

Environmental and Social Impact Assessment

Module Introduction and Overview

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1 Introduction to the Module

As you will learn in this module, the intended beneficiaries or investors are not the only audiences to whom it must be demonstrated that a project's technical, institutional and financial attributes warrant that the project will be worthwhile. The effects a project will have (*ie* its impacts) on the environment, nearby communities and wider society must also be investigated so they can be taken into consideration by the decision-makers who determine whether the project should proceed.

The most widely used techniques to investigate a project's environmental and social implications are Environmental Impact Assessment (EIA) and Social Impact Assessment (SIA), or Environmental and Social Impact Assessment (ESIA). Many governments, project financiers and project developers require ESIA or EIA.

Two types of project assessment can be distinguished:

- *Ex ante* assessment: determining in advance (*ie* before it is implemented) whether a project is worthwhile and should proceed and, if so, in what format – this is sometimes called project appraisal or evaluation.
- *Ex post* assessment: assessing the performance of a project after it has been implemented and completed (*ie* retrospectively) – this is sometimes called (environmental) auditing or performance monitoring.

This module covers the *ex ante* ESIA of projects. It also introduces tools used to support ESIA, ways of improving the effectiveness of ESIA, and ways in which other (non-ESIA) techniques are used to investigate the environmental and social implications of projects and other initiatives.

2 The Module Authors

Theo Hacking is a Senior Research Associate at the University of Cambridge. He spent the early part of his career working in industry and latterly as a consultant in the fields of environmental management, sustainable development and corporate social responsibility. He has specialised in social and environmental impact assessment and has a particular interest in enhancing the effectiveness of impact assessment as a tool for sustainable development. Dr Hacking has a PhD from the University of Cambridge, for his research exploring the sustainability assessment of mining projects. His initial degrees were BSc Eng (Civil) and MSc Eng (Environmental) from the University of the Witwatersrand. He is an active member of the International Association of Impact Assessment.

Ruth Shaw is an independent environmental researcher and data analyst, specialising in the impacts of human developments on aquatic systems. She has

a BA in Geography from the University of Cambridge (focusing on physical earth systems), a Master's in Water Science, Policy and Management from the University of Oxford and a PhD in Environmental Science (freshwater carbon cycling and how the carbon mass balance of freshwaters is impacted by climate and nutrient loading related to land use and geographical influences) from Oxford Brookes University.

3 Study Resources

This study guide is your main learning resource for the module as it directs your study through eight units. Each unit has recommended reading either from the key text or from supplementary module readings.



Key text

John Glasson and Riki Therivel (2019) *Introduction to Environmental Impact Assessment*. 5th Edition. Abingdon UK: Routledge.

Module readings

In addition to the key text, you will also have access to the module reading, with articles and examples. You will be guided through all of the readings as you work through the module.

Multimedia

Videos for the relevant unit can be accessed via the VLE.

Case studies

Some exercises in the module will use case studies illustrating the technical and theoretical issues covered in the module. Select two of the following for this purpose:

Case Study 1

Environmental impact assessment and environmental and social management system reports for the Anaklia Port Project, Georgia

The Anaklia Port Project involves the construction of a gateway deep seaport on the Black Sea with berthing for 10,000 ships and capacity for 1.5 million tonnes of dry bulk cargo, at a strategic point on the transport route between China and the South Caucasus (the New Silk Road). Construction will include a breakwater, access channel and turning circle, container terminal, marine coastguard station, infrastructure to connect inland routes and dry bulk storage facilities. The aim is to stimulate the economy in the Samegrelo-Zemo Svaneti region, as well as the wider Georgian economy, by reducing the costs of trade. The development consortium aims to build a carbon-neutral port, reducing the carbon footprint of Georgia's trading activities. To this end, they have

conducted an EIA and also prepared a management plan for construction and subsequent operation of the port facilities (the Environmental and Social Management System). These documents can be found at:

<http://anakliadevelopment.com/csr/>

Case Study 2

Environmental and social assessment for the Kandahar Solar Power Project, Afghanistan

Available from: <https://www.adb.org/projects/52229-001/main>

The Kandahar Solar Power Project hopes to develop, construct, commission and operate a 15.1 MW solar power plant, capable of supplying over 11,000 homes at a conservative estimate. The government of Afghanistan has set the objective of providing 40 per cent of the country's energy requirements by renewable energy infrastructure by 2032, partly to reduce their energy import bill. This Asian Development Bank-funded project also aims to provide knowledge and skills that will facilitate future developments of the kind (*ie* building technical and/or social capital). Possible impacts include noise, waste generation, water use and dust (from construction work). The transmission of energy will be aligned with a national road. Consultation with community stakeholders will need to take account of issues such as equitable access to the energy produced, with particular consideration of access to all benefits for women, and the impact of the construction work on women's freedom and safety, in the context of local and external social norms and practices. This case study raises important questions around social impacts of development, and the potential to design in positive outcomes.

Case Study 3

Environmental impact assessment for the Hummingbird Highway Rehabilitation, Belize

Available from: <http://doe.gov.bz/index.php/services/publications/send/15-eia/595-hummingbird-highway-eia-incl-appendixes>

The project involves upgrading an existing rural highway and rehabilitation of the road to prevent structural damage to the roadbed; replacement of 22 single-lane bridges with double-lane structures; improvement of road cuttings in hilly areas and straightening of some curved sections; various improvements to road safety and junctions and installation of cat's eyes. The Hummingbird Highway stretches 87.8 km from Dangriga to Belmopan City, where it joins the George Price Highway. Currently its condition is poor, and recent temporary repairs have worsened it in the long term. Its usefulness is further limited by missing sections of road shoulder, lack of speed bumps through settlements, problems with heavy vehicles being slowed at curvy and hilly points and the lack of passing points and effective road markings. The project is being partly funded by the UK DFID and the EU, and the area of influence is being increased from 2 km either side of the highway to 4 km. Because this project is an upgrade of an existing roadway, key impacts are likely to be limited to hydrological impacts and

to noise, waste and nuisance impacts during construction, whilst there is potential to mitigate existing flooding impacts and stimulate economic development.

ESIA documents can be a lot of reading; for example, the Hummingbird Highway document is 370 pages long. However, you need not read the whole of each report; we suggest looking at the table of contents, browsing sections that interest you, and searching the document for any terms or issues that interest you or that you do not understand. This approach will give you some context for the theoretical content of the ESIA module and will demonstrate the typical structure of these reports, their scope, how to interpret them and how to write them. For other examples, we suggest browsing specialist journals such as the *Environmental Impact Assessment Review*. Go to <https://apps.webofknowledge.com/> which you will be able to access via the institutional login (UK Federation; SOAS, University of London) using your six-digit SOAS ID and password.

Further examples can be found on the World Bank website (www.worldbank.org – search ‘impact assessments’). If you are interested in further examples of EIAs, SIAs and ESIA for major development, possible further sources include: The International Finance Corporation (IFC) at www.ifc.org/projects (select a Category A or B project); the Canadian Impact Assessment Agency Registry (choose Projects/Companies) at www.ceaa.gc.ca/050/evaluations/, or choose ‘library’ at www.sakhalinenergy.ru/en/.

4 Module Overview

The module is divided into eight units of study, each to be completed within one week.

Unit 1 Introduction to ESIA

- 1.1 Introduction
- 1.2 Origins and Variations in Application
- 1.3 The Purpose of ESIA
- 1.4 Drivers for ESIA
- 1.5 The Overall ESIA Process
- 1.6 Structuring ESIA
- 1.7 Success of ESIA
- 1.8 Social Impact Assessment
- 1.9 Reflection on SIA
- 1.10 Conclusion

Unit 2 Laying the Foundations for ESIA

- 2.1 Introduction
- 2.2 Screening

- 2.3 Scoping
- 2.4 Project Description
- 2.5 Baseline Description
- 2.6 Data Collection, Interpretation and Reporting
- 2.7 Conclusion

Unit 3 Impact Assessment – the ‘Heart’ of ESIA

- 3.1 Introduction
- 3.2 Impact Identification and Prediction
- 3.3 Impact Significance Evaluation
- 3.4 Social Impacts and Equity
- 3.5 Conclusion

Unit 4 Impact Management, Reporting and Decision-Making

- 4.1 Introduction
- 4.2 Impact Mitigation and Enhancement
- 4.3 Environmental and Social Management and Monitoring
- 4.4 Reporting the ESIA
- 4.5 ESIA and Decision-Making
- 4.6 Conclusion

Unit 5 ESIA Stakeholder Engagement/Public Consultation

- 5.1 Introduction
- 5.2 Stakeholder Engagement: Objectives and Benefits
- 5.3 Methods of Securing Stakeholder Engagement
- 5.4 Stakeholder Engagement in Practice
- 5.5 Conclusion

Unit 6 Improving the Effectiveness of ESIA

- 6.1 Introduction
- 6.2 ESIA Planning and Project Management
- 6.3 Implementation and Follow-up
- 6.4 Conclusion

Unit 7 Thematic and Specialised Assessment Techniques

- 7.1 Introduction
- 7.2 Themed Impact Assessment
- 7.3 ‘Specialised’ Assessment Techniques
- 7.4 Conclusion

Unit 8 Strategic and Emerging Forms of Assessment

- 8.1 Introduction
- 8.2 Widening the Scope of Impact Assessment
- 8.3 Emerging Forms of Impact Assessment
- 8.4 Conclusion

Unit 1 of the module introduces the functions and tools of ESIA. It provides an overview of ESIA's origins and how it varies in application. It discusses the purpose and drivers of ESIA, and describes the overall ESIA process, including the structuring of ESIA. This unit also looks at the success of ESIA and includes a discussion on SIA.

Unit 2 explains how the foundation is laid for ESIA via the screening, scoping, project description, and baseline description steps. It discusses the fundamentals of screening, approaches to screening, the purpose of scoping, scoping procedure, identification of alternatives and data collection, interpretation and reporting.

Unit 3 is concerned with impact assessment itself. It covers impact identification and prediction and discusses some of the tools available for these activities. It also covers impact significance evaluation, looking at how to judge significance with and without management, significance criteria and methods of judging and presenting significance evaluations. In addition, this unit discusses the distribution of impacts, taking social equity into consideration.

Unit 4 deals with the management hierarchy, mitigation of negative impacts (undesirable consequences) and enhancement of positive impacts (benefits), which are key purposes of ESIA, and how mitigation relates to project design. The unit also covers management and monitoring plans, reporting the ESIA and decision-making.

Unit 5 focuses on stakeholder engagement (also known as public consultation) in ESIA, covering its aims and benefits, stakeholder identification and analysis, how stakeholder engagement fits with the ESIA process, the nature and extent of involvement in stakeholder engagement, methods for stakeholder engagement, and stakeholder engagement in practice.

Unit 6 is concerned with improving the effectiveness of ESIA. It addresses ESIA planning and project management, including a discussion of the ESIA team, the project manager, project scheduling and budgeting. The unit is also concerned with implementation and follow-up, covering monitoring, auditing and the links between ESIA and the Environmental Management System (EMS).

Unit 7 discusses other assessment techniques. It introduces thematically focused forms of impact assessment including health impact assessment, mental well-being impact assessment, economic impact assessment, gender impact assessment, and cultural/heritage impact assessment. It also deals with 'specialised' assessment techniques – in particular, risk assessment and life cycle assessment.

Unit 8 focuses on strategic and emerging forms of impact assessment. It begins by exploring approaches to widening the scope of impact assessments to explore cumulative and strategic impacts. It then examines emerging forms of

assessment such as integrated assessment, sustainability assessment and climate impacts assessment.

5 Learning Outcomes

When you have completed your study of this module, you will be able to:

- analyse and critically appraise the stages in ESIA processes
- synthesise and evaluate the outcomes of an ESIA
- critique ESIA in practical applications
- critically discuss thematic and specialised assessment approaches
- evaluate the contribution of strategic and emerging forms of assessment
- critically assess the role of ESIA as a policy and planning tool.

6 Glossary

Biophysical	The non-human environment, including living organisms (plants and animals) and non-living matter (<i>eg</i> water and air).
Cultural/Heritage Impact Assessment	Assessment of impacts on anything that may have aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value. This may encompass the natural environment, buildings, objects and/or less tangible components, such as indigenous knowledge systems or rituals.
Cumulative Effects Assessment	Assessment of impacts due to numerous separate developments which might by themselves be insignificant, but which can interact or combine to cause significant impacts.
Economic Impact Assessment	Assessment of a project's impacts on the wider economy; these can be <i>direct, indirect, induced</i> or <i>fiscal</i> .
Engagement	Process of interacting with stakeholders to improve decisions/outcomes. The level of engagement may increase as follows: to <i>inform, consult, involve, collaborate</i> and/or <i>empower</i> .
Equator Principles	Initiative of financial institutions whereby the signatories commit to assessing potential investments in accordance with the IFC's Performance Standards on Social and Environmental Sustainability, which include ESIA (The Equator Principles Association, nd)
Health Impact Assessment	A combination of procedures, methods and tools used to judge the potential effects of any policy, programme or project on population health and the distribution of those effects within a population (WHO, nd).
Impact	Any change, beneficial or adverse, in the social or biophysical environment as a result of human activity.
Integrated Assessment	Forms of impact assessment that aim to align/combine a number of established assessment techniques (<i>eg</i> EIA+SIA) and compare or explore interrelationships between themes (<i>eg</i> biophysical and social).

Life Cycle Assessment	Compilation and evaluation of the inputs, outputs and potential environmental impacts of a product system throughout its life cycle (ISO, 2006).
Mitigation	Measures to prevent, eliminate, reduce, minimise, remediate, repair or compensate adverse impacts.
Significance	The significance of impacts is typically determined by considering their magnitude, severity, extent, duration and probability. Opposite ends of the spectrum are: <ul style="list-style-type: none"> ▪ Highly significant impacts: Impacts that are diverse, irreversible and/or unprecedented. ▪ Low significance impacts: Impacts that are generally site-specific, largely reversible, and (in relation to adverse impacts) readily addressed by mitigation.
Social	Anything relating to humans and their interactions, including economic, cultural, human rights, health and safety concerns.
Stakeholders	Interested or affected parties including: neighbouring communities and businesses; local, regional and national governments (<i>ie</i> the authorities); employees, contractors, and suppliers; non-governmental organisations (NGOs) and community-based organisations (CBOs); and media groups.
Strategic Environmental Assessment	A systematic, ongoing process for evaluating, at the earliest possible stage of publicly accountable decision-making, the environmental quality and consequences of alternative visions and development intentions incorporated in policy, planning or programme initiatives, ensuring full integration of relevant biophysical, economic, social and political considerations (Partidário, 1999).
Sustainability Assessment	An assessment process that aims to determine whether or not an initiative will contribute to sustainable development (Pope <i>et al</i> , 2004).
Triple bottom line	Term used in business literature, referring to companies expanding their traditional focus on the financial 'bottom line' to consider (biophysical) environmental and social performance, <i>ie</i> people, planet and profit.
Vulnerable individuals or groups	People who are differentially or disproportionately sensitive to change, or in need of change, because they are underrepresented, disadvantaged or lacking in power, influence or capacity. Typical examples are children, the elderly, minority groups, indigenous peoples, women, and people with disabilities.

References

ISO (2006) *ISO 14040. Environmental Management – Lifecycle Assessment – Principles and Framework*. [Online]. Available from: <https://www.iso.org/standard/37456.html> [Accessed 6 January 2021]

Partidário M (1999) 'Strategic environmental assessment: principles and

potential'. In J Petts (Ed.) *Handbook of Environmental Impact Assessment*. Oxford: Blackwell Science. pp. 60–73.

Pope J, D Annandale and A Morrison-Saunders (2004) 'Conceptualising sustainability assessment'. *Environmental Impact Assessment Review*, 24 (6), 595–616.

The Equator Principles Association (nd) *Homepage*. [Online]. Available from: <https://equator-principles.com> [Accessed 6 January 2021]