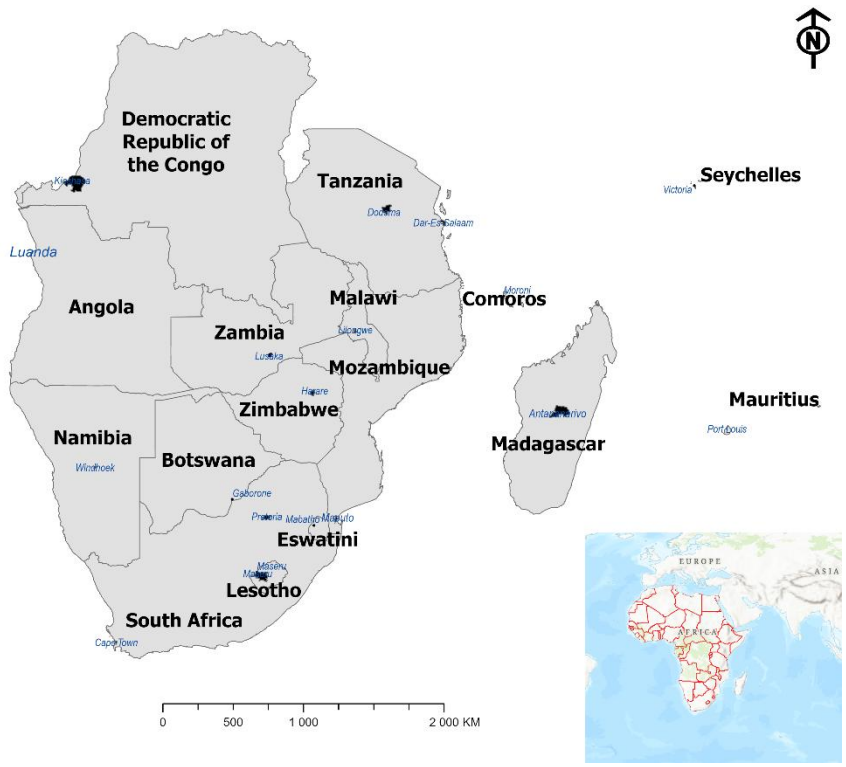
SADC Strategic Environmental Assessment (SEA) and Environment and Social Impact Assessment (ESIA) Guidelines 2025



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Acronyms

AMCEN	African Ministerial Conference on the Environment
BA	Basic Assessment
CEO	Chief Executive Officer
CITES	Convention on International Trade in Endangered Species
CIA	Cumulative Impact Assessment
DBSA	Development Bank of Southern Africa
DFI	Development finance institution
DG	Director General
DRC	Democratic Republic of Congo
EA	Environmental Assessment
EAC	East African Community
ECO	Environmental Compliance Officer
ECOWAS	Economic Community of West African States
EIA	Environmental Impact Assessment
ESIA	Environmental and Social Impact Assessment
EIS	Environmental Impact Statement
EMP	Environmental Management Plan
EMS	Environmental Management System
EO	Environmental Officer
ESMP	Environmental Social Management Programme
GIS	Geographic Information Systems
IA	Impact assessment
IAIA	International Association for Impact Assessment
IMF	International Monitory Fund

ICT	Information and Communication Technology
NAPA	National Adaptation Plan of Action
OECD	Organisation for Economic Co-operation and Development
SADC	Southern African Development Community
SAIEA	Southern African Institute for Environmental Assessment
SDGs	Sustainable Development Goals
SEA	Strategic Environmental Assessment
SSA	Sub-Saharan Africa
UN	United Nations
UNEP	United Nations Environmental Programme
UNFCCC	United Nations Framework Convention on Climate Change

Definitions and Use of Terms

In this document, unless the context otherwise requires, the terms and expressions defined in Article 1 of the SADC Treaty and the Environmental Protocol (2014) shall bear the same meaning.

"biodiversity or biological diversity" means the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part: this includes diversity within species, between species and of ecosystems;

"biological resources" means genetic resources, organisms or parts thereof, populations or any other biotic component of ecosystem with actual or potential use or value for humanity;

"biosafety" means the protection of biological diversity from the potential risks posed by living and genetically modified organisms resulting from modern biotechnology;

"biotechnology" means any technological application that uses biological systems, living organisms, or derivatives thereof, to make or modify products or processes for specific use;

"bush encroachment" refers to the conversion of a grassland-dominated vegetation type to one that is dominated by woody species, as well as increasing woody plant density;

"climate change" means a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods;

"Committee of Ministers" means the committee of Ministers responsible for environment matters;

"Committee of Senior Officials" means the committee of senior Officials responsible for environment matters;

"cradle to grave principle" means a product's life cycle and performance from creation to disposal;

"cultural heritage" includes monuments: architectural works, works of monumental sculpture and painting, elements or structures of an archaeological nature, inscriptions, cave dwellings and combinations of features, which are of outstanding universal value from the point of view of history, art or science; groups of buildings: groups of separate or connected buildings which, because of their architecture, their homogeneity or their place in the landscape, are of outstanding universal value from the point of view of history, art or science; and sites: works of man or the combined works of nature and man, and areas including archaeological sites which are of outstanding universal value from the historical, aesthetic, ethnological or anthropological point of view;

"desertification" refers to the process of land degradation in arid, semi-arid and dry sub-humid areas, resulting from various factors, including climatic variations and human activities;

"ecosystem" means a dynamic system of plant, animal and micro-organism communities and their non- living environment interacting as a functional unit;

"environment" means the entire range of living and non-living factors that influence life on the earth and their interactions;

"environmental economics" refers to a branch of economics that deals with the impacts of interaction between man and nature and finds human solutions to maintain harmony between man and nature;

"environmental goods and services" refers to ecological services rendered to humanity by the natural environment in the form of life supporting systems or biodegradation of waste products;

"environment assessment' refers to a procedure that ensures that environmental implications of decisions are taken into account before decisions are made;

"environmental indicator" means a parameter, or a value derived from parameters, that points to, provides information about or describes the state of the environment, and has a significance extending beyond that directly associated with any given parametric value and includes indicators of environmental pressures, conditions and responses;

"eutrophication" refers to the process whereby nutrients accumulate in a body of water, which process is often accelerated by nutrient-rich discharges from agriculture or sewerage, leading to a rapid and excessive growth of algae and water plants and undesirable changes in water quality;

"evaluation" refers to the process of determining the worth or significance of a development activity, policy or program to determine the relevance of objectives, the efficacy of design and implementation, the efficiency of resource use, and the sustainability of results;

"extended producer responsibility" refers to actions which extend a person's financial and physical responsibility of a product to a post-consumer stage of the product and includes, waste minimisation programmes, financial contributions to any fund that has been established to promote the minimisation, recovery, re-use and recycling of waste; awareness programmes to inform the public of the impacts of waste emanating from the product on human health and the environment and any other measures to reduce the potential impacts of the product on the human health and the environment;

"Genetically Modified Organism (GMO)" means an organism whose genome has been engineered in the laboratory in order to favour the expression of desired physiological traits or the production of desired biological products;

"hazard" means a source of or exposure to danger;

"hazardous chemical" refers to a chemical substance that poses a threat to human health and the environment. Hazardous chemicals may be toxic, corrosive, ignitable, explosive or chemically reactive;

"hazardous waste" includes waste that is poisonous, corrosive, noxious, explosive, inflammable, radioactive, toxic or harmful to human health and the environment;

"international environmental instrument" refers to any international agreement, declaration, resolution, convention or protocol which relates to the management of the environment;

"invasive alien species" refers to plants, animals, pathogens and other organisms that are non-native to an ecosystem, and which may cause economic or environmental harm or adversely affect human health. In particular, they impact adversely upon biodiversity, including by contributing to the decline or elimination of native species - through competition, predation, or transmission of pathogens - and the disruption of local ecosystems and ecosystem functions;

"land degradation" means reduction or loss, in arid, semi-arid and dry sub-humid areas, of the biological or economic productivity and complexity of rain-fed cropland, irrigated cropland, or range, pasture, forest and woodlands resulting from land uses or from a process or combination of processes, including processes arising from human activities and habitation patterns, such as: soil erosion caused by wind or water; deterioration of the physical, chemical and biological or economic properties of soil; and long- term loss of natural vegetation;

"management plans" means courses of action for ensuring that undue or reasonably avoidable impacts of an intervention are prevented or minimised and monitored while the positive benefits are enhanced;

"monitoring" means the collection, compilation and analysis of information on the environment and related activities;

"natural heritage" means natural features consisting of physical and biological formations or groups of such formations, which are of outstanding universal value from the aesthetic or scientific point of view; geological and physiographical formations and precisely delineated areas which constitute the habitat of threatened species of animals and plants of outstanding universal value from the point of view of science or conservation; and natural sites or precisely delineated natural areas of outstanding universal value from the point of view of science, conservation or natural beauty;

"natural resource" means material source of wealth, such as fauna and flora, fresh water, mineral deposits, that occurs in a natural state and has economic value;

"natural resources economics" means a branch of economics that deals with the supply, demand, and allocation of the earth's natural resources with the objective of better understanding the role of natural resources in the economy in order to develop more sustainable methods of managing those resources and ensure their availability to future generations;

"natural resource accounting" refers to an accounting system that deals with stocks and stock changes of natural assets, comprising biota (produced or wild), subsoil assets (proved reserves), water and land with their aquatic and terrestrial ecosystems;

"persistent organic pollutants" means chemical substances that persist in the environment, bioaccumulate through the food web, and pose a risk of causing adverse effects to human health and the environment;

"precautionary principle" refers to the principle which states that where there are threats of serious or irreversible damage to the environment, lack of full scientific certainty shall not be used as a reason for postponing cost effective measures to prevent environmental damage;

"pollution" means any direct or indirect alteration of the environment caused by the introduction of any substance or condition as to cause an actual or potential danger to human health and the environment;

"Protocol" means this instrument of implementation of the SADC Treaty and includes any Annex, Amendment or extension thereof which forms an integral part of this Protocol;

"Public Private Partnership" means a contract between a public sector institution and a private party, in which the private party assumes substantial financial, technical and operational risk in the design, financing, building and operation of a project;

"SADC Region" means the geographic area of the Member States of SADC;

"salinisation" means an increase in salt concentration in an environmental medium, such as water and soil;

"Sanitary and Phytosanitary (SPS) Measures" means measures to protect humans, animals, and plants from diseases, pests, or contaminants. These apply to all sanitary (relating to animals) and phytosanitary (relating to plants) measures that may have a direct or indirect impact on international trade;

"subsidiary instrument" means an agreement entered into by two or more Member States in accordance with, and for the purposes of achieving the objectives of this Protocol;

"surveillance" means the monitoring and supervision of environmentally related activities to ensure compliance with control measures;

"sustainable development" refers to development that meets the needs of the present without compromising the ability of future generations to meet their own needs;

"sustainable trade and investment" refers to trade and investment that places sustainable development at the centre of its decision-making processes;

"State Party" means a country that has ratified or acceded to this Protocol;

"the polluter-pays principle" refers to a principle according to which the polluter bears the full social and environmental costs of avoiding, mitigating, or remedying damage done to society or the environment;

"traditional knowledge" means knowledge and skills that people in a given community have developed over time, and continue to develop. It is based on experience, often tested over centuries of use, adapted to local culture and environment, dynamic and changing and forms the basis for decision making;

"transboundary" means traversing from an area under the national jurisdiction of one State to or through an area under the national jurisdiction of another State to or through an area not under the national jurisdiction of any State, provided at least two States are involved;

"waste" means substances or objects which are disposed of or are intended to be disposed of or required to be disposed of.

1. Background and Justification

The Southern African Development Community (SADC) is a Regional Economic Community comprising 16 Member States, namely, Angola, Botswana, Comoros, Democratic Republic of Congo, Eswatini, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Tanzania, Zambia, Zimbabwe. Established in 1992, SADC is committed to **Regional Integration** and Poverty Eradication within Southern Africa through economic development and ensuring peace and security.

The SADC regional integration Agenda and Vision is premised upon the realization "of a common future, a future in a regional community that will ensure economic wellbeing, improvement of the standards of living and quality of life, freedom and social justice and peace and security for the peoples of Southern Africa. This shared vision is anchored on the common values and principles and the historical and cultural affinities that exist between the peoples of Southern Africa ". The integration agenda is also underpinned by the Mission of SADC, which is "to promote sustainable and equitable economic growth and socio-economic development through efficient productive systems, deeper cooperation and integration, good governance, and durable peace and security, so that the Region emerges as a competitive and effective player in international relations and the world economy.

To guide the integration agenda, SADC developed the SADC **Regional Indicative Strategic Development Plan (RISDP) 2020–2030** as the main guiding framework for implementation of the Regional Integration Agenda. It draws impetus from the organization's Vision 2050, which envisages "a peaceful, inclusive, competitive, middle- to high-income industrialized region, where all citizens enjoy sustainable economic well-being, justice, and freedom". Figure 1 depicts the SADC Region Member States.

The RISDP 2020–2030 is composed of a foundational pillar, three core pillars, and **cross-cutting issues**, cascading down to 24 strategic objectives and 48 key outcomes with the shared ambition of contributing towards SADC Vision 2050. The three core pillars are: (1) Industrial Development and Market Integration, (2) Infrastructure Development in Support of Regional Integration, and (3) Social and Human Capital Development, anchored on a firm foundation of Peace, Security, and Good Governance.

In RISDP 2020–2030, **cross-cutting issues include Gender, Youth, Environment and Climate Change, and Disaster Risk Management.** These issues are central to ensuring that the formulation, deliberation, adoption, and implementation of regional protocols, strategies, policies, and programmes – underpinned by critical existing instruments – is undertaken in an inclusive manner Climate change resilience and the scaling-up of climate mitigation measures is also emphasized as a cross-cutting issue in the RISDP.

In addition, the **SADC Industrialisation Strategy and Roadmap (SISR) 2015–2063**, which is under Pillar 1 of the RISDP, has been adopted as the priority within the Regional Integration process, and aims to promote industrialization, enhance competitiveness, and deepen regional

integration through structural transformation, leading to an increase in manufactured goods and exports.

Figure 1: The SADC Region Countries

The SADC Industrialization Strategy and Roadmap (2015-2063) seeks to achieve economic and technological transformation in the Region, in line with the AU Agenda 2063. It focusses on **agro-processing, blue economy, green economy, circular economy, mineral beneficiation, and pharmaceuticals**. It has been shown over the past two decades that countries (notably in Europe and East Asia) that have managed to reduce poverty and became wealthy nations have done so by heavily investing in supportive infrastructure (this is addressed under Pillar 2 of RISDP "infra-structure development to support regional integration), and diversifying away from dependence on primary commodities, such as agriculture, into high-value manufactured products. Export-led industrialisation processes that took place among the "Asian Tigers", such as Hong Kong, Singapore, Taiwan, and South Korea, between 1970 and 2005, happened on the back of government strategic supportive interventions and concerted efforts aimed at developing value chains (under Pillar 1 of RISDP), starting in light manufacturing sectors such as the agro-processing and leather industries. Over the past 10 years, Malaysia has improved its global competitiveness on the back of comprehensive local value-addition packages of competitiveness enhancement measures.

In summary, international experience has revealed that investing in facilitative infrastructure and promoting value-added light manufacturing and value-added exports contributes to Industrialization. It is in the same vein that SADC developed the **Regional Infrastructure Development Master Plan (RIDMP)**, which calls for specific actions on how to develop infrastructure required to catalyze industrialization, and to develop corridors in addressing issues relating to trade facilitation, non-tariff barriers and movement of skills and innovation. Moreover, The **SADC Regional Agricultural Policy (RAP)**, is another strategic plan which seeks to "define common agreed objectives and measures to guide, promote and support actions at regional and national levels in the agricultural sector of the SADC Member States in contribution to regional integration and the attainment of the SADC Common Agenda". In order to operationalize the RAP, SADC developed a Regional Agricultural Investment Plan (2017 – 2022). Peace and security are necessary preconditions for regional development since instability in one Member State can have an impact on neighboring countries and cause a setback for regional integration. In recognition of this, issues of peace and security remain a top priority for SADC and are clearly articulated and demonstrated in the proliferation of declarations, treaties and protocols aimed at preventing and containing conflicts in the region. The **Strategic Indicative Plan for the Organ (SIPO) on Politics, Defense and Security Cooperation**, whose core objective is to create a peaceful and stable political and security environment through which the Region will realize its objectives of development and economic growth, peace and security, poverty alleviation and enhance the standard and quality of life for the peoples of Southern Africa.

The strategic decisions taken towards Regional Integration, including industrialization and infrastructure development, as well as the current socio-economic development, **calls for an urgent and adequate environmental management process to ensure that the current and expected development is not done at the expense of environment, with significant negative consequences to natural resources, and human population.**

1.1. Global and Regional Environmental Perspective

The world is facing three major environmental crises: biodiversity/nature loss, pollution and waste, and climate change, driven by human activity and unsustainable patterns of development, consumption and production. These unsustainable patterns in mining, agricultural production, infrastructure development, excessive resource consumption etc. could lead to:

- prolonged extreme events such as dry spells conditions, desertification trends, drought, and floods, leading to destruction of infrastructure and land degradation.
- reduced agricultural productivity (crop failures, livestock losses) and food insecurity (grain shortages), exacerbating hunger and malnutrition among vulnerable populations.
- disruption of ecosystems (habitat loss, biodiversity decline, and ecosystem degradation), with far-reaching consequences for ecosystem services, including soil fertility, water regulation, and carbon sequestration;
- socio-economic challenges, including poverty, unemployment, and social inequalities perpetuate vulnerability in communities, particularly those reliant on rain-fed agriculture and natural resources for their livelihoods.

As global economic growth over the last few decades has been rapid and unevenly spread, and sometimes unplanned, could have negative impact on the environment and natural resource base of the planet. In 2018, 91% of all major disasters and 77% of economic losses from natural disasters were attributed to extreme weather events. Human activities have adversely contributed towards major environmental trends, which will increasingly take the form of *inter alia,* diminishing biodiversity levels, the degradation of air and land, a paucity of water, marine pollution, and deforestation. For example, over 90% of the world's population resides in areas where the air pollution levels exceed the World Health Organisation (WHO) threshold. It is further projected that by 2030, the population living under conditions of poverty will rise by 122 million, as the agricultural sector experiences heavy reverses.

The SADC Region is rich in biological resources, some of which have global significance. However, the region is characterized by high levels of poverty that emanate from its inability to effectively plan and manage its biological resource capital for socio-economic development. It is also facing serious environmental challenges that are leading to the loss of its rich biological heritage and ecological processes, compounded by the impacts of climate change and variability.

Agricultural production is a key driver of resource use, and agricultural practices directly affect natural resources and ecosystem services. Agriculture accounts for 72% of freshwater withdrawals worldwide and contributes to water stress (FAO, 2023). Soil degradation, which is the diminishing capacity of the soil to provide ecosystem goods and services, is also worsening due to unsustainable agricultural practices, overgrazing, deforestation and improper land use. At present, most the world's soil resources are in only fair, poor or very poor condition, with 33% of land being moderately to highly degraded due to erosion, salinisation, compaction, acidification, and chemical pollution.

The SADC region also experiences similar soil degradation challenges due to unsustainable agricultural practices. Agriculture contributes about 35 % to the Gross Domestic Product (GDP) of the Member States and over 70 % of employment in the region. Agriculture in the region is an important source of exports, contributing on average about 13 % to total export earnings and about 66 % to the total value of intra-regional trade (FAO, 2022).

Since the SADC region is equally prone to development-related environmental challenges, mitigating strategies must be developed. The SADC Region should therefore address the challenges through among others, the development of adequate and harmonized environmental management tools, including Environmental and Social Impact Assessment (ESIA) and Strategic Environmental Assessment (SEA).

It is against this background that SADC developed the **Protocol on Environmental Management** for Sustainable Development in 2014. The protocol's specific objectives include among others: contributing towards sustainable development through the adoption of sound environmental management principles and procedures; ensuring that sustainable objectives are mainstreamed into trade and socio-economic policies, programmes and plans in the region; promoting trade in environmental goods and services for the development of the economies of the State Parties; facilitate value addition and beneficiation of the region's natural resources to

maximize benefits; enhancing the restoration, rehabilitation and remediation of degraded and polluted environments; promoting complementarity in implementing transboundary environmental management activities; facilitating harmonization of environmental policies, legislation, law enforcement and natural resource governance; monitoring and reporting on environmental trends and implementation of transboundary programmes in the region, including development and implementation of early warning systems and environmental risk assessments; facilitating the development, implementation and coordination of environmental assessment procedures, environmental management instruments and standards; and promoting the use of environmental economics and natural resources accounting in development planning.

The SADC Regional has seen an increase in the number of **cross boundary activities and projects** in the past few years, which has necessitated the need to find common ground in dealing with such projects. Moreover, the region has also grown in terms of socio-economic activities and since environmental issues know no boundaries it has become important for Environmental Practitioners operating within the region to work more closely and align their processes, methodologies, and legislation. The government departments involved in the approval of these projects also need to operate from the same level of understanding and impose similar decision-making processes to enable environmental standardization of all the activities and facilitate private sector engagement and investment.

Moreover, the SADC Infrastructure Vision 2027 is anchored on six pillars as shown in Figure 2. Below and consist of the following.

- Energy,
- Transport,
- Information and communication technologies (ICT),
- Meteorology,
- Trans-boundary water resources and
- Tourism (trans-frontier conservation areas),

Figure 2: The SADC Infrastructure Vision 2027 pillars

These constitute various Environmental projects that we need to deal with across the boundaries by Environmental Assessment Practitioners (EAPs) mostly operating within the SADC Region.

The Southern African Development Community (SADC) region has been coordinating and supporting Member States in infrastructure projects particularly in many areas, including among others environment, transport, building construction and energy sectors. In order to achieve this, SADC must work closely together in strengthening environmental assessment tools (EA to ensure there are legally binding tools for predicting and addressing the negative environmental and social impacts of such projects.

The harmonization of environmental management processes using tools such as ESIA and SEAs in the SADC region is mandated by the SADC Protocol on Environmental Management for Sustainable Development of 2014. Countries in the Southern African Region have legislations on Environmental assessments (EAs); however, these pieces of legislation are dis-integrated and remain weak whilst a silo approach is still so much in existence which result in:

- Weak emphasis on the social environment as part of the broad definition of environment within legislation
- Weak capacities (in relation to social impact assessments) within national environmental laws and management authorities.
- Weak stakeholder consultation, intergovernmental and cooperative governance.
- Absence of simplified tools and processes for environmental assessment.
-
- Weak compliance, enforcement, and monitoring systems.

1.2. Regional Indicative Strategic Development Plan (2020-2030)

As part of the Regional Integration process, guided by the common vision, mission, operationalised by the RISDP and relevant protocols, strategies, plans and policies, it is critical to ensure that measures to better conserve and protect the environment from social and economic activities are harmonized. A framework on environmental management is not only important to ensure coherent, consistent, and impactful actions within the region, as per the Protocol on Environmental Management for Sustainable Development (2014) but equally reduce investment costs and attract the private sector.

It is against this background that the SADC Secretariat is developing the harmonized and integrated ESIA and SEA guidelines for the SADC Region to enhance regional integration. The ESIA Guidelines will be used as a tool to identify the environmental, social, and economic impacts of a project prior to decision-making. It aims to predict environmental impacts at an early stage in project planning and design, find ways and means to reduce adverse impacts, shape projects to suit the local environment and present the predictions and options to decision-makers. In addition, SEA extends the application of environmental and social impact assessment (ESIA) from projects to policies, programs, and plans. SEA is a participatory approach for upstreaming environmental and social issues to influence processes for development planning, decision making, and implementation at the strategic level. By using both ESIA and SEA, environmental and economic benefits can be achieved, such as reduced cost and time of project implementation and design, avoided treatment/clean-up costs and impacts of laws and regulations.

2. SADC Environmental Laws and Regulations on ESIA and SEA

The SADC Region countries have diverse pieces of legislation that have been enacted and are currently being implemented on ESIA and SEA related projects. These legal instruments are at different levels of maturity, with some Member States having developed environmental legislation as far back as 1995 while other states have developed laws 10 years later. This section will discuss the various existing environmental laws on ESIA and SEA within each member state followed by an identification of gaps and discussion on proposed improvements and harmonization opportunities.

2.1. Legal and Policy Requirements for ESIA and SEA

All the SADC Member States have enacted legislation and policies that they are currently utilizing in the management of ESIA within their countries. However, not all the Member States have introduced a range of other environmental management processes like SEA, which is considered one of the most powerful processes that can be used in handling transboundary projects. Table 1 highlights some of the key similarities and differences between an ESIA and a SEA.

SEA shares much in common with project-level Environmental and Social Impact Assessment (ESIA) in that they both aim to minimize the significant environmental impact of a proposed policy, plan, programme or project. ESIA is applied to development projects (e.g. roads, waste-water treatment plants, housing developments) (under statutory instruments) whilst SEA can apply at a higher, or earlier stage in planning such developments (e.g. waste management plans, county development plans). Similarly, whereas the project ESIA usually addresses specific, direct cause–effect relationships between the proposed development and an environmental receptor, a SEA can stand back and look at the broader picture.

Both ESIA and SEA can address cumulative, indirect and multiplier effects if conducted properly. The two processes can also look at alternative means of meeting the same need. Overall, SEA can be more flexible and pro-active in nature whereas project ESIA is more constrained by legal timeframes and the scope of the proposed development that is under scrutiny and is less able to look beyond the scope of the proposed project.

SEA is broader in scope and used for strategic planning. At Project-level, ESIA addresses specific issues and impacts at specific locations. SEAs do not replace project-level ESIAs since project-level ESIAs are necessary to provide detailed analysis. SEA occurs prior to project-level decision making. SEAs are more variable in form and scope than project ESIA wide range of strategic decisions to which SEA is applied from broad policies to specific plans. SEA incorporates a greater scale of analysis (e.g., geographic area, environmental components considered, range of alternatives considered). Technical content and specificity are of less detail in SEA. Impact prediction uncertainties are greater for SEA. SEA may relate to geographical

regions, industrial sectors or social issues. Time scale is more variable in SEA (i.e., ranging from the immediate to the very long term).

The strategic component of a SEA refers to the set of objectives, principles and policies that give shape to the vision and development intentions incorporated in a policy, plan or program. SEAs deal with concepts and goals, not with particular activities. SEAs aim to prevent unacceptable environmental damage. SEA has become an important instrument to help to achieve sustainable development in public planning and policy making. The importance of SEA is widely recognised. Particular benefits of SEA include:

- To support sustainable development;
- To improve the evidence base for strategic decisions;
- To facilitate and respond to consultation with stakeholders;
- To streamline other processes such as Environmental Impact Assessments of individual development projects.
- SEA is a tool for improving the strategic action, not a post-hoc "snapshot". This means that the SEA should be started early, be integrated in the decision-making process, and focus on identifying possible alternatives and modifications to the strategic action. The decision-maker should be involved in the SEA process in some active capacity, to ensure that the SEA findings are fully taken into account in decision-making.
- To fit into the timescale and resources of the decision-making process, SEA should focus on key environmental/sustainability constraints, thresholds and limits. It should not aim to have the level of detail of project Environmental and Social Impact Assessment (ESIA), nor be a giant collection of baseline data which does not focus on key issues. This suggests that a scoping stage is needed to sort out what the key issues are.

Table 1: Summary of ESIA and SEA

ESIA	**SEA**
Assessment focused on the project being implemented	Assessment based on a wider scale
Uses and works within existing Legal Framework	Policy, Programmes, Legal and Institutional assessment;
Require detailed scope/ ToR	Does not require exact project scope/ ToR
Project based	Strategic
Project Development	Scenario development;
Set time-frames for decision-making in line with legislation	No set time-frames allowing for flexibility in decision-making
Risk assessment and management procedures	Risk assessment and management procedures

Cumulative Impacts Assessment	Cumulative effects assessment;
Public Consultation	Public consultation;
Development of a project specific Environmental Management Plan/ Programme	Development of a strategic environmental management plan/ programme.
Involves project alternatives	Involves the establishment of biodiversity zones within proposed area
Typically Proponent Driven	Typically Government Driven
No Exemptions or Exclusions on listed activities/ Categories	Determines Exemptions or Exclusions on listed activities/ Categories
Involves Specialists	Involves Specialists
May involve application fees and penalties	May involve application fees and penalties
Assesses the effect of a proposed development on the environment	Assesses the effect of the environment on development needs and opportunities
Focuses on the mitigation of impacts	Focuses on maintaining a chosen level of environmental quality
Focus on project-specific impacts	Creates a vision and overall framework against which impacts and benefits can be measured
Is reactive to a development proposal	Is proactive and informs development proposals

The legal and policy framework within the Member States is based on various and to some extent differing principles of environmental management. However, the outcome of the projects is expected to deliver an objective decision, which is not always the case.

Effective SEA Systems require Political commitment and organizational support, Clear provisions and requirements, Use of appropriate methods, Mechanisms for overview and monitoring, compliance and performance and Follow-up and feedback capability.

2.2. Environmental Laws and Regulations

The region has seen an increase in the number of environmental legislation and regulations that deal with various aspects of the environment. At the core of most of these laws is sustainable development and of late Sustainable Development Goals (SDGs). Each of the SADC Member States has an overarching Act of parliament that they use in dealing with the environmental

issues and most of them use regulations as a way to operationalize the legal requirements set down in the law. However, countries like the Comoros and Mauritius do not currently have regulations. In other instances, the environmental legislation is still handled as a framework or guideline policy which is then developed further using regulations.

Table 2 provides a snapshot of the existing Laws and regulations within the SADC Region. It can be noted from the table that all the countries have developed their main environmental Acts/ Decrees over the past two to three decades, which is commendable. Several changes have also been made to the existing laws and there is evidence of improvement in the structure and required environmental management outputs from these laws. What is clear though from the review is the differences in approach, layout and environmental considerations in these laws. These differences will continue to perpetuate the current unharmonized set up and propagate a silo mentality in the development of these environmental laws.

Another notable issue within the region is how most of the countries have developed regulations that are currently being used to operationalize the environmental laws. Only five countries within the region have not finalised their regulations. These countries are, Comoros, Lesotho, Malawi, Mauritius and Zambia. Comoros continues to use the World Bank Standards to guide its implementation of environmental laws. Malawi recently finalised its regulations which will be submitted to the Minister of Justice at the end of March 2025. Mauritius and Zambia have legislation that calls for the development of regulations and their regulations are currently in draft form while Lesotho still has to develop their regulations.

However, in as much as the issue around regulations is a positive aspect within the SADC region, there is still a lot of variation in these regulations in terms of ESIA, public engagement and appeal processes, fee and consultant requirements, principles and penalties. Unfortunately, this results in a lack of harmonization. Some countries are however making strides towards amending their legislation to strengthen their legislation and align with global and regional trends. For example, Zimbabwe is currently reviewing its principal act to address the emerging environmental issues as well as strengthen its laws for effective law enforcement. During the amendment process, the Act is adopting the use of the term ESIA instead of EIA which is in line with international trends. This will ensure that social aspects of the environment are significantly considered during the ESIA process.

Table 2: SADC Countries ESIA and SEA Legislation

Country	Ministry responsible for environmental management	Authority responsible for ESIA	Name of ESIA Act	ESIA Regulations
Angola 	Ministry of Culture, Tourism and Environment	National Directorate for Prevention and Environmental Impact Assessment	Environment Framework Law, No. 5/98 of 1 June 1998	Decree on General Regulation on Environmental Impact Assessment and Environmental Licensing Procedures Presidential Decree No. 117/2020 of 22 April
Botswana 	Ministry of Environment, Natural Resources Conservation & Tourism	Department of Environmental Affairs (DEA)	Environmental Assessment Act, No. 10 of 2011; Environmental Assessment Act, 2020	EA Regulations (Statutory Instrument (SI) No. 58 of 2012) were promulgated in 2012
Comoros 	Ministry of Agriculture, Fisheries & Environment (MAFE)	Directorate-General of Environment	Environmental law, No. 94-018/AF of June 1994 (as amended by Law No. 95-007/AF o 19 June 1995	None. Using World Bank Standards
Democratic Republic of the Congo 	Ministry of Environment & Sustainable Development (MESD)	Congolese Environmental Agency	Law No. 11/009 of July 9, 2011, on fundamental principles relating to environmental protection, as amended and supplemented by Ordinance-Law No. 23/007 of March 3, 2023.	Decree No. 14/019 of 02 August 2014 sets out the regulations made in terms of the EPA for environmental protection, including all the procedures for conducting ESIAs
Eswatini 	Ministry of Tourism & Environmental Affairs (MTEA)	Eswatini Environmental Authority (EEA)	Environmental Management Act, No. 5 of 2002	Environmental Audit, Assessment and Review Regulations (EAARR), 2008; Environmental Assessment Regulations, 2022
Lesotho 	Ministry of Tourism, Culture & Environment (MTCE)	Department of Environment	Environment Act, No. 10 of 2008	None. Section 113 of the Environment Act allows the Minister to make regulations on EIAs. No regulations have yet been made. However, EIA Guidelines were drafted in 2002 and formalised in 2009
Madagascar 	Ministry of Environment & Sustainable Development (MESD)	National Office for the Environment (ONE)	Environment Charter, Law No. 2015-003 of February 2015	Decree relating to the Compatibility of Investments with the Environment, commonly referred to as Decree MECIE. Decree No. 2004-167 of 3 February 2004 first promulgated 1992.

Malawi 	Mnistry of Natural Resources and Climate Change (MNRCC)	*Malawi Environmental Protection Authority (MEPA)*	Environmental Management Act, No 19 of 2017	Section 31: 4 for the Minister to make regulations pertaining to Environmental and Social Impact Assessment and Strategic Environmental Assessment
Mauritius 	Ministry of Social Security, National Solidarity, & Environment & Sustainable Development	Environmental Assessment Division (of the Department of Environment)	Environmental Protection Act, No. 19 of 2002 (amended in 2008)	None
Mozambique 	Ministry of Land, Environment and Rural Development (MITADER)	National Environmental Directorate (at national and provincial levels	Environmental Law, No. 20/97 of 1 October 1997	Regulations on the Environmental Impact Assessment Process, Decree No. 54/2015 of 31 December 2015)
Namibia 	Ministry of Environment & Tourism (MET)	Directorate of Environmental Affairs (DEA)	Environmental Management Act, No. 7 of 2007	Environmental Impact Assessment Regulations of 6 February 2012 *(under revision)*
Seychelles 	Ministry of Environment, Energy & Climate Change (MEECC)	Environmental Appraisal Committee (EAD)	Environment Protection Act, No. 18 of 2016	Environmental Protection (Impact Assessment) Regulations of May 1996
South Africa 	Department of Forestry, Fisheries & the Environment (DFFE)	National DFFE or provincial departments (see Chapter 23 for list)	National Environmental Management Act, No. 107 of 1998, as amended in 2002, 2003, 2004, 2008 (twice), 2009, 2013 & 2014	Environmental Impact Assessment Regulations GNR982, GNR 983, GNR 984 & GNR 985 of 2014 (as amended in 2018)
Tanzania 	Vice-President's Office: Division of Environment	National Environmental Management Council (NEMC)	Environmental Management Act, No. 20 of 2004	Environmental Impact Assessment & Audit Regulations, Government Notice No. 349 of November 2005
Zambia 	Ministry of Water Development, Sanitation & Environmental Protection	Zambian Environmental Management Agency (ZEMA)	Environmental Management Act, No. 12 of 2011	Environmental Protection & Pollution Control (Environmental Impact Assessment) Regulations, Statutory Instrument No. 28 of 1997 (new Regulations in draft)
Zimbabwe 	Ministry of Environment, Tourism & Hospitality Industry	Environmental Management Agency (EMA)	Environmental Management Act, Chapter 20:27, of 2002 as read with Statutory Instrument 7 as well as General Laws Amendment 5 of 2011	Statutory Instrument No. 7 of 2007 (EIAs & Ecosystems Protection Regulations), as General Laws Amendment 5 of 2011

In terms of SEAs, ten SADC countries have legislation to manage the process as presented in Table 3.

Table 3: SADC Countries with SEA Legislation

Country	SEA required for policies, plans and programmes	Availability of specific SEA regulations (or guidelines)
Angola	None	None
Botswana	Yes	Guidelines
Comoros	None	None
DRC	Yes	Yes (Decree No. 14/019 of 2 August 2014)
Eswatini	Yes	None
Lesotho	Yes	None
Madagascar	Yes	None
Malawi	Yes	None
Mauritius	None	None
Mozambique	None	None
Namibia	None	None
Seychelles	Yes	None
South Africa	Yes	Regulations and Guidelines
Tanzania	Yes	None
Zambia	Yes	Regulations in draft
Zimbabwe	None	None

Although this is also encouraging to note that ten countries refer to SEAs in their legislation, only three countries i.e. Botswana, DRC and South Africa have guidelines on how this should be implemented while Zambia has draft guidelines/ regulations. It was also noted from the existing legislation that the SEAs can only be used by the state and state-owned entities and not necessarily private developers. Other non-state entities, for example, international financing organisations, have also been able to utilise the SEA legislation in the region based on funding requirements.

2.3. Environmental Laws and Practitioners

Some of the SADC Member States like South Africa, Zimbabwe and Eswatini require the Environmental Practitioners to be formally registered for them to be allowed to practice. Additionally, Malawi has included the requirement for registration of Environmental Practitioners in the Environmental Assessment Guidelines that will be published at the end of March 2025 and also in the relevant regulations that will be submitted to the Minister of Justice at the end of March 2025. Four countries require ESIA team members and their qualifications to be listed in the ToR sent to the authorities for approval before commencing with the ESIA. This affords some level of

quality control, assuming that the information provided by the consultants is accurate. The lowest level of quality assurance is where the environmental agency has a list of approved consultants. This generally lists all practitioners present in the country, and there is little or no quality control. Four countries stipulate that ESIA consultants must be independent, which means that: a) they cannot have any business, financial, personal or other interest in the activity, application or appeal in respect of which they were appointed, other than fair remuneration for work performed; and b) there are no circumstances that may compromise their objectivity. Although not explicitly stated, those countries with a statutory professional registration system in place are likely to require registered professionals to sign a code of conduct which could cover issues such as objectivity, conflicts of interest and independence.

Public engagement in almost all the SADC countries is compulsory. The method of conducting the public engagement, however, differs from country to country and in some cases is dependent on the nature/ category of the project. On the other hand, the regulations do not provide a lot of support to practitioners when it comes to social issues. For example, most laws and regulations are quiet on resettlement/ relocation issues within the region.

2.4. Gaps

- Legislation is dis-integrated and remains weak in terms of ESIA, public engagement and appeal processes, fee and consultant requirements, principles and penalties whilst silo approach is still so much in existence within the region
- The laws are currently not structured uniformly and do not have similar intentions/ principles/ areas of focus.
- Legislation in the region has weak emphasis on social and socio-economic considerations while conducting ESIAs resulting in weak stakeholder consultation, intergovernmental and cooperative governance
- The Decision-making process in the various countries is not well articulated within the laws due to lack of detailed regulations in other countries.
- Legislation lacks alternative tools and processes on environmental management. Most countries only use ESIA as a tool.
- Most legislation has weak compliance, enforcement and monitoring requirements in either their Act/ Decree and/or the related Regulations.

This situation therefore still requires the Member States to continue improving their own environmental legislation on one hand and focus on harmonization issues on the other hand so as to create a functional balance across the region.

2.5. Opportunities/ Harmonization

- All the SADC Countries are encouraged to ratify the SADC Protocol on Environment Management for Sustainable Development in order to fast track the operationalization of the ESIA and SEA processes throughout the region. This will improve the integration of the projects, practitioners and processes within the SADC region. Environmental Practitioners

will also be able to easily identify the main Act/ Decree on appointment thereby streamlining the process.

- Countries with relevant Laws should develop Regulations that are used to operationalize the ESIA and/or SEA processes. This allows all Stakeholders to be able to identify the general steps, processes and procedures involved in conducting the ESIA and/or SEA without extensive consultation with Practitioners.
- Countries are encouraged to start using the uniform environmental definitions as provided in the SADC Protocol on Environment Management for Sustainable Development.
- Countries are encouraged to apply the principles provided in the SADC Protocol on Environment Management for Sustainable Development.
- Member States are encouraged to develop other environmental management tools besides the ESIA and at this juncture focus on the SEA processes for enhanced harmonization.
- The harmonization of ESIA and SEA legislation should improve the finalisation and implementation of transboundary projects and reduce red tape.
- Member States are encouraged to include tightened social and socio-economic considerations in their laws to improve the outcomes from ESIAs and SEAs.

3. Administrative/Governance Structures (ESIA/SEA)

Most countries have a ministry or department responsible for environmental issues with a few differences. Other countries have agencies or stand-alone authorities that handle ESIAs and SEAs, but they report to the environment ministry or department. Some countries have professional councils that monitor the practitioners involved in ESIAs and SEAs and those councils also report to the ministry or department.

SADC Member States which utilise agencies include the DRC, Eswatini, Madagascar, Malawi (once the new Environment Management Act comes into effect), Tanzania, Zambia and Zimbabwe. The rest report to their ministries directly. Most countries have their ESIA and SEA reviews and decision-making taking place at national and provincial levels. Countries with effective national and provincial level environmental administration include Mozambique, South Africa and Zambia.

Transparency, objectivity and the integrity of the institutions involved in ESIAs, and SEAs is an essential determining factor in assessing the environmental impacts of project proposals and in applying effective mitigation at Practitioner and Government Official level. All the SADC Member States, however, still face financial challenges when it comes to skills development and site investigative work during submission of application.

3.1. Existing Structures

As already alluded to in this section, most SADC Member States have a ministry responsible for environmental management which then implies that the ultimate person responsible for environmental matters is the Minister of that department/ministry. The Minister then appoints a Director General/ Permanent Secretary who then overseas the operational matters of the environmental issues through other Senior managers. This structure varies from country to

country depending on sector allocations within each country. Mozambique and South Africa have a structure where certain projects are handled within provincial governments.

Other countries have legislation that allows for delegation of responsibility and/or accountability to state owned entities/ agencies or in some instances non-state-owned entities. When a delegation of authority to these entities is in place, the institutions are run through a Board of Directors which is usually approved by the Minister. The Board of Directors would then appoint an executive operational team which is headed by a Chief Executive Officer (CEO). Table 4 below summarises the status within the region.

Table 4: SADC Countries ESIA and SEA Governance Structures

Country	In Charge	Operational Authority
Angola	Minister	Permanent Secretary/ Director General
Botswana	Minister	Permanent Secretary/ Director General
Comoros	Minister	Permanent Secretary/ Director General
DRC	Delegated Agency	Chief Executive Officer
Eswatini	Delegated Agency	Chief Executive Officer
Lesotho	Minister	Permanent Secretary/ Director General
Madagascar	Minister	Permanent Secretary/ Director General
Malawi	Delegated Agency	Director General
Mauritius	Minister	Permanent Secretary/ Director General
Mozambique	Minister	Provincial Authority/ Director General
Namibia	Minister	Permanent Secretary/ Director General
Seychelles	Minister	Permanent Secretary/ Director General
South Africa	Minister	Provincial Member of Executive Council/ Director General
Tanzania	Minister	Permanent Secretary/ Director General
Zambia	Delegated Agency	Chief Executive Officer
Zimbabwe	Delegated Agency	Director General

3.2. Gaps

- No uniform governance structures within the region
- Decision making is not standardized. Each Member State follows their own decision-making processes and procedures based on environmental, socio-economic factors and priorities.

- Powers within each structure are not uniform. Each country aligns their institutions based on internal arrangements.

3.3. Recommendations/ Harmonization

The current governance structures seem to work in different countries. However, based on an analysis of regional and international processes, the use of agencies seems to be more progressive as compared to running environmental matters within the ministries. This is precisely because mandated Agencies:

- Provide an element of independence.
- Remove political interference in the decision-making processes.
- Make decisions quicker and bring in a level of flexibility.
- Cut out bureaucratic processes.
- Releases the Minister to become the Appeal authority.
- Can streamline processes through direct engagements.
- Can develop harmonized Standard Operating Procedures (SOPs), which makes it easier to implement projects and programmes.

4. Overview of ESIA Processes

ESIA processes are complex, and their effectiveness, appropriateness, and flow differ from one area to another (Bednarek-Szczepańska, 2022; Caro-Gonzalez et al., 2023; Kumar et al., 2023; Neto & Mallett, 2023; Ortiz & Climent-Gil, 2020). ESIAs are now established in many countries of the developed and developing world. ESIA systems do, however, vary greatly between procedures and actual practice. Some countries have clear regulations, others have administrative guidelines, and others have more ad hoc procedures. Those with well-established procedures may not necessarily have the most successful implementation records (Wayakone et al., 2013). However, there are commonalities in what gets to be included in the process of an ESIA, as suggested by scholars Mccabe & Sadler (2003), including but not limited to the following:

a) Provisions for appeal by the proponent or the public against decisions
b) Legal or procedural specifications of time limits
c) Review body for ESIAs
d) Specified screening categories
e) Systematic screening approach
f) Requirements to consider alternatives
g) Specified ESIA report content
h) Systematic ESIA report review approach
i) Public participation in ESIA processes
j) Systematic decision-making process/approach
k) Requirements for EMPs
l) Requirements for mitigation of impacts
m) Requirements for impact monitoring
n) Expertise in conducting and reviewing ESIAs
o) ESIA system monitoring
p) Training and capacity building

For the SADC region to find its ESIA processes harmonised, it is ideal to have an overview of the various processes taking place across the world, Africa and the SADC region itself, hence the below synthesis of the literature on ESIA processes.

4.1. Global ESIA (UNEP) Processes.

The Environmental Impact Assessment Process in the Asian context, like in other regions of the world, is a multi-step process that examines a variety of issues to determine a project's feasibility. It entails screening, scoping, preparing an initial environmental examination (IEE) report, and reviewing, approving, and managing the environment (Bhatt, 2023).

In Oman, the application for approval is made to the Director General of Environmental Affairs (DGEA) department through a specified form wherein data on the project are provided. The application is screened and reviewed and may result in either issuance of a 'No Objection Certificate' (NOC) or requirement for a full EIA. If an EIA is required, the proponent must present a scoping report of the EIA, which gets reviewed and approved by the DGEA. The EIA report is

approved and submitted to the DGEA for evaluation and assessment. Within 60 days of submission, a decision is made on whether to grant the permit or reject the project. If the application is not approved, the proponent has the right to appeal the verdict within 30 days from the date of notification (Al-Azri et al., 2014).

In the case of the United Arab Emirates, Federal Law No. 24 of 1999 defines the procedure for obtaining permits for all projects or establishments by submission of an environmental permit application. Upon receiving such an application, the Federal Environmental Agency (FEA) or the local authority reviews the application and determines whether an EIA is required. The FEA or the local authority, depending on the type and scale of the project, may request a preliminary environmental review or EIA to be performed (Al-Azri et al., 2014). What is critical here is that federal projects would be evaluated at the FEA, whereas local projects would be evaluated at the local authority level. When it comes to the practitioners/consultants who conduct EIAs, they must have been approved by FEA or by a local authority. A decision on EIA submissions should be made within 30 days, which could be extended by another 30 days if needed (Al-Azri et al., 2014).

Only Oman and Qatar have provisions for an appeal against a decision on EIA submission, compared to UAE, Saudi Arabia (KSA), Bahrain and Kuwait. In terms of the timelines for decision-making on an EIA, the majority of the countries in Asia have legal or procedural specifications of time limits, where, for instance, Oman (within 60 days and appeal within one month of decision), UAE (decision should not exceed one month, and may be extended by another month), Qatar (within 30 days from the submission of the study), Saudi Arabia (no time limits in the regulations), Bahrain (decision within 60 days of the submission) and Kuwait (within 60 days from the submission of final report) (Al-Azri et al., 2014). All the countries' EIA systems use the screening approach that involves relatively comprehensive lists of projects to identify whether an EIA is required or not. However, these systems follow a case-by-case basis if the activity is not specified in the lists. Except for Saudi Arabia, the EIA systems of other regional states have specified only one category in which EIA is mandatory.

Only Oman legislatively requires public consultations during the EIA study process of all six EIA systems in the Gulf states region. However, public participation is not required during the review and evaluation stage. Also, non-governmental organisations (NGOs) are occasionally consulted during the EIA study process. Approval and rejection of the project are the most important part of the EIA process. In all six EIA systems, decision-making would depend on evaluation from feedback from different departments on the EIA report before issuing the verdict. No project or development is allowed to proceed without the authorised agency's prior environmental acceptability of the project. Provisions for environmental management plans (EMPs) are defined in all six EIA systems as part of the EIA report requirement.

In Lebanon, according to El-Fadel et al., (2000), and depending on project classification, the steps to follow in preparing an EIA program appear to be a function of whether the report to be prepared will be an EIS or an ER. Note, however, that both are, to a great extent, similar in scope, with the latter being a shorter and abridged version of the former.

According to Gronow (2024), Mccabe & Sadler (2003) and a review of EIA studies for both developed and developing countries such as Malaysia, Nigeria, Syria, Estonia, Colombia and the Philippines), it emerged that both positive and negative aspects of EIA practice can be noted from a review of the case studies. Often, the experiences described indicate approaches that are systematic and appropriate and, in some instances, innovative (such as the Environmental

Review Fund established in the Philippines). The EIA procedure and practice in many developing countries have more similarities than differences with those in the developed world, and the necessary expertise is available to carry out the EIA methodology. Not unexpectedly, the case studies also highlight several areas where EIA arrangements are either deficient or their implementation wanting.

The Brazilian EIA processes according to Neto & Mallett (2023), the public participation process should look beyond just the EIA process. An observation was made by Papamichael et al., (2023), whilst undertaking an evaluation of the effectiveness of EIAs in Greece, that even though Greece has a strong institutional framework, as required by European Union directives, and has had a well-established EIA system for many years, the EIA institution in Greece shows weaknesses similar with the ones that are found in EIA systems of less developed or poorer countries.

The alternatives analysis section in ESIA reports has both a procedural function of providing information to support statutory and financial decision-makers and a substantive function of prompting proponents to select lower-impact alternatives that avoid or minimises negative environmental and social impacts (Gronow, 2024).

4.2. African Context Processes

ESIA processes vary across countries and are mainly influenced by the commissioning entity for that particular ESIA, such as government institutions, private developers, and development finance institutions (DFIs), and their requirements). The Nile basin's environmental outlook and associated processes remain quite hazy (El Gohary, 2016). Nile Basin countries experience many challenges, such as a lack of capacity, data, proper guidelines, enforcement, and, most importantly, awareness of the environmental protection sector and its effectiveness.

Although not exhaustive, most of the processes in the continent have their process and terminologies used, as suggested by scholars such as Walmsley & Sheldon Husselman (2020), revolving around the following:

a) Screening
b) Scoping
c) Public participation
d) ESIA report
e) Environmental authorisation, permit or license
f) EMP
g) Compliance monitoring
h) Follow up
i) Registration of ESIA Practitioners

From the review and analysis of literature on ESIA steps and terminology across the listed countries, we can interpret and summarize the key stages and terms as indicated in Table 5.

Table 5: Summary of ESIA Stages

KEY STAGE	DEFINITION

Screening	This is the initial stage of the ESIA process, where the proposed project is assessed to determine if a full ESIA is required. Screening may involve the completion of screening forms or documents, and decisions are typically made based on predetermined criteria.
Scoping	During this stage, the scope and objectives of the ESIA are defined. It involves identifying key environmental issues, stakeholders, and methodologies to be used in the assessment. Scoping reports or terms of reference (ToR) are prepared to guide the ESIA process.
ESIA Report	The ESIA report is a comprehensive document that presents the findings of the environmental and social assessment. It includes information on potential environmental impacts, proposed mitigation measures, and monitoring plans. The report is often accompanied by an Environmental Management Plan (EMP) outlining measures to manage and mitigate environmental impacts.
Permit, License Authorization	After the completion of the ESIA process and approval of the ESIA report, the project may require permits, licenses, or authorizations from regulatory authorities to proceed with implementation. This stage involves obtaining the necessary approvals to commence the project.
Follow-up	Once the project is approved and implemented, follow-up activities are conducted to monitor the actual environmental impacts and ensure compliance with mitigation measures outlined in the ESIA report and EMP. Monitoring may be conducted by regulatory authorities, project proponents, or both

Additional Terminologies: Different countries may use additional terminologies and procedures within the ESIA process, such as the ones listed in Table 6.

Table 6: Various terminologies used in SADC

TERMINOLOGY IN USE	COUNTRIES
Environmental Pre-feasibility Study	Angola – conducted as part of the screening process.

Environmental Certificate	The Democratic Republic of Congo – issued as authorisation for projects
Initial Environmental Evaluation	Eswatini – conducted as part of the screening process
Preliminary Environmental Report	Mauritius – prepared as part of the screening process.
Prospectus Report	Zimbabwe – which is a brief summary or introductory report prepared by the Project Owner or appointed consultant introducing the project scope / components, identification of key stakeholders, key project impacts, project location settings, proposed EIA methodologies and proposed terms of reference (ToRs). The prospectus report is then reviewed, and decision is made to the client giving direction to be undertaken either project exemption from full ESIA study or a full ESIA study be undertaken
Basic Assessment Report	South Africa – prepared as a shortened version of an ESIA.
Environmental Clearance Certificate	Lesotho – issued as evidence of compliance with environmental regulations.
Environmental Appraisal Committee	Seychelles and Zambia – Involved in the review process.
ESIA Certificate	Tanzania's Zanzibar – issued after clearance.

These steps and terminologies illustrate the common stages and procedures involved in the ESIA process across the SADC countries, although specific terminology and requirements may vary based on national regulations and practices.

A critical aspect of an ESIA process is the development of Terms of References (ToRs), and this, just like the ESIA process itself, has been approached differently across various countries. A better-framed ToR bring certainty to the EIA process, which eliminates doubt and ensures confidence in the process (Tennøy et al., 2006). Table 7 below outlines some of the methods used by some of the countries to develop ToRs.

From the data provided by Walmsley & Sheldon Husselman (2020), it appears that there are three main methods used for developing Terms of References (ToRs) for ESIA across different countries, Tables 7 and 8:

Table 7: Development of ESIA ToRs in the SADC

Drawing up of ToR	**Explanation**

Proponent draws up ToR with no review	In some countries such as Comoros and Madagascar, the responsibility for drafting the ToR lies solely with the proponent of the project. There is no explicit mention of review or involvement from regulatory authorities
Proponent draws up ToR with authority review	This method is prevalent in many countries such as Botswana, Burundi, Eswatini, Ethiopia, Ghana, Kenya, Lesotho, Malawi, Mozambique, Namibia, Nigeria, Rwanda, Senegal, South Africa, Tanzania, Uganda, Zambia, Zanzibar. Here, the proponent initiates the drafting process, but the ToR undergoes review or approval by regulatory authorities. In some cases, guidance may be available for the proponent in preparing the ToR
Authorities draw up ToR	In several countries including Angola, Côte d'Ivoire, Mauritius, Seychelles, and Zimbabwe, the regulatory authorities take the lead in developing the ToR for ESIAs. In some cases, there are general ToRs available, while in others, sector-specific ToRs are developed
Combination	Additionally, there are instances where the exact method is not clearly specified or varies, such as in the case of Mauritius where the literature indicates that authorities draw up ToRs, but it's not specified if there's any proponent involvement. Overall, the methods for developing ToRs for ESIAs vary across countries, reflecting different regulatory frameworks, levels of stakeholder involvement, and institutional capacities

Table 8: Responsibility for ESIA ToRs development per SADC member state

Country	Proponent draws up ToR (no review)	Proponent draws up ToR (authority review)	Authorities draw up ToR	Comments
Angola	No	No	Yes	General & sector-specific ToRs
Botswana	No	Yes	No	
Comoros	Yes	No	No	Not specified
DRC	No	Yes	No	
Eswatini	No	Yes	No	
Lesotho	No	Yes	No	
Madagascar	Yes	No	No	
Malawi	No	Yes	No	Model ToRs is provided in the guidelines
Mauritius	No	No	Yes	
Mozambique	No	Yes	No	
Namibia	No	Yes	No	
Seychelles	No	No	Yes	Model ToR provided by Authorities
South Africa	No	Yes	No	
Tanzania	No	Yes	No	
Zambia	No	Yes	No	ToR to be developed with Authorities
Zimbabwe	No	No	No	Drafting of ToRs is done by the Proponent and submitted together with prospectus report for review by the Agency which will then be communicated back to client together with prospectus review decision

Source: Walmsley & Sheldon Husselman, 2020

Public participation is also critical to the success of an EIA process (Bednarek-Szczepańska, 2022; Neto & Mallett, 2023). As reflected in Table 9, there are variations in terms of when and who conducts the public participation process. From the data provided on public participation in EIA processes across different countries (Walmsley & Sheldon Husselman, 2020), the timing and responsibilities for public engagement can be interpreted as follows:

Scoping Stage: In several countries such as Angola, Botswana, Burundi, DRC, Ethiopia, Ghana, Kenya, Lesotho, Mozambique, Namibia, Senegal, Tanzania, Uganda, Zambia, and Zimbabwe, public consultation is required during the scoping stage of the ESIA process. In these cases, the responsibility for organising public consultation typically lies with the project proponent, who engages with stakeholders to identify key issues and concerns to be addressed in the ESIA.

Preparation of ESIA: Public consultation during the preparation of the ESIA is also common in many countries. Project proponents in countries like Angola, Botswana, Burundi, Comoros, DRC, Eswatini, Ethiopia, Ghana, Kenya, Madagascar, Malawi, Mozambique, Nigeria, Rwanda, Senegal, South Africa, Tanzania, Uganda, Zambia, and Zimbabwe are required to engage with the public during this stage. The responsibility for organising public consultation usually rests with the proponent, who seeks feedback on the draft ESIA report and mitigation measures proposed.

Public Review and Hearings: After the completion of the ESIA report, several countries require public review and/or public hearings. This stage involves making the finalised ESIA report available to the public for review and providing opportunities for stakeholders to participate in hearings to express their views and concerns. Authorities often oversee this process. Countries such as Angola, Botswana, Burundi, Comoros, Côte d'Ivoire, DRC, Ghana, Kenya, Madagascar, Malawi, Mozambique, Nigeria, Rwanda, Senegal, Seychelles, South Africa, Tanzania, Uganda, Zambia, and Zanzibar have provisions for public review and/or public hearings after the ESIA report is completed.

Variations in Mandatory Requirements: There are variations in the mandatory nature of public consultation across countries and stages of the ESIA process. Some countries make public consultation mandatory at every stage, while others have optional or implied requirements, particularly during the scoping stage.

Responsibility for Public Consultation: The responsibility for organising public consultation primarily lies with the proponent of the project in most cases. However, there are instances where authorities may also play a role, especially during public review and hearings after the completion of the ESIA report.

Overall, while there is a general trend towards incorporating public participation throughout the ESIA process for many countries in Africa, variations exist in terms of timing, mandatory requirements, and responsibilities for organising public consultation (Table 9). Harmonising these practices can promote transparency, inclusivity, and effectiveness in the ESIA process across different jurisdictions.

Table 9: Timing/responsibility for public engagement in ESIA processes

Country	Public consultation required in scoping	Public consultation required during preparation of ESIA	Public review and/or public hearings after ESIA report completed
Angola	Yes (proponent)	Yes (proponent)	Yes (authorities)
Botswana	Yes (proponent)	Yes (authorities)	Maybe (authorities)
Comoros	Required but no further details specified		
DRC	No	Yes (proponent)	Yes (authorities)
Eswatini	No (IEE) Yes (ESIA) (proponent)	No (IEE) Yes (ESIA) (proponent)	Public review of IEE and ESIA (proponent). Optional public hearing for IEE and ESIA (authorities)
Lesotho	Yes (proponent)	No	Maybe (authorities)
Madagascar	No	Implied (proponent)	Yes (authorities)
Malawi	Maybe (proponent)	Yes (proponent)	Maybe (authorities)
Mauritius	No	No	Yes (authorities)
Mozambique	Yes (proponent)	Yes (proponent)	Maybe (authorities)
Namibia	Yes (proponent)	Yes (proponent)	No
Seychelles	No	No	Yes (authorities)
South Africa	Yes (proponent)	Yes (proponent)	No
Tanzania	Yes (proponent)	Yes (proponent)	Yes (authorities)
Zambia	Yes (proponent)	Yes (proponent)	Yes (authorities)
Zimbabwe	No	Yes (proponent)	No. Legislation does not provide for mandatory public review and hearings for EIA reports submitted for review. However, depending on the complexity and sensitivity of the proposed project, the Director General shall do further consultation in the form of hearings or advertisement in both print and electronic media. Expenses are associated with stakeholder consultation process which shall be borne by the Developer

Source: Walmsley & Sheldon Husselman, 2020

Certification of practitioners involved in undertaking and reviewing ESIAs is also a critical aspect of the ESIA process. For the countries on the African continent, the certification, registration, and independence of EA practitioners are summarised in Table 10 below. The table summarises the status of certification, registration, and independence of Environmental Assessment (EA) practitioners across various countries, as outlined by (Walmsley & Sheldon Husselman, 2020).

Certification and Registration:

Statutory Registration and ESIA Consultants Certification Scheme: Some countries have a legal requirement to certify and register ESIA consultants.

Non-Statutory Registration System: In other countries, registration of ESIA consultants is based on professional criteria but not mandated by law.

Approval by Authorities:

In some cases, consultants need approval from authorities before undertaking an ESIA. This approval process ensures that only qualified consultants are engaged in ESIA projects.

List of Approved Consultants: Environmental authorities in certain countries maintain lists of approved consultants.

Independence of ESIA Consultants:

It is emphasized that ESIA consultants should maintain independence as required by law.

A summary of the findings for some specific countries is detailed below:

- Angola: No statutory registration, but certification based on professional criteria is required. Consultants need approval from authorities before conducting EIAs, and they are required to be independent by law.
- Botswana: Statutory registration exists, but there's no certification scheme. Approval by authorities is necessary, and consultants are required to be independent.
- Eswatini: Statutory registration exists, but there's no certification scheme. Approval by authorities is necessary, and consultants are required to be independent.
- Lesotho: Statutory registration and certification are present. Consultants need approval from authorities, and they are required to be independent.
- Namibia: Statutory registration exists, but certification is not mentioned. Approval from authorities is required, and consultants are mandated to be independent.

These summaries provide insights into the regulatory frameworks governing EA practitioners across different countries, highlighting variations in certification, registration, approval processes, and requirements for independence.

4.3. SADC Member States Status

Most ESIA reviews and decision-making take place at the national level, despite several past efforts to devolve this into regions or provinces (e.g., Malawi and DRC). Countries with effective state, region, or provincial-level environmental administration include Mozambique, South Africa, and, to a degree, Zambia (Walmsley & Sheldon Husselman, 2020).

From the review on certification, registration, and independence of Environmental Assessment (EA) practitioners, the aspects specific to the Southern African Development Community (SADC) countries are:

- Botswana has a statutory registration system and an EIA consultant's certification scheme. According to the law, consultants are expected to be independent.
- Lesotho has a non-statutory registration system for EIA consultants based on professional criteria. Consultants for a given EIA need to be approved by authorities before commencing with the EIA. Additionally, EIA consultants are expected to be independent according to the law.
- Namibia has a non-statutory registration system for EIA consultants based on professional criteria. Before commencing an EIA, consultants need to be approved by authorities. The environmental authority also holds a list of approved consultants. According to the law, EIA consultants are expected to be independent.

- South Africa has a statutory registration system, and consultants and government officials must register with a professional body (EAPASA) before conducting or reviewing an EIA.
- Zimbabwe's has established a consultants registration and certification process which is done in terms of the Environmental Management Act Chapter 20:27 and Statutory Instrument 7 of 2007. The Consultants firm should be an eligible body and a registered company according to the country's governing laws. The company should have a team of at least 4 people of different qualifications and among them should include Ecologist/Environmentalist and Social Scientist. The Agency keeps a register of the Consultants and details are displayed on the Agency website for public access. The registration process and certification also allows registration of external firms or companies so that they can practice in Zimbabwe. In addition, if an external company does not want to register their consultants in Zimbabwe, they are allowed to partner with a registered local company to allow for the work to be conducted in Zimbabwe. This partnership approach has brought positive results through information sharing, experience, and skills transfer while making it easier for external companies to meet the country's legal requirements. All the local environmental companies are fully aware of the requirements.
- A review of the ESIA legislation in the DRC conducted by Osei & Effah (2023) revealed that the decree was not effective and efficient for the ESIA study. Some of the key limitations of the ESIA decree included the lack of scoping in the entire ESIA process, limited scope alternatives, fees and charges that were not explicitly stated in the legislation, and the lack of public participation at some stages. These aspects highlight the specific approaches and requirements for certification, registration, and independence of EA practitioners within the SADC region, showcasing both statutory and non-statutory systems in place across the member countries.

Table 10: Certification, registration and independence of EA practitioners

Country	Statutory registration & ESIA Consultants certification scheme	Non-statutory registration system for ESIA consultants based on professional criteria	Consultants for a given ESIA to be approved by authorities before commencing with the ESIA	List of approved consultants held by environmental authority	ESIA consultants to be independent in terms of the law
Angola	X	Yes	X	X	Yes
Botswana	Yes	X	X	X	X
Comoros	X	X	X	X	X
DRC	X	X	X	Yes	X
Eswatini	Yes	X	X	X	X
Lesotho	X	Yes	Yes	Yes	X
Madagascar	X	X	X	X	X
Malawi	Yes	X	X	Yes	X
Mauritius	X	X	Yes	X	X
Mozambique	X	Yes	Yes	X	X
Namibia	X	Yes	X	X	Yes
Seychelles	Yes	X	X	X	X
South Africa	Yes	X	X	X	Yes
Tanzania	Yes	X	X	X	Yes
Zambia	In progress	X	Yes	X	X
Zimbabwe	Yes	X	X	Yes	X

Source: Walmsley & Sheldon Husselman, 2020

Table 11: Summary of ESIA Stages in SADC Countries

Country	ESIA stage				
	Screening	**Scoping**	**ESIA Report**	**Permit, license authorisation**	**Follow-up**
Angola	Screening	Environmental Pre-feasibility Study and Scoping Report	Environmental Impact Statement (EIS) and Environmental Management Plan (EMP)	Environmental License	Monitoring implementation by authorities
Botswana	Screening	Project Brief & ToR	EIS & EMP	Environmental Authorisation	Monitoring & auditing by authorities & proponent
Comoros	-	-	EIA report & EMP	Environmental Authorisation	-
DRC	Screening	ToR for EIA	ESIA & ESMP	Environmental Certificate	Compliance monitoring by proponent
Eswatini					
Category 1	Screening	-	-	Environmental Authorisation Letter	-
Category 2	Screening	Initial Environmental Evaluation & Comprehensive Mitigation Plan Scoping report	-	Environmental Clearance Certificate	Compliance monitoring by proponent
Category 3	Screening		EIA report & Comprehensive Mitigation Plan	Environmental Clearance Certificate	Compliance monitoring by proponent
Lesotho	Screening	Project Brief & ToR	EIS and EMP	EIA License	Compliance monitoring & auditing by authorities
Madagascar					
Annex I	Screening		EIA & EMP	Environmental Permit	Environmental monitoring by authorities
Annex II	Screening	Programme of Environmental Engagement	-	Environmental Approval	-

Country	ESIA stage				
	Screening	**Scoping**	**ESIA Report**	**Permit, license authorisation**	**Follow-up**
Malawi					
List A	Screening	Project Brief & ToR	EIA & EMP	EIA Certificate	Auditing by authorities
List B	Screening	Project Brief	ESMP	Approval ESMP letter	-
Mauritius	Screening	Preliminary Environmental Report	EIA report & EMP	EIA License	Monitoring by authorities
Mozambique					
Category A+ /A	Application & pre-assessment	Environmental Pre-Viability Report & Scope Definition & ToR	EIS & EMP	Environmental Licence	Inspections & audits by authorities
Category B	Application & pre-assessment	ToR	Simplified Environmental Report & EMP	Environmental Licence	Inspections by authorities
Category C	Application & pre-assessment	-	-	Environmental Licence	-
Namibia	Registration & screening	Scoping report & Plan of Study for EIA (ToR)	EA Report & EMP	Environmental Clearance Certificate	Inspections & compliance monitoring by authorities
Seychelles	Presentation to Environmental Appraisal Committee	Scoping report & ToR	EIA report & EMP	Environmental Authorisation	Monitoring by authorities

Country	ESIA stage				
	Screening	**Scoping**	**ESIA Report**	**Permit, license authorisation**	**Follow-up**
South Africa					
Listing Notice 1 & 3	Application form (registration)	Basic Assessment Report, EMPr & closure plan	-	Environmental Authorisation	Auditing by proponent
Listing Notice 2	Application form (registration)	Scoping	EIA report & EMPr	Environmental Authorisation	Auditing by proponent
Tanzania					
Type A	Registration & screening	Scoping & ToR	EIS & EMP	EIA Certificate	Environmental auditing by authorities
Type B	Registration & screening	Preliminary EA	-	Authorisation to proceed	-
Zambia					
First schedule	Screening	Project Brief & EMP	-	Environmental Authorisation	Auditing by proponent
Second Schedule	Screening	ToR & scoping	EIS & EMP	Environmental Authorisation	Auditing by proponent
Zimbabwe	Prospectus	ToR	EIA report & EMP	EIA Certificate	Auditing by authorities through routine monitoring inspections and bi-annual environmental audits as required in terms of the Environmental Management Act Chapter 20:27

Source: DBSA Handbook 2020

4.4. Gaps

The review of ESIA processes in the SADC region has highlighted several gaps (Table 12) and areas for harmonisation:

Table 12: SADC Region identified Gaps in ESIA Process and Requirements

ITEM	DESCRIPTION OF THE GAP
1	Lack of Uniformity in Terminology: Variation exists in the terminology used across SADC countries, hindering clarity and consistency in ESIA processes.
2	Diverse Approaches to Screening: Methods and criteria for screening projects differ among countries, suggesting a need for common criteria or guidelines.
3	Differences in Scoping Procedures: Variations in scoping methodologies and requirements highlight the need for standardised procedures.
4	Permit and Authorization Processes: Variability in permit application procedures necessitates alignment for efficiency.
5	Monitoring and Follow-up Activities: Disparities in monitoring protocols and responsibilities call for standardised guidelines.
6	Lack of Standardized Guidelines: A need for regional guidelines or best practices to ensure consistency and effectiveness in ESIA processes is evident.
7	No Information about Training and Capacity Building: The absence of details on training for ESIA consultants and officials suggests a gap in capacity-building efforts.
8	Lack of Consistency in Public Participation: Inconsistent requirements and procedures for public consultation across countries and stages of the ESIA process hinder inclusivity.
9	Undefined Procedures for Public Consultation: Lack of detailed information on public consultation mechanisms undermines transparency.
10	Variability in Responsibility for Public Consultation: Differences in responsibility for organising public consultation affect consistency in engagement.
11	Uncertainty in Public Review: Lack of clarity on public review processes undermines transparency and trust.

12	Inconsistent Timing of Public Consultation: Variation in the timing of public consultation affects the effectiveness of stakeholder engagement.
13	Absence of Mandatory Requirements for Public Consultation: Some countries lack mandatory public consultation, limiting public input in decision-making processes.
14	Lack of Regulatory Frameworks for EA Practitioners: Inconsistencies in certification, registration, and independence of practitioners highlight the need for standardisation.
15	Lack of Standardization in Certification and Registration: Inconsistent schemes for certifying ESIA consultants require harmonisation for professionalism.
16	Approval Process for Consultants: Varying approval processes for consultants necessitate standardised procedures.
17	Transparency in Consultant Approval: Lack of transparency in the approval process undermines trust and informed decision-making.
18	Independence of ESIA Consultants: Variability in legal provisions regarding consultant independence suggests a need for clarification.
19	Inclusion of Professional Criteria: Harmonizing professional criteria can ensure consistent standards for evaluating ESIA practitioners.
20	Capacity Building and Training: Access to training and capacity-building initiatives is essential for addressing expertise gaps and promoting professionalism.
21	Enforcement Mechanisms: Establishing effective enforcement mechanisms is crucial for ensuring compliance with certification and registration requirements.
22	Lack of Standardization in Developing ToRs: Inconsistent methods for developing ToRs highlight the need for uniformity.
23	Inconsistent Stakeholder Involvement: Variation in stakeholder involvement calls for clarity and consistency in the process.
24	Undefined Procedures for ToR Development: Lack of clarity on specific procedures undermines transparency and accountability.

25	Guidance and Capacity Building for ToR Preparation: Disparities in support mechanisms for preparing ToRs suggest a need for standardisation. ToRs are loosely used within the region and must be correctly defined.
26	Clarity on Regulatory Oversight: Transparency regarding regulatory oversight over ToR development is essential for accountability.

Detailed gaps identified

Lack of Uniformity in Terminology: There is a lack of uniformity in the terminology used across different SADC countries. For example, terms such as "Screening," "Scoping," and "EIA/ESIA Report" are commonly used, but variations exist in terms like "Environmental Pre-feasibility Study," "Project Brief," and "Preliminary Environmental Report." Harmonising terminology could improve clarity and consistency across the region.

Diverse Approaches to Screening: While most countries have a screening stage, the methods and criteria used for screening vary. Some countries use forms or checklists for screening, while others have categories or annexes for project classification. Harmonisation could involve establishing common screening criteria or guidelines for determining project significance.

Differences in Scoping Procedures: Similarly, scoping procedures differ among countries, with variations in the preparation of scoping reports or terms of reference (ToR). Harmonisation efforts could aim to standardise scoping methodologies and requirements to ensure comprehensive coverage of environmental issues.

Permit and Authorization Processes: The processes for obtaining permits or authorisations also exhibit variability across SADC countries. Some countries issue environmental licenses, while others provide environmental clearances or approvals. Harmonisation could involve aligning permit application procedures and requirements to streamline the authorisation process.

Monitoring and Follow-up Activities: Monitoring and follow-up activities, including compliance monitoring and auditing, show disparities in implementation and responsibility between countries. Harmonisation efforts could focus on defining standardised monitoring protocols and responsibilities for both authorities and project proponents to ensure effective oversight and enforcement.

Need for Standardized Guidelines: Overall, there is a need for standardised guidelines or frameworks for ESIA processes within the SADC region. Harmonization efforts could involve the development of regional guidelines or best practices to promote consistency, transparency, and effectiveness in environmental assessment procedures across Member States.

Lack of Consistency: There is a lack of consistency in the requirements for public consultation across countries and stages of the ESIA process. Some countries have mandatory public consultation at every stage (e.g., Botswana, Kenya), while others have optional or implied requirements (e.g., Burundi, Madagascar).

Undefined Procedures: In some cases, the data does not provide detailed information on the procedures and mechanisms for public consultation. For example, Comoros is listed as requiring public consultation during the scoping stage, but no further details are specified.

Variability in Responsibility: Responsibility for organising public consultation varies across countries and stages of the ESIA process. While project proponents are typically responsible for public consultation during the scoping and preparation of the ESIA, the responsibility may shift to authorities for public review and hearings after the ESIA report is completed. However, there are instances where authorities may also play a role in organising public consultation during other stages.

Uncertainty in Public Review: In some countries, such as Botswana and Lesotho, there is uncertainty regarding whether public review or hearings will take place after the completion of the EIA report. This lack of clarity can undermine transparency and public trust in the EIA process (El Gohary & Armanious, 2017; Martínez et al., 2019).

Inconsistent Timing: The timing of public consultation also varies across countries. While some countries require public consultation early in the ESIA process (e.g., during scoping), others may only require it during later stages (e.g., preparation of the EIA).

Absence of Mandatory Requirements: In a few cases, such as Mauritius and Seychelles, there is an absence of mandatory public consultation requirements at any stage of the ESIA process. This may limit opportunities for public input and engagement in decision-making processes related to proposed projects.

Addressing these gaps will be crucial for enhancing transparency, inclusivity, and effectiveness in the ESIA process across different countries.

No regulatory frameworks governing EA practitioners across different countries. Several gaps have been identified, specifically relating to certification, registration and independence of practitioners; these include, but are not limited to:

Lack of Standardization in Certification and Registration: There is inconsistency across countries in the existence and nature of certification and registration schemes for ESIA consultants. Some countries have statutory registration and certification schemes, while others rely on non-statutory systems based on professional criteria. Harmonising these schemes could ensure a minimum level of competence and professionalism among ESIA practitioners across different jurisdictions.

Approval Process for Consultants: The process for approving consultants to conduct ESIAs varies across countries. While some countries require consultants to be approved by authorities before commencing with the ESIA, others do not have such a requirement. Establishing standardised approval processes can help ensure that only qualified and competent consultants are engaged in the ESIA process.

Transparency in Consultant Approval: In some countries, there is a lack of transparency regarding the list of approved consultants held by environmental authorities. Making this information readily available to the public can enhance transparency and facilitate informed decision-making by project proponents and stakeholders.

Independence of ESIA Consultants: While many countries emphasize the independence of ESIA consultants in terms of the law, the specific legal provisions ensuring independence vary.

Inclusion of Professional Criteria: Some countries rely on non-statutory registration systems based on professional criteria for certifying ESIA consultants. Harmonising these criteria across countries can help establish consistent standards for evaluating the qualifications and competence of ESIA practitioners.

Capacity Building and Training: Ensuring that ESIA practitioners have access to adequate training and capacity-building initiatives can help address gaps in expertise and promote professionalism in the field.

Harmonising training programs and professional development opportunities across countries can contribute to raising the overall quality of ESIA practice.

Enforcement Mechanisms: Harmonization efforts should also focus on establishing effective enforcement mechanisms to ensure compliance with certification, registration, and independence requirements.

With regards to the development of ToRs for Environmental Impact Assessments, several gaps and areas requiring harmonization can have been identified.

Lack of Standardization: There is a lack of standardisation in the methods used across different countries. Some countries have the proponent solely responsible for drafting the ToR; some involve authority review, while others have authorities entirely drawing up the ToR. This lack of uniformity can lead to inconsistencies in the quality and comprehensiveness of ESIAs conducted across different jurisdictions.

Inconsistent Stakeholder Involvement: The level of stakeholder involvement in the development of ToRs varies across countries. In some cases, stakeholders, including project proponents and regulatory authorities, are actively involved in the process, while in others, their involvement is limited or not clearly specified.

Undefined Procedures: In some instances, the data provided lacks clarity on the specific procedures followed for developing ToRs. For example, in Comoros, it's mentioned that the proponent draws up the ToR, but it's not specified if there's any review process involved.

Guidance and Capacity Building: While some countries provide guidance on preparing ToRs, others may lack such support mechanisms.

Transparency and Accountability: Transparency and accountability in the ESIA process are crucial for ensuring the integrity of environmental assessments.

Clarity on Regulatory Oversight: In some cases, it's not explicitly stated whether regulatory authorities have oversight over the development of ToRs.

4.5. Opportunities for Harmonization

From the review undertaken on ESIA steps and terminologies used in the SADC countries, several gaps and areas for harmonization can be identified. The identified gaps provide an opportunity for the SADC region to harmonise. Some of the proposed harmonization steps are summarized in Table 13.

Table 13: Summary of SADC Opportunities for ESIA Harmonization

ITEM	GAP	DESCRIPTION OF OPPORTUNITY
1	Harmonisation of Terminology	Standardising terminology across SADC countries can enhance clarity and consistency in ESIA processes, facilitating better communication and understanding.
2	Standardisation of project categories	It is of paramount importance for the region to develop an agreed prescriptive list of projects which require to undergo through the different ESIA process for uniformity purpose.

3	Common Screening Criteria	Establishing common screening criteria or guidelines can streamline the screening process, ensuring consistent evaluation of project significance.
4	Standardised Scoping Methodologies	Harmonising scoping methodologies and requirements can ensure comprehensive coverage of environmental issues, leading to more effective assessments.
5	Alignment of Permit Processes	Aligning permit application procedures and requirements can streamline authorisation, reducing administrative burdens and delays.
6	Standardised Monitoring Protocols	Defining standardised monitoring protocols and responsibilities can enhance oversight and enforcement, leading to better environmental management.
7	Development of Regional Guidelines	Creating regional guidelines or best practices can promote consistency, transparency, and effectiveness in ESIA procedures across Member States.
8	Capacity Building for ESIA Practitioners	Training and capacity-building initiatives can address gaps in expertise and professionalism, improving the quality of ESIA practice.
9	Standardisation of Certification and Registration	Harmonising certification and registration schemes can ensure competence and professionalism among ESIA practitioners across different jurisdictions. For example, the registration of Practitioners by EAPASA and SACNASP in South Africa or create a regional body for this role. Proposal. A regional forum of practitioners
10	Transparency in Consultant Approval	Making available information on approved consultants can enhance transparency and facilitate informed decision-making. Development of an electronic database of certified consultants or professionals for the SADC region, including decision making processes. Automated decision-making (ADM), in which automated processes are used to execute or inform decisions, is increasingly permeating public sector decision-making throughout the world (Nay et al., 2021). This is supported by the assertions of Kumar et al., (2023), who suggest the use of data mining and artificial intelligence in EIAs.
11	Clarification of Regulatory Oversight	Clarifying regulatory oversight over the development of ToRs can enhance accountability and ensure adherence to standards.

4.6. Proposed SADC ESIA Processes

- It is suggested that Environmental Agencies and relevant government departments be responsible for driving the establishment of the harmonized processes within the SADC countries.

4.7. Guiding Principles

The principles, which will also serve as a basis for any other sector-specific laws relating to the environment, are as follows:

- The principle of sustainable development – all national policies that affect the economic and social development of the country must be based on the principle of sustainable development;
- The principle of access to information and the participation of the public in decision-making on environmental matters;
- People centered development;
- The principle of preventative and corrective actions;
- The precautionary principle;
- The polluter pays principle;
- The principle of international cooperation on environmental matters; and
- The principle of mainstreaming sustainable development across all relevant sectors.

4.8. Process Flow/Decision-making scorecard

Proposal –projects are divided into categories 1, 2, and 3 as depicted in Table 14. Category 1 projects have potentially minimal environmental impacts and may be subject to only screening and approval. Category 2 projects are to undergo a Basic Assessment Process, while Category 3 projects require full ESIA.

Table 14: Proposed environmental assessment categories in SADC,

CATEGORY	LIST	APPLICATION FEES
Category 1 – Subject to only screening exercise	SADC Member States and stakeholders to agree	Fixed fee
Category 2 – Subject to only a Basic Environmental Assessment	SADC Member States and stakeholders to agree	Fixed fee
Category 3 – Subject to only a Full-Scale Scoping and EIR	SADC Member States and stakeholders to agree	Fixed fee

Table 15 briefly describes the nature of the projects.

Table 15: Description of processes

CATEGORY	DESCRIPTION
Category 1 – Subject to only screening exercise	Screening – approval at the local level (SADC Member states to agree on what constitutes local level, perhaps at provincial/ municipality/district level) • Screening of professionals to conduct the assessment • Screening of authorities to review and approve the project Registration of the project is via a prepared form with details of applicants, consultants, and project details. • Potential number and kind of specialist studies • Desktop studies • Site verification report
Category 2 – Subject to only a Basic Environmental Assessment	Basic Environmental Assessment – approval at the provincial/ National level • Screening of professionals to conduct the assessment • Screening of authorities to review and approve the project • Registration of the project is via a prepared form with details of applicants, consultants, and project details. • Stakeholder engagement – proposed process for Member States • Potential number and kind of specialist studies required, for example, below, but on a project-per-project basis o Socio-Economic o Social Impact Assessment o Climate Change Impact Assessment o Geotechnical Investigation o Geohydrological Studies o Ecological Impact Assessment o Heritage and Palaeontological o Health Impact Assessment
Category 3 – Subject to only a Full-Scale Scoping and EIR	Full-Scale ESIA – approval by a national entity or where there are transboundary issues, by an established and agreed to entity, such as SADC in this case. • Screening of professionals to conduct the assessment • Screening of authorities to review and approve the project • Content standardised

	• Stakeholder engagement
	• Potential and number of specialist studies required, for example, below, but on a project per-project basis
	  o Socio-Economic
	  o Social Impact Assessment
	  o Climate Change Impact Assessment
	  o Geotechnical Investigation
	  o Geohydrological Studies
	  o Ecological Impact Assessment
	  o Heritage and Palaeontological
	  o Health Impact Assessment
	• Environmental and Social Management Plans/Programmes
	  o Content standardised
	• Appeals
	  o Stakeholder engagement
	  o Timeframes
	• Penalties
	  o Proposed schedule of penalties
	• Monitoring and Follow-up
	  o Audits – approval authorities.
	  o Environmental Compliance Officer (ECO)
	  o Environmental Compliance Practitioner (ECP)
	  o Environmental Officer (EO)

After analysing a number of reports and a review of different processes from the SADC countries and around Africa, the following process is currently being proposed, Table 16.

Table 16: The Proposed SADC ESIA Processes

Step/ Phase	Proposed Process/ Activity	Proposed Timeframes
1	Project Application/ Registration	30 Days Maximum Including 7-14 days **Public Engagement Process** if required
2	Screening • Baseline and authority consultation on process • Exclusions • Norms and Standards • Geographic Areas • Enquiries • Approval • Online Tools	60 Days Maximum Including 7 – 30 days of Public Engagement
3	Basic ES Assessment Processes for Low-Medium Impact Projects • Define the Nature of the projects • Content of documents	8 months Maximum Including 14 – 45 days of Public Engagement Proposed Approval Timeframe for BES: 30 – 45 days
4	Full Scoping ESIA Processes for High-Impact Projects • Define the Nature of the projects • Content of documents	16 months Maximum Including 14 – 30 days of Public Engagement at the Scoping stage and a further 14 – 30 days of Public Engagement at ES Impact stage Proposed Approval Timeframe Scoping: 30 – 45 days Proposed Approval Timeframe ES: 30 – 60 days
5	Appeals	3-6 months Maximum
6	Penalties	To be determined each member state
7	Environmental Monitoring	Continuous during implementation

The proposed timeframes in Table 16 are just mere guidelines to allow for both the Consultant to have enough time to analyse the information and write a solid environmental report while on the other hand allowing the Authorities to have ample time to review the submitted reports without rushing through which normally leads to incorrect decisions being made. Standardising timeframes or aligning these timeframes across the region makes it easier for both the consultant and developer to follow the process and limits opportunities for unprofessional behaviour. The more predictable the system is, the more the investment will flow into the region.

5. SEA Processes

Further to the ESIA process detailed in the previous section, the strategic context within which the SADC region envisions/aspires to grow its economy and prosper its citizens needs to be understood. Strategic assessment of the implications of strategic plans, programmes, policies and decisions on the environment with a corresponding evaluation of the social well-being and economic prosperity, which rely on well-functioning natural systems especially in the SADC Region whose economy is largely nature based; is recommended.

A SEA is the most suitable tool for achieving this regional scale understanding and is accepted globally as a process that systematically assesses the likely impacts of a policy, plan or programme and its alternatives on the environment in support of the decision-making process. Ideally, the SEA should be undertaken at the conceptual level of the decision-making process in order for its outcomes to be effectively considered in policy formulation and/or the design of a plan or programme.

A significant number of countries are currently either piloting SEA to inform their high-level planning and decision-making processes or are in the early stages of undertaking their first SEA, including several countries in the SADC Region. It should be noted that the status of SEA is constantly changing in countries around the world and that the literature review represents only a snapshot of international good practice based on the documents that were consulted early in this project.

5.1. SEA Categories

Different categories of SEA are often clearly distinguishable barring possible overlaps in cases such as where the SEA is undertaken for the purposes of meeting predefined requirements for donor lending and in SEA's jointly initiated by the Government and Private Sector in which case a hybrid SEA that may combine either of the stated categories may be adopted.

(i) "Policy impact assessment" or "policy ESIA" – the assessment of policies being planned, proposed or already in place.

(ii) "Sectoral environmental assessment" – "the process of examining potential environmental and social implications of all or most of the potential projects proposed for the same sector."

(iii) "Area-wide or regional assessment" – assessments for policies, plans, and programs related to particular jurisdictions (e.g., land use plans for cities) or natural areas (e.g., river basin development plans).

(iv) "Programmatic" environmental impact statements – a term used primarily in the United States to refer to assessments prepared for federal and state plans and programs, such as land use plans and herbicide spraying programs.

5.2. Typical SEA Attributes

Steps in SEA:

- Define goals and criteria
- Examine land-use trends for problems and "hot-spots"
- Develop future scenarios
- Predict likely effects
- Evaluate impacts and value of alternatives

- Modify alternative goals with new constraints

5.3. SEA in SADC Region

For the SADC Region, the potential for the use of SEA is already clear looking at the magnitude of investment envisaged for the economic growth of the region by 2030 (RISDP, 2020). This section therefore explores the use of SEA as a tool that will give effect to the environmental management and sustainability principles agreed to by the SADC Parties in the Protocol for Environmental Management for Sustainable Development in realizing growth aspirations of the Region. Regional scale SADC programmes and corridors that could benefit from the SEA approach will be explored in greater detail, including the harmonization of the SEA methodology for consideration by the SADC parties.

The SEA practice in the SADC Region also has a long history that spans SEA's undertaken by country governments and donor partners. A few examples discussed below provide a better understanding of the reasons behind the SEA being prioritized in each instance.

Examples of SEAs conducted in the region include;

- **Botswana:** SEA for the Okavango Delta Ramsar Site, 2012, commissioned by the Botswana Department of Environmental Affairs, funded by USAID. One of the key objectives of the SEA was to provide a robust institutional and legal framework within which policy and decision-makers can systematically evaluate future development options to guide the sustainable management of the Ramsar site, in-order to ensure that the required monitoring and auditing feedback loops are effectively implemented. This SEA example clearly falls within "Policy Impact Assessment" category with its outcomes also used to review the existing Okavango Delta Management Plan for improved management of this Ramsar Site (Ecosurv in Collaboration with SAIEA – October 2012).

- **South Africa**: SEA for the Development of a Phased Gas Pipeline for South Africa, November 2019, initiated by the Department of Environmental Affairs (DEA), the Department of Energy (DoE) and the Department of Public Enterprises (DPE), together with iGas, Eskom and Transnet. The Council for Scientific and Industrial Research (CSIR) was appointed in April 2017 to undertake the Gas Pipeline SEA Process, in collaboration with the South African National Biodiversity Institute (SANBI). The main objective of the SEA was to identify and pre-assess suitable gas transmission pipeline corridors that would facilitate a streamlined Environmental Assessment Process for the development of such energy infrastructure, while ensuring the highest level of environmental protection. It was envisaged that the final corridors as advised by the SEA outcomes be embedded and integrated into Provincial and Local planning mechanisms to secure long term energy planning. In this example, the SEA category is clearly a sectoral based one, focusing on the South African Region with implications for national and provincial government decision making as well as for local government planning (CSIR, 2019).

5.4. Value-Add

For the SADC Region, the SEA tool is emerging as the most suitable Integrated Environmental Management instrument that can help Parties realize greater synergy on areas of regional integration, jointly managing transboundary resources and achieving shared economic growth. The SEA approach for the SADC Region has

the potential to contribute to meeting the 2030 vision for the Sustainable Development Goals and in the process enabling a Just and Equitable Transition towards a low carbon and resilient economy.

SEA's have also been proven to be an effective tool for planning, decision making and action by governments during instances of recovery from climate change disasters, ensuring that the recovery is undertaken expeditiously but in a sustainable manner that will not further exacerbate vulnerability of communities in the long-term (UNEP, 2018). Several Countries within the SADC region have already experienced devastation from flood events that has seen loss of properties and bulk infrastructure on a large scale.

5.5. Global Context

Globally, SEA's have been used in various contexts, often triggered by the Party funding the programme/plan being subjected to a SEA to safeguard its investment and prevent reputational damage. However, there are many instances where SEA's have been used in compliance with set standards by countries. In terms of guidelines for conducting SEA's, there is a mixed bag that includes guidelines produced by government authorities, United Nations institutions and international organizations.

In 2004, just as the SEA practice was gaining momentum globally, the UNEP funded a study to undertake a review of SEA tools and frameworks that were available and could be used by International Agencies during the time where there was emergence of impact assessment approaches that were less project based but needed to be responsive to policy-based lending and sector level evaluations. This work seems to have been one of the earliest global reviews of the SEA approaches adopted by various parties and features also early ESIA's undertaken in Sub-Saharan Africa. The outcome of this work was an SEA reference guide used by International Agencies such as the IIED and UNEP (Dayal-Clayton and Sadler, 2004).

In 2018, the UNEP produced and published a guideline for SEA in post-crisis countries to incorporate disaster risk-reduction and climate change adaptation in sustainable reconstruction and development planning (UNEP, 2018). The guidance note proposes a fit for purpose methodology for conducting SEAs under post-crisis situations in order to fast-track decision making while enabling sustainable reconstruction.

5.6. General SEA Attributes

Typically SEA involves the following main stages:-

- Screening (does the policy, plan or programme require SEA)
- Scoping (what environmental issues should the SEA address) – ideally with public and stakeholder consultation
- Baseline data (establish the environmental baseline- current state of the environment)
- Alternatives (what alternative options to the plan or programme could be taken)
- Mitigation (what can be done to alleviate negative and enhance positive impacts of the chosen options)
- Environmental Report (document process and findings in a transparent way, including identification and assessment of significant effects)
- Public consultation (consult general public, stakeholders and NGOs)
- Consider SEA findings and decision-making (take SEA findings into account in finalising and adopting/approving the plan/programme)
- Monitoring (monitor implementation of plan/programme)

5.7. Gaps

An analysis of SEA's undertaken so far in the region shows that there has not been a uniform approach to conducting SEA's. The following gaps have been noted.

- Many countries in the SADC region have no defined SEA regulations in terms of legislation.
- SEA's have historically been initiated by governments and in some instances by foreign governments that are donors for programmes undergoing an SEA. This may have added to the lack of uniformity in the SEA approach.
- The critical element of stakeholder engagement is also not prescribed by regulations and remains at the discretion of the party undertaking the SEA, leading to inconsistencies.
- The SEA tool has not been used much in many SADC countries despite the many advantages it brings, instead a more reactive approach of undertaking SEA when investors show interest

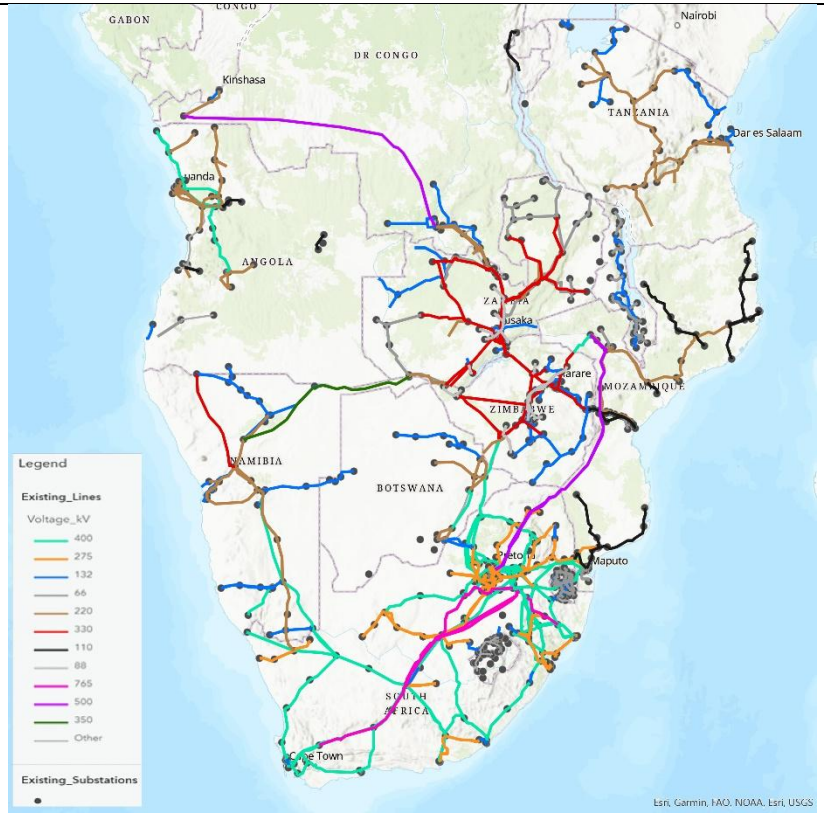
5.8. Opportunities and Harmonization

- SADC countries are urged to develop guidelines and regulations for SEA in order to promote greater usage of the SEA tool in the SADC Region in order to proactively assess environmental and socio-economic impacts of all policies, programmes and plans that SADC Parties have committed to through various ratified strategies.
- Governments and the private sector have the real opportunity to introduce SEA as early as possible in their talks regarding private sector investment and possible Public/Private Partnerships.
- The SADC are encouraged to include the critical aspect of stakeholder engagement throughout the SEA process for greater acceptance of the SEA outcomes
- There is a real opportunity to inclusively develop a standardized SEA methodology for the SADC Region.
- The development of SEAs for Sectors and related corridors
- Member States should establish corridors that interconnect with neighbouring countries for each sector corridor
- Each sector corridor to develop generic environmental management plans which should be approved for different geographic areas along the corridor
- If a project falls within a corridor that has an approved SEA, Marine Spatial Planning and EMPR, a streamlined ESIA must be undertaken. However, if the project falls outside the corridor, then a full ESIA or basic assessment process should be undertaken.
- Member States should develop Norms and Standards for repetitive projects. The projects that require Norms and Standards can be registered with Environmental authority of the respective country.
- Registration of practitioners should be done through professional bodies or environmental agencies within each Member State or establish a regional professional body for practitioners who want to work across the region.
- Consider making the implementation of SEA mandatory for major sectoral policies, particularly in the fields of infrastructure, energy, mining, agriculture, spatial planning, and the environment.
- Strengthen the integration of social, gender, and human rights dimensions at all stages of the SEA, including at the early planning phase.
- Establish a structured participation of youth, women, and local communities in SEA processes, relying on inclusive and accessible tools (translation, local languages, visual aids).
- Create a regional network of national environmental assessment agencies to facilitate technical cooperation, the exchange of best practices, and the harmonization of methods.
- Set up a regional funding mechanism for SEA processes for countries with exceptional ecological heritage, like the DRC, to support the quality and rigor of strategic evaluations in sensitive areas.

6. Proposed SEA Corridors/ Strategic Areas

Having underscored the effectiveness of a SEA in guiding strategic level decision making and fostering regional integration, the SADC Region could begin to use SEA as a means of achieving sustainable socio-economic development. Table 17, below unpacks the opportunities for use of SEA on some of the Strategic Priority Areas and corridors identified in the RISDP.

Table 17: SADC Proposed SEA Corridors and Areas

Strategic Priority Area/Corridor	SADC vision	Examples for Potential Corridor/area development using SEA
Energy projects Transmission Lines	SADC region has an opportunity to plan and develop transmission projects as part of regional integration in the energy sector to help distribute power from countries with surplus electricity production to those with shortfalls. The development of regional power interconnectors will enable SADC Member States to share and benefit from increased generation capacity across borders. SADC Member States to develop Transmission line corridors for the	 Figure 3: SAPP SADC Grid Map: SAPP, 2025

<table>
<tr>
<td></td>
<td>evacuation of electricity between the countries.</td>
<td>A number of transmission projects are at various stages of implementation, which aim to evacuate electricity from new power stations to areas with power deficits. The table below shows Transmission Projects to Move Power from New Generating Stations to Load Centres.

As an example, South Africa has developed its strategic transmission corridors throughout the country.

<table>
<tr><th>Project name</th><th>Countries involved</th></tr>
<tr><td>Grand Inga Transmission</td><td>DRC</td></tr>
<tr><td>Mozambique-Malawi Transmission</td><td>Malawi, Mozambique</td></tr>
<tr><td>Botswana-South Africa Transmission</td><td>Botswana, South Africa</td></tr>
<tr><td>Botswana-Namibia Transmission</td><td>Botswana, Namibia</td></tr>
<tr><td>South Africa-Namibia Transmission</td><td>Namibia, South Africa</td></tr>
<tr><td>Mozambique-Zambia Transmission</td><td>Mozambique and Zambia</td></tr>
<tr><td>Kolwezi-Solwezi Transmission</td><td>DRC, Zambia</td></tr>
</table>
</td>
</tr>
<tr>
<td>Renewable Energy Resources (Hydro-electric, solar, Biomas, Wind, Geo-thermal, hydrogen, Wave and Tidal)</td>
<td>To ensure the availability of sufficient, reliable, least-cost/affordable, sustainable, clean, carbon free, and modern energy services for SADC that will assist in the attainment of economic efficiency, industrialization and the eradication of poverty whilst ensuring the environmentally sustainable use of energy resources.</td>
<td>SADC should undertake a series of Strategic Environmental Assessments (“SEAs”) to determine the environmental implications of the renewable energy policies and plans. Through the SEAs, the region can identify Renewable Energy Development Zones (“REDZs”) within each Member States that are of strategic importance for large-scale renewable energy developments as well as Strategic Transmission Corridors that are important for the rollout of the large-scale electricity infrastructure required for the energy projects within these areas.
For example, and as shown below, South Africa has established the renewable energy development Zones (REDZs), most of which are close to the transmission corridors.</td>
</tr>
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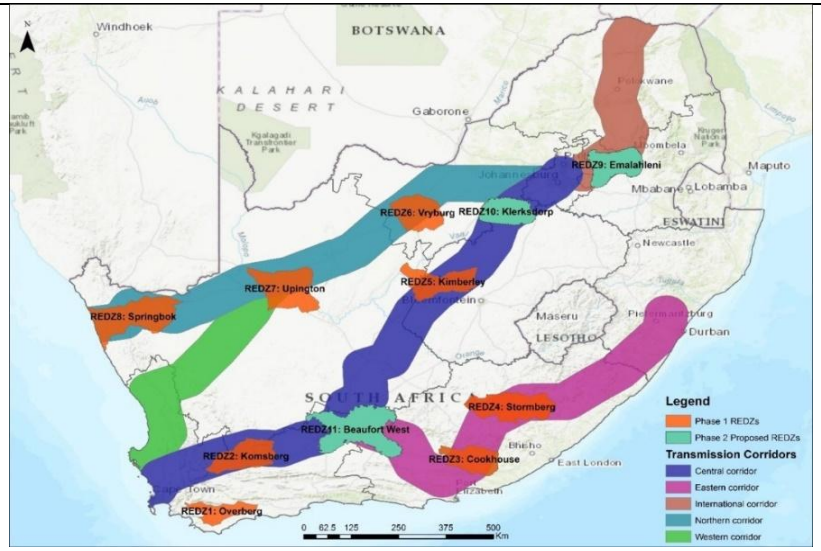
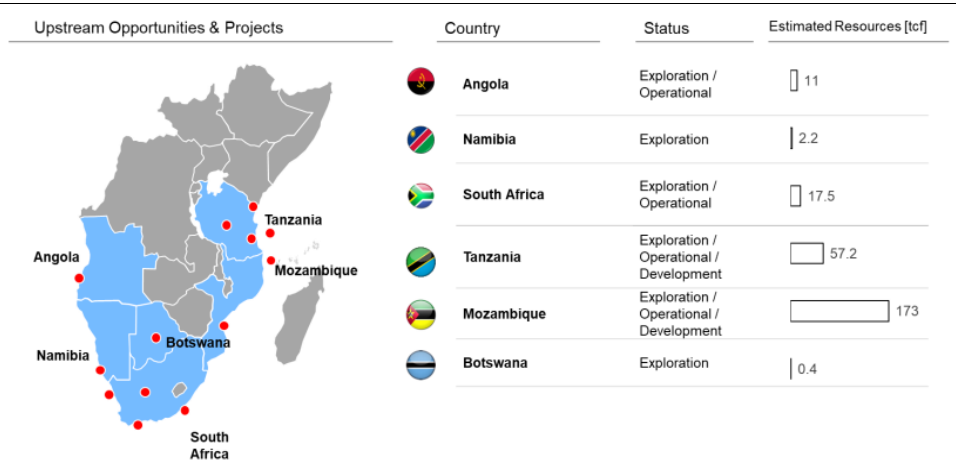
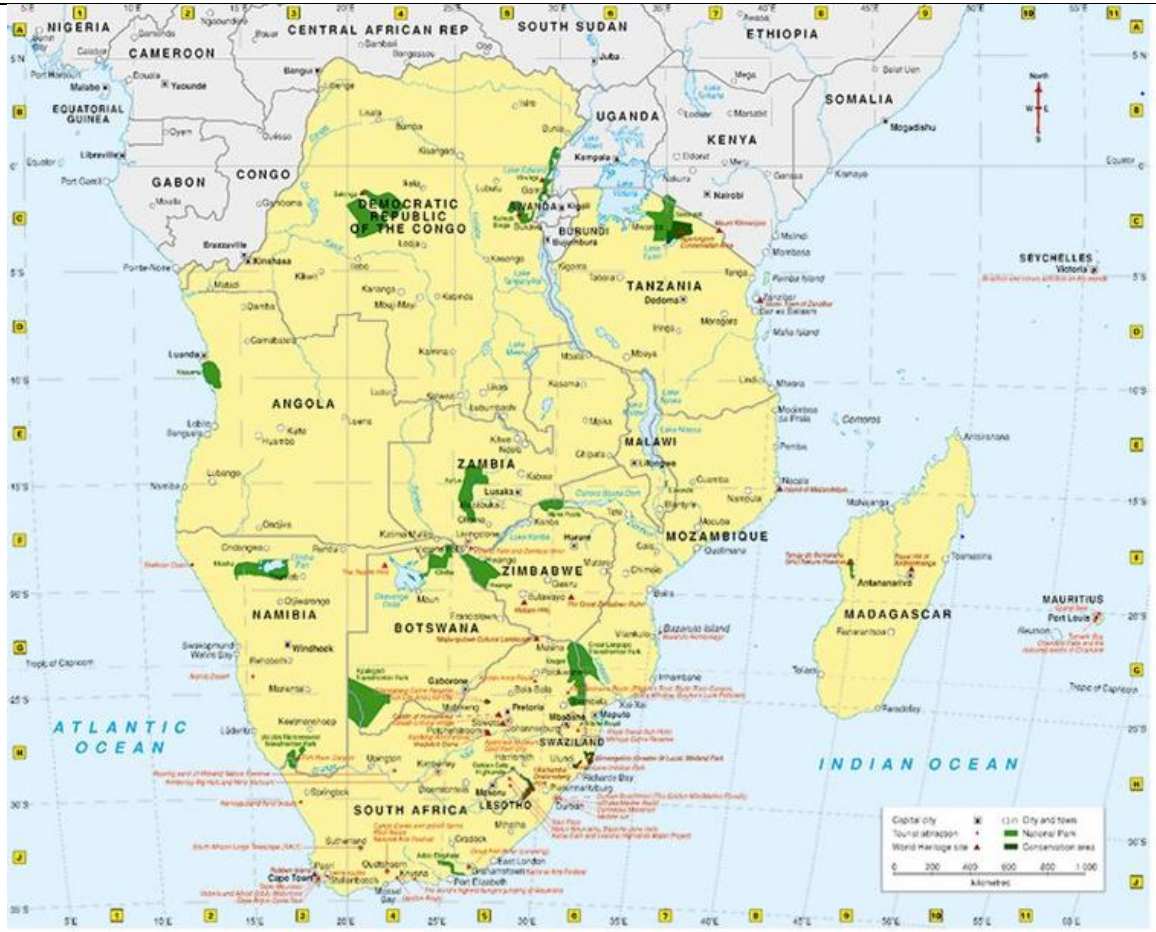
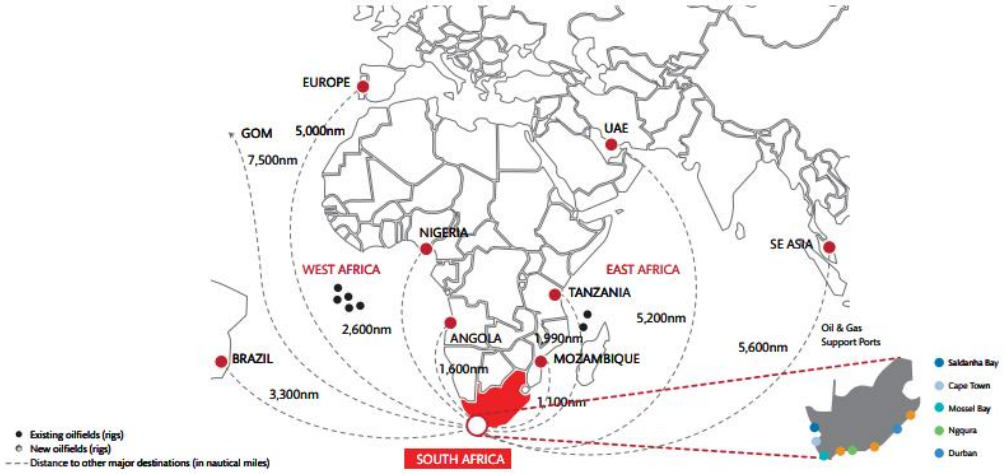
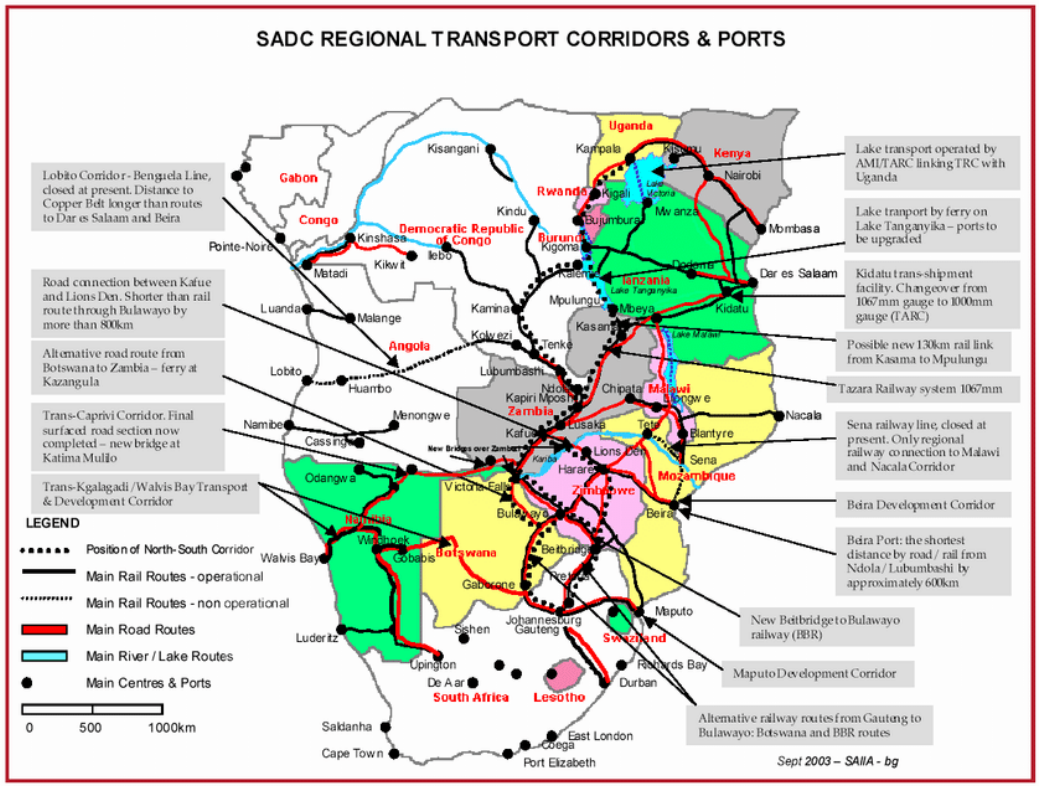
		 Figure 4: Map showing the eight REDZs (in orange), the three additional REDZs (in blue) and the Strategic Transmission Corridors (discussed below) [Map source: CSIR]
Oil and Gas	The global demand for crude oil and gas has spurred significant activity across the SADC Member States aimed at developing the respective oil and gas industries. The SADC Vision is to create synergies across Member States, with the goal of harmonising oil and gas industries and promoting regional integration and economic growth. This necessitates the SADC region to further develop	 Figure 5: SADC Natural Gas Resources (SADC Gas Masterplan, 2022) There is increase in demand for oil and gas globally, which necessitates the SADC region to further develop the oil and gas industry. The SADC region has several natural gas deposits in various countries. Mozambique is currently at the forefront, with an excess of 100 trillion cubic feet (tcf) of proven natural gas reserves. Countries such as

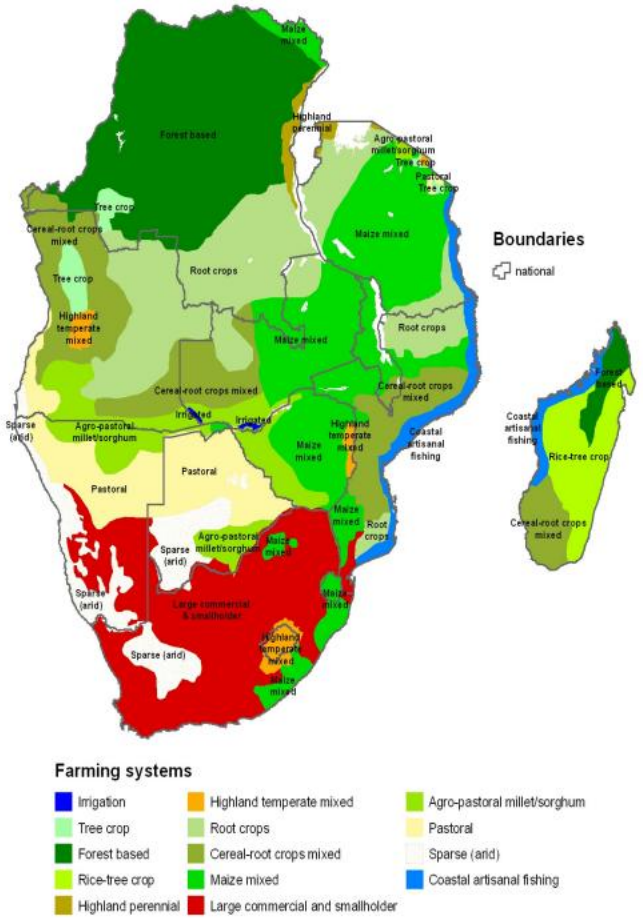
	the oil and gas industry, through undertaking a SEA process.	Tanzania, Angola, Namibia, and South Africa have economic reserves that are currently, and can potentially be, monetised.
Water and Sanitation.	A water secure future for a resilient, peaceful and prosperous SADC region. To manage and develop water resources sustainably across the region, aiming to improve access to water and sanitation through a coordinated approach to water governance, infrastructure development and water management across Member States. Multiple SEAs will be required per catchment and for ground water resources.	 Figure 6: SADC River Basins (SADC Water 5th Regional Strategic Action Plan) There are a number of island states that have unique water resource regimes and challenges, whilst on the mainland of Southern Africa there are 15 major shared river basins. This has prompted the need for strong transboundary and regional cooperation coupled with harmonisation of legislation, strategies, and policies to ensure peace in the region.

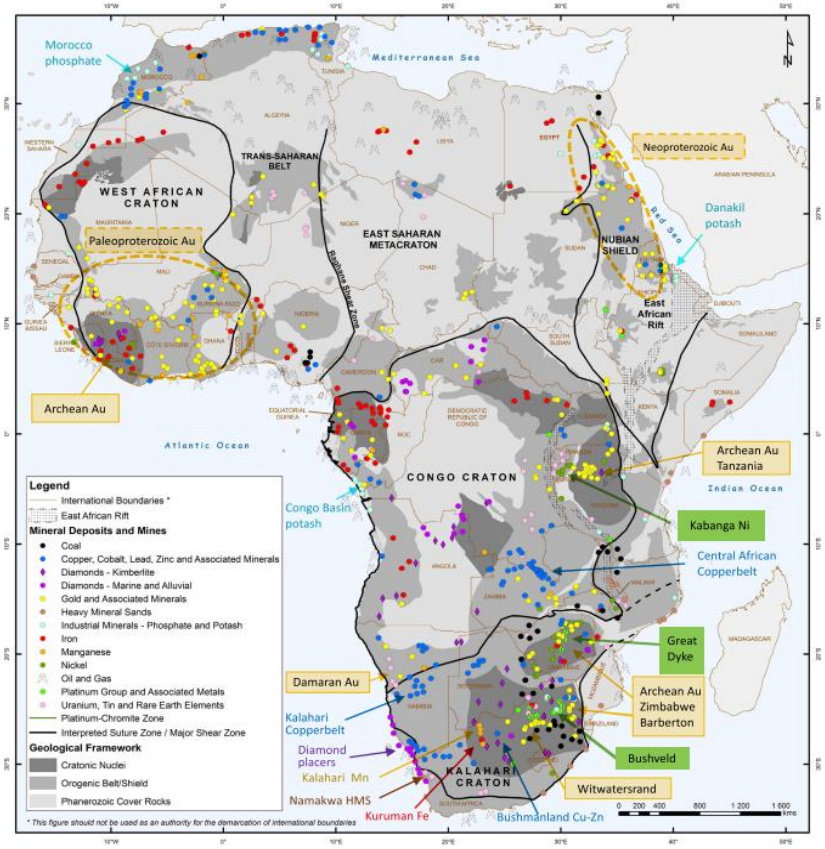
		There is growing urbanisation and increasing population growth, the demand on water resources between competing users is intensifying, particularly around agriculture and industrial use, which requires balancing act that is supported by strong planning and management of water resources across all SADC Member States. This can be accomplished through a SEA process.
Transfrontier Conservation Areas (TFCAs) and Protected areas	To support a functional and integrated network of Transfrontier Conservation Areas where shared natural and cultural resources are sustainably co-managed, conserved and recognised as a foundation of economic development, human well-being and improved resilience of people living within and around TFCAs.	 Figure 7: SADC Transfrontier Conservation Areas (TFCAs) 2025 **Other (Category C)**: These TFCAs are conceptual stage and Member States are still to send jointly signed letters of intent with any supporting documentation (e.g., Concept Note, International Union for Conservation of Nature (IUCN) Diagnostic Tool for Transboundary Conservation Planners, implementation plan) either on own initiative or following the information request from SADC Secretariat.

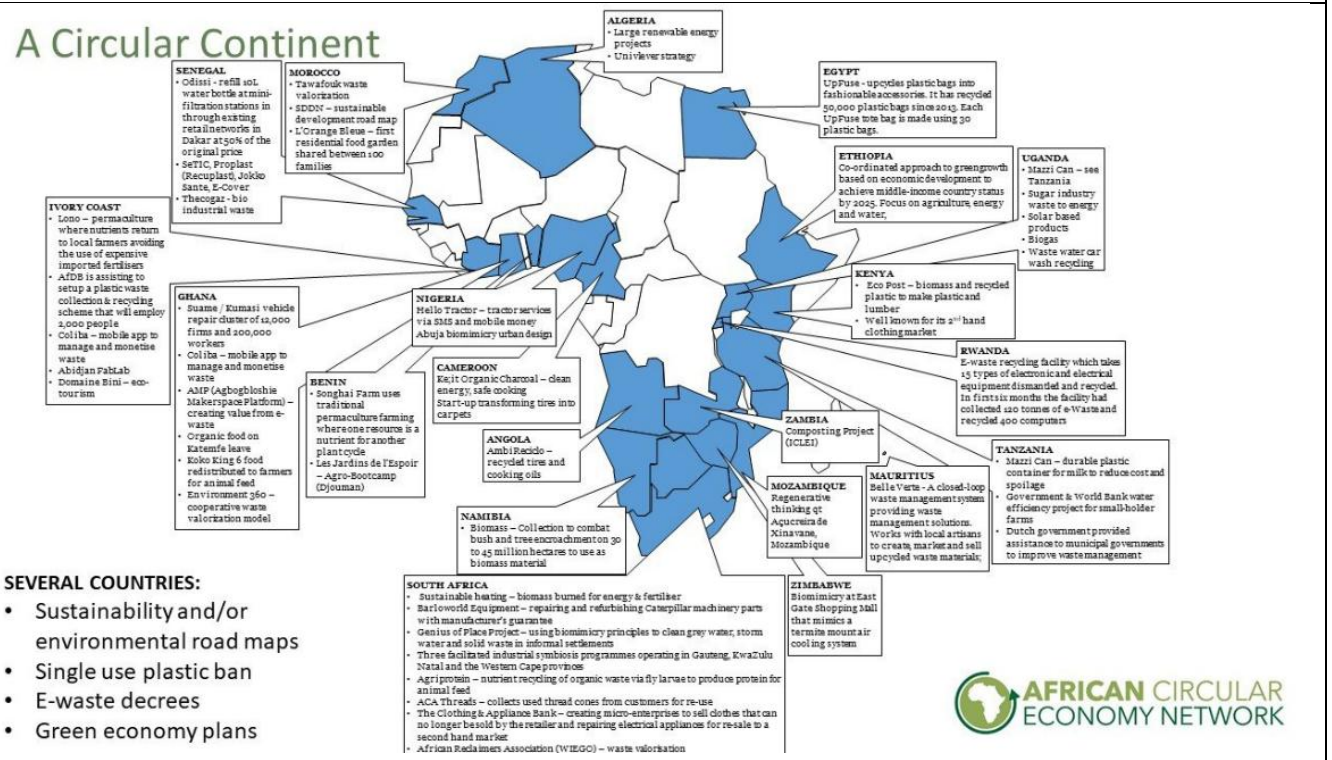
Tourism and Cultural Heritage	Growth in cross-border, multi-destination travel in SADC to exceed average global tourism growth levels through advocating, facilitating and effectively coordinating tourism policies, programmes and practices in the region in collaboration with Member States. SEA will establish long term investment needs for the tourism sector within the region.	 Figure 8: The SADC Tourism Map SADC has a number of interconnected tourism attraction areas and nodes. A SEA is required to map the corridors to facilitate multi-destination travel and the development of the sector.

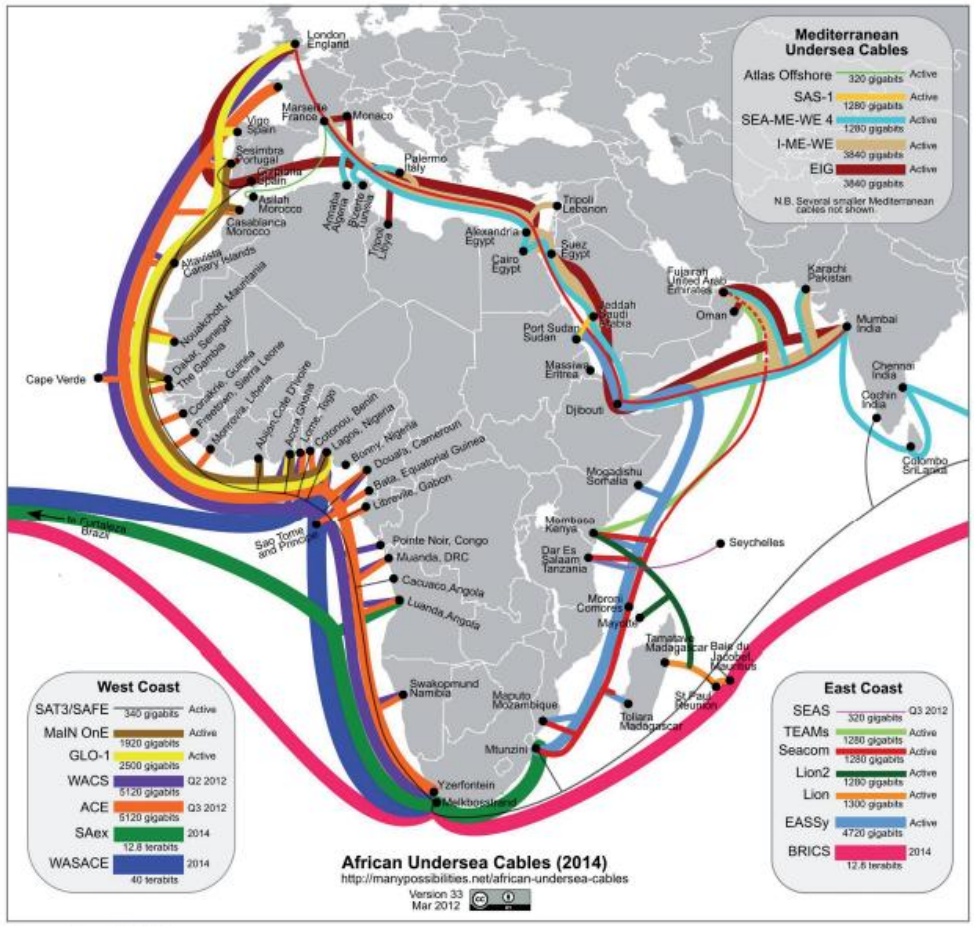
Blue Economy	SADC Blue Economy envisions exploitation of marine and large inland water bodies resources in a socially and economically inclusive, environmentally resilient and sustainable use that significantly contributes to SADC's mandate for regional integration and sustainable development. .	 Figure 9: Interconnectedness of South Africa to African oilfields Sector Based SEAs are urgently needed for the region to fully realise the Blue Economy potential, for socio-economic development in the SADC region.
Transport (Roads) Ports and Rail)	To provide transport infrastructure and services such as (electric vehicle charging points, weighbridges), as well as policy and legislature, enabling environmental and supportive institutions with human resources and institutional capacity to transform the transport sector. This will ensure a sector that is relevant in the future and can efficiently address the needs of the transport system users.	The map below highlights three key corridors: the North-South Corridor running north from Durban, South Africa, the Maputo Corridor through Mozambique, and the Dar-es-Salaam Corridor in Tanzania; these corridors connect important shipping ports to industrial areas and are considered the primary focus for infrastructure development within the SADC region. For example, key points about the SADC transport corridors: • **Major Ports:** These corridors connect to major ports like Durban (South Africa), Maputo (Mozambique), and Dar es Salaam (Tanzania). • **Development Focus:** The SADC prioritizes development in these corridors due to their potential for economic growth and trade facilitation. • **Other Corridors:** While the North-South, Maputo, and Dar-es-Salaam corridors are the most prominent, other secondary corridors like the Beira and Nacala corridors also exist and require further development. Specific SEAs are required for each mode of transport (road, rail and ports) to facilitate interconnectivity of corridors.

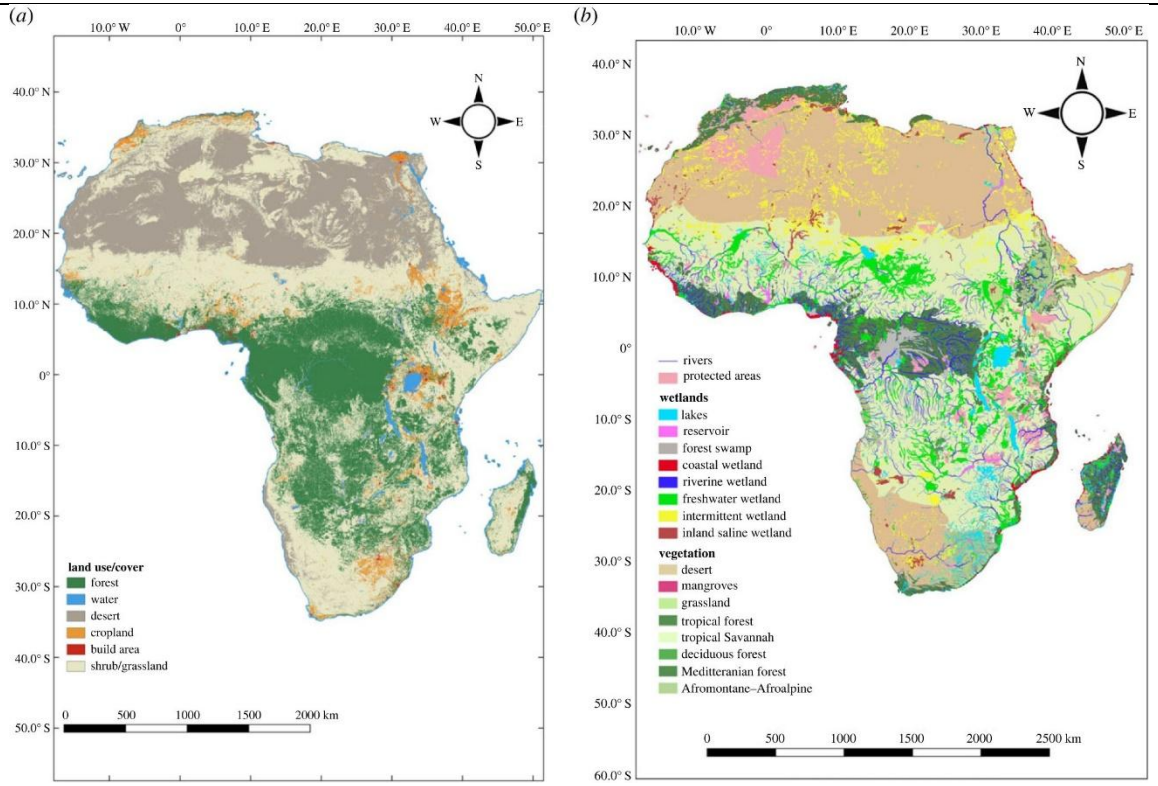
	The creation and implementation of the One-Stop Border Posts which are a measure to increase efficiency and decrease costs at border crossings.	 Figure 10: SADC Regional Transport Corridors and Ports
Transport Aviation	To provide a network of intra-regional services which connects regional centres with major hubs and ensure that regional aviation remains fully integrated globally, and aligns to international conventions, standards and recommended practices.	Air transportation in Southern Africa relies on a central hub through which most traffic flows; for the SADC region, this hub is the OR Tambo International Airport in Johannesburg, South Africa. With a capacity to handle 28 million passengers annually, it is Africa's largest airport, serving traffic from most countries on a daily basis, including through-traffic between capitals of SADC Member States. As air traffic in the region expands, most of it will pass through Johannesburg, which is currently set to accommodate an increase of two million passengers a year by 2030, building to three million passengers by 2040. This is also applicable to air cargo, transporting goods to different countries and places. However, as travel and cargo increase through stronger integration with the region and the world, traffic at many of these airports is expected to exceed their capacity. Therefore, this requires SEA processes to support aviation efficiency.

Agriculture and Food Security	To contribute to sustainable agricultural growth and socio-economic development.	 Figure 11: Agro-ecologies and Farming Systems in SADC Southern Africa's diverse agro-ecological zones and agricultural systems illustrate that agricultural performance in the region is conditioned by deeper socioeconomic and biophysical realities. In particular, agricultural performance determines and reflects: spatial distributions of human population and associated access to cultivable land, agricultural potential as captured by agro-ecological conditions, and access to markets. Increasing agriculture production without proper concurrent planning and infrastructure development can thus lead to environmental degradation. Therefore, there is need to undertake SEA process to improve agricultural production and productivity in an environmentally sustainable way. The SEA process will **identify different agricultural corridors** which will

		enhance sustainable agricultural production, productivity and competitiveness; Improve regional and international trade and access to markets of agricultural products; Improve private and public sector engagement and investment in the agricultural value chains; and Reduce social and economic vulnerability of the region's population in the context of food and nutrition security and the changing economic and climatic environment.
Mining and Extractive Industries	To promote sustainable development by ensuring that a balance between mineral development and environmental protection is attained. Member States shall encourage a regional approach in conducting environmental and social impact assessments especially in relation to shared systems and cross border environmental effects of mining operations.	 Figure 12: Significant mineral occurrences in Africa. Superimposed on a map detailing major mineral deposits of Africa (Frost-Killian et al. (2016). The development of a harmonized minerals industry environment in Southern Africa requires addressing the major issues impacting on minerals development and international competitiveness. Some of the issues are peculiar and specific to the minerals industry while others are crosscutting. As a result, the pursuit of harmonization has to be holistic and should encompass all environmental, economic, political and social facets in the region. In the initial

		stage, however, harmonization of aspects specific to the minerals industry is needed before tackling broader issues, which can be done through SEAs.
Circular Economy (Pharmaceuticals, traditional/ indigenous products, Chemicals, Waste	To promote circular economy industries with the circularity principles, mutual learning in areas of research and innovation, and the valorisation of indigenous/ traditional knowledge), cooperation (e.g., in multi-country partnerships) and collaboration (e.g., in value chains, or in transboundary landscapes).	 Figure 13: A selection of Circular Economy examples in Africa. The SADC region is at a crossroads; its economies are growing, but most countries are still on the verge of economic and urban transformation. This gives SADC enormous potential to avoid any dangers of "linear lock-in" of certain industrial sectors to ensure (un)sustainable "business as usual" and develop instead in a more sustainable way on a legal, socio-economic and environmental level. This 'leapfrogging' can be enabled by close collaboration between countries by exchanging best practice and sharing lessons learnt across all value chains through the alignment of regional policies.

Telecommunications and ICT (Fibre and towers)	To improve connectivity and access to affordable, high-speed internet across all SADC Member States by focusing on developing robust broadband connections between countries, ensuring internet exchange points within each country, and facilitating access for underserved areas through terrestrial wireless or satellite technologies, while also encouraging private sector involvement in infrastructure development; ultimately aiming to achieve a "Digital SADC" by enabling regional integration through ICT usage.	 **Source:** Song (2011) Figure 14: Map showing existing and planned submarine fibre cables for Africa The current status of ICT in the SADC region reveals that one of the main shortfalls is that although most of the underlying infrastructure is in place, it is not efficiently utilised. Landlocked SADC Member States still pay more to get their traffic to the coast or to the rest of Africa than they do to get from the coast to Europe, the United States or Asia. National fibre optic backbones in many SADC Member States require improved management, upgrading and extension to cover more of the population, at affordable prices. It is evident that due to limited development of traffic exchange points, much domestic and regional traffic is exchanged overseas, leading to poor network performance and millions of dollars in transit fees annually paid to foreign operators. As a result, high access costs prevail across

		the region, severely limiting use, especially for broadband services, among the general public. This in turn constrains demand for the development of local applications and services, resulting in the continued use of inefficient manual processes.
Biodiversity (Alien Invasive Species & Marine pollution)	To promote effective conservation, sustainable use and benefit sharing of biodiversity, and ecosystem integrity by fostering collaboration, building capacity, resource mobilization, and promoting good governance among Member States.	 Figure 15: Major land-use and land cover classifications and terrestrial and aquatic ecosystems connectivity in Africa (https://doi.org/10.1098/rstb.2022.0271) SADC Regional Biodiversity Strategy is underpinned by the recognition that the state of the environment (which includes biodiversity) is a major determinant of the growth and development of the region and affects the living standards of its citizens. Consequently, addressing environmental issues and challenges is a necessary condition for achieving SADC's goals. The SEA process will assist in identifying and implementing trans- boundary initiatives related to biodiversity conservation and its sustainable use in Southern Africa. In addition, the region's rich biodiversity is under threat from the dominance of invasive alien species. The SEA process will help to map alien

		invasive species hot spots in order to draw up regional management plans towards the eradication of alien invasive species.

7. Proposed Impact Assessment and Risk Assessment Methodology

There are various impact assessment and risk assessment methodologies currently being used across the world. Some of these methodologies can be so technical that it becomes difficult to apply them across different regions without proper capacity building. The methodologies that have been discussed in this document are closely aligned with those that have been identified within the SADC region Member States as commonly being used by various practitioners and competent authorities (Government authorities/ Decision-makers).

It is important to take note of the double-sided nature of these methodologies where on one hand are the practitioners and on the other hand are the Decision-makers with their own assessment processes and procedures.

7.1. Global ESIA and SEA Processes

In coming up with a methodology for SEA usage within the region, it should be noted that the SEA:

- should help to identify the best option for the strategic action. It should thus help to identify and assess different plan options, for instance the most sustainable option, the Best Practicable Environmental Option which meets demands but minimises damage, and demand management - modifying forecast demand rather than accommodating it.
- involves making judgements on limits beyond which irreversible damage from impacts may occur. This requires prediction and evaluation of the effects of the strategic action. This generally means comparing the likely future situation without the plan - the "baseline" - against the situation with the strategic action: this is the prediction aspect. It also involves an element of judgement about whether the effect is significant or not: the evaluation aspect.
- should apply the precautionary principle: if the value of development and its impacts are uncertain there should be a presumption in favour of protecting what exists.
- should aim to minimize negative impacts, optimise positive ones, and compensate for the loss of valuable features and benefits. Impact mitigation in SEA often takes other forms than end-of-pipe technology: it could include changing aspects of the strategic action to avoid the negative impact, influencing other organisations to act in certain ways, or setting constraints on subsequent project implementation.

SEA should be transparent and promote public participation in decision-making. It should document what has been done, why decisions have been made, and assumptions and uncertainties.

7.2. SEA Methodology

The proposed methodology to undertake SEA is generic in nature and is designed to be flexible and applicable to all of the plans and programmes that may require SEA. When applying the proposed methodology, it will be important to adapt the individual tasks to the nature of the plans and programmes, and the level of detail of the plans and programmes being assessed. This will increase the effectiveness of the application of the tasks and the quality of the outputs.

Methodologies for SEAs are not as well-developed as for project-level ESIA comparative studies are needed on the use of various techniques. No one standardized method (i.e., depends on specific use of SEA - upper level policy development local land use planning). SEA Techniques therefore include:

- Techniques used for project-level ESIA
- Techniques typically used for policy analysis/plan evaluation (e.g., scenario building and analysis)
- No one single technique can be used to fulfill all the steps in a SEA

General Stages for SEA processes, currently in use, have a number of features in common. The proposed methodology is composed of 12 procedural "Stages" as detailed in Table 18.

Table 18: General SEA Stages

Steps	Activity	Comment
1	Baseline Study	• Identify the current state of the environment: • Identify issues and concerns • Establish a benchmark to evaluate impacts (i.e., the difference in the status of the environment with and without the project or activity)
2	Screening	• Compilation of desktop information on the actual project • GIS/ Remote sensing activities
3	Scoping	• Site Investigation • Compilation of project area information • GIS/ Remote sensing activities • Identification of Key Specialists required • Include Consultation 30 – 45 Days
4	Establish Environmental Indicators	Establish Environmental Indicators: The description and evaluation of effects is given in terms of "sustainability indicators" (i.e., measures used to gauge whether the proposal will contribute to sustainable development). Indicators are used to: • measure and describe baseline environmental conditions (e.g., State of the Environment reporting) • predict impacts • compare alternatives • monitor implementation of Project Engagement • Internal Stakeholder Consultation
5	Identify Options	Comparing alternatives enables decision makers to determine which Public Engagements is the best option and achieves:

		• the objectives at the lowest cost or greatest benefit and/or • the best balance between contradictory objectives Options can include: • "do nothing" or „continue with present trends" option • different locations • different types of development which address the same objective (e.g., energy by gas, coal, wind) • different forms of management • demand reduction Techniques for Identifying Options include: • Environmental policy, standards, strategies • Previous commitment precedents • Regional/local plans • Monitor the changes the environment would undergo by identifying the differences between the initial situation (without the project) and the current situation (with the project). This will allow for better consideration of the observed impacts in defining measures (enhancement, elimination, compensation, etc.) to be recommended • Public values and preferences • Internal Stakeholder Consultation
6	Impact Analysis	This typically follows the normal ESIA impact assessment process.
7	Development of SEA Report	Report contains minimum content requirements • Public Stakeholder Consultation 30 – 45 days
8	Revision	Revisions based on Public Engagement and government discussions Framework for implementing development projects within the strategic area/ corridor
9	Approvals/ Authorisations/ Endorsement	Approval note of the SEA from the relevant Member States
10	Monitoring and Follow-Up	Checking progress of project and or programme implementation • Public Engagement regularly
11	Post-Adoption Activities	Includes roadmap for implementation

12	Post-project/ Closure Report	Project closure after verification of impact

7.3. ESIA Methodology

Environmental and social analysts are responsible for screening the project for environmental and social impacts to determine the type and level of environmental and social assessment required. As a guide, the following criteria listed below are proposed for the different project categories.

7.3.1. Procedures to follow for Category 1 Projects: Low Risk

These projects are unlikely to have adverse environmental impacts as the social, physical and biophysical environments will not be significantly affected. As programmes and projects in this category are unlikely to have significant adverse environmental impacts, they are therefore readily appraised with limited environmental information. The Practitioner/ Developer should develop the following documents for review by decision making authority:

- Evidence of project screening undertaken to identify whether any potential E&S considerations require further investigation;
- All permits or approvals required in terms of national legislation;
- Any measures necessary to anticipate and manage affected community impacts;
- A Basic ESMP may be required depending on the project's scale and scope;
- Norms and Standards.

7.3.2. Procedures to follow for Category 2 Projects: Medium Risk

Category 2 programmes and projects are medium risk projects which may have adverse environmental and social impacts, but which are likely to be reversible and potentially less severe than those associated with Category 1. For medium risk projects, the depth and type of environmental and social impact assessment required will depend on the type of project and the type of environmental and social risks encountered. The Practitioner/ Developer needs to provide at least the following for review by decision-making authority:

- Environmental and Social Basic Assessment Report
- A Basic ESIA
- The Basic ESIA should include the minutes of any stakeholder engagement meetings and meeting attendance registers
- A comprehensive ESMP containing sufficient detail to assess, manage and mitigate the project's E&S risks and outcomes.
- Any additional impact and/or risk assessments and plans considered in determining the project's environmental and social screening and appraisal.

7.3.3. Procedures to follow for Category 3: High/Substantial Risk Projects

The E&S impacts generated by these projects are likely to be significant, broad and diverse. They may be irreversible and could lead to significant impacts on the social, physical and biological environment, and changes in land use. The following documents are proposed to be developed for review by decision-making authority;

- An Environmental and Social Scoping report
- A comprehensive Environmental and Social Impact Assessment (ESIA)
- Minutes of any public stakeholder engagement meetings and meeting attendance registers
- A detailed environmental and social management plan (ESMP) (or similar) and all supporting documentation, setting out the recommended mitigation measures for the project.
- Depending on the project's scope, a Social Assessment and Cumulative Impact Assessment and Emergency Preparedness Plan
- A Stakeholder Engagement Plan
- Specialist Studies
- Any special measures
- Grievance and redress mechanisms

7.3.4. Environmental and social risk assessment tools

All the applicants/ project developers are required to assess, manage and monitor the project's E&S risks, impacts and outcomes throughout the project life-cycle in a manner and within a timeframe in accordance with relevant legislation. The applicant/ project developer is required to apply an integrated environmental and social management approach utilising appropriate methods and tools, including a combination of the following, as appropriate to the project circumstances. Such tools include:

- Environmental and Social Impact Assessment (ESIA), which identifies and assesses specific potential programme/project/activity E&S impacts, evaluates alternatives, and outlines appropriate mitigation, management and monitoring measures.
- Environmental and Social Audit (ESA), which identifies significant E&S risks (including legal compliance risks, ESSS risks and loan agreement risks), assesses the current status of project activities and identifies whether activities meet all relevant requirements. It outlines significant findings, identifies any deviations and liabilities, and sets out recommended measures, actions and time frames.
- Hazard or Risk Assessment (HRA) which identifies, analyses, and controls hazards associated with dangerous materials and conditions at a project site. The applicant/ project developer should develop and implement a hazard or risk assessment for projects involving certain inflammable, explosive, reactive, and toxic materials present in quantities above a specified threshold level. The applicant/ project developer may include the HRA in the ESIA and/or SEA.
- Cumulative Impact Assessment (CIA) which considers cumulative project impacts from relevant past, present, foreseeable developments and unplanned but predictable project-related activities that may occur later or at a different location.
- Social and conflict analysis assesses the degree to which the project may exacerbate tensions and societal inequality within the project-affected communities and between these communities and others or contribute to any form of conflict and instability within the project area of impact.
- Environmental and Social Management Plan (ESMP) outlines measures and actions the applicant/ project developer must apply to assess and manage the potential E&S risks and impacts and ensure that the project complies with the ESSSs over a specified timeframe. The applicant/ project developer will be required to implement the measures and actions identified in the ESMP. Depending on the nature of the development, this may include a Resettlement Plan, Livelihood Restoration Plan, Indigenous Peoples' Plan, Biodiversity Action Plan, or Cultural Heritage Management Plan as agreed with the approving authority.

- Environmental and Social Management Framework (ESMF) examines the principles, rules, guidelines and procedures to assess the E&S risks of a programme and/or a series of sub-projects. The ESMF outlines measures and plans to reduce, mitigate and/or offset adverse risks and impacts, a budget to implement identified measures, the parties responsible and their capacity.

7.3.5. Performance and compliance monitoring

The applicant/ project developer is required to monitor the project's E&S performance in accordance with the loan agreement and contract, and any environmental conditions attached to the environmental permit or license, as well as the ESMP. The applicant/ project developer's obligations with regard to monitoring include the following:

- Ensure that adequate institutional arrangements, resources and personnel (including relevant third parties or other agencies) are in place to carry out monitoring;
- Establish relevant operational controls to track performance, and comply with actions requested by relevant regulatory authorities and stakeholders;
- Document monitoring results to provide an accurate and objective record of project implementation, ESMP compliance and adherence to the ESSS requirements;
- Designate senior officials to compile regular project monitoring reports to submit to the approval authorities as per the ESMP specifications. Based on the monitoring results, the applicant/ project developer will identify any necessary corrective and preventive actions, and incorporate these in an amended ESMP or the relevant management tool, in a manner acceptable to the approval authority;
- Implement the agreed corrective and preventive actions in accordance with the amended ESMP or relevant management tool, and monitor and report on these actions;
- Notify the approval authority promptly of any incident or accident relating to the project which has the potential to have a significant adverse effect on the environment, the affected communities, the public or workers. The applicant/ project developer will take immediate measures to address the incident or accident and to prevent any recurrence, in accordance with national law and the ESSSs.

7.4. Public Participation/ Stakeholder Engagement Methodology

One of the most critical steps which is always undermined during project development phases is the Public Participation Process and/or Stakeholder Engagement Process. These two terminologies are usually used interchangeably within the SADC region. In general, and as a minimum, all affected persons on a project, whether directly or indirectly and whether intentionally and unintentionally need to be informed and consulted on the project during the planning stages into the designs, construction and thereafter operational stage. However, for projects with a much bigger footprint and/ or impact, the project developers and government are required to actively involve the people in decision making which is more than just providing project information. All the people affected by projects should feel a sense of belonging and respect since these projects usually bring a change in the lifestyles of the impacted persons.

In terms of sharing the information on projects, this can be done through posting notices on site, the use of local newspapers, the use of technology e.g. social media and for bigger and more complex projects it may be necessary to use broadcasting media like television and radio.

All the comments raised through the public engagement process need to be captured and responded to by the relevant people who will be involved as part of the project. No comment should be considered minor or bigger than the other. ESIA Consultants need to consider the social well-being of human-being during project development and not only the economic outcome or environmental impact of a project. If consultation is conducted professionally there will be minimum disruptions on projects. The Table below seeks to provide guidance on the minimum level of consultation required at each stage of the ESIA and SEA processes.

Table 19: Public Participation/ Stakeholder Engagement

Steps	**SEA Activity**	**Public Participation/ Stakeholder Engagement Process**	**ESIA Activity**
1	Baseline Study	Consult with Authorities, Stakeholders and directly affected persons	Project Application/ Registration
2	Screening	Develop a brief project background document and consult with Authorities, Stakeholders and directly affected persons	Screening
3	Scoping	Develop a detailed report including specialist studies and consult a wide range of people including Authorities, Stakeholders and directly/ indirectly affected persons	Basic ES Assessment Processes for Low-Medium Impact Projects
4	Establish Environmental Indicators	Develop a detailed report including specialist studies and consult a wide range of people including Authorities, Stakeholders and directly/ indirectly affected persons	Full Scoping ESIA Processes for High-Impact Projects
5	Identify Options	Consult with Authorities, Stakeholders and directly affected persons	Appeals
6	Impact Analysis	Consult with Authorities, Stakeholders and directly affected persons	
7	Development of SEA Report	Develop a detailed report including specialist studies and consult a wide range of people including Authorities, Stakeholders and directly/ indirectly affected persons	

8	Approvals/ Authorisations/ Endorsement	Consult with Authorities, Stakeholders and directly affected persons	Penalties
9	Monitoring and Follow-Up	Consult with Authorities, Stakeholders and directly affected persons	Environmental Monitoring
10	Post-Adoption Activities	Consult with Authorities, Stakeholders and directly affected persons	
11	Post-project/ Closure Report	Consult with Authorities, Stakeholders and directly affected persons	

7.5. Impact Assessment Methodology

In order for us to establish the significant issues that need to be addressed in the ESIA and SEA, an impact assessment needs to be conducted to give insight into the key considerations. An environmental impact is the change to the environment, whether desirable or undesirable, that will result from the effect of an activity. An impact may be the direct or indirect consequence of an activity. A description of potential impacts or consequences of an aspect of the development on a specified component of the biophysical, social or economic environment within a defined time and space.

The section below is the method used for determining the significance of impacts. Each of the impacts was listed taking into consideration the different phases (planning, construction, operation, decommissioning). A description of the findings and potential implications of such findings on the impact of the proposed activity, including identified alternatives on the environment, was provided. Impacts and risks were identified, including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts - (a) can be reversed; (b) may cause irreplaceable loss of resources; and (c) can be avoided, managed or mitigated.

The specialist studies are synthesized and integrated into the overall impact assessment and recommendations for mitigation should be included in the ESMP. The contents of all specialist reports include information as prescribed in the different Member States. In addition, the following should be identified:

- positive and negative impacts that the proposed activity will have on the environment and on the community that may be affected focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;
- the possible mitigation measures that could be applied and level of residual risk; and

The following proposed methodology can be applied in the prediction and assessment of impacts/risks. Potential impacts are then rated in terms of the direct, indirect and cumulative:

Table 20: Potential Intensity/Severity Rating

Potential Intensity Description (negative)	Intensity	Score
Change is slight, often not noticeable, natural functioning of environment not affected.	Negligible	1
Natural functioning of the environment is minimally affected. Natural, cultural and social functions and processes can be reversed to their original state.	Low	2
Environment remarkably altered, still functions, if in modified way. Negative impacts cannot be fully reversed.	Medium	3
Cultural and social functions and processes disturbed – potentially ceasing to function temporarily.	High	4
Natural, cultural and social functions and processes permanently cease, and valued, important, sensitive or vulnerable systems or communities are substantially affected. Negative impacts cannot be reversed.	Very high	5

- Direct impacts are impacts that are caused directly by the activity and generally occur at the same time and at the place of the activity. These impacts are usually associated with the construction, operation or maintenance of an activity and are generally obvious and quantifiable.
- Indirect impacts of an activity are indirect or induced changes that may occur as a result of the activity. These types of impacts include all the potential impacts that do not manifest immediately when the activity is undertaken, or which occur at a different place as a result of the activity.
- Cumulative effects are impacts that result from the incremental impact of the proposed activity on a common resource when added to the impacts of other past, present or reasonably foreseeable future activities. Cumulative impacts can occur from the collective impacts of individual minor actions over a period of time and can include both direct and indirect impacts.

Nature of impact - this reviews the type of effect that a proposed activity will have on the environment and should include “what will be affected and how?”

Spatial extent – The size of the area that will be affected by the risk/impact.

Table 21: Extent Description

Extent Description	Score
Site specific (Impacted area is only at the site – the actual extent of the activity).	1
Local (impacted area is limited to the site and its immediate surrounding area).	2
District (Impacted area extends to the surrounding area, the immediate and the neighboring properties).	3
Provincial/National (Impact considered of provincial importance).	4

International/Regional (e.g., Greenhouse Gas emissions or migrant birds).	5

Duration – The timeframe during which the risk/impact will be experienced:

Table 22: Duration Description

Duration Description	Score
Temporary (less than 3 year) or duration of the construction period. This impact is fully reversible. E.g., the construction noise temporary impact that is highly reversible as it will stop at the end of the construction period	1
Short term (3 to 10 years). The impact is reversible with the implementation of appropriate mitigation and management actions.	2
Medium term (10 to 20 years) but where the impact will cease after the operational life of the activity). The impact is reversible with the implementation of appropriate mitigation and management actions. E.g., the noise impact caused by the desalination plant is a medium-term impact but can be considered to be highly reversible at the end of the project life, when the project is decommissioned	3
Long term (20 – 30 years) but where the impact will cease long after the operational life of the activity). The impact is reversible with the implementation of appropriate mitigation and major management actions.	4
Permanent (over 30 years)– (mitigation will not occur in such a way or in such a time span that the impact can be considered transient). This impact is irreversible. E.g., The loss of a palaeontological resource on site caused by construction activities is permanent and would be irreversible. No mitigation measures of natural process will reduce impact after implementation – impact will remain after operational life of project.	5

Using the criteria above, the impacts were further assessed in terms of the following:

- Probability – The probability of the impact/risk occurring.

Table 23: Probability Description

Probability Description	Score
Improbable (little or no chance of occurring <10%)	1
Low Probability (10 - 25% chance of occurring)	2
Probable (25 - 50% chance of occurring)	3
Highly probable (50 – 90% chance of occurring)	4
Definite (>90% chance of occurring).	5

- Magnitude–The anticipated severity of the impact (Intensity + Extent + Duration):
- Extreme (extreme alteration of natural systems, patterns or processes, i.e. where environmental functions and processes are altered such that they permanently cease);
- Severe (severe alteration of natural systems, patterns or processes, i.e. where environmental functions and processes are altered such that they temporarily or permanently cease);
- Substantial (substantial alteration of natural systems, patterns or processes, i.e. where environmental functions and processes are altered such that they temporarily or permanently cease);
- Moderate (notable alteration of natural systems, patterns or processes, i.e. where the environment continues to function but in a modified manner); or
- Slight (negligible alteration of natural systems, patterns or processes, i.e. where no natural systems/environmental functions, patterns, or processes are affected).
- Significance – Will the impact cause a notable alteration of the environment? To determine the significance of an identified impact/risk, the consequence is multiplied by probability.

Impact Magnitude = Potential Intensity + duration + extent

Significance rating = Impact magnitude * Probability

Table 24: Magnitude Description

Criteria: MAGNITUDE		
RATING		**DESCRIPTION**
2	Minor	Negligible effects on biophysical or social functions / processes. Includes areas / environmental aspects which have already been altered significantly and have little to no conservation importance (negligible sensitivity*).
4	Low	Minimal effects on biophysical or social functions / processes. Includes areas / environmental aspects which have been largely modified, and / or have a low conservation importance (low sensitivity*).
6	Moderate	Notable effects on biophysical or social functions / processes. Includes areas / environmental aspects which have already been moderately modified and have a medium conservation importance (medium sensitivity*).
8	High	Considerable effects on biophysical or social functions / processes. Includes areas / environmental aspects which have been slightly modified and have a high conservation importance (high sensitivity*).
10	Very High	Severe effects on biophysical or social functions / processes. Includes areas / environmental aspects which have not previously been impacted upon and are pristine, thus of very high conservation importance (very high sensitivity*).

Table 25: Guide to assessing risk/impact significance

"Significance"- attempts to evaluate the importance of a particular impact with mitigation measures included and also excluded. The significance was calculated using the following formula: **Significance = (Extent + Duration + Severity) X Probability**		
Significance of Predicted NEGATIVE Impacts		
Low	0 – 30	Where the impact will have a relatively small effect on the environment and will require minimum or no mitigation and as such have a limited influence on the decision
Medium	31 – 60	Where the impact can have an influence on the environment and should be mitigated and as such could have an influence on the decision unless it is mitigated.
High	61 - 100	Where the impact will definitely have an influence on the environment and must be mitigated, where possible. This impact will influence the decision regardless of any possible mitigation.
Significance of Predicted POSITIVE Impacts		
Low	0 – 30	Where the impact will have a relatively small positive effect on the environment.
Medium	31 – 60	Where the positive impact will counteract an existing negative impact and result in an overall neutral effect on the environment.
High	61 - 100	Where the positive impact will improve the environment relative to baseline conditions.

Table 26: Status Description

Criteria: STATUS – Describes whether the impacts would have a negative, neutral or positive effect on the affected environment.		
RATING		**DESCRIPTION**
+	Positive	Benefit to the environment
=	Neutral	Standard/impartial
-	Negative	Cause damage to the environment

- Significance was rated as follows (based on Table 24 above)
  - Very low (the risk/impact may result in very minor alterations of the environment and can be easily avoided by implementing appropriate mitigation measures, and will not have an influence on decision-making);
  - Low (the risk/impact may result in minor alterations of the environment and can be easily avoided by implementing appropriate mitigation measures, and will not have an influence on decision making);
  - Medium (the risk/impact will result in moderate alteration of the environment and can be reduced or avoided by implementing the appropriate mitigation measures, and will only have an influence on the decision-making if not mitigated); or
  - High (the risk/impacts will result in a considerable alteration to the environment even with the implementation of the appropriate mitigation measures and will have an influence on decision making).

- Very high (the risk/impacts will result in major alteration to the environment even with the implementation of the appropriate mitigation measures and will have an influence on decision making
  (i.e. the project cannot be authorized unless major changes to the engineering design are carried out to reduce the significance rating).

Impacts should be described both before and after the implementation of the proposed mitigation and management measures. The scenario "without mitigation" considers all management actions already proposed by the proponent as part of the project description. "With mitigation" assesses the significance rating of the potential impact, taking into account any additional management actions recommended by the specialist.

Linked to the above, for each impact assessment, mitigation measures are generally listed under the following three categories (as applicable):

- Mitigation measures inherent to the project design (i.e. mitigation/management actions that the proponent had planned to implement as part of the project description);
- Key management actions proposed by specialist (pertinent measures that will be written into, and enforced through the ESMP for implementation to ensure that the significance of the associated impact is acceptable); and
- Additional management actions proposed by the specialist (management actions to be considered by proponent and authority).

The impact assessment should attempt to quantify the magnitude of potential impacts (direct and cumulative effects) and outline the rationale used. Where appropriate, national standards are used as a measure of the level of impact.

Note that the concept of "irreplaceable loss of a resource" is to be taken into account in the Potential Intensity score of an impact. Irreplaceability of resource loss caused by impacts –

- High irreplaceability of resources (project will destroy unique resources that cannot be replaced, i.e. this is the least favorable assessment for the environment. For example, if the project will destroy unique wetland systems, these may be irreplaceable);
- Moderate irreplaceability of resources;
- Low irreplaceability of resources; or
- Resources are replaceable (the affected resource is easy to replace/rehabilitate, i.e. this is the most favorable assessment for the environment).

Table 27: Irreplaceability of resource Description

Irreplaceability of resource Description	Score
Low: Where the impact is unlikely to result in irreplaceable loss of resources	1
Medium: Where the impact may result in the irreplaceable loss (cannot be replaced or substituted) of resources but the value (services and/or functions) of these resources is limited	2
High: Where the impact may result in the irreplaceable loss of resources of high value (services and/or functions).	3

The concept of "reversibility" is reflected in the duration scoring. i.e. the longer the impact endures the less likely it will be reversible.

Reversibility of impacts -

- High reversibility of impacts (impact is highly reversible at end of project life, i.e. this is the most favorable assessment for the environment. For example, the nuisance factor caused by noise impacts associated with the operational phase of an exporting terminal can be considered to be highly reversible at the end of the project life);
- Moderate reversibility of impacts;
- Low reversibility of impacts; or
- Impacts are non-reversible (impact is permanent, i.e. this is the least favorable assessment for the environment. The impact is permanent. For example, the loss of a paleontological resource on the site caused by building foundations could be non-reversible).

Table 28: Reversibility Description

Reversibility Description	Score
Impact is reversible without any time and cost.	1
Impact is reversible without incurring significant time and cost	2
Impact is reversible only by incurring significant time and cost	3
Impact is reversible only by incurring prohibitively high time and cost	4
Irreversible Impact	5

One of the most important assessment in ESIAs and SEAs is the public perception of the project. This can be measured based on the public participation comments and the support or lack of support of the project by the Interested and Affected Parties and/or Stakeholders.

Table 29: Public Feedback Description

Public Feedback Description	Score
Low: Issue not raised in public responses	1
Medium: Issue has received a meaningful and justifiable public response	2
High: Issue has received an intense meaningful and justifiable public response	3

8. Means of Implementation

8.1. Capacity Building

For the region to effectively implement the SEA/ESIA guideline for enhancing sustainable development while protecting its critical resources, there is a need to build capacity in the various affected sectors. There is also a critical need to promote and strengthen practitioners in this area of work, that can fast-track processes, monitor compliance and provide expertise at various levels of the SEA/ESIA processes. Some of the roles may include the following:

- Empowering relevant capacity building institutions, regional networks and facilitating sharing of experiences, information and best practices.
- Enhancing communication, education and awareness-raising at all levels in relation to SEA/ESIA processes and implications of not having these processes enforced for development.
- Facilitating the development and updating of tools (e.g. GIS maps), methods and technologies in support of SEA/ESIA processes.
- Supporting and strengthening participatory and integrated approaches in mainstreaming of SEA/ESIA requirements into planning and decision-making processes.
- Supporting specific capacity building needs of SADC countries to address institutional and technical challenges and constraints at regional, national and local levels.
- Capacity building of practitioners operating in public and private sector to utilise SEA/ESIA tools, including establishment and operationalisation of a regional pool of practitioners.
- Accessing and harnessing effectively international, continental and regional capacity building programmes and initiative.

8.2. Finance and Resource mobilization

Studies by the International Monitory Fund (IMF) found the financing gap to achieve significant progress toward five SDGs i.e. education, health, water and sanitation, electricity, and roads will amount to 16.1 % of the GDP of LDCs and other LIC by 2030).

Based on the above, the SADC Region, like the rest of the world is behind schedule with achievement of the SDGs by 2030. Despite all efforts that have been made, SADC countries are still faced with large unmet financing needs and a financial architecture unable to close these gaps in an ever more crisis-prone world. It is therefore imperative to fast-track development using urgent, large scale, multi-country, multi-year and sustainable investment push to help the region achieve these goals. The SEA/ESIA “guidelines” open doors for regional integration on this regard. SADC needs a holistic mechanism that addresses both private and public sector financial flows for the guidelines to be utilized and for sustainable development to be achieved in the region. Access to resources in the SADC region must be guided by the following principles:

- Financing institutions should aim to close the current funding and investment gap with scale, urgency and effectiveness.
- Funding institutions should assist to formulate and finance new development pathways that will deliver on the SDGs and ensure no one in the region is left behind.
- Funding institutions should ensure funds are directed to where they are needed (demand-driven, rather than donor-driven).

- Proposed pipeline projects and corridors should utilize the already existing SADC Resource Mobilization Manual

8.3. Sources of funding

- Domestic (e.g., Incentives, Carbon taxes)
- Private sector finance
- International Development Cooperation

Figure 16: Example of sources of finance: Forest and Landscape Restoration funding sources (FAO and Global Mechanism of the UNCCD, 2015)

8.4. Technology

Technology has become a critical tool in conducting Environmental Assessments. Geospatial technology like remote sensing, Geographical Information Systems, and Global Positioning Systems are the latest technologies which may produce much more accurate results and perform various geographic analyses even in complex situations. Such spatial techniques enhance substantial viewing, movement, query, and even map-making capabilities in Environmental Assessment processes. This has potential to enhance effective analysis of natural resources for developmental planning, policy formulation, and decision making. Imam, Et al (2021).

Moving ESIA Projects and Statements to a digital platform can help transform complex and lengthy SEA and ESIA Reports to user-centric format that is easier to understand and navigate. Digital ESIA documents inspire more effective public participation and ultimately, better decision-making. (RPS: A Tetra Tech Company).

8.5. Communication, Advocacy and Awareness

A communication and advocacy plan is essential to the successful operationalization of these SEA/ESIA guidelines. The overall goal of the plan will be to link all stakeholders to enable effective understanding of the SEA/ESIA processes and pipeline initiatives. It will also facilitate information sharing, enhanced collaboration, lessons learnt, attract further support and allow for feedback on the effectiveness of the guidelines". The plan must consider the role of other relevant institutions and stakeholders in and out of the region. SADC Secretariat will play a critical role in facilitating this process.

8.6. Institutional Arrangements

In order for the SADC Secretariat to facilitate effective implementation of this multi-disciplinary cross-cutting "guideline," there is a need to establish close coordination of relevant stakeholders at all levels including regional, national and project level. The following arrangements are therefore proposed;

- The establishment of a SADC Cross-Sectorial Technical Working Group on SEA and ESIA. The TWG will be composed of SADC Staff members from the various sectors that require SEA and/or ESIA processes in the region, as listed in the Corridors/Strategic Areas in the document. The committee will be chaired by the Director of Food, Agriculture and Natural Resources within the secretariat. Terms of Reference will be developed to outline the roles and responsibilities, membership criteria and operations of the TWG.
- SADC Member States need to appoint National Focal Points (NFPs) for SEA/ESIA. Their role will be to coordinate the work in their countries and to report to the SADC TWG. The NFPs will also be responsible for sharing upcoming proposed strategic national and trans-boundary projects that qualify to be subjected to this process. The NFP will also be responsible for coordinating, monitoring, reporting and facilitating inter-sectoral collaboration of projects and initiatives within their countries, under this process.
- Both regional and national structures will be established through detailed approved Terms or References, nomination by relevant structures and issuance of appointment letters.
- Project Steering Committees for each sector/development corridor will be utilized or established where they do not currently exist. These structures will be useful in monitoring individual project work and reporting to the SADC TWG.
- In case of transboundary projects, it is recommended that a technical team be set aside to facilitate the smooth flow of the ESIA process up to decision making stage. Where the ESIA fees varies, a common position has to be reached by the responsible regulatory authorities / agencies such that a common review fee is paid by the developer. After the certification, a joint monitoring team has to be established for project implementation monitoring and have an agreed joint monitoring schedule.

8.7. Monitoring and Reporting

SADC should develop a harmonized tool to fast-track performance and impact of SEA and ESIA projects and initiatives that are subjected to this process. It is recommended that the tool should be a Digital Monitoring, Reporting and Learning Dashboard. SADC Secretariat TWG members and Member States NFPs should be trained on how to effectively monitor and report progress on projects and share lessons on the platform. The dashboard can also be used by SADC Secretariat to report to Member States Sector Ministers and Heads of States on ongoing regional projects and initiatives. The tool can further be used for mobilizing resources to support the initiatives.

9. Concluding Remarks and Recommendations

The SADC ESIA/SEA Guideline document has been designed for regional integration and alignment. Member States and Regional Professionals are therefore encouraged to make use of this guideline document as they develop further legislation and amend current legislation so as to improve the alignment. Regional professionals can make use of these guidelines as they conduct their work throughout the region which will provide them with a good understanding of the SADC region's drive towards integration. Strategic Environmental Assessment (SEA) and Environmental and Social Impact Assessment (ESIA) are crucial for ensuring sustainable development by integrating environmental and social considerations into decision-making processes, but at different scales. SEA focuses on policies, plans, and programs, while ESIA assesses the impacts of specific projects. Strategic Environmental Assessment (SEA) assesses the environmental implications of proposed policies, plans, and programs at a strategic level, aiming to integrate environmental considerations early in the decision-making process. The purpose of SEA is to ensure that environmental, social, and economic aspects of sustainability are considered systematically in policies and plans, addressing broad, strategic issues early in the planning process. On the other hand, Environmental and Social Impact Assessment (ESIA) focuses on assessing the environmental and social impacts of specific projects, interventions, or developments. ESIA predict potential environmental and social consequences of a project and to identify measures to mitigate potential negative impacts.

As part of the consultation, SADC Member States recommended crucial aspects to enable to fully institutionalize and implement the SADC ESIA/SEA Guidelines**:** There is need to Institutionalize specialized environmental agencies**: Promote the creation or strengthening of autonomous agencies responsible for environmental assessments in each Member State, similar to the Congolese Environmental Agency (ACE), to ensure independence, technical rigor, and effective decision-making. This includes** mandatory SEA for major public policies**, particularly in sectors with significant environmental impact (energy, infrastructure, agriculture, mining), to better anticipate risks and ensure the sustainability of development plans. There is need to e**stablish a regional support fund for SEA/ESIA processes **in ecosystems with high ecological value, with priority access for countries playing a strategic ecological role in the region.** Create a SADC Network of environmental assessment institutions **to facilitate technical cooperation, harmonization of procedures, and strengthening of institutional capacities.** Moreover, Member States are **encouraged to digitize** SEA/ESIA procedures **through national digital platforms interconnected to a common regional portal.** Standardize inclusive participation of women, youth, and local communities**, with specific guidelines on languages, accessibility, and feedback mechanisms for affected populations.**

10. References

Al-Azri, N. S., Al-Busaidi, R. O., Sulaiman, H., & Al-Azri, A. R. (2014). Comparative evaluation of EIA systems in the Gulf Cooperation Council States. In *Impact Assessment and Project Appraisal* (Vol. 32, Issue 2). https://doi.org/10.1080/14615517.2014.893620

Bednarek-Szczepańska, M. (2022). The power of protest in the EIA proceedings. Influence of local community on environmental decisions regarding intensive livestock operations - Example of Poland. *Environmental Impact Assessment Review*, *97*. https://doi.org/10.1016/j.eiar.2022.106868

Bhatt, R. P. (2023). Environmental Impact Assessment System and Process in Developing Countries. *Open Journal of Ecology*, *13*(12). https://doi.org/10.4236/oje.2023.1312059

Caro-Gonzalez, A. L., Nita, A., Toro, J., & Zamorano, M. (2023). From procedural to transformative: A review of the evolution of effectiveness in EIA. In *Environmental Impact Assessment Review* (Vol. 103). https://doi.org/10.1016/j.eiar.2023.107256

El-Fadel, M., Zeinati, M., & Jamali, D. (2000). Framework for environmental impact assessment in Lebanon. In *Environmental Impact Assessment Review* (Vol. 20). www.elsevier.com/locate/eiarEIAprocedure

El Gohary, R. (2016). International EIA Guidelines and the Nile Basin Countries EIA Experience. *European Scientific Journal, ESJ*, *12*(17). https://doi.org/10.19044/esj.2016.v12n17p482

El Gohary, R., & Armanious, S. (2017). Environmental Impact Assessment for Projects in the Nile Basin Countries. *European Scientific Journal, ESJ*, *13*(5). https://doi.org/10.19044/esj.2017.v13n5p134

FAO and Global Mechanism of the UNCCD. (2021). Forest and Landscape Restoration funding sources. Extract from: Local financing mechanisms for forest and landscape restoration A review of local-level investment mechanisms. https://www.researchgate.net/publication/350458101_Local_financing_mechanisms_for_forest_and_landscape_restoration_A_review_of_local-level_investment_mechanisms_FOOD_AND_AGRICULTURE_ORGANIZATION_OF_THE_UNITED_NATIONS. Rome.

Imam, E., Ilyas, O., Hussain, M.M. (2021). Use of Geospatial Technology in Environmnetal Impact Assesssment. Book Chapter in Environmental Impact Assessments: Precept and Practice. CRC Press 1st Edition.

Gronow, C. (2024). The role of alternatives analysis in proponent decision-making about hydropower. *Environmental Impact Assessment Review*, *105*. https://doi.org/10.1016/j.eiar.2024.107451

Kumar, V., Mishra, M., Kr Pathak, A., Kr Dubey, D., & Singh, B. (2023). Environmental Impact Assessment using Social Network Analysis and Data Mining. *Ecology, Environment and Conservation*, *29*(04). https://doi.org/10.53550/eec.2023.v29i04.047

Martínez, L. F., Toro, J., & J. León, C. (2019). A complex network approach to environmental impact assessment. *Impact Assessment and Project Appraisal*, *37*(5). https://doi.org/10.1080/14615517.2018.1552442

Mccabe, M., & Sadler, B. (2003). *Studies of EIA Practice in Developing Countries*. http://www.unep.ch/etu

Nay, Z., Huggins, A., & Deane, F. (2021). Automated Decision-Making and Environmental Impact Assessments: Decisions, Data Analysis and Predictions. *Law, Technology and Humans*, *3*(2). https://doi.org/10.5204/lthj.1846

Neto, P. B., & Mallett, A. (2023). Public participation in environmental impact assessment processes through various channels – Can you listen to us now? Lessons from a Brazilian mining case. *Extractive Industries and Society*, *13*. https://doi.org/10.1016/j.exis.2022.101186

Ortiz, G., & Climent-Gil, E. (2020). A transdisciplinary framework for environmental impact assessment: Opportunities and resistances among practitioners in Spain. *Environmental Impact Assessment Review*, *81*. https://doi.org/10.1016/j.eiar.2019.106339

Osei, F. A., & Effah, E. A. (2023). A critical review of environmental assessment legislation in the Democratic Republic of the Congo. In *Environmental Health Engineering and Management* (Vol. 10, Issue 4). https://doi.org/10.34172/EHEM.2023.49

Papamichael, I., Tsiolaki, F., Stylianou, M., Voukkali, I., Sourkouni, G., Argirusis, N., Argirusis, C., & Zorpas, A. A. (2023). Evaluation of the effectiveness and performance of environmental impact assessment studies in Greece. *Comptes Rendus Chimie*, *26*. https://doi.org/10.5802/crchim.218

(RPS: A Tetra Tech Company). Digital Environmental Impact Assessment. https://www.rpsgroup.com/services/environment/environmental-impact-assessment/digital-environmental-impact-assessment/

Tennøy, A., Kværner, J., & Gjerstad, K. I. (2006). Uncertainty in environmental impact assessment predictions: The need for better communication and more transparency. *Impact Assessment and Project Appraisal*, *24*(1). https://doi.org/10.3152/147154606781765345

Walmsley, B., & Sheldon Husselman, S. (2020). *HANDBOOK ON ENVIRONMENTAL ASSESSMENT LEGISLATION IN SELECTED COUNTRIES IN SUB-SAHARAN AFRICA Fourth Edition CONSULTATION DRAFT Published by the Development Bank of Southern Africa*. www.saiea.com

Wayakone, S., Makoto, I., & Harashina, S. (2013). Environmental impact assessment in Lao PDR : A comparative study on the gaps between procedures and practice with reference to Japan. *International Journal of Environmental Sciences*, *3*(6).

FAO. 2022. Support Towards the Operationalization of the SADC Regional Agriculture Policy (STOSAR) bulletin. 2nd Edition. December 2022. Rome.

Strategic Environmental Assessment (SEA) ((Brief Overview)). Prof. Dr. Mohammad Ali Al-Anbari. March - 2007

SADC. (2015). Climate Change Strategy and Action Plan

[i] The SDG indicator database is available at: https://unstats.un.org/sdgs/dataportal

[ii] IMF, "Second Review of the Special Data Dissemination Standard."

[iii] https://desapublications.un.org/publications/financing-sustainable-development-report-2024