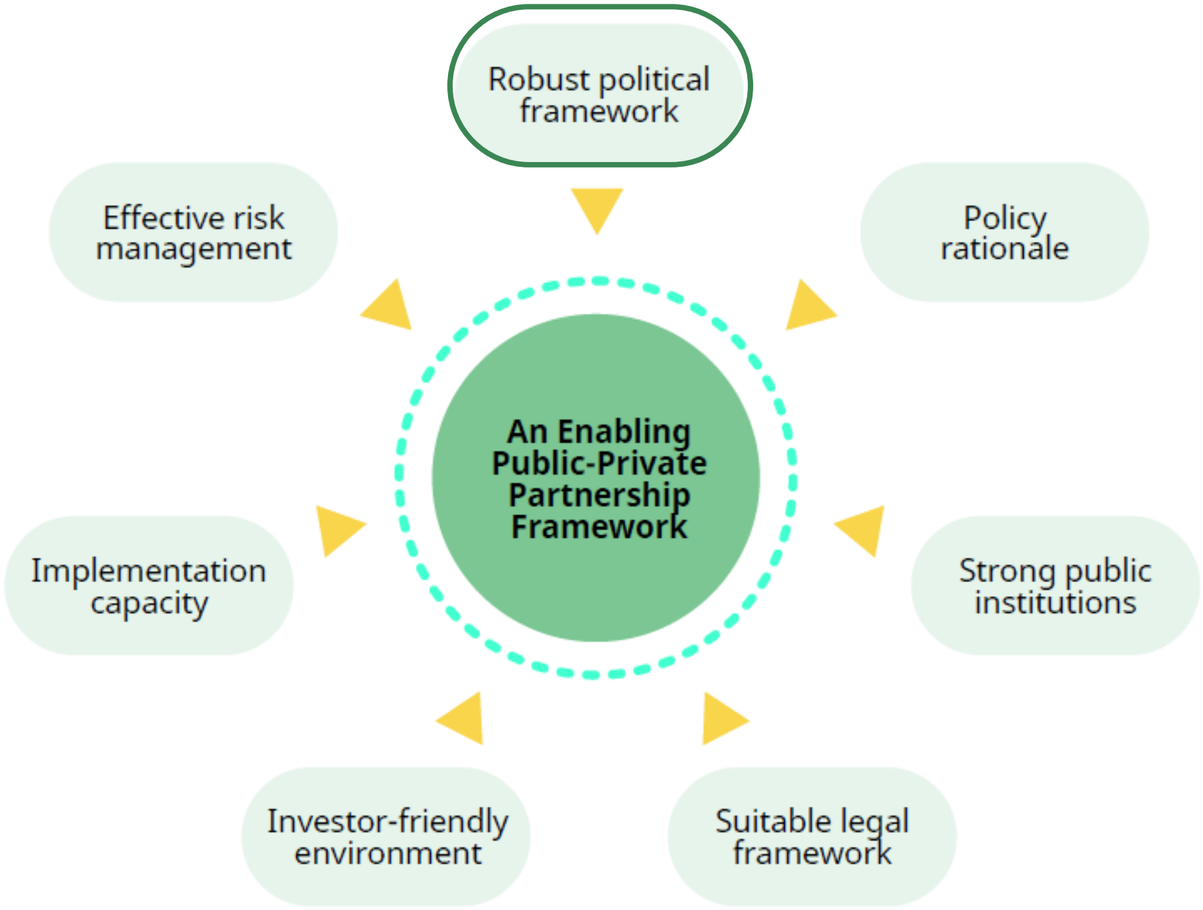
ENABLING CONDITIONS



Policy rationale: For the establishment of PPPs, it is imperative for the private and public sectors to have a clear understanding of the policy rationale for the identified PPP project, as well as the processes that accompany the PPP, to allow for a suitable preparation and execution.

This involves providing access to detailed information about the actors, processes of project selection, procurement, preparation and implementation, as well as contract monitoring and mechanisms of resolving conflict.

ENABLING CONDITIONS



Robust policy: It is important that the public partner defines their priorities, objectives and expectations according to the socio-economic scenario in their city or region, as well as the agencies and sectors of the government that will be involved and/or impacted by the PPP. It is critical for the public sector participants in PPPs to ensure high transparency in terms of processes, objectives, timelines and consequences, presenting consistent and clear regulations

PART 3

ENSURING SUCCESSFUL PARTNERSHIPS

PROJECT DEVELOPMENT

Photo: Matthew Henry, Unsplash

STAGES OF DEVELOPING A PROJECT

1. Identification

Identify projects based on the local government's needs

2. Expert engagement

Engage the right experts at the right time

3. Assess options

Quantify the benefits of each option and assess which ones are affordable and which one is the most suitable

4. Early project finance

Secure financial support from the LRG and NG, and engage with other development partners

5. Demonstrate feasibility

Conduct detailed technical and financial studies to conclude on affordability

6. Secure funding

Formalize funding commitments with legal contracts or via LRG/NG budgets

7. Procurement

Appoint the private sector partner(s) via tendering process

8. Monitoring

Monitor performance of the private partner against indicators, and report on KPIs

STAGE 1: PROJECT IDENTIFICATION

Cost structures
What costs are incurred by the public and private sectors?

Volumes
What are current volumes for demand/supply?

Sites
Identify potential sites and their locations

Existing programs
Which programs or standardised designs/contracts can the LG access?

Possible funding models
Which funding models are supported by regulations?

Budgets
What budgets are available to implement an RE project and to appoint consultants?

Revenue mechanisms
What fees are paid by households/businesses?

STAGE 2: EXPERT ENGAGEMENT

- Projects need **steady leadership, clear governance structure, and structured project management** for **effective decision-making, planning, coordination, and implementation of the various workstreams**
- Defining **clear roles and responsibilities** helps develop and launch the project as smoothly as possible
- Depending on the project stage, different skills and positions are needed
- It is important to start engaging experts that will work on the project, following a clear understanding of expertise available internally and what needs to be brought in

STAGE 3: ASSESSING OPTIONS

Volumes and type
Size of the community to be served, energy demand, capacity of technology installation

Land and geography
Size and location of land (different technologies require different amounts of types of land)

Climate
Local climate (rainfall, average temperatures etc.) also affects the determination of technology options

Off-take
Are there likely to be buyers for the product (electricity, PV panels, batteries, cables etc.)?

Institutional capacity
Availability of local skills for design, construction and O&M (mechanized technologies require more sophisticated skills)

Logistics
Need for centralized transport/logistics vs. Decentralized options; centralized could achieve economies of scale but may not be practical

Adaptability
Ability to expand the plant as volumes grow, and ability to integrate RE technologies

Regulations
Technology options will be informed by environmental, local business standards and/or import/export regulations

STAGE 4: EARLY PROJECT FINANCE

- The PPP model will need to be structured to minimize financial risks for the private sector and its lenders and provide certainty to guarantee the return of investment.
- Project aggregation, both geographically, thematically and financially can reduce risk. National governments as well as development finance institutions possess a wide variety of **de-risking instruments**, which can also increase investors' appetite.
- Local governments might also have to commit financially to the PPP for **OPEX or CAPEX**, which can be sourced from their own revenues, fees, taxes and assets. Any funding gaps should be identified as early as possible, possibly even during the design phase.
- **Grants** from the national government, or other support institutions, should also be explored.

STAGE 5: DEMONSTRATE FEASIBILITY

- A project has to demonstrate feasibility to all stakeholders involved. For the LG, for example, requirements such as the project's affordability, its impact on the community, and how it aligns with broader development plans and priorities should be considered.
- For the private sector, key concerns include whether the risk is allocated appropriately between the public and private sector, as well as the LRG's ability to pay for services, and cash flows generated are sufficient.
- Financial partners supporting the project could require that political support for the project at the national or local level be shown, and that the demonstrated development (co-)benefits are greater than costs, as well as how social and environmental risks will be mitigated, and whether the business model is sustainable.
- It is important to involve a diverse range of experts, including technical, social and financial, early in the assessment of feasibility.

STAGE 6: SECURING FUNDING

- Different funding models require different allocations of roles and responsibilities, as well as the risks and rewards of undertaking the project.
- These responsibilities span the project development cycle from conceptualizing the project, to construction, performance and operation and maintenance, as well as securing funding and ensuring sales and marketing.
- In situations where public and private entities collaborate, such as through service contracts or public-private partnerships, the allocations of roles, responsibilities and risks vary.

STAGE 7: PROCUREMENT PROCESS

- The public sector authority can issue a tender for a project to be implemented as a PPP with needed requirements. A technical consultant can be used to develop output specifications (materials, technologies used, supervision, construction services etc.) and specific legal expertise would be required to monitor and ensure legal procurement processes are being followed.

- Different jurisdictions may have different requirements or constraints for issuing tenders as PPPs (World Bank n.d.).

- The procurement process can be across multiple stages, including a request for qualifications (RfQ) or a direct request for proposals (RfP).

- Received bids should be based on clear and explicit criteria, and potential bidders should be provided with all relevant information such as rules and evaluation criteria. Negotiations can be conducted with bidders, however care should be taken that the process is as fair as possible and fundamentals of the tender are not changed, as is mandated in certain jurisdictions

- It is important that the procurement process be as transparent as possible to instill confidence from the private sector, which is an important enabling factor

STAGE 7: PROCUREMENT PROCESS

- It is important that the procurement process be as transparent as possible to instill confidence from the private sector, which is an important enabling factor
- Concluding the bidding process would involve selecting the preferred bidder and then finalizing the project design, governance, legal and financial structure for the consortium, drafting all requisite contracts and initiating relevant procurement processes.
- The SPV is formed at this stage as well. Agreements may be sought to ensure that the bidder(s) do not back out at this stage.

STAGE 8: IMPLEMENTATION AND MONITORING

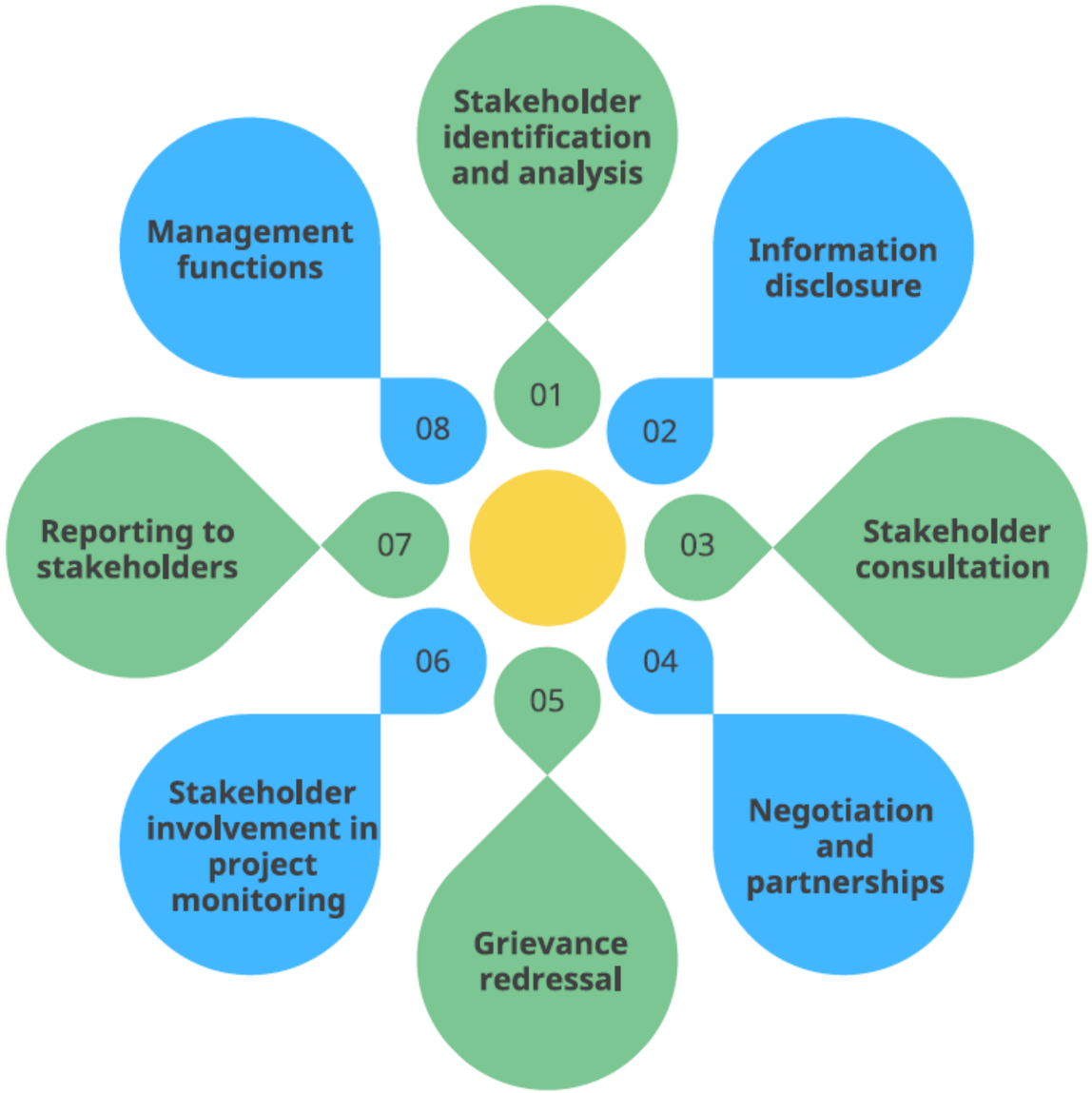
- Monitoring the implementation and operation of the project prevents unnecessary delays, cost overruns or bad management practices.
- An independent service provider can be appointed to monitor the engineering, procurement and construction (EPC) contractor, who in turn would most likely have their own internal verification processes.
- The local government can also establish internal processes to ensure that the SPV meets its obligations, and can even choose to appoint an independent consultant to monitor the contractor, who must verify performance based on the specified criteria.
- Penalties must be tracked and applied to the payment. Separate operation and maintenance contracts can be concluded to ensure the project continues to function properly after commissioning (CoM SSA 2022). If circumstances change, the project may need to be renegotiated or refinanced, it would be done at this stage (CoM SSA 2022).

STAKEHOLDER ENGAGEMENT

Photo: Matthew Henry, Unsplash

STAKEHOLDER ENGAGEMENT

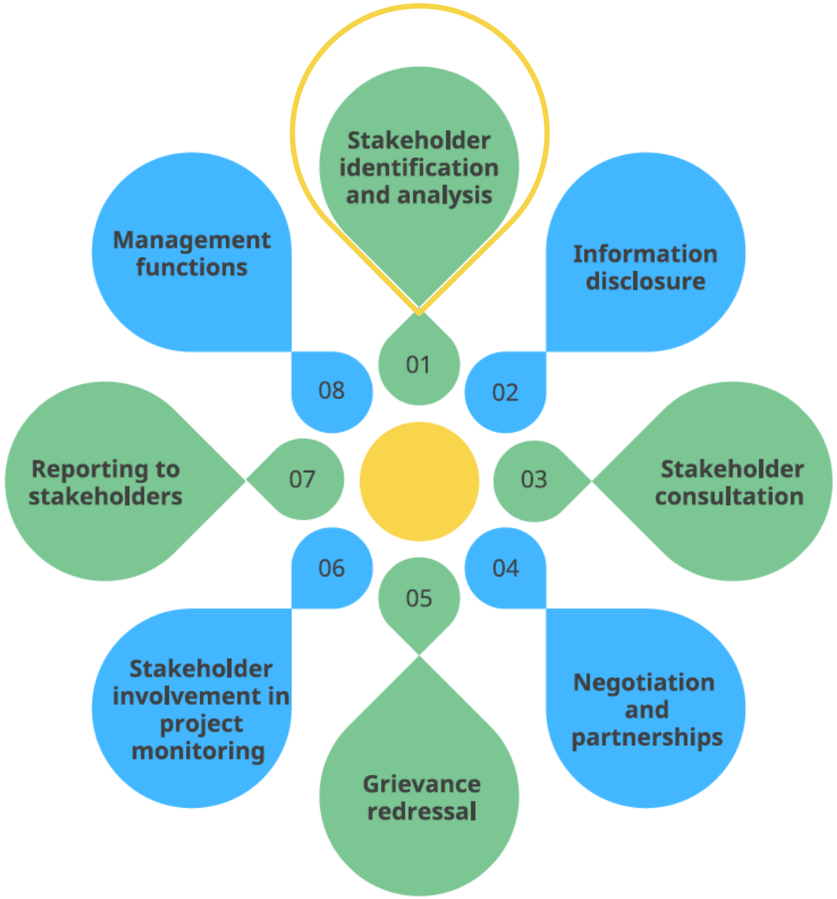
Key elements of a stakeholder engagement plan



Source: Adapted from Infrastructure Asia n.d.

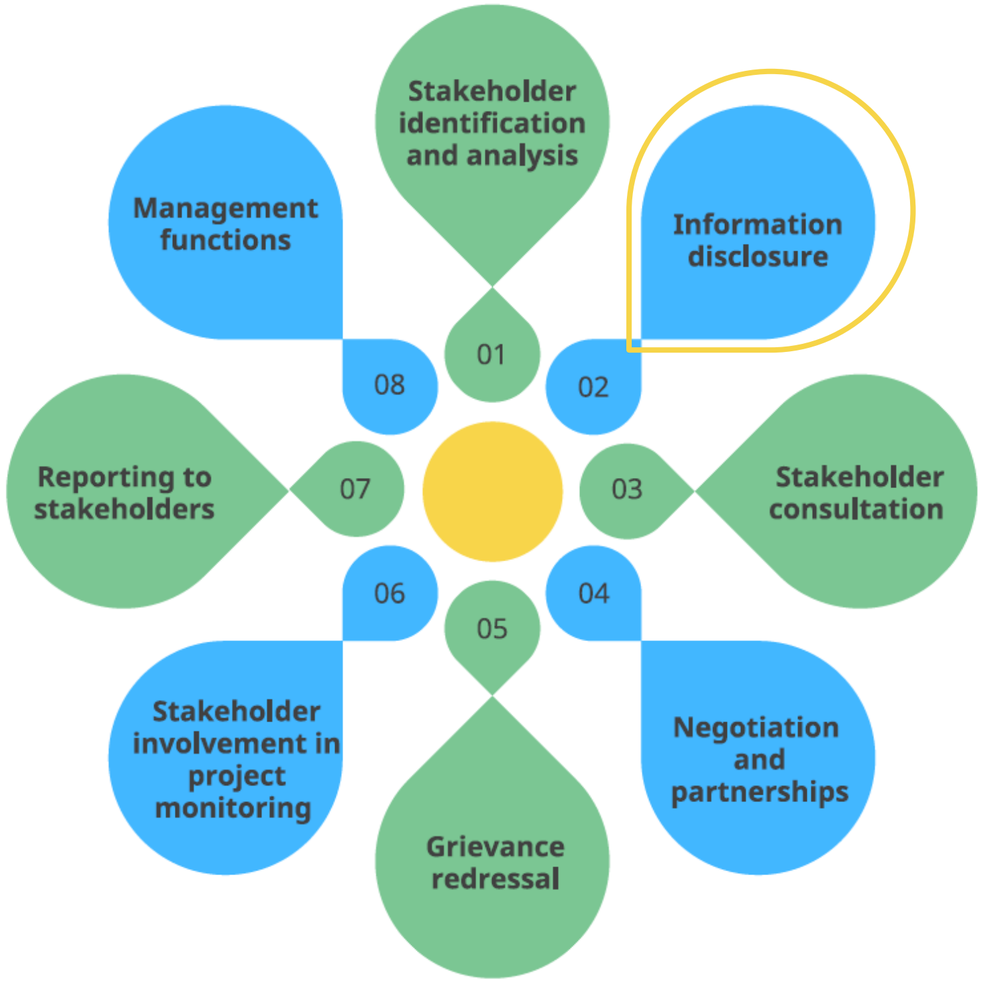
STAKEHOLDER IDENTIFICATION AND ANALYSIS

- Identification of the stakeholders that might be affected or have an interest in the PPP, as well as their respective groups, subdivisions, and representatives.
- These may include national government authorities, local organizations, non-governmental organizations (NGOs), companies, civil society organizations (CSOs) and nearby communities. Vulnerable groups should also be identified as they might not have a voice to express their interests or needs.
- A detailed analysis of each stakeholder group's interests and how the PPP will impact their activities and vice-versa then follows. It is important to understand the specificities and sensitivities in each of the groups.
- This can be achieved through meetings, surveys, analysis of annual reports and networking events.



INFORMATION DISCLOSURE

- Make information accessible and clear to interested parties, demonstrating transparency. It is important to minimize any risk of misinformation since this might lead to disengagement and reduced political support and public trust in the long term.
- Partners should consider possible sensitive and controversial issues, weighing potential risks in disclosing such information. This is a key step to anticipate conflicts and strategies to minimize opposition to the project.
- It is also important to establish how the information will be disclosed, whether through the publication of a report, a “background information disclosure” document, meetings or a summary with key information. This choice will highly depend on the type of stakeholders identified previously (IFC 2007).



STAKEHOLDER CONSULTATION

1

Plan ahead
Collect details on key questions regarding purpose, requirements, priorities, stakeholders, responsibilities and methods.

2

Good practices
Make sure that the process is targeted, informed, two-way, gender inclusive and documented.

3

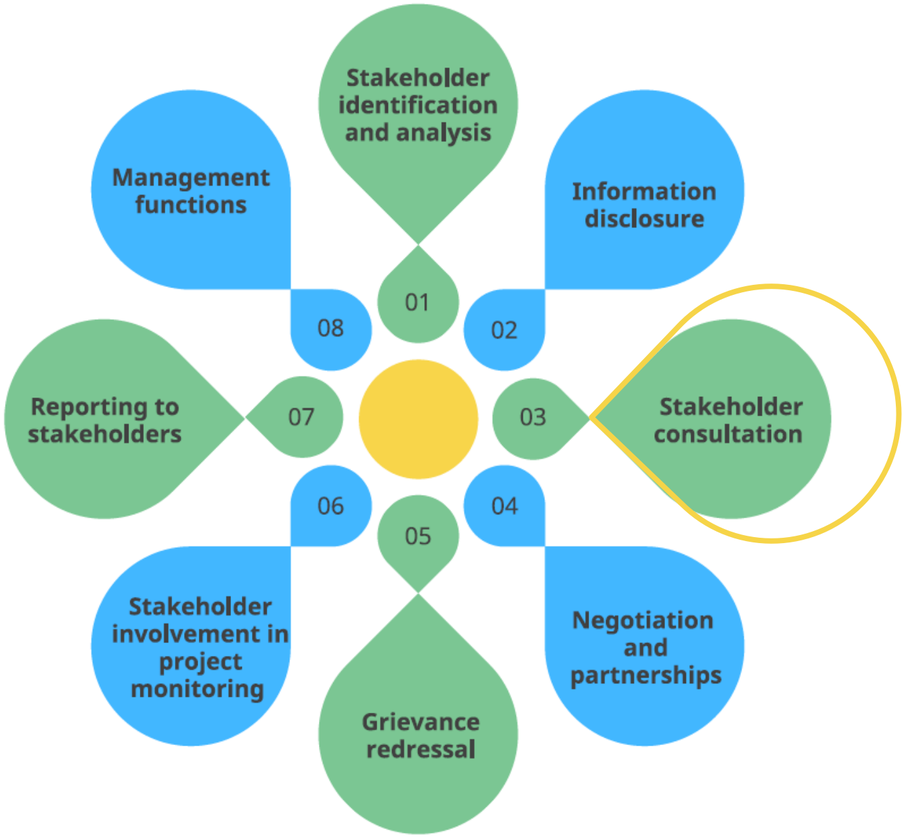
Incorporate feedback
Consider the views shared in the consultation on the project's decision-making processes.

4

Document the consultation outcomes
Such documentation provides the basis for reporting back to stakeholders on how their views have been addressed.

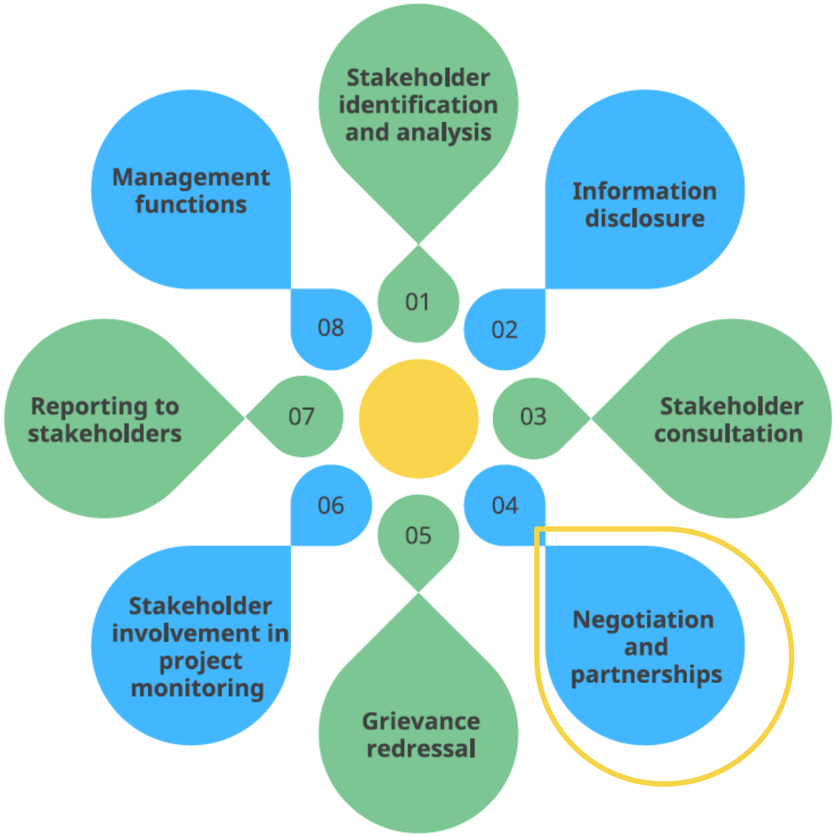
5

Report back
Follow up with stakeholders to let them know what has happened and what the next steps in the process will be.



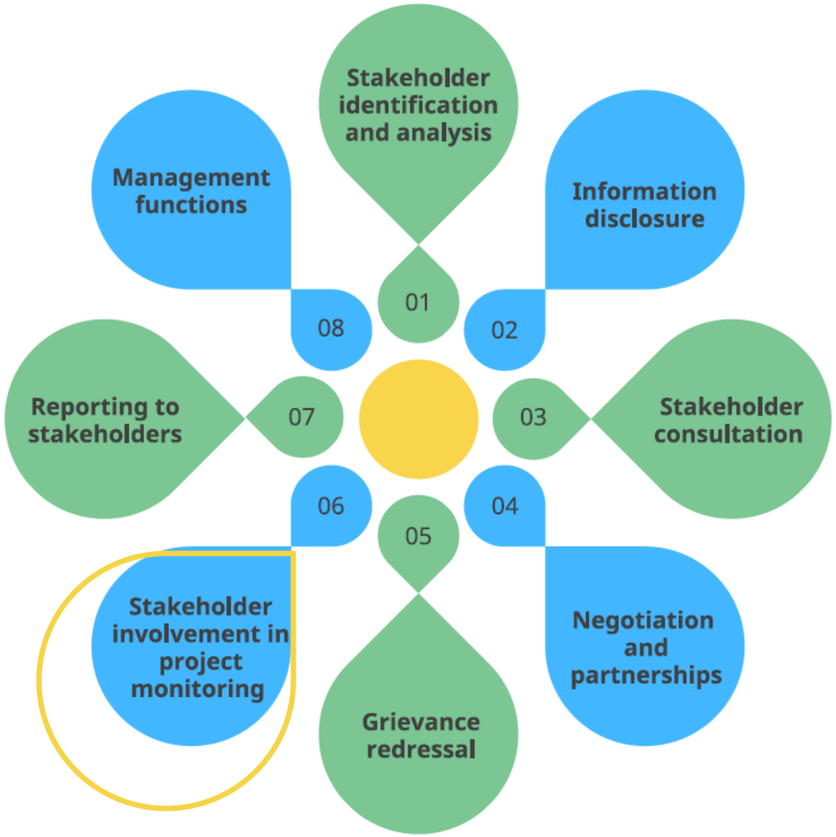
NEGOTIATION AND PARTNERSHIP

- The consultation process might require further negotiation among the stakeholders to reach an agreement on a specific issue raised during the dialogue.
- Negotiations should be grounded in good faith among the parties, i.e. conducted with an open mind and willingness to contribute to the process.
- It is important to understand when negotiation becomes necessary. It is usually recommended in the occurrence of a sensitive situation that might compromise the effective implementation of the PPP project.
- Negotiation might involve legitimate representatives from the different stakeholder groups who would jointly explore any sensitive issues. This process should be participatory, as it plays a key role in providing clarity and predictability regarding the next steps.



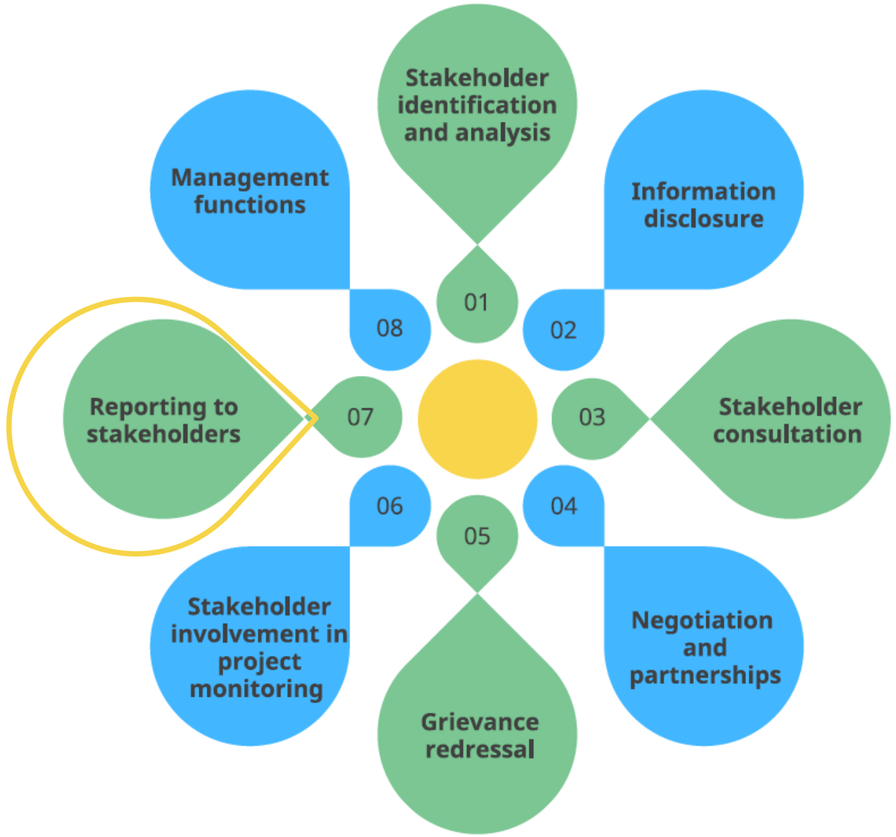
STAKEHOLDER INVOLVEMENT IN PROJECT MONITORING

- Involving local stakeholders in project monitoring can assist in increasing the transparency of the PPP, as well as giving a sense of responsibility and empowerment to such actors.
- In the process, it is important to define methods and indicators that are meaningful to the involved stakeholders.
- In some cases, public officials can lack the necessary technical expertise to engage in such monitoring. An external monitor can also be considered as an option, increasing the credibility of the monitoring results. (IFC, 2007)



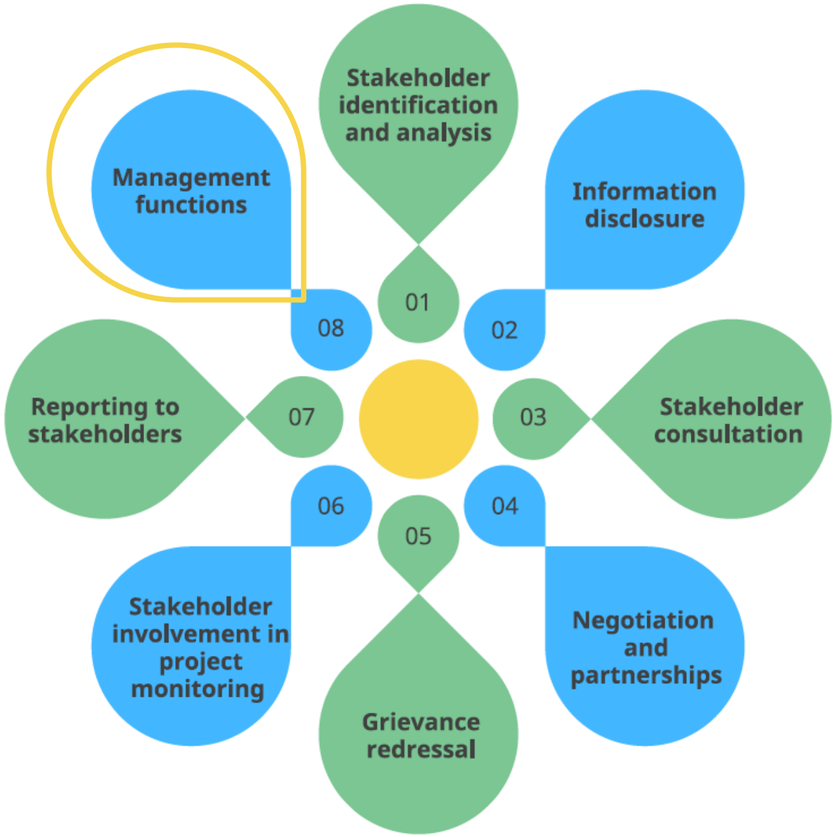
REPORTING TO STAKEHOLDERS

- Once the consultation process is over, sensitive issues have been discussed and stakeholders are engaged in monitoring, it is important to inform the stakeholders which of their suggestions have been accepted, how the project impacts are being monitored and the conflict mitigation strategies.
- This communication step has to involve all the key groups previously identified, which will be nurtured with consistent information. Reports should cover the process of stakeholder engagement as a whole, both to those stakeholders who are directly engaged, and to other interested parties. (IFC 2007)
- The type of information has to be carefully selected, shared publicly and might involve translation to local language so it can be accessed by all stakeholders. In some cases, sustainability reporting is also relevant to inform the social and environmental impacts of the project. (APMG International 2022)



MANAGEMENT FUNCTIONS

- A stakeholder engagement plan has to be managed as any other part of the PPP project, with clear targets, timelines and monitoring. A clear communication channel between stakeholders is also key to guaranteeing effective management.
- In large-scale PPPs, it might be necessary to establish a database with all the stakeholders and the interactions along the process.
- It is important to define a group that will deal directly with the stakeholders and have direct access to the project management team.
- In some cases, it will be necessary to hire staff with different skills in order to enhance the quality of the stakeholder engagement. For example, if the project affects indigenous communities, the PPP has to consider people that have the proper expertise in dealing with such groups. (IFC 2007)



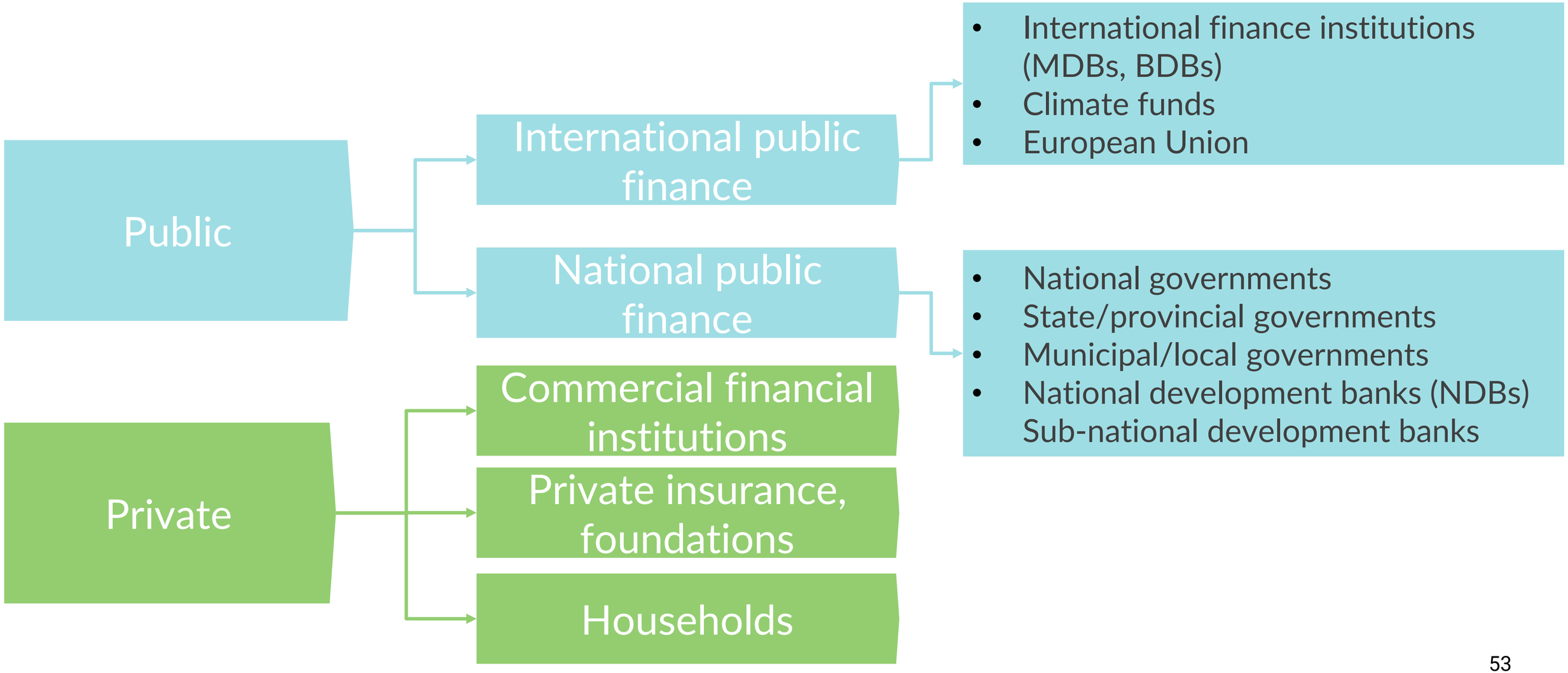
EXAMPLES OF STANDARD PPP CONTRACTS

Country	Standard	Link (external)
Australia	Guidelines on commercial principles for social and economic infrastructure PPPs	**Australia National Guidelines for Infrastructure Project Delivery**
India	Descriptions of model agreements for PPP in a range of transport sectors	**Government of India, Planning Commission**
New Zealand	Generic agreement template to guide private sector in engaging in PPPs	**Standard Form Public Private Partnership (PPP) Project Agreement**
Philippines	The PPP Center develops standardized terms for broader application on PPP in different sectors	**Public-Private Partnership Center**
South Africa	Standardized PPP provisions	**PPP Unit South Africa**

PART 4

ACCESSING FINANCE

CLIMATE FINANCE ARCHITECTURE



PUBLIC SECTOR FUNDING MODELS

It is advisable to assess the LG's own sources of revenue, including taxes, fees, land and assets, to understand whether it has sufficient funding in its capital investment budget to cover the costs of the designing and installing of the project

If purely own sources are usually not enough, the second stage of assessment should include information on the LG's ability to obtain grant and/or concessionary funding to cover costs from other public sources, such as national governments, development partners, climate funds, or other source

A third layer of the assessment should focus on the LGs borrowing capacity to take on debt from finance institutions (CoM-SSA 2020).

PRIVATE SECTOR FUNDING MODELS

Success factors to leverage private finance

- High levels of revenue certainty
- A commercialized technological solution
- Predictable development and operational costs
- A creditworthy & transparent LG
- In-kind contributions, and/or grants to minimize capital expenditure costs

Type of finance for PPPs

- Equity and shareholder loans
- Debt raised via private sector entity's own balance sheet
- Project finance debt: debt raised for a specific project, secured against project cash flows
- Blended finance from development finance institutions: including a combination of grants, concessionary loans, guarantees and other risk mitigation measures
- CAPEX grants
- Pooled finance

BLENDED FINANCE OPTIONS

An *interest rate subsidy* makes use of public grants to reduce a project's debt service payments

- *Concessional loans and/or grants* can reduce interest costs and offer longer maturities than those offered by private banks, allowing annual repayments to be reduced and spread over a longer period
- *Subordinated debt,* which is a form of debt that ranks behind 'senior debt' (e.g. bank loans) but before equity providers. It can help to insulate senior debt investors from unacceptable risks and reduces the cost of capital in cases where equity is too expensive
- *First loss equity*, which shields investors from a predefined amount of financial losses, making it more attractive for the private sector to fund the project's remaining equity
- *Guarantees* can mitigate various types of investment risks, including political, policy, regulatory, credit and technology risk

CAPEX grants which are funds to reduce the capital expenditure (CAPEX) of the project provided by the public sector to make a project more affordable by reducing the amount that the private sector needs to borrow

BLENDED FINANCE OPTIONS

- **Pooled finance** at the sub-national level is one of the models available to mobilize private financing for local climate projects. An initial assessment is necessary to trace the exact financial structure of the pooled mechanism, depending on the existing legal and institutional framework, as well as the financial needs of the local government. The modular nature of climate projects can provide the basis for pooled development funding as well as pooled financing facilities and pooled procurement. Pooled finance possibilities include:
- **Club deals** are where LGs issue a bond together and each one is responsible for the payment of its share of borrowed capital, with interest. No special purpose vehicle (SPV) is created, and the issuance can be organized by the association that represents the group of issuers, who directly access the market
- **Aggregation platforms**, where an SPV is created to work as an intermediary between municipalities and capital markets, which can be owned by the central government, subnational authorities or even by a third party, such as a pension fund. It can aggregate portfolios, raise larger sums of capital and help public borrowers to diversify their funding sources and to access cheaper financing. SPVs can also be equipped with technical expertise and enhanced risk management and creditworthiness
- **Bond banks***,* where LGs can create entities to finance municipal projects.These funding vehicles make pooled issuances for local authorities who will eventually pay back the interest and the borrowed capital to the bank. Bond banks can offer lending at lower costs, higher creditworthiness and diversification, risk reduction and technical assistance

FINANCIAL ASPECTS OF AN SPV

FINANCIAL CYCLE OF A PPP PROJECT

Financing

- Sponsor equity
- Subordinated debt
- Bank loans
- Government grants

- Bond rating agencies, credit insurance companies

- Sponsor equity
- Third party equity investors
- Bondholders
- Bond rating agencies, credit insurance companies

SPV Functions

Construction

Operation

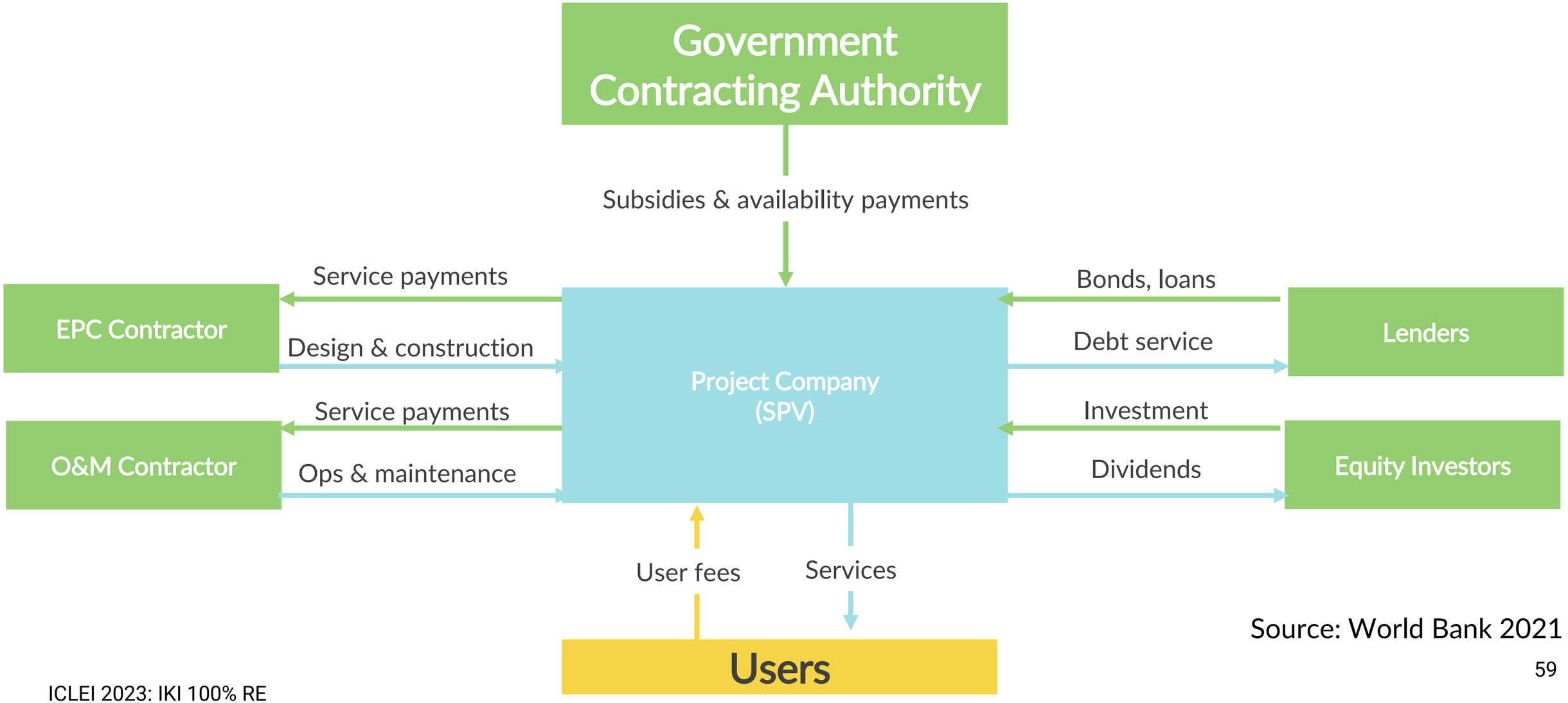
Asset is transferred to the government

Revenues

- Tolls or user fees
- Revenue guarantees
- Service fees (e.g. availability payments, shadow tolls)
- Subsidies

Source: Engel et. al 2014

FINANCIAL FLOWS OF AN SPV



Source: World Bank 2021

CARBON MARKETS

Photo: Matthew Henry, Unsplash

WHAT ARE CARBON MARKETS?

- Carbon markets are trading systems in which carbon credits are sold and bought.
- One tradable carbon credit equals one ton of carbon dioxide or the equivalent amount of a different greenhouse gas reduced, sequestered or avoided.

- Two types:

1) Compliance (or mandatory) carbon markets are created as a result of any national, regional and/or international policy or regulation

2) Voluntary carbon markets – national and international – refer to the issuance, buying and selling of carbon credits, on a voluntary basis.

Source: UNDP, 2022

TYPES OF CARBON MARKETS

Voluntary markets vs. compliance markets

Type of market/ Criteria	Voluntary market	Compliance market
Exchanged commodity	Carbon offsets, facilitated by a project-based system	Allowances, facilitated by a cap-and-trade system
How is the market regulated?	Functions outside of the compliance market	National, regional or international carbon reduction regimes E.g. Article 6, Kyoto Protocol, California Carbon Market, EU Emissions Trading System
What is the price?	Voluntary credits tend to be cheaper because they cannot be used in compliance markets. The price is impacted by project type, project size, location, co-benefits, and vintage	Compliance credits tend to be more expensive because they are driven by regulatory obligations
Who can purchase credits?	Businesses, governments, NGOs, and individuals	Companies and governments have adopted emission limits established by the United Nations Framework Convention on Climate change
Where are credits traded?	Currently no centralized voluntary carbon credit market. Project developers can sell credits directly to buyers through a broker or an exchange, or sell to a retailer who then resells to a buyer	Companies that surpass their emission targets can sell their surplus credits to those looking to offset emissions. Credits can be sold under regulated emissions trading schemes

COMPLIANCE CARBON MARKETS

Prior to participation in the mechanism, the host Party has **designated a national authority** and reports how engagement in the mechanism relates to its NDC,LEDS and the long-term goals of the PA. The host Party can make further specifications on **methodologies** and **crediting periods** that go beyond the A6.4M rules.

The host Party authorizes public and private entities prior to registration of an activity to be activity participants.

The host Party approves the activity and communicates how it promotes sustainable development and contributes to NDCs, LEDS and long-term goals of the Paris Agreement.

The host Party authorizes (or not) A6.4ERs for different purposes (NDC achievement or other international mitigation purposes (i.e. CORSIA), incl. other purposes (i.e. VCM) and specifies further terms and provisions.

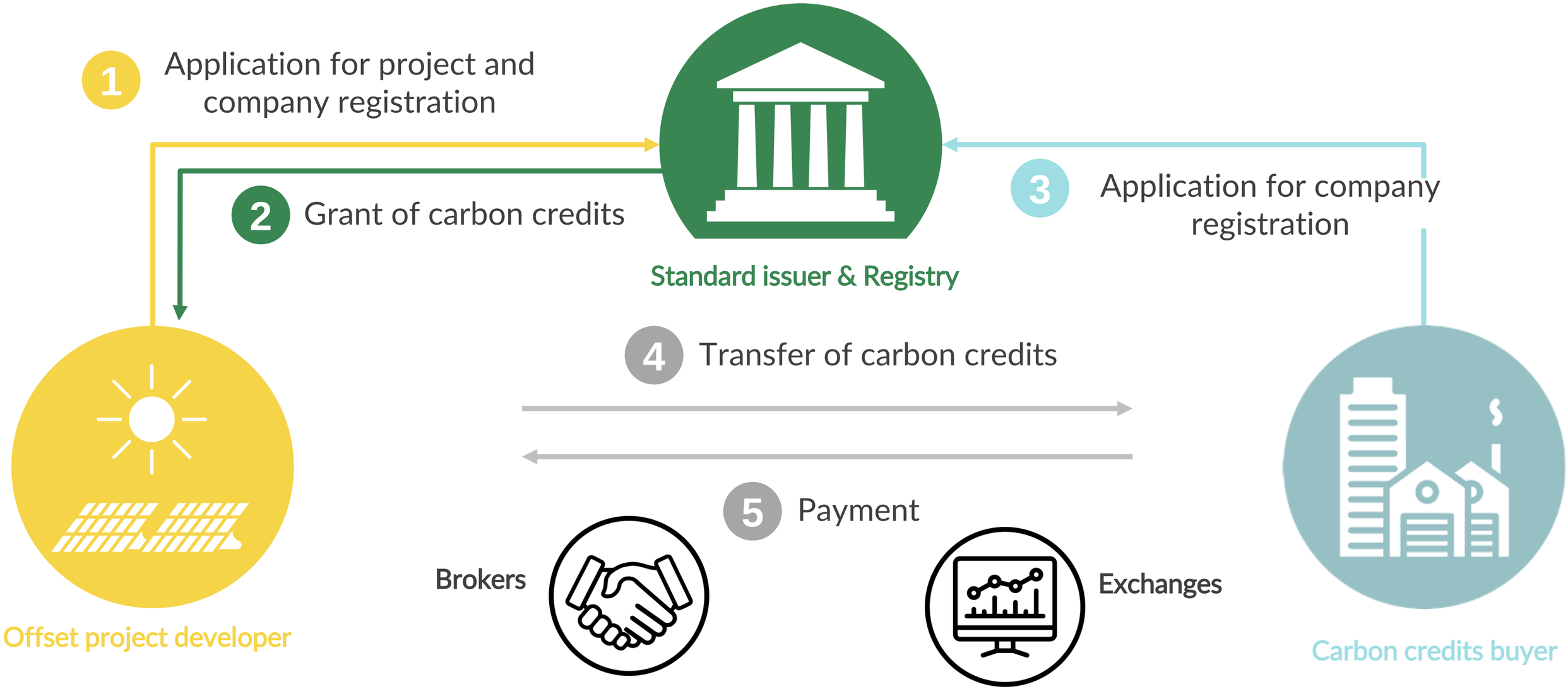
Other participating Parties authorize public or private entities' participation in the mechanism.

Source: Adapted from Kessler et al 2021

VOLUNTARY CARBON MARKETS

- The pricing of carbon credits vary widely according to the category of the project (e.g. renewable energy vs. forestry) and even within a particular category. Several factors contribute to how a carbon credit is priced, including:
- **Size of project**: Larger projects that produce higher volumes of carbon credits are often associated with a lower price. Smaller projects are often more expensive to implement and produce fewer carbon credits.
- **Location of offset:** Locations where there is conflict and higher risk may make the project more expensive.
- **Vintage:** This depends on the year the emission reduction occurred—older projects are typically priced lower.
- **Quality:** The standard in which the project was certified can affect the price.
- **Co-benefits:** A co-benefit is any positive impact that is produced by the project above and beyond GHG emissions (such as job creation, gender inclusivity etc.)

HOW A VOLUNTARY CARBON MARKET WORKS



Source: Adapted from Burzec and Lewis 2021

LOCAL GOVERNMENTS AND CARBON MARKETS

- Local and regional governments have a key role in achieving countries' NDCs. They can act in managing projects at the local level or helping in private sector engagement, also taking into account the local needs.
- Sub-national efforts can, for example, work as a facilitator of national schemes, identifying opportunities to engage communities in projects or raising awareness of the importance of such systems
- Voluntary carbon markets offer some level of flexibility as it allows the participation of local governments and private actors, opening room to leverage external sources to climate projects.
- Lastly, VCMs allow local governments to undertake initiatives beyond the actions prioritized by the national level, tailoring solutions to the local context.

CONSIDERATIONS FOR SOLAR PPPs

Risk allocation and funding models

Funding models/ Roles & responsibility	Public owned, operated	Public owned; private operated (SLA)	ESCO-funded	PPP (100% private)	PPP (minority LRG ownership)	Private owned & operated	PAYG
Design risk	Local government		Private sector				
Construction and CAPEX risk							
Performance risk							
CAPEX funding	Local government raises grants and debt		Private sector raises debt and equity		LRG share of equity; rest raised by private sector	Private sector raises debt and equity	Private sector raises debt and equity (and possibly DFI grants)
Grants	Local government can raise grants to make the funding model more affordable					Private sector could secure grants	
Operation	Local government		Private sector				
Maintenance							
Sales and marketing							

PART 5

CASE STUDIES

CASE STUDY: MALICOUNDA SOLAR FARM

- A 22 MW solar PV plant, comprising 90,000 solar panels, used state-of-the-art PV and inverter technologies including outdoor string inverters, crystalline modules and earth screws foundation types. The project is expected to produce 36 Gwh of electricity annually, and to cover the energy demand for 9,000 households
- The project was implemented through the special purpose vehicle (SPV) Groupe Solaria, with Chemtech Solar, an Italian company, financing the initial construction of the plant
- The plant was commissioned in partnership with the Malicounda Municipality. Chemtech also owned the EPC contractor, Techno Solaire, which also operated the plant
- Malicounda Municipality acquired the land for the project and holds a 5 percent share. A contract with national utility SENELEC was signed for 25 years to offtake the electricity. The total investment amount to EUR 33,500,000

CASE STUDY: MALICOUNDA SOLAR FARM

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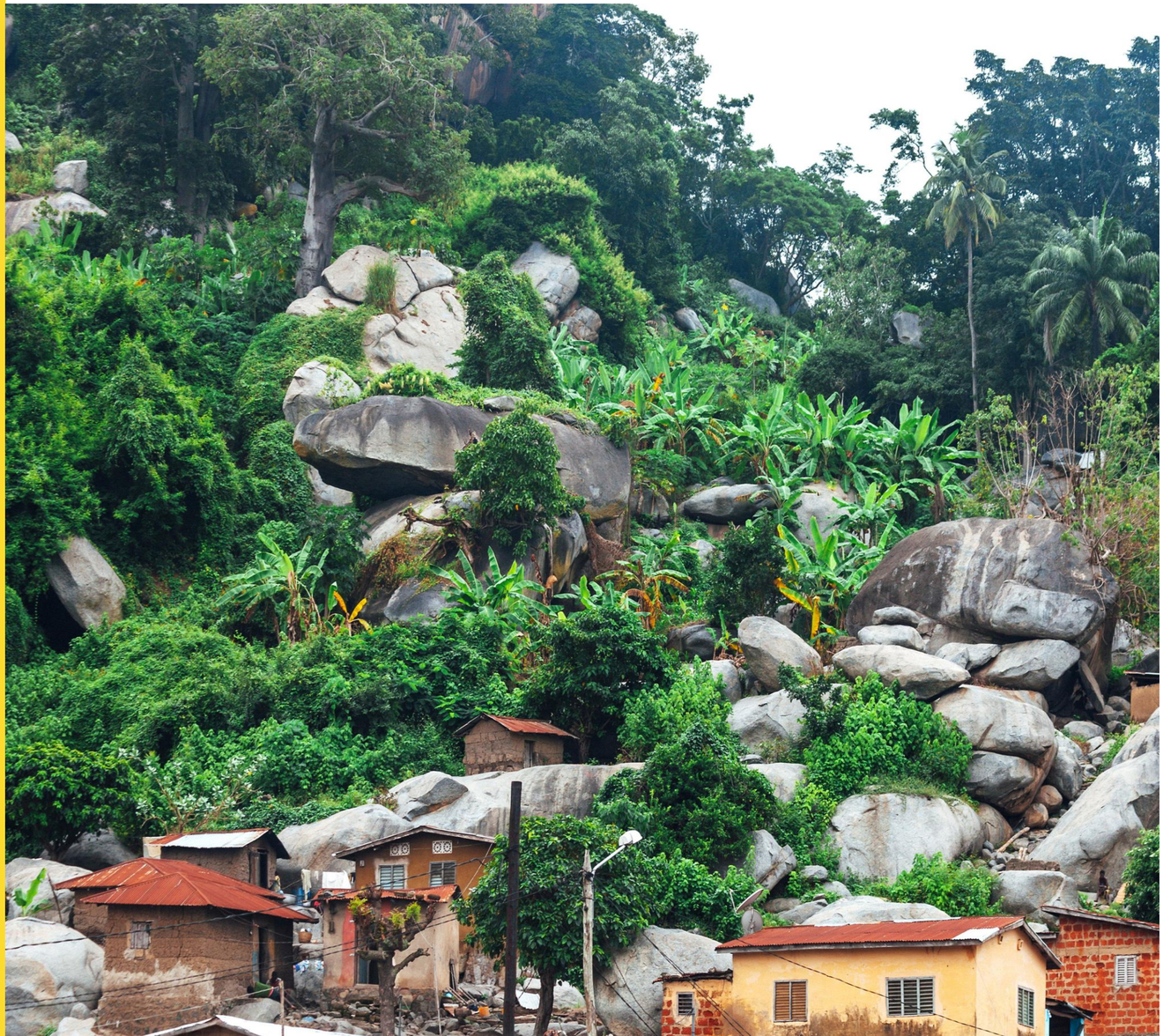
CASE STUDY: BATESVILLE SCHOOL DISTRICT

- The Batesville School District spent over USD 600,000 annually on utilities. Seeking to cut energy and water utility costs, the ‘Solar on Schools in Batesville’ project was signed to avoid shuttering schools or laying off teachers.
- The project was based on a partnership between Batesville and an energy services company. As of the time of writing, it constituted the largest solar energy installation in any school district in Arkansas. The project involved goals for student achievement, hiring/ retaining staff, efficiencies, and partnerships.
- This project has also generated interest among the neighboring school districts to achieve the same cost savings and benefits. The project has a total capacity of 759 kW of solar energy, installed in two campuses with upgraded lighting, energy efficiency and water efficiency, which saves the district nearly USD 100,000 per year.

CASE STUDY: PITUAÇU STADIUM

- For the Brazilian energy sector, this project presents not only technological and scientific advancements, but also has social and economic benefits. The PPP involved Coelba, the electricity company of Bahia, which financed 66 percent of the project and was in charge of purchasing and installing equipment.
- The Bahia State Government invested 32 percent of the total funds which were used to reinforce the stadium structure. Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) contributed 2 percent in the financing of the project, to cover the cost of engaging consultants and related trip expenses.
- In addition, other partners from the public and the private sectors were involved such as the Universidade Federal de Santa Catarina and Neoenergía, a Brazilian electricity company. The total investment for this project was USD 1,032,265.

ANNEX: Tools and Resources



ANNEX

FURTHER READING

RESOURCES

- Guidelines for Successful Public-Private Partnerships
- Public Private Partnerships Reference Guide
- The APMG Public-Private Partnership (PPP) Certification Guide
- Enabling Environment for PPP
- Diagnosis of Enabling Environment for PPP
- Leading Practices in Governmental Processes Facilitating Infrastructure Project Preparation
- An Overview of the PPP Process Cycle
- Public-Private Partnership Cycle
- Securing Climate Benefit: A Guide to Using Carbon Offsets
- Finance Structures for PPPs
- Finance and Public-Private Partnerships
- PPP Risk Allocation Matrix: Solar Photovoltaics
- Promoting the Solar Industry in Ghana through Effective Public-Private Partnership (PPP): Some Lessons from South Africa and Morocco

Supported by:

Federal Ministry for Economic Affairs and Climate Action

IKI INTERNATIONAL CLIMATE INITIATIVE

on the basis of a decision by the German Bundestag

END OF MODULE

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