



**DEVELOPMENT
CORRIDORS
PARTNERSHIP**

IMPACT ASSESSMENT FOR CORRIDORS: FROM INFRASTRUCTURE TO DEVELOPMENT CORRIDORS

Edited by:
Jonathan Hobbs and Diego Juffe Bignoli
2022

The Development Corridors Partnership

The Development Corridors Partnership (DCP) is a research and capacity development initiative. It is a collaboration between institutions from China, Kenya, Tanzania and the UK. The main objective is to deliver effective research and capacity-building to help improve corridor planning and management. It aims to ensure that development corridor decision-making is based on sound scientific evidence and effective use of available planning tools and procedures, to ensure that risks are

avoided and opportunities exploited. The DCP comprises partners from the University of York, the University of Cambridge, London School of Economics, Sokoine University of Agriculture, the University of Nairobi, as well as the UN Environment Programme World Conservation Monitoring Centre (UNEP-WCMC), African Conservation Centre, the World Wide Fund for Nature (WWF), the Chinese Academy of Agricultural Sciences and the Chinese Academy of International Trade and Economic Cooperation (CAITEC).

DCP Partners:



For the purposes of this publication, DCP collaboration was extended to experts representing Netherlands Commission for Environmental Assessment, the Centre for Energy, Petroleum and Mineral Law and Policy at the University of Dundee, the University of Queensland, the Columbia Centre on Sustainable Investment, the GOBI

Framework for Sustainable Infrastructure Initiative (comprising the University of Oxford, University of Central Asia and the Independent Research Institute of Mongolia), The Biodiversity Consultancy, the Wildlife Institute of India, the Endangered Wildlife Trust and Ecotecnia Ingenieros Consultores SRL.

Expert Organisations:



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Foreword

In the course of a long and varied working life, I have been privileged to work with, or learn from, a stimulating panoply of individuals who are committed to contributing to the economic, social, and environmental development of all aspects of the United Nations Sustainable Development Goals.

Jon Hobbs and Diego Juffe-Bignoli are, thankfully, two of these individuals. I was delighted to learn that they had come together to produce, for the Development Corridors Partnership, a rich and stimulating collection of research reports, case studies and assessments relating to the array of efforts made under the rubric of 'development corridors'. They were determined to express the conviction that decisions made, primarily by governments, regarding the planning and building of Corridors, really must be informed by an evidence-based understanding of the consequences - positive or negative - of these decisions. And they have succeeded. But Jon Hobbs will never read these words. He was hospitalized after the bulk of the work was complete, and, to the deep sadness and regret of all who knew him, he passed away at the end of September, 2021.

Jon and Diego sought out and recruited a daunting array of researchers, scholars and stakeholders to shed light on the processes currently underlying the world of development corridors today. They certainly succeeded.

The work was initiated before the onset of the COVID-19 pandemic, and as governments turn to the formidable challenge of restoring

economic vitality without further damage to the climate, it becomes even more imperative that impact assessment be understood, embraced and improved. Jon and Diego have shown us the way forward for a journey which absolutely must be embarked upon.

They would be first to recognise that the Development Corridors Partnership as a whole must be commended for showing - in many different ways and places - that, not only is the need for impact assessment clear and present, but so are the skills and commitment of researchers, scholars and stakeholders. These are to be found in an impressive coming together of universities, civil society organizations and business groups, and communities.

All are part of an outstanding initiative, funded by the UK Research and Innovation Council, and managed by the UNEP-WCMC. This initiative has been embraced by some of the best minds that have been turned to the task of ensuring that - while we attempt to bring economic and social benefits to people, in line with the United Nations Sustainable Development Goals - we do not risk significant environmental and social costs, and thus actually undermine long-term development successes.

So, I urge you to read this book, and figure out how you might improve your own contribution to the challenges ahead. Jon and Diego have set out a case. It needs to be taken up, not set aside; acted on, not just talked about. It is in your hands.

John Harker

Chair of the Development Corridors Partnership Independent Advisory Board,
Nova Scotia, Canada.

Dedicated to the memory of Jon Hobbs
who was the architect and driving force of this book

Executive Summary

Driven by increasing globalisation, the development aspirations of nations, and the need to access resources, an infrastructure boom is impacting many regions of our planet. New infrastructure projects are traversing diverse landscapes over hundreds of kilometres, often crossing international borders and penetrating into remote areas previously unaffected by industrialisation and urbanisation. These large-scale projects, mostly spanning several regions in a same country, but often linear and transnational in nature, are generically called corridors. Depending on the nature and objectives, they can be transport, infrastructure, growth, resource or economic corridors.

The rapid development of corridors globally presents environmental planning professionals with numerous challenges. **The primary need is to ensure that decisions about these developments are informed by an evidence-based understanding of their consequences - both positive and negative.** This will enable infrastructure development to meet development needs without adversely impacting ecological systems or human welfare. Improving the quality of infrastructure policies, plans, programmes and projects, by ensuring they include the necessary environmental and social scrutiny, is urgently required now - and will be for the foreseeable future. This challenge is the unifying theme of this publication.

Using insights from Africa, Asia and South America, this sourcebook compiles 24 contributed papers written in 2021, covering many facets of the

opportunities and challenges presented by the rapidly growing number of infrastructure and corridor developments around the world. Prevailing planning practices are reviewed through case studies along with the efficacy of some of the available tools to conduct systematic and comprehensive impact assessments. The latter includes Strategic Environmental Impact Assessment (SEA) and Environmental Impact Assessment (EIA).

As the title suggests the underlying thesis of this publication is that, where they are justified, **there are significant benefits in ensuring that corridors that contain single purpose infrastructure developments (utility, infrastructure or transport) progress through a carefully planned sequential process of diversification and expansion to ensure the maximisation of benefits in full-blown 'development corridors'.** In this book, development corridors are therefore aspirational. They comprise areas identified as priorities for investment to catalyse economic growth and development. They should be developed with multiple stakeholders and social, economic and environmental interests and interdependencies in mind. With the integration of sustainability principles and appropriate environmental and social standards, development corridors could become true '(sustainable) development corridors'. They should be planned to maximise positive opportunities and minimise negative risks. Without this, today's short-term successes will become tomorrow's challenges and long-term human welfare and ecosystem integrity will be undermined.

Overview of contents

This book brings together a wide range of perspectives from experts, researchers, and practitioners around the world with the purpose to foster greater collaboration and increase our global understanding of corridors and their benefits and potential negative impacts. 13 of the 24 chapters are written by independent experts and researchers from Australia, Bolivia, Brazil, China, India, Kenya, Mongolia, South Africa, Tanzania, UK, and the USA. The book also includes 11 chapters containing material gathered by the Development Corridors Partnership, a programme of work led by UN Environment Programme World Conservation Monitoring Centre (UNEP-WCMC) and funded by the UK Government via their Global Challenges Research Fund.

The collection of papers in this sourcebook is divided into five sections. First an introductory section where we introduce some key terms and definitions that underpin this work ([Chapter 1](#)). We then explore some key principles and aspirations of corridors such as delivering the Sustainable Development Goals ([Chapter 2](#)), ensuring theory and practice align ([Chapter 3](#)), ensuring financial sustainability ([Chapter 4](#)), properly assessing environmental sensitivity ([Chapter 5](#)) respecting human

rights ([Chapter 6](#)), or maximising, co-benefits ([Chapter 7](#)).

In the next three sections, we present 15 case studies from three continents: Africa, Asia, and Latin America. These case studies explore key challenges and lessons learned from specific planned, ongoing, and already implemented developments. They are presented as individual stories that readers can explore.

The final and fifth section aims to summarise lessons learned from a 4-year research and capacity building programme specifically aiming to understand the key challenges and opportunities around corridors and that has been the major driving force of this work: The Development Corridors Partnership project (DCP). DCP is a collaborative partnership across UK, Kenya, Tanzania and China, funded by the UK Research and Innovation Global Challenges Research Fund (see [Chapter 23](#)).

The book finishes with an overview of the lessons learned from the contributed papers included in this book and develops ten principles for corridor planning and delivering a meaningful and comprehensive impact assessment ([Chapter 24](#)), which we summarise here as ten key messages.

Key messages

1

Corridors must seek to achieve positive sustainability outcomes:

The mindset underwriting environmental planning of most infrastructure developments has been to mitigate negative impacts. The planning of few existing corridors is based on their role in supporting a sustainability vision for a country or region in which they are situated. Corridor developments must therefore be based on sustainability principles and support progress towards national, regional and international sustainable development goals. A true development corridor will seek to do good, as well as to mitigate negative impacts.

2

Integrated and inter-disciplinary approaches are needed:

Corridor developments are extensive, complex, multifaceted features traversing many landscapes. They can bring about significant transformational change to physical, economic, social, and cultural systems, and serve as interconnecting features. Yet engagement in corridor planning is often constrained by limited disciplinary and institutional involvement, with projects often superimposed upon communities. Corridor developments need diverse expertise and experience in their planning and management, including local stakeholder knowledge, avoiding disciplinary, institutional, or sectoral silos, that can result in policy conflicts, contradictions, and inconsistencies.

3

Corridor proponents should clearly demonstrate consideration of alternatives:

Corridor options should not be limited to a preferred proposal favoured by an elite. Corridor developments must consider all feasible alternatives (including maintenance of the status quo and no corridor development) and make the risks and opportunities of each option explicit and transparent through meaningful consultation. An important requirement in all corridor planning is to justify the need for a wide choice of options and an explanation of the potential benefits it will bring and to whom, in comparison with the alternatives. Any necessary trade-offs and how any significant potential negative impacts will be effectively managed, and opportunities created must be explained.

4

Public participation and stakeholder engagement should be at the core of corridor planning:

Corridor planning frequently fails to include meaningful participation of all stakeholders. Corridors can profoundly affect the lives and rights of indigenous peoples and local communities, potentially for generations. A common failing is that the first opportunity for local stakeholders to engage arises only after all strategic decisions have already been made and the only option remaining is for them to react negatively to a fait accompli. The meaningful engagement of all stakeholders is necessary to ensure their role is more than reactive. The way corridors are viewed by different stakeholders must be identified, understood, and addressed. Corridor developments must ensure that all interested and affected people are provided with adequate information about a proposal and have meaningful ways to engage in decision-making processes from the outset of strategic planning.

5

Mainstreaming and tiering are fundamental for corridor success:

Corridor planning requires a tiered assessment process, ensuring that environmental and social issues are considered alongside financial and technical considerations from the start of strategic planning or programme development, right through to project specifics. Conceptual corridor planning is frequently dominated by technical and financial suitability criteria with environmental, social, cultural, and human rights sensitivity issues being considered, at best, as externalities, retrospectively, once issues and problems arise. Strategic planning is important because it is when the full range of options is still open for discussion. It also establishes the parameters that will frame and implement a corridor plan or programme. Environmental and social considerations (and the interactions between them) should be considered early in strategic decision-making alongside (and to inform) technical, financial, and economic considerations.

6

An iterative process is needed:

Corridors exist in dynamic environments and need to be responsive to changing circumstances and priorities. Planning must adjust as circumstances and available information changes. The process should identify, map, and engage all interested and affected stakeholders from the earliest stage of corridor planning and throughout the planning and management of the corridor. New concerns and evidence will likely emerge as a corridor development progresses. Corridor planning frequently places undue emphasis on the production of a report (Environmental Impact Report) and its influence on the decision to proceed. The process may not be so linear in nature. It may involve many adjustments and decisions as new evidence emerges and predictions improve. A good-quality report and recommendations is necessary, but they are dependent upon a comprehensive process of ongoing dialogue and engagement with all stakeholders.

7

Corridors must ensure effective use of available tools:

Many corridor environmental impact assessments fail to meet required international standards. Corridor planning and management should make systematic and adequate use of available impact assessment procedures, methods, techniques, and tools to ensure good-quality decisions. The available procedures discussed in this publication (notably Strategic Environmental Assessment and Environmental Impact Assessment) and their associated methods, tools and techniques should be used when appropriate to help ensure that a systematic process identifies all significant potential benefits and development outcomes, and that they outweigh the costs and risks to affected people and their livelihoods and environments. The objectivity and quality of corridor decisions are dependent upon the effective use of the available tools.

8

Plan corridors with resilience and adaptability in mind:

Prevention will always be better than cure in addressing the negative impacts of corridors, and this should be the priority. However, some circumstances dictate an inevitability of negative impacts. Corridors, therefore, need to be designed to be made resilient to anticipated changes and adaptation measures may be necessary as 'coping' mechanisms or to offset unavoidable impacts, such as the impacts caused by climate change. The suitability of measures will require ongoing monitoring and adaptation as needs arise.

9

Seek impact, influence, and implementation capacity:

The decision to proceed with a corridor is ultimately the responsibility of decision makers. They are usually the representatives of all stakeholders' interests and custodians of their natural resources. Any impact assessment report must provide adequate information to ensure sufficiently good-quality decisions. If they are to be effectively implement the recommendations provided. Attempts to improve the performance of planning and associated assessment processes of corridors must tackle the ways in which outcomes are shaped by political contexts and institutional capacities. Approaches to working on assessment processes should integrate political economy analyses and institutional capacity assessment from the outset and on an ongoing basis. Resulting insights should inform the design and implementation of interventions intended to improve planning practice.

10

Evolve from Infrastructure to Development Corridors:

The prospects for linear infrastructure projects to evolve into comprehensive development corridors are often left to chance and spontaneity. Infrastructure projects are often developed in isolation and in an incremental way. For infrastructure projects to progress and become true development corridors, the transition must be systematically sequenced into planning from the start. Assessments must include consideration of potential induced, secondary, synergistic, transboundary, and cumulative impacts likely to result from the corridor development. The progression from infrastructure to development corridors must be based on a systematic, comprehensive, and integrated assessment of the potential positive environmental, social and economic opportunities and the rigorous avoidance or management of negative impacts.

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Introduction

Context and Definitions

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1.1 Why this publication?

An infrastructure boom is impacting many regions of our planet, driven by increasing globalisation. New projects are traversing diverse landscapes over thousands of kilometres, sometimes crossing international borders and penetrating remote areas that have, to date, been relatively unaffected by industrialisation and urbanisation. These large-scale projects, mostly spanning several regions in a same country but often linear and transnational in nature, are generically called corridors. Depending on the nature and objectives of these they can be transport, infrastructure, growth, resource or economic corridors (See Juffe-Bignoli et al. 2021 section 1.4)

This process is both a threat and an opportunity. Integrating marginalized regions and peoples into development processes is an urgent need. However, it also presents risks to the integrity of ecosystems and the services they provide to support human livelihoods, welfare and biodiversity. It is essential to ensure that decisions about new developments are informed by a sufficient understanding of their potential consequences, both positive and negative. This will help enable corridors to meet development needs, while not undermining their sustainability-and as such can be labelled as true development corridors. To improve the quality of decisions about infrastructure policies, plans,

programmes and projects, scrutiny of their potential effects is necessary before they are implemented. Adequate safeguards during their construction, operation and eventual dismantling must also be in place throughout the rest of their life cycle.

This challenge is the unifying theme of this publication. As the title suggests, the underlying thesis is that, where they are appropriate and justified (and that is not true for every case), there are significant benefits in ensuring that corridors with a single (or limited number of) infrastructure development objectives (such as transport, electricity, telecommunications, water and sanitation, oil, gas and chemicals etc.) progress through a planned sequence of diversification and expansion to ensure maximization of benefits and minimization of risks in 'development corridors'.

Using insights from Africa, Asia and South America, this publication addresses many facets of the opportunities and challenges that the rapidly growing number of infrastructure investments present for all stakeholders. Prevailing planning practices are reviewed (along with the efficacy of some of the available tools) through case studies based on literature reviews and field work. In this introduction, we briefly explore the global infrastructure boom and its drivers. We propose a corridor typology and offer

some definitions to help clarify what can be a very diverse and confusing vocabulary. We reflect on how corridors might (and should) evolve over time into the aforementioned strategic and comprehensive initiatives. That is, (sustainable) development corridors. We provide references to indicate in which

chapters more detailed analysis of an issue or a case study can be found within the publication. The final chapter provides recommendations for successful development corridor planning based on the views of all authors in this publication.

1.2 Drivers of infrastructure growth

1.2.1 Infrastructure deficit

The current acceleration in infrastructure provision is attempting to address the widespread deficit that exists, especially in developing countries. This is nothing new, and it has been progressing sporadically over decades. Estimates suggest that the global gap between the required investment in infrastructure provision and the projected need will reach US\$15 trillion by 2040.¹ Financial institutions (European Bank for Reconstruction and Development [EBRD], Canada's Infrastructure Bank, Asian Infrastructure Investment Bank etc.) and international initiatives such as the Asian Development Bank's Greater Mekong sub Region Development Corridor's programme, the African Union's/New Partnership for African Development (NEPAD) flagship Programme for Infrastructure Development in Africa (PIDA) (African Development Bank 2015) and the Initiative for the Integration of Regional Infrastructure in South America (IIRSA). One international infrastructure programme that is referenced in several chapters of this publication is the 'Belt and Road Initiative', (BRI), which was formally launched by China's President Xi Jinping in 2013.²

1.2.2 Development multiplier

A lack of infrastructure puts the brakes on economic development, growth and productivity, and limits access to basic

services, jobs and markets. The importance of infrastructure as a development catalyst has been recognized in the United Nation's Sustainable Development Goals (SDGs) (adopted by the United Nations General Assembly in 2015). SDG 9 ('Industry, Innovation and Infrastructure') expressly highlights the specific need to "build resilient infrastructure". Corridors, and the projects within them, can also play a cross-cutting role that is essential for delivering all of the 17 SDGs. (especially SDGs 11 and 13 [see [Chapter 2](#)] (United Nations 2012)). However, poorly planned projects risk increasing development inequities.

1.2.3 Economic growth and recovery

The enthusiasm for infrastructure projects fluctuates with cyclical economic fortunes. At their most basic, they are a region's conduits for moving goods, services and people efficiently, and are often associated with resource extraction projects. During times of high commodity prices, the economic feasibility of exploiting new prospects of natural resources in ever-remoter regions of the world escalates. If resource surveys prove that previously inaccessible or economically marginal deposits of minerals, timber and so on have now become viable for exploitation,

1 G20's Global Infrastructure Hub 2019. See: <https://outlook.gihub.org>.

2 For current status of Belt and Road Initiative projects in over 70 countries, see: www.beltroad-initiative.com/projects.

infrastructure will be needed to ensure a supply of inputs (energy, water, construction materials, labour etc.) and delivery of outputs (to ports, mills, refineries, smelters and, ultimately, markets). These services are provided by corridors of one sort or another. As exploration expands, regions that may be particularly socially, economically, culturally or ecologically sensitive may be adversely impacted (see [Chapter 5](#)). By virtue of their previous inaccessibility, they may host vulnerable indigenous and ethnic groups and have wilderness or high conservation values. Among other things, this raises issues of protection of rights and adequate compensation for loss of livelihood or cultural resources (see [Chapters 6](#) and [20](#)). 'Pioneering' and explorative developments may seem insignificant at first, but they may initiate major land use, economic, social and political changes.

However, even during periods of commodity

price falls, when interest in exploration for new investment opportunities reduces, infrastructure developments often still continue in anticipation of an economic upturn, albeit with less urgency than previously.

Infrastructure provision also serves as an attractive stimulus to aid economic recovery (including after pandemics and associated economic recessions). As is evident in many countries' post-COVID-19 pandemic plans, infrastructure investments are promoted as vehicles for job creation and to encourage public and private sector investments. While investment in infrastructure of all kinds is being prioritised as countries seek to reboot their economies, it is also important to ensure that this is done with appropriately rigorous assessment of the risks and opportunities. Of concern is that this urgency may be accompanied by an imprudent relaxation of planning regulations.

1.3 Defining infrastructure

Infrastructure can be widely defined to include almost all supporting elements of society and economy. However, a general distinction can be made between hard infrastructure (e.g. physical facilities) and soft infrastructure (e.g. policies, regulations, strategies, programmes institutional frameworks and financing mechanisms).³ In this publication, the term is used primarily to describe hard infrastructure; that is, roads, railways, pipelines, conveyors, transmission and distribution systems and networks. It also focuses on infrastructure developments that have linear characteristics and the associated considerations that are not always evident in non-linear infrastructure developments.

Linear developments impact diverse landscapes and communities, cover extensive distances, include transboundary (including transnational) characteristics, involve numerous jurisdictions, may have 'transit-only' needs, pose extensive barriers to and cause fragmentation of other land uses, while also often having cumulative and induced secondary impacts.

For the purposes of this publication, therefore, infrastructure comprises the components within corridors. For a more thorough review of infrastructure definitions, see United Nations Environment Programme (2021). Hard, linear infrastructure comprises the facilities and structures existing within corridors.

³ With a further distinction drawn between strategic infrastructure (the 'backbone' of a system) and support infrastructure (feeding into a strategic system).



1.4 Defining corridors

The diversity of labels developed over the past decade to define different types of corridors can be mesmerizing. Corridors mean different things to different people. Different labels may be attached to the same corridor type. In addition, the development of corridors is often a dynamic process. A transport corridor comprising a highway may progress to become a much more diverse entity (Juffe-Bignoli et al. 2021).

The labels developed tend to reflect the specific interests of their protagonists, although interests may often overlap. Consequently, the way corridors are viewed by different stakeholders must be identified, understood and addressed if policy inconsistencies, conflicts and misunderstandings are to be avoided.

1.4.1 Governments' perspectives

For governments, enthusiasm for corridors is varied, and is motivated by their value in:

- » Encouraging trade, investment and growth
- » Their inclusion of lagging, economically marginalized areas
- » Their inter- and intra-connectivity
- » National competitiveness
- » Attracting private sector and development finance
- » Raising prospects for increased tax

revenues (national and international)

- » Regional integration
- » Expanding geopolitical and cultural influence
- » Increasing and better managing natural resource exploitation
- » Opening landlocked countries' access to international trade and
- » Meeting the demands of growing populations for efficient services and so on.
- » The terms 'investment', 'access', 'supply' and 'regional' are used to emphasize these key aspirations.



1.4.2 Business perspectives

For the private sector, the dominant interest in corridors is primarily in facilitating improved supply chains and logistics, improving efficiencies, creating economies of scale and opportunities for shared use, opening new areas for extraction of natural resources, providing a service or delivering a commodity. For business, a new corridor initiative will be an opportunity for removing barriers to trade and investment, reducing freight and transport time and costs, encouraging value added processing, reducing customs and administrative red tape, upgrading dilapidated facilities, creating and accessing new markets and so on. The terms 'resource', 'trade', 'utility', 'transport' and 'economic' are used to emphasize such aspirations.

1.4.3 Development agencies' perspectives

For development agencies, infrastructure interest is dominated by the possibilities presented to catalyse or multiply development and poverty reduction by creating jobs and small business opportunities. They will also improve the reach of energy, health and food security, and provide opportunities for better governance by promoting human rights due diligence and eliminating bribery and corruption, and other essential components of growth and development (see [Chapter 6](#)). Corridors are a platform for a progressive process upon which to build development programmes and explore 'co-benefit'⁴ opportunities (see [Chapter 7](#)) (Brauch 2017). They provide an opportunity to sequence a series of projects that have the potential to multiply a single investment into comprehensive development opportunities. The terms 'growth', 'development', 'value', 'resource' and 'economic' are used to emphasize these aspirations.

1.4.4 Environmental perspectives

For the environmental (and social) sector the term 'development' is used to label corridors, but with the implicit qualification of 'sustainable', to stress that they should not be developed at all costs, without justification or without an effective integrated social, economic and environmental assessment of their consequences. The COVID-19 pandemic has highlighted interconnectivity, and demonstrated the need for systems approaches. Similarly, corridors may be significant vectors for the spread of other diseases, and the introduction of alien and exotic species.

Corridors concentrate otherwise numerous independent projects into a common but differentiated entity. They also present opportunities to phase out environmentally damaging technologies and introduce more sustainable options. This could also include providing platforms for improving resource use efficiencies (e.g. cleaner production, eco-efficiency, pollution prevention strategies, industrial symbiosis, industrial ecology). To use a cliché, corridors are an opportunity to build back better' and with greater resilience (see [Chapter 10](#)).

By virtue of their potential for causing barriers to wildlife movement and migration - dissecting, degrading and fragmenting the cohesion of important habitats, high value conservation areas or protected areas - they may also be regarded as more of a threat than an opportunity.

Meanwhile, the term 'green infrastructure' (e.g. ecosystems such as rivers (See [Chapter 18](#)) has been used as a counterpoint to industrial or 'brown', man-made infrastructure and terms such as 'ecological' and 'wildlife' corridors are used to emphasize the need to maintain connectivity between areas of importance for ecological processes and biodiversity.

Given these diverse and complex interests, an integrated systems, inter-disciplinary and cross-sector approach is fundamental to

4 Development corridors will maximise economic, environmental and social co-benefits.

corridor planning and design. It is important, therefore, to find common ground between the diverse objectives of corridor advocates.

1.4.5 Towards a corridor typology

Estimates of how many corridors exist or are planned vary widely.⁵ This is not surprising

given the wide range of interpretations of what constitutes a corridor. As well as their protagonists' interests, they can also be defined according to the stages of a development continuum through which they progress, with infrastructure or utility corridors being the most rudimentary, and diversified development corridors being the most advanced.



⁵ Recent research by the Development Corridors Partnership (DCP) suggests that there are at least 88 in Africa alone (Thorn et al. in press). A geospatial and tabular database of all development corridors across Africa was created in 2021

Table 1.1 Most common general terms used for corridors

Name of corridor	Description
<p>Transport corridors (e.g., trade, transit, arterial, etc.):</p>	<p>Physical transportation links between nodes or areas within a region or country facilitating the flow of people, vehicles and freight. They may include security, safety and potential areas for future expansion needs. They are usually legally protected by 'easements', 'permits', 'way leaves', 'rights of access/way' and other mechanisms that have tended to exclude opportunities for shared use and co-benefits. An example of a transport corridor is the Maputo Development Corridor (see Chapter 15). Initially developed to connect the urban and industrial centres of Gauteng Province in South Africa to the port of Maputo in Mozambique, it has progressed to unlock the landlocked provinces of Mpumalanga and Limpopo in South Africa as well as the country of Eswatini (formerly Swaziland). It is the planned first stage in linking the Atlantic and Indian Oceans linking with the Botswana-Namibia Trans-Kalahari Corridor. Similarly, the Standard Gauge Railway in Kenya (see Chapters 11, 12 and 13), and the Lamu Port-South Sudan-Ethiopia transport corridor (LAPPSET) (Chapters 11 and 13) combine transport and resource extraction objectives from the African interior to the coastline. They may be regarded as a foundational stage in a potential transition to a development corridor (see Chapters 16, 18, 19, 20 and 21).</p>
<p>Utility corridors (e.g., service, transmission, trade etc.):</p>	<p>Land that accommodates (or is reserved for) pipelines, transmission lines and so on, through which oil, gas, chemicals and electricity are transported. They may be used to support more than one service (and, where feasible, this is preferred to independent routing across the landscape). Distributive in nature, they are also defined by safety needs in case of potential hazards such as leaks, spills and electromagnetic field effects.</p>
<p>Resource corridors (e.g., export, value etc.):</p>	<p>Initially with a focus on resource extraction but favoured by, among others, the World Bank as a development designed to leverage a large extractive industry investment (e.g. a mine, forest or oil field etc.) into a more comprehensive economic development (with the recognized potential to support diversification in shared-use and co-benefits) (see Chapters 7, 12, 19, 20 and 22). They are also known as 'value' corridors. Some developments may upgrade existing infrastructure (i.e. strengthening bridges, improving and maintaining surfaces etc.) but many develop new facilities. Examples of resource corridors in Africa include the Zambezi Valley Development Corridor (Zimbabwe-Zambia-Malawi-Mozambique), Nacala-Tete (Malawi-Mozambique), Guinea's proposed corridors and Tanzania's Mtwara Corridor⁶ (see Chapter 8) and, in South America, the Carajas Corridor (see Chapter 20).</p>

6 For a discussion on the role of resource corridors in a conflict zone, see Shroder J (2013) Building Resource Corridors in Afghanistan: A solution to an interminable war?, *Earth*, 2 September 2013. www.earthmagazine.org/article/building-resource-corridors-afghanistan-solution-interminable-war. Accessed 1 April 2021.

<p>Economic corridors (e.g., growth):</p>	<p>These involve, not only the development of infrastructure and transport, but also laws, regulations and institutions to facilitate business practices and provide access to markets . “The objective from the start is to achieve a combination of hard infrastructure, transport and logistics services, institutional instruments and community involvement that results in broad-based development of unrealised economic potential” (Hope and Cox 2015). They include activities necessary for trade, investment and development in a comprehensive and diverse manner. The reason they may not yet be ‘development corridors’ is because they are frequently planned with economic benefits in mind, paying only limited attention to environmental and social impacts. They may have a number of secondary transport spurs or support infrastructure to increase connectivity. They may potentially integrate into road and rail networks that connect regions, countries and centres of supply and production (such as manufacturing hubs, factories, industrial clusters and economic zones) with centres of demand (such as major urban and industrial nodes). Examples include the Beira Development Corridor, the Southern Agricultural Growth Corridor of Tanzania (SAGCOT) (see Chapter 9 and 10) and the Maputo Development Corridor (MDC) (see Chapter 15).</p>
<p>Ecological corridors (e.g., wildlife or green infrastructure):</p>	<p>Linear features to maintain connectivity and protect biodiversity, gene and ecological processes. The International Union for the Conservation of Nature (IUCN) defines ecological corridors as “clearly defined geographical spaces that are governed and managed over the long-term to maintain or restore effective ecological connectivity” (IUCN 2019). Where natural processes are interrupted, artificial alternatives may be provided (e.g. bridges, ladders, underpasses, tunnels), to maintain ecological functions between natural zones. Sometimes, this is done with specific species in mind and this is particularly important for ensuring gene pool mixing, important areas to access feeding and breeding areas, maintaining contiguous units within protected areas or connections between roosting and foraging areas and so on. Ecological corridors can reduce the risk of mortality to both humans and wildlife from road and rail traffic accidents. When planned in harmony with other corridor projects they can be an integral part of a development corridor (see Chapters 14 and 17) (Asia Development Bank 2019).</p>
<p>Development corridors:</p>	<p>These are identified as priorities for investment to catalyse economic growth and development. They should be developed with multiple stakeholders and sectoral (social, economic and environmental) interests and interdependencies in mind (see Chapters 6, 9, 11, 13 and 18). With the integration of sustainability principles and appropriate environmental and social standards, development corridors could become true ‘(sustainable) development corridors’. They require collaboration and coordination for effective implementation. Development corridors are currently largely aspirational.⁷</p>

Note: The labels are not mutually exclusive and many corridors will have elements of each.

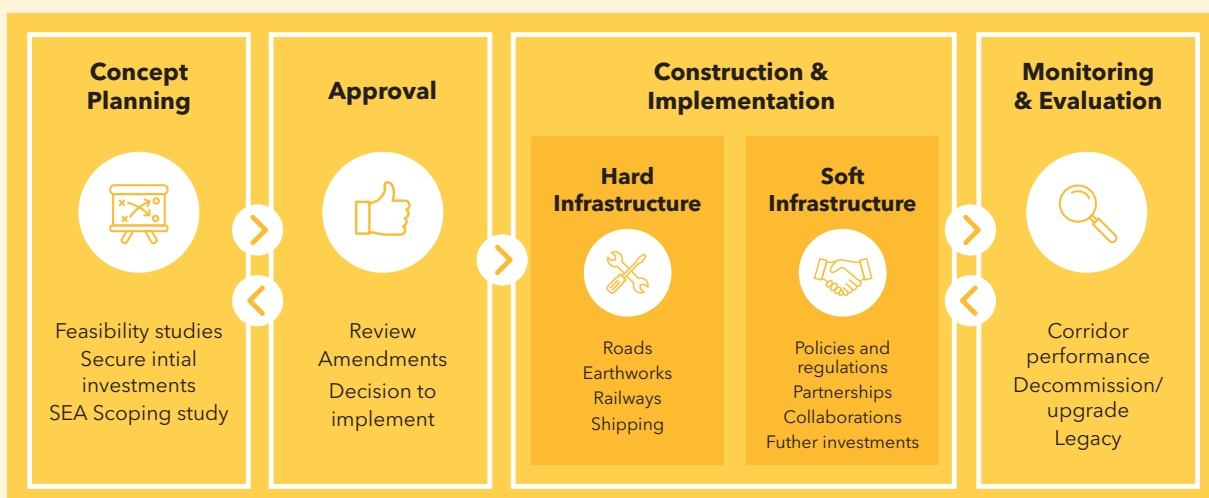
⁷ Many other corridor types and labels exist, ranging from maritime corridors, transboundary or transnational corridors, military and political buffer/access zones (e.g. the long-standing Caprivi strip, Namibia), cordons (e.g. livestock veterinary cordon fences, Botswana) and so on.

BOX 1 - KEY PHASES COMMON TO ALL DEVELOPMENT CORRIDORS

(Adapted from Juffe-Bignoli et al. 2021)

The Development Corridors Partnership Project (see [Chapter 23](#)) identified four broad phases that are common to an ideal development corridor process (Fig. 1.1). These phases apply to the corridor as a whole and aim to ensure systematic and comprehensive assessment of the development strategy with all its associated projects. These corridor phases are described below.

Figure 1.1 Main phases of a development corridor.



- 1. Concept planning:** The aim of concept planning is to determine whether the proposed development corridor in a country or region is economically, social and environmentally viable. This is often led by government agencies and financial institutions. When an agreement is reached, feasibility and scoping studies are conducted, initial projects are identified, initial stakeholder consultations take place, and initial investments are secured, ideally conducted under a Strategic Environmental Assessment (SEA) framework. While SEA is recommended for the corridor, specific project level surveys, baseline assessments, feasibility studies, and Environmental Impact Assessment (EIA) should be conducted for each of its component projects, following the laws and regulations of the countries where they are implemented and complying with the standards and procedures required by lenders. Risks and potential significant social and environmental impacts should be identified, and plans made for minimisation, restoration, and compensation. Impact assessment should include direct, indirect, and cumulative impacts (Juffe Bignoli et. al 2021) and apply the mitigation hierarchy framework (see [Chapter 4](#)).

2. **Approval:** Approval to undertake the initiative occurs when assessments (e.g., scoping, feasibility or SEA reports) and plans developed in the first phase should be scrutinised for compliance with legal and lender requirements. If some changes are required, the process could come back to phase one (concept planning). If the initiative is not approved the programme is put on hold or reformulated.
3. **Construction and implementation:** Implementation involves the construction of the projects that form the development corridor. Implementation may last for many years or constantly evolve as operational projects are decommissioned or closed, others are expanded or upgraded, and new projects are proposed and developed. This phase is coordinated by designated authorities which could be a new or an existing institution (e.g., Lamu Port, South Sudan, Ethiopia Transport corridor (LAPSSET) is coordinated by the LAPSSET authority). Agreed design and plans are implemented through hard and soft infrastructure supported by further investment. Hard infrastructure refers to physical projects that compose the corridor, implemented sequentially or at different times (e.g., a road to a mined area, a dam, or railway). Soft infrastructure refers to the policies, regulations, partnerships and collaborations, including capacity building, need to facilitate implementation of the development corridor.
4. **Monitoring and evaluation:** This phase involves tracking the economic, social, and environmental performance of the development corridor and its individual projects. Evidence of positive and negative impacts is documented as in post development audits. Monitoring and evaluation is led by designated corridor authorities and lenders and government agencies of individual projects and it starts at the construction and implementation phase. During monitoring and evaluation it can be assessed how well the predictions and recommended management measures perform in practice and apply the necessary corrections.

1.4.6 From infrastructure to development corridors

Infrastructure developments have traditionally been planned as single-purpose projects in utility or transport 'corridors' dedicated to a specific anchor project, with a narrow focus on objectives. They are designed to provide a core service (e.g. electricity reticulation, transport links or oil pipelines). They have characteristically been developed to minimize construction and eventual operating costs and follow 'routes of least resistance' between two or more nodes (i.e. the most direct and technologically feasible route, within the bounds of topography and, increasingly, community resistance). They tend to be planned on a project-by-project basis. Over time, they are likely to bring about significant changes to land use, natural resource management, settlement patterns and market dynamics, whether intended or not.⁸ (See [Chapter 20](#), which considers a railway project serving an iron ore anchor project in Brazil that included incremental 'shared use' options that were not adequately assessed for their implications.)

Resource corridors are often associated with 'anchor' projects such as a new mine (i.e. infrastructure needs are particularly extensive for low-value, high-volume commodities such as iron ore, coal, copper etc.; see [Chapters 4 and 20](#)). Potential development opportunities beyond mines' immediate needs have usually not featured highly on planners' agendas. Infrastructure development for exclusive use by the extractive industry does not necessarily contribute to diversification and industrial development, and needs to be planned. It is not unusual for mine-related infrastructure to serve the exclusive use of an operator and without consideration of potential 'co-benefits' for communities (IISD 2017) (see [Chapter 7](#))

or 'shared benefits' with other companies (Cameron and Stanley 2017) (see [Chapter 20](#)). For example, it is common to see infrastructure developments that bypass communities that do not obtain any benefits from them. For example, people can be prohibited to pass under access-electricity transmission lines to collect fuel wood. In other cases railways convey bulk commodities to a main port while the communities that they by-pass struggle to reach their local markets. This is sometimes for security and safety reasons, but not always.

Individual infrastructure projects will invariably have some development benefits in their own right, but these will be limited if they are coincidental 'spin offs' from a major project. The prevailing situation of 'disjointed incrementalism' or 'muddling through'⁹ is very different to a systematically planned and sequenced development strategy, within which synergies can be devised, multiplied and diversified (see [Chapter 7](#)). Rarely is the full range of development opportunities systematically investigated at the conceptual stage of corridor planning. Instead, the level of environmental and social assessment for non-core components (such as infrastructure) may be cursory and overshadowed by the needs of the assessment of the main anchor project (see [Chapter 3](#) and [12](#)). There are some exceptions (see [Chapter 9](#)). Development corridors should aim to provide benefits far beyond those that any single infrastructure corridor project can deliver. Table 1.2 shows key areas in which development corridors differ from more rudimentary transport, infrastructure corridors.

8 Although they may range in scale from small to mega-projects, this does not necessarily equate with scale of impact. For example, a 765kV electricity powerline is clearly of greater magnitude than a 44kV electricity distribution line. The latter may, however, pose a more significant electrocution threat to birds with a large wingspan, because the distance between live conductors on the poles used by these birds may be more easily bridged. On the larger transmission line, the distances may mean that it is impossible for them to cause electrocution and thus will be no significant threat.

9 A pattern of planning decision-making, identified by the American political scientist Charles Lindblom, in which decisions are taken step by step, as a problem unfolds (Lindblom 1959).

Table 1.2 Differences between 'infrastructure' and 'development' corridors

Infrastructure corridors	Development corridors
Narrow focus on single infrastructure	Broad framework for multiple and diverse investments
Relatively short-term focus on output	Long term focus on outcomes
Linked to specific anchor project's needs	Linked to National/Regional policies/plans/programmes
Area of influence well defined	Area of influence potentially expansive and more flexible
Piecemeal, ad hoc, incremental approach	Strategic, sequenced, and structured approach
Limited range of alternatives	Flexibility in considering diverse alternatives
Project-specific scale	Regional/Landscape scale
Linear decision-making process	Iterative decision-making process
Sector-specific planning priorities	Cross sector dialogue and planning needed for consistency
Weak political engagement, usually private sector or parastatal lead	Potentially led by public sector and potentially corridor programme management entity
Suited to project EIA processes	Suited to plan and programme SEA processes

The process of sequencing developments within corridors has environmental risks, as well as benefits. A poorly planned process could lead to undesirable secondary, synergistic or cumulative impacts (see [Chapter 20](#), [21](#) and [22](#)). One individual project may have limited negative impacts on its own, but it may set a precedent for numerous additional projects that in combination and, over time, may result in significant adverse cumulative impacts and undesirable land use changes. Single-purpose corridors must be planned sensitively, keeping in mind the possibility that they may become complex and diverse corridors in the future (see [Chapter 17](#)).

As the title suggests, the underlying thesis of this publication is that, where they are justified, there are significant benefits in ensuring that single (or limited) purpose infrastructure developments progress through a carefully planned sequence of diversification and expansion to ensure maximization of benefits in 'development corridors'.

1.4.7 Environmental assessment terminology

The linear nature of corridors means that there are many unique characteristics that are not present in non-linear investments that require adaptation of impact assessment methods and techniques. Throughout this publication, environmental assessment (both Strategic Environmental Assessment [SEA] and Environmental Impact Assessment [EIA] and their various derivatives) is recognized as the critical requirement to ensure corridors are planned to be more economically, socially and environmentally sustainable. To assist the DCP partners, a quality assurance tool for EIA and SEA was provided to help evaluate both the process and content of assessments that have been reviewed. Here, we offer only a brief overview of the key terminology applicable to planning and assessment. Some of these terms also have a variety of applications, and are sometimes used interchangeably, so we give a general overview on how they are used in this publication.

Environmental assessment (EA) is the ‘umbrella’ term used for all levels of assessment (policy, programme, plan and project). The term ‘impact assessment’ may also be used in the same generic way. The objective of all EAs is to ensure that quality environmental information is provided in a timely way so that it can be effectively used in decision-making processes, initially to decide whether or not a proposal should proceed, and if so, under what conditions. A corridor programme will characteristically have multiple and diverse sub-projects, all of which must be assessed – both cumulatively and independently. Fig. 1.1 shows conceptual diagrams of (1) the decision-making hierarchy and (2) inclusion of the points of application of key different but related assessments.

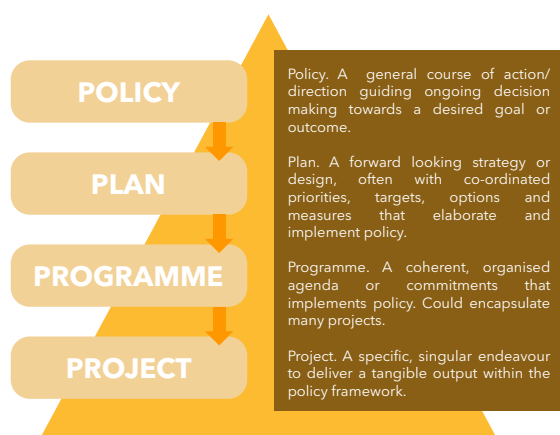
A point of contention in EA has been its scope, whether confined to effects on the physical environment or inclusive of effects on the social and economic dimensions. Some of the earliest EIAs were criticized for their scope being limited to the natural environment. This has been addressed by clarifying that the term ‘environment’ should refer to the physical, biological, social, economic and cultural components and surroundings and recognition of their interdependencies in a holistic sense. Increasingly, the importance of governance is also being recognized and

included. Nonetheless, some practitioners consider it important to add and emphasise ‘social’ after ‘environmental’ assessments, and others have promoted stand-alone social impact assessments (SIAs) (among many other topic-specific derivative assessments). [Chapter 19](#) makes a strong case for this, as well as separate human rights assessments, and indicates that one country, Mongolia, has legislated for separate SIAs (see also [Chapters 6, 11, 13](#) and [19](#)). In this publication, ‘environment’ is generally defined holistically, because any EA (SEA or EIA) that does not address all dimensions of ‘environment’, and the interplay and potential trade-offs between them, would not be an adequate assessment. However, we do not preclude the need for separate assessments if warranted by specific circumstances. The important requirement is that, in the final analysis, the assessment process must always include an integrated consideration of all facets. Recognition of this need for interdisciplinarity in corridor assessment processes is a fundamental recommendation of this publication¹⁰ (see [Chapter 24](#)).

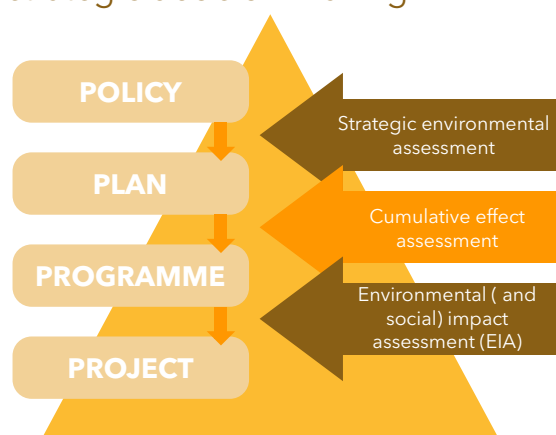
EIA and SEA are the two main procedures under the EA umbrella. They are applied to the decision-making hierarchy in a *tiered* fashion.

Figure 1.2 Decision-making hierarchy and the role of SEA/EIA

The Decision Making Hierarchy



Incorporating the environment into strategic decision-making



¹⁰ The key definitional reference used here is the internal report prepared by the Multilateral Financial Institutions Working Group on Environment: “A Common Framework for Environmental Assessment”. This was developed in 2005 as a note to guide International Finance Institutions in good practice and to promote convergence and harmonization among international finance institutions, bilateral aid agencies, export credit agencies and so on on institutional requirements, processes and practices for EA of their public and private sector interventions. This work informed the development of policies, procedures and Performance Standards of IFI’s (see [Chapter 4](#)).

EIA: (i.e., Environmental and Social Impact Assessment) The International Association for Impact Assessment (IAIA) defines EIA as “a procedure of identifying, predicting, evaluating and mitigating the biophysical, social and other relevant effects of proposed projects and physical activities prior to major decisions and commitments being made” (IAIA/IEA 1999).¹¹ An EIA process is designed to provide decision makers with sufficient information upon which to base their decisions. The systematic process for examining the environmental and social consequences of a proposed activity is outlined below and culminates in a report (or statement) on whether or not to permit the development to proceed.

EIA involves several components. *Procedures* (sequenced requirements for carrying out an EIA, which may be detailed in legislation) and *methods*¹² (matrices, checklists, network analysis, environmental flows, overlays [particularly valuable in assessing linear developments]. In addition also *checklists*, multi-criteria analysis, delphi, among others) to clearly identify, predict, assess and communicate, impacts, their significance, and to evaluate alternatives, and achieve consensus among disparate groups) and *techniques* (to understand and explain specific effects and their projected consequences (e.g. air and

water quality modelling, livelihoods analysis, ecological services and environmental flows analysis etc.).

The EIA process generally follows a linear sequence of steps, as shown in Table 1.3. This process is likely to be fluid as new information emerges.

Meaningful and inclusive public participation is fundamental to the EIA process. This should be built on an understanding of interested and affected stakeholders based on stakeholder mapping and analysis to ensure inclusion of disadvantaged groups (see Chapters [7](#), [12](#), [14](#) and [20](#)). A distinction must be drawn between interested and affected people, to ensure that the stakeholders with a legitimate mandate are engaged (Hobbs 2020). Increasingly, the concept of a social license to operate (SLO) is being explored to give communities rights of veto over proposals they consider unacceptable. This right is currently limited to indigenous peoples and is germane to corridors when they encroach into areas such as the Amazon (see Chapters [6](#), [11](#) and [13](#)).

As several authors note, the extent to which the EIA process and EIR actually impact eventual decisions is variable (see Chapters [3](#) and [13](#)).

11 The terms and acronyms EIA and ESIA are used interchangeably but EIA is the term more commonly used in legislation and is therefore favoured here.

12 Organized, systematic and interdisciplinary approaches to identify, predict and assess impacts to ensure that currently unquantified values are given appropriate (and weighted) consideration, alongside economic and technical considerations.

Table 1.3 Generic steps in the Environmental Impact Assessment process

Step	Description of step	Undertaken by
1. Screening	Determines if an assessment is required and the level of detail necessary if it is. It is likely that most corridor developments will require a full, comprehensive (rather than a 'rapid' or 'initial' EIA (see Chapter 18)). Initial studies will determine the broad context and nature of the proposal, location (or route) options, scale and zone of influence, key stakeholders, justification for the proposal, initial indications of significant and potential for cumulative impacts and the general compatibility of the proposal with any prevailing strategic priorities, such as those generated by an earlier SEA etc. This will help develop parameters (resource needs, timeline, and Terms of Reference for commissioning consultants to undertake a more detailed process). Any immediate 'fatal flaws' will signal a need to reject the proposal (see Chapter 3).	Government authority
2. Assessment	A detailed assessment and prediction of the consequences of 'significant' impacts. During both the scoping and assessment phases an important requirement is the identification and consideration of the effects of alternatives that would achieve the same functionality and objectives in different ways (locational, technological, scale, timing, design, procedural etc.). For corridors, this will include assessing alternative routes. The 'no go' option should be one of the alternatives considered. The identification of the significant consequences of each alternative will help identify preferred options based on social, economic and natural environment considerations. Measures that could be used to avoid, minimize and offset significant adverse impacts and maximize positive opportunities for co-benefits will be included.	
3. Scoping	Determines and prioritizes more detail on key issues to be addressed (often involving specialists' technical input, but also the views of those potentially directly affected by the proposal). It will also indicate the information needed, the geographical area to be covered, the stakeholders to engage, the alternatives to be considered in more detail and the level of analysis required to adequately assess predicted impacts and compliance needs with prevailing laws, policies, standards, etc. Dialogue with all stakeholders will take place as an ongoing process. Baseline information will identify the key suitability and sensitivity criteria associated with the proposal and its location and any necessary additional research required to fill in information gaps (see Chapter 5).	Delegated authority: Consultants in the employ of the proponents (and investors and lenders if appropriate)
Environmental impact report (EIR) or environmental impact statement (EIS) And (draft) Environmental Impact Management Plan. (EMP)	Concludes the assessment process. Initially, a set period allows for adequate public comment on the findings and recommendations laid out in the draft EIR (the substance of the report and adequacy of the procedures follow). The EIR will recommend appropriate measures to ensure compliance with the conditions of approval in an environmental management plan (EMP). The formulation of the EMP will begin during the EIA process but, given that the proposal may be rejected, not in great detail. This is necessary to provide assurances that the identified negative impacts will be adequately managed, and positive opportunities enhanced. The EIR will indicate how to incorporate the necessary measures into project design and implementation, and they will be modified and developed as necessary. The EMP will include compliance registers, action plans and so on to address specific issues: a biodiversity action plan, community engagement action plan, resettlement plan, grievance mechanisms and so on, against which the project's development should be monitored and audited. An EMP may include the need for additional studies that were not considered necessary to resolve before a decision on approval or rejection of the proposal was reached	
4. Review and formal approval	A process that will result in a decision to proceed or not; and, if the former, under what conditions.	Accountable agency (and other decision makers)

Key failings of many EIA processes evident in the chapters of this publication include:

- » Failure to do an SEA or EIA in spite of EIA (and, increasingly, SEA too) being a legal requirement in many countries.
- » Failure to prioritize issues to be addressed (achieved by the interpretation of 'significance' by both technical, scientific experts, and interested and affected stakeholders). This results in either skeletal or encyclopaedic reports that are of little value to decision makers.
- » Lack of balanced assessments and partiality of consultants who favour the interests of their sponsors (the proponents).
- » Impartiality of the approving agency.
- » Inadequate definition of sphere of influence and consequent failure to identify induced impacts - secondary or delayed - outside the immediate project area (e.g. a corridor may open access to new resource exploitation possibilities; access roads and quarries needed for construction of a major infrastructure project may be omitted.)
- » Failure to analyse cumulative impacts, that is, the combined impacts of a number of projects implemented over a period of time. This is a failing particularly germane to corridor developments.
- » Dismissal of associated facilities as insignificant when assessing a megaproject.
- » The lack of capacity to implement and monitor the conditions of approval.
- » Failure to have influence and impact on decision makers.
- » In both EIA and SEA, a tendency exists to consider the product (a report) as the objective. The inclusive and transparent process that results in the final product is equally important.

In spite of the failings of EIA, it is the general consensus of this publication that the tool is the best we have. It is not necessarily the failure of EIA per se, but that of decision makers and developers to understand EIA's importance in helping improve the quality of their decisions (see [Chapter 3](#)). This makes evaluation of the capacity and performance of implementing agencies in dealing effectively with anticipated impacts an important and integral requirement in EA processes. If there is limited capacity or 'political will' to implement the EIA's recommendations, this deficit needs to be addressed.

SEA (i.e., strategic environmental and social assessment, sustainability appraisal) it mainstreams and upstreams environmental considerations into the decision-making hierarchy (See Fig. 1.3). As mentioned earlier, the critical distinction between SEA and EIA is in their respective 'entry points'. The Organisation for Economic Co-operation and Development (OECD) Development Assistance Committee SEA task team defined SEA as "a range of analytical and participatory approaches that aim to integrate environmental considerations into policies, plans and programmes" (as opposed to EIA's focus on projects) and evaluate the interlinkages between multiple sub projects with social and economic considerations. (Organisation for Economic Co-operation and Development 2006.) The latter qualification has led some authors to offer the term 'Sustainability Appraisal' as more relevant alternative to the label SEA (Dalal-Clayton and Sadler 2014).

Figure 1.3 Corridor planning in the decision-making hierarchy

Corridor planning in the decision-making hierarchy

PLAN	Broadly defined corridor to link sectors, regions, and countries as part of national development strategy (related to a national policy). Infrastructure needs are defined. May not have geographical expression at this stage.
PROGRAMME	Investment programmes for specific area or sector based on the above strategy. Alternative types and routings are considered (e.g. Road or rail).
PROJECT	Concrete projects implement the above. Extract routes are defined and technology choices decided.
A corridor may be totally new or build on/upgrade existing facilities	

Policies are developed at the initial stages of planning (and are the pinnacle of the decision-making hierarchy). They establish the frameworks, principles and priorities that will guide the plans and programmes that will put the policies into effect. SEA is a tool to help develop and assess such policies for their sustainability characteristics. Numerous projects (such as infrastructure investments) will then implement them (and must be subject to detailed EIA procedures). The aggregation of such projects leads to a corridor.

SEA allows for stakeholder participation early in the strategic and conceptual stages of the decision-making process. Too often, community engagement in projects is left until the project appraisal stage (EIAs). It, therefore, effectively limits attention to mitigation of anticipated negative impacts and precludes debate on fundamental strategic choices. This is a recipe for antagonism, misunderstanding, lack of trust and conflicts. SEA, through its early engagement in strategic decision-making, can help ensure that environmental (and social) impacts are not left as an afterthought in corridor planning. Engagement at the strategic stage allows greater flexibility in considering alternatives

in contrast to projects that have been already well defined and in which investments already made. For example, a corridor based upon fossil fuel extraction will have already passed the stage of feasible consideration of whether or not fossil fuel extraction is a priority for the sustainable development of a country. The assessment will be limited to the risks and opportunities of fossil fuel-based corridor projects per se, not the principle of them (see [Chapter 8](#)).

An important tool that is used in SEA is scenario planning (see [Chapter 12](#)). This tool systematically considers a variety of futures and helps identify a strategy to achieve a preferred option, preferably with the least ecological and social stresses involved. Planners and decision makers, once they understand the range of future possibilities, can then steer developments in the preferred direction, while taking account of trends that dictate the need for building in resilience of plans, programmes and projects to possible political, technology and environmental changes (see [Chapter 10](#)).

Two approaches to SEA exist, with differentiating general entry points:

'Policy-oriented' SEA that helps to develop or evaluate policies and their eventual plans and programmes. This will assess development (of new) or review (of existing) policies and will enable policymakers to better integrate a sector or policy priority into the long-term vision of the sustainable development of a country (see Chapters [2](#) and [20](#)).

'Impact-centred SEA', which tends to upstream basic EIA procedures to the strategic level and is closely aligned to regional and land use planning, thereby having a physical manifestation not necessarily exhibited in policy-oriented SEA in (1) above.

SEA can therefore have a spatial emphasis (regional assessment) (see [Chapter 8](#)), or policy sectoral assessment (see [Chapter 22](#)). Impact-centred SEA is the most commonly used form, especially when applied to corridors. This is because there are few

specific corridor policies, per se. Other policy priorities drive corridor developments (such as the 'policy drivers' referred to earlier (regional integration, inward investment etc.). Corridors are a means to an end (policy attainment), not a policy in their own right. In the case of corridors, a plan or programme will be implementing a policy or policies.

Finally, SEA is a governance tool. Placing corridors in a strategic plan or programme requires an institution with the capacity to manage the process. As with EIA, some agencies add 'institution-centred' before the term SEA to emphasize the governance need and the futility of making recommendations if there is limited capacity to manage a corridor development programme. Several of the programmes discussed in the publication have established corridor authorities to manage implementation of specific corridor programmes (e.g. SAGCOT in Tanzania, LAPSSET in Kenya).



1.5 Conclusion

Corridors are, by design, transformational developments. This publication highlights the urgency for better planning and management of corridors and postulates some of the good and bad transformations that they will potentially bring about.

The international benchmarks for the necessary environmental and social Performance Standards (including Environmental Impact Assessment requirements) have been well developed by international financial institutions (see [Chapter 4](#)). Their effective use is increasing, but it is still largely limited to developments in which international financial

institutions are directly engaged and exercise their due diligence.

The entry of relatively new actors in corridor initiatives (such as the BRI) and the current post-pandemic recovery and consequent growth in interest in corridors has increased not only the challenges but it has also created opportunities. A window of opportunity exists for renewed and urgent effort to ensure greater uptake of the appropriate standards. In the final chapter, we recommend some fundamental principles needed for effective corridor design, planning and implementation.



Image credits: Jon Hobbs

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