

Preface

Today, 22 billion tonnes of green-house gas emissions (methane, nitrous oxide and carbon dioxide) are emitted each year into the atmosphere from man-made sources. These are from burning gas, diesel and oil for power generation, and from flaring and venting during non-routine operations. Over the next hundred years, demand for energy is expected to more than double. Growth will be particularly critical in developing nations, e.g., China, India, Brazil and Venezuela, where industrialization and improved quality of life will increase demand for energy. Scenarios designed to predict future emissions estimate that, unless action is taken to limit emissions by 2100, annual emissions of CO₂ from fossil fuels will range from 16 to 110 billion tonnes per year. Most of these scenarios indicate a doubling of CO₂ emissions by the middle of this century.

Failure to measure and report the outcomes of environmental pollution, climate change and industrial wastes cost Australia alone several billion dollars a year in lost efficiency, repeated errors and unexploited opportunities.

The need to deliver projects within the overall strategic plan of a business organization is a *sine qua non* to increasing shareholders' wealth. However, the spectre of climate change and the daunting challenge of reducing greenhouse gas emissions are changing our collective consciousness.

How can we improve the ways in which projects are planned so that realistic and useful measurement of their outcomes and value for money becomes possible? How can we produce from these evaluations data of the quality and a standard required to drive future improvement? The authors have used the developed environmental project management (EnvPM) methodology to study and propose a sustainable solution to the problems of greenhouse gas emissions, hazardous waste disposal and deforestation.

This book is written as a sourcebook for undergraduate and graduate students, researchers and non-experts interested in environmental project management methodology using geospatial tools. It is intended to raise the bar on the professionalism with which environmental projects are planned, monitored and evaluated.

The book is divided into four parts. Part I: setting for environmental project management, consists of two chapters; part II: principles of environmental project management contains five chapters; part III: essential tools and techniques for environmental project management includes ten chapters and finally, part IV: case studies on environmental conservation and remediation projects combines three chapters together to discuss the case study of environmental projects in Australia and challenges of applying environmental project management in developing countries. Each chapter ends with a concluding remark, summarising vital points discussed.

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Principles, Methodology, and Processes

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