



UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION

FEASIBILITY STUDIES SERIES VOLUME 1

PROJECT DEVELOPMENT

OVERVIEW OF PRE-INVESTMENT STUDIES



INCLUSIVE AND SUSTAINABLE INDUSTRIAL DEVELOPMENT



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A decorative graphic consisting of several overlapping shapes in two shades of green. A large, light green shape forms a wide, rounded 'X' shape. Overlaid on this is a smaller, medium green shape that is also roughly 'X' shaped. In the center-right of the medium green shape is a solid dark green circle containing the text 'FOREWORD'.

FOREWORD

FOREWORD

This volume marks the launch of the Feasibility Studies Series, through which UNIDO is following its long tradition of providing government authorities and business communities with the most up-to-date methods and tools for the evaluation of investment projects in general and industrial investment projects in particular. Through these tools UNIDO seeks not only to quantify costs, benefits and financial indicators, important as they may be from the point of view of investors, but also to take into account the wider impacts, both positive and negative, of the projects on the environment, the needs of the populations and the broader national interests.

In line with these fundamental concerns, UNIDO's Member States formulated a new vision in the "Lima Declaration: Towards inclusive and sustainable industrial development" adopted at the Organization's 15th General Conference in December 2013. This Declaration clearly recognizes that industrialization is the only way to eradicate poverty and achieve higher levels of sustainable development in all of its dimensions – economic, social and environmental – for the benefit of the populations.

Governments and entrepreneurs of developing and developed countries alike require properly prepared feasibility studies for industrial investment projects in order to take sound investment decisions based on the right choice of technologies that accommodate industrial growth and sustainability. UNIDO has responded to this need with the development of COMFAR, a Computer Model for Feasibility Studies and Reporting, and the preparation of related manuals and teaching materials, prominent among which is the Manual for the Preparation of Industrial Feasibility Studies.

Both COMFAR and the accompanying Manual have been in use for a long time. They have been updated and upgraded from time to time, to keep them in tune with evolving circumstances. Over many years, these tools have proved their value both for the analysis of investment projects and the training of experts in methodologies that enable better and more appropriate investment decisions – decisions that are more profitable from the perspective of investors while having beneficial macro-economic, social and environmental impacts.

The time has now come for a further evolutionary step in the development of these tools in order to respond to the needs of governments and enterprises as they face new and more complex business environments and models. The COMFAR software is being updated. It will incorporate the latest technical developments as well as the feedback received

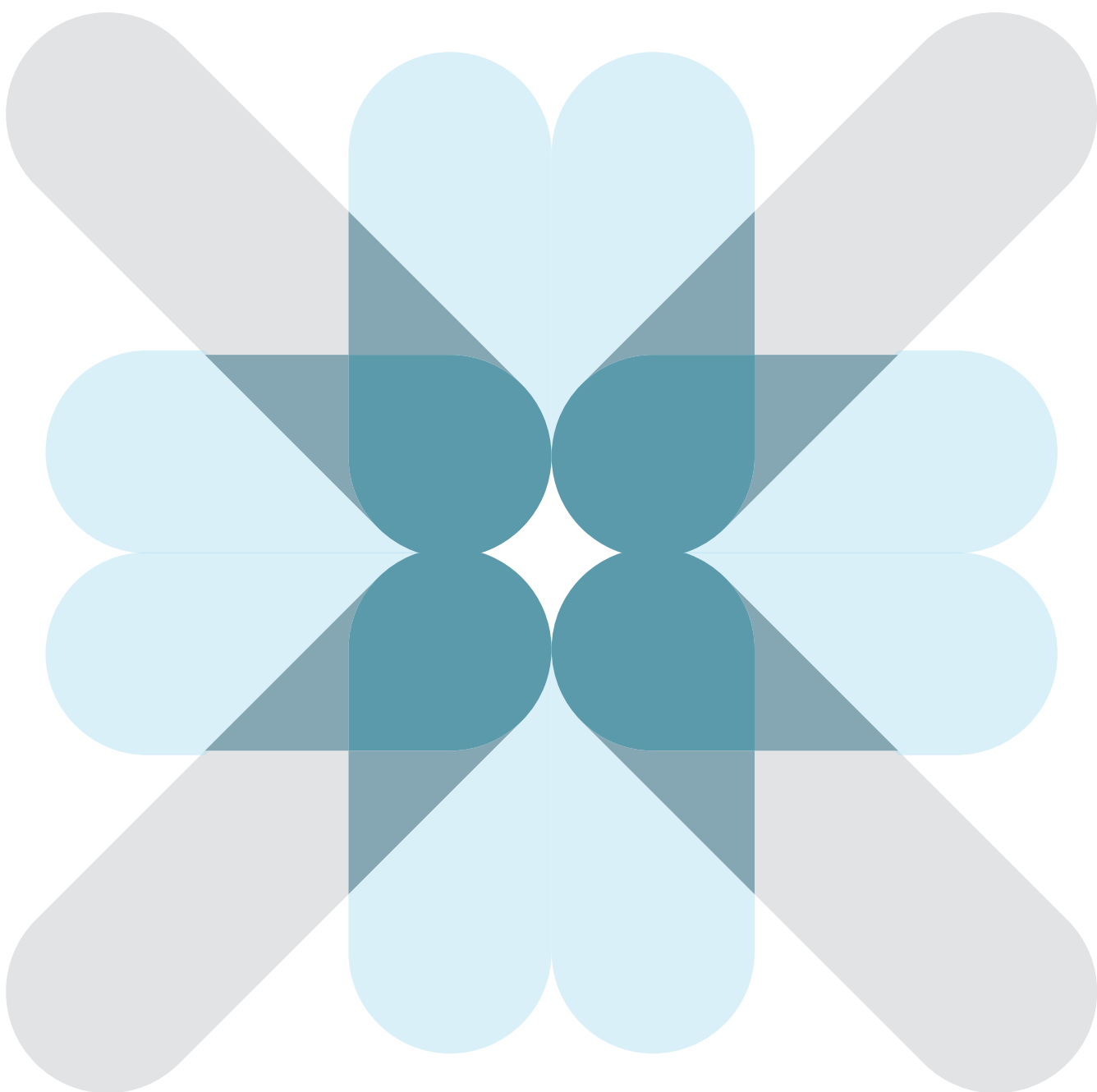
from users reflecting their experience, recommendations, comments and needs.

The launch of the Feasibility Studies Series is based on the same line of reasoning and concerns. It is intended to update the Manual for the Preparation of Industrial Feasibility Studies, but instead of taking the form of a single, comprehensive and bulky new Manual, the decision has been taken to publish a series of documents, where each volume will cover a specialized topic with more focus and depth. This approach will permit greater flexibility in the preparation of future updates on a selective basis as the need arises.

Most of all, the Feasibility Studies Series presents a fresh approach to promote effective investments towards the achievement of inclusive and sustainable industrial development.



LI Yong
DIRECTOR GENERAL



ACKNOWLEDGMENTS

The Feasibility Studies Series comes into being as a result of driving forces generated by UNIDO to serve the purpose of industrial development, economic growth and job creation. It also relies on the commitment and expertise of leaders and practitioners who have been able to translate the UNIDO strategic vision into practical consequences to the ultimate benefit of entrepreneurs and policy makers.

In terms of organizational setting, the work was developed and implemented within the UNIDO Business, Investment and Technology Services Branch (PTC/BIT) which, under the direction of Mohamed-Lamine Dhaoui, supports capacity building initiatives, partnerships, and the sharing of knowledge and the best practices to promote private sector development and improve the competitiveness of enterprises in manufacturing industries. Within PTC/BIT, the work falls among the activities undertaken under the supervision of Monica Carcó, Chief of the Investment and Technology Unit. Substantively, ITU's programmes focus on institutional capacity building on investment and technology promotion, the provision of innovative tools and methodologies, and the sharing of investment and technology related knowledge and expertise to close global gaps and enhance productivity performance.

The launching of the Feasibility Studies Series, with this first volume, represents an evolutionary step in a programme, which is as old as UNIDO itself and stands on the shoulders of its many contributors and predecessors. They gave shape to the COMFAR programme and developed the guiding and didactic materials associated to it. In particular, reference can be made to the pervasive Manual for the Preparation of Industrial Feasibility Studies and the training package

widely known as IPPA, Investment Project Preparation and Appraisal.

The present Feasibility Studies Series draws substantially on both of the above mentioned seminal works and also used contributions from many specialists and UNIDO consultants. The earliest and most inspiring work was developed under the direction of Werner Behrens and Peter Hawranek, of the former UNIDO Division of Industrial Operations Support. David Sussman also contributed his in-depth expertise by preparing and delivering to UNIDO substantial technical materials, which were of use and guidance for the development of the present Series. As to other contributors, who are many and covering a wide range of specialized fields, they are referred to and enumerated in the introductory parts of the Manual for the Preparation of Industrial Feasibility Studies and of the IPPA Package.

Concerning the new directions for the COMFAR Programme in general and for the new Feasibility Studies Series in particular, a special reference is owed to: a) Stanislaw Pigon, a longstanding COMFAR expert, who gave to the COMFAR Programme a new and fresh strategic direction as required by the current development scenario. b) José de Caldas Lima, whose vast experience of working with UNIDO in the areas of technology and investment promotion, was instrumental to deal with the vastness and multidisciplinary nature of the pre-investment studies and prepare this Volume 1 of the Feasibility Studies Series with the intended fresh approach, clarity and comprehensiveness. c) Aleksandar Jancheski, who contributed to the process of streamlining the substantive content and graphs. d) Radhika Nathwani, a graphic design expert who created refreshing graphs and an innovative publication design.

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INTRODUCTION

The Feasibility Studies Series is a new product of UNIDO intended to supplement the COMFAR programme, the UNIDO Computer Model for Feasibility Studies and Reporting, with the didactic insight into the disciplines, studies and methodologies which come into play in the preparation, appraisal and implementation of investment projects.

So far, in addition to the dedicated tutorial materials, the COMFAR programme has mostly been supported by the Manual for the Preparation of Industrial Feasibility Studies, a major guiding tool for practitioners and decision makers, who have to deal with, and wish to learn about the multidimensional aspects of investment projects.

Because the last print of the Manual dates from mid-1990s and considering the fast developments in business, industry and technology, and also in the regulatory environment, which carry with them new and innovative modalities and approaches to the design, financing, evaluation and

management of investment projects, the need was felt for new versions of COMFAR and the accompanying Manual, in tune with the new and evolving realities.

The COMFAR software is being updated. As for the updating of the Manual for the Preparation of Industrial Feasibility Studies, the option was for the new Feasibility Studies Series, an innovative approach where each substantive project discipline is dealt with in a separate volume. The perceived advantage is that the users will have the different topics of pre-investment studies and project-related disciplines dealt with in a self-contained way, meeting specific areas of concern with more focus and depth; and the updating and upgrading of the volumes can be done flexibly as the need should occur.

This Volume 1 with the title *Project Development: Overview of Pre-Investment Studies* gives a start to the Feasibility Studies Series. Being the first publication in the new cycle of COMFAR programme, is naturally intended to provide the broad understanding of the issues related to the development of industrial investment projects from project ideas to investment decision. It covers the project cycle and its phases, highlights the interactions between the project and the environment where it is to operate and underscores that the feasibility, and the consequent investment decision, is a concept that has to accommodate the interests of diverse participants and stakeholders such as project sponsors, financiers, regulators and the society at large. To achieve its objectives Volume 1 is developed in three main parts as follows:

Part I – Project preparation: an overview. Part I deals with investment projects in general and industrial investment projects in particular, and depicts the approaches, methods and studies, which are necessary for an informed investment decision. The process involves an iterative process, the main phases of which are: a) project identification (investment opportunity, investment participants, business concept); b) project preparation (market analysis, financial analysis, technical analysis); c) appraisal (commercial profitability, national profitability, investment decision); and d) project implementation (implementation planning, detailed engineering, erection and start-up). As explained in Part I, the pre-investment studies undertaken along the project development process go into increased levels of depth and cost, from opportunity phase to pre-feasibility assessment and finally, if justified, into a full-fledged feasibility study and the ensuing appraisal, for final consideration of sponsors, investors and other relevant stakeholders.

Part II – Market analysis and marketing strategy. For an investment project intended to bring a product to the market and achieve gains for the investors and for the

society, an essential aspect is to get consumers buying the product and achieve the strategic objectives of the project in terms of volume of sales and market share. Thus, the critical importance of the marketing development process, which is the subject of Part II. The process entails: a) the market research and analysis, which identifies potential consumers and their needs, estimates the market share accessible to the project and the sales revenues for consideration in financial analysis; and b) the marketing strategy, aimed at attracting and gaining allegiance of consumers, encouraging them to buy the products so that the project's goals and objectives are met, namely in respect of sales programme and consequent plant capacity.

Part III – Technical analysis. Part III covers the range of technical activities through which the production facilities and the related enterprise are designed, engineered, structured, set-up and operated in a way that: a) the production targets as determined by the marketing strategy and the sales programme are met; b) the investment costs and the production costs are optimized to ensure profitability and satisfaction to investors and sponsors; c) the project has a beneficial social and economic effect and abides by the best practices with regard to environmental impact and mitigation measures. Part III provides a roadmap for the technical design process. It shows the range of issues to be explored and the actions to be taken in order to arrive at a viable and functioning project, able to deliver the product to the market in competitive and profitable conditions. Among the main areas of technical analysis reference can be made to: engineering and technology; location, site and environment; raw materials and supplies; human resources; organization and overheads; and implementation planning.

Since the main purpose of Volume 1 is to provide an overview of the project development process, it is therefore intended to set the scene for the subsequent volumes of the Series, where specialized aspects of project analysis and feasibility can be dealt with at the required level of depth and detail. Among the topics to be covered by other individual volumes, reference can be made to *Financial analysis, Economic analysis and Case studies*.

In that line of reasoning, the option was made for clarity in the presentation and readability of content, with a distinctive, consistent and balanced layout where the main body of text is interspersed with textboxes diagrams and figures so that the user may easily apprehend the broad picture. By the same token, it was also decided to avoid exhaustive annexes, appendixes and footnotes and mathematical formulations in order to keep the presentation essentially simple (but not simplistic) and flowing in an easy way. Such kind of elements will more appropriately be necessary in the forthcoming volumes of the Series.