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Assessing Project Feasibility and Economic Viability

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Implementing a project as a PPP only makes sense if the project itself is sound. Most governments therefore subject proposed PPP projects to the same technical and economic appraisal as any other major public investment project. There are typically two broad elements to this assessment:

- Developing and assessing the feasibility of the project concept
- Appraising whether the project is a good public investment decision based on an economic viability analysis

This assessment may take place prior to consideration of a project as a PPP as described in Identifying PPP Projects. In other cases, it may be undertaken as part of the PPP appraisal process. The project feasibility and economic viability analysis of a PPP should be as thorough as that of any other major public investment project.

This section describes such analyses as applied to potential PPP projects, highlighting key issues that would typically be addressed and providing a selection of sources that may supplement governments' existing guidance materials.

Defining a project and checking feasibility

A project must be clearly defined before it can be appraised. Project definition includes the description of the physical facilities that will be constructed, the technology to be used, the outputs to be provided, and the identification of the end-users. Capital, operating, and maintenance costs should be estimated over the life of the project, as well as any revenue expected to be generated. This definition should be sufficiently broad to apply to a project delivered as either a PPP or a traditional publicly financed project. The PPP contract should focus on output and refrain from specifying the technologies, inputs, and processes to be used. This should be the responsibility of the private operator. However, some technological definition is still needed for initial cost assessment.

The project can then be tested for feasibility across several dimensions:

- **Technical feasibility**—can the project be implemented as planned, using proven technologies, and without unreasonable technical risks?
- **Legal feasibility**—are there any legal barriers to the project? For a PPP, this includes due diligence to identify any legal constraint preventing the government to enter into a PPP contract.
- **Environmental and social sustainability**—at a minimum, does the project comply with national environmental and planning standards? In some cases, a higher bar may be set, such as compliance with the E**quator Principles**—a set of standards on managing environmental and social risk from project finance transactions, based on World Bank Group standards, set out in detail at (Engel et al. 2009). This is discussed in greater detail in Environmental and Social Studies and Standards.

Answering these questions involves engaging experts to undertake several detailed studies—for example, technical feasibility studies, legal due diligence, environmental, and social impact assessments. For further

guidance, see for example the detailed manuals published by the governments of **Chile** (CL 2010b), **Germany** (DE 1998), **Peru** (PE Pasivos), **Philippines** (PH 2010), and the **United Kingdom** (UK 2011a) for carrying out feasibility studies for public sector investment projects. The **Caribbean PPP Toolkit** (Caribbean 2017, Modules 3 & 4) also provides guidance on carrying out feasibility studies, including checklists on legal and technical topics.

Creating and appraising options

Developing value for money in a project requires identifying delivery options and appraising them. Noting that establishing a range of options can be challenging, the **United Kingdom Green Book** (UK 2011a) suggests the following actions:

- Research existing reports, and consult widely with practitioners and experts, to gather the set of data and information relevant to the objectives and scope of the project.
- Analyze the data to understand significant dependencies, priorities, incentives and other drivers.
- From the research, identify best practice solutions, including international examples if appropriate.
- Consider the full range of issues likely to affect the objective.
- Identify the full range of policy instruments or projects that may be used to meet the objectives. This may span different sorts or scales of intervention; regulatory (or deregulatory) solutions may be compared with self-regulation; different financing and funding solutions may be considered as well as various tax options.
- Develop and consider radical options. These options may not become part of the formal appraisal but can be helpful to test the parameters of feasible solutions. Well-run brainstorming sessions can help to generate such a range of ideas.

The same **Green Book** (UK 2011a) provides examples of strategic and operational options. They include, among others:

- Varying time and scale
- Options to rent, build, or purchase
- Refurbishing existing facilities or leasing and buying new ones
- Changing locations or sites
- Co-locating, or sharing facilities with other agencies
- Changing the combination of capital and recurrent expenditure
- Varying the balance between outsourcing and providing services
- Varying quality targets

Appraising project economic viability

Many governments undertake some form of economic viability analysis (also known as socio-economic viability) to decide whether a proposed project is a good use of public resources. A project is economically viable if the economic benefits of the project exceed its economic costs, when analyzed for society as a whole.

The economic costs of the project are not the same as its financial costs—externalities and environmental impacts should be considered. Externalities (positive or negative) are economic impacts that affect persons who are not necessarily part of the project scope. The economic benefits are a measure of the value the project will deliver to society as a whole. The revenue a project will generate is usually a lower-bound estimate of its economic benefits; however, benefits can be much higher than revenues. For example, the benefits from improved transportation, for drivers, can far exceed the tolls paid on a highway—faster connections, reduced vehicle maintenance, lower accident rates, may be significant factors. In addition, the project may enhance regional economic activity and quality of life for the people living in the vicinity of the

project. Similarly, the value of education at a high school should be measured by the enhancement in the lives and prospects of the children who attend that school, even if no school fees are charged. Economic viability analysis can also include a cost-effectiveness analysis to determine whether the project is the lowest-cost alternative to achieve the identified benefits.

There is a wide range of literature and guidance material available on project appraisal and economic cost-benefit analysis. The *Key References* for this section provide a selection, with examples of government guidance material, as well as resources from international institutions, and textbooks. The **United Kingdom *Green Book on appraisal*** (UK 2011a) states as the main purpose of appraisal guaranteeing that no project, program, or policy is adopted without answering two major questions: Are there better ways to achieve this objective? Are there better uses for these resources?

Application to PPP

Many countries require PPP projects to meet feasibility and economic viability criteria. For example:

- In the **Philippines**, all major infrastructure projects are required to undergo a feasibility and viability assessment process, as described in details in a reference manual (NEDA 2005a). The same process is required for PPP projects.
- In **Chile**, the 2010 Concessions Law states that the social impact evaluation of a potential PPP project must be approved by the Ministry of Planning. The Concessions Council must also review this document before allowing a project to be implemented as a PPP.
- In **Indonesia**, guidelines issued by the state-owned Indonesia Infrastructure Guarantee Fund specify the criteria to assess the opportunity cost of issuing guarantees to PPP investors. The criteria include technical feasibility, economic viability, and environmental and social desirability.

Optimism bias is a systemic issue relevant to all infrastructure projects including PPPs (see Poor Planning and Project Selection). It needs to be addressed at the time of appraisal as it is often the cause of project renegotiation. In addition, overly optimistic demand studies may induce governments to approve projects that ultimately generate more cost than benefit. The **United Kingdom Treasury has published guidance material** (UK 2013) on overcoming optimism bias.

Implementing agencies should bear in mind that the work undertaken in assessing project viability also lays the foundation for the rest of the PPP appraisal. The project definition provides the basis for developing the PPP financial model and commercial and fiscal viability analysis, as well as any quantitative value for money analysis. Assessment of technical feasibility, and environmental and social sustainability will provide a basis for the risk analysis. Cost and demand estimates developed for the economic viability assessment will also provide initial inputs to the financial modeling, and PPP value for money analysis.

Stakeholder engagement to assess project viability

Stakeholder engagement is a valuable tool for assessing the viability of a project and identifying risks. Stakeholder Communication and Engagement describes the process in detail.

Stakeholder engagement should be initiated as early as possible in the project cycle. The **IFC stakeholder handbook** (IFC 2007, 4) states that many private operators begin their consultation process around the pre-feasibility stage of the project. IFC's handbook also recommends beginning the consultation at the time of the project concept stage.

Early engagement has both its positive and negative aspects. It allows government to introduce the project in a positive light, lay out its development rationale publicly, and strike a balance between promoting the project and managing expectations. All projects have potential benefits but also uncertainties. Early engagement also signals to stakeholders that their needs and views are being taken into consideration (IFC

2007, 4–5). Establishing a positive relationship early generates social capital and creates a foundation of credibility with stakeholders if an issue were to arise.

The negative aspects of early engagement are connected to the danger of spreading of misinformation. As soon as disclosure on the project begins, the window for misinformation and rumors opens. As described in the **IFC stakeholder engagement handbook** (IFC 2007, 111–113), the ability to counteract these rumors is limited in the early stages of the project cycle, since many details will only become clear toward the end of the appraisal phase. It may therefore be difficult to reassure stakeholders or respond to questions in the absence of concrete details. This lack of information may cause stakeholders to speculate and prematurely condemn a project based on unconfirmed facts or false assumptions. Therefore, stakeholders for the initial consultation should be chosen strategically. Limited consultation with targeted stakeholders can be conducted during the project concept stage to receive important stakeholder input; but care is needed to avoid the spreading of unnecessary and potentially harmful misinformation that will raise alarms before a project is even given the go-ahead. After this initial consultation, stakeholders may then be more broadly identified and consulted when more project specifics are known. The Delhi Water Project provides an example of the consequences of misinformation remaining unchecked.

Having a solid project narrative in place may help countering such misinformation. Several useful steps in formulating a narrative are:

- Identify the current problem faced by the populations
- Explain the problem's impact on the lives of those affected
- Explain how the government is addressing the problem
- Explain why the government is choosing to address the problem with a PPP

The **European Commission guidelines on stakeholder consultation** (EC 2015) suggest a maximum of 12 weeks for this consultation process to occur. This period will vary based off the scale and scope of the project with only major projects necessitating the full 12-week consultation period.

Evaluating climate change-related and natural disaster risks

As policy makers and project developers gradually enhance their understanding of the risks posed by climate change, practitioners should be able to design the contractual obligations of private investors and adequate contract management mechanisms. The life cycle approach opens avenues for creating incentives for all stakeholders engaged in the PPP process and minimizing risks to investments. A **European Commission study: Guidelines for Project Managers** (CLIMATE-ADAPT 2012, 17–53) presents guidelines for integrating climate resilience into the asset lifecycle.

Downscaled models use macro information to predict climate outcomes at the local level. Although the data on climate and disaster risks for downscaled models is becoming more robust, the range of uncertainty regarding these risks and resulting impacts remains a challenge. Good practice consists of incorporating the concept of resilience in the risk allocation matrix and whole-asset-life-cost optimization approaches, instead of focusing only on the project implementation phase.

Procurement specialists need to develop incentive structures in PPP procurement to foster innovation in climate mitigation and adaptation while still operating within a competitive environment. For example, **evaluation criteria** for resilience could be introduced in tender documents, using the asset life costing approach—bidders could be invited to demonstrate how their proposals address resilience to risk, highlighting the costs as well as the benefits, and how they will manage the project when facing changes in the risk itself.

Two key resources enable non-specialists to consider the impacts of disasters on new development projects. These are:

- The **Climate Change Knowledge Portal** (WB-Climate)
- **Think Hazard** (GFDRR), a web-based tool, developed by the World Bank and other partners

Other innovative technical assistance available to procuring authorities are:

- The **Society for Decision Making under Deep Uncertainty (DMDU)** (Deep Uncertainty), an interactive platform that supports learning and dialogue about key aspects of long-term investment under uncertainty.
- **Making Informed Investment Decisions in an Uncertain World: A Short Demonstration** (Bonzanigo and Kalra 2014) seeks to motivate and equip analysts to better manage uncertainty in investment decisions.
- A **World Bank study: Robust decision-making in the water sector** (Kalra et al. 2015) helped SEDAPAL, the water utility serving Lima, Peru, make smart investments to ensure long-term water reliability by drawing on state-of-the-art methods for decision-making under deep uncertainty.
- A **World Bank publication** (WB 2016d) outlines the decision tree used in South Asia to procure climate resilient hydropower.

Related Content

- **INTRODUCTION**
- **PPP BASICS: WHAT AND WHY**
- **ESTABLISHING THE PPP FRAMEWORK**
- **PPP CYCLE**
- **Identifying PPP Projects**
- **Appraising Potential PPP Projects**
- **Structuring PPP Projects**
- **Designing PPP Contracts**
- **Managing PPP Transactions**

- **Managing PPP Contracts**

- **Dealing with Unsolicited Proposals**

- **Key References - PPP Cycle**

Additional Resources

- Applying CVC in Infrastructure Projects
- Assessing Commercial Feasibility of CVC

Find in pdf at PPP Reference Guide - PPP Cycle or visit the PPP Online Reference Guide section to find out more.

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