



INTERNATIONAL MONETARY FUND

INFRASTRUCTURE GOVERNANCE

European Regional Network



“Best of the Web” Series — October 2020

Note 2. Preparing for the Next Big Push in Infrastructure

Introduction

This note's is the second in a series prepared by IMF's Fiscal Affairs Department. The objective of these notes is to provide decision makers and project evaluators with useful references for improving their work on Infrastructure Governance (IG). The first note was distributed in July 2020 <https://www.imfconnect.org/content/dam/IGEUR/Activities/bestofweb/Best%20of%20the%20Web%20on%20IG%20No1.pdf> and contained references to material prepared by multilaterals about IG and the Covid 19 pandemic, documents about defining indicators and Multicriteria Decision Analysis, and studies about country experiences with investment stimulus packages. This second number is devoted to tools and techniques that help in preparing and managing infrastructure stimulus programs.

Infrastructure Stimulus Programs

There is no doubt that in the long-term infrastructure investment can boost economic growth of a country by increasing the potential supply capacity of the economy. But another key impact of infrastructure investment is to boost aggregate demand in the short-term through increased construction activity and employment. It is for this last reason that almost every country suffering the consequences of the pandemic is implementing or planning stimulus packages, including a large share devoted to infrastructure.

Yet, to be effective an infrastructure stimulus package must be well designed and managed. Developing and maintaining a pipeline of suitable public investment projects, duly appraised and ready for implementation, having efficient project selection and prioritization procedures in place, and good management of implementation are critical factors for success.

To support these tasks, the following section includes references to project selection, selection of project delivery method, project appraisal and sustainability, and management of infrastructure investment programmes.

References

A. Project selection

1. Websites / Blog posts

- i. [Rethinking infrastructure project selection](#), March 2017
This interesting post asserts that Australia's future productivity is at stake if the way projects are selected is not rethought. It advocates for a shift of the balance from new, large-scale construction projects to also assessing demand management, capacity

enhancement and asset management strategies to ensure having more productive, high-quality infrastructure.

2. Articles / Papers

- i. [An Alternative Approach to Project Selection: The Infrastructure Prioritization Framework](#)
Darwin Marcelo, Cledan Mandri-Perrott, Schuyler House, Jordan Z. Schwartz World Bank PPP Group 14 April 2016.
This paper presents an Infrastructure Prioritization Framework (IPF), which is a multi-criteria decision support tool that considers project outcomes along two dimensions – social environmental and financial-economic. When large sets of small- to medium-sized projects are proposed, resources for implementation are limited, and basic project appraisal data (but not full SCBA) are available. In these cases the author suggest IPF can be used to inform the selection of projects by combining selection criteria into social-environmental and financial-economic indices. These indices are used to plot projects on a Cartesian plane, and the sector budget is imposed to create a project map for comparison along each dimension.
- ii. [Criteria to consider in selecting and prioritizing infrastructure projects](#), Seng Hansen, Eric Too, and Tiendung Le.
This research aims to identify decision criteria for infrastructure project selection based on a systematic review of literature. A total of 34 decision criteria were identified and organized into five groups: strategic fit, owner philosophies, project funding & timing, project requirements, and value engineering. Also a structured model was developed which describes the procedure for integrating the identified decision criteria into a Decision-Making Framework (DMF) for infrastructure project selection. The article may be useful for selecting criteria to be incorporated in a country specific model.
- iii. [Selecting and Prioritizing Projects: A study on Intergovernmental and Non-profit Organizations](#), Marcela Figueroa Padilla and Laura Rojas Muñoz. Umeå School of Business and Economics, 2017, Master thesis.
This study explores the project portfolio management (PPM) process in intergovernmental and non-profit organizations focusing specifically on the decision-making process regarding project selection and prioritization. It provides an understanding of the main criteria these organizations take into consideration when selecting and prioritizing projects and the impact these methodologies have in terms of achieving project and organizational success. In addition, it examines the role of the project management office (PMO) and individual project managers based on their influence on the decisions concerning project selection and prioritization, as well as project success and organizational success.

3. Books / Manuals

- i. [Equity Analysis in Regional Transportation Planning Processes, Volume 1: Guide](#).
Hannah Twaddell and Beth Zgod, National Academies of Sciences, Engineering, and Medicine 2020. The guide documents a five-step equity analysis framework for regional transportation plans and programs. The opening chapters provides a high-level overview of relevant requirements and the analysis framework; quick-reference charts of activities, resources, and guidebook sections that apply particularly to planners, policy makers,

analysts, and modelers; and approaches for laying a strong foundation of public and stakeholder engagement to support the entire analysis process. Subsequent chapters provide step-by-step descriptions of methods, examples, and resources to help agencies develop and implement equity analyses that reflect varying regional contexts and agency capabilities. It concludes with descriptions of four brief pilot projects to test different aspects of the equity analysis framework.

B. Selection of delivery method

1. Websites / Blog posts

- i. [Tools to assess whether to implement a project as PPP](#). This section of the [PPP Knowledge Lab](#) site presents different tools that help in identifying a subset of pipeline projects that are compatible with PPPs and deciding to either proceed with a PPP or not. Tools include the PPP Fiscal Risk Assessment Model (PFRAM) and PPP Screening Tool, among others.

2. Articles / Papers

- i. [Selection Criteria for Delivery Methods for Infrastructure Projects](#), Ali Hosseini Ola Lædre Bjørn Andersen Olav Torp Nils Olsson Jardar Lohne. *Procedia - Social and Behavioral Sciences*, Volume 226, 14 July 2016, Pages 260-268. Design-Build, Construction Management and Design-Bid-Build represent the three main project delivery methods (PDM) and each has its own advantages and disadvantages. Firstly, this paper identifies general criteria for selecting PDM. Secondly, it comes up with specific criteria for selecting the PDM for a large infrastructure project. The paper contributes to the body of knowledge with a list of selection criteria for PDMs aggregated from literature and points out that this list should be adapted to case specific characteristics before being used to select a PDM.
- ii. [Are public-private partnerships a healthy option? A systematic literature review](#), Jens K. Roehrich, Michael A. Lewis and Gerard George. *Social Science & Medicine*, Volume 113, July 2014, Pages 110-119. Even if this article is not recent, it is interesting because it analyzed more than 1.400 publications about PPs from 1990 to 2011. The authors do not draw conclusions on the convenience of PPPs. Instead, publications are classified in broad categories, namely policy of PPPs, practice of PPPs and PPP outcomes (benefits and disadvantages). For many cited papers there is even the possibility of downloading the article. Therefore the paper is a good starting point for gaining greater knowledge about PPPs.

3. Books / Manuals

- i. [Infrastructure in a changing World: Trends and Challenges](#), edited by Carlo Secchi and Alberto Belladonna. [Italian Institute for International Political Studies - ISPI](#) May 2020. The first part of the Report focuses on analysing infrastructure trends from 2007 on in different countries and highlights how infrastructure investments played a countercyclical

role (or not) in economic recovery during the global financial crisis. Geopolitics and its impact on infrastructure are the subject of the second part of the Report, while the third addresses future trends and new needs in infrastructure. From the standpoint of project delivery, of special interest could be Chapter 2 “Infrastructure Gap and the Lost Growth”. Chapter 4 “Reorganisation of the Infrastructure Sector and New Forms of Financing” may be of interest for PPP related professionals. Chapter 10 “Transitioning Towards More Sustainable and Quality Infrastructure” and Chapter 11 “Finance for Sustainability: A Useful Tool for Policymakers” will be of interest for those concerned with sustainability and green recovery.

- ii. [PPP Reference Guide - Version 3](#), World Bank, 2017.
The Guide can be downloaded in its entirety or consulted on-line, including referenced documents, in the [PPP Knowledge Lab](#) site. Regarding selection of delivery method, namely PPP or public sector provision, sections of interest are: [Screening for PPP Potential](#), [Assessing Project Feasibility and Economic Viability](#), and [Assessing Value for Money of the PPP](#). The guide is not a step by step how-to-do manual, but includes a large number of references (links) to other guides, articles and manuals that explain in further detail each topic, as well as country examples.

C. Project appraisal and sustainability

1. Websites / Blog posts

- i. [Infrastructure Sustainability Council of Australia \(ISCA\)](#). ISCA is a member-based, not-for-profit operating in Australia and New Zealand with the purpose of enabling sustainability outcomes in infrastructure. The [Tools & Resources](#) pages includes useful downloadable material like the “Business Case Guide: Developing a Business Case for Sustainability Initiatives in Infrastructure”. Of interest may also be the study “[IS Rating Scheme Return on Investment](#)” which values the benefits that can be attributed to using the ISCA Infrastructure Sustainability (IS) Rating Scheme, based on benefits that can be derived from implementing a sustainability approach in infrastructure projects.

2. Articles / Papers

- i. [Sustainability appraisal in infrastructure projects \(SUSAIP\) Part 1. Development of indicators and computational methods](#), O.O. Ugwu, M.M. Kumaraswamy, A. Wong, S.T. Ng. Published in the [Journal Automation in Construction](#), Volume 15, Issue 2, March 2006.
The paper discusses development of indicators, computational methods, and analytical models for sustainability assessment. It highlights the absence of a systematic approach to sustainability appraisal at micro-levels and focuses on investigating solutions. It emphasises that problem structuring and systematic approaches are required to translate strategic sustainability objectives into project-specific concrete actions. Even if not recent, ideas presented are useful for green recovery infrastructure investment programmes. A practical application is presented in [Sustainability appraisal in infrastructure projects \(SUSAIP\): Part 2: A case study in bridge design](#) (must be requested).

- ii. [Sustainability assessment of roadway projects under uncertainty using Green Proforma: An index-based approach](#), Adil Umer, Kasun Hewage. Husnain Haider and Rehan Sadiq. Published in the [International Journal of Sustainable Built Environment](#), Volume 5, Issue 2, December 2016.

This paper presents the development of a customizable tool, called “Green Proforma” (an Excel sheet) for the sustainability assessment of roadway projects under uncertainties. But what is of interest is the list of indicators suggested to assess sustainability, which are linked to the sustainability objectives of mobility, safety, resource efficiency, economy, ecological protection and environmental quality. A hierarchical framework is used to develop the sustainability objective indices by aggregating the selected indicators. Uncertainty is incorporated by using a fuzzy logic technique when valuing indicators.

3. Books / Manuals

- i. [What Is Sustainable Infrastructure? A Framework to Guide Sustainability Across the Project Cycle](#), Inter-American Development Bank IDB, Technical Note N° IDB-TN-1388, March 2018.

This document presents a framework for both public and private sectors to support planning, designing, and financing of infrastructure that is economically, financially, socially, environmentally, and institutionally sustainable. It proposes a menu of over 60 criteria that are important for operationalizing sustainability along the project life cycle. The framework should help to identify key actions across the project cycle that can ensure sustainable infrastructure—from strategies and planning to portfolio and project design, construction, operations and maintenance, and ultimately decommissioning.

D. Management of Infrastructure Investment Programmes

1. Websites / Blog posts

- i. [Project Portfolio Management Software](#). This website by [Capterra](#) presents a list of Project Portfolio Management software with brief descriptions of each. Links allow accessing detailed information like features, reviews and product comparisons. Some software packages include project prioritizing and budgeting capabilities. Also, some provide free trial versions and have a low starting cost.
- ii. [4 essential steps of Project Portfolio Optimization](#). Post by Pavel Aramyan in the [Project Management Blog](#) (by “Easy Projects”). It presents key steps for setting and securing budget for a portfolio of projects and for portfolio optimization. Namely: project planning/preparation, project selection/deletion, assessing and devoting resources and project execution. Even if topics are not analysed in depth, sound advice can be found in this brief text.

2. Articles / Papers

- i. [Effective Public Investment Across Levels of Government, Implementing the OECD Principles](#). OECD, Centre for Entrepreneurship, SMEs, Regions and Cities (CFE), 2019. This brochure presents progress in the adoption of the 12 [Recommendations of the Council on Effective Public Investment Across Levels of Government](#) by the 36 member countries plus three non-OECD countries that adhered to the principles (Brazil, Colombia, Morocco). Apart from describing each principle and presenting statistics about its adoption by countries, many examples of concrete actions by governments are presented, which are a valuable source of ideas for better IG.
- ii. [BUILD Construction Sector Performance and Prospects 2019](#), Project Ireland 2040. Report by the Investment Projects and Programmes Office (IPPO). This report presents an overview of the performance and prospects for the Irish construction sector. Even if not about the topic of this section, it is a good example of aspects not usually analysed and of paramount importance when developing an infrastructure stimulus package. If the construction sector is not prepared to absorb an important increase in public investment, the stimulus package could be a failure. Analysing trends in costs would also help to better estimate investment required and estimating future productivity and availability of skilled labour allows timely addressing of constraints.

3. Books / Manuals

- i. [Well Spent: How Strong Infrastructure Governance Can End Waste in Public Investment](#). Editor(es): Gerd Schwartz, Manal Fouad, Torben Hansen, and Genevieve Verdier. IMF, September 2020. This just published book addresses how countries can design good infrastructure governance. It shows that, on average, countries waste about 1/3 of their infrastructure spending due to inefficiencies and that in low-income countries the loss can surpass a staggering 50 percent of total investment. Drawing on the Fund's analytical and capacity development work, including the [Public Investment Management Assessments](#) (PIMA) carried out in more than 60 countries, the book provides a roadmap for countries to move from "aspiration to action" to achieve quality infrastructure outcomes and reap the full economic and social dividends from public investment. Further information about this valuable book can be found in the [IMF Blog](#), including a video presentation.

Would you like to share a specific document, or your country experience with other members of the Network? Please contact us at IGEUR@imf.org and we will be included it in a future number of this series.