

Handbook of Environmental Impact Assessment

Edited by

Alberto Fonseca

*Associate Professor of Environmental Impact Assessment, Department of
Environmental Engineering, Federal University of Ouro Preto, Brazil*

RESEARCH HANDBOOKS ON IMPACT ASSESSMENT



Edward Elgar
PUBLISHING

Cheltenham, UK • Northampton, MA, USA

Contents

List of contributors

viii

PART I CONCEPTUAL FOUNDATIONS AND EVOLVING ROLES

- | | | |
|---|---|----|
| 1 | Introduction to the <i>Handbook of Environmental Impact Assessment</i>
<i>Alberto Fonseca</i> | 2 |
| 2 | NEPA in the United States: death by extremism or redesign of a more useful tool?
<i>Michael R. Greenberg and Stuart Shapiro</i> | 28 |
| 3 | Impact assessment in the post-COVID-19 world: the growing role of health impact assessment
<i>Mirko S. Winkler, Adithya Pradyumna, Francesca Viliani and Astrid M. Knoblauch</i> | 47 |
| 4 | Integrated impact assessment: coming out of the shadows?
<i>Richard K. Morgan</i> | 66 |

PART II STAGES AND METHODS

- | | | |
|----|--|-----|
| 5 | Influence of EIA on project planning and design: exploring the gap between best and actual practice
<i>Claire Gronow</i> | 86 |
| 6 | The theory and practice of scoping: delivering proportionate EIA reports
<i>Urmila Jha-Thakur, Fatemeh Khosravi and David Hoare</i> | 111 |
| 7 | The benefits and perils of digital and automated technologies: impact assessment methods in the fourth industrial revolution
<i>Alberto Fonseca</i> | 126 |
| 8 | A new agenda for significance determination in EIA: promoting community-based determination processes to counterbalance technocratic approaches
<i>Sara Bjørn Aaen, Ivar Lyhne and Helle Nedergaard Nielsen</i> | 146 |
| 9 | Artificial intelligence solutions for environmental and social impact assessments
<i>Atiyah Curmally, Blaise W. Sandwidi and Aditi Jagtiani</i> | 163 |
| 10 | Mitigating climate change through impact assessments: critical reflections from Canadian policy reform
<i>Karine Péloffy, Nick Zrinyi and Rosa Galvez</i> | 178 |

11	Follow-up: post-decision learning in EIA <i>John Glasson</i>	198
----	---	-----

PART III IMPROVING GOVERNANCE AND DECISION-MAKING

12	Uncertainty in EIA <i>Sanne Vammen Larsen</i>	220
13	Trade-offs in impact assessment design and implementation <i>Robert B. Gibson and Alberto Fonseca</i>	233
14	Heuristics and bias in assessing the social impacts of energy projects <i>Douglas L. Bessette</i>	258
15	Rightful resistance and activism through EIAs in Chile <i>Rajiv Maher and Diego Gálvez Pino</i>	270
16	Indigenous Peoples and impact assessment <i>Philippe Hanna, Cássio Ingles de Sousa and Tumanako Fa'aui</i>	285
17	Trends in EIA effectiveness research <i>John J. Loomis and Mauricio Dziedzic</i>	303

PART IV GLOBAL PRACTICE

18	EIA best practice in Africa <i>Luke Sandham, Francois Retief and Reece Alberts</i>	320
19	EIA in Finland: the influence of international norms on the founding and evolution of national impact assessment systems <i>Timo Koivurova, Katri-Maaria Kyllönen and Krittika Singh</i>	337
20	EIA in Canada: strengthening follow-up, monitoring and evaluation <i>Patricia Fitzpatrick and J. Byron Williams</i>	352
21	EIA in Japan: the benefits of early public participation <i>Tetsuya Kamijo</i>	366
22	Environmental impact assessment in Brazil: a review of its rise (and fall?) <i>Luis E. Sánchez and Carla Grigoletto Duarte</i>	383
23	EIA in China: evolution and challenges <i>He Xu, Yiting Yang, Huanzhi Wang and Xueyan Guo</i>	404

PART V LOOKING FORWARD

24	The importance of leadership in impact assessment <i>Ross Marshall and Maria Partidário</i>	423
25	Epilogue (The future of impact prediction: what to expect from EIA in the next 50 years?) <i>Alberto Fonseca</i>	441
	<i>Index</i>	446