



**Ministry of Roads and Transport
State Department for Transport**

**Strategic Environmental and Social Assessment on the
Integrated National Transport Policy**

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DOCUMENT AUTHENTICATION

This Final Strategic Environmental and Social Assessment (SESA) report for the Integrated National Transport Policy (INTP)

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The report has been prepared by LEAD EXPERTS:


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in accordance with the “Terms of Reference”; and for fulfilment of NEMA’s Environmental Management and Coordination (Amendment) Act (EMCA) of 2015 and the Environmental Impact Assessment and Audit Regulations (Amendment) 2019 on SESA. We the undersigned, certify that the particulars in this report are correct and right to the best of our knowledge.

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STRATEGIC ENVIRONMENTAL AND SOCIAL ASSESSEMENT TEAM

Name	Qualification	Roles
Dr. John Muriuki	PhD in Environmental Studies from Kenyatta University & Masters in Conservation Biology from Cape Town South Africa; and BSc. from Nairobi University. John has extensive knowledge and skills in training, research and delivery of environmental impact assessment and audits, which include but are not limited to EIA, EA, ESIA and SESA	Environment and climate change matters and Team Leader
Dr. Thomas Kibutu	Dr Thomas Kibutu has a MA and PhD in geography and more than 20 years in the teaching of in several private and public universities. He has taught in the areas of map reading and Urban and regional planning. He is also a NEMA registered Lead Expert in EIA and EA with more than 10 years' consultancy experience in the same. He is also a member of the Environmental Institute of Kenya. Currently.	Mapping and stakeholder issues
Dr. Calvine Kayi	He holds qualifications in transport policy and planning, geographic information systems (GIS), and business administration. Expertise in Transport Planning & Policy and GIS.	Transport policy design, planning and implementation issues
Dr. Susan Mwangi	Susan Waiyego holds a PhD in Socio-Economic and political History of Kenya from Pau University France. Susan is a strategic socio-economist who leverages on technology to design and evaluate programs that relate to livelihoods of most at risk populations. Her research and training in land use, conflicts and peace-building spanning over 12 years have seen her become a leading actor in conflict resolution and management of conflicts related to resource distribution, control and their impacts on development	Socio-economic and governance issues
Eng. George Mwangi	Eng. George Kiiru has over 30 years experience in Highway managements. He is former Director general with the Ministry of roads and highway development authority. George has been a lead Engineer in many road projects including but not limited to Kenol-Sagana-Marua, Kwale and Loitoktok	Engineering, Construction & design issues

	roads. George has a Msc in Civil Engineering from Birmingham University, UK.	
Dr. Pacifica Okemwa	PhD in Gender Women and Culture from Kenyatta University. Dr. Pacifica Moraa Okemwa's extensive experience of 24 years in consultancy has seen her become a lead gender expert sought after by security, governments, donor agencies and communities in need of gender mainstreaming. She provides strategic expertise in mainstreaming projects, programs and policies whose aim is to ensure inclusion and protection of man, women, boys and girls in both theory and practice.	Gender and Vulnerable groups issues
Dr. Peterson Warutere	Dr. Warutere holds a PhD in health and safety and has over 20 years' experience in training, research and doig policy briefs. Warutere, a registered OSHA expert has been engaged in diverse projects to determine and recommend safety and occupational health solutions to organizations in transport, hydrological, sanitation and irrigation systems.	Occupational Safety and Health related matters
Mr. Alfred Eshitera	Alfred is a qualified land use and physical planner with a masters degree on the same He has 9 year experience on land use and planning. He is a result-oriented and focused individual who has done several land use researches and trainings to government departments and Non-Governmental organizations.	Matters of land Planning and demographics
Dr Samuel Munanu	Dr Mwangi has PhD and MA in sociology from Wichita State University, Wichita and Miami University, Oxford, Ohio, respectively. For more than 10 years, he has been involved in a Baseline Survey on Socio-economic and Environmental Impacts Associated with Development of Access Roads in Informal Urban Settlement in Nairobi County.	Issues of social and stakeholder engagement
Albert Ochieng'	Holds a Master of Arts from Kenyatta University.	Project administrator

ABBREVIATIONS AND ACRONYMS

ACCNNR	African Convention on the Conservation of Nature and Natural Resources
ADR	Alternative Dispute Resolution
AfDB	African Development Bank
CEDAW	Convention on the Elimination of All forms of Discrimination Against Women
CoK	Constitution of Kenya
CORSIA	Carbon Offsetting and Reduction Scheme for International Aviation
COTIF	Convention concerning International Carriage by Rail
CP	Catholic Protection
CRC	Convention on the Rights of the Child
CRC	Convention on the Rights of the Child
DOSHS	Directorate of Occupational Safety & Health Services
EBK	Engineers Board of Kenya
EHS	environmental, health, and safety
EHS	Environmental, Health, and Safety
EMCA	Environmental Management and Coordination Act
EMMP	Environmental Management and Monitoring Plan
ESA	Environmental and Social Audits
ESF	Environmental and Social Framework
ESIA	Environment and Social Impact
ESS	Environmental and Social Standards
ESSDA21	Earth Summit on Sustainable Development Agenda 21
FGDs	Focus Group Discussions
FI	Financial Intermediaries
FPIC	Free Prior Informed Consent Principle
GBV	Gender-based violence
GDP	Gross Domestic Product
GHGs	Greenhouse Gas emissions
GoK	Government of Kenya
HIV/AIDS	Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome

HoAGDP	Horn of Africa Gateway Development Project
IAAF	International Association of Athletics Federations
IATA	International Air Transport Association
ICAO	The International Civil Aviation Organization
ICL	International Convention on Labour
ICT	Information and Communication Technology
IFC	International Finance Corporation
ILO	International Labour Organisation
IMO	International Maritime Organization
IMO	World Meteorological Organization
INTP	Integrated National Transport Policy
IPF	Investment Project Financing
IRU	International Road Transport Union
ITS	Intelligent Transport Systems
KCAA	Kenya Civil Aviation Authority
KEBS	Kenya Bureau of Standards
KEFRI	Kenya Forestry Research Institute
KeNHA	Kenya National Highways Authority
KEPHIS	Kenya Plant Health Inspectorate Service
KEPSA	Kenya Private Sector Alliance
KeRRA	Kenya Rural Roads Authority
KFS	Kenya Ferry Services
KIIs	Key Informant Interviews
KLDTD	Kenya Long Distance Truck Drivers Association
KMA	Kenya Maritime Authority
KNCC	Kenya Chamber of Commerce and Industry
KNPSC	Kenya National Police Service Commission
KNSL	Kenya National Shipping Line
KPC	Kenya Pipeline Company
KRA	Kenya Revenue Authority
KRB	Kenya Roads Board
KRC	Kenya Railways Corporation
KSh	Kenyan Shillings

KTA	Kenya Transporters Association
KUMIP	Kenya Urban Mobility Improvement Project
KURA	Kenya Urban Roads Authority
KURRA	Kenya Rural Roads Authority
KWaRma	Kenya Water Resources Management Authority
KWS	Kenya Wildlife Services
LAPSSET	Lamu Port, South Sudan and Ethiopia
LFS	Life and Fire Safety
MaRPs	Most at Risk Populations
MoA	Matatu Owners Association
MRT	Mass Rapid Transit
NaMATA	Nairobi Metropolitan Area Transport Authority
NCA	National Construction Authority
NCASP	National Civil Aviation Security Policy
NCCAP	National Climate Change Action Plan
NCPWD	National Council for Persons with Disabilities
NCTTCA	Northern Corridor Transit and Transport Co-ordination
NEMA	National Environment Management Authority
NITA	National Industrial Training Authority
NLC	National Land Commission
NMIMTs	Non-Motorized and Intermediate Means of Transport
NMT	Non-Motorized Transport
NPS	National Police Service
NTSA	National Transport and Safety Authority
OP	Operational Procedures
OSHA	Occupational Safety and Health Act
PPE	Personal Protective Equipment
PPPs	Policy, Plan, or Program
PRSP	Poverty Reduction Strategy Paper
PU	Pwani University
PWDs	Persons with Disabilities
RDED	Rio Declaration on Environment and Development

RSS	Roadside Service Stations
RTI	Railway Training Institute
RTMP	Roads Transport Masterplan
SDG	Sustainable Development Goals
SDoR	State Department for Roads
SDoT	State Department for Transport
SESA	Strategic Environmental and Social Assessment
SGR	Standard Gauge Railway
SOLAS	Safety of Life at Sea
TOD	Transit Orientated Development
TUK	Technical University of Mombasa
TVET	Technical and Vocational Education and Training
UNCBD	United Nations Convention on Biological Diversity
UNCCD	United Nations Convention to Combat Desertification
UNCLOS	United Nations Convention on the Law of the Sea
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
VG	Vulnerable Group
WB	World Bank
WHO	World Health Organisation
WOAH	World Organisation for Animal Health
WRA	Water Resource Authority

DEFINITION OF TERMS AND CONCEPTS

Alternatives Analysis: means of finding the most effective way of meeting the need and purpose of the proposal, either through enhancing the environmental benefits of the proposed activity, and or through reducing or avoiding potentially significant negative impacts.

Baseline data: Data that describes issues and conditions at the inception of the SEA. Serves as the starting point for measuring impacts, performance, etc., and is an important reference for evaluation.

Biological diversity: means the variability among living organisms from all sources including terrestrial ecosystems, aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, among species and of ecosystems;

Biological resources: include genetic resources organisms or parts thereof, populations, or any other biotic component or ecosystems with actual or potential use or value for humanity

Cumulative effects/impacts: Are combined or additive effects on the environment over time or space when added to other past, present or reasonably foreseeable actions. They may seem to be insignificant when seen in isolation, but collectively they have a significant effect.

Decommissioning – is the strategic approach to deactivating a project or facility from service. It entails all steps leading to the release of a facility, other than a disposal facility, from regulatory control other than confirming the decommissioned status of a facility. These steps include the processes of decontamination and dismantling.

Ecosystem: means a dynamic complex of plant, animal, and microorganism communities and their non-living environment interacting as a functional unit;

Effluent: means gaseous waste, water or, liquid or other fluid of domestic, agricultural, trade or industrial origin treated or untreated and discharged directly or indirectly into the aquatic environment;

Environment: includes the physical factors of the surroundings of human beings, including land, water, atmosphere, climate, sound, odour, taste, the biological factors of animals and plants and the social factor of aesthetics and includes both the natural and the built environment;

Environmental audit: means the systematic, documented, periodic and objective evaluation of how well environmental organisation, management and equipment are performing in conserving or preserving the environment;

Environmental and social impact assessment (ESIA): (often used synonymously with Environmental Impact Assessment -EIA), is the umbrella term for the process of examining the environmental risks and benefits of project level proposals. It implies a systematic examination conducted to determine whether or not a programme, activity or project will have any adverse impacts on society and the environment;

Environmental management: includes the protection, conservation and sustainable use of the various elements or components of the environment;

Environmental monitoring: means the continuous or periodic determination of actual and potential effects of any activity or phenomenon on the environment whether short-term or long term;

Environmental planning: means both long-term and short-term planning that takes into account environmental exigencies;

Environmental resources: includes the resources of the air, land, flora, fauna and water together with their aesthetical qualities;

Hazardous substance: means any chemical, waste, gas, medicine, drug, plant, animal or microorganism that is likely to be injurious to human health or the environment;

Indicator: a signal that reveals progress (or lack thereof) towards objectives, and provides a means of measuring what actually happens against what has been planned in terms of quantity, quality and timeliness.

Lead agency: means any Government ministry, department, parastatal, state corporation or local authority, in which any law vests functions of control or management or any element of the environment or natural resources;

Natural resources: include resources of the air, land, water, animals and plants, including their aesthetic qualities

Pollutant: includes any substance, whether liquid, solid or gaseous, which may directly or indirectly alter the quality of any element of the receiving environment; is hazardous or potentially hazardous to human health or the environment; and includes objectionable odours,

radio-activity, noise, temperature change or physical, chemical or biological change to any segment or element of the environment;

Pollution: means any direct or indirect alteration of the physical, thermal, chemical, biological, or radioactive properties of any part of the environment by discharging, emitting, or depositing wastes so as to affect any beneficial use adversely, to cause a condition which is hazardous or potentially hazardous to public health, safety or welfare, or to animals, birds, wildlife, fish or aquatic life, or to plants or to cause a contravention of any condition, limitation, or restriction which is subject to a licence under EMCA, 1999.

Policy: is a broad statement of intent that reflects and focuses the political agenda of government and initiates a decision cycle; a general course of action or proposed overall direction that a government is or will be pursuing that guide's ongoing decision-making.

Plan: A purposeful forward-looking strategy or design, often with co-ordinated priorities, options and measures that elaborate and implement policy.

Programme: A coherent, organized agenda or schedule of commitments, proposals, instruments and/or activities that elaborate and implement policy.

Sustainable development: means development that meets the needs of the present generation without compromising the ability of future generations to meet their needs by maintaining the carrying capacity of the supporting ecosystems;

Waste: includes any matter prescribed to be waste and any matter, whether liquid, solid, gaseous or radioactive, which is discharged, emitted or deposited in the environment in such volume, composition or manner likely to cause an alteration of the environment;

Wetland: means areas permanently or seasonally flooded by water where plants and animals have become adapted.

Scoping: The process of defining the extent and detail of a SEA, including the identification of strategic issues.

Stakeholder: those who may be interested in, potentially affected by, or influence the implementation of a Policies, Plans and Programmes (PPPs).

Strategic Environmental and Social Assessment (SESA) - means a formal and systematic process to analyses and address the environmental effects of policies, plans, programmes and other strategic initiatives. In the context of this report, Strategic Environmental Assessment

(SESA) and Strategic Environmental Assessment (SEA) are used interchangeably. Suffice to mention that SESA is now the international and NEMA official title to the process in Kenya.

ACKNOWLEDGEMENTS

Conducting a SESA exercise for a policy is both engaging and complex. It calls for patience, humility, and understanding of actors, individuals, and processes associated with it. The State Department of Transport that commissioned this exercise and, which was conducted by a Consortium headed by two lead environmental experts, Dr. John Njagi Muriuki-EIA/EA 050 and Dr. Thomas Njuguna Kibutu- EIA/EA 1994) wishes to acknowledge and appreciate the contribution of very many actors and individuals in the process of bringing this exercise into completion.

To begin, we appreciate the Horn of Africa Gateway Development Project (HoAGDP) for financing and constantly following up and advising on the program and processes to be completed. The staff at the World Bank have tirelessly given their valuable comments, and this is highly appreciated. The Ministry of Roads and Transport, under which SDoT is housed, staff under the Cabinet Secretary and his able Principal Secretaries (Principal Secretary SDoT and Principal Secretary State Department of Transport) are also appreciated for their immense support in approving documents and facilitating movement to various offices relevant for carrying out of the SESA exercise. The staff in the various agencies, departments, and other areas in the Ministry were always available for physical and virtual consultation. Your cooperation and patience are greatly acknowledged. Your efforts at designing and formulation of a policy aimed at guiding operations of the transport sector with improved air quality, decreased dependence on fossil fuels and that constantly mitigates greenhouse emissions (GHG) do not go unappreciated. Globally, transport contributes to a considerable amount of current global energy-related GHG emissions, and arresting this phenomenon is imperative. The Ministry of Roads and Transport's efforts at ensuring that the sector abides by the National Energy Efficiency and Conservation Strategy (2020) must be applauded. We sincerely thank the staff in both SDoR and SDoT for providing relevant documents, information and contacts needed for this exercise.

The Ministry of Environment, Climate Change and Forestry deserves special mention. The staff in this Ministry greatly assisted the consultant with relevant documents, information and advice on conducting the exercise. The National Environment Management Authority (NEMA) staff are greatly appreciated and applauded for being at hand to assess and give important comments on the various documents for approval of the exercise. Their constant engagement with the team, capacity building, and availability to advise on otherwise unclear issues cannot

go unmentioned. The team says a big thank you and acknowledges the selfless efforts to protect and manage all development projects' environmental, socio-economic and occupational health and safety issues. The survival of future generations greatly depends on how efficient, effective and sustainable efforts will be done in dealing with climate change-related challenges. NEMA is always available to guide on related efforts.

The consultants wish to render their gratitude to staff in the Ministries of; Water, sanitation and Irrigation, Labour and Skills Development, Public Service, Gender and Affirmative Action, Energy, Health, Interior and National Administration, National Treasury and Economic Planning and Roads, Transport and Public Works and Foreign and Diaspora Affairs. Staff in these ministries provided important information for this exercise. The county government staff in Isiolo, Mombasa, Lamu, Nairobi, Kisumu, Eldoret, Murang'a and Nyeri is also appreciated. Identified staff members were instrumental in helping the consultant understand the need for collaborations and liaison with the SDoT to manage environmental, socio-economic, health and safety issues.

We also wish to appreciate Dubai Road and Transport Authority and the South Africa Department of Transport staff that were in place to receive and give valuable information to learn from to improve the transport sector in Kenya. The teams from the SDoT and the consultants are grateful to the respective Embassies of Kenya in these countries for facilitating in travel logistics.

The role of academia in providing information on research gaps and suggesting ways of mitigating such is also greatly acknowledged and appreciated. Continuous assessment and review of transport sector trends form part of what academia should focus on for sustainable development. Analysing trends in building and strengthening climate-resilient transport systems should be upheld by academia. In this regard, we greatly appreciate staff from Pwani University, University of Nairobi, Maasai Mara University, United States International University, Kenyatta University, Meru Institute of Science and Technology, Bandari Maritime Academy, and the Technical University of Mombasa who were instrumental in generating and engaging in debates on the need for rethinking collaborations between governments and the academia in suggesting ways of reducing greenhouse emissions through the use of energy-efficient transport modes and systems.

To our able and willing informants from all walks of life, we say a big thank you and hope that assessments on environmental, socio-economic and occupational health and safety needs will greatly help mitigate the negative impacts associated with transport sector development projects. This SESA will play a great role in drawing guidelines for the management of issues that you willingly raised during the public and stakeholder meetings. To the Program Manager, Albert Ochieng, thank you so much for being there to communicate and organise for required logistics. Your immense contribution to the completion of this exercise cannot go unnoticed.

NON-TECHNICAL SUMMARY

Introduction

Among other development blueprints, the Government of Kenya (GoK) recognizes the transport sector as one of the critical enablers in achieving Kenya's Vision 2030. Thus, the sector is deemed important in improving the competitiveness of products from Kenya and the region and serves as a significant basis for the economic, social, and political pillars of this long-term development strategy. Further, the sector is expected to remain a key component in tackling such challenges as poverty reduction and overall improvement in the general welfare of the population. The Government of Kenya developed the Integrated National Transport Policy (INTP) in 2010 to achieve these developmental goals. The government recognizes that an appropriate Integrated National Transport Policy (INTP) is the prerequisite for attaining an excellent transport system that is responsive to the needs of the people and the industry. The INTP is intended to promote the country's development in terms of integrating production, marketing, and population centres, hence facilitating mobility in rural and urban areas, national and regional integration, trade promotions, improving the overall welfare of the people, and Kenya's competitiveness. There is a need to eliminate impediments to the development and use of non-motorized and intermediate means of transport in order to enhance transport safety and security, develop and maintain a safe and secure transport system, sustainable utilization of the environment, integrate of meteorological information as well as the development of the requisite human capacity.

When this policy document was conceptualized, the Government of Kenya (GoK) finalized a road map for implementing an integrated transport policy. However, questions remained regarding how much the INTP conformed to the World Bank's ESS, which is an important requirement for all development projects funded by the Bank. The Bank thus identified the need for analytical work on the INTP's economic, environmental, and social implications to ensure compliance with the SESA National Guidelines and WB standards, an endeavour that the current review seeks to carry out.

The institution-centered Strategic Environmental and Social Assessment (SESA) aims to assist the GOK with implementing the Integrated National Transport Policy (INTP) and inform the Ministry of Roads and Transport of priority areas for successful implementation. To achieve its objective, the SESA blends analytical work with information from consultations with key

stakeholders, including community views, civil servants from diverse ministries, the private sector, academia, and non-governmental organizations. The SESA provides recommendations regarding concrete actions necessary to mainstream and implement relevant World Bank standards and guidelines to improve the INTP.

The Integrated National Transport Policy (INTP)

The Integrated National Transport Policy (INTP) is the policy document upon which this SESA is based. The policy is still under review and was developed to guide the design, operations, and all activities under the Ministry of Transport, Infrastructure, Housing, Urban Development and Public Works. It was developed in response to the growing realization that integrating, as opposed to segmenting, different transport sectors would provide more sustainable ways of managing and maximizing existing opportunities in the sector. A SESA review of the document is important to ensure that the INTP adheres to the requirements of existing Kenyan legislation on inclusivity and comprehensiveness. In particular, this consultancy aimed to assess the extent of the inclusion of environmental, occupational health, safety, and social issues within the policy document.

The exercise was developed in response to a request by SDOT to carry out a Strategic Environmental and social assessment (SESA). SESA is a well-established, practical and efficient planning and decision-making support tool. Its effective application should ensure that the strategic documents (plans, programs, policies, strategies, etc.) in the key sectors, including, for instance, energy, water, or waste management, which may cause significant adverse environmental and social, including health/safety effects are developed taking into account these likely effects. Strategic Environmental and Social Assessment (SEA) aims to promote sustainable development by mainstreaming environmental and health issues into the planning and decision-making processes at the national, regional and local levels. The SESA seeks to provide a high level of protection of the environment and social entities by integrating Environmental-Social considerations into the INTP for to manage the implementation of SDOTs policy, programs, plans, and programmes. The INTP SESA has its base anchored in the Kenya's NEMA regulatory frameworks and on the World Bank's Environmental and Social Standards. Other equally important documents related to SESA are also consulted and inform the overall review of the current SESA project.

Strategic Environmental and Social Assessment (SESA)

A Strategic Environmental and Social Assessment (SESA) is a planning tool used to proactively identify and manage the environmental and social impacts of policies, plans, and programs (PPP) before they are implemented. Overall, a SESA aims to ensure that policies, plans, and programs are implemented in a way that minimizes negative environmental and social impacts, while maximizing positive ones.

In recent years, Kenya has revolutionized its transportation systems, mainly through the modernization and expansion of infrastructure and transportation modes, including incorporating new technologies. As a result, areas that previously had limited accessibility are becoming increasingly accessible and thus open to new investments. Policies and regulatory frameworks guiding such developments need to be scaled up, entrenching environmental, social, and climate change requirements. They, in particular, need to conform to Kenya's EMCA (2009) and to good international practices such as the WB standards. This SESA aims to ensure that environmental and social implications or options within the INTP document have been assessed to ensure compatibility with WB's environmental-social planning and management. This is a requirement by the WB, which endeavours to build countries' capacity to formulate and implement sustainable development policies and plans.

Objectives of the SESA

The overall objective of this SESA is to ensure that INTP implementation minimizes negative environmental and social impacts while maximizing positive ones.

Specific objectives

1. To assess transport sector systems, policies, and activities for compliance to statutory and regulatory requirements.
2. Review INTP for Compliance with the Environmental, Health and Safety (EHS) Guidelines.
3. Identify public concerns that can emanate from the implementation of the INTP;
4. To highlight the specific transport sector systems and activities for potential environmental and social impacts, risks, costs, and benefits wherever possible.
5. To establish and provide mitigation measures and alternatives for managing for all significant social and environmental impacts, and recommend action plans;
6. Provide an analysis of overarching policy issues on gender in the transport sector.

7. To provide baseline information/data that will assist in deciding on the most appropriate mix of initiatives for policy implementation, sustainability, monitoring and evaluation.

Assessment Approach and Methodology

The SESA was based on a wide range of data obtained from both primary and secondary sources. Primary data was gathered by use of;

- a) Key Informant Interview Guides
- b) Interview schedules
- c) Focus-group discussions guides
- d) Observation sheets.

Secondary data was collected from government documents, including strategic plans, sector guidelines, reports, and other relevant documents. This was done against the background of the transport sectors and transport modes in relation to INTP. In order to establish the necessary baseline information on potential environmental impacts, the assessment focused on biodiversity, physical factors of the environment: - solid, liquid, and gaseous pollutants, noise, vibrations, and their impacts; occupational health and safety issues and social impacts and risks.

Findings and Discussions

This section delves into the key findings of the Strategic Environmental and Social Assessment (SESA) conducted for the Integrated National Transport Policy (INTP). It summarises the environmental and social impacts identified by the SESA, along with a detailed analysis of their potential consequences.

a) Policy, legislative, and institutional framework for assessment

The legal basis of Strategic Environmental Assessment defines the scope of the law, its purpose, principles of regulation, and the subjective composition of legal relations. It also establishes the procedure for implementing SESA. SESA allows compliance with the requirements of the law and brings other acts into line with environmental and social impact considerations during project design and implementation. The Constitution of Kenya 2010¹: - empowers persons to

¹ The Constitution of Kenya 2010. available at: http://www.kenyalaw.org/kl/fileadmin/pdfdownloads/Constitution_of_Kenya_2010.pdf (Accessed on 12/01/2023)

seek redress when their right to a healthy and clean environment has been violated or infringed. In particular, Article 42 of Kenya Constitution 2010 (The Enforcement of Environmental Rights) guarantees the people a clean and healthy environment. It, in particular, references the "Environmental Management and Coordination Act" of 1999 (EMCA), which was enacted to provide an appropriate legal and institutional framework for the management of the environment and for matters connected therewith and incidental thereto; revised in 2015.

EMCA also established the National Environmental Management Authority (NEMA) under the Environmental Management and Coordination Act (EMCA) No. 8 of 1999 as the principal instrument of government in the implementation of all policies relating to the environment. This Strategic Social and environmental assessment has subjected the INTP to ensure that it is in accordance with the provisions and requirements of the Environmental Management and Coordination Act (EMCA), 1999 and subsidiary regulations. Other national policies consulted include but are not limited to; Environment and Land Court Act (No. 19 Of 2011), The Occupational Safety and Health Act, 2007, Kenya National Social Protection Policy Act, 2011, National Police Service Act, 2011, State Corporations Act (No. 11 Of 1986), Public Procurement and Asset Disposal Act (No. 33 Of 2015), Exchequer and Audit Act (Cap. 412), Public Private Partnerships Act (No. 14 Of 2021), Lake Basin Development Authority Act (Cap. 442), Kenya Revenue Authority Act (No. 2 of 1995), Land Act (No. 6 of 2012), Land Adjudication Act (Cap. 284), Land Control Act (Cap. 302), Children Act 2001, National Children Policy, 2010, Sexual Offences Act 2006, Gender Policy of 2011, Standard Act (CAP 496), HIV and AIDS Prevention and Control 2006, Sessional Paper No. 10 of 2012 on Kenya Vision 2030, National Environmental Action Plan (NEAP) of 2009-2013, The National Poverty Eradication Plan of 1999, The Poverty Reduction Strategy Paper (PRSP) of 2000, The National Biodiversity Strategy of 2000, The Kenya National Climate Change Response Strategy of 2010, Technical Guidelines on the Management of Used Oil and Oil Sludge in Kenya (NEMA 2014), National Sand Harvesting Guidelines 2007, Integrated Land Use Guidelines among others.

The SESA process has also subjected the INTP to WB's SESA guidelines to identify gaps, suggest action plans, and propose ways of improving the INTP for Kenya's transport sector. They include OP/BP 4.01 Environment Assessment, OP/BP 4.04 Natural Habitat, OP/BP 4.10 Indigenous People, OP/BP 4.11 Physical Cultural Resources, OP/BP 4.12 Involuntary

Resettlement, World Bank Policy on Access to Information 2010 and World Bank Group General Environmental Health and Safety (HIS) guidelines among others.

Other International legislations include the United Nations Convention on Biological Diversity (UNCBD), the African Convention on the Conservation of Nature and Natural Resources (ACCNNR), the United Nations Convention to Combat Desertification (UNCCD), Rio Declaration on Environment and Development (RDED), the Earth Summit on Sustainable Development Agenda 21 (ESSDA21), Convention on the Rights of the Child (CRC), Convention on the Elimination of All forms of Discrimination Against Women (CEDAW) and the International Convention on Labour (ICL). The African Development Bank's environmental and social safeguards; European Union / European Investment Bank Environmental and Social Principles and Standards; International Finance Corporation (IFC) Performance Standards on Environmental and Social Sustainability²; and other appropriate international conventions were also consulted. The matrix for reviewing the INTP is conformity, non-conformity and/or partial conformity.

b) Institutional Capacity analysis

It was revealed that agencies and departments exist in the transport sector to handle environmental, social, occupational health, and safety issues. NEMA however plays the most critical role of regulating and managing issues related to the environment, while the DOSHS housed in the Ministry of Labour and Skills Development deals with, among others, occupational health and safety issues. Diverse ministries, including the Ministry of Public Service, Gender and Affirmative Action, Ministry of Labour and Skills Development, and Ministry of Sports, Culture and Heritage, deal with social issues. These institutions, while possessing adequate requisite training, knowledge and skills on some issues, are, however, greatly understaffed, especially in ensuring the establishment of climate-resilience transport infrastructure; under-funded and, at times, ill-equipped when it comes to specialized equipment and instruments for dealing with advanced aspects such as air transport satellite imaging to deal with flight monitoring, fire-fighting equipment's at both national and county-levels, road recovery and patrol vehicles to monitor accident sports and electric bikes for operating short distances all to reduce GHG emissions, improve air quality and addressing the need for

²International Finance Corporation (IFC) Performance Standards on Environmental and Social Sustainability. Available at: https://www.ifc.org/wps/wcm/connect/c02c2e86-e6cd-4b55-95a2-b3395d204279/IFC_Performance_Standards.pdf?MOD=AJPERES&CVID=kTjHBzk

dependence on fossil fuels. The needs assessment analysis points to the need for continuous training and retooling, hiring and capacity-building of staff in climate-resilience transport, purchasing of specialized instruments for each agency, e.g. unmanned drones for surveillance and mapping, radars for surveillance and control of avian birds and solar cells to reduce energy consumption at the airports. Modern RTGs are needed to ease the handling of incoming and outgoing cargo at ports.

c) Stakeholder Engagement and Public Participation

Public and stakeholder engagements were conducted at six sites identified: Mombasa, Nairobi, Kisumu, Eldoret, Nairobi, Isiolo, and Lamu. Purposive and snowballing sampling methods were used to identify other equally important individuals to be consulted. In total, 3,897 people were consulted, of which 53% were men and 47% were women. Their views have been collated and analyzed. The lower percentage of women is attributed to the patriarchal nature of the communities selected. Free prior and Informed Consent was sought and special attention given to VGs. The main languages used during the consultations was English and Kiswahili. However, where discussions in the two languages were not possible, local research assistants were recruited to help translate and translate the interviews. FPIC should be included in the INTP document to allow PAPs to engage effectively during the project, plan, and policy implementation of transport sector processes. This will also allow for the sustainability of the processes.

d) Women's roles in transport policy decisions and implementation

The INTP has provided for women's protection, participation, and inclusion in the design, implementation, monitoring, and evaluation of transport sector infrastructural developments. However, it was established that the levels and extent of participation are not clearly provided for in the document. It is thus recommended that at each stage of policy design and implementation and at the project level, the role of women (both skilled and otherwise) be clearly spelled out in appreciation of Kenya's COK (2010) and World Bank's ESS, OP, and EHS among other national and international laws on women. Mainstreaming gender issues as opposed to emphasising numbers and fairness is recommended, as this will ensure that the needs and aspirations of all women and men, boys and girls, regardless of their localities, age, and class, are taken care of.

e) Impact identification and Mitigation

Impact identification and mitigation are the cornerstones of a strong Strategic Environmental and Social Assessment (SESA). By proactively identifying and addressing environmental and social concerns, SESA helps ensure that proposed PPPs are implemented in a way that minimizes negative impacts and maximizes positive ones. Understanding the specific environmental and social impacts allows for the development of targeted mitigation strategies that are more likely to be successful.

f) Monitoring and evaluation

Monitoring and evaluation is an essential element of a robust SESA process. It ensures accountability, facilitates continuous improvement and allows for adaptive management that minimizes environmental and social impacts while promoting sustainable development.

As a rule, all transport infrastructure development projects should undergo Environmental and Social Impacts Assessments (ESIAs) and, subsequently annual Environmental and Social Audits (ESAs). This is missing from the INTP document. Annual audits are important in ensuring that projects not only adhere to national and international environmental, social, safety, and security standards but also contribute to the sustainability of the projects, an aspect that needs to come out strongly in the INTP document. The current SESA exercise has identified and recommended areas where SDOT needs to work with the Ministries of Water & Sanitation and Irrigation, Labour and Skills Development, Public Service, Gender and Affirmative Action, Energy, Health, Interior and National Administration, National Treasury and Economic Planning and Roads, Transport and Public Works among others to mitigate negative impacts of existing and proposed transport sector infrastructure projects in all the six subsectors. In particular, and as a requirement by the TOR, the consultant has identified relevant national and international environmental and social safeguards and guidelines to be followed by diverse agencies in the transport sector to ensure that these projects are not only sustainable but also monitored by relevant departments and agencies for the avoidance of duplication and overlap of mandates as it is currently. The SESA has also drawn an action plan to be considered by SDoT and its partners, including government agencies such as NEMA, Water Resources Authority (WRA), Kenya Forest Service (KFS), Kenya Plant Health Inspectorate Service (KEPHIS), National Police Service (NPS), National Land Commission and the Kenya Institute of Surveying & Mapping among others. The report notes that several

guidelines need regular review to mitigate environmental, socio-economic, health and safety issues effectively.

g) Analysis of Alternatives

The requirement for a policy document guiding the design, implementation, monitoring, and evaluation of programs, projects, and plans of all government ministries and government institutions is enshrined in the Constitution of Kenya (2010). There is, therefore, no alternative to having a policy by the Ministry of Roads and Transport. International and national instruments also require that PPPs go through constant review to ensure that they are responsive and sustainable and adhere to environmental, socio-economic, health safety, and security measures as required by SESA. In Kenya, EMCA (2009) was amended in 2015, and World Bank ESS, Operational procedures (OP), and Environmental Health and Safety (ESH) also require that all policies, plans, and programs (PPPs) be subjected to SESA. Section 41 (1) of EMCA clearly indicates that in consultation with county governments, lead agencies, institutions, and private entities, all proposals for policy, plans or programs to a SESA. The main objective of the SESA, as per the authority, is geared towards guiding policy, programme, or plan proposals to ensure that they are compatible with sustainable environmental planning and management. The law requires that all entities undertake or cause the SESA to be undertaken, at their own expense and consequently submit such assessments to NEMA for consideration and approval. In addition, NEMA remains the main agency responsible for guiding SESA's process. It prescribes and provides guidelines to stakeholders related to all SESA. In this regard, there is no alternative to conducting SESA for the Integrated National Transport Policy (INTP). This is because the policy has proposed transport infrastructure projects that will have both negative impacts and benefits to the environment, socio-economic, occupational health, safety, and security of communities. The SESA has thus proposed a relevant design review where larger recovery sections are provided, especially on the highways. An increase in road lanes on the LAPSSET corridor was also proposed. In the majority of the proposed transport infrastructure projects, no alternative action was suggested because relevant agencies are expected to conduct individual SESA activities on proposed transport infrastructure development projects.

h) Conclusion and recommendations

This conclusion section highlights the key environmental and social considerations identified in the SESA. It also has the recommendations section, which outlines specific actions that should be taken to ensure that the implementation of the INTP will result to minimal negative environmental and social impacts while maximising positive ones.

❖ Conclusions derived from this SESA include;

The following conclusions are derived from the SESA study for the INTP, thus;

- a) The INTP document is well thought out, written, formatted and critical SESA issues as required by EMCA (1999) and World Bank standards and guidelines and operational Standards identified for the stimulation of rapid development and efficient management of a safe, widely accessible transport system in a rapidly globalizing world handled.
- b) The INTP document has addressed challenges and identified policy recommendations related to transport infrastructure planning, development and management.
- c) The INTP has clearly delineated gender, sexual exploitation and abuse as important issues in the transport sector development projects, plans and programs.
- d) Climate change has been identified as an important impact related to transport sector infrastructure development projects.
- e) The transport sector opportunities and prospects have also been drawn, and provisions for the growth of the sector have been provided for the five subsectors.
- f) The INTP document has identified strategic directions for the transport sector with clear strategic goals and principles.
- g) The INTP document has clearly highlighted legal, institutional, and regulatory frameworks governing the transport sector as required by EMCA (1999)
- h) The INTP has discussed the impacts for existing and proposed transport sector infrastructure projects with an emphasis on the impacts of these projects on vulnerable groups and indigenous communities.
- i) The INTP has identified mitigation measures for dealing with the negative impacts of existing and proposed transport sector development projects.

❖ Recommendations drawn from the conclusions;

Based on the above conclusions, the following recommendations are drawn;

1. Implementing the Transport Act should be done in close/ effective, and productive conjunction with county governments.
2. Establish a protocol for working with NEMA on government policy, plans, and projects, and “walk together” in PPP processes in order to minimize delays in project execution and avoid misalignments associated with economic and social costs.
3. Close collaboration and partnership with partner and other stakeholders should be strengthened and operationalised.
4. To strengthen the SESA framework, there is a need to integrate the missing environmental, socio-economic, and occupational health and safety national policy, regulatory and legislative frameworks, and international instruments. The socio-economic aspect of the policy document must be prioritized. This is in particular as the INTP relates to the extent and level of stakeholder engagement.
5. A clear timeline for monitoring, evaluation and review of projects, programs and policies should be indicated in the INTP.
6. Institutional capacity building should be prioritized to ensure adequate staff to deal and handle SESA issues.
7. The development and operationalization of the Integrated National Transport Master Plan (INTMP) should be fast-tracked and expedited and a timeline for completion should be provided.
8. Establishment and designation of transport sector casualty investment to deal with accidents and injuries.
9. Procurement of specialized equipment in all sectors, including air (radars, unmanned drones and solar cells) Pipeline (RTGs), Road (patrol and surveillance vehicles, convex reflectors and ambulances) and NMIMTs (Ministry-specific e-bikes for each county and solar charging centres) is recommended to ensure environmental, socio-economic and health and safety issues are handled effectively and efficiently.

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CHAPTER ONE

1.0 Introduction

The Ministry of Roads and Transport (Kenya) is one of Kenya's twenty-one (21) ministries. Its mission is to provide efficient, affordable, and reliable transportation services for sustainable economic growth and development. The Ministry houses two state departments namely, the State Department of Transport (SDoT) and the State department for roads (SDoR), each of which is headed by a Principal Secretary (PS). The SDoR deals with road infrastructure, while the SDoT specializes in rolling stock. The table below shows the organization of the Ministry of Roads and Transport as at January 2023;

Table 1: Ministry of Roads and Transport

<p>STATE DEPARTMENT FOR ROADS</p> <p>Functions:</p> <ul style="list-style-type: none"> ✓ National Roads Development Policy; ✓ Development, Standardization, and Maintenance of Roads; ✓ Materials Testing and Advice on Usage; ✓ Protection of Road Reserves. ✓ Maintenance of Security Roads; ✓ Administer Mechanical and Transport Fund; ✓ Registration of Engineers; ✓ Mechanical and Transport Services; ✓ Enforcement of Axle Load Control. 	<p>Institutions</p> <ul style="list-style-type: none"> ✓ Kenya Roads Board (Kenya Roads Board Act, 1999 & 2007) ✓ Kenya National Highways Authority (Kenya Roads Act, 2007) ✓ Kenya Urban Roads Authority (Kenya Roads Act, No. 2 of 2007) ✓ Kenya Rural Roads Authority (Kenya Roads Act, No. 2 of 2007) ✓ Kenya Institute of Highways and Building Technology ✓ Kenya Institute of Technology ✓ Engineers Board of Kenya (Engineers Registration Act, Cap. 530A) ✓ Kenya Engineering Technologists Registration Board (Engineering Technology Act, 2016) ✓ Mechanical and Transport Fund (Public Finance Management Act, No. 18 of 2012).
<p>STATE DEPARTMENT FOR TRANSPORT</p> <p>Functions:</p> <ul style="list-style-type: none"> ✓ Transport Policy Management; ✓ Rail Transport and Infrastructure Management; ✓ Fast Tracking Identified Northern and LAPPSET Transport Corridor Projects; 	<p>Institutions:</p> <ul style="list-style-type: none"> ✓ Kenya Railways Corporation (<i>Kenya Railways Corporation Act, Cap. 397</i>) ✓ Northern Corridor Transit and Transport Coordination (NCTTCA) ✓ LAPSSET Development Authority (<i>State Corporations Act, Cap. 446, Gazette Notice-2013</i>) ✓ Kenya Airports Authority (<i>Kenya Airports</i>

<ul style="list-style-type: none"> ✓ Oversight and Co-ordination of Northern Corridor Transport and Lamu South Sudan Ethiopia Transit (LAPSSSET) ✓ Programmes Implementation; ✓ Civil Aviation Management and Training; ✓ Registration and Insurance of Motor Vehicles; ✓ Motor Vehicles Inspection; ✓ National Transport Safety; ✓ National Road Safety Management; ✓ National Roads Transport Policy; ✓ Axle Load Control Policy and Standards; ✓ Development and Maintenance of Air Strips; and ✓ Oversee the establishment of an integrated, efficient, effective and sustainable Urban Public Transport system within the Nairobi Metropolitan Area. 	<ul style="list-style-type: none"> ✓ <i>Authority Act, Cap. 395)</i> ✓ Kenya Civil Aviation Authority (<i>Civil Aviation Act, No. 21 of 2013</i>) ✓ East African School of Aviation (<i>Civil Aviation Act, No. 21 of 2013</i>) ✓ Kenya Ports Authority (<i>Kenya Ports Authority Act, Cap. 391</i>) ✓ National Transport and Safety Authority (<i>The National Transport and Safety Authority Act, No. 33 of 2012</i>) ✓ The Nairobi Metropolitan Area Transport Authority (<i>The Nairobi Metropolitan Area Transport Authority Order, 2016</i>) ✓ The Railway City Development Authority ✓ Railway Training Institute
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Over the years' transport sector has grown at an average annual rate of 13.3% compared to 11.8% for the overall economy. The sector's contribution to Gross Domestic Product (GDP) as at May 2023 was 11.4%. This increase was propelled by external as well as internal financing from the government.

The State Department of Transport (SDOT), under whose auspices the INTP is being developed, has the following as its strategic objectives;

1.1 Strategic Objectives of the State Department of Transport

1. To strengthen the institutional framework for infrastructure development and accelerate the speed of completion of sector-priority projects;
2. To develop and enforce regulations and standards to ensure safe, secure, and efficient transport and infrastructure systems;
3. To undertake research and development for efficient transport and infrastructure systems; and,
4. Expand, modernize and maintain an integrated, safe, and efficient transport network.

To achieve these objectives, SDoT has and continues to review the integrated National transport policy to create a sustainable system that meets the existing and emerging challenges and issues in the Kenyan transport system. Such issues include but are not limited to environmental and

climate vulnerability, wealth creation, e-mobility, and urban mobility improvement, which, among others, envisages a green mobility solution in the transport sector, security and safety and poverty reduction in line with Kenya's Vision 2030, AU's 2063 Agenda and the Sustainable Development Goals (SDGs) aspirations among others. In particular, SDG 11.2, whose aim is to ensure that all citizens will have access to safe, affordable, accessible, and sustainable transport systems by 2030 and beyond, is important to the SDoT.

1.2 Overview the INTP

An Integrated National Transport Policy (INTP) is a comprehensive framework designed to guide the development and management of the transport sector in Kenya. It aims to address the challenges facing the sector, including inefficiencies, safety concerns, and environmental degradation while promoting economic growth, social equity, and environmental sustainability.

The Integrated Transport Policy Document covers the entire transport sector in Kenya, comprising six (6) sub-sectors: Road transport, Rail transport, Port and Maritime, Air transport, Pipeline transport, and, Inland water transport. The Non-Motorized Transport (NMT) is also covered. These sub-sectors have specific contributions to the overall transport system in Kenya's urban and rural areas. In addition, the policy covers key transport sector challenges related to transport infrastructure planning, development, and management; a legal, institutional, and regulatory framework for the sector; safety and security, financing, gender mainstreaming, utilization of Information and Communication Technology (ICT), climate change and environmental and social considerations. It also contains sector opportunities related to technological development, globalisation, and private and public sector engagement, which the sector and associated partners should exploit to achieve maximum benefits for the citizens.

The SDoT aims to provide a policy that is conducive to the stimulation of rapid development and efficient management of a safe, climate change, and environmentally sensitive and responsive transport sector that is widely accessible and that responds to modern technological advancement in a rapidly changing and globalized environment. The high-level strategic objectives of the Integrated National Transport Policy are;

1.3 Objectives of the INTP.

The general objective of the INTP is to ensure sustainable development of Kenya's transport sector by proactively identifying, evaluating, and mitigating the potential environmental and social impacts of the INTP, fostering public participation, and promoting informed decision-making.

1.3.1 Impact Level:

Impact Level Strategic Policy Objectives are to:

1. Meet overall Government policy objectives, as contained in Vision 2030, its development plans, and regional and international development goals;
2. Encourage regional and international integration for vibrant trade and transport;
3. Leverage the key productive sectors of oil and gas, agriculture, blue economy manufacturing and tourism;
4. Reduce disruptive effects of climate change in accordance with the National Climate Change Action Plan; and,
5. Assist social mobility, accessibility, poverty reduction and inclusivity.

1.3.2 Outcome Level

Outcome Level Strategic Policy Objectives are to:

1. Contribute to improved safety and security in transport;
2. Have the potential to leverage private sector financing;
3. Be economically (EIRR, NPV, B/C), environmentally (positive impacts), and socially (inclusive) sustainable;
4. Support enforcement and compliance with sector laws and regulations;
5. Support the development and maintenance of an integrated and coordinated transport infrastructure and services for efficient movement of passengers and freight, and support disaster management efforts;
6. Contribute to integrated land use and transportation planning and management; and,
7. Embrace new technologies and introduce elements of technology transfer to Kenya.

1.3.3 Strategic Initiatives

These policy objectives will be achieved through the adoption of the following broad strategies:

1. The development of appropriate transport sector funding/financing mechanisms, including leveraging private sector financing;
2. Introduction of elements of technology transfer to Kenya;
3. Establishment of appropriate institutional systems for transport sector management, coordination and regulation;
4. Enhanced investment in the transport sector, especially in sustainable urban transportation systems and climate-proof infrastructure;
5. The application of ICT in transport planning, operations, and management to enhance sector efficiency;
6. The incorporation of environmental protection, resource conservation, emission reduction, and climate risk assessment in transportation planning, infrastructure design, implementation, and provision of transport services;
7. The development of a national transport information database for effective and integrated transport planning and management;
8. The promotion of public awareness through the use of appropriate information to inculcate positive attitude change; and,
9. Developing and promoting appropriate human resource capacities and good governance in the sector.

1.4 Background and context for the INTTP SESA:

The State department for roads, hereafter SDoT, which commissioned this SESA exercise, draws its mandate and functions from Executive Order No.1 of January 2020, revised May 2020, and is responsible for the formulation of transport Policy for all modes of transport, Legislation and providing oversight of State Corporations established through various Acts of Parliament including but not limited to:

- Civil Aviation Act No.21 of 2013 establishes Kenya Civil Aviation Authority and the East African School of Aviation;
- Kenya Airports Authority Act No 3 of 1991 establishes Kenya Airport Authority; and
- Traffic Act of 2008.

The SESA was based on the recognition that the construction of transport infrastructure systems and their maintenance often affect the environment through the destruction of flora, fauna, and physical entities of the environment, displacement of human settlements and livelihoods, habitat fragmentation, and negative changes in environmental aesthetics. As such, there is a need to ensure that environmental, social, health and safety considerations are incorporated in transport infrastructure development, management, and operations. A Strategic Environmental and Social Assessment (SESA) is a systematic process for evaluating environmental and social implications of a proposed policy, plan or programme and provides means for looking at cumulative effects and appropriately addressing them at the earliest stage of decision-making alongside economic and social considerations, is a major tool for assessing and ensuring conformity to such standards and guidelines. This particular Strategic Environmental and Social Assessment (SESA) is based on the Integrated National Transport Policy (INTP), which was developed in 2009 and later approved through Sessional Paper No. 2 of 2012 and which is expected to operate in conformity with (EMCA 1999, and (EMCA Amendment, 2015). One key aim of the INTP is to establish management rules and regulations and ensure a decrease in greenhouse gas emissions within Kenyan cities, improve air quality, and reduce dependency on fossil fuels. This is in addition to addressing other environmental and social concerns as Kenya strives to achieve its developmental goals as envisioned in the “Big Four Agenda”; Vision 2030 and 2063 Africa development Goals, all alongside UN Sustainable Development Goals. Implementation of this policy anticipates various environmental and social linkages manifested through the proposed projects. The SESA identified key environmental and social risks and recommended ways of integrating environmental and social sustainability strategies in the implementation of the reviewed policy.

As a practical and efficient planning and decision-making support tool, the effective application of recommendations from the SESA exercise should ensure that the strategic documents (plans, programs, policies, strategies, etc.) in the key sectors, including, for instance, energy, water, or waste management, which may cause significant adverse environmental and social; including health/safety effects are developed taking into account these likely effects. The INTP SESA has its base anchored in Kenya’s NEMA regulatory frameworks, national policies, statutes, action plans and regulations, and on the World Bank’s Environmental and Social Standards. Other equally important documents related to SESA are also consulted and inform the overall review of the current SESA project.

Kenya's Integrated National Transport Policy (INTP) recognizes the importance of addressing climate change in the transport sector. The policy aims to support the policy objectives in the National Climate Change Action Plan (NCCAP) and promote the development of integrated transport systems that reduce greenhouse gas (GHG) emissions and noise. To achieve this, the INTP recommends several strategies, including promoting the adoption of e-mobility for transport services, supporting investments in modern vehicle and aircraft technologies to reduce GHG emissions and noise, prioritizing the implementation of mass rapid transit systems (MRTS) and non-motorized transport facilities in urban areas, and dis-incentivizing the use of private motor vehicles.

The policy also encourages the promotion of renewable fuels, including green mobility, setting an enabling policy framework to incentivize efficiency improvements in freight transport in conjunction with the private sector and exploring ways to generate further financial resources as part of mitigation efforts in the transport sector.

The INTP also emphasizes the importance of ratifying, domesticating, and implementing all relevant international/regional conventions and protocols relating to environmental conservation and climate change, as well as creating a regulatory/institutional structure to ensure that all agencies comply with all the environmental laws and regulations throughout the project cycle. Importantly, the policy likewise encourages the pursuit of innovative technologies in the field of environmental conservation and the use of alternative materials with fewer carbon footprints in transport infrastructure construction.

The policy is also cognisant that with emerging transport infrastructure and modes of development and rapid growth, each sub-sector will require a separate and comprehensive SESA to adapt to these emerging dynamics in the transport sector. This will also allow for an appreciation of climate change and its attendant consequences.

1.5 The rationale for the SESA

There is a need to ensure that social and environmental considerations are incorporated into transport infrastructure development, management, and operations. The construction of infrastructure and maintenance of transport systems often affect the environment through the destruction of flora and fauna, displacement of human settlements and livelihoods, habitat fragmentation and negative changes in environmental aesthetics. This realization is one of the

factors that set-in motion the development of an Integrated National Transport Policy (INTP) in 2009. This was later approved through Sessional Paper No. 2 of 2012. The policy review was undertaken in 2019 to incorporate recent developments and other emerging issues. The policy recommendations will be implemented through pre-determined programs.

Implementation of the policy anticipates various environmental and social linkages manifested through the proposed projects. This SESA involved a comprehensive policy assessment in light of the proposed projects to establish basic environmental and social settings, standard methodologies, and management plan structures. These concepts were applied in the scoping process and impact studies for each project for necessary review and approval.

1.6 Overall Objective of the SESA

The overall objective of a Strategic Environmental and Social Assessment (SESA) is to ensure informed decision-making for policies, plans, and programs (PPP) by proactively identifying, evaluating, and mitigating their potential environmental and social impacts throughout the planning process.

1.7 Specific objectives of the SESA

The specific objectives of this SESA are as follows:

- 1) To assess transport sector systems, policies and activities for compliance to statutory and regulatory requirements, including conformity to environmental and social safeguards (as described in World Bank, AfDB, EMCA, OSHA frameworks, and relevant International Agreements, among others);
- 2) Review INTP for Compliance with the Environmental, Health and Safety (EHS) Guidelines. The consultant will identify areas of application/mainstreaming of the EHS Guidelines in the INTP based on identified environmental and social issues.
- 3) Identify public concerns that can emanate from the implementation of the INTP;
- 4) To highlight the specific transport sector systems and activities for potential environmental and social impacts, risks, costs, and benefits wherever possible.
- 5) To establish and provide mitigation measures and alternatives for managing all significant social and environmental impacts, and recommend action plans;

- 6) Provide an analysis of overarching policy issues in the transport sector on gender and recommend ways of strengthening gender equality, especially women's roles in transport policy decisions and implementation.
- 7) To provide baseline information/data that will assist in deciding on the most appropriate mix of initiatives for policy implementation, sustainability, monitoring, and evaluation.

The assessment has provided a comprehensive transport sector-wide assessment for information on potential impacts, both positive and negative, of developments, and the identification of gaps in regulation, institutional capacity and the strengthening of the public consultation mechanism. Overall, the following synopsis was captured from the INTP in relation to SESA;

The INTP appreciates and considers environmental issues in developing, managing, and operating transportation infrastructure. More precisely, the document addresses issues related to biodiversity, the displacement of human settlements and animal habitats, the division of animal herds, and unfavourable and negative changes to the aesthetics of the environment. On biodiversity conservation and sustainable management of living natural resources, it is noted that adherence to ESIA requirements indicates that the INTP recognizes the importance of maintaining core ecological functions of habitats, including forests, and the biodiversity they support. To achieve this, it is recommended to add in the INTP requirement that each project, after an ESIA is carried out, should undergo an annual Environmental and Social Audit (ESA) as per NEMA and the World Bank Environmental and Social Framework (ESF) requirements.

In addition, the document appropriately provides guidelines for handling the effects of transport infrastructure related to the environment. As an observation, it was noted that measures of handling the transportation of hazardous waste, which are often transported by road, thus posing environmental and, health and safety concerns, have not been adequately handled in the INTP document.

It was also noted that all transport modes are taken care of in the INTP. However, while some modes, such as road and air, are captured in detail, others, such as inland, maritime, and pipeline, do not comprehensively conform to the NEMA and World Bank SESA standards and guidelines. Thus, all modes should be fully integrated into the INTP document. Additionally, it was noted that all the transport sectors operate under the reviewed Integrated National

Transport Policy (INTP) and are, therefore, supposed to be in compliance with environmental and social standards, including health, safety, gender equality, and related factors.

In the area of stakeholder engagement and information disclosure, the INTP appreciates and provides for stakeholders' engagement at all levels of the policies, plans, and programmes. However, the INTP is silent on the levels and extent of public participation. In addition, how this policy pronouncement will be implemented is not mentioned in the INTP. We recommend conformity on this.

It has also been observed that the INTP has used some nomenclature that does not reflect the social dimension, an important issue in the World Bank and other SESA standards and guidelines. This is evident in the use of the terms Environmental and Social Impact Assessment (ESIA) and Audit (ESA) Environmental and Social Audit (ESA) instead of Environmental and Impact Assessment (EIA) and Audit (ESA) Environmental and Audit (EA). It is recommended that in order to reflect the World Bank's and other international institutions' good practice, SESA as opposed to other terminologies, be used as these incorporate social aspects of PPPs. This will conform specifically to the World Bank's first Environmental and Social Assessment Standard ad contained in the World Bank Environmental and Social Framework (ESF).

Concerning land acquisition, land use restrictions, and involuntary resettlement, the INTP clearly spells out the provisions for modernization, demographic changes, and changes in industrial and agricultural production and other economic activities. These provisions are, however, only clear for the railway transport sector. For conformity, it is recommended that these requirements be comprehensively mainstreamed in all the transport sectors, including road, air, inland and maritime, and non-motorized sectors. In addition, the policy needs to make it clear that involuntary resettlement should be avoided. Where involuntary resettlement is unavoidable, it will be minimized. Appropriate measures to mitigate adverse impacts on displaced persons (and on host communities receiving displaced persons) are carefully planned and implemented in the INTP. However, the document does not fully integrate the policy to address this.

It was also noted that the World Bank requires Financial Intermediaries (FIs) to monitor and manage the environmental and social risks and impacts of their portfolio and FI subprojects and monitor portfolio risk as appropriate to the nature of intermediated financing. It is noted that the INTP indicates that the current sources for financing transport infrastructure

development are both internal and external sources. In all cases, the overriding concern will be reducing the level of subventions required in the medium and long term.” However, the provision for FIs to monitor and manage their portfolio's environmental and social risks and impacts is not explicit in the policy (INTP). Thus, the policy should acknowledge the role of FIs in monitoring and managing policies, plans and programmes funded by the World Bank.

An important environmental and social issue, though absent from the World Bank's ten-point ESS provisions that the INTP document has dealt with, is on transboundary challenges related to transport and infrastructure. The INTP recognizes that transportation transcends boundaries and does not stand alone. This recognition, thus, calls for consultation and cooperation in the formulation of policies related to cross-border modes of transport. The INTP clearly spells out the need for joint efforts in all neighbouring road transport modes and sectors. We recommend that this be extended to all transport modes, including air, inland and, maritime, rail, and non-motorized modes. We also recommend that in the area of inspection, provisions be made on the policy to ensure effective, transparent, efficient, and timely completion of the exercise. We also recommend that consultation and harmonization of policies on transport with neighbouring countries be observed to avoid transboundary conflicts related to land, oil spills, and related environmental and social issues.

CHAPTER TWO

SCOPE OF THE ASSESSMENT AND METHODOLOGY

2.0 Introduction

This section explains how information will be collected for the SESA. The methodology details how the environmental and social impacts will be measured and evaluated. This will involve using specialized tools or frameworks to analyze potential consequences. The methodology outlines how the findings of the SESA will be documented and communicated.

2.1 Scope of the SESA

The SESA is based on the INTP 2009 and Sessional Paper No. 2 of 2012³. The SESA aimed to establish key environmental and social issues related to programs, projects, and plans and recommend actions that ensure compliance and conformity to both national and international environmental and social safeguards and related obligations. The aim is to ensure that the INTP of Kenya's transport sector addresses contemporary and pertinent social and environmental issues in line with national and international obligations, contributes to social justice and gender and social inclusion, and contributes to environmental sustainability. In this SESA, the World Bank Environmental Guidelines on Social and Environmental Safeguards, Kenya's EMCA 2009⁴, and various transport legislations and regulations, among others, formed important reference materials.

2.2 Geographical Scope

The geographical scope of the SESA considered the whole of Kenya, but a sample selection of stakeholders and public perceptions focused on the major towns of Nairobi, Mombasa, Kisumu, Eldoret, Isiolo, and Lamu. The selection of areas was based on various issues; thus, Eldoret has the pipeline oil and inland container depots, which will serve the entire region through rail, air, and road. Isiolo is near the oil deposit in Turkana and serves the Lamu Port South Sudan

³ Sessional Paper No 2 of 2012 available at:

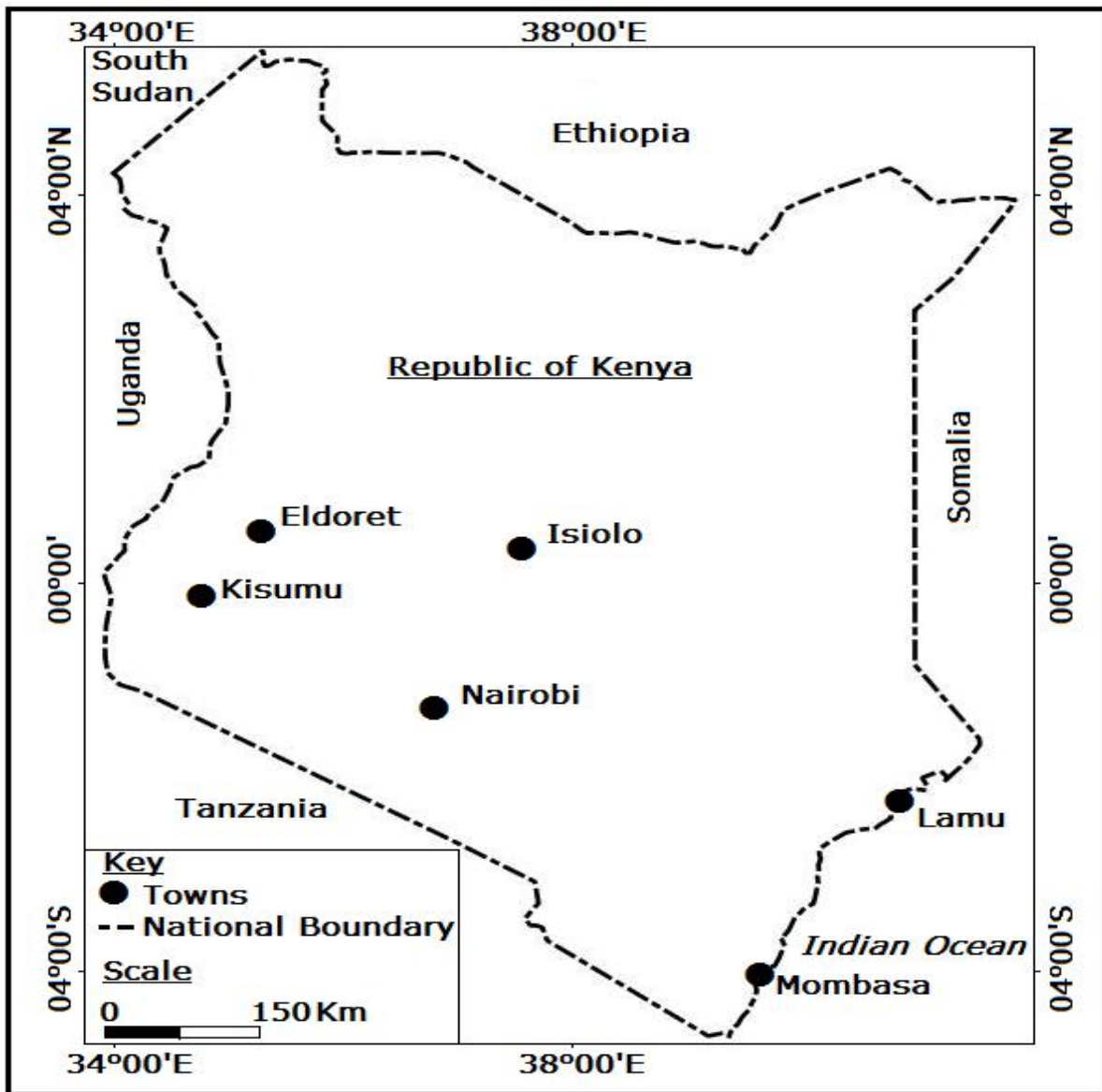
<https://repository.kippra.or.ke/bitstream/handle/123456789/3063/Sessional%20Paper%20No.%202%20of%202012.pdf?sequence=1&isAllowed=y> (Accessed on 3/01/2023)

⁴ Environmental Management and Coordination Act (EMCA), 1999 Available at:

<https://www.nema.go.ke/images/Docs/Legislation%20and%20Policies/EMCA%20Act%202015.pdf> (Accessed on 3/01/2023)

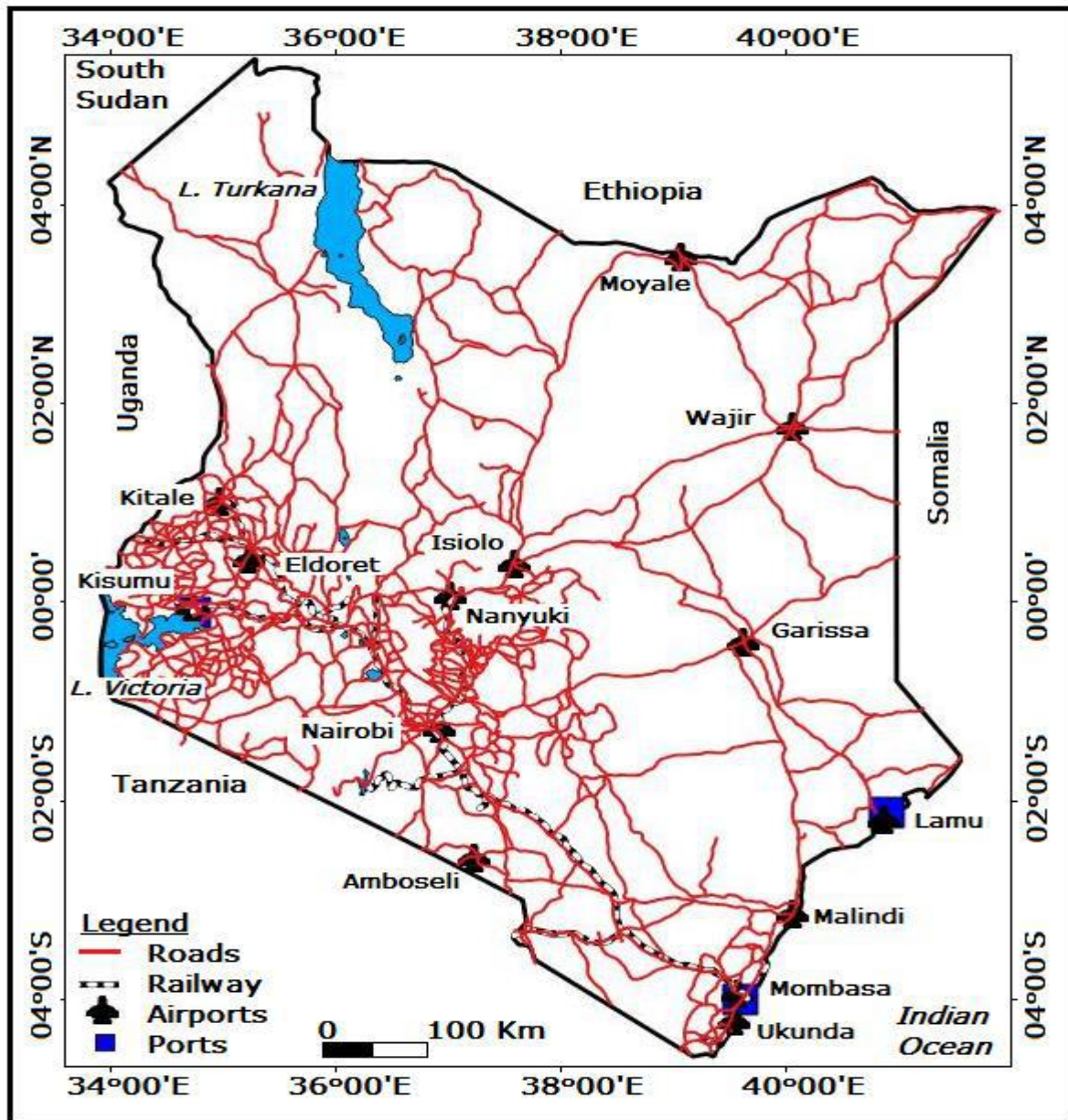
Ethiopia Transport Corridor Project (LAPSSET) transport corridor. In addition, Isiolo is one of the proposed resort cities of the LAPSSET corridors. Kisumu connects Kenya to the hinterland and has Lake Victoria, which is the largest inland oil transport in Kenya. Mombasa was sampled because it hosts Kenya's main port with the *Ndongo Kundu* industrial hub. Nairobi was selected due to its centrality and cosmopolitan nature of the city, while Lamu marks the start of the LAPSSET corridor, and it has a proposed thirty-two (32) births. Three of the 32 births are at various levels of development through public funding, and 29 are proposed to be implemented through Policy, Plan, or Program (PPP). Site visits to the Kenol-Marua and Mombasa-Lunga Lunga roads was also done. The team also conducted foreign benchmarking visits to Dubai and South Africa. The technical scope considered all the guidelines provided in the TORs (Appendix 1). The map of Kenya below shows the study areas (Map 1), while Map two (2) indicates Kenya's complex transport sector network.

Map 1: Map of Study Areas



Map 2 below shows Kenya's complex network roads, rail, air and ports.

Map 2: Kenya's Transport Network



Source: Kenya National Bureau of Statistics (2008)

Table two (2) shows the total inventoried road network infrastructure as of 2023. The Kenya Roads Board compiled this after a comprehensive update through the Kenya Roads Board (2023).

Table 2: Total inventoried network

Classified (Km.)					New (Km.)	Total
NTR	KeNHA	KeRRA	KURA	Sub-Total	219.84	44,849.26
	22,320.12	18,377.44	3,931.86	44,629.42	73,935.30	194,272.47
County (All 47 Counties)				120,337.17	74,155.14	239,121.74
Total				164,966.59	74,155.14	239,121.74

Source: Kenya Roads Board (2023)

2.3 Baseline environmental and socio-economic scenarios

This section presents the country's baseline environmental and social situations in general and on the six selected sites in particular.

2.3.1 Environmental and Social Baseline Information

Diverse habitats and endangered species were considered during the analysis. It was established that the INTP is cognisant, has established measures of avoidance, and has provided alternatives to using environmentally insensitive transport infrastructure. This has been done through an analysis of environmental risks associated with the development of transport infrastructure in rural, urban and vulnerable sites, analysis of demographics and population trends in proposed sites, acknowledgement and analysis of utilities such as electricity and communication lines and engaging the public to ensure buy-in and ownership of the projects and the overall INTP proposals.

The next section discusses environmental and social situations in Kenya that the INTP considered when designing and planning the policy implementation for the sector.

1. Biodiversity

(a) Fauna

i) Birds

Kenya boasts of diverse bird types inhabiting both forested and settled areas. With over 1,000 bird types, many are resident, while others migrate yearly to and from the African region, while others move as far as Asia and Europe, and some to the Middle Eastern lands. According to Bennun and Njoroge (1999), some of these birds do not move outside of the African continent. Birds fly paths in Kenya, including Turkana, the wider Kajiado and Narok ecosystems, Kakamega and Nandi forests, Northern Kenya short-grass plains and around the lakes.

ii) Amphibians and reptiles (*Herpetofauna*)

Kenya has a rich herpetofauna diversity totalling about 215 reptile species, snakes, frogs, lizards, and turtles. Crocodiles are largely conserved and a few are found in big water bodies. Generally, amphibians are largely confined to wetland ecosystems and forests, while reptiles have a wider distribution, especially in arid and semi-arid areas. A wide range of snakes exist in forested areas, and while a few are conserved in individual and/or public conservancies, others roam in dry areas of Baringo and the greater Rift Valley plateau. Amphibians and reptiles are quite sensitive to ecological changes or disturbances. In addition, a number of amphibian and reptilian species remain highly vulnerable, endangered or threatened with extinction, especially due to ecological disturbances and climate change.

iii) Fish and Marine invertebrates

Kenya's lakes and rivers host diverse endemic fish species. With a large number of freshwater bodies, the country also hosts marine species, some of which are endangered. Fish are found in Lake Turkana, Ewaso Nyiro, Boji plains, Kombeni, and Manjema, Lake Victoria. The coastal oceanic water bodies also host a number of amphibians and fish types. New fish types have also been introduced in Kenya in the last few years. More than 20,000 insects also inhabit marine and inland environments in Kenya. These include beetles, butterflies, ants, locusts, bees, flies, and fleas, many of which are important in pollination. Marine invertebrates include

but are not limited to zooplankton, crustaceans' anemones, lobsters, prawns, corals, and jellyfish.

iv) Mammals

Kenya has a rich diversity of both small and large mammals. Large animals, including herbivores, carnivores, and omnivorous types, are found plenty in the Kenyan highlands, where forests and bushes exist. The big five wild animals are all found in big numbers in Kenya's national parks, game parks, and public and private conservancies. Domesticated animals such as cows, camels, goats, sheep, cats, and dogs are also found within many rural households and are domesticated for food and the provision of security. Mammalian species are found in all parts of the country, with large mammals largely confined to game parks and game reserves. However, sizeable numbers also occur outside protected areas. Some animals have been used as transport, especially in Lamu, Northern and Eastern parts of Kenya, where road, air and rail transport networks are unavailable or limited. The use of such forms of NMT requires development, which is covered well in the INTP. The preservation of wildlife corridors is also critical to the development of transport infrastructure.

b. Flora

Kenya's landscape is littered with thousands of plant types, including trees, shrubs, grasses, and a variety of crop species. While the majority of these plants are natives' others are exotic, having found their way into the ecosystem through the processes of diffusion and dispersal. Native plants of Kenya include sand forest poison rope found along the coastal region and rocky areas, as well as sage bush trees. The Black ironwood tree found around the Great Rift Valley areas and Mtondoo trees has existed in Kenya for hundreds of years. Flowers, tea, and coffee farms are common features in Kenya's highland regions of Central Rift Valley and lower eastern regions. The INTP has adequately analysed and proposed policy directions on avoiding such areas or requiring agencies to conduct profiling and mapping surveys to identify areas where these resources are found.

2. Physical and Physiographic features and characteristics

(i) Topography

Topographically, Kenya is divided into upper, lower, highland, and midland zones. The upper highland zones are majorly wet and lie at an altitude of between 1800-2550 metres above sea

level. The lower zones have hills plateaus and small mountainous zones between 1,500-1800 metres above sea level. The upper regions between 1300 and 1500 cover areas with volcanic activity. The lower zones have very erodible soils, steep slopes, and forests, making them unsuitable for farming.

(ii) Climatic Conditions

Kenya lies at the equator with three climate types: temperate subtropics found in southwestern and western regions, hot and humid temperatures, and hot and drylands. Attitude, land use patterns, and energy use influence climatic conditions in Kenya. The mountainous regions in Kenya experience cold weather; in some instances, Mount Kenya peaks drop to temperatures below zero at night. Areas like the highlands that experience moderate temperatures record high crop yields, with the greater Rift Valley and Central regions of Kenya acting as the bread baskets for the country.

(iii) Water and sanitation

Kenya depends on both surface and groundwater resources. Groundwater is mainly used in rural areas, with surface water surfaces used in rural and urban areas. The two main surface water bodies in Kenya are the Tana River and Lake Victoria, which are the longest, while the highest yielding aquifers are found in Rift Valley, Athi, Tana, and Ewaso Nyiro basins. The five water catchment areas are Lake Natron, Lake Victoria, Lake Nakuru, Lake Baringo, and Lake Turkana. River Nile drains into the Mediterranean Sea through Uganda, South Sudan, and Egypt, thus making it a lifeline to many people in the region. A small number of people in Kenya rely on unimproved water sources such as ponds and un-purified water pans. Generally, about 10 million Kenyans use contaminated surface water sources, and about 5 million of them practice open defecation.

3. Population

Kenya has an estimated population of about 55,961,895⁵ people. The growth in the population has been attributed to two major things, namely, high fertility rates and low mortality due to

⁵ Worldmeter. Kenya Population. Available at: <https://www.worldometers.info/world-population/kenya-population/>

improved healthcare. It is projected that by the year 2030, 63, 860,000 persons will be living in Kenya. Nairobi has the highest population, with a total population of about 4.4 million, while Lamu has the lowest population, with only 143,920 people. As of 2021, there were 98.77 males per 100 females. This translates to a 50.3% female population compared to 49.7% males. The increase in population ostensibly puts more pressure on natural resources, especially land, while simultaneously demanding increased transport sector development projects to cater to the growing population. With an increased population, demand for transport, housing, sewage and sanitation, water, energy sources, and food continues to increase. Pressure on land use and subsequent demand for agricultural land will also lead to adverse effects on the environment.

Belief systems play a significant role in the lives of Africans. Every community in Kenya boasts unique cultural norms, which have been passed down over the years from one generation to the other through word of mouth and written documents. Tangible (movable, immobile, and underwater) cultural heritage in Kenya clothing, artwork, and archaeological sites are located in Kariandusi, Fort Tenan, Olorgesailie, and along the coastal region. Intangible (cultural Heritage) cultural assets in Kenya include oral stories and histories, legends, religious rites, songs, and dances. With more than forty-three (43) speaking communities, each group possesses a unique heritage related to burials, marriages, births, and initiation. Historic buildings also exist, for instance, in Lamu, and works of monumental sculpture or painting in Mombasa, Kitui, and Machakos. Major livelihood patterns of the majority of communities in Kenya range from pastoralism, fishing, farming, fishing, beekeeping, horticulture, poultry keeping, and mining. Trade is practiced by almost all communities for either subsistence or on a commercial scale. Land is a very important and highly valued asset that is the basis for all these economic activities. Over time, conflicts over land-related resources have thus been experienced, especially during electioneering periods in areas around central and the greater Rift Valley. The Luo, Turkana, Pokot, and Suba communities practice fishing along lakes, while large-scale plantation farming is practiced in Kenya's Rift and Central regions.

4. Natural Resources Distribution in Kenya

Kenya is a land rich in natural resources, boasting a diverse landscape that shapes the distribution of these valuable assets. From fertile highlands to vast arid plains, Kenya's natural resources are not uniformly spread. This section presents key categories of natural resources found in Kenya in selected areas of study.

a. Wetlands

The distribution of wetlands and swamps in Kenya is diverse, ranging from coastal and marine wetlands to inland freshwater lakes, rivers, meanders, floodplains, riverbanks, lakeshores, and seashores where wetland plants grow. Kenya's wetlands include marine and intertidal areas like deltas, estuaries, mud flats, mangroves, salt marshes, sea grass beds, and shallow reefs. Globally, wetlands cover about 6% of the earth's surface, with Kenya's wetlands occupying approximately 3% to 4% of the land surface, totalling around 14,000 km², which can increase up to 6% during rainy seasons. In Kenya, wetlands are distributed across various regions of the country, with some of the key areas including the Tana River Delta, Lake Victoria Basin, Lake Naivasha, Lake Turkana, and the Maasai Mara National Reserve. These wetlands provide essential ecological and socio-economic goods and services such as water supply, food production, construction materials, and products for the cottage industry, tourism, recreation, flood control, water filtration, nutrient storage, wildlife habitats, and more. The distribution of Kenyan wetlands is influenced by rainfall and landform, with trans-boundary wetlands sharing with neighbouring countries presenting unique challenges.⁶ With global climatic changes, these wetlands are threatened, and calls for preservation and protection of the same is important even as the INTP proposes to provide guidelines for transport infrastructure development.

b. Vegetation Cover

The distribution of vegetation cover in Kenya varies across different regions due to the country's diverse landscapes and climatic conditions. Kenya's vegetation cover includes a range of ecosystems such as dry and sparsely vegetated regions in the north, lowlands and humid rainforests along the eastern coast, fertile lands in the central part and around Lake Victoria, broad plains, numerous hills, and biodiverse mountain forests of Mount Kenya. Shrublands dominate the arid and semi-arid regions in Kenya's northern and eastern parts, characterized by the Acacia-Commiphora bushlands and thickets ecosystem. Additionally, the coastal lowlands experience high temperatures and humidity, supporting a moist coastal forest ecosystem dominated by semi-deciduous, broad-leaved trees. The vegetation cover in Kenya is influenced by factors like rainfall patterns, topography, and climate zones, resulting in a diverse array of vegetation types and distribution across the country. Climatic change patterns

⁶ Mailu, G. M., & Kiai, S. P. M. (1995). Kenya country paper Wetland classification for agricultural development in Eastern and Southern Africa.

have negatively affected vegetation cover, which, if destroyed through transport infrastructure development, would yield negative impacts on the populace.

i. Coral Reefs

Kenya's coral reefs are at the northern end of the East African Marine Ecoregion, decreasing in extent, size and diversity from south to north in three main sections: a) a near-continuous fringing reef system borders the southern coast from Shimoni to Malindi, b) negligible reef development between Malindi Kipini in the region affected by Kenya's two largest rivers, the Athi/Galana/Sabaki and Tana Rivers, and c) patch-and small fringing-reefs border the islands of the Lamu-Bajuni archipelago. Current estimates give a total reef area of 630 km², extending from the sea surface to about 20-25 m depth. Kenyan reefs harbour over 235 species of Scleractinia corals, more than 350 species of bony fish, and 12 seagrass species. Turtles and marine mammals that are associated with reefs are of high conservation and tourism value.

The reefs support a widespread artisan fishery and a growing commercial fishery; both made up of local and migrant fishers using a range of gears from traditional to modern. Coral reefs also support Kenya's coastal tourism industry and protect shoreline development in major towns and all significant beachfront developments. Major threats to coral and coral reef ecosystems are from many factors ranging from rising sea levels and rising sea temperatures due to global warming to seawater acidification.

ii. Mangrove forest

The mangrove forest distribution in Kenya is significant with mangroves covering approximately 3% of the country's natural forest cover, totalling more than 60,000 hectares. The mangrove trees in Kenya are found along sheltered sedimentary shores, particularly in bays and estuaries. Around 60% of the mangroves are concentrated in Lamu County in northern Kenya, while Kwale County in southern part accounts for about 14% of the mangrove cover. Notably, the best-developed mangroves are located in Tana River County, which has the second most extensive patch of mangrove forest after Lamu County. Kenya is home to nine species of mangroves, with the dominant species being *Rhizophora mucronata*, locally known as 'mkoko' and *Ceriops* (Mkandaa) are dominant and form 70% of the formation. The rare species are

Heritiera (Msikundazi) and *Xylocarpus* (Mkomafi).⁷ These mangrove ecosystems play a crucial role in supporting biodiversity, carbon storage, and providing resources for coastal communities. However, mangroves in Kenya face threats from human activities, erosion, drought, and sea-level changes, leading to a decline in mangrove cover over the years.

The major obstacles that have prevented the rational use of mangroves in Kenya have been the sectoral approach of mangrove resource management, lack of community inputs into management efforts, the poverty status of many indigenous coastal communities, lack of alternative livelihood, and a lack of awareness amongst decision makers and communities about the true value of mangroves.

iii. Forests

The distribution of forest cover in Kenya is diverse, with various types of vegetation occupying different regions of the country. As of 2018, Kenya's forest cover was estimated at 7.4% of the total land area, which is below the recommended global minimum of 10%. The breakdown of vegetation cover in Kenya includes Indigenous Forests covering 2.1%, Plantation forests at 3%, Woodland at 3.7%, Bushland at 42.9%, Wooded Grassland at 18.5%, Mangrove at 1%, Grassland at 2.1%, Desert at 13.7%, and Farmland and Urban Development at 16.5%. Notably, woodlands, bushlands, and wooded grasslands collectively occupy 65.1% of Kenya's total land area. Closed canopy forests, which are climatically restricted to specific regions like the Central Highlands and the Nyanza Plateau, cover about 2% of the country, with over 88% of Kenya's forest cover being indigenous forests. The Government of Kenya (GoK) aims to enhance forest cover to a minimum of 10% of the national area by 2030, emphasizing the importance of forests in climate change mitigation and adaptation efforts.⁸

Kenya's coastal forests bear unique fauna and flora communities with high drought resilience, high levels of adaptation, and endemism. The reduction in forest cover and subsequent fragmentation of forests into isolated remnant pockets has proceeded gradually due to climate change and in recent years, more rapidly due to human factors. A number of the remaining forest patches have high levels of endemism of birds, small mammals, and other fauna and

⁷ Langat, J.K.S. (October 2008). *Variability of mangrove forests along the Kenyan coast*. Kenya Marine and Fisheries Research Institute. Available at: <https://aquadocs.org/bitstream/handle/1834/7802/ktf0478.pdf>

⁸ Ototo, G., & Vlosky, R. P. (2018). Overview of the forest sector in Kenya. *Forest Products Journal*, 68(1), 6-14. See also Republic of Kenya (August 2020). The National Forest Reference Level for REDD+ Implementation. Available at: https://redd.unfccc.int/media/kenya_national_frl_report-_august_2020.pdf

flora. The largest of these forest patches, the Arabuko-Sokoke forest in the Malindi and Kilifi districts, is home to six rare and endemic birds and is designated as a forest reserve. Other forest patches include Boni-Lungi, Dakacha woodlands, and Dodori on the northern coast and Shimba Hills in the southern coast. The coastal region also has other small forests traditionally considered sacred shrines by local communities, commonly known as *Kayas*.

Major threats facing coastal forests include encroachment for settlement and farming, illegal logging, human-wildlife conflict, deforestation, and loss of biodiversity, mainly attributed to a reduction of forest cover. These factors have contributed to the reduction in forest cover and subsequent fragmentation of forests into isolated remnant pockets, accelerating the loss of endemic species such as the iconic owl. Below is a photo of the endangered Sokoke scops owl.

Figure 1: The endangered Sokoke scops owl



Source: Wikimedia⁹

⁹ Wikimedia. Available at: https://upload.wikimedia.org/wikipedia/commons/3/34/Sokoke_scops_owl_pair_in_Arabuko-Sokoke_Forest.jpg (Accessed on 2/6/2023)

2.3.2 Methods of Data Collection

a) **One-on-one in-depth Interviews** were conducted in Mombasa, Lamu, Nairobi, Kisumu, Eldoret and Isiolo in from October 2022 to March 2023. Of those interviewed 52% were males, while 48% were females. The reason for the disparity is that the majority of the females expected in the meetings were unavailable due to reasons cited, including; household chores, denial to participate by male spouses, and reproductive health issues. Some females reported that they were not offered transport money to enable them to travel to the meeting venue. An open-ended questionnaire was used to collect data from these interviews, and both qualitative and quantitative data were collected.

b) **Focus-Group Discussions (FGDs)**; group discussions emerged after informants identified key areas for engagement. These included occupational health and safety topics, land mapping and compensation, stakeholder engagement, and gender responsiveness in the INTP document. Each FGD comprised between six (6) and ten (10) participants. To ensure that the leave no one behind policy was adhered to, the gender balance was observed, and inclusion of vulnerable populations and groups was considered, and their views are included in this report. Interestingly, in Isiolo and Lamu, some men rejected the inclusion of women in their groups. This, however, does not mean that the perceptions of women were not taken care of. Their ideas were collected in an all-female focus-group discussion focused on areas of concern for this women category. An FGD open-question guide was utilized to solicit relevant qualitative information on this SESA exercise.

c) **Key Informant Interviews (KIIs)**; Key informants were drawn from identified ministries, agencies, and departments in the ministries of Roads and Transport, Public Service, Gender and Affirmative Action, Lands, Public Works, Housing, and Urban Development. In addition, from local communities. Academia and individuals drawn from non-governmental organizations working on conservation and biodiversity were also consulted. A KIIs question guide was used to gather relevant data on maritime impacts, social issues, and cultural resource management and preservation.

d) **Round-table discussions**: These were majorly done in Mombasa with academia from Pwani University (PU) and members from Technical University of Mombasa (TUK) departments of environment, tourism and maritime studies, teacher training colleges, and Nursing institutes. Three round-table discussions were also conducted in Kisumu, Nairobi, and

Isiolo to collect their views on what they wish to see included in the INTP document. The discussions were also aimed at collecting baseline profiles of the selected regions. Questions on public participation were of particular interest to this category of informants. As a general agreement, the group concluded that the document must be presented to as many stakeholders as possible for sensitization, awareness creation, consensus building, and co-ownership with the government. The round-table discussion meeting discussed emerging issues on the document and the identification and mapping of relevant stakeholders, sectors, and issues for further review.

2.3.3 Structure of Meetings and Discussion Forums

The structure of the meetings enabled close interaction with the participants. The meetings began with obtaining information through a registration form (Appendix 3). Attached to the registration form was a brief questionnaire on an individual's willingness to participate in the exercise. A few general questions were also presented. In addition, a brief PowerPoint presentation was done on the SESA baseline report, after which issues were identified for inclusion in the final report.

2.3.4 Fieldwork Process and Engagement

In-depth one-on-one fieldwork was conducted from November 2022 to June 2023 in six (6) main locations: Nairobi, Isiolo, Kisumu, Eldoret, Lamu, and Mombasa. In these areas, interviews were conducted longitudinally, and crosscutting issues were identified for further discussions with smaller groups of experts. Key informant interviewees were identified in other sampled areas, including Murang'a, Nyeri, Lokichar, Lodwar, and Malaba. The aim was to ensure that, as much as possible, a representative sample of the Kenyan population was reached. About a hundred and twenty-two (1022) stakeholders had an open discussion on pertinent issues that should be considered towards enhancing the INTP. A sample list of participants is indicated in Appendix 4.

The SESA team leader, Dr. John Muriuki, facilitated the meetings, assisted by Dr. Thomas Kibutu. In each of the areas visited, the team leader gave a presentation on the project. The purpose and objectives, context and background, and importance of a reviewed policy on the transport sector were presented. The team in particular, took stakeholders through the INTP and then justified the need for a SESA on programs, policies, and plans based on the World

Bank, EMCA, and related environmental, social, and occupational health and safety standards. This formed the basis for understanding the rationale for the SESA for the draft INTP. Participants were asked for their views regarding the strengths, weaknesses, and suggestions for improvement of the document, particularly on SESA. To this end, the approach and methodology of the exercise were projected, indicating the importance of the mixed methods approach, specifically qualitative and quantitative methods, and the participatory cross-sectional design adopted for the exercise. The INTP document emphasized collecting data on existing and emerging issues, particularly on environmental impacts, gender, occupational health and safety, social impacts, land mapping, and stakeholder engagement. A review of available health and safety records in organisations visited was also done.

CHAPTER THREE

POLICY, LEGISLATIVE AND INSTITUTIONAL FRAMEWORKS

3.0 Introduction

This section looks at institutions engaged in policy-making, planning, implementation, and regulation of environmental, safety, health, and social impacts and risks. It also includes a review of legal, regulatory, and institutional frameworks as well as compiling relevant policies, laws, and regulations guidelines, including environmental licensing requirements, relevant World Bank Group Environmental Social Standards, Operational Procedures, and Environmental, Health and Safety Guidelines.

The chapter also indicates the linkages between the policy (INTP) to existing PPPs and other legal frameworks. This is important as the Integrated National Transport Policy provides the overarching context, direction, and guidance for decision-making on transport matters at the national or local levels and sets forth framework plans and programs. The Transport strategic plans, specific actions, and measures undertaken to achieve the objectives are largely developed at transport sub-sectorial levels and provide the roadmap for program implementation, making the clarity of linkages along the policies, legislative framework, and institutional value chains imperative.

The interlinkage between the Reviewed Integrated National Transport Policy (INTP) to sectorial policies, plans, and programs, while supported by existing legal frameworks for the transport sector, is crucial in assisting the designing of strategic plans and their implementation. To achieve desired and sustainable growth in the transport sector, INTP must show a balance and links to all these in a way that none competes or/and outshines the other since the success or failure of one may translate to an overall failure of the institutions' objectives. Environmental and social considerations in the policies as well as in the legal frameworks, is imperative for achieving desired sustainable outcomes.

The chapter concluded with an assessment of the adequacy of the World Bank framework, based on international experience, and the capacity of public agencies at national and local levels to address the potential impacts and risks associated with the implementation of the INTP. Recommendations for improving institutional capacity and linkages to ensure that policy

interventions are implemented sustainably. The section also provides suggestions for improving the INTP document.

3.1 Institutions responsible for policy, planning, regulating and enforcing legislation in the transport sectors

The transport sector has several institutions responsible for policy, planning, regulating and enforcing legislation. These public institutions are created through acts of parliament to undertake specific roles with the broad aim of achieving sustainable development. These institutions are required to build synergy with the government and its partners to attain the desired goals. While some of the institutions have broad-based overarching mandates, others have sector-specific mandates. The table below shows institutions responsible for policy making, policy planning, regulation and enforcing legislation in the transport sector and sub-sectors. The table separates institutions with broad mandates from those with specific ones as shown below;

Table 3: Institutions responsible for policy, planning, regulating, and enforcing legislation in the transport sectors.

Description		Institutions responsibilities'		
		National Institution		
	Overarching Institutions	<ul style="list-style-type: none"> • The National Environment Management Authority (NEMA) • The Kenya Bureau of Standards (KEBS) • The Kenya Plant Health Inspectorate Service (KEPHIS) • The Kenya Revenue Authority (KRA) • The National and County Assemblies • The Kenya National Police Service Commission (KNPSC) • Port Health Services 		
		International Institutions		
		<ul style="list-style-type: none"> • International Road Transport Union (IRU) • The International Air Transport Association (IATA) • The International Civil Aviation Organization (ICAO) • the International Maritime Organization (IMO) • World Health Organisation (WHO) • International Labour Organisation (ILO) • International Maritime Organization (IMO) • World Meteorological Organization (WMO) • The World Organisation for Animal Health (WOAH) 		
Transport Sector	Policy	Planning & implementation		Regulation and enforcement of legislation

1	Roads Transport	<ul style="list-style-type: none"> • Ministry of Roads and Transport <ul style="list-style-type: none"> ○ SDoT ○ SDoR • County governments 	<ul style="list-style-type: none"> • SDOT- • Department of Road and Rail • National Transport and Safety Authority (NTSA): • Kenya National Highways Authority (KeNHA) • Kenya Urban Roads Authority (KURA) • Kenya Rural Roads Authority (KeRRA) • Kenya Institute of Highways and Building Technology (KHIBT) • LAPPSET Coordination Authority • Northern Corridor Transit and Transport Coordination Authority (NCTTCA) • Nairobi Metropolitan Area Transport Authority (NAMATA)- • Kenya Wildlife Service (KWS) • County Governments-County Roads 	<ul style="list-style-type: none"> • Kenya Roads Board (KRB)
2	Rail Transport	<ul style="list-style-type: none"> • Ministry- SDOT 	<ul style="list-style-type: none"> • Department of Road and Rail • Kenya Railways Corporation (KRC) 	<ul style="list-style-type: none"> • Kenya Railways Corporation (KRC)
3	Air Transport	<ul style="list-style-type: none"> • Ministry 	<ul style="list-style-type: none"> • Department of Air Transport • Air accident investigation department • Kenya Airports Authority (KAA) 	<ul style="list-style-type: none"> • Kenya Civil Aviation Authority (KCAA)
4	Shipping and Maritime Transport	<ul style="list-style-type: none"> • Ministry of Roads and Transport-SDOT • Mining, Blue Economy, and Maritime Affairs (State Department of Shipping and Maritime) 	<ul style="list-style-type: none"> • Kenya Ports Authority (KPA) • Shipping and Maritime Department • Kenya Ferry Services (KFS) • Kenya National Shipping Line (KNSL) • LAPPSET Coordination Authority • Northern Corridor Transit and Transport Coordination Authority (NCTTCA) 	<ul style="list-style-type: none"> • Kenya Maritime Authority • Coast Guards
5	Pipeline (oil) Transport	<ul style="list-style-type: none"> • Ministry of Energy 	<ul style="list-style-type: none"> • Department of Energy • Kenya Pipeline Company (KPC) 	<ul style="list-style-type: none"> Energy and Petroleum Regulatory Authority (EPRA)

6	Inland Water transport	<ul style="list-style-type: none"> • Ministry of Roads and Transport - SDOT • Mining, Blue Economy and Maritime Affairs 	<ul style="list-style-type: none"> • Shipping and Maritime Department • Kenya Ports Authority • Kenya Maritime Authority 	<ul style="list-style-type: none"> • Kenya Maritime Authority • Coast Guards
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3.2 The Constitution of Kenya (2010)

The Constitution of Kenya (2010) acts as the main blueprint for the country's development. It clearly spells out and provides for the enjoyment of diverse rights and freedoms. Among them are security, social, and environmental rights. In particular, Chapter Four of the Constitution, which addresses the 'The Bill of Rights', has provisions relevant to social and environmental protection and management. Article 41 (1) on Labour relations for instance, provides, *inter alia*, that 'every person has the right to fair labour practices. Article 42, on the other hand, provides that 'every person has the right to a clean and healthy environment'. These include the right to protect the environment for the benefit of present and future generations through legislative and other measures, particularly those contemplated in Article 69, and to have obligations relating to the environment fulfilled under Article 70. Article 43 on Economic and Social rights provides, *inter alia*, that every person has the right 'to the highest attainable standard of health; freedom from hunger; accessible and adequate housing, and to reasonable sanitation standards; social security; emergency medical treatment; and education. Article 44 also provides for, among others, that every person has the right to use their language, participate in the cultural life of the person's choice, and enjoy the person's culture.

Other provisions of the Constitution relevant to a SESA exercise include Chapter five on Land and Environment. In particular, Articles 60 (1) provides for: equitable access to land; security of land rights; transparent and cost-effective administration of land; sound conservation and protection of ecologically sensitive areas; elimination of gender discrimination in law, customs, and practices related to land and property in land; and encouragement of communities to settle land disputes through recognised local community initiatives consistent with the Constitution.

Article 69 (1) on obligations in respect of the environment provides that The State shall ensure sustainable exploitation, utilization, management, and conservation of the environment and natural resources, and ensure the equitable sharing of the accruing benefits; protect and enhance intellectual property in, and indigenous knowledge of, biodiversity and the genetic resources of the communities; encourage public participation in the management, protection and conservation of the environment; protect genetic resources and biological diversity; protect genetic resources and biological diversity; establish systems of environmental impact

assessment, environmental audit and monitoring of the environment; and eliminate processes and activities that are likely to endanger the environment.

These articles in the constitution and action plans of development agendas such as Vision 2030, the Big 4, AU agenda 2063, and World Bank SESA requirements must inform the design, implementation, and regulation of government policy, projects, and plans. In addition, constant and consistent monitoring and evaluation of projects, plans, and policies for improvement and identification of emerging issues is important, especially in the context of a changing climate in a rapidly globalizing world.

The Fourth Schedule of the Kenya Constitution on the distribution of function between the National and County governments on transport and communications, Section 18, provides that the national government is responsible for: road traffic, the construction and operation of national trunk roads; standards for the construction and maintenance of other roads by counties; railways; pipelines; marine navigation; civil aviation; space travel; postal services; telecommunications; and radio and television broadcasting. On the other hand, county governments are in charge of county transport, including county roads; street lighting; traffic and parking, public road transport, and ferries and harbours, excluding the regulation of international and national shipping and matters related thereto. Section 69(1) (d) also states that the State shall encourage public participation in environmental management, protection and conservation. The next section identifies institutions mandated with policy, planning, regulating and enforcing legislation in the transport sectors.

3.3 Environmental, social, safety, and occupational health legal, regulatory and institutional framework

The legal basis of Strategic Environmental and Social Assessment indicates the scope of the law, its purpose, principles of regulation, and the subjective composition of legal relations. It also establishes the procedure for implementing SESA. SESA allows compliance with the requirements of the law and brings other acts into line with environmental and social impact considerations during project design and implementation. The Constitution of Kenya 2010¹⁰: - empowers persons to seek redress when their right to a healthy and clean environment has been

¹⁰ The Constitution of Kenya 2010. available at: http://www.kenyalaw.org/kl/fileadmin/pdfdownloads/Constitution_of_Kenya_2010.pdf (Accessed on 12/01/2023)

violated or infringed. In particular, Article 42 of Kenya Constitution 2010 (The Enforcement of Environmental Rights) guarantees the people a clean and healthy environment. It, in particular, references the "Environmental Management and Coordination Act" of 1999 (EMCA), which was enacted to provide an appropriate legal and institutional framework for the management of the environment and for matters connected therewith and incidental thereto; revised in 2015. EMCA also established the National Environmental Management Authority (NEMA) under the Environmental Management and Coordination Act (EMCA) No. 8 of 1999 as the principal instrument of government in the implementation of all policies relating to the environment. This particular Strategic Social and Environment Assessment aims to evaluate the level of compliance with the INTP of the SDoT and ensure that it is in accordance with the provisions and requirements of the EMCA, 1999, and subsidiary regulations.

3.3.1 Transport Policies and Legal Frameworks

In order to operate effectively, respective institutions design frameworks that include but are not limited to legal, institutional, and regulatory ones. Policy and legal frameworks are instruments, tools, and parameters put in place to enable a sector to operate and thrive in an orderly manner. They do this by stipulating regulations, indicating desired outcomes, and how to achieve the outcomes. In addition, the frameworks assign responsibility to each institution/stakeholder. A review of existing policy and legal frameworks, however, indicates that such policies do not necessarily translate to the success and easy operation of the institution. This is often occasioned by bottlenecks, lacuna, and structural challenges from the macro and/or microenvironment as well as from internal constraints. A review of existing legal, institutional, and regulatory frameworks helps point out strengths, identify weaknesses, highlight opportunities, and tease out possible threats to the frameworks. This, in turn, assists in suggesting areas for improvement. One of the main issues that were identified during the review of the policies and regulations governing the transport sector was that the sector does not seem to have a national transport masterplan that would provide the basis for reference by all the subsectors. This has implications for the design and implementation of the INTP because it is from such a document that the INTP ought to derive its content and actualisation.

3.4 Gaps between Kenyan Legislation and World Bank Safeguards

The table below highlights gaps, relevance, and presents a comparative analysis of each of the World Bank Environment and Social Standards framework and its relation and relevance to

Kenyan legislation as used in the INTP. The recommendations for addressing existing gaps are also provided. By highlighting these gaps, the table helps project developers design and implement projects that address potential shortcomings in Kenyan legislation. This can minimize negative environmental and social impacts and ensure projects meet World Bank funding requirements.

Table 4: Gaps between Kenyan Legislation and World Bank Safeguards with Recommendations

Item Code	World Bank Environmental and Social Standard (ESS)	Kenyan Legislation	Comparison	Gaps (Kenyan Legislations)	Recommendation
ESS 1	Environmental and Social Standard 1: Assessment and Management of Environmental and Social Risks and Impacts	<ul style="list-style-type: none"> ✓ The Environmental (Impact Assessment and Audit) Regulations, 2003, require an Environmental Impact Assessment (EIA) examination of the effects of a proposed project on the environment. 	<ul style="list-style-type: none"> ✓ The two legal frameworks are cognisant of the need to conduct an Environmental Impact Assessment (EIA) to identify and assess potential environmental impacts of proposed projects, developments, or activities. This allows decision-makers to make informed choices, consider alternatives, and minimize environmental negative impacts. 	<ul style="list-style-type: none"> ✓ The regulations do not sufficiently address the cumulative impacts of multiple projects in a specific area (transport) or on specific environmental resources. 	<ul style="list-style-type: none"> ✓ Ensure strict enforcement of regulations. ✓ Cumulative impact assessments could be incorporated to paint a more holistic picture of potential environmental consequences.
ESS 2	Environmental and Social Standard 2: Labour and Working Conditions	<ul style="list-style-type: none"> ✓ The Occupational Safety and Health Act, 2007 4 77- to secure the safety, health, and welfare of persons at work; and protect persons other than persons at work against risks to safety and health arising out of, or in connection with, the activities of persons at work. ✓ Kenya National Social Protection Policy, 2011- 	<ul style="list-style-type: none"> ✓ These legal frameworks create a framework that ensures workers are treated fairly and with dignity, and there is a need for regulations to promote a safe and healthy working environment. ✓ The framework integrates grievance management plans/mechanisms. 	<ul style="list-style-type: none"> ✓ Exclusion of Informal Sector: The policies primarily focus on formal sector workers 	<ul style="list-style-type: none"> ✓ Ensure strict enforcement of regulations. ✓ Expanding coverage to include this group is essential.

		<p>Cushioning workers and their dependants from the consequences of income-threatening risks such as sickness, poor health, and injuries at work as well as from the threat of poverty in their post-employment life.</p> <p>✓ Employment (Amendment) Act, No. 15 of 2022-The Act defines the fundamental rights of the employee's basic conditions of employment of employees, regulates employment of children, and provides for matters connected thereto. Since projects proposed in the INTP will require employees, the Act ensures that the contractor will make statutory deductions and submit them to responsible institutions like NHIF and NSSF, among others, without delay.</p> <p>✓ The Children Act of 2001- Provides safeguards for the child's rights and welfare and protects children from economic exploitation and any work that is likely to be hazardous or to interfere with the child's health or physical,</p>			
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		mental, spiritual, moral, or social development.			
ESS 3	Environmental and Social Standard 3: Resource Efficiency and Pollution Prevention and Management	<ul style="list-style-type: none"> ✓ The Environment and Coordination Act CAP 387 and Its Tools has various tools that regulate different aspects, namely Impact Assessment and Audit, Water Quality Regulations, waste management, Noise and Excessive Vibration Pollution Control, Air Quality, Fossil Fuel Emission Control, Conservation of Biological Diversity and Resources, Access to Genetic Resources and Benefit Sharing, and Wetlands, River Banks, Lake Shores, and Sea Shore Management. ✓ Section 87 of EMCA 1999 states that —(1) No person shall discharge or dispose of any wastes, whether generated within or outside Kenya, in such manner as to cause pollution to the environment or ill health to any person. ✓ Sustainable Waste Management Act, 2022- This aims to bring efficiency 	✓ They call for efficient use of energy and water and the need to prevent and manage pollution of the environment.	✓ Pollution control-the legal frameworks are not addressing emerging contaminants.	<ul style="list-style-type: none"> ✓ Ensure strict enforcement of regulations. ✓ Existing regulations on air, water, and soil pollution might need updating to reflect evolving technologies and emerging contaminants.

		to waste management activities with emphasis on waste sorting at source and aiming at converting waste, including materials, chemicals, and energy sources, into valuable products by reusing, recycling, or composting the waste.			
ESS 4	Environmental and Social Standard 4: Community Health and Safety	<ul style="list-style-type: none"> ✓ Occupational Health and Safety Policy of 2012- The policy intends to significantly sustain the continual development and implementation of the National Occupational Safety and Health systems and programs to reduce incidences of work-related accidents and diseases. Additionally, it aims to provide fair compensation to those who sustain bodily harm and develop occupational disorders. The contractors are required to ensure the safety of the employees. 	<ul style="list-style-type: none"> ✓ Addresses the well-being and protection of individuals within a community. It involves measures to prevent illnesses, ensure access to healthcare services, and maintain a safe living and working environment for everyone. 	<ul style="list-style-type: none"> ✓ The policy does not fully address emerging concerns about mental health and psychosocial hazards in the workplace, such as stress, burnout, and workplace violence. 	<ul style="list-style-type: none"> ✓ Ensure strict enforcement of regulations. ✓ Review the policy to address the emerging issues.
ESS 5	Environmental and Social Standard 5: Land Acquisition, Restrictions on Land Use and	<ul style="list-style-type: none"> ✓ The Land Act, 2012- It gives effect to Article 68 of the Constitution to revise, consolidate and rationalize land laws; to provide for the 	<ul style="list-style-type: none"> ✓ It establishes legal frameworks for ownership, regulates the use of land, makes provisions for environmental protection, and includes mechanisms 	<ul style="list-style-type: none"> ✓ The lack of detailed involuntary resettlement and cultural heritage impacts guidelines. 	<ul style="list-style-type: none"> ✓ Develop and implement a resettlement plan.

	Involuntary Resettlement	<p>sustainable administration and management of land and land-based resources, and for connected purposes.</p> <ul style="list-style-type: none"> ✓ Environment and Land Court Act no.19 of 2011 (ELCA)- It hears and determines disputes relating to the environment, the use, occupation, and title to land. ✓ The Environmental (Impact Assessment and Audit) Regulations, 2003 - to ensure that development projects consider their potential environmental impacts and strive to mitigate or avoid any adverse effects 	<p>for resolving land-related disputes, such as boundary conflicts or conflicting land claims.</p> <ul style="list-style-type: none"> ✓ They also recognize and protect the rights of indigenous communities or local populations who depend on land for their livelihoods. ✓ The legal frameworks recognise social safeguards 		<ul style="list-style-type: none"> ✓ Ensure strict enforcement of regulations.
ESS 6	Environmental and Social Standard 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources	<ul style="list-style-type: none"> ✓ It is a response to its international commitment under the Convention of Biological Diversity (CBD). The National Biodiversity Strategy of 2000 seeks to conserve Kenya's biodiversity, to sustainably use its components, to fairly and equitably share the benefits arising from utilization of biodiversity resources among all stakeholders, and to enhance technical and scientific cooperation nationally and internally, including the 	<ul style="list-style-type: none"> ✓ These frameworks help protect and conserve ecosystems, maintaining the balance of ecosystems. ✓ The ESS 6 Legal framework recognizes and protects the rights of communities' dependent on natural resources, ensuring their sustainable livelihoods and cultural heritage. ✓ Support the sustainable utilization of natural resources, 	<ul style="list-style-type: none"> ✓ The National Biodiversity Strategy of 2000-lacks a robust framework for monitoring progress towards goals and objectives. 	<ul style="list-style-type: none"> ✓ The Kenyan legislation frameworks should review to ensure that they recognize and protect the rights of communities' dependent on natural resources, ensuring their sustainable livelihoods and cultural heritage. ✓ The National Biodiversity Strategy of 2000-

		<p>exchange of information in support of biodiversity conservation.</p> <ul style="list-style-type: none"> ✓ The Kenya National Climate Change Response Strategy of 2010- This is a strategy undertaken by the government to address the effects of climate change on various sectors of the economy and Global Greenhouse Gas emission mitigation. ✓ Water Act 2016 provides for the ownership, use, and management of water and regulation of the management of water resources. It stipulates that a permit shall be required in all cases of proposed diversion, abstraction, obstruction, storage or use of water, with minor exceptions relating to use for domestic purposes (Section.36). 			<p>review and develop framework for monitoring progress.</p>
ESS 7	Environmental and Social Standard 7: Indigenous Peoples/Sub-Saharan African Historically Underserved	<ul style="list-style-type: none"> ✓ The Constitution of Kenya 2010 introduces community land, which is the category of land that enshrines indigenous communities' land rights. ✓ Community Land Act 2016- It gives effect to 	<ul style="list-style-type: none"> ✓ They are providing a platform for safeguarding their rights to self-determination, land, resources, cultural heritage, language, and identity. ✓ ESS 7 is explicit of free prior informed consent recognizing the rights of 	<ul style="list-style-type: none"> ✓ Conflicting claims between communities, national and county governments, and private entities remain a significant issue. 	<ul style="list-style-type: none"> ✓ The Community Land Act 2016 should be reviewed to make FPIC explicit. ✓ Clearer guidelines and processes for resolving land disputes involving

	Traditional Local Communities.	Article 63 of the Constitution of Kenya. It provides for the recognition, protection, and registration of community land rights, management and administration of community land, and the role of county governments in relation to unregistered community land and related matters.	individuals or communities, particularly indigenous peoples, to give or withhold their consent to any project, policy, or activity that may affect their lands, territories, resources, or rights.		community land are needed.
ESS 8	Environmental and Social Standard 8: Cultural Heritage	✓ The National Museums and Heritage Act, 2006- It established the National Museum of Kenya, its functions, and powers for the protection of national natural and cultural heritage (as defined).	✓ They provide a legal framework for identifying, protecting, and preserving cultural heritage sites, objects, and practices.	✓ While the Act mentions consultation with communities, mechanisms for their proactive involvement in heritage identification, protection, and decision-making are not fully articulated.	✓ Strengthening community ownership and partnerships is crucial. ✓ Ensure strict enforcement of regulations. ✓ Develop and implement a resettlement plan.
ESS 9	Environmental and Social Standard 9: Financial Intermediaries	✓ Public-Private Partnership Act-Providing a legal framework for the identification, development, and implementation of PPP projects.	✓ Providing a legal framework for the identification, development, and implementation of PPP projects. ✓ Facilitating private sector participation in infrastructure development.	✓ The absence of a comprehensive legal framework can create uncertainty and hinder the growth of PPP initiatives.	✓ Stakeholder engagement
ESS 10	Environmental and Social Standard 10: Stakeholder Engagement and	✓ The Constitution of Kenya, 2010- Article 35 guarantees citizens' right to access information.	✓ Promotes transparency by ensuring that relevant information about the project activities, decisions, and impacts is shared with	✓ Limited Participation: While the Act mentions consultation with	✓ Strengthening community ownership and partnerships

	Information Disclosure.	✓ The Access to Information Act No. 31 of 2016- gives effect to Article 35 of the Constitution.	stakeholders, enabling them to make well-informed decisions regarding the project.	communities, mechanisms for their proactive involvement in heritage identification, protection, and decision-making are not fully articulated.	✓ Develop and implement a Stakeholder engagement plan ✓ Ensure strict enforcement of regulations.
WORLD BANK OPERATIONAL PROCEDURES					
OP/BP 4.01	Environmental Assessment	The Environmental (Impact Assessment and Audit) Regulations, 2003 require an Environmental Impact Assessment (EIA) examination of the effects of a proposed project on the environment.	-ensure that potential environmental impacts of projects are identified, assessed, and mitigated, and project decisions are made in an informed and sustainable manner.	Exemptions: Certain categories of projects, like some agricultural activities or small-scale infrastructure, are exempted from EIA requirements, potentially overlooking their cumulative environmental impact.	✓ Reviewing exemptions and expanding coverage to include potentially impactful projects is crucial.
OP/BP 4.10	Indigenous Peoples	Community Land Act 2016- establishes structures and mechanisms for the identification, documentation, and registration of community land rights.	They recognize the importance of respecting the rights, culture, and identity of Indigenous Peoples, as well as promoting their development aspirations.	Conflicting Legal Regimes: Existing customary laws and practices can sometimes conflict with provisions of the Act, creating confusion and uncertainty for indigenous communities.	✓ Clearer mechanisms for reconciling these differences are needed.
OP/BP 4.11	Physical Cultural Resources	The National Museums and Heritage Act, 2006- It	Requires assessments of potential cultural heritage	Inadequate Protection Mechanisms: Penalties	✓ Stronger enforcement

		established the National Museum of Kenya, its functions, and powers for the protection of national natural and cultural heritage (as defined).	impacts and, if necessary, a comprehensive cultural heritage assessment.	for damaging or illegally excavating Physical cultural resources might be insufficient to deter such activities.	mechanisms and dedicated resources for site protection are crucial.
OP/BP 4.12	Involuntary Resettlement	<p>Constitution of Kenya 2010: Article 40 (Protection of right to property): Guarantees the right to own property and protects it from deprivation without compensation.</p> <p>Land Acquisition Act, Cap 295: Main framework for land acquisition by the government, outlining the procedures for compensation, valuation, and dispute resolution.</p>	The policies emphasize the importance of avoiding or minimizing displacement whenever possible.	Land Acquisition Act, Cap 295: inadequate compensation mechanisms, lack of transparent procedures, and limited community participation.	✓ Strengthening compensation mechanisms community ownership and partnerships

3.5 Adequacy of Strategic Environmental and Social Assessment Framework

The World Bank SESA Framework is a comprehensive approach that integrates environmental and social considerations into policy, plan, and program decision-making processes. It aims to assess and manage proposed initiatives' potential environmental and social impacts, ensuring sustainable development and positive social outcomes. How appropriate is the SESA framework?

- **Provides Comprehensive Coverage:** The SESA Framework encompasses a broad range of environmental and social factors that are relevant to the proposed policy, plan, or program. It adequately addresses potential impacts on natural resources, ecosystems, biodiversity, cultural heritage, human health, social equity, and livelihoods.
- **Offer A Robust Methodology:** The SESA Framework employs a rigorous and scientifically sound data collection, impact assessment, and decision-making methodology. The framework ensures that assessments are based on accurate and reliable information, using appropriate tools, models, and techniques.
- **Informs Decision Making:** An adequate SESA Framework is integrated into policy, plan, and program decision-making processes. It informs and influences decision-makers, enabling them to consider environmental and social considerations alongside economic factors. The framework has a clear process for translating assessment findings into concrete actions and policy adjustments.
- **Provides Mitigation and Enhancement Measures:** The SESA Framework provides guidance on developing and implementing robust mitigation and enhancement measures. It ensures that negative impacts are minimized or avoided through appropriate safeguards while also identifying opportunities to enhance positive environmental and social outcomes.
- **Stakeholder Engagement:** Acceptability of the SESA Framework depends on meaningful and inclusive stakeholder engagement throughout the assessment process. It allows for public participation of affected communities, civil society organizations, and relevant stakeholders. The framework provides mechanisms for sharing information, soliciting feedback, and incorporating stakeholder perspectives into decision-making.
- **Monitoring and Evaluation:** The SESA Framework includes provisions for monitoring and evaluating the effectiveness of mitigation measures and the overall impact of the assessed policy, plan, or program. It establishes clear monitoring indicators, data collection mechanisms, and evaluation methodologies to track progress and ensure accountability.

The SESA framework is thus adequate and should be applied in all the ministries in Kenya. This is because environmental changes and emerging issues associated with climate variabilities transcend boundaries outside of the country, region, and globe. With its growing demands and developments, the transport sector in particular ought to be cognizant of the dynamics associated with new and forecasted infrastructural developments and emerging transport modes, which the INTP has not adequately addressed. Such is the case for the Non-Motorized and Intermediate means of Transport (NMIMTs). Impacts associated with such developments included pollution, loss of flora, fauna, and habitats, displacement of human settlements, and those linked to occupational health and safety. There could also be additional risks associated with climate change, including flooding; or pandemics such as Covid-19, which affect human resources and economies. This then calls for continuous strengthening of the frameworks.

The table below shows some of the important international conventions governing various sectors of transport.

Table 5: Sector-Specific International Conventions

Description	International Conventions
Sector Specific	<p>Transport Sector</p> <p>Conventions</p>
	<p>Road transport</p> <ul style="list-style-type: none"> • United Nations Road Safety Conventions (seven) • 1968 Convention on Road Traffic • 1968 Convention on Road Signs and Signals • 1997 Agreement concerning the Adoption of Uniform Conditions for Periodical Technical Inspections of Wheeled Vehicles • 1998 Agreement concerning the Establishing of Global Technical Regulations for Wheeled Vehicles, Equipment and Parts • 1957 Agreement concerning the International Carriage of Dangerous Goods by Road (ADR) • African Road Safety Charter and TAH Harmonisation (Safety)
	<p>Rail transport</p> <ul style="list-style-type: none"> • 1999 Convention concerning International Carriage by Rail (COTIF)
	<p>Port and Maritime/ Inland water transport</p> <ul style="list-style-type: none"> • Convention on the Territorial Sea and the Contiguous Zone Geneva 29 April 1958 • United Nations Convention on the Law of the Sea Montego Bay 10 December 1982 <p>International Maritime Organisation Conventions</p> <ul style="list-style-type: none"> • International Convention for the Safety of Life at Sea (SOLAS, 1974, as amended). • International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto and by the Protocol of 1997 (MARPOL) • International Convention on Standards of Training, Certification and Watch keeping for Seafarers (STCW) as amended, including the 1995 and 2010 Manila Amendments • Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter(LC), 1972 (and the 1996 London Protocol) • International Convention on Oil Pollution Preparedness, Response and Co-operation (OPRC), 1990 • Protocol on Preparedness, Response and Co-operation to pollution Incidents by Hazardous and Noxious Substances, 2000 (OPRC-HNS Protocol) • International Convention on Civil Liability for Oil Pollution Damage (CLC), 1969

	Air transport	<ul style="list-style-type: none"> • Chicago Convention on International Civil Aviation (Convention on International Civil Aviation (1944)) • The Montreal Convention 1999
	Pipeline transport (Oil)	<ul style="list-style-type: none"> • Agreement concerning the International Carriage of Dangerous Goods by Road (ADR 2023)

3.6 National Environmental, social, safety and occupational health legal, regulatory and institutional framework

Drawing from the international standard an analysis of environmental, social, safety and occupational health legal, regulatory and institutional frameworks the next section analyses legal and institutional framework for Kenya. These frameworks establish guidelines and standards that organizations must adhere to in order to protect the environment, promote social responsibility, ensure workplace safety, and safeguard the health of employees. It is critical to establish a robust legal, regulatory and institutional framework for environmental, social, safety and occupational health to ensure the protection of workers, the public and the environment. table below is a summary of the policies from which the INTP adheres and borrows for the improvement of the transport sector;

Table 6: Environmental, social, safety and occupational health legal, regulatory and institutional framework

Sector	Institution	Statutes and regulations	Description
<p>Overarching sector</p>	<p>The State</p>	<ul style="list-style-type: none"> ✓ The Constitution of Kenya, 2010 ✓ The Occupational Safety and Health Act, 2007 ✓ Kenya National Social Protection Policy, 2011 ✓ Vision 2030 	<ul style="list-style-type: none"> ✓ Article 41 (1) on Labour relations, Article 42 on the other hand provides that ‘every person has the right to a clean and healthy environment’; Article 43 on Economic and Social rights. Articles 60 (1) provides for: equitable access to land; security of land rights; transparent and cost-effective administration of land; sound conservation and protection of ecologically sensitive areas; elimination of gender discrimination in law, customs and practices related to land and property in land; and encouragement of communities to settle land disputes through recognised local community initiatives consistent with the Constitution. Article 69 (1) on obligations with respect to the environment. Article 56 highlights the rights of marginalized communities in the decision-making process with regards to development and their input. The INTP should be anchored on the CoK 2010. ✓ The Occupational Safety and Health Act, 2007 4 77- to secure the safety, health and welfare of persons at work; and protect persons other than persons at work against risks to safety and health arising out of, or in connection with, the activities of persons at work. ✓ Kenya National Social Protection Policy, 2011- Cushioning workers and their dependants from the consequences of income-threatening risks such as sickness, poor health, and injuries at work as well as from the threat of poverty in their post-employment life. ✓ Sessional Paper No. 10 of 2012 on Kenya Vision 2030-it is a long-term development plan for the period 2008 and 2030. It seeks to transform the country into “a newly-industrialising, middle-income country providing a high quality of life to all its citizens in a clean and secure environment”. Therefore, the INTP should promote the realisation of the Visions goals.
ENVIRONMENTAL			
Statutes and Regulation			Description

<p>Sessional Paper No. 01 of 2020 on Wildlife Policy</p> <ul style="list-style-type: none"> ✓ The National Biodiversity Strategy of 2000 ✓ The Kenya National Climate Change Response Strategy of 2010 ✓ The Wildlife Management and Conservation Act 2013 ✓ Water Act 2016 ✓ The Environment and Land Court Act, 2011 	<ul style="list-style-type: none"> ✓ It strengthens conservation and makes it sustainable both in protected and none protected areas. Therefore, the INTTP has to confirm to this policy and where proposed projects would affect appropriate mitigation measures should be put in place ✓ It is a response to its international commitment under the Convention of Biological Diversity (CBD). The NBSAP seeks to conserve Kenya’s biodiversity, sustainably use its components, fairly and equitably share the benefits arising from utilization of biodiversity resources among all stakeholders, and enhance technical and scientific cooperation nationally and internally, including the exchange of information in support of biodiversity conservation. Therefore, any proposed project in the INTTP will have to conform to the strategy requirements since some projects could lead to vegetation loss along the construction routes. ✓ This is a strategy undertaken by the government to address the effects of climate change on various sectors of the economy and Global Greenhouse Gas emission mitigation. Thus, any proposed project by the INTTP should take into consideration of climate change. ✓ The Act promotes the protection, conservation and management of wildlife in Kenya and related matters. It indicates that wildlife should be conserved for optimal benefits. The Act controls activities within the national parks, which may lead to the disturbance of wild animals. The proposed INTTP projects, like the extension of SGR passes through conservation areas, such projects should to make provisions for wildlife passages. ✓ The Act provides for ownership, use, and management of waters and regulation of management of water resources. It stipulates that a permit shall be required in all cases of proposed diversion, abstraction, obstruction, storage or use of water, with minor exceptions relating to use for domestic purposes (Section.36). Any projects proposed in the INTTP should confirm to the Act and mitigate any impacts on water use like the one effluent should not be released back into water bodies unless purified. ✓ It is established by Article 162(2) of the Constitution of Kenya but given to effect by Environment and Land Court Act no.19 of 2011 (ELCA). It hears and determines disputes relating to the environment, land use and occupation, and land title. The court has the powers to deal with land administration and management disputes. It is also empowered to hear cases relating to public, private and community land and contracts, choses in action or other instruments granting any enforceable interests in land. Therefore, in any event there are issues that relate to land it can always intervene.
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	<ul style="list-style-type: none"> ✓ National sand harvesting guidelines, 2007 ✓ The Environment Management and Coordination Act CAP 387 and Its Tools ✓ The Environmental Management and Coordination Act of 2015 (CAP 387) and its Amendment ✓ Sustainable Waste Management Act, 2022. 	<ul style="list-style-type: none"> ✓ The guideline ensures sustainable utilization of the sand resource and proper management of the environment. Since the INTP projects will deal with sand, the contractor's activities in sand harvesting are expected to be carried out within the stipulated legal framework. ✓ This Act modifies the Environmental Management and Coordination Act, 1999 with regard to a number of issues, such as: access to any information relating to the implementation of this Act; administration; duties of the National Environment Management Authority; establishment of a County Environment Committee in each County; composition, functions, etc., of County Environment Committees; the National Environmental Complaints Committee; and the adoption of a National Environmental Action plan among others. The various projects under INTP should be subjected through the relevant applicable environmental assessment as per EMCA and its subsidiary legislations ✓ This Act has various tools that regulate different aspects namely Impact Assessment and Audit, Water Quality Regulations, waste management, Noise and Excessive Vibration Pollution Control, Air Quality, Fossil Fuel Emission Control, Conservation of Biological Diversity and Resources, Access to Genetic Resources and Benefit Sharing, and Wetlands, River Banks, Lake Shores and Sea Shore Management. ✓ This act aims to bring efficiency on waste management activities with an emphasis on sorting wastes at source, and aiming at converting waste, including materials, chemicals and sources of energy, into useful products by reusing, recycling or composting the waste. Projects proposed in the INTP should consider waste management efficiency per this act. Section 87 of EMCA 1999 states that —(1) No person shall discharge or dispose of any wastes, whether generated within or outside Kenya, in such manner as to cause pollution to the environment or ill health to any person. AS such projects proposed in the INTP should ensure waste management practices examine the entire scope of possible wastes in transport operations and constructions including spent fuels, radioactive waste, e-wastes etc.
	SOCIAL	
	Statutes and Regulation	Description

<ul style="list-style-type: none"> ✓ The Land Act, 2012 ✓ The National Land Commission Act, 2012 (No. 5 of 2012) ✓ Community Land Act 2016 ✓ The Environment and Land Court Act, 2011 ✓ Employment (Amendment) Act, No. 15 of 2022 	<ul style="list-style-type: none"> ✓ It gives effect to Article 68 of the Constitution, to revise, consolidate and rationalize land laws; to provide for the sustainable administration and management of land and land-based resources, and for connected purposes. The Act applies to all land declared as (a) public land under Article 62 of the Constitution; (b) private land under Article 64 of the Constitution; and (c) community land under Article 63 of the Constitution and any other written law relating to community land. It also details with compulsory acquisition of land, lease, transfers, and contracts over land settlement programmes. The proposed INTP programmes always passes through community and private lands and affects the population living along such areas therefore, it is important in the implementation of resettlement action plan. ✓ Established the National Lands Commission and defined its function and powers. The Act gives effect to Article 67 of the Constitution and for certain aspects of management and administration of land in accordance with the principles of land policy set out in Article 60 of the Constitution and the national land policy. It is important because of INTP proposed projects involve acquisition of either community or private lands. ✓ It gives effect to effect to Article 63 of the Constitution of Kenya. It provides for the recognition, protection and registration of community land rights, management and administration of community land and the role of county governments in relation to unregistered community land and related matters. Most of the INTP projects are along community lands; thus, consultations and consent will be critical before construction. ✓ It is established by Article 162(2) of the Constitution of Kenya, but given to effect by Environment and Land Court Act no.19 of 2011 (ELCA). It hears and determines disputes relating to the environment and the use and occupation of, and title to land. The court has powers to deal with disputes relating to land administration and management. It is also empowered to hear cases relating to public, private and community land and contracts, choses in action or other instruments granting any enforceable interests in land. Therefore, in any event there are issues that relate to land it can always intervene. ✓ The Act defines the fundamental rights of the employees, basic conditions of employment of employees; regulate the employment of children and to provide for matters connected thereto. Since projects proposed in the INTP will require employees, the Act ensures that the contractor will make statutory deductions and submit them to responsible institutions like NHIF, NSSA among others immediately.
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	<ul style="list-style-type: none"> ✓ The Children Act, 2022 (Revised) ✓ Persons with Disability Act, CAP 133 ✓ The National Museums and Heritage Act, 2006 	<ul style="list-style-type: none"> ✓ Provides for safeguards for the rights and welfare of the child, and protects children from economic exploitation and any work that is likely to be hazardous or to interfere with the child's health or physical, mental, spiritual, moral or social development. ✓ Provides for the rights and rehabilitation of persons with disabilities. Establishes National Council for Persons with Disabilities to oversee the welfare of persons with disabilities. The Law also requires that both public and private sector employers reserve 5 per cent of jobs for disabled persons. ✓ It establishes the National Museum of Kenya, its functions and powers for the protection of national natural and cultural heritage (as defined). Due to projects, areas rich in diverse history and background there could be areas of cultural heritage, ancestral lands, among others might be affected thus the need to protect such areas.
OCCUPATIONAL, HEALTH AND SAFETY		
	Statutes and Regulation	Description

<ul style="list-style-type: none"> ✓ Occupational Health and Safety Policy of 2012 ✓ HIV/AIDS Policy of 2009 ✓ National Gender and Development Policy ✓ Public Health Policy of 2014 ✓ The Public Health Act (CAP. 242) ✓ The Physical and Land Use Planning Act, 2022) ✓ Occupational Safety and Health Act ✓ The Penal Code (Cap. 63) 	<ul style="list-style-type: none"> ✓ This Policy intends to significantly sustain the continual development and implementation of the National Occupational Safety and Health systems and programs to reduce incidences of work-related accidents and diseases. Additionally, it aims to provide fair compensation to those who sustain bodily harm and develop occupational disorders. The contractors are required to ensure safety of the employees. ✓ The policy guide in the fight against HIV and Aids in the workplace by providing guidance for those who deal with the day-to-day HIV and AIDS-related issues and problems that arise within the workplace and also outlines employee’s rights, responsibilities and expected behaviour in the workplace. ✓ The policy seeks to create a just, fair and transformed society free from gender-based discrimination in all spheres of life practices. It facilitates the mainstreaming the needs of women, men, girls and boys in all sectors of development in Kenya so that they can participate and benefit equally from development initiatives. ✓ The policy calls on the project proponents to ensure that a Health Impact Assessment (HIA) is conducted for any major infrastructural development. ✓ Outlines regulations pertaining to, among other things, animal care, public water supply protection, mosquito prevention and control, and the elimination of nuisances, particularly those brought on by sewage, among other things. The act will govern the contractors’ activities onsite to ensure health and safety of the employees and the environs ✓ Act provides rules for physical planning in Kenya, establishes Physical Planning Liaison Committees, provides for the appointment of the Director of Physical Planning, requires regional and local authorities to adopt Physical Development Plans in accordance with this Act and provides for control of development and subdivision of land. The proposed INTP projects should be subjected to this policy. ✓ The Act ensures safe and healthful working conditions for working men and women. Ensure that every workplace is free of any hazards and complies with the standards laid down to ensure the safety of employees. Article XIII states that if an employer in this, the contractors must ensure the health and safety of its employees and the environs. ✓ It codifies offences and penalties, from murder, treason, domestic cases, defamation, assault, theft, violence, extortion, corruption, etc. Chapter XVII deals with Nuisances and Offences against Health and Convenience and Chapter XXII deal with offences endangering life and health. Therefore, any person who violates these is
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	<ul style="list-style-type: none"> ✓ Work Injury Compensation Benefit Act (WIBA) 2007 ✓ The HIV and AIDS Prevention and Control Act ✓ The Sexual Offences Act, 2006 ✓ The National Gender and Equality Act, 2011 ✓ Security Laws (Amendment) Act, 2014 ✓ The Traffic Act Cap 403 		<p>subject to prosecution. The contractor will ensure that all emissions are controlled during the construction and should guarantee safety to the employees and the rest of the community.</p> <ul style="list-style-type: none"> ✓ Enacted to guarantee the compensation of workers for injuries that arise while they are working and also for health conditions contracted in the course of their employment. Contractors are obliged to compensate workers who sustain injuries in course of their work. The contractor therefore is required to provide appropriate insurance to the workers. ✓ This Act of Parliament establishes policies for the promotion and protection of public health, the appropriate care and treatment of those who are infected with HIV or who are at risk of contracting the disease, as well as for related objectives. It also establishes policies for the prevention, management, and control of HIV and AIDS. The contractor carries sensitization among the locals and employees, provision of free voluntary counselling and testing services and non-discrimination of those who are infected or affected. ✓ The Act delineates the acts that qualify as sexual offences and to establish a means of punishing offenders, in an effort to prevent such offences and to protect all persons from unlawful sexual acts. It has consolidated all laws relating to sexual offences. ✓ The Act establishes the National Gender and Equality Commission. The Commission is a successor in title to the Kenya National Human Rights and Equality Commission established by Article 59 of the Constitution. Functions of the Commission shall include: promote gender equality and freedom from discrimination in accordance with Article 27 of the Constitution among others. Gender mainstreaming must be incorporated into all facets of project design, execution, operation, monitoring, and assessment in order to guarantee that men and women benefit equally from INTP projects and that discrimination is not persisted. ✓ The Act deals with wide array of legal framework and jurisdiction on security matters. The INTP proposed projects are to be undertaken in areas that are facing insecurity due to terrorism, thus, there is need for enhanced security. ✓ The Acts provides guidelines for registration of vehicles, licensing of vehicles, driving license and offences related traffic and the use of roads and facilities. The contractor’s vehicle will have to comply with the Act. 	
sector specific	Transport Sector	Regulating Institution	Statutes and Regulation	Description

Road transport	KeNHA KURA KERRA KRB NTSA	<ul style="list-style-type: none"> ✓ The National Transport and Safety Authority Act, 2012 ✓ Kenya Roads (No. 2 of 2007) ✓ Kenya Roads Board (No. 7 of 1999) 	<ul style="list-style-type: none"> ✓ The National Transport and Safety Authority Act, 2012, established the NTSA, which is in charge of ensuring road safety through licencing, inspection of motor vehicles. Conducting research and audit on road safety, sensitization of the public on road safety ✓ Kenya Roads (No. 2 of 2007) established the Kenya National Highways Authority (KeNHA) with the mandate of managing the national roads. The Act also created KeRRA and Kenya Urban Roads Authority (KURA) ✓ Kenya Roads Board (No. 7 Of 1999), established the Kenya Roads Board with the objective and purpose of overseeing the road network in Kenya and coordinate the maintenance, rehabilitation and development funded by the fund ✓ The Public Roads and Roads of Access Act, CAP 399, provides for road which the public had a right to use immediately before the commencement of this Act; all proclaimed or reserved roads and thoroughfares being or existing on any land sold or leased or otherwise held under the East Africa Land Regulations, 1897, the Crown Lands Act, 1902, or the Government Lands Act (Cap. 280), at any time before the commencement of this Act; and all roads and thoroughfares hereafter reserved for public use. The construction of any road will have to abide by the provision of this Act ✓ KeNHA's Environment and Social Safeguards Policy, 2018- It outlines the steps KeNHA will take to make sure that the Authority's operations do not have a negative impact on the environment or the social cohesion of the areas in which they operate.
Rail transport	Kenya Railway Corporation	<ul style="list-style-type: none"> ✓ Kenya Railways Corporation Act Chapter 397 ✓ The Kenya Railways Corporation (Amendment) Act, 2005 	<ul style="list-style-type: none"> ✓ Kenya Railways Corporation Act Chapter 397-Established in 1978, the Kenya Railways Corporation, is mandated to provide houses and accommodation to the employees -It also details on land acquisition by the Corporation in relation to compensation and power to enter land to prevent accidents,

Port and Maritime	Kenya Ports Authority	<ul style="list-style-type: none"> ✓ Kenya Ports Authority Act Chapter 391 	<ul style="list-style-type: none"> ✓ Kenya Ports Authority Act Chapter 391 established KPA to regulate and manage the ports. The KPA through the Act is mandated to ensure occupational, health and safety to its employees, provide housing to the employees, acquisition of land for the purposes of the Authority, through negotiation and agreement and power to enter land to prevent accidents
	Kenya Maritime Authority/ Inland water transport	<ul style="list-style-type: none"> ✓ Kenya Maritime Authority Act 2006 (Revised Edition 2012) ✓ The Merchant Shipping Act No. 4 of 2009 ✓ Marine Insurance CAP 390 ✓ Maritime Zones (Cap. 371) 	<ul style="list-style-type: none"> ✓ Kenya Maritime Authority Act 2006, established the KMA to regulate, co-ordinate and oversee maritime affairs <ul style="list-style-type: none"> -Develop, co-ordinate and manage a national oil spill contingency plan for both coastal and inland waters -Enforce safety of shipping, including compliance with construction regulations, maintenance of safety standards and safety navigation rules; regular inspection of ships, overseeing welfare of seafarers, -Prevention of marine source pollution, protection of the marine environment and response to marine environment incidents ✓ The Merchant Shipping Act No. 4 of 2009 details the seafarers' welfares, terms of employment, discharge, and wages. <ul style="list-style-type: none"> -The Act also addresses the safety of navigation and prevention of collision, safety of life at sea, unsafe ships, safety of navigation and vessels for inland waters and maritime security. -The Act has domesticated various international conventions protection and preservation of the marine environment from pollution by matter from ships
Air transport	Kenya Civil Aviation Authority	<ul style="list-style-type: none"> ✓ The Civil Aviation Act No. 21 of 2013 ✓ The Civil Aviation (Amendment) Act, 2016 	<ul style="list-style-type: none"> ✓ The Civil Aviation Act No. 21 of 2013 established KCAA with the objective and purpose to economically and efficiently plans, develop and manage civil aviation, regulate and operate a safe civil aviation system in Kenya. <ul style="list-style-type: none"> -Licensing of air services and ensuring safety in airspaces -Protection of environment -It has domesticated Chicago Convention

		Kenya Airports Authority	<ul style="list-style-type: none"> ✓ Kenya Airports Authority (Cap. 395)- Revised Edition 2012 [1992] 	<ul style="list-style-type: none"> ✓ Kenya Airports Authority (Cap. 395)-established the Kenya Airports Authority with the mandate to construct, operate and maintain aerodromes and other related facilities -To ensure occupational, health and safety to employees, provide housing to the employees, acquisition of land for the purposes of the Authority, through negotiation and agreement and power to enter land to prevent accidents
Pipeline (Oil) transport	Energy & Petroleum Regulatory Authority (EPRA)	<ul style="list-style-type: none"> ✓ Energy (No. 1 of 2019) ✓ Petroleum (No. 2 of 2019) 	<ul style="list-style-type: none"> ✓ Energy (No. 1 of 2019) established the Energy and Petroleum Regulatory Authority -Formulate, set, enforce and review environmental, health, safety and quality standards for the energy sector in coordination with other statutory authorities ✓ Petroleum (No. 2 of 2019)-protection of environment by requiring contractors to provide environment impact assessment study reports for upstream petroleum operations. -Take any action for the conservation and protection of the natural resources and the environment in that area -The Act also details environment, health and safety obligations of the contractors engaged in petroleum exploration 	

An analysis of the INTP document indicates that it is not only clearly written but many aspects of the environment, climate change, and social impacts are addressed in all transport modes and sectors, including; road, railway, pipeline, ports, and maritime, air, and inland water transport in both urban and rural areas as per NEMA guidelines. The non-motorized sector is also effectively dealt with. Institutional, legal, and regulatory transport frameworks are precisely adhered to, and conformity with national and international development standards is observed. With regards to World Bank Environmental and Social Standards (ESS) and guidelines, it is demonstrated in the INTP document that great importance has been placed on all ten (10) aspects. In addition, it was noted that the INTP compares and adequately draws heavily from diverse national, regional, and international relevant policies, plans, and transport and infrastructure development programs in the following areas;

- a. Ensuring compliance with related legal documents
- b. Strengthening enforcement to ensure adherence to rules and regulations that improve safety
- c. Embracement of emerging automated technology – for example, ICT, and considering innovations such as Electric vehicles and drones, among others
- d. Compliance with International Transport Safety Standards
- e. Implementation of Safety Audits on all New and Improved Transport Infrastructural projects in accordance with international best practices
- f. Promotion of safety culture by strengthening leadership, management, and institutional capacity in agencies tasked with the design and management of transport systems
- g. Involvement of individuals, communities, local agencies, and the state in the development and implementation of the policy
- h. Promotion of Green mobility as emphasized in the Paris Agreement-2015 Conference of Parties
- i. Emphasizing Research in the field of the transport sector through comprehensive data collection and analysis
- j. Capturing all the seven current transport sectors in Kenya

3.7 Assessments of regulatory and institutional capacity

This section analyses the regulatory and institutional capacities of some of the institutions, agencies and departments with the mandate of handling environmental, social, safety, and occupational health within the transport sector. The assessment takes into consideration various

aspects, among them (i) Institutions' physical infrastructure, which includes available equipment and materials; (ii) Human resources; (iii) Financing and funding; (iv) Motivation and Incentives; and (v) Information Technology and Communication.

The Ministry of Roads and Transport fits into and is fed by many institutions, agencies and departments among them NEMA, The Ministry of Labour and Social Protection, the Ministry of Public Service, Gender and Affirmative Action, the Ministry of Interior and National Administration, The National Treasury and Economic Planning, Ministry of lands, public works, housing and Urban Development, Ministry of health, Ministry of Environment and Forestry, Ministry of tourism, wildlife and heritage, Ministry of water, sanitation and Irrigation and the Ministry of Energy and petroleum. Importantly, through the various departments and agencies, the ministries interface with NEMA and international players so that issues related to the environment, health, safety, and social risks associated with projects, plans, and programs are effectively and efficiently handled with minimal negative consequences. To determine the institutional capacity of the transport sector to handle environmental and social issues, the consultant examined the variance in human capacity needs, training and capacity building programs at NEMA and relevant agencies, availability of instrumentation and equipment, and plans for future expertise recruitment are presented in the table below;

Table 7: Assessment of Regulatory and Institutional Capacities

Institution	Mandate	SESA Capacity Strengths	Institutional Capacity Needs	Possible Intervention
State Department for Transport (SDoT)	Develops transport policies and strategies	<ul style="list-style-type: none"> - Policy focus on integration could support SESA. - May have existing experience with environmental impact assessments (EIAs) for specific projects. 	<ul style="list-style-type: none"> - Limited in-house expertise on Strategic environmental and social impact assessment (SESA). - Policy focus might not translate directly to strategic application of SESA. 	<ul style="list-style-type: none"> -Partner with NEMA and universities for technical expertise -Build staff capacity through training programs
National Environment Management Authority (NEMA)	Leads environmental regulation and impact assessment	<ul style="list-style-type: none"> - Strong legal mandate and experience with EIAs. - Established stakeholder engagement mechanisms. 	<ul style="list-style-type: none"> - Primarily focused on project-level EIAs, may require adaptation for strategic assessments. - Limited resources for in-depth social impact analysis. 	<ul style="list-style-type: none"> -Develop SESA guidelines tailored to the transport sector -Partner with transport agencies to build capacity -Build staff capacity through training programs
National Transport and Safety Authority (NTSA)	Regulates transport safety and operations	<ul style="list-style-type: none"> - Emphasis on safety could be leveraged for social impact considerations in SESA. - Data collection on transport accidents could inform SESA. 	<ul style="list-style-type: none"> - Safety focus might overshadow broader environmental considerations. - Limited experience in strategic environmental and social assessment. 	<ul style="list-style-type: none"> -Integrate social impact considerations into existing safety assessments -Collaborate with NEMA and SDOT on SESA development
Kenya Urban Roads Authority (KURA)	Manages national and urban roads	<ul style="list-style-type: none"> - Experience with EIAs for road construction projects. - Existing data on road networks could inform SESA. 	<ul style="list-style-type: none"> - Focus on urban and national roads might not extend to other transport sectors (e.g., aviation, maritime). - Limited capacity for strategic impact assessment beyond specific projects. - Availability of dedicated funds for SESA within KURA's budget is unknown 	<ul style="list-style-type: none"> -Collaborate with NEMA and SDOT on SESA development. -Conduct training programs for KURA staff on SESA methodologies and best practices. - Allocate budget specifically for SESA activities within KURA and explore innovative financing mechanisms like user fees for SESA of specific projects.

Kenya Civil Aviation Authority (KCAA)	Regulates civil aviation safety and security	<ul style="list-style-type: none"> - Strong safety focus could be relevant for social impact considerations in SESA. - Experience with safety impact assessments for airports. 	<ul style="list-style-type: none"> - Limited experience with broader environmental or social impact assessments. - Focus on aviation safety might not translate well to other transport sectors. 	<ul style="list-style-type: none"> -Conduct internal training programs on SESA for relevant KCAA departments (e.g., planning, infrastructure). -Integrate social impact considerations into existing safety assessments
Kenya Ports Authority (KPA)	Manages seaports and maritime transport	<ul style="list-style-type: none"> - Experience with EIAs for port development projects. - Stakeholder engagement with port communities could be relevant for SESA. 	<ul style="list-style-type: none"> - Focus on port operations might not extend to broader maritime transport issues. - Limited capacity for strategic impact assessment beyond specific projects. 	<ul style="list-style-type: none"> -Collaborate with SDT and NEMA on SESA for port-related infrastructure development - Develop SESA checklists for port expansion projects
Kenya National Highways Authority (KERRA)	Manages national highways	<ul style="list-style-type: none"> - Experience with EIAs for highway construction projects. - Existing data on national highway network could inform SESA. 	<ul style="list-style-type: none"> -Limited staff with SESA expertise -Budgetary constraints limits resources allocated for SESA -Unclear if SESA is currently integrated into the planning stages of KeRRA projects. 	<ul style="list-style-type: none"> -KeRRA could provide SESA training for relevant staff, or partner with universities or NGOs with SESA expertise. -KeRRA could explore incorporating SESA costs into project budgets. -Develop clear procedures for integrating SESA into project planning cycles like establishing SESA review points within the project approval process.

3.8 Institutional capacity of other Ministries and Agencies

Issues emerging from other relevant ministries and agencies were associated with financing and expenditure, understaffing, and incentivization. Handling such issues requires collaboration, coordination, and partnership between private and public national and international institutions and organizations. In addition, regular training and capacity building for existing staff and investment in education and skills building is important in all ministries and agencies handling environmental, social, health, and safety issues in the transport sector.

While the capacity of institutional agencies to address environmental, occupational health, safety, and social issues was appreciated, the same may not apply at local levels where unique challenges exist. Addressing current and potential risks at both levels is also subject to capacity challenges such as sub-sector infrastructure, availability of appropriate equipment and materials, levels of synergies and linkages between institutions, and availability of relevant staff to address environmental, occupational health and, safety, and social issues at the county levels. Collaborations and continuous training of specialized county staff is thus needed. In particular, staff to handle specialized data measuring equipment and materials, for instance, those dealing with new technologies in the transport sector, are needed. Institutions with overarching mandates such as KEBs require specialized staff to handle very sensitive data on environmental, social, health, and safety. Retooling of such staff to operate new equipment's and to deal with emerging issues should be adequately addressed by the INTP for implementation. An important challenge is the availability of expert personnel and capacity to identify specific risk factors of the INTP's environmental, occupational health, safety, and social attributes.

CHAPTER FOUR

POLICY ANALYSIS OF THE INTERGRATED NATIONAL TRANSPORT POLICY

4.0 Introduction

This section links existing and forecasted developments to communities' environment, social, health, safety, and security. These include climate change risks associated with existing developments and plans for investment in the transport sector, considering the forecasts and scenarios developed. Cumulative/synergistic/secondary impacts and consequences of individual developments under the transport policy are also included. The priorities were identified based on existing information, expert judgment, inputs, and stakeholders' concerns. In addition, the section identifies consequences/risks associated with existing and forecasted development and identifies clear prioritization criteria for future action. World Bank is keen on vulnerable groups, including women, youth, elders, and marginalized groups, as well as cultural and children's issues, as discussed. A dedicated section on this group is thus provided. This chapter has also suggested recommendations derived from stakeholder engagement and observations in addressing risks and consequences associated with the transport sector. This is aimed at informing improvements in the INTP document.

An assessment of the INTP document indicates various strategic proposed policy directions and specific transport development projects as follows;

Table 8: Forecasts of Future Developments as Proposed in the INTP

OVERARCHING	
1. ENVIRONMENT	
Forecasted	
	<ol style="list-style-type: none"> 1. Develop and implement the next phase of NCCAP on climate-proofing transport infrastructure and, in particular, the development of low-carbon sustainable transport systems; 2. Enforce the Climate Change Act, Number 11 of 2016, on environmental safeguards such as control of gaseous emissions, noise pollution, oil spills, and construction activities, among others; 3. Develop and implement a Transport Sector Climate Change Action Plan to put in place a sectoral consensus on climate change and monitor and review mitigation targets for transport on a regular basis; 4. Develop standards for climate-proofing of transport infrastructure and a long-term strategy for climate-resilient development in the transport sector; 5. Prioritize implementation of Mass Rapid Transit Systems (MRTS) and non-motorized transport facilities in urban areas, and dis-incentives for the use of private vehicles; 6. Promote the use of renewable fuels and develop a strategy for electric mobility, including investments in new vehicle technologies; 7. Set an enabling policy framework to incentivize efficiency improvements in freight transport, particularly the use of rail, in consultation with relevant private sector stakeholders; 8. Provide the necessary resources for full operationalization of the Climate Change Coordination Unit of the Transport sector as set out in the Climate Change Act of 2016; 9. Forge closer cooperation with scientists and engineers, industry, and international organizations to ensure that up-to-date information on climate change impacts and adaptation measures for transport is available, widely disseminated and taken into account by policymakers, transportation planners, and development strategists; 10. Explore ways in which further financial resources may be generated as part of mitigation efforts in the transport sector and ensure that any proceeds are reinvested within the industry in particular for the study of impacts and for the purposes of effective adaptation; and, 11. Ratify, domesticate, and implement all relevant international/regional conventions and, protocols, and agreements relating to climate change.
2. SOCIAL	
	<ol style="list-style-type: none"> 1. Develop a framework to actively identify, through measurable indicators, and eliminate social and economic exclusion in the transport sector; 2. Incorporate social exclusion vulnerability assessments into transport projects' planning and implementation phases. 3. Promote education in specialised transport disciplines at Kenyan universities TVET institutions, including collaboration with relevant institutions in the development and regulation of the necessary curricula for all levels of the education system 4. Establish a Transport Industry Training Levy to support training of transport industry professionals;

5. Develop the relevant human resources required to manage sustainable transport systems in Kenya for all sub-sectors, including the capacity building of local institutions to train the required professionals;
6. Introduce relevant courses for technical and other personnel in the design, development and maintenance of Non-Motorised and Intermediate Means of Transport (NMIMT) vehicles and facilities;
7. Develop and support “Centres of Excellence” for each transport sub-sector and facilitate restructuring of the Railway Training Institute (RTI) to focus on the provision of courses that are essential to the core activities of rail transport and transform it into a “Centre of Excellence” for rail transport.

3. OCCUPATIONAL, SAFETY AND HEALTH

1. The Government will conduct further research to determine the nature and extent of the linkages between transport and health and develop a framework for intervention to reduce transport's potential and actual negative effects on health. Policy interventions will be aligned with international agendas such as Sustainable Development Goals (SDGs) that cover environmental degradation climate change resolutions, among others.
2. The Government will enhance security and safety for all transport sub-sectors through a combination of measures to that will include: improved surveillance by application of ICT; improved logistics, and, enhancement and enforcement of traffic and labour laws and regulations. Other measures will include the provision of Roadside Stations (RSS) along the major transport corridors for the safety and security of passengers.

SECTOR-SPECIFIC

Transport Sector	Forecasted
Road Transport	<p>Safety, Health and Security</p> <ol style="list-style-type: none"> 1. Develop a framework for capacity building on road transport and health for institutions responsible for oversight on road safety measures, public health, and enforcement; 2. Promote use of green mobility, and, 3. Develop a policy on safe scrapping/disposal of unserviceable vehicles, vehicle parts and waste. 4. Develop a framework for regular review of road design manuals to international best practices in road safety. The manuals shall have guidelines for traffic engineering control devices such as traffic signals; road signs and road markings; protection measures, off-carriageway (roadside) safety measures; monitoring and evaluation; 5. Enhance framework that instigates road safety audits during planning, implementation and development of infrastructure; and, 6. Undertake continuous review of vehicle quality standards (including GHG emissions) and enforce compliance through random and periodic vehicle inspections. 7. Establish coordination mechanisms for the development and implementation of effective post-crash incident management. 8. Build capacity for incident management and establishment of trauma centres 9. Facilitate and enhance detailed crash investigation for post-crash preventive initiatives

10. Operationalize the National Transport and Safety Fund.
11. To comply with legal and international safety conventions, ensure financial sustainability for lead agencies on road safety.
12. Strengthen the capacity of NTSA for better coordination and management of road traffic safety, particularly on: driver training and testing; vehicle inspections, crash data collection and analysis, and, using technology to pro-actively prevent road crashes from happening;
13. Strengthen all road agencies involved in planning and developing road transport infrastructure and regulating transport services, to have the necessary skills and adequate funding to deal with road traffic crashes through integrated and proactive planning and implementation;
14. Enhance the level of professionalism of the Traffic Police in traffic control, modern methods of enforcement focused on the psychology of the road user and unpredictability, prosecution, and post-crash emergency response; and,
15. Enhance traffic control, safety management and enforcement through the use of ICT (e.g., Intelligent Transport Systems (ITS), cameras, CCTVs, etc.), emergency response vehicles and equipment. This will be achieved through extensive utilization of transport information systems (ITS); setting and evaluating traffic control standards on regional, national and international levels.
16. Develop a framework to reduce the potential and actual negative effects of freight transport health-related issues;
17. Integrate health-related issues in road transport planning, design, development and operations, including the development of Roadside Service Stations (RSS) at strategic locations within the road network. The RSS will be equipped with health facilities, as well as serve as centres for sensitization on HIV/AIDS and human trafficking.

Environment

1. Establish a coordination framework between institutions responsible for land use planning and road infrastructure planning and development. Road transport planning shall be undertaken in an integrated and complementary approach so as to link with other modes;
2. Develop and implement a Roads Transport Masterplan (RTMP) that is fully integrated with urban and regional land use plans;
3. Secure and/or acquire land for future development; and
4. Establish a road corridor management framework for mapping out road reserves and ensuring they are encumbrances-free.
5. Create a regulatory/ institutional structure to ensure that all agencies comply with all the environmental laws and regulations throughout the project cycle. The planning and development standards shall meet climate change considerations, including the incorporation of costs of CO₂ emissions and road crashes in the assessment of the economic viability of road projects;
6. Pursue innovative technologies in the field of environmental conservation and use of alternative materials with fewer carbon footprints in road construction;
7. Promote the growth and development of E-Mobility and other low-carbon pathways in the road transport sector;
8. Ensure closer cooperation between relevant government agencies in the implementation of international environmental legislation/agreements such as the Paris Agreement and the Clean Air Initiative (CAI) resolutions; and,
9. Develop, progressively introduce and enforce vehicle emission limits
10. Provide the regulatory framework and appropriate fiscal policies to promote energy-efficient and low-emission freight transport, including shifting long-distance freight from road to rail;

	<ol style="list-style-type: none"> 11. Ensure strict enforcement of regulations governing the transportation of hazardous materials and substances to minimize chances of occurrence of disasters, such as fires arising from spills of petroleum fuels through road accidents; 12. Establish effective disaster management measures, along the major road corridors, will also be established to deal with such disasters when they occur; and, 13. Put in place and enforce necessary regulations to prevent and address fuel spills and consider diverting such dangerous freight to the rail, pipeline, and inland waterway systems where population exposure is lower.
Rail Transport	Safety, Health and Security Safety, Health and Security
	<ol style="list-style-type: none"> 1. Provide adequate resources for timely maintenance, renewal of railway assets and optimum staffing; 2. Provide for the establishment of an independent railway safety regulator; and, 3. Strengthen and enforce implementation of appropriate safety management system. 4. The Government will protect and secure railway assets.
	Environment
	<ol style="list-style-type: none"> 1. Maintain an updated Railway Transport Masterplan (RTMP) that is integrated with National and County Spatial Plans. The RTMP will align with existing national and county land use plans. The RTMP will guide the preservation and acquisition of land for future rail development and, 2. Ensure that the RTMP is considered whenever new spatial plans are being prepared. 3. Promote the progressive transition from fossil fuels to clean energy in railway transport; and, 4. Provide for proper disposal of waste emanating from railway operations.
Maritime Transport	Social
	<ol style="list-style-type: none"> 1. Formulate a strategy to attract and retain qualified human resources in all aspects of railway operations, development, and management; and, 2. Ensure that Railway Training Institute (RTI) has adequate equipment, facilities and other relevant infrastructure to offer courses that are essential to railway operations and development
	Safety, Health and Security Safety, Health and Security
	<ol style="list-style-type: none"> 1. Enhance the institutional capacity of the maritime regulator to effectively implement the Merchant Shipping Act; 2. Invest in registration of all boat operations on Kenyan waters and ensure capabilities in enforcing and undertaking assurance of safety of life and property at sea; 3. Encourage private sector participation in salvage by stimulating investment from the private sector in the tug and salvage industry; 4. Ensure maritime governance is improved through appropriate financial resources and tools to the relevant institutions to execute their mandates;

	<ol style="list-style-type: none"> 5. Ensure operationalization of the Merchant Shipping Act for maritime safety marine pollution. Further, undertake navigation and hydrographic mapping of the Kenyan waters; and, 6. Establish an accident investigation unit. 7. Build human and institutional capacity to ensure enforcement of port health in all Kenyan sea and inland waters; and, 8. Establish sea farer rehabilitation centres. 9. Develop legislative changes to establish and designate the marine casualty investigation as a specific agency with autonomy, financial independence, powers of investigation, and organizational capacity to conduct marine accident and serious incident investigations within the country; and, 10. Ensure that the institutional framework of the maritime sector is effective and aligned with international practice.
	Environment
	<ol style="list-style-type: none"> 1. The government will promote green ports and shipping by encouraging the adoption of energy-efficient equipment and alternative fuels for marine crafts and vessels and promoting good global practices in cargo handling in line with the climate action plan. 2. The Government will secure existing land for future maritime development and undertake a review of the land use plans.
	Social
	<ol style="list-style-type: none"> 1. Support the development of adequately trained and skilled maritime professionals through public and private maritime training institutions aligned with the industry needs; 2. Enhance the performance of Port State Control as an effective means of deterring substandard ships and their owners from calling at Kenyan ports; 3. Encourage participation of the private sector in the establishment of maritime training institutions; 4. Strengthen existing institutions to attract and retain specialized pool of expertise that meets the industry’s needs; 5. Formulate a strategy to enhance talent attraction, recruitment, and retention; and, 6. Encourage collaborations with international partners to promote on-the-job maritime training to obtain practical skills (Sea time) and remain relevant in a rapidly changing and dynamic industry.
Air Transport	Safety, Health and Security Safety, Health and Security
	<ol style="list-style-type: none"> 1. The government will strengthen the State Safety Oversight (SSO) system implement, and maintain the State Safety Programme (SSP) to achieve consistent and continuous compliance with the ICAO SARPs. 2. Update the National Civil Aviation Security Policy (NCASP) and Civil Aviation Security Regulations to ensure that they conform to ICAO’s SARPS and international best practices. 3. Enhance the level of cooperation among the airport security organs that play a critical role in the civil aviation system and capacity to implement ICAO SARPS requiring risk assessment by the relevant national or local authorities.

	<ol style="list-style-type: none"> 4. Implement legislative changes to establish and designate the AAID as a specific agency with autonomy, financial independence, powers of investigation and organizational capacity to conduct aircraft accident and serious incident investigations within the country. 5. Ensure that the institutional framework of the aviation sector is effective and aligned with international practice. <p style="text-align: center;">Environment</p> <ol style="list-style-type: none"> 1. Develop climate adaptation and mitigation plans to help curb negative environmental and climate change impacts. 2. Embrace and promote the use of improved aircraft in terms of fuel consumption, efficiency, and noise reduction. 3. Develop a framework for aviation environmental protection, including the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) and support coordination between the aviation stakeholders and environment experts to enhance expertise and promote knowledge sharing and harmonization of positions on issues of environment protection and climate change. 4. Develop capacity in terms of personnel and technology and encourage production and deployment of alternative sources of fuels, including Sustainable Aviation Fuels (Biofuels and electricity) and use of more energy-efficient infrastructure, including electric vehicles. 5. Promote integrated land use planning to ensure compatible land use in areas around aerodromes to mitigate noise pollution. 6. Develop and enforce regulations on the responsibility for the disposal of abandoned and written-off aircraft and related aircraft waste such as aircraft parts and fluids within aerodromes. <p style="text-align: center;">Social</p> <ol style="list-style-type: none"> 1. Support the development of adequately trained and skilled aviation professionals through public and private aviation training institutions aligned with the industry needs; 2. Formulate a strategy to enhance talent attraction, recruitment, and retention. 3. Upgrade and modernize infrastructure and equipment and enhance instructional capacity to offer quality integrated aviation training.
Pipeline Transport	<p style="text-align: center;">Safety, Health and Security Safety, Health and Security</p> <ol style="list-style-type: none"> 1. Enact appropriate safety and security regulations that will govern the development and operation of the pipeline transport system. 2. Develop a legislative framework that shall ensure all petroleum products are transported through the existing pipeline system. 3. Facilitate investment in technology for real-time dissemination of information in the event of pipeline vandalism. 4. Establish standard emergency response procedures incorporating all inter-agencies and equipping them with the relevant resources to attend to petroleum product emergencies. 5. Promote enhancement of pipeline protection from human encroachment 6. Establish adequate contingency plans to deal with risks associated with spillages and fires. 7. Ensure that imported fuel specifications adhere to internationally accepted levels on Lead and Sulphur. 8. Enforce the Occupational Safety and Health Act (OSHA), 2007, to ensure the safety and health of all persons and property within KPC installations.

	Environment
	1. Enforce the Environmental Management and Coordination Act (EMCA), 1999, to ensure environmental protection in the event of product spillage.
	Social
	1. Develop strategies to enhance coaching and mentorship in the industry. 2. Develop a strategy to address skill needs in the petroleum industry.

In addition to these policy strategic directions and drawing from the INTP, the following future transport sector infrastructure development projects are proposed for each transport subsector. Specific sites for the envisioned projects are highlighted. The table below summarizes the proposed projects;

Table 9: Forecasts of future developments projects as proposed in the INTP

Transport sector	Some Envisaged Projects from the INTP	scenarios
Road Transport	<ol style="list-style-type: none"> 1. The Northern Corridor runs from Mombasa at the Coast through Nairobi, Nakuru, and Eldoret to Malaba at the Kenya-Uganda Border and the Nakuru - Mau Summit through Kericho and Kisumu to Busia at the Kenya-Uganda Border; 2. The Great North Road runs from Namanga at the border with Tanzania, through Nairobi and Isiolo to Moyale; 3. Lamu - Garissa – Isiolo to Lokichar; 4. Tarime - Kisii - Kisumu - Kitale - Lodwar to Kenya - Sudan Border. 5. Kitale – Endebes - Suam – Uganda; 6. Kainuk-Uganda border corridor; 7. Somalia Border-Lamu-Mombasa-Lunga Lunga corridor ; 8. Kainuk-South Horr-Marsabit-Moyale corridor; 9. Mai Mahiu – Mulot – Kilgoris – Lolgorian – Isebania Corridor; and, 10. Road transport corridor connecting Lamu to South Sudan through Lokichoggio 	<ul style="list-style-type: none"> ✓ Non-integration of land use, planning and development results to spatially dislocated settlements, urban sprawling, high cost of transport, long congested commuting distance time ✓ Understaffing in planning departments ✓ Lack of integrated implementation of plans for Mombasa and Nairobi ✓ Heavily congested roads around CBDs ✓ Lack of mandatory traffic impact assessments (TIA) ✓ Lack of elaborate and adequate bypasses ✓ Ineffective traffic demand management measures ✓ Traffic congestion ✓ Inadequate and uncoordinated traffic signals ✓ Lack of dedicated traffic provisions for pedestrians ✓ Lack of information on route networks ✓ Lack of dedicated bus lanes ✓ Inadequate, ineffective stakeholder enjoyment in the transport sector ✓ Uncomprehensive pedestrian network ✓ Lack of prioritization of non-motorized transport infrastructure ✓ Parking congestion causes hazards ✓ Increased carbon emissions ✓ Destruction of flora and fauna

Rail Transport	<ol style="list-style-type: none"> 1. Integrated multi-modal transport planning and development, particularly to link railway systems with other transport modes for both freight and passenger transport; and, 2. Rail Transport Masterplan (RTMP), as part of the Integrated Transport Masterplan (INTMP). 3. Extension of SGR to Kisumu and Malaba 4. Proposed LAPSSET SGR 5. Regional SGR Network connecting member states 6. Refurbishing of the meter gauge railway network (Nyahururu, Voi-Taveta, transshipment from SGR to MGR (Taveta, Kenya-Tanzania border) 	<ul style="list-style-type: none"> ✓ Passing through national parks, wild animal corridors, game reserves, cultural heritage areas ✓ Encroachment on agricultural land
Maritime Transport	Port	<ul style="list-style-type: none"> ✓ Encroachment on marine biodiversity ✓ Increased carbon emissions ✓ Displacement of marine
	<ol style="list-style-type: none"> 1. Integrating planning and development of Port infrastructure with multi-modal cargo evacuation system and other auxiliary port infrastructure; 2. Development of deep-sea ports in other areas to accommodate ultra large vessels; 3. Modernization of the general cargo berths at the Port of Mombasa to take advantage of the economies of scale in transportation of general cargo; and, 4. Integration of port infrastructure with the development of logistics hubs and special economic/ industrial zones to generate traffic for the ports. 5. Lamu Port-construction of additional 29 berths 	
	Ferry	<ul style="list-style-type: none"> ✓ Encroachment on marine biodiversity ✓ Increased carbon emissions ✓ Displacement of marine
<ol style="list-style-type: none"> 1. Encouraging inter and intra-county ferry operations to enable the shift of freight and passenger traffic from road to ferries 2. Investments in ferry landing infrastructure 3. Replacement plan for government owned and run ferries 		

Air Transport	<ol style="list-style-type: none"> 1. Expansion of aerodromes 2. Upgrade of air navigation infrastructure 	<ul style="list-style-type: none"> ✓ Increased emission ✓ Encroachment on agricultural land wild reserves
Pipeline Transport	<ol style="list-style-type: none"> 1. Integration of pipeline transport mode with other modes 2. Expansion and increase of storage capacity of the pipeline system within the country 3. Extension of pipeline network to strategic regions within the country 4. Development of compatible pipeline infrastructure with the neighbouring countries 	<ul style="list-style-type: none"> ✓ Encroachment on agricultural land wild reserves

4.1 Enhancing Integrated National Transport Policy: The Role of E-Mobility and Non-Motorised Transport

In addition to the above envisaged projects, the transport sector has come up other plans and projects which emphasis the need for incorporating environmental and social considerations. The INTP in particular references existing environmental legislation like the Environmental Management and Coordination Act (EMCA) and the Climate Change Act. Some of the most important plans and projects that are underway that included but is not limited to;

4.1.1 E-mobility

Kenya is in the process of implementing its first national E-mobility policy, launched in March 2024. This policy aims to transition the country's transportation system away from fossil fuels and towards electric vehicles, motorcycles, and even electric rail and air travel. A key part of the plan is to encourage the development and assembly of electric vehicles within Kenya, alongside building charging infrastructure and training technicians to service these new technologies. This shift towards E-mobility is expected to reduce greenhouse gas emissions and align with Kenya's climate change goals. Electric vehicles produce zero tailpipe emissions, contributing to improved air quality and reduced greenhouse gas emissions. Additionally, EVs are quieter than traditional vehicles, creating a more pleasant soundscape in cities. Furthermore, electrifying the transportation sector lessens Kenya's reliance on imported fossil fuels, boosting the country's energy security and reducing its vulnerability to price fluctuations in the global oil market.

4.1.2 Non-Motorised Transport (NMT)

The non-motorised transport sector comprises modes of transportation that do not rely on motorized vehicles, such as walking, the use of wheelbarrows and carts, animal transport (horses, camels, donkeys, mules, and oxen), animal-drawn carriages (such as sledges), bicycles and tricycles for passenger and freight transport. In Kenya especially in remote and low-income areas plays a significant role in enabling people access markets, healthcare, and educational facilities. Use of wheel chairs by PWDs, *boda boda* humans is also common in vulnerable areas. In Kenya, non-motorized transport plays a significant role in providing affordable and sustainable transportation options, especially in urban areas where congestion and pollution from motorized vehicles are major challenges. Walking is a primary mode of

transportation for a substantial portion of the urban population, with estimates indicating that 47% of urban residents in Kenya use walking. Despite its importance, city planners sometimes overlook non-motorised transport, leading to inadequate infrastructure for pedestrians and cyclists. Financial constraints have been blamed for this.

NMT faces challenges such as limited infrastructure due to the lack of dedicated lanes and safe spaces for pedestrians and cyclists are lacking. Additionally, there are safety concerns since sharing roads with motorized vehicles poses a risk to NMT users. The Kenyan government has been making efforts to promote non-motorized transport through various initiatives, including the construction of pedestrian walkways and cycling lanes and the implementation of policies that prioritize non-motorized transport in urban planning. Constant and continuous awareness creation, sensitization and tooling of citizens on security and need to use flyovers and designated areas are some of the policy dimensions in the INTP.

NMT is crucial in facilitating mobility for *persons with disabilities* (PWD). By providing accessible pathways such as sidewalks, cycle lanes, and pedestrian crossings, individuals with disabilities can navigate urban environments more easily and safely. Additionally, promoting non-motorised transport options like walking and cycling can improve accessibility for people with disabilities who may face challenges using motorized transportation due to physical or cognitive disabilities. Investing in infrastructure that supports non-motorised transport benefits not only persons with disabilities but also promotes inclusivity and sustainable urban development. Collaboration and partnership is important especially in ensuring that NMT is promoted. The INTP emphasises this and in Nairobi County, the Nairobi City County Government has developed a Non-motorized Transport (NMT) policy in collaboration with the United Nations Environment Programme (UNEP) to improve the transport sector performance by promoting the use of NMT¹¹ and enable persons living with disabilities (PWDs) take advantage of low-cost public transport. The policy aims to create a safe, secure, and accessible NMT environment for all users, including pedestrians, cyclists, and users of other non-motorized modes of transport. Article 54 (1) (c) of Kenya's constitution also emphasizes that individuals with disabilities are entitled to reasonable access to all places, public transport, and information.

¹¹ Non-Motorized Transport Policy “Towards NMT as the Mode of Choice”. Available at: [NairobiCity NonMotorizedTransportPolicy.pdf \(unep.org\)](https://www.nairobi.go.ke/Portals/0/NonMotorizedTransportPolicy.pdf).

It is also an environmentally friendly mode of transport that has minimal impact on the ecosystem. Overall, the non-motorized transport sector in Kenya is an important and growing trend that contributes to reducing traffic congestion, improving air quality, and promoting physical activity and healthy lifestyles among the population. With continued investment in infrastructure and safety measures, it has the potential to become a sustainable and accessible mode of transport for many Kenyans. This is well covered in the INTP. A glance at the sector, however, points to inadequate allocation of resources to the sector. Many times, master plans and programs consider this sub-sector as less important and thus less developed. The INTP, however, calls and plans to effectively develop the NMT by collaborating with development partners to finance the sub-sector.

4.1.3 Kenya Urban Mobility Improvement Project (KUMIP)

The Kenya Urban Mobility Improvement Project (KUMIP) is a specific initiative that directly implements the vision of the INTP within major cities. KUMIP aligns with the INTP in several key ways. It promotes a multi-modal approach to urban transport, reducing reliance on private vehicles. This aligns with the INTP's goal of improving accessibility and fostering economic growth by providing Kenyans with various transportation options. KUMIP achieves this by investing in infrastructure like commuter rail and dedicated bus lanes, encouraging a shift towards public transport. KUMIP integrates land-use planning with infrastructure development, a principle emphasized by the INTP. This ensures that infrastructure projects are strategically located to minimize long commutes and encourage smart growth patterns within cities.

Finally, KUMIP prioritizes Non-Motorised Transport (NMT) options like cycling and walking. This aligns with the INTP's focus on promoting sustainable and healthy transportation choices. KUMIP achieves this by building sidewalks, protected bike lanes, and secure bike parking facilities, making NMT a more viable and attractive option for urban residents. Initiatives under KUMIP, such as the development of commuter rail systems, improvement of non-motorized transport facilities, and traffic management enhancements in major cities, directly contribute to the implementation of the INTP's objectives.

From the analysis of the proposed strategic policy directions and specific projects and plan, the table below gives a summary of PPP analysis of Environmental, Socioeconomic, Occupational Health, and Safety integration of policy, legislative, and regulatory frameworks at both national

and international levels as evidenced by the INTP. The matrix identifies existing gaps through analysis in terms of either fully integrated, moderately integrated or not integrated aspects.

Table 10: Summary of PPP analysis of Environmental, Socioeconomic, Occupational Health and Safety obligations of the Integrated National Transport Policy

Pillar	Well Integrated	Moderately Integrated	Not Integrated
Environmental	<ul style="list-style-type: none"> ● The Constitution of Kenya, 2010 (P) ● Vision 2030 (S) ● The Physical and Land Use Planning Act No. 13 of 2019 (A) ● Climate Change Act, Number 11 of 2016 (A) ● Kenya Roads Act (No. 2 of 2007) that established the Kenya National Highways Authority (KeNHA), KeRRA and Kenya Urban Roads Authority (KURA) (A) ● Kenya Roads Board (No. 7 Of 1999) (A) ● Kenya Roads Act (No. 2 of 2007) (A) ● The Environmental Management and Coordination Act of 2015 (CAP 387) (A) ● National Climate Change Action Plan 2018 – 2022 (NCCAP) (P) ● The Paris Agreement (IP) ● Sustainable Development Goals (SDGs) (IP) 	<ul style="list-style-type: none"> ● Merchant Shipping Act 2009 for maritime safety, marine pollution (A) ● The Civil Aviation Act No. 21 of 2013 (A) ● Kenya Maritime Authority Act 2006 (Revised Edition 2012) (A) ● Energy Act (No. 1 of 2019) (A) ● The Merchant Shipping Act No. 4 of 2009 (A) ● Convention on international Trade in Endangered Species of Wild Fauna and Flora (1973) (IC/A/P) ● Convention on Persistent Organic Pollutant (2001) (IC/A/P) ● Bassel Convention on the Control of Trans-Boundary Movements of Hazardous Wastes and Their Disposal (1995) (IC/A/P) ● Convention on Climatic Change and the Kyoto Protocol (IC/A/P) ● Lusaka Agreement on the Cooperative Enforcement Operations Directed against Illegal Trade in Fauna (1994) (IC/A/P) ● African Convention for the Conservation of Nature and Natural Resources (2003) (IC/A/P) 	<ul style="list-style-type: none"> ● East African Community Protocol on Environment on Natural Resources (Amendment 206) (IC/A/P) ● Convention on Biological Diversity (IC/A/P) ● Ramsar Convention (IC/A/P) ● Convention on Migratory Species/Bonn Convention (IC/A/P) ● Bamako Convention on the Ban of the Import into Africa and the Control of Transboundary Movement and Management of Hazardous Waste within Africa (1997) (IC/A/P)

	<ul style="list-style-type: none"> • United Nations Convention on the Law of the Sea (IP) • United Nations Framework Convention on Climate Change (IP) • The Public Private Partnership Act 2021 (A) • World Ports Climate Initiative (IP) • The National Transport and Safety Authority (NTSA) Act, 2012 (A) • The Kenya National Climate Change Response Strategy of 2010 (P) 	<ul style="list-style-type: none"> • Technical Guidelines on the Management of Used Oil and Oil Sludge in Kenya (NEMA 2014) (A) • National Sand Harvesting Guidelines 2007 (F) 	
Socioeconomic	<ul style="list-style-type: none"> • TVET Act 2013 (A) • Bilateral Air Services Agreement(s) (AG) • Yamoussoukro Decision/Declaration (IP) • Promote research and innovation in the maritime sector (AP) 	<ul style="list-style-type: none"> • County Government Act 2012 • Kenya Maritime Authority Act 2006 (Revised Edition 2012) (A) • The Merchant Shipping Act No. 4 of 2009 (A) • The National Transport and Safety Authority (NTSA) Act, 2012 (A) • Republic of Kenya National Tax Policy (A) • Air Passenger Service Charge Act (A) • Economic regulatory framework (F) • Single African Air Transport Market (SAATM). 	<ul style="list-style-type: none"> • The Employment Act, 2007 (A) • Labour Relations Act No. 14 Of 2007 (A) • Labour Institutions Act No. 12 Of 2007 (A) • Persons with Disabilities Act No. 14 OF 2003 (A) • Work Injury Benefits Act Chapter 236 (A) • Industrial Court Act, 2011 (A) • The Children Act No. 29 f 2022 (A)The Land Act, 2012 (A) • The National Land Commission Act, 2012 (No. 5 of 2012) (A) • Community Land Act 2016 (A) • The Environment and Land Court Act, 2011 (A) • Access to information Act 2016 (A)

		<ul style="list-style-type: none"> ● Unmanned Aircraft Systems regulatory framework (F) ● Kenya National Social Protection Policy, 2011 (P) ● National Information, Communications and Technology (ICT) Policy (P) ● KAA Act (A) ● Passenger Service Charge Act (A) ● UNESCO Convention for the protection of the World Cultural and Natural Heritage (1972) (IC/A/P) ● The National Poverty Eradication Plan of 1999 (P) ● The Poverty Reduction Strategy Paper (PRSP) of 2000 (P) ● Children Act 2001, 	<ul style="list-style-type: none"> ● Commission of administrative Act No 23 of 2011 (A) ● The prevention and protection and assistance to Internally Displacement Persons and affected communities Act, IDP ACT 2012 ● Universal Declaration of Human Rights (IC/A/P) ● ILO Declaration on Fundamental Principles And Rights At Work (IC/A/P) ● International Covenant on Economic, Social and Cultural Rights (IC/A/P) ● African Charter of Human and People’s Rights (IC/A/P) ● The Kenya National Oceans and Fisheries Policies, 2020 (IC/A/P) ● Nation Cohesion and Integration Act 2011 (Amendment 2012) (A) ● United Nations Conventions to Combat Desertification (UNCCD) (IC/A/P) ● World Heritage Convention (IC/A/P) ● Sessional paper No 1 of 2015 on the National Policy on Elimination of Child Labour (SP) ● Sessional paper no 3 of 2014 on National Policy and Action Plan on Human Rights ● The Declaration on the Rights of Indigenous Peoples (UNDRIP), 2007
Occupational Health and Safety	<ul style="list-style-type: none"> ● East African Community Vehicle Load Control Act, 2016 (A) ● Traffic Act 2015 (A) ● HIV/AIDS Policy of 2009 (P) 	<ul style="list-style-type: none"> ● Employment (Amendment) Act, No. 15 of 2022 (A) ● The Occupational Safety and Health Act, 2007 (A) ● Vision 2030 (S) 	<ul style="list-style-type: none"> ● County Governments Disaster Management Bill (B) ●

	<ul style="list-style-type: none"> • Civil Aviation Act No. 21 of 2013 (A) • Civil Aviation (Amendment) Act No. 46 of 2016 (A) • Kenya Airports Authority (KAA) Act CAP 395, of 1991 (A) 	<ul style="list-style-type: none"> • Energy (No. 1 of 2019) (A) • Petroleum (No. 2 of 2019) (A) • Occupational Safety and Health Act (OSHA), 2007 (A) • Data Protection Act 2019 (A) • Civil Aviation Security Regulations (R) • Security Laws (Amendment) Act 2014 • The Civil Aviation Act (No. 21 Of 2013)-National Civil Aviation Security Policy (NCASP) (P) • Annex 9 of ICAO (F) • Public Health Act 	
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Key

A	Act of Parliament	S	Strategy
AG	Agreement	SP	Sessional Paper
B	Bill	AP	Action Plan
F	Framework	IC/P/A	International Convention/Policy/Agreement
P	Policy	R	Regulations

In the context of transport sector in Kenya and based on the table above, the table below indicates a summary of integration levels and the priority matrix for environmental, socio-economic and health and safety considerations is summarized below;

Table 11: Comparative Table for Prioritization

ENVIRONMENT				
	Fully Integrated	Moderately Integrated	Not Integrated	Total
Policy	3	-	-	3
Regulations	-	-	-	0
Sessional Paper	-	-	-	0
International Convention/ Agreement/ Policy	5	6	5	16
Legal Frameworks	7	7	-	14
Strategic and Action Plans	1	-	-	
TOTAL	16	13	5	34
SOCIAL				
	Fully Integrated	Moderately Integrated	Not Integrated	Total
Policy	-	5	-	5
Regulations	-	-	-	0
Sessional Paper	-	-	2	2
International Convention/ Agreement/ Policy	-	2	8	10
Legal Frameworks	-	10	15	25
Strategic and Action Plans	1	-	-	1
TOTAL	1	17	25	43
OCCUPATION SAFETY, HEALTH, AND SECURITY				
	Fully Integrated	Moderately Integrated	Not Integrated	Total
Policy	1	-	-	1
Regulations	-	-	-	0
Sessional Paper	-	-	-	0

International Convention/ Agreement/ Policy	-	1	-	1
Legal Frameworks	5	9	1	15
Strategic and Action Plans	-	1	-	1
TOTAL	6	11	1	18

The PPP analysis established that socio-economic policy, legislative and regulatory frameworks at both national and international levels, and considerations are the most neglected in the INTP. As indicated above, twenty-five (25) aspects are completely left out, one (1) aspect is integrated, and fourteen (17) are moderately integrated. The environmental component ranks second in terms of priority within the thirty-one (34) identified obligations. Of these, fifteen (16) are fully integrated, eleven (13) are moderately integrated, and five (5) are not integrated at all. On occupational health and safety concerns, eighteen (18) aspects of the framework were picked, with results indicating that six (6) were fully complied with, eleven (11) moderately integrated, and only one (1) showed complete non-compliance.

Drawing from the above analysis, conclusions indicate the following in relation to assessing compliance or/and non-compliance to the NEMA and World Bank SESA framework;

Table 12: Levels of Conformity

Item Code	World Bank Environmental and Social Standard (ESS)	Level of Conformity		
		Integrated	Moderately integrated	Not-integrated
ESS1	Environmental and Social Standard 1: Assessment and Management of Environmental and Social Risks and Impacts		✓	
ESS 2	Environmental and Social Standard 2: Labour and Working Conditions			✓
ESS 3	Environmental and Social Standard 3: Resource Efficiency and Pollution Prevention and Management		✓	
ESS 4	Environmental and Social Standard 4: Community Health and Safety	✓		
ESS 5	Environmental and Social Standard 5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement		✓	
ESS 6	Environmental and Social Standard 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources	✓		
ESS 7	Environmental and Social Standard 7: Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities		✓	
ESS 8	Environmental and Social Standard 8: Cultural Heritage		✓	
ESS 9	Environmental and Social Standard 9: Financial Intermediaries.		✓	
ESS 10	Environmental and Social Standard 10: Stakeholder Engagement and Information Disclosure			✓
WORLD BANK OPERATIONAL PROCEDURES				
		Integrated	Moderately integrated	Not-integrated
OP/BP 4.01	Environmental Assessment		✓	
OP/BP 4.10	Indigenous Peoples			✓
OP/BP 4.11	Physical Cultural Resources			✓
OP/BP 4.12	Involuntary Resettlement			✓
	WORLD BANK ENVIRONMENTAL, HEALTH, AND SAFETY GUIDELINES (EHS Guidelines)			

	1.	Environmental
	1.1 1.2 1.3 1.4 1.5 1.6. 1.7 1.8	Air Emissions and Ambient Air Quality Energy Conservation Wastewater and Ambient Water Quality Water Conservation Hazardous Materials Management Waste Management Noise Contaminated Land
	2.	Occupational Health and Safety
	2.1 2.2 2.3 2.4 2.5 2.6 2.7 2.8 2.9	General Facility Design and Operation Communication and Training Physical Hazards Chemical Hazards Biological Hazards Radiological Hazards Personal Protective Equipment (PPE) Special Hazard Environments Monitoring
	3.	Community Health and Safety
	3.1 3.2 3.3 3.4 3.5 3.6 3.7	Water Quality and Availability Structural Safety of Project Infrastructure Life and Fire Safety (L&FS) Traffic Safety Transport of Hazardous Materials Disease Prevention Emergency Preparedness and Response
	4.	Constriction and Decommissioning
	4.1 4.2 4.3	Environment Occupational Health and Safety Community Health and Safety

This being a Policy SESA, the analysis focused more on design, implementation and regulation and their impacts on the environment, social and health and safety. The matrix for prioritization levels and extent that emerged from the discussion showed the following thus;

1. Socio-economic → 2. Environmental → 3. Occupational health and safety

The prioritization matrix should thus consider full compliance with NEMA and World Bank E&S standards and guidelines by first integrating environmental, socio-economic and occupational health and safety factors considering some aspects have been neglected. The INTF should thus adequately mainstream the above issues.

4.2 SESA findings influence on the INTP-making process.

Policy-making entails three main stages namely; Agenda setting, design /formulation, and implementation, while SESA plays a crucial role in promoting sustainable development by integrating environmental and social considerations into the early stages of policy, plan, and program development. The proactive approach helps ensure that decisions made today don't have unintended negative consequences for the environment or society in the future. SESA thus assists policymakers in helping identify, address, mitigate, and monitor adverse effects emanating from plans, projects, and policies. The INTP emphasizes the need for a multimodal transport system that seamlessly integrates different modes of transportation, including road, rail, air, and waterways. It aims to improve connectivity, accessibility, efficiency, and safety within the transport sector. The INTP outlines several key objectives, including the development of transport infrastructure, enhancing transport accessibility and affordability, promoting road safety, improving logistics and supply chain efficiency, and fostering sustainable transport solutions. Further, it emphasizes the importance of public-private partnerships in achieving the policy's goals.

With regards to the extent to which the SESA findings have and continue to influence the INTP in ensuring that the above is achieved, it was established that within the framework of the policy-making process, the INTP has successfully gone through the agenda-setting stage where SDoT, through Sessional Paper no 2 of 2012 was mandated with the responsibility of coming up with an integrated national transport policy document cognizant of the need to harmonise and bring together the sector under one comprehensive policy. The Integrated National Transport Policy (INTP) has significantly transformed the country's transport sector. As Sessional Paper No. 02 of 2012 outlined, the policy was designed to enhance Kenya's development by integrating production, marketing, and population centres, facilitating mobility in rural and urban areas, and national and regional integration.

The comprehensive document spells and draws the roadmap to ensure that effective, affordable and straightforward regulations govern the transport sector. By subjecting the policy to a SESA process, the proposed policy's potential environmental and social impacts are identified. This will allow for effective mitigation and constant monitoring for ease of management. Such information further will help policymakers make more informed decisions less likely to have

negative consequences. The following is a highlight of how SESA findings have influenced and continue to influence the INTP making process.

Allows for informed decision-making

- ✓ **Identifies and assesses potential environmental and social impacts:** SESA proactively examines the positive and negative consequences of proposed strategic actions on the environment and communities. In the SESA on the INTP, such environmental and social impacts include but are not limited to habitat loss, emissions, air and noise pollution, the introduction of invasive species, and labour and gender issues, among others. This information will empower decision-makers in the transport sector to choose options with minimal adverse impacts and maximize potential benefits.
- ✓ **Evaluation of sustainability:** Considering environmental and social factors alongside economic aspects, this SESA will help ensure strategic actions align with long-term sustainability goals, promoting responsible development within the transport sector. In the road sector, for instance, peace-meal decisions, which are often costly yet short-term, will be avoided as long-term, more sustainable, and cost-effective projects are adopted.
- ✓ **Reduction of risks and costs:** Early identification of potential issues allows for proactive mitigation and management, avoiding costly delays, legal challenges, and reputational damage in the future. This is especially the case where envisaged projects may affect large proportions of people. Continuous analysis will identify future impacts and plan for mitigation and management. Overall, decision-makers in the transport sector will have comprehensive information to make strategic choices that are economically viable, environmentally sound, and socially responsible, contributing to long-term success and sustainable development.

Gives direction on Implementation and Monitoring plans

- ✓ The findings of this SESA will continually inform the transport sector in developing environmental and social management plans (ESMPs) and other mitigation strategies, ensuring their effectiveness throughout the implementation process of the INTP. By developing a simple yet comprehensive mitigation and monitoring plan, clear matrices,

agencies responsible, and cost implications, SDoT will plan for future transport infrastructure development in collaboration with other agencies.

Ensures Continuous Stakeholder consultation and deliberations

- ✓ **Call for inclusion, dialogue, and consensus building for acceptable results:** SESA involves consulting with affected communities, Indigenous Peoples, marginalized and vulnerable groups, and other stakeholders throughout the process. This calls for consultations and consensus building, as well as transparency. As per NEMA and World Bank safeguards, trust-building and inclusive engagements are important in building resilient communities. By constantly engaging communities, communities and project owners achieve a sense of ownership.
- ✓ **Addressing social concerns:** By actively engaging with stakeholders, SESA has identified labour concerns as a major aspect that had not been adequately handled in the INTP. SDoT has since included labour laws in the policy, and risks associated with labour are dealt with adequately in the document. This will help address potential social injustices, promoting equitable outcomes and minimizing negative social impacts.
- ✓ **Builds consensus and support:** Inclusive participation fosters understanding and ownership of strategic actions, leading to broader support and smoother implementation. Most of the existing projects have a wider support from surrounding communities owing to the sensitisation and awareness creation meetings that have been held during the SESA exercise. This sense of ownership will allow for faster and smoother implementation of future envisaged projects.

Ensures that ideals of good governance and respect of rule of law are respected

By setting clear environmental and social standards for policies, plans, and programs, SESA helps promote good governance and fosters accountability for those responsible. This will help ensure that transport infrastructure projects are carried out responsibly and sustainably within the transport sector. For instance, a SESA on all transport projects under the INTP will require that compliance with certain environmental and social safeguards is observed by all developers, failure to which the law is summoned. By ensuring developers are accountable for their actions, negative impacts associated with such development are mitigated and managed.

CHAPTER FIVE

IMPACT IDENTIFICATION ANALYSIS

5.0 Introduction

SESA has identified a wide range of environmental and social impacts, including physical, chemical, biological, and socio-cultural. However, it is important to note that each identified element may express its impacts either directly or indirectly, short-term or long-term. It was, therefore, crucial for SESA to recognize the potentiality of each of these factors for policy accommodation. Unlike other assessments, the SESA looked into some key potential/forecasted impacts, including environmental or social cumulative effects, and recommended these aspects be mainstreamed in INTP policy. Further, to fully capture expected future ecological changes such as biodiversity (e.g., species, ecosystems, or whole landscape ecological changes) and social (e.g., new settlements along road corridors, which create new dynamics), the SESA identifies the need to carry out sustainable modelling processes. The modelling is important as it gives ideas, especially on long-term changes expected as a result of project implementation. This can also allow simulations to be carried out, aiding mitigation and preparedness and defining sustainability roadmaps. Chapter five discusses the environmental and social impacts in the transport sector for mainstreaming in policy, which can be modelled for comprehensive decision-making. These were derived after intense stakeholder discussions.

Impact identification was based on analysis of both secondary and primary data collected. It was established that all transport sector development and maintenance projects have benefits and negative impacts. The emergence and growth of many towns and urban centres in Africa and beyond were occasioned by the construction of rails, roads, air, and other ports. Businesses have grown, and employment created. These developments generally contribute to poverty reduction and sustainable development, as per the United Nations' Sustainable Development Goals (2030). On the other hand, though, opening up of such places and spaces has had impacts such as loss of land, complaints over resettlement and involuntary relocation, erosion of culture, and encroachment of indigenous people who are rarely consulted and even where/when they are, this is done without considerations to Free Prior Informed Consent Principle (FPIC).

5.1 Environmental and social Consequences and risks associated with Existing and potential transport sector developments

Existing and forecasted transport infrastructure development poses benefits, negative consequences, and risks to society and the surrounding environment. This is especially the case when considerations for environmental, safety and, security, and social-economic issues are considered. The following were identified as existing and potential benefits of transport sector developments in all the six sub-sectors: Employment and job creation, Reduced travel and time cost, Improved access to social services, Improved business opportunities, Improved information access through communication, better social networks, Improved cultural exchanges, Cultural exchanges and interactions, Improved tourism and related activities.

Cumulative beneficial consequences of implementing the INTP include improved literacy levels, increased property value, improved connections, and creation of job opportunities, improved communication network, and a general reduction in environmental population. The negative cumulative impacts are; Population Increase and demand for housing, Increased traffic, Increased demand for water, Increased demand for sanitation and sewerage systems, Insecurity and criminality, Soil degradation, Increased metals in rivers and dams, Increased vibrations and noise, Loss of flora and fauna and related climate change impacts.

5.1.1 Climate change and transport

Climate change and the transport sector are closely linked, with the transport sector being responsible for approximately one-quarter of greenhouse gas emissions globally. The majority of the world's transport energy still comes from fossil fuels, and for 45% of countries, transport is the largest source of energy-related emissions.¹² The transport sector accounted for 57% of global oil demand and 28% of total energy consumption in 2019.¹³ The impacts of climate change, such as sea level rise, storms, rain, flooding, and higher temperatures, pose several immediate and long-term risks and impacts on the transportation sector's day-to-day operations. For example, the 1997-98 El Niño floods in Kenya caused damage equivalent to at least 11 per cent of GDP, including Ksh 62 billion in damage to transport

¹² United Nations (no. date) *Fact Sheet: Climate Change*. Available at [FACT SHEET Climate Change.pdf \(un.org\)](#)

¹³ Ibid

infrastructure.¹⁴ Higher temperatures can cause pavements to soften and expand, creating rutting, potholes, and warping of rail tracks, requiring track repairs or speed restrictions to avoid derailments.

Climate change affects transport sub-sectors in various ways as highlighted below;

Road Transport:

1. **Extreme weather:** More frequent and intense storms, floods, and heatwaves can damage roads and bridges, leading to closures and expensive repairs.
2. **Landslides and erosion:** Heavy rainfall can trigger landslides and erosion, further disrupting roads and jeopardizing safety.
3. **Traffic disruptions:** Heatwaves can cause road surfaces to buckle, while heavy rain can flood streets and underpasses, thus hindering traffic flow.

Rail Transport:

1. **Heat impacts:** Extreme heat can cause railway tracks to buckle, disrupting service and potentially leading to derailments.
2. **Flooding:** Heavy rains and floods can damage railway infrastructure, including tracks, stations, and signalling systems.
3. **Sea level rise:** Coastal railways are vulnerable to rising sea levels, leading to permanent service disruptions and infrastructure loss.

Air Transport:

1. **Extreme weather:** Heavy storms and turbulence can disrupt flights, causing delays and cancellations.
2. **Sea level rise:** Coastal airports face threats from rising sea levels, threatening runways, terminals and other critical infrastructure
3. **Visibility issues:** Increased wildfires and dust storms can reduce visibility, thus impacting air traffic safety.

¹⁴ Kenya Private Sector Alliance (April 2014). Climate Change and the Transport Sector. *Climate Change and Your Business Briefing Note Series*. Available at: [Climate-Change-and-the-Transport-Sector.pdf \(cdkn.org\)](#)

Maritime Transport:

1. **Sea level rise:** Coastal ports and harbours are at risk of flooding and inundation due to rising sea levels, which may disrupt operations and damage facilities.
2. **Extreme weather:** Storms and hurricanes can damage port infrastructure and disrupt shipping schedules.
3. **Changes in ocean currents:** Melting glaciers and ice sheets can alter ocean currents potentially impacting shipping routes and efficiency.

Inland Waterways:

1. **Droughts:** Decreased water levels in rivers and canals can limit the capacity of barges and other vessels to effectively operate thereby hindering freight transport.
2. **Flooding:** Heavy rains can cause excessive water levels, which may disrupt navigation and potentially damage infrastructure.
3. **Changes in weather patterns:** Shifts in precipitation patterns can lead to unpredictable water levels thus making it difficult to manage waterways

Non-Motorised Transport:

1. **Extreme Weather-**Too much heat causes death of animals and humans thus disrupting movement of goods and services.
2. **Landslides and erosion:** Environmental risks associated with landslides have often times disrupted movement especially in vulnerable places. Erosion and flash flooding in low places such as Narok has always disrupted movement of animals, carts and humans in rural areas.

The National Climate Change Action Plan (NCCAP) as a comprehensive strategy to address the country's climate change impacts aims to enhance resilience, reduce vulnerability, and maximize opportunities for sustainable development in the face of climate change. The NCCAP prioritizes adaptation measures to help Kenya cope with the inevitable impacts of climate change, such as droughts, floods, and rising sea levels. It also focuses on mitigation strategies to reduce Kenya's greenhouse gas emissions and contribute to global efforts to combat climate change. The NCCAP outlines a range of strategies across various sectors, including encouraging the transition to renewable energy sources like solar and wind power, protecting

and restoring forests to increase carbon sequestration and improve overall ecosystem health, and ensuring that infrastructure projects are designed and built to withstand the impacts of climate change.

5.1.2 Climate Vulnerability and risk assessment for the transport sector infrastructure

Climate change and related vulnerabilities may give rise to different types of results in form of disasters, which may have widespread consequences on different transport sectors and people. Coincidentally, the transport sector in itself is a major contributor to emissions that contribute to climate change, and consistently monitoring the two is important for both. The Climate Change Act of 2016 requires that climate change and related vulnerabilities be mainstreamed into development planning, decision-making, and implementation. The SESA established that the INTP document acknowledges the transport sector's contribution to climate change through emissions; likewise, climate change impacts significantly impact the transport sector. This SESA has, in addition, recommended that climate change disasters/risks assessments and vulnerability measures be executed on an annual basis. The table below identifies climatic change variables and associated impacts in the various transport sector modes.

Table 13: Climate Change Variables and Impacts Relevant to the Transport Sector

Climatic factor	Impact on Infrastructure	Priority sector
High rainfall	Flooding Impact on Road lanes, landslides, flooding of Runways; destruction of bridges, pedestrian and bike paths Physical damage to multiple assets,	1. Roads 2. Rail 3. Air 4. Pipeline 5. port and marine
Cloudiness/ Fog	Poor visibility; Cause accidents on roads, air and water transportation;	1. Roads 2. Air 3. Rail 4. Sea and marine 5. pipeline
Extreme Temperatures	Hot air affects airplanes take-off; Damage to tar and asphalt on roads damage to rail tracks; systems use electricity; electrical grid failures during extreme heat events can have major impacts on operations, such as signalling and communication equipment; Failure of other related electronic equipment, risk to workers and passengers.	1. air 2. Rail 3. Roads 4. Pipeline 5. Port and marine
Sea Level Rise	Leading to storm surge and flooding; Loss of function of multiple assets due to inundation, physical damage, corrosion/scouring of bridges, erosion of roads	1. Port and marine 2. Roads 3. Rail 4. Pipeline 5. Air
Storm surge	Loss of function of multiple assets due to inundation, physical damage to multiple assets, corrosion/scouring of bridges, and erosion of roads.	1. Air 2. Roads. 3. Rail 4. Pipeline
High winds	Temporary closure of roads, bridges, pedestrian/bike paths, airports, and rail services due to damage from debris and other hazards	1. Air 2. Roads. 3. Rail 4. Pipeline

5.2 Vulnerable and Indigenous Communities

While transport sector infrastructure development affects the general populace, most at-risk populations (MARPs), including women, boys, girls, and indigenous communities' cultures

and norms, are mostly impacted on by such developments. These groups thus deserve special mention and attention when development projects are discussed. This section discusses findings on potential social consequences and risks associated with future transport sector developments and failure to either conform or integrate related environmental, socio-economic and occupational health and safety policies on vulnerable groups and indigenous communities based on consultations held in all six selected areas. Part one of the discussion highlights the benefits of proposed transport infrastructure developments to the VGs, while part two discusses existing and potential risks associated with transport sector developments.

Owing to the cosmopolitan nature of these areas, the regions are inhabited by people from all ethnic groups found in Kenya as well as nationals from other countries. All six selected areas have people with diverse disabilities such as physical, visual, mental, cerebral palsy, low vision, hearing impairment, dwarfism, autism, and speech and language disabilities, among others. Marginalized and vulnerable linguistic/cultural groups in selected areas include;

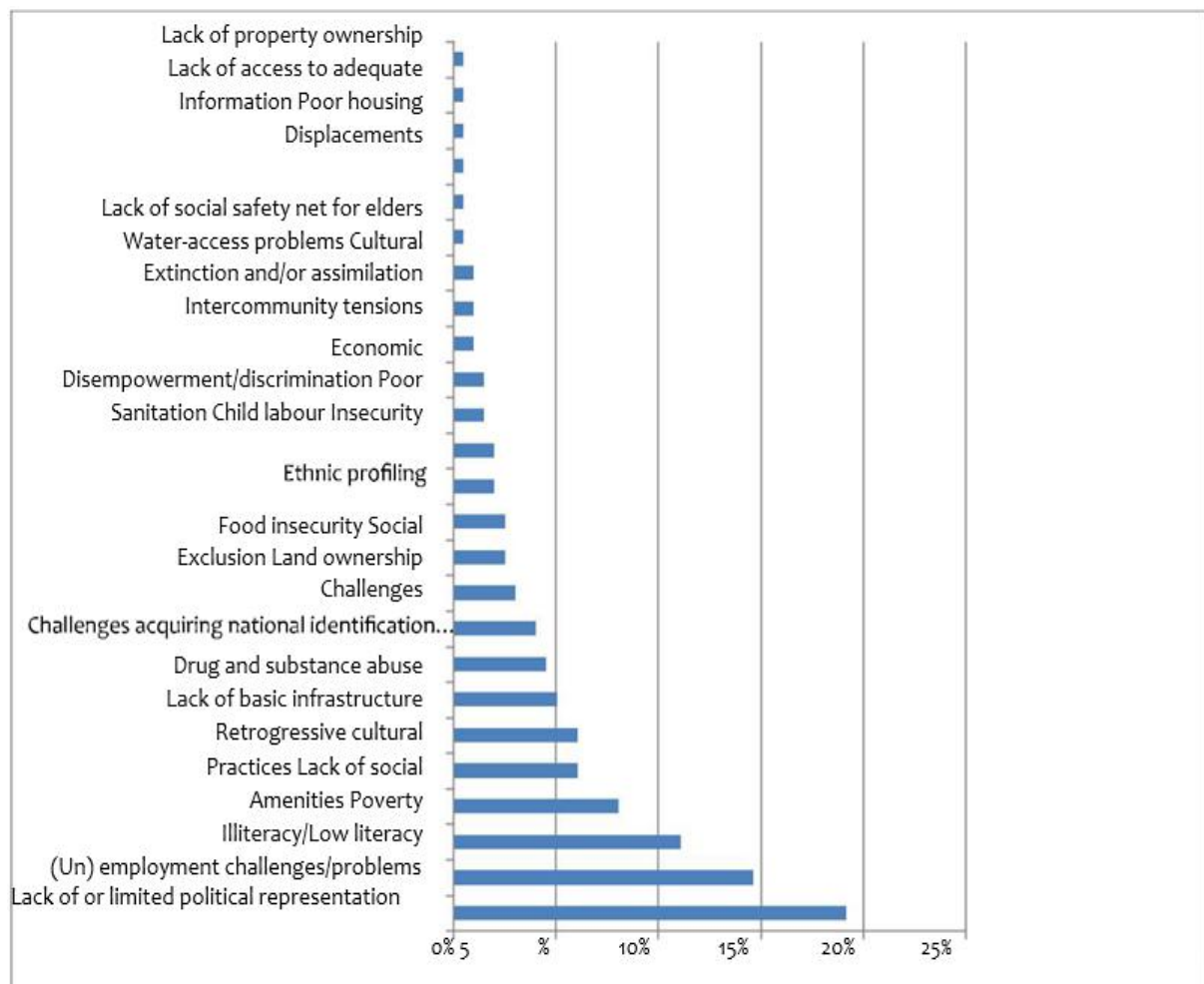
Table 14: Vulnerable communities and marginalized indigenous groups in selected areas

Name	Location
Kuria, Samburu, Maasai, Taita, Nubians, Borana and Somali	Nairobi
Turkana, Samburu, Nubian, Terik, and Mkendwa	Kisumu
Borana, Somali, Lesan, Dorobo, Gabra, Waata, Nubian/Arela	Isiolo
Yaaku, Boni, Orma, Pokomo, Sanya, Waata	Lamu
Makonde and Nubian	Mombasa
Okiek, Terek	Eldoret

High levels of poverty and low education levels characterize the communities identified in Table 14. Levels of employment and job opportunities among these marginalized and vulnerable groups are also low. In Isiolo, Lamu, Eldoret, and parts of Mombasa, land ownership and land rights contestations have engendered resource- and ethnic-based conflicts during and after electoral periods. Mombasa, Lamu, Isiolo, and Nairobi counties have high cases of undocumented individuals whose rights are hardly respected. In addition, cultural practices such as early marriages, female genital mutilation, teenage pregnancies, and child exploitation are prevalent. In Nairobi, poor housing and sanitation are experienced in slums and peri-urban

areas where marginalized communities live. Ethnic profiling and underrepresentation in local and national politics within these groups appear higher than among other communities in Kenya. Vulnerable groups reported minimal engagement with Free Prior Informed Consent (FPIC) requirements and even where consultations were done, marginalized groups and communities were hardly involved. The majority complained of coercion and manipulation to sign documents before reading and understanding the content therein. Some of the main issues affecting vulnerable and marginalized indigenous communities are presented in the figure below;

Figure 2: Issues affecting vulnerable communities and marginalized indigenous groups in selected areas



Source: National Gender and Equality Commission (2017).

Diverse socio-economic and cultural practices deserving protection because of the attachment that concerned communities have in selected locations, including governance systems such as Adulla by the Borana, use of Kaya¹⁵ among the Mijikenda, and nomadic lifestyles among the Maasai, Samburu, and Turkana.

Women, boys, girls, children, and the elderly also form part of these vulnerable groups living in these locations. They are equally affected by existing and transport infrastructure developments as follows;

5.3 Gender Issues

Generally, Kenya is a patriarchal society where females are considered inferior to men. This phenomenon is engendered by the way children are socialized from birth through the education system and religious and cultural practices. Men are thus required to occupy public spaces, while women, within the Victorian concept, occupy the private realm where no decisions are made. While the COK (2010) gives women an equal role, society still accords women with very few opportunities within the public sphere. Sexual-based harassment, exploitation and abuse among women and girls are thus prevalent and permeate all sectors of society, including in the transport sector. The modes of transport, for instance, provide few provisions for women and pregnant mothers. In addition, the transport sector infrastructure rarely takes into consideration the needs and aspirations of women and girls. Few women reported engagement in the various phases of transport infrastructure project development, including pre-construction, construction, and post-construction. Participants in FGDs also reported that the protection of women and girls during such projects only appears on paper. Yet, exploitation and sexual favours are common if one is to be engaged as a worker.

5.4 Part 1: Potential Benefits of Transport Infrastructure Development to Vulnerable Groups (VGs)

Forecasted transport infrastructure development provides important avenues for empowerment for vulnerable groups, including the elderly, women, indigenous communities, and children. Such potential benefits include;

¹⁵ Kaya is inscribed into the list of UNESO World Heritage Sites

- a. **Construction and improvement of social amenities-** Future transport development projects within all the selected areas have the potential to improve and result in the construction of new schools (private and/or public), health centres opening up of hitherto closed areas, and other social service provisions. In Isiolo, residents reported that they anticipate new schools to be constructed and improved around the Isiolo-Wajir-Mandera transport corridor. Health amenities and new Huduma centres may also contribute to the safety of VGs who have had to travel for long distances to access government services. Key informant interviews in Isiolo established that accessibility and inadequate education facilities had hampered the region's general development. With improved and/or refurbishment of health facilities and internet-connected schools, literacy levels are bound to improve in the Wote-Lamu, Bullapesa, Wabera, and Lagdima-Isiolo and along the Kisumu-Malaba route.
- b. **Employment opportunities-** Transport infrastructure development projects in Eldoret, Kisumu, Mombasa, and the Central Region of Kenya will greatly contribute to jobs for locals and other construction workers. In Lamu, Muranga, and Isiolo, where huge road development projects are forecasted and /or underway, which brings with it increased traffic, youth reported that many have joined or will join the industry as either skilled, semi-skilled or manual labourers. This will in turn, contribute to improved livelihoods for those employed and/or benefiting from the proceeds of the employees. Women and people living with disabilities in particular, acknowledged that while they may not benefit directly from employment, they would have an opportunity to set up on-site food kiosks, fruit *vibandas*, and roadside establishments to serve construction workers. The emergence of small urban centres and towns will also greatly benefit VGs who anticipate setting up business premises in these town centres. Residents of the proposed Kisumu-Malaba Road were emphatic that they anticipate employment opportunities for idle youth engaged in dangerous fishing along the expansive Lake Victoria basin.
- c. **Improved value of Land-** in Eldoret and Kisumu, PWDs who own land reported that they foresee increased land prices along construction sites. An elderly visually impaired man who owns land around the Lake Victoria shipping yard appreciated government efforts to revive the sector. He has since sold his land thrice the price he had anticipated. A widowed lady who owns land along Kenol-Marua road said that she is selling her 40*80 plot in Kenol at a price that will afford her two acres in the interior of Ithanga in Kakuzi. The Northern Corridor, which runs from Mombasa through Nairobi, Nakuru to Malaba at the Kenyan-Uganda border, portends great opportunities in terms of land

value for the locals who are hoarding land in anticipation of higher prices once the construction begins.

Land in Mundoro is improving in price. No one can afford an acre in this region. I am keeping my two-acre- farm to sell once this road is complete.¹⁶

- d. **Improved mobility of PWDs-** Movement by people with diverse impairments has been a big challenge in places with minimal modes of transport. With the construction of roads, rail and improved provisions on roads, airports and railways, few complaints will be reported regarding discrimination related to transport. In Nairobi, people with physical impairments hail KENHA for ensuring that there are provisions for friendly pavements for wheel-chaired users on all future roads. It is also envisaged that travel time and costs will greatly decrease, and safer and more secure routes will contribute to better mobility of VGs.
- e. **Easy access to information and interactions:** Transport development projects generally come with the opening up of marginalized locations. For instance, road construction works bring services such as telecommunication masts, improved connectivity through fibre optic cable and electricity to otherwise closed areas. With the opening-up of villages in Eldoret and Kisumu by the forecasted SGR, for example, residents anticipate that they will have better interactions through information exchange on the phone and otherwise. VGs in Isiolo Tsavo and Emali note that several Safaricom masts have been erected in remote areas where communication has been a challenge. Locals in Isiolo, for instance, indicated that ten years ago, the use of mobile phones was practically impossible. However, with the anticipated upgrading of Isiolo airport, mobile network improvement has been noted, improving interactions between and among people within and outside the county. Elderly Somali women in Isiolo, Muranga, and Kisumu reported an improvement in how they access cash transfers from the government owing to forecasted road infrastructure developments in respective areas. In each of these areas, there are more Huduma Centres, and others are still anticipated.
- f. **Increased business opportunities and livelihoods-** The construction of transport infrastructure will contribute to the emergence of business opportunities in terms of

¹⁶ An elderly woman in Kiambu along the Mau Mau Road under construction

investors, improvement of local economies, increased modes of transport, and increased business activities. Shops, gas stations, hotels and motels will spring up in hitherto closed areas and this will help improve the livelihoods of those living along areas year-marked for transport infrastructure development. The proposed Northern Corridor passing through Eldoret has already seen locals position themselves for business while investors are prospecting with land along the corridor to either resale or construct business premises.

- g. **Improved security-** All six selected areas suffer from rampant insecurity associated with poor lighting, vehicle breakdown and congestion. Unemployed youth are also accused of forming and/or joining criminal gangs that terrorise motorists, especially at night. In Mombasa, Lamu, Isiolo and Nairobi, cases of Al Shabab infiltration into local youth have increased. The proposed construction/expansion of roads and railways and improvement/upgrade of airports will open up dark alleys and reduce criminal gangs operating in these areas. In Nairobi, for example, 94% of VGs consulted were emphatic that the proposed improvement and construction of roads and upgrade of JKIA will reduce insecurity in the city. VGs suffer more from insecurity than other citizens do, and transport development will thus benefit the VGs tremendously.
- h. **Increased Livestock Production and Management-** in Isiolo, elderly men reported that poor transport has hampered the growth of the livestock industry. They lamented the low prices of camels, cows, and goats to intermediaries who blamed poor roads and means of transport for the low prices. Borana and Somali herders complained that their livestock yields are low compared to other communities because accessibility to improved foliage and water is almost impossible. The improved transport system will contribute to not only the opening-up of these areas but also through partnerships with the county government of Isiolo; livestock shade, watering points and slaughterhouses will be erected, thus improving the quality and quantity of livestock.
- i. **Improved cultural interactions, tourism and exchange-** Marginalized indigenous communities living in the forests rarely interact with other communities. Proposed infrastructure development in forested and remote areas where such groups reside will open up these traditional communities to interact with mainstream groups and borrowing of cultures will benefit both groups. Intermarriages, trade engagements and wider consultations with indigenous minorities will also lead to an appreciation

of cultural norms and values, which require preservation for posterity. Along the Mombasa-Lungalunga-Malindi road, the Giriama living around the Gedi ruins reported that they welcome road projects because they will help them reach out to other communities in helping them preserve and protect the rich cultural diversities existing in the area. Those residing around the Arabuko-Sokoke forest welcome the expansion of Malindi airport to open up the area to improve tourism.

5.5 Part 2: Potential Risks of Transport Infrastructure Development to Vulnerable Groups (VGs)

Vulnerable and marginalized groups and communities, however, lamented increased cases of violence, exploitation, and further marginalization based on gender and vulnerabilities as follows;

1. Gender Based Violence (GBV)

Gender-based violence (GBV) comprises acts that degrade, violate, and deny women, boys, and girls the rights and freedoms of engagement in an activity. It also entails lack/inadequate protection, participation, and prevention of acts that may be detrimental to the well-being of women, boys, and girls. They include such acts as indecent touching, rape, emotional abuse, physical insults, threats based on sexual orientation, and exploitation. Overall, consultations with village elders, women, members of civil society organizations, government officials, youth representatives, religious leaders, county government representatives, and the general citizenry in all the selected areas indicate that everyone is aware of at least a case of GBV in their locality.

- a. **Sexual exploitation of women and girls-** Communities in Isiolo decry the possibility of sexual exploitation and abuse when seeking employment around construction sites. This is in the form of rape, indecent touching of private parts, and demand for sex for employment as well as use of derogatory words and phrases to women labourers. Stakeholders in Isiolo, Lamu and Mombasa who majorly subscribe to Islam also added that requirements to dress in aprons and trousers infringe on their rights to dressing and religious orientation. In Nairobi and Eldoret, women and girls lament the demand for sexual favours from male construction workers in return for promotion to higher levels, specific lighter

assignments and late arrival to workplaces. This happens between supervisors and labourers and among workers themselves (horizontal).

- b) **Physical assault-** It was established that existing and forecasted transport developments have the potential for insults from bosses and abuse from fellow workers. Among VGs interviewed 92% reported that while they wish to work in construction sites, they might experience abuse related to their slow pace of delivery, clumsiness and lateness in arrival at workplaces. Such abuse includes slapping, pinching, acid and metal attacks and cuts. Male workers have in particular, been accused of such assaults.
- c) **Psychological/emotional abuse-** Potential workers in Nairobi and Kisumu reported that they experience or may go through threats, intimidation, humiliation and gestural abuse related to sex. A physically impaired lady along Mlolongo reported that men often use the middle finger to humiliate and intimidate them. Such emotional abuse is experienced between and among workers as well as by seniors in sites.
- d) **Child labour and exploitation-** In Isiolo and Kisumu, children were used to carry stones, dig trenches, and as porters in sites. Parents of such children reported that the proposed development along Kisumu-Malaba Road would see many children drop out of school to be used in construction sites. With high poverty levels, the propensity of adults' exploitation of children is also high in Isiolo, Mombasa and Lamu. In Nairobi, cases of the use of children by long-distance drivers for sex are common.
- e) **Early and teenage marriages-** In Isiolo and Lamu, cases of older males marrying and impregnating teenage girls are prevalent. Parents and locals generally argue that with the opening up of the villages and remote places along construction sites, children and young adults may be exposed to early sex and prostitution, which leaves them with sexually transmitted diseases and children born out of wedlock. Locals in Isiolo and Lamu are worried about the potential of proposed road constructions to contribute to early marriages as girls seek favours from male workers and bosses.
- f) **Sexual Harassment-**Nairobi, Kisumu and Eldoret assessment established that sexual harassment also takes the form of unwelcome sexual advances, verbal and physical conduct associated with reproductive organs and other subtle ways that reflect differentiated power analysis between a worker and their boss. When sex is not mutual and is not between consenting adults any act associated with it is considered harassment. Proposed transport sector developments have the potential to engender such acts.
- g) **Sexually Transmitted Diseases, HIV/AIDs and Other Diseases-**Generally, development projects have a high potential of bringing new people and behaviours to selected

development sites. Transport sector development projects in Nairobi, Nakuru, Mombasa, Eldoret and Kisumu, among others, have been blamed for bringing about foreign maladies and infectious diseases in project sites. Water bodies left by construction workers have the potential to breed mosquitoes and increased unprotected sexual activities have caused sexually transmitted diseases like HIV/AIDs. Sanitation issues associated with roadside food vendors, sewage systems, open defecation and associated dirt may also cause diarrhea, vomiting and general malaise. In Lamu, locals reported an increase in STIs during the commencement of the LAPSSET corridor due to an influx of foreigners.

- h) Youth-**In the construction of mega transport infrastructures, such as the proposed extension of SGR from Naivasha to Malaba border, and increased related modes of transport, youth complained of marginalization and engagement in low-paying menial jobs with little pay. This is because they are often stereotyped as 'lazy'. In Kisumu, there was a concern that some KENHA, KURA and KERRA personnel have not engaged local youth while constructing major roads. The youth in all selected regions thus reported non-inclusion and marginalization on the basis of lack of experience. They lament that this phenomenon may repeat itself during the execution of the proposed transport infrastructure in the regions.
- i) Denial of opportunities to PWDs and indigenous Communities-**Persons with disabilities PWDs are rarely considered for employment. This is despite the COK (2010) explicitly stating that every individual has the right to employment on an equal basis. Employers are, however, wary of employing such people with claims that they are slow or have more risks in the workplace. People living along existing and proposed project areas along Kenol-Marua and Mombasa-Lunga-Lunga roads and Isiolo-Moyale corridors reported that only a handful of PWDs are employed in such sites. People with physical disabilities were concerned that few transport sector-related construction projects accommodated them as employees.
- j) Displacement-**Displacements of people are a common feature in discussions about the construction of transport infrastructure. Attempts by governments to promote development often entail varying degrees of risk for some sections of society. In most cases, the victims are already impoverished due to marginalisation. Not only are they displaced, but their livelihoods are also disrupted, making it difficult to restore them even after resettlement. Resettlement and relocation have also been experienced when airports, railways, roads, pipelines and inland development projects are initiated. In Mombasa and Kisumu, where inland water transport is common, displacement without due regard to prices of land and other assets within affected households was reported. Locals in these areas envisage that

such unplanned displacement and chaotic relocation will be experienced during the proposed project planning and construction phases. In Ahero, locals complained that the expansion and construction of the Ahero-Kisii interchange they were minimally consulted during the pre-construction phase. The amount they were compensated was thus not commensurate with what they owned.

- k) **Accidents-** Accidents associated with pre-, during, and post-construction transport sector projects are common in all transport subsectors. During the construction and/or expansion of shipyards, ferry yards and airports, increased transportation of heavy machinery, lifting weights and animal crossing caused accidents of diverse magnitudes. In some instances, deaths and injuries have been reported in a large scale. In all sampled areas, the assessment concluded that all proposed transport sector projects have the potential to cause accidents, and such may be more severe for PWDs. In Isiolo and Mombasa, a Kaya elder reported that a wheelchair user fell in a ditch while riding at night near the Kilifi junction on the Mombasa-Lunga Lunga- Malindi road. During the expansion of Kisumu International Airport, a middle-aged man reported that a stone fell on a construction worker, which was never reported to authorities due to fear.
- l) **VGs' safety and security risks:** As reported earlier, VGs, especially indigenous communities, have complained about exposure to construction instruments. Among the Ogiek living in Uashin Gishu, locals noted that children often run after tractors, which poses great danger to their lives. The proposed transport development projects passing through the homes of such marginalized communities must be done after thorough sensitization of indigenous communities to minimise safety and security risks associated with such developments. Among the Somali and Borana herders, cases of deaths through lorry accidents in construction sites were reported. With the proposed expansion of Isiolo as a city, increased reports of animal accidents crossing construction sites are envisaged.
- m) **Disregard and Disturbance of Belief Systems, norms, and Culture:** The basic unit of survival for culturally marginalized communities is their belief systems, values and norms. Music and dance, dressing, burial practices and sites, initiation sites, worship centres, and eating habits form part of the intangible culture of indigenous communities. The Okiek, Yaaku, Waata, Borana, Somali, and Nubians all form part of the UNESCO endangered communities in need of protection. Proposed transport infrastructure projects traversing these communities could result in separation, loss of oral traditions, loss of burial and others, and degradation of cultural values. While immigration may lead to cultural exchange and interactions, it may threaten the survival of Indigenous Knowledge Systems

(IKS), which are so important for communal cohesion. Locals in Gedi, for instance, claim that their visitors can no longer access some communal cemeteries due to road construction projects in the area. Muslim communities in Lamu, Mombasa and Isiolo also reported that proposed projects might result in the infiltration of new cultures, such as the use of pork.

- n) **Destruction of Heritage Sites**-Heritage sites are threatened by large-scale infrastructure projects such as dams, pipelines, roads, and mega ports. These impacts emanate from direct physical disturbance or damage to the resources themselves. For example, the construction of the Mombasa –Malindi road has the cumulative effect of more settlements and commercial premises along the road corridor, increasing demand for water, power, and sanitation in Mombasa. Encroachment into the Kaya Forest, Arabuko-Sokoke and Gedi historical sites have also been cited as a possible impact of the proposed road expansion projects in the area. For example, if not undertaken carefully, the construction of Makupa Causeway would have dire consequences like water pollution in the creek, thus affecting water quality.

The table below summarizes the potential/existing risks and impacts as well as secondary risks associated with transport sector developments. It should be noted that while the SESA was carried out on a policy, the policy itself highlights important transport infrastructure development projects with far-reaching implications on the environment, socio-economic and safety livelihoods of people as indicated below. The table also indicates stakeholders' perceptions of the criteria for prioritization of environmental, social, and occupational health and safety issues in the context of the transport sector in Kenya.

Table 15: Environmental and social consequences and risks associated with existing and potential transport sector developments

ENVIRONMENTAL RISKS			
Targeted Sector	Potential existing risks/impacts	Secondary impacts	Timeline (short/medium/Long)
Road Transport	<ol style="list-style-type: none"> 1. Noise 2. Air pollution, noise and dust) 3. Large carbon emissions 4. Oil spillage 5. Hazardous waste disposal 6. Deforestation, 7. Soil erosion and degradation 8. loss of biodiversity 9. Increased water uses and diversion of water bodies 10. Solid waste generation 11. Increased energy use 12. Poor management of borrow pits and excessive surface run-off during road construction 13. Loss of flora and fauna 	<ul style="list-style-type: none"> ✓ Introduction of alien invasive species ✓ Beauty due to landscaping ✓ Changes in land use and new human settlement ✓ Water abstraction ✓ Sanitation and hygiene issues ✓ Change in infections/disease patterns ✓ Eutrophication of inland water bodies 	<ol style="list-style-type: none"> 1. Short term 2. Midterm 3. Short term 4. Short term 5. Long term 6. Long term 7. Long term 8. Long term 9. Short term 10. Short term 11. Short term 12. Short term
Rail Transport	<ol style="list-style-type: none"> 2. Excessive Noise 3. Air pollution 4. Large carbon emissions 5. Oil spillage 6. Hazardous waste disposal 7. Deforestation, 8. Poor management of borrow pits and excessive surface run-off during rail construction. 	<ul style="list-style-type: none"> ✓ Introduction of alien invasive species ✓ Climate change 	<ol style="list-style-type: none"> 1. short term 2. short term 3. Long term 4. Short term 5. Long term 6. Long term 7. Short term
Maritime Transport	<ol style="list-style-type: none"> 1. Loss of flora and fauna 2. Destruction of biodiversity Excessive Noise 	<ul style="list-style-type: none"> ✓ Introduction of alien invasive species 	<ol style="list-style-type: none"> 1. Long term 2. Long term

	<ol style="list-style-type: none"> 3. Air pollution 4. Water pollution 5. Large carbon emissions 6. Oil spillage 7. Hazardous waste disposal 8. Poor management of borrow pits and excessive surface run-off during rail construction; 	<ul style="list-style-type: none"> ✓ Coral bleaching, disease, and mortality of corals and fish ✓ Climate Change 	<ol style="list-style-type: none"> 3. Short term 4. Short term 5. Long term 6. Short term 7. Long term 8. Short term
Air Transport	<ol style="list-style-type: none"> 1. Excessive Noise 2. Air pollution 3. Deforestation 4. Water pollution 5. Large carbon emissions 6. Oil spillage 7. Hazardous waste disposal 8. Poor management of borrow pits and excessive surface run-off during rail construction 	<ul style="list-style-type: none"> ✓ Introduction of alien invasive species ✓ Climate change ✓ Displacement of migratory species along aerodrome routes 	<ol style="list-style-type: none"> 1. Long term 2. Long term 3. Long term 4. Long term 5. Long term 6. Short term 7. Long term 8. Short term
Pipeline Transport	<ol style="list-style-type: none"> 1. Soil pollution 2. Water pollution 3. Large carbon emissions 4. Oil spillage 5. Hazardous waste disposal 6. Poor management of borrow pits and excessive surface run-off during rail construction 	<ul style="list-style-type: none"> ✓ Introduction of alien invasive species ✓ Death of soil microorganisms ✓ Sanitation and hygiene issues 	<ol style="list-style-type: none"> 1. Long term 2. Short term 3. Short term 4. Long term 5. Short term 6. Short term
SOCIAL RISKS			
Targeted Sector	Potential existing risks/impacts	Secondary impacts	Timeline
Road Transport	<ol style="list-style-type: none"> 1. Loss of land including trees, plants, houses/buildings and crops 	<ul style="list-style-type: none"> ✓ In-migration ✓ HIV & AIDS 	<ol style="list-style-type: none"> 1. Long term 2. Long term

	<ol style="list-style-type: none"> 2. Child labour and exploitation of children 3. Displacement and conflicts 4. Increased human-wildlife conflicts 5. In and e-migration 6. Competition over resources 7. Potential tensions and conflicts 8. Cultural erosion 9. Destruction of tangible and intangible material culture 10. Destruction of ancestral territories 11. Encroachment on customary land 12. Displacement of indigenous peoples 13. Erosion of indigenous cultural practices and Heritage practices 14. Increased population 15. Increased insecurity and criminal acts 	<ul style="list-style-type: none"> ✓ Resource-based conflicts ✓ Gender-based violence/abuse and exploitation ✓ Food insecurity ✓ Insecurity and crime 	<ol style="list-style-type: none"> 3. Long term 4. Short term 5. Short and Long term 6. Long term 7. Long term 8. Long term 9. Long term 10. Long term 11. Long term 12. Long term
Rail Transport	<ol style="list-style-type: none"> 1. Land loss 2. Displacement 3. In and e-migration 4. Competition over resources 5. Potential tensions and conflicts 6. Cultural erosion 7. Destruction of tangible and intangible material culture 8. Destruction of ancestral territories 9. Encroachment on customary land 10. Displacement of indigenous peoples 11. Erosion of indigenous cultural practices and Heritage 12. Increased population 	<ul style="list-style-type: none"> ✓ In-migration ✓ HIV & AIDS ✓ Resource-based conflicts ✓ Gender-based violence and exploitation 	<ol style="list-style-type: none"> 1. Long term 2. Long term 3. Long term 4. Short term 5. Short term 6. Long term 7. Long term 8. Long term 9. Long term 10. Long term 11. Long term 12. Long term

<p>Mari term Transport</p>	<ol style="list-style-type: none"> 1. Loss of land 2. Displacement 3. In and e-migration 4. Competition over resources 5. Potential tensions and conflicts 6. Cultural erosion 7. Destruction of tangible and intangible material culture 8. Destruction of ancestral territories 9. Encroachment on customary land 10. Displacement of indigenous peoples 11. Erosion of indigenous cultural practices and Heritage 12. Increased population 13. Labour influx 14. Traffic congestion and disruption of service delivery 	<ul style="list-style-type: none"> ✓ In-migration ✓ HIV & AIDS ✓ Resource-based conflicts ✓ Gender-based violence and exploitation ✓ Sanitation and hygiene issues 	<ol style="list-style-type: none"> 1. Long term 2. Long term 3. Long term 4. Short term 5. Short term 6. Long term 7. Long term 8. Long term 9. Long term 10. Long term 11. Long term 12. Long term
<p>Air Transport</p>	<ol style="list-style-type: none"> 1. Loss of land 2. Displacement 3. In and e-migration 4. Competition over resources 5. Potential tensions and conflicts 6. Cultural erosion 7. Destruction of tangible and intangible material culture 8. Destruction of ancestral territories 9. Encroachment on customary land 10. Displacement of indigenous peoples 11. Erosion of indigenous cultural practices and Heritage 12. Increased population 	<ul style="list-style-type: none"> ✓ In-migration ✓ HIV & AIDS ✓ Resource-based conflicts ✓ Gender-based violence and exploitation ✓ Sanitation and hygiene issues 	<ol style="list-style-type: none"> 1. Long term 2. Long term 3. Long term 4. Short term 5. Short term 6. Long term 7. Long term 8. Long term 9. Long term 10. Long term 11. Long term 12. Long term

Pipeline Transport	<ol style="list-style-type: none"> 1. Loss of land 2. Displacement 3. In migration 4. Competition over resources 5. Potential tensions and conflicts 6. Cultural erosion 7. Destruction of tangible and intangible material culture 8. Destruction of ancestral territories 9. Encroachment on customary land 10. Displacement of indigenous peoples 11. Erosion of indigenous cultural practices and Heritage 12. Increased population 	<ul style="list-style-type: none"> ✓ In-migration ✓ HIV & AIDS ✓ Resource-based conflicts ✓ Gender-based violence and exploitation ✓ Sanitation and hygiene issues 	
OCCUPATION SAFETY, HEALTH AND SECURITY RISKS			
Targeted Sector	Potential existing risks/impacts	Secondary impacts	Timeline
Road Transport	<ol style="list-style-type: none"> 1. Sanitation and hygiene issues 2. Fire-related accidents 3. Uncollected waste material 	<ul style="list-style-type: none"> ✓ Occupational-related health risks and diseases 	<ol style="list-style-type: none"> 1. Short term 2. Short term 3. Short term
Rail Transport	<ol style="list-style-type: none"> 1. Sanitation and hygiene issues 2. Fire-related accidents 3. Uncollected waste material 	<ul style="list-style-type: none"> ✓ In-migration ✓ HIV & AIDS ✓ Resource-based conflicts ✓ Gender-based violence and exploitation 	<ol style="list-style-type: none"> 1. Short term 2. Short term 3. Short term

Marine term Transport	13. Oil spills 14. Noise pollution 15. Gas/air pollution 16. Marine and shore-line biodiversity loss 17. Solid waste dumping	<ul style="list-style-type: none"> ✓ In-migration ✓ HIV & AIDS ✓ Resource-based conflicts ✓ Gender-based violence and exploitation ✓ Sanitation and hygiene issues 	<ol style="list-style-type: none"> 1. Short term 2. Short term 3. Short term 4. Short term
Air Transport	<ol style="list-style-type: none"> 1. Sanitation and hygiene issues 2. Fire-related accidents 3. Uncollected waste material 	<ul style="list-style-type: none"> ✓ In-migration ✓ HIV & AIDS ✓ Resource-based conflicts ✓ Gender-based violence and exploitation ✓ Sanitation and hygiene issues 	<ol style="list-style-type: none"> 1. Short term 2. Short term 3. Short term
Pipeline Transport	<ol style="list-style-type: none"> 1. Oil spills 2. Gas/air pollution 3. Biodiversity loss 4. Uncollected waste materials 	<ul style="list-style-type: none"> ✓ In-migration ✓ HIV & AIDS ✓ Resource-based conflicts ✓ Gender-based violence and exploitation ✓ Sanitation and hygiene issues 	<ol style="list-style-type: none"> 1. Short term 2. Short term 3. Short term 4. Short term

It was concluded that road transport modes had the highest levels of environmental and occupational risks related to accidents, destruction of flora and fauna, and displacements. Negative environmental impacts had immense primary as well as secondary influences on land, water, air, biodiversity, and its entities. In marine ecosystems, loss of mangrove forests, corals, fish, sea grasses, sedges, and other marine fauna and flora is experienced due to development encroachments, displacements or pollution. It was noted that negative impacts are widespread across all the transport sector infrastructural activities and modes, and mitigations and management have been ongoing. Cumulative/synergistic/secondary environmental impacts such as land use change, coral breaching, loss of coastal fisheries, climate change, or secondary social risks such as emergent diseases or human migrations are significant. Their consequences serve to emphasize the need for early sectorial impacts mitigations, as occurrences are highly dependent on impacts of individual developments under the transport policy.

It was also emphasized that forecasted and existing transport sector development projects had greater consequences and risks for VGs. These include indigenous communities, marginalized communities and groups, women, the elderly, girls, youth, and children. PWDs have also been greatly affected by transport sector development in both positive and negative ways. In particular, gender-related violence and sexual abuse and harassment are common, while degradation of cultural diversities and heritage sites were reported as major issues of concern by communities living in the six selected areas. It was highlighted that issues related to occupational health, safety and security are envisaged to occur during the implementation phase of proposed transport sector infrastructure projects

CHAPTER SIX

ENVIRONMENTAL MONITORING AND MANAGEMENT PLAN (EMMP)

6.0 Introduction

An environmental management and monitoring plan is usually designed to show how and extent specific concerns and issues will be addressed through the process of formulation, design, planning, implementation and evaluation phases of a policy will be addressed. The proposed EMMP for the INTP thus draws and provides a nexus between strategic and cumulative impacts and the mitigation measures to be put in place to minimize the negative impacts and enhance the positive ones. The need to continuously and constantly update and review the EMMP to identify and address emerging issues should also be emphasised. An EMMP is a live document, and Amendments, deletions, and updating the plan to take care of new technologies, additional laws and regulations, international agreements, and protocols is thus imperative.

In this SESA report, we propose interventions at a broader level based on the expansive nature of the transport sector, which has many institutions, agencies, departments, regulators, and related stakeholders with diverse interests. The plan interventions are thus envisaged to provide strategic guidelines for the operations of all transport sector activities, particularly those that fall under SDoT. Responsible agencies and consultancies will draw project-specific guidelines during ESIA stages and must be presented to NEMA before any such project or plan is commended. This policy, however, will guide the operations of all such plans and projects under SDoT.

6.1 Scope and Objectives of the EMMP

The proposed plan of action is aimed at providing strategic guidelines for forecasted projects within the INTP, which comprises all transport modes, sectors, institutions and agencies. This also includes those related to rural, urban and other geographical zones of operations. The e-mobility sector is also mainstreamed within the INTP and is therefore taken care of by the proposed EMMP. The EMMP details the actions required to effectively address mitigation measures for environmental and social obligations and enhance the positive impacts recommended in SESA.

Specific objectives of this EMMP are to;

1. To provide SDoT with a tool for evaluating projects and plans under the INTP while considering relevant Kenyan environmental, occupational health and safety, and social legislations.
2. Assure stakeholders, particularly regulators and affected parties, of the client's commitment to environmental and social issues associated with the transport sector.
3. To emphasize to SDoT and other stakeholders their environmental and social role and responsibilities in the implementation of the INTP
4. Provide clear, easy-to-follow guidelines for effective management and protection measures of environmental and social issues and concerns associated with activities in the INTP.
5. Provide information related to the need for timely monitoring of all actions related to, among others; hazardous waste disposal, aerodromes, e-mobility issues(emissions), biodiversity conservation water and air erosion, occupational health and safety, oil spillage, deforestation socio-economic issues (labour, child labour, heritage conservation and management, population increase), and gender issues.

6.2 Environmental Monitoring Plan and Requirements

This SESA has proposed simple, straightforward, tangible and easily applicable mitigation measures and a plan for addressing possible negative direct, indirect, and cumulative impacts emerging from gaps identified from the analysis of the INTP and PPP analysis. The six transport subsectors forecasted projects would have specific environmental, social, health, safety, and security impacts. It is also envisaged that, generally, transport sector infrastructure has overarching impacts that cut across all the subsectors. In addition, while some may be long-term, as discussed earlier, others are short-term and reversible if well-managed.

The table below summarizes the environmental monitoring and management plan. This section identifies potential mitigation measures, monitoring and action plan requirements for each potential strategic impact of implementing the INTP. Suggestions for implementing appropriate legislation, including legal environmental standards for emissions into air, water, and soil; measures specifically targeting engagement with vulnerable groups; revised institutional

organization, streamlining environmental responsibility, and monitoring and evaluation of proposed mitigation measures, are also presented. In addition, specific indicators are identified to allow for the follow-up of the effectiveness of proposed mitigation measures. The agency responsible for the same is also indicated. The section also highlights good practice international standards, such as World Bank Safeguards, International Labour Organisation, International Civil Aviation Organisation, and gender policies to develop mitigation and monitoring measures. The assessment explains how these practices can enhance the existing Environmental and Social Framework for transport, taking into account the transport sector in Kenya. The interventions and action plans have been picked from diverse stakeholders and community members, as well as from the views of international partners from Dubai and South Africa. Methods used in collecting data were both participatory and inclusive of especially MARPs in the selected areas. Respect for cultural norms, values, belief systems, ideals, and principles of free prior informed consent was done to ensure ethical issues were adhered to. These are captured in the table below:

Table 16: Environmental Monitoring and Management Plan (EMMP)

EMERGING OVERARCHING ISSUES								
ENVIRONMENTAL ISSUES								
Issues	Monitoring	Mitigation	Indicators	Action Plan				Agency responsible
				Immediate	Short-term (1-2 years)	Medium (3-5 years)	Cost estimate 000,000	
1. Pollution (Air, water, noise)	✓ Review guidelines on the transport sector action plan	Compliance/adherence/ conformity to: <ul style="list-style-type: none"> ✓ NEMA policy on noise, air quality standards ✓ East African Community Protocol on Environment on Natural Resources (Amendment 206) ✓ Occupational Safety and Health Act, 2007 ✓ Public Health Act (CAP. 242) ✓ Civil Aviation Act No 21 of 2013, ✓ the Civil Aviation (Amendment) Act No. 46 of 2016, ✓ The Kenya Airports Authority (KAA) Act CAP 395 of 1991 and the various regulations covering diverse areas. ✓ The International Civil Aviation Organization (ICAO) ✓ Convention on Biological Diversity ✓ Ramsar Convention 	<ul style="list-style-type: none"> ✓ The levels of noised generated ✓ The quality of water and air. ✓ Levels of stakeholders' satisfaction 	✓			5	SDoT in collaboration with NEMA

		<ul style="list-style-type: none"> ✓ Convention on Migratory Species/Bonn Convention ✓ Bamako Convention on the Ban of the Import into Africa and the Control of Transboundary Movement and Management of Hazardous Waste within Africa (1997) ✓ Convention on Persistent Organic Pollutant (2001) 						
2. Hazardous waste	✓ Review guidelines on waste management	<p>Compliance/adherence/ conformity/Review to:</p> <ul style="list-style-type: none"> ✓ Sustainable Waste Management Act 2022 ✓ Bamako Convention on the Ban of the Import into Africa and the Control of Transboundary Movement and Management of Hazardous Waste within Africa (1997) 	<ul style="list-style-type: none"> ✓ Waste diversion rate ✓ Recycling rate ✓ Reduction in landfill waste 		✓		3	SDoT in collaboration with NEMA
3. Wet land loss and degradation	✓ Strengthen guidelines on water catchment management.	<p>Compliance/adherence/ conformity to:</p> <ul style="list-style-type: none"> ✓ Sustainable Waste Management Act 2022 ✓ Climate Change Act No 11 of 2016 ✓ United Nations Framework Convention on Climate Change (UNFCCC) ✓ Draft National Policy on Wetlands Conservation and Management (2013) ✓ Ramsar Convention ✓ Wildlife Conservation and Management Act 2013 ✓ National Environment Policy, 2013 	<ul style="list-style-type: none"> ✓ Changes in Water quality ✓ the number or variety of plant and animal species ✓ Water flow patterns e.g., water levels, 		✓		4	SDoT in collaboration with NEMA, and Water Resources Authority (WRA)

4. Destruction of flora and fauna	✓ Review guidelines on the management of flora and fauna.	Compliance/adherence/ conformity to: <ul style="list-style-type: none"> ✓ Convention on Biological Diversity (IC/A/P) ✓ Convention on Migratory Species/Bonn Convention (IC/A/P) ✓ Wildlife Conservation and Management Act 2013 ✓ Forest Act 2012 ✓ Environmental Management and Coordination Act of 2015 (CAP 387) and its Amendment ✓ Lusaka Agreement on the Cooperative Enforcement Operations Directed against Illegal Trade in Fauna (1994) 	✓ Number heritage sites affected		✓		5	SDoT in collaboration with NEMA, and Water Resources Authority (WRA), Kenya Wildlife Service, Kenya Forest Service
5. Introduction of invasive species	✓ Review guidelines for the prevention of and introduction of alien invasive species in the transport sector.	✓ Compliance/adherence/ conformity/Review to: <ul style="list-style-type: none"> ✓ National Biodiversity Strategy and Action Plan (NBSAP), 2000 	✓ Acreage of land acquired		✓		2	SDoT in collaboration with Kenya Plant Health Inspectorate Service (KEPHIS)
6. Deforestation	✓ Draw guidelines on the requirement of environmental rehabilitation plan (ERP)	Compliance/adherence/ conformity/Review to: <ul style="list-style-type: none"> ✓ Draft National Forest Policy, 2015 ✓ EMCA Cap 2015 ✓ National Biodiversity Strategy and Action Plan (NBSAP), 2000 ✓ National Master Plan for Conservation and Management of Water Catchment Areas 2012 ✓ Environmental Management and Coordination Act of 2015 (CAP 387) and its Amendment 	✓ Number of reported resource-based conflicts			✓	5	SDoT in collaboration with Kenya Wildlife Service and NEMA, Kenya Forest Service

7. Climate Change impacts (drought, floods and landslides)	✓ Review guidelines on adequate integration of climate change mitigation and mitigation in transport sector project EIA Report	Compliance/adherence/conformity/Review to: <ul style="list-style-type: none"> ✓ Sessional Paper of 2014 on National Climate Change Framework Policy ✓ Climate Change Act 2016 ✓ County Governments Disaster Management Bill 	✓ Annual reports of child exploitation cases	✓			7	SDoT in collaboration with Kenya Wildlife Service, KMA and NEMA, Kenya Forest Service
8. Oil spills	✓ Re-assess the guidelines on for the ecosystem protection plan.	✓ Compliance/adherence/conformity/Review to: <ul style="list-style-type: none"> ✓ The Merchant Shipping Act No. 4 of 2009 ✓ the Environmental Management and Coordination Act (EMCA), 1999 ✓ International Convention for the Prevention of Pollution from Ships (MARPOL) 	✓ Annual number of accidents reported		✓		2	SDoT in collaboration with Kenya Pipeline, KMA, KPA

SOCIAL ISSUES

Issues	Monitoring	Mitigation	Indicators	Action Plan				Agency Responsible
				Immediate	Short-term (1-2 years)	Medium (3-5 years)	Cost estimate	
1. Increase crime rates	✓ Draft guidelines on mainstreaming and engagement of enforcement agencies	Compliance/adherence/conformity/Review to: <ul style="list-style-type: none"> ✓ The Penal Code (Cap. 63) ✓ the Security Laws (Amendments) Act, 2014 	✓ Annual number of criminal cases reported	✓			1	SDoT in collaboration with Kenya Police Service, Directorate of Crime Investigation
2. Labour opportunities	✓ Re-assess guidelines on labour	Compliance/adherence/conformity/Review to:	✓ Number of local and foreign workers	✓	✓			SDoT in collaboration with Ministry of

	management plan	<ul style="list-style-type: none"> ✓ The Constitution of Kenya, 2010 ✓ The Employment Act, 2007 ✓ Labour Relations Act No. 14 Of 2007 ✓ Labour Institutions Act No. 12 Of 2007 Persons With Disabilities Act No. 14 of 2003 					4	Labour and Skills Development
3. Erosion of cultural norms, values, and systems	✓ Re-assess guidelines on the protection of cultural norms, systems, and values	<p>Compliance/adherence/conformity/Review to:</p> <ul style="list-style-type: none"> ✓ National Policy on Culture and Heritage, 2009 ✓ World Bank Policies, Indigenous Peoples Policy (O.P.4.10) ✓ UNESCO Convention for the protection of the World Cultural and Natural Heritage (1972) ✓ World Heritage Convention 	✓ State of existing cultural values, norms and systems		✓		2	SDoT in collaboration with Ministry of Sports, Culture and Heritage and National Museums of Kenya
4. Destruction of cultural and heritage sites and displacement of indigenous people	✓ Review rules on the protection of heritage and protection/participation and inclusion of indigenous peoples.	<p>Compliance/adherence/conformity/Review to:</p> <ul style="list-style-type: none"> ✓ National Policy on Culture and Heritage, 2009 ✓ World Bank Policies, Indigenous Peoples Policy (O.P.4.10) ✓ National Museums and Heritage Act 2006 ✓ World Bank's Operational Policy 4.11-Physical Cultural Resources ✓ UNESCO Convention for the protection of the World Cultural and Natural Heritage (1972) ✓ World Heritage Convention ✓ The Physical and Land Use Planning Act, 2019 	✓ Number heritage sites affected			✓	4	SDoT in collaboration with Ministry of Sports, Culture and Heritage and National Museums of Kenya

		<ul style="list-style-type: none"> ✓ World Bank's Operational Policy 4.12: Involuntary Resettlements ✓ Compliance with the Land Act 2012 						
5. Loss of land, and its entities including property.	<ul style="list-style-type: none"> ✓ In conjunction with NLC and Environment and Land Court, review guidelines of compensation/relocation and resettlement plans. 	Compliance/adherence/conformity/Review to: <ul style="list-style-type: none"> • Land Act 2012 • The Physical and Land Use Planning Act, 2019 	<ul style="list-style-type: none"> ✓ Acreage of land acquired 	<ul style="list-style-type: none"> ✓ 			7	SDoT in collaboration with National Land Commission, Kenya Institute of Surveying & Mapping and Ministry of Lands, Public Works, Housing and Urban Development
6. Closure of access routes	<ul style="list-style-type: none"> ✓ Review grievance redress mechanisms in conjunction with law enforcement agencies. ✓ Rethink the Bill of Rights as enshrined in the COK (2010) ✓ Draw guidelines on the African Charter on Human Rights 	<ul style="list-style-type: none"> ✓ 	<ul style="list-style-type: none"> ✓ 	<ul style="list-style-type: none"> ✓ 			1	SDoT in collaboration with County Government, KERRA, KenHA, KURA and KRB
7. Child labour and exploita	<ul style="list-style-type: none"> ✓ Review guidelines of enforcement laws on child 	Compliance/adherence/conformity/Review to: <ul style="list-style-type: none"> ✓ Children Act 2001 	<ul style="list-style-type: none"> ✓ Annual reports of child exploitation cases 	<ul style="list-style-type: none"> ✓ 			1	SDoT in collaboration with

tion of children	labour and exploitation	<ul style="list-style-type: none"> ✓ National Children Policy, 2010 ✓ Labour Relations Act No. 14 Of 2007 							
8. Increase road accidents	<ul style="list-style-type: none"> ✓ Review guidelines on an enforcement management plan 	<ul style="list-style-type: none"> ✓ Compliance/adherence/conformity/Review to: ✓ Traffic Act Chapter 403 	<ul style="list-style-type: none"> ✓ Annual number of accidents reported 	✓				4	SDoT in collaboration with County Government, National Police Service, KERRA, KenHA, KURA and KRB

OCCUPATION SAFETY, HEALTH, AND SECURITY ISSUES

Issues	Monitoring	Mitigation	Indicators	Action Plan				Responsibility
				Immediate	Short-term (1-2 years)	Medium (3-5 years)	Cost estimates	
1. Death and injuries	<ul style="list-style-type: none"> ✓ Review guidelines on work injury and benefits 	<ul style="list-style-type: none"> Compliance/adherence/conformity/Review to: ✓ Occupational, Safety, and Health Act, 2007 ✓ Work Injury Benefits Act, 2007 ✓ ILO Declaration on Fundamental Principles and Rights at Work ✓ Persons With Disabilities Act No. 14 OF 2003 	<ul style="list-style-type: none"> ✓ Annual number of deaths and injuries 	✓			5	SDoT in collaboration with, the National Police Service
2. Gender based violence and sexual harassment	<ul style="list-style-type: none"> ✓ Re-assess guidelines on GBSH engagement and protection management plan 	<ul style="list-style-type: none"> Compliance/adherence/conformity/Review to: ✓ Sexual Offences Act 2006 ✓ Gender Policy of 2011 ✓ Sexual and Gender-Based Violence Act 2017 	<ul style="list-style-type: none"> ✓ Annual number of GBHS cases reported 	✓			2	SDoT in collaboration with, the National Police Service and Ministry of Public Service, Gender

									and Affirmative Action
3. Violation of Rights of Children (VRC)	✓ Review guidelines on disease sensitization management plan	Compliance/adherence/conformity/Review to: <ul style="list-style-type: none"> ✓ Children Act 2001 ✓ National Children Policy, 2010 ✓ ILO Declaration on Fundamental Principles and Rights At Work 	✓ Cases reported on child labour and exploitation			✓	1	SDoT in collaboration with, the National Police Service	
4. STIs, HIV, and AIDS	✓ Draw guidelines on health impact assessment.	Compliance/adherence/conformity/Review to: <ul style="list-style-type: none"> ✓ Public Health Act ✓ HIV, and AIDS Prevention and Control 2006 	✓ Annual number of sensitization meetings	✓			3	SDoT in collaboration with Kenya National AIDS and STI Control Programme (NAS COP)	
5. Sanitation and hygiene	✓ Review guidelines on work injury and benefits	Compliance/adherence/conformity/Review to: <ul style="list-style-type: none"> ✓ Sustainable Waste Management Act 2022 ✓ Compliance with the Water Act, 2016 ✓ National environmental Sanitation and Hygiene Policy (NESHP) 2007 ✓ Kenya environmental Sanitation and Hygiene Policy 2016-2030 	✓ Records on quality of water ✓ Annual number of inspections	✓			2	SDoT in collaboration with Ministry of Health, and NEMA	

The EMMP table serves as a roadmap for ensuring the project adheres to environmental regulations and minimizes its ecological footprint. The sole responsibility of implementing the EMMP is the SDoT under the auspices of the Ministry of Transport, Infrastructure, Housing, Urban Development and Public Works. For efficient and effective implementation of the same, however, close collaboration and partnership with relevant stakeholders such as institutions and agencies, and working together to ensure that international and regional legislations and protocols are adhered to among others is maintained and upheld as indicated in the EMMP is also important. Ensuring linkages and collaboration among government agencies is crucial for SDoT because of the following:

1. Efficiency and Effectiveness:

Synergy and Shared Resources: By working together, the SDoT can leverage the expertise and resources of other agencies. For example, collaborating with the Ministry of Environment, Climate Change & Forestry can ensure new transport projects adhere to environmental regulations, avoiding costly rework later.

2. Improved Policy and Planning:

Holistic Approach: Different agencies have diverse perspectives. Collaboration ensures transport policies consider factors like land use (The State Department for lands and Physical Planning), economic development (State Department for Trade), and public safety (Ministry of Interior and National Administration). This leads to more comprehensive and effective plans. Additionally, the sharing of data across agencies allows for better-informed decisions. For example, the Ministry of Health could use traffic data from the Kenya National Highways Authority (KeNHA) to plan ambulance response times.

3. Successful Implementation:

Sustainability: Considering the impact on other sectors during planning helps ensure projects are sustainable in the long run. For example, a new road project might require collaboration with the Ministry of Water, Sanitation, and Irrigation to avoid disrupting water supply infrastructure.

CHAPTER SEVEN

STAKEHOLDER ENGAGEMENT AND PUBLIC CONSULTATIONS

7.0 Introduction

Consultations and deliberations with diverse stakeholders are important aspects of any planning, policy, and program decision-making process. The aim is to build relationships based on understanding a process, internalizing the pros and cons, and buying into the process and product. Picking and mainstreaming the needs, fears, and aspirations of as many stakeholders as possible while designing, implementing, and monitoring a policy document's strengths and weaknesses helps shape and improve a policy's overall impacts on the people it is intended to benefit. As opposed to a one-off event stakeholder, engagement and public consultation ought to be a continuous process throughout the process of formulation, design, implementation, monitoring, and evaluation of the policy. The transport sector in Kenya impacts and is impacted by almost everyone in the country. This is because movement is integral to human beings, whether in relation to goods and/or services.

Like any other policy document in Kenya, Article 69 of the Constitution of Kenya (2010) empowers the state to encourage public participation in environmental management, protection and conservation. The CoK (2010) also provides that parliament shall not bar anyone from participating in public affairs on any grounds such as age, race, colour, gender or political affiliation. National values and principles of governance thus include public participation as underscored in Article 10, which points at transparency, integrity, and accountability in ensuring sustainable development. The Article also underscores the need for human dignity, equity, social justice, inclusiveness, equality, human rights, non-discrimination and protection of the marginalized. Onyango and Schmidt (2007) note that public participation is at the heart of EMCA (1999). The authority places the public at the centre of environmental justice and management. The Authority contends that the public contributes by airing their environmental concerns and giving their insights, feedback, and perspectives, thereby contributing to informed environmental decisions that mitigate environmental impacts. The legal provisions for public participation under EMCA, 1999 rely on the five guiding principles thus;

- a. Polluter pay principle
- b. Precautionary principle
- c. Principle of public participation in the development of policies, plans, and processes for the management of the environment
- d. Cultural and traditional principles
- e. Principle of intergenerational and intra-generational equity

7.1 Public Participation and Stakeholder Engagement Plan

Public participation and stakeholder consultations for this SESA exercise were done through;

- a. Consultative forums which helped identify issues of concern by diverse stakeholders in the transport sector, sensitization on the intention to implement the INTP, for buy-in and improving the INTP document in readiness for implementation
- b. In-depth interviews with government officials, the public sector, lead agencies, and relevant ministries.
- c. Key Informant interviews with government officials responsible for designing, implementing, monitoring, and evaluating the INTP. This category will be responsible for the implementation of the SESA recommendations.
- d. Focus-group discussions with locals affected and/or likely to be affected by the INTP implementation
- e. Academic discussions and round table meetings were also held with experts in relevant areas. Experts are key in helping identify policy gaps and suggesting improvements and recommendations. They often carry out ESIAAs, ESAs, SESA, and related activities.
- f. County and local government officials gave insight into awareness creation and sensitization processes on the INTP. Politicians and community leaders understand transport sector politics and are important in supporting national governments in implementing policies.

7.2 Stakeholder and public participation findings and discussions

Issues for discussion revolved around the impacts of the transport projects on the lives and livelihoods of people of all genders, culture, and heritagization of tangible and intangible

community resources, land compensation, environmental challenges, and climate change issues associated with transport infrastructure development projects and related issues. Focus Group Discussions revealed diverse environmental and social impacts related to the INTP. Regarding compliance and conformity to World Bank and national environmental, socio and, health and safety standards, the matrix used integrated, moderately integrated and integrated options to determine the extent of SESA that specifically relates to a policy document, such as the INTP, all key environmental and social issues are considered to have potential impacts and therefore earn a space in the policy document.

7.3 Findings from Stakeholder and public participation engagements

The assessment utilized NEMA and World Bank standards and guidelines to identify impacts of existing and proposed transport projects on the environment, socio and health, and safety. On NEMA, stakeholders were emphatic that NEMA has constantly engaged them in discussions regarding Noise, air, oil spillage, loss of flora and fauna where proposed construction sites are envisaged, unclear rules of engagement with transport sector personnel regarding environmental issues, destruction of mangroves, inadequate training on management of environment and biodiversity among others. In Mombasa, Lamu, and Kisumu, the question of oil spillage by boats, ferries and ships was of particular concern. Local communities complained about the lack of direct communication lines to transport sector personnel regarding oil spillages and air pollution by these vessels. A concern regarding spillage by pipelines was also reported in Mombasa. Regarding social, safety and health issues stakeholders in the road and rail sectors complained about lack of clear guidelines on PWDs, expectant mothers and the elderly. The public was also concerned about accidents on major roads occasioned by stalled old vehicles with new licenses. There is need for proper follow up on enforcement on vehicles to be imported, rules of disposal of old vehicles, rules on licensing of *boda boda* plying all routes and proper coordination mechanisms with local government authorities in the transport sector.

Stakeholders generally agreed that with increased transport infrastructure constructions and implementation of policies on such projects, employment opportunities for men, women and youth have increased in all six areas. It was also established that movement from one area to the other has improved and the cost for such journeys has been reduced. There was also general agreement

that, together with improved communication and information dispatch, business opportunities and commerce were experienced. This has engendered unforeseen cultural exchanges where people move from one region to the other. In Mombasa, Lamu, and Isiolo, road network infrastructure development has led to the opening up of the local economy, and investors continue to flock to these areas. In Isiolo and Lamu, cases of insecurity have reduced tremendously as Al Shabab networks that were operating in remote areas retreat to Mogadishu. The increased air and road traffic continues and is envisaged further to open up insecure forested areas in Lamu and Mombasa, thus creating opportunities for tourism in the two locations. Locals in Eldoret and Kisumu, on their part, reported and envisaged improved service delivery with the implementation of the proposed INTP. At Kisumu International Airport, travellers revealed that implementing the INTP with proposals on new modes of transport would contribute to reduced travel time and costs of transporting goods. The opening of the Lake Victoria shipyard and subsequent activities will greatly open up the region for sub-regional business opportunities with Uganda, the Democratic Republic of Congo (DRC), Rwanda and Burundi.

Consultations with men, women, government workers and representatives of civil society organisations revealed that Kenya has a comprehensive climate change strategy and Act (2016) which provides a framework for an enhanced response to climate change and provides mechanisms and measures to improve resilience to climate change risks and promote low carbon development there exists minimal evidence showing the integration of climate financing priorities in the development of transport infrastructure. In addition, transport sub-sectors appear not to have clear guidelines of capacity-building needs for specific climate change experts. Departments and directorates have individuals with exposure but no requisite comprehensive training on environmental governance, climate financing and the use of transformative approaches to build and strengthen communities affected by transport sector infrastructure. The INTP clearly appreciates the impacts of climate change on the transport sector. Provisions for in-depth training, recruitment of experts in climate change and capacity building are, however, not clear. Mainstreaming climate change and sustainability in all subsectors and training staff on the same is imperative. This will help mitigate the negative impacts associated with climate change occasioned by transport sector development projects in the future. The conclusions from public and

stakeholder deliberations indicated that were based on EMCA 1999, World Bank and other environmental and social issues indicates as follows;

a. Assessment and Management of Environmental and Social Risks and Impacts

Respondents in Mombasa, Nairobi, Eldoret, Nairobi, Kisumu, and Bula Pesa in Isiolo noted that due to increased population, rapid urbanization, and related developments, transportation activities have correspondingly increased to move people, goods, and services. Positive impacts revolved around the rapidity of movements and access to goods and services. Risks notable in the transportation sector resulted mainly from carbon emissions and oil pollution from vehicles, shipping, and aeroplanes. In addition, respondents noted that there is inadequate provision of public sanitary facilities, especially toilets along major roads. This has both environmental and social implications due to the risk posed by open defecation and other improper disposals of human waste as well as the social risks associated with the lack of privacy for travellers. The INTP has partly dealt with these issues.

b. Assessment of Labour and Working Conditions

As a positive impact, respondents from all six sites acknowledged that the transport sector in Kenya has greatly contributed to the employment of both skilled and unskilled youth. Local communities along the LAPSSET corridor in Isiolo and Mombasa hailed the government and construction firms for reduced criminality due to growth in urban centres, which come with electricity and improved security agencies. Income-generating activities such as small-scale businesses have also sprouted along construction corridors. Road construction workers, however, lamented the lack of clear terms and conditions of employment. It was, in particular, noted that the number of foreign workers in KeNHA relative to the local labour force is high. In Mombasa, locals sought for a clear definition of 'local workers' in the INTP. In addition, they underlined the need for clear guidelines on terms and conditions regarding numbers, provisions, and qualifications of both local and foreign workers in the INTP.

c. Information Management and Disclosure

Generally, respondents were considered on levels and extend of engagements before, during and after plans, projects and policies are completed. They proposed that a standard guideline and operating procedures be continuously availed them and information disclose at all levels of the PPPL lifetime. This they noted would reduce conflict related to vagueness in some of the ministries, agencies and departments.

d. Needs assessment

Participants in interviews were concerned about their non-inclusion in determining community needs related to the transport sector. Communities living along the SGR to Mombasa complaint that if they would have been engaged in assessing the needs of the communities living along the line they would have better suggestions regarding exit points to the towns and villages.

e. Assessment of Resource Efficiency and Pollution Prevention and Management

Respondents agreed that transport activities and related developments generate pollution to air, water, and land and that effective waste management is imperative. Discussions, however, revealed that differing and overlapping mandates of concerned sectors in government hamper pollution prevention and management. As an example, a respondent from the County Government of Mombasa noted that despite seeking finances to develop some infrastructure for managing waste in areas such as Mwakirunge dumpsite in Mombasa, Kenya Airports Authority has been opposed to such developments, insisting that is not possible because the land is on a flight path. This is despite the fact that sanitary landfills are known to be better than open dumpsites. Further, materials that go to landfills are those left after rigorous recycling of wastes has taken place. There is, therefore, a great need to review the INTP to allow for combined multi-sectoral and inter-institutional efforts in waste management that would equally be responsive to the needs and concerns of people of all genders in the affected communities. In addition, an elaborate waste management plan is recommended in at all stages. This should be clearly spelled out in the INTP as follows;

Figure 3: Hazardous Waste Management Considerations



Source: Slideserve¹⁷

f. Perceptions on Land Acquisition, Restrictions on Land Use, and Involuntary Resettlement

The respondents noted that active, free prior informed consent in public participation is crucial, especially in the identification of local inhabitants who have lived for a long time in the areas to be annexed and/or affected to appropriately guide compensations. Interviews with locals in Mavueni in the Coast revealed that proper land inventories, for instance, for minerals, biological resources, and human-constructed physical structures, need to be carried out. Other resources, such as climate and water, should also be considered. All these would guide not only the determination of land value and compensation levels but also make sure that in case of need for resettlement, the affected people would be resettled in areas that closely resemble and prices commensurate to where they would be coming from. For instance, locals living along the Standard Gauge Railway (SGR) pathways complained that they were resettled in very dry lands. In Lamu, locals complained that they were forced to relocate during the construction of the incomplete LAPPSET. Along Kenol-Marua and the Mau Mau roads, residents say that while they were compensated, the amount given

¹⁷ <https://image.slideserve.com/773691/hazardous-waste-management-system-1.jpg>

h. Assessment of Biodiversity Conservation and Sustainable Management of Living Natural Resources

Transport, though important, has led to the physical fragmentation of landscape and the destruction of existing flora and fauna. It was noted that the destruction of forests, in particular, contributed to a decrease in groundwater resources along areas where major highway construction was underway. This also contributes to the loss of important green spaces required for environmental cooling effects. On whether landscape issues were adequately covered in the INTP, informants generally agreed that major issues were tackled. In some areas like Isiolo, however, informants lamented high temperatures and little if any, water in areas hitherto known as water reservoirs for animals. In Mombasa, respondents noted that the construction of LAPSSET and associated roads by KURA involved removing plant species and displacing of fauna. Port and shipping activities, in particular, were noted to affect marine flora and fauna, yet mitigation efforts were noted to be minimal. For example, areas around the port of Mombasa and Makupa had a complete absence of mangrove forests. Respondents noted that Mombasa has about ten ferries and many ships frequented the port. Car washing yards and garages were noted to release oils and heavy metals (such as lead), which greatly affected biodiversity. Airplane flights around the now expanded Moi International Airport, Mombasa, had noise levels that negatively impacted faunal diversity. In addition to dangers posed by large faunal species on flight paths near the airport, informants lamented that in other instances, access to biodiversity resources to local people had un-negotiated restrictions, thus lowering interest in biodiversity conservation by local people. There is, therefore, a great need to revisit the INTP to allow for provisions that encourage biodiversity conservation and sustainable utilization, with a high level of stakeholder involvement, especially in the local communities.

It was also observed that there is a need for vegetation to be planted, especially after the transport infrastructure has been constructed. However, there is a need to be context-specific because different areas require different types of vegetation. They also noted that huge trees should not be planted close to highways as they may pose a risk in terms of obscuring the vision of drivers and may cause accidents in case they fall on the highways. In addition, owing to this inadequate guideline on the type of vegetation to be planted, there was the risk of introducing invasive alien species when rehabilitating the environment.

In addition, respondents noted that areas around airfields should not have large trees planted to avoid attracting birds and other animals that may obscure the airfield and cause aircraft accidents.

i. Views on Transboundary Projects

Respondents noted that the national government and neighbouring states had undertaken long-term development projects, programs, and policies that seek to transform their countries into newly industrializing, middle-income countries to provide a high quality of life to all their citizens. The projects have transformative potential for the neglected North Eastern region of Kenya and all of the marginalized regions of East Africa. A major challenge mentioned in FGDs held in Isiolo was environmental safeguards and the rights and livelihoods of those whose lands the project would cross. Each element of the project carries a high economic and social cost, therefore requiring the creation of a joint coordinating commission.

j. Perceptions on impacts on Gender, Social Inclusion (GESI), and Stakeholder Engagement

Meetings and focus group discussions on stakeholder engagement brought forth potential and anticipated environmental and social impacts and possible mitigations required. In particular, residents of Wabera, Burat, and Bulla Pesa, after a brief presentation of the INTP, complained that they were not consulted during the stakeholder engagement exercise that was done in the initial stages. The locals added that land surveyors who recommended land prices for those to be compensated did not discuss cultural sensitivities that accompany land allocations in the area. A group of men also lamented the non-disclosure of important information regarding considerations for valuations of land around Isiolo airstrip and its environs. However, this was countered by government officers in Isiolo and Mombasa, including chiefs, assistant county commissioners, and other officers who provided lists of people who participated in stakeholder engagement meetings in the two places. However, while they insisted that local communities were adequately engaged, 64% of participants in these two locations disagreed. Of the 64%, women respondents were emphatic that their views were hardly considered and do not, therefore, feel that the INTP document reflects their views. It was agreed that through all stages of the exercise, communities from the areas identified for the project should be included during the dissemination and validation

exercises. It was also suggested that rather than have women's issues stand alone, the INTP should mainstream issues related to gender and social inclusion. On information disclosure, it was agreed that the importance of open and transparent engagement between the transport project proponents and project stakeholders be emphasized as comprehensively as possible. This would enhance project acceptance and significantly contribute to successful project design, operation, and sustainability.

k. Assessment of Cultural heritage and preservation of indigenous people perceptions

In Mombasa, the question of cultural heritage conservation and biodiversity was in particularly contentious. Of those interviewed, 42% were of the opinion that the construction of LAPSSET completely ignored the value of marginalized cultures. As traditional custodians of indigenous cultural values of local endangered communities, 95% of the informants suggested that the INTP be modified to include a nationalized heritage code that recognizes the contribution and place of marginalized communities and cultures.

l. Views on Financial Intermediaries

The role of local businesses, communities, and financial institutions, including local banks, Saccos, and financial consultants, emerged as an important issue for discussion. In Isiolo and Mombasa, key players in the transport sector and other government establishments stressed the need for public-private sector partnerships. In addition, while the informants from the two sectors praised the amiable consultations and community empowerment initiatives, including financing of small, medium, and large investors in the transport sector, it was noted that the potential of financial intermediaries had not been fully utilized by both the Government and local communities. This is largely due to inadequate capacity building and low awareness levels. Transport policy initiatives must include as a central role in awareness creation, sensitization, and capacity building on domestic capital and financial markets access, which will drive sustainable investments and growth. The role of financial Intermediaries in promoting good environmental and social management practices, including sound human resources capacity and management in transport projects, were noted.

The following environmental, socio-economic and health and safety issues were identified from the PPP and stakeholder analysis and they require to be prioritized by SDoT and partner ministries and agencies;

1. Establishment of clear guidelines to avoid risks associated with risks of pollution by the transport sector due to unclear guidelines on old vehicles, old poorly serviced trains, old and un-serviced ferries and boats
2. To avoid loss of biodiversity where new projects are envisioned, there is a need to map out existing flora and develop plans to manage the same. This is especially the case with conservation areas
3. Occupational health and safety problems, e.g., narrow recovery lanes on highways, the existence of many exit points on highways, lack of clear pedestrian lines on highways, few provisions and guidelines for PWDs in major transport modes.
4. Public participation and stakeholder engagement plans in the transport sector, e.g., internal and external, as well as the extent and levels of participation, need to be clearly spelled out
5. Development of a clearly time-bound master plan for the transport sector
6. Provision of clear guidelines on roles of agencies, regulatory and enforcement bodies

The environmental, socio, health, and safety issues raised by stakeholders and not catered for in the INTP are;

1. Plans for protection of vulnerable groups
2. Levels and extent of public and stakeholder engagement
3. Plans for dealing with narrow recovery lanes on highways
4. Need to have offices at the county level to follow up on guidelines and regulations on environment, socio, health, and safety issues in the transport sector

m. Capacity Building and Knowledge Transfer

In order to build capacity regarding environmental and social safeguards issues in the SESA report, the consultants have continuously built capacity among transport sector stakeholders, especially key transport policy, programs, and plans implementers through the involvement of the Ministry

of Roads and Transport during data collection abroad and dissemination/information materials and outcome reports.

Objectives of Building capacity has been to;

- a. To familiarize the transport sector participants and other relevant stakeholders with the outcomes of the “Strategic Environment and Social Assessment of the INTP.
- b. To explain the role of the SESA Framework as an appropriate instrument for identifying environmental and social issues and potential impacts (positive and negative) associated with transport sector management policies, programs, and plans.
- c. To Present the World Bank Environmental and social standards and applicable EMCA regulations relevant to SESA, including other relevant standards in place.
- d. To highlight ways of Mainstreaming/ Implementation SESA in Policy, Programs, and Plans, including public consultation and disclosure procedures,
- e. To present case studies from benchmark countries/internationally and also based on local experiences.

7.4 Categorise of Stakeholder consulted

Categories of stakeholders considered for consultation included; government institutions, , government agencies, ministries departmental staff, transport sector players, research institutions, trade union representatives, members of civil society, professional bodies and other individuals as follows; Kenya Urban Roads Authority (KURA), Kenya Rural Roads Authority (KURRA), Kenya National Highways Authority (KeNHA), Kenya Rural Roads Authority (KERRA), Nairobi Metropolitan Area Transport Authority (NaMATA), Kenya Ports Authority (KPA), Kenya Civil Aviation Authority (KCAA), Kenya Pipeline Company(KPC), Kenya Railways Corporation (KRC), Kenya Maritime Authority (KMA), Kenya Roads Board (KRB), National Industrial Training Authority (NITA), LAPSSET (Lamu Port South Sudan Ethiopia Transport) Corridor Development Authority), National Transport and Safety Authority (NTSA), Engineers Board of Kenya (EBK), National Construction Authority (NCA), National Environment Management Authority (NEMA), Kenya Forestry Research Institute (KEFRI), Kenya Wildlife Service (KWS), National Land Commission (NLC), Kenya Water Resources Management Authority (KWaRMa),

Kenya Chamber of Commerce and Industry (KNCC), Kenya Private Sector Alliance (KEPSA), Kenya Transporters Association (KTA), Matatu Owners Association (MOA), *Boda boda* Association, Kenya Long Distance Truck Drivers Association (KLDTD) and Association of Electric Mobility Vehicles Development in Africa.

Table 17: List of Stakeholders

Stakeholder	Role	Information sought
Kenya Urban Roads Authority (KURA)	Management, development, rehabilitation, and maintenance of all national urban roads	<ul style="list-style-type: none"> • Road safety information • Regulations and standards. • Road projects and planning.
Kenya Rural Roads Authority (KURRA)	Oversight and management of rural roads in Kenya.	<ul style="list-style-type: none"> • Road safety information • Regulations and standards. • Road projects and planning.
Kenya National Highways Authority (KeNHA)	Responsible for developing, managing, rehabilitating, and maintaining Kenya's national trunk road network.	<ul style="list-style-type: none"> • Road safety information • Regulations and standards. • Road projects and planning. • Issues with the design of pedestrian and cycling lanes
Kenya Rural Roads Authority (KERRA)	the development, rehabilitation, maintenance, and overall management of rural roads in the country	<ul style="list-style-type: none"> • Road safety information • Regulations and standards. • Road projects and planning.
Nairobi Metropolitan Area Transport Authority (NaMATA)	the central organization for planning, coordinating, and implementing a comprehensive public transport system within the Nairobi Metropolitan Area (NMA)	<ul style="list-style-type: none"> • Public Transport Planning and Development • Road safety information • Regulations and standards.
Kenya Ports Authority (KPA)	Port operation and Management and Port Regulation	<ul style="list-style-type: none"> • Port regulations and procedures. • Maritime and inland transport safety.
Kenya Civil Aviation Authority (KCAA)	Responsible for overseeing and regulating Kenya's civil aviation industry.	<ul style="list-style-type: none"> • Air transport safety information • Regulations and Standards
Kenya Pipeline Company (KPC)	Handling the transportation, storage, and delivery of petroleum products.	<ul style="list-style-type: none"> • Pipeline transport safety information • Regulations and Standards
Kenya Railways Corporation (KRC)	Management of Passenger and Freight Transport, Infrastructure Management.	<ul style="list-style-type: none"> • Rail safety information • Regulations and standards. • Rail projects and planning.
Kenya Maritime Authority (KMA)	Oversees and regulates maritime affairs in Kenya	<ul style="list-style-type: none"> • Port regulations and procedures. • Maritime and inland transport safety.
Kenya Roads Board (KRB)	Ensures Kenya has an efficient and well-maintained road network.	<ul style="list-style-type: none"> • Road safety information • Regulations and standards. • Road projects and planning.

		<ul style="list-style-type: none"> • Matter related to NMT.
National Industrial Training Authority (NITA)	Ensures a skilled and qualified workforce for the country's industries.	<ul style="list-style-type: none"> • Industrial Training Requirements
Lamu Port South Sudan Ethiopia Transport Authority (LAPSSET) Corridor Development Authority	It is s tasked with spearheading the development and management of the massive LAPSSET Corridor Project.	<ul style="list-style-type: none"> • Social Impact Assessments • Policies and Regulations
National Transport and Safety Authority (NTSA)	To make Kenya's roads safer and more efficient for everyone.	<ul style="list-style-type: none"> • Traffic Laws and Regulations • Road Safety Information • Public Transport Information
Engineers Board of Kenya (EBK)	It regulates and develops the engineering profession in Kenya	<ul style="list-style-type: none"> • Laws and Regulations • Projects and planning • Issues on NMT
National Construction Authority (NCA)	Overseeing and developing the construction industry.	<ul style="list-style-type: none"> • Registration and Licensing • Regulations and Standards • Dispute resolutions
National Environment Management Authority (NEMA)	It is tasked with overseeing and coordinating environmental matters	<ul style="list-style-type: none"> • Environmental Policies and Regulations • Public participation opportunities
Kenya Forestry Research Institute (KEFRI)	Researches and generates technologies for the sustainable management, conservation, and development of forests and allied natural resources.	<ul style="list-style-type: none"> • Forestry Management Information • Forestry Policies and Regulations • Forestry Research
Kenya Wildlife Service (KWS)	Protecting and managing Kenya's wildlife resources.	<ul style="list-style-type: none"> • Wildlife Conservation Efforts • Biodiversity Information • Park Information and Regulations
National Land Commission (NLC)	Critical role in overseeing and managing land affairs in the country.	<ul style="list-style-type: none"> • Land use and planning • Laws and Regulations
Kenya Water Resources Management Authority (KWaRMa)	Ensuring the equitable, efficient, and sustainable management of water resources in Kenya.	<ul style="list-style-type: none"> • Water use and regulations • Biodiversity
Kenya Chamber of Commerce and Industry (KNCC)	acts as a champion for Kenyan businesses, specifically focusing on small, medium, and large enterprises	<ul style="list-style-type: none"> • Investment in the transport sector
Kenya Private Sector Alliance (KEPSA)	acts as the umbrella organization for Kenyan businesses, representing over one million businesses of all sizes	<ul style="list-style-type: none"> • Investment/funding in the transport sector
Kenya Transporters Association (KTA)	Acts as a champion for road transporters in Kenya.	<ul style="list-style-type: none"> • Economic and social welfare of transporters

		<ul style="list-style-type: none"> • Occupational safety of the transporters
Matatu Owners Association (MOA)	Acts as a champion for matatu owners in Kenya, working to improve the public transport sector and create a more favourable business environment.	<ul style="list-style-type: none"> • Economic and social welfare of matatu owners • Occupational safety of the public
<i>Boda boda</i> Association	acts as a representative body for <i>boda boda</i> riders in Kenya	<ul style="list-style-type: none"> • Economic and social welfare of the <i>boda boda</i> riders • Occupational safety of the public and <i>boda boda</i> riders • Use of NMT
Kenya Long Distance Truck Drivers Association (KLDTD)	Championing for the rights and social welfare of long-distance truck drivers in Kenya.	<ul style="list-style-type: none"> • Economic and social welfare of the long-distance truck drivers • Occupational safety of the public and long-distance drivers
Association of Electric Mobility Vehicles Development in Africa.	A driving force in the transition to cleaner and more sustainable transportation in Kenya and potentially across Africa	<ul style="list-style-type: none"> • Industry Updates and Trends. • Consumer Information and Resources
General public	Users	<ul style="list-style-type: none"> • Safety concerns • Accessibility issues • Perceptions and experiences • Engagement in policy-making • Emerging trends • Issues in NMT

CHAPTER EIGHT

CONCLUSION AND RECOMMENDATIONS

8.1 CONCLUSIONS AND RECOMMENDATIONS

The conclusions and recommendations for this exercise are presented for action as below;

Conclusions

It has been established that the INTP has effectively identified transport sector opportunities, prospects and provisions for the sectors growth provided. The INTP has also provided strategic policy directions, and proposed projects and plans with clear goals and principles for handling with environmental, social, safety and health safe guards in line with EMCA 1999 provisions.

The PPP analysis for the transport sector is thus adequate in the way it integrates environmental sustainability, socio-economic aspects, and health and security issues. The integration of most of the main environmental, socio-economic, and occupational health and safety factors showed a clear understanding of the transport sector's policy, legislative, and regulatory frameworks at national and international levels.

In addition, while the capacity of the institutional agencies to address environmental, occupational health and safety and social issues was appreciated, underfunding, dilapidated equipmentation, inadequate motivation and incentive and human capacity needs in majority of the agencies was noted. It was also concluded that unique challenges exist at the county level where rural transport in form of human and animal transport is common. Addressing current and potential risks at both levels is also subject to capacity challenges such as sub-sector infrastructure, availability of appropriate equipment and materials, levels of synergies and linkages between institutions and availability of relevant staff to address environmental, occupational health and, safety and social issues at the county levels. An important challenge is the availability of expert personnel and the capacity to identify specific risk factors of the INTP's environmental, occupational health, safety, and social attributes.

8.1.1 RECOMMENDATIONS FROM PPP ANALYSIS

The following recommendations are made to strengthen the INTP framework, which will be used in all transport sector modes, entities, agencies, institutions, and related means.

1. Review the transport sector framework to ensure the integration of all modes of transport.
2. Develop transport sector guidelines for the complete integration of all modes of transport.
3. Implementing the Transport Act should be done in close/ effective, and productive conjunction with county governments.
4. Establish a protocol for working with NEMA on government policy, plans, and projects, and “walk together” in PPP processes in order to minimize delays in project execution and avoid misalignments associated with economic and social costs.
5. Establish and designate transport sector casualty investment to deal with accidents and injuries.
6. There is a need for regulations to standardize the construction/building of human/animal-drawn carts (size and control devices) and where and when they should be used and controlled.
7. Climate-proofing transport infrastructure: This involves assessing the vulnerability of transport infrastructure to climate change impacts such as flooding, sea-level rise, and extreme weather events. It also involves implementing measures to enhance the resilience of transport infrastructure, such as building sea walls, raising road and railway embankments, and using climate-resilient materials. Climate-resilient materials can maintain connectivity and reduce disaster risk in transport infrastructure, improving design standards and using innovative materials and design specifications that enhance the robustness and flexibility of infrastructure.
8. Integrating climate change adaptation into transport planning and decision-making involves incorporating climate change considerations into transport policies, strategies, and plans. It also involves assessing the potential impacts of climate change on transport systems and developing adaptation measures to address these impacts.
9. Encouraging the use of low-carbon transport modes: This involves promoting the use of transport modes that have lower greenhouse gas emissions, such as walking, cycling, public

transport, and electric vehicles. It also involves implementing measures to discourage the use of high-carbon transport modes, such as fossil fuel-powered cars and airplanes.

10. **Building capacity and awareness:** This involves building the capacity of transport professionals to address climate change impacts and promoting awareness of climate change risks and adaptation measures among transport users and stakeholders.
11. The INTP should ensure the incorporation of the following legislations in conformity with the EMCA 1999, World Bank, AfDB, UNFCCC, ICAO, among others.
 - a. **On environment:** The Environment and Land Court Act 2011 and National Oceans and Fisheries Policies
 - b. **On land:** The Land Act, 2012; The National Land Commission Act, 2012 (No. 5 of 2012); Community Land Act of 2016, and The Environment and Land Court Act, 2011.
 - c. **On employment and labour:** The Employment Act, 2007, Labour Relations Act No. 14 Of 2007, Labour Institutions Act No. 12 Of 2007, Work Injury Benefits Act Chapter 236, Industrial Court Act, 2011, Sessional paper No 1 of 2015 on the National Policy on Elimination of Child Labour (SP) and The Sessional paper no 3 of 2014 on national policy and action plan on Human Rights
 - d. **On protection of marginalize and vulnerable groups:** The Children Act No. 29 f 2022 and the Prevention and Protection and Assistance to Internally Displacement Persons and Affected Communities Act, IDP ACT 2012
 - e. **On information disclosure:** The Access to Information Act 2016
 - f. **On governance:** The Commission of Administrative Act No. 23 of 2011 and National Cohesion and Integration Act 2011 (Amendment 2012)
 - g. **On occupational health and safety:** County Governments Disaster Management Bill

8.2 SESA Action Plan

This SESA Action Plan outlines a comprehensive strategy for conducting a Strategic Environmental and Social Assessment (SESA) for the INTP. A SESA proactively identifies and addresses the potential environmental and social impacts associated with the proposed initiative before its implementation. This SESA Action Plan serves as a roadmap for ensuring that environmental and social considerations are integrated throughout the INTP lifecycle.

The table below gives the action Plan for implementation by various actors in the transport sector and related relevant institutions;

Table 18: SESA Action Plan

EMERGING OVERARCHING ISSUES							
ENVIRONMENTAL ISSUES							
No.	Issues	Recommendations	Action Plan				Agency responsible
			Immediate	Short-term (1-2 years)	Medium (3-5 years)	Cost estimate 000,000	
	1. Pollution (Air, water, noise)	✓ Review guidelines on the transport sector action plan		✓		5	SDoT in collaboration with NEMA
	2. Hazardous waste	✓ Review guidelines on waste management		✓		3	SDoT in collaboration with NEMA
	3. Wet land loss and degradation	✓ Strengthen guidelines on water catchment management.		✓		4	SDoT in collaboration with NEMA, and Water Resources Authority (WRA)
	4. Destruction of flora and fauna	✓ Review guidelines on the management of flora and fauna.		✓		5	SDoT in collaboration with NEMA, and Water Resources Authority (WRA), Kenya Wildlife Service, Kenya Forest Service
	5. Introduction of invasive species	✓ Review guidelines for the prevention of and introduction of alien invasive species in the transport sector.		✓		2	SDoT in collaboration with Kenya Plant Health Inspectorate Service (KEPHIS)
	6. Deforestation	✓ Draw guidelines on the requirement of			✓	5	SDoT in collaboration with Kenya Wildlife

		environmental rehabilitation plan (ERP)					Service and NEMA, Kenya Forest Service
	7. Climate Change impacts (drought, floods and landslides)	✓ Review guidelines on adequate integration of climate change mitigation and mitigation in transport sector project EIA Report	✓			7	SDoT in collaboration with Kenya Wildlife Service, KMA and NEMA, Kenya Forest Service
	8. Oil spills	✓ Re-assess the guidelines on for the ecosystem protection plan.		✓		2	SDoT in collaboration with Kenya Pipeline, KMA, KPA

SOCIAL ISSUES

Sub-Sector	Issues	Recommendations	Action Plan				Responsibility
			Immediate	Short-term (1-2 years)	Medium (3-5 years)	Cost estimate	
	1. Increased crime rates	✓ Draft guidelines on mainstreaming and engagement of enforcement agencies	✓			1	SDoT in collaboration with Kenya Police Service, Directorate of Crime Investigation
	2. Labour opportunities	✓ Re-assess guidelines on labour management plan		✓		4	SDoT in collaboration with Ministry of Labour and Skills Development
	3. Erosion of cultural norms, values, and systems	✓ Re-assess guidelines on the protection of cultural norms, systems, and values		✓		2	SDoT in collaboration with Ministry of Sports, Culture and Heritage

							and National Museums of Kenya
4.	Destruction of cultural and heritage sites and displacement of indigenous people	✓ Review rules on the protection of heritage and protection/participation and inclusion of indigenous peoples.			✓	4	SDoT in collaboration with Ministry of Sports, Culture and Heritage and National Museums of Kenya
5.	Loss of land, and its entities including property.	✓ In conjunction with NLC and Environment and Land Court, review guidelines of compensation/relocation and resettlement plans.	✓			7	SDoT in collaboration with National Land Commission, Kenya Institute of Surveying & Mapping and Ministry of Lands, Public Works, Housing and Urban Development
6.	Closure of access routes	<ul style="list-style-type: none"> ✓ Review grievance redress mechanisms in conjunction with law enforcement agencies. ✓ Rethink the Bill of Rights as enshrined in the COK (2010) ✓ Draw guidelines on the African Charter on Human Rights 	✓			1	SDoT in collaboration with County Government, KERRA, KenHA, KURA and KRB
7.	Child labour and exploitation of children	✓ Review guidelines of enforcement laws on child labour and exploitation	✓			1	SDoT in collaboration with

8. Increased road accidents	✓ Review guidelines on an enforcement management plan	✓			4	SDoT in collaboration with County Government, National Police Service, KERRA, KenHA, KURA and KRB
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OCCUPATION SAFETY, HEALTH, AND SECURITY ISSUES

Issues	Recommendation	Action Plan				Responsibility
		Immediate	Short-term (1-2 years)	Medium (3-5 years)	Cost estimates	
1. Death and injuries	✓ Review guidelines on work injury and benefits	✓			5	SDoT in collaboration with, National Police Service
2. Gender based violence and sexual harassment	✓ Re-assess guidelines on GBSH engagement and protection management plan	✓			2	SDoT in collaboration with, National Police Service and Ministry of Public Service, Gender and Affirmative Action
3. Violation of Rights of Children (VRC)	✓ Review guidelines on disease sensitization management plan			✓	1	SDoT in collaboration with, National Police Service
4. STIs, HIV, and AIDS	✓ Draw guidelines on health impact assessment.	✓			3	SDoT in collaboration with Kenya National AIDS and STI Control Programme (NASCOP)
5. Sanitation and hygiene	✓ Review guidelines on work injury and benefits	✓			2	SDoT in collaboration with Ministry of Health, and NEMA

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United Nations Framework Convention on Climate Change

United Nations Road Safety Conventions (seven)

Universal Declaration of Human Rights

World Bank Environmental, Health, and Safety Guidelines (EHS Guidelines)

World Heritage Convention

World Ports Climate Initiative

APPENDICES

Appendix 1: Minutes

MINUTES OF THE INCEPTION REPORT MEETING HELD ON 17 OCTOBER 2022 IN THE TRANSCOM HOUSE, BOARDROOM.

Members Present

Name	Organisation
Mr. George Wanjau	Director Planning State Department of Transport -Chairing
Bernard Nzau	State Department of Transport
Otieno Abich	Engineers Board of Kenya
George Ndegwa	Masaai Mara University
Eng. J.N. Githui	Nairobi Metropolitan Area Transport Authority
Eng. Roy Nyakech	Lamu Port South Sudan Ethiopia Transport Corridor Project (LAPSSET)
Wilfred J. Kagimbi	SDSM
Martin Kimanzi	Kenya Urban Roads Authority (KURA)
Mary Munyi	Kenya Ports Authority
Samuel Kawenju	State Department for Gender
Caxto Manzi	Ministry of Lands and Physical Planning
Connie Ngachu	Nairobi Metropolitan Area Transport Authority
Paul Kingori	State Department of Transport
Eng. Christine Akinyi	Kenya Roads Boards
Elvis Ngoji	Kenya National Shipping Line
Beatrice Olwa	National Biosafety Authority (NBA)
Dickson Odhiambo	National Transport and Safety Authority
Esther Gacanja	State Department of Transport
Dr. Susan Mwangi	Talito Holdings Ltd.
Abdi Hire	SDI
Major Tallam	Kenya Civil Aviation Authority
Robin Rotich	State Department of Transport
Wendy Maina	State Department of Transport

Brenda Mwango	State Department of Transport
Dr. John Muriuki	Talito Holdings Ltd.
Albert Ochieng'	Talito Holdings Ltd-Recording
Dr. Thomas Kibutu	Talito Holdings Ltd.
Pauline Kione	Kenya Railways

Absent with apology

Agenda

Chairman's welcoming remarks

Introduction of members

Inception report presentation

MINUTE 1/OCTOBER/2022: WELCOMING REMARKS

The Chairperson welcomed members to the meeting. It started with a word of prayer. Through the Chairman's instructions, everyone introduced themselves and the organizations they represented.

MINUTE 2/OCTOBER/2022: INCEPTION REPORT.

The Consultant was given an opportunity to make a presentation of the inception report. Dr. John Muriuki presented the inception report. The Consultant received comments from the various stakeholders present in the meeting. Albert Ochieng' took the comments, recommendations, and actions.

Task	Comments	Actions
Inception report meeting	<ol style="list-style-type: none"> 1. The climate change Act of 2016 was not included in the presentation. 2. Use international protocols/conventions instead of agreements 3. Page 1, no three on the work plan is unclear what the programs, plans, and policies (PPP) is what it will achieve. 4. Cultural aspects should be integrated into the project since it is a major issue of 	<p>The Consultant took note of the matter and will look into it</p> <p>The Consultant indicated that they would do that.</p> <p>The Consultant explained clearly, what a PPP brief is.</p> <p>The Consultant indicated that cultural aspects are central to this assignment and indicated that</p>

	<p>concern among the communities located on the transport infrastructure corridors.</p> <p>5. It is the responsibility of the Consultant to present the PPP Brief and draft report to NEMA for approval</p> <p>6. The focus should be on net-zero emissions and not zero-emissions</p> <p>7. The schedule is general; therefore, there is a need to state when each deliverable will be attained.</p> <p>8. Methodology: Gap analysis is missing; therefore, there is a need to integrate it during the review of policy documents (The Integrated National Transport Policy (INTP))</p> <p>9. The Integrated National Transport Policy (INTP) has been reviewed-2022.</p> <p>10. In the review of the INTP and regimes regarding SESA, there is a need to analyze, synthesize and decide what is going to work for the SDoT (Kenya)</p> <p>11. The Integrated National Transport Policy (INTP) gave birth to other policies regarding the transport sector, which should also be considered when reviewing the policies.</p> <p>12. The presentation ignored coast and inland transport.</p> <p>13. The Kenya Pipeline Authority (KPA) should be considered since it is part of the transport.</p>	<p>among the World Bank, Social and Environmental Standards and, more specifically, Standard Number 8 would be used in the assessment</p> <p>The Consultant agreed to the responsibility. However, indicated that since the document is co-created, the submission will be made in consultation with the Client.</p> <p>The Consultant took note of the matter.</p> <p>The Consultant indicated that they would do that.</p> <p>The Consultant indicated that gap analysis would be carried out during the review of policies and various documents</p> <p>The Consultant indicated that they are aware of this and that they are actually assessing the INTP</p> <p>The Consultant indicated that this would be taken into consideration and that they would look for best practices elsewhere too</p> <p>The Consultant took note of the matter and would give consideration.</p> <p>The Consultant indicated that coast and inland transport has not been ignored and is indeed part of</p>
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	<p>14. The sample size and target population should be clear and be representative of parts of the country because it is a nationwide policy on transport.</p>	<p>the assessment. It will, however, be made more explicit.</p> <p>The Consultant indicated that KPA is indeed part and parcel of the assessment. It will, however, be made more explicit.</p> <p>The Consultant welcomed the remarks and indicated that they would do this during the scoping phase of the assignment.</p>
	A.O.B	
	<p>1. Next meeting. It was agreed that the next meeting should be in the next 1.5 months to give updates on the progress of the review of the policies.</p>	

CLOSING REMARKS

The Chairperson thanked the Consultant and the stakeholders for attending the Inception Report Meeting.

COMPILED BY:



Dr. John Muriuki

DATE: 18/10/2022

CONFIRMED BY: Wanjau

Mr. George Wanjau

Director Planning, State Department of Transport (SDoT)

DATE: _____

Minutes of Stakeholder Consultation, Meeting Held on 12th April 2023 at Kenya Ferry Services Office, Likoni at 2:30 pm.

Agenda

Preliminaries

Discussion of INTP

Other concerns

Members present

Mwachia Kitur- Kenya Ferry Services

Dr. John Muriuki-Talito Holdings Ltd.

Dr. Thomas Kibutu- Talito Holdings Ltd.

Albert Ochieng'- Talito Holdings Ltd.

Min 1/23: Preliminaries

The host welcomed the Consultant and requested both teams to introduce themselves.

The Team leader began by intruding the consultant team to the KFS official. He began by explaining that the Integrated National Transport Policy (INTP) is a comprehensive framework that guides the development and management of the country's transport sector. It aims to create an efficient, safe, reliable, and sustainable transport system that supports Kenya's economic growth, social development, and environmental protection.

Min 2/23: Discussion of the issue

No policy on the environment, but is guided by the 2016 policy on the environment.

Not aware of the INTP

They have a draft OSH approved around 2013/2014-reviewed after every five years.

Risks-oil spill from cargo (vehicles) being moved and the ferry itself

Skidding of vehicles during the rainy season due to lack of tractions and also the steep gradient of the land, especially on Likoni mainland

Forecast-possible collision of ferry and oil tankers in the Kilindini harbour

Integration of Mombasa ferry services_

A strategic plan developed in 2021 was put on hold due to the transition of the ferry services from Kenya Ferry Services to KPA.

Due to the transition, the last annual environment audit was conducted in 2018.

OSH is done regularly

Concern-

- The available staff are not adequate. This is due to the national government's freeze on employment.

- Funding
- Capacity building is not regular
- There is air pollution and emission since the ferries that they having are operating using diesel
- Climate change is also a great challenge since ocean levels are rising. However, discussions on climate barely exist in the institution.
- Increasing population- the pressure exerted on their services by the ever-increasing population is great. Therefore, a project like the Ndogo Kundu is anticipated to ease pressure on the existing ferry services.

Priority-

- The landing base should be broadened to prevent future ferries collusion.
- The waiting bays should also be expanded, especially on the side of the mainland.
- Employment of more staff
- Decommissioning old ferries (some like MV Nyayo, which is 30 years old) and getting new ferries

World Bank Environmental and Social Standard

Table 1


S/No	World Bank ESS	High	Medium	Low	Why?/Reason
1.	Assessment and Management of Environmental and Social Risks and Impacts	x			
2.	Labour and Working Conditions	x			
3.	Resource Efficiency and Pollution Prevention and Management	x			
4.	Community Health and Safety		x		
5.	Land Acquisition, Restrictions on Land Use, and Involuntary Resettlement	x			
6.	Biodiversity Conservation and Sustainable Management of Living Natural Resources	x			Avoid oil spillage
7.	Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities		X		
8.	Cultural Heritage	X			
9.	Financial Intermediaries			X	
10.	Stakeholder Engagement and Information Disclosure	H			They engage various stakeholders in their activities. These stakeholders are but not limited to Chiefs, assistant

					chiefs, among others.
S/No	World Bank ESS	Mitigation	Monitoring	Indicator	International standards /Good practice
1.	Assessment and Management of Environmental and Social Risks and Impacts				
2.	Labour and Working Conditions				
3.	Resource Efficiency and Pollution Prevention and Management				
4.	Community Health and Safety	Develop policy Regular maintenance of the ferries		Reports on the status of the ferries are generated regularly Ferries are inspected annually by the KMA	
5.	Land Acquisition, Restrictions on Land Use, and Involuntary Resettlement				
6.	Biodiversity Conservation and Sustainable Management of Living Natural Resources				
7.	Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities				
8.	Cultural Heritage				
9.	Financial Intermediaries				
10	Stakeholder Engagement and Information Disclosure	Develop a policy on stakeholder engagement.		Complain register adherence	

Min 3/24 Adjournment

The KFS Official was thanked for participating in the process.

The meeting adjourned at 3:20 pm.

Minutes Drafted by Albert Ochieng-Project Manager 

Minutes Confirmed by Dr. John Muriuki-Team Leader 

Minutes of Stakeholder Consultation, Meeting Held on 12th April 2023 at Kenya Maritime Authority Board room, Mombasa at 4:33 pm.

Agenda

Preliminaries

Discussion of INTTP

Other concerns

Members present

Michael Mburu-KMA

Oliver Maina-KMA

Dr. John Muriuki-Talito Holdings Ltd.

Dr. Thomas Kibutu- Talito Holdings Ltd.

Albert Ochieng'- Talito Holdings Ltd.

Min 1/23: Preliminaries

The meeting began at 4:33 pm with a word of prayer from the host.

The host welcomed the Consultant and requested both teams to introduce themselves.

The SESA team leader introduced the team and gave a brief of the project. He indicated that The INTTP focuses on various aspects of the transport sector, including road, rail, air, and maritime transport. It aims to improve accessibility, affordability, efficiency, safety, and environmental sustainability in the transport system, and the document is under review. Therefore, SDoT is seeking stakeholders' opinions on the document's compliance with SESA.

Min 2/23: Discussion of the issue

A Brief History of KMA:

In order to oversee marine activities in the nation, the Kenya Maritime Authority (KMA) was established in June 2004. It is a government agency in the Ministry of Transport, Infrastructure, Housing, and Urban Development. KMA is a part of the State Department of Transport.

KMA was established by presidential order in 2002 to oversee the transfer of responsibilities in shipping matters from KPA to an autonomous State Corporation. In 2009, it was legally constituted under the Kenya Maritime Act, No 5. Its mandate is to "regulate, coordinate and oversee maritime affairs" in the country. However, a new version of the Merchant Shipping Act (Merchant Shipping Act 2009) was enacted, creating a comprehensive and modern legal regime for merchant shipping in Kenya. The Act provides the basis for addressing maritime safety, security and training as well as opening opportunities for investment in water transport and related industries.

Function: -

They oversee the training and certification of seafarers.

They license the seafarer's equipment agents.

Licensing helps reduce social risks, especially to the safety of the workers.

The Maritime Level Convention 2006 provides for the rights of the seafarers. The Kenyan government ratified it to guarantee the safety of Kenyan seafarers. However, we are yet to enact and domesticate it.

There is a need to domesticate the Maritime Labour Conventions in order to protect the seafarers.

The moral obligation of KMA is to assist Kenyans who are abandoned abroad.

The seafaring labour is exposed to risks arising out of lack of labour laws as contemplated under MLC

They are concerned with the welfare of the seafarers.

When the ships dock, there are officers to check on the status of the workers on board to establish if they are well taken care of, like salary payment. In case of any problem, they can detain the ship.

They are dealing with search and rescue, and they are working on establishing such centers in the counties.

They are collaborating on search and rescue with other stakeholders. They are operating regional search and rescue centers

Generally, they deal with 3ps

- People
- Property-safety and cargo
- Planet-

INTP

They are aware of the INTP-They took part in its review

INTP is about the business of shipping

It proposed the creation of KMA as an autonomous institution and The Merchant Shipping Act.

In 2018, they developed a sector plan for the blue economy, which was guided by the INTP section 3.15.6.

The Merchant Shipping Act-KMA 2006. It elaborates more on the function in 2009, and it has been reviewed to domesticate various international maritime conventions.

OSH-Two ways: - the internal (staff)-

1. KMA environmental policy
2. The shipping sector is international in nature. There are international conventions for the prevention of pollution from ships (Marpol Convention 7378). It put a framework for the prevention of pollution

Pollution preparedness and response convention

NEMA expects them to deal with and handle pollution from the ship

There are nine conventions dealing with pollutants from ships.

Funds for compensation

In the domestication of the international conventions, they have to come up with regulations under the Merchant Shipping Act. They drew up the Marine Pollution Bill, but it had so many stakes that it was shelved. Equally, the AG advised them to draw a new bill that would consolidate all marine aspects contained in various legal frameworks/Acts. This is because it was realised that many aspects of marine are covered in various laws of the country.

Additionally, there was proposed creation of a parastatal from the Act to enact it, thus, it would have usurped the functionalities of KMA.

Recommendation: there is need to consolidate all the legal frameworks on marine found in different laws into one solid framework.

Domestication of the Marpol convention as an Act of parliament and not as a subsidiary legislation

Draw an Act of parliament to protect the Marine environment.

Coordination of search and rescue

Even though legal frameworks like EMCA came much earlier than the KMA, the expertise is domiciled in the KMA. Therefore, in their operations regarding environment assessment, NEMA often sends requests to KMA. However, this was to be addressed by the shelved bill, which had proposed that such functions be domiciled in KMA.

Challenge: bureaucracy was highlighted as one of the many challenges that the institution experiences. For example, the DG has to follow reports at KMA.

There is rivalry between institutions.

Forecast

Pollution was identified as a future concern for the institutions. Since we have not domesticated international conventions dealing with maritime pollution, it would be fateful if such an incident occurred. For example, in the event of an oil spillage, the pollutant would not be held accountable since the country has no domestic treaties dealing with such issues. This would not only be harmful to the biodiversity, but compensation of those affected would not be possible. Nonetheless, in some cases, it is not about the magnitude of the spill but rather where it occurs, like in coral reefs.

Institutional policy

They have a policy on the environment, which was developed by the board.

The policy is often reviewed to confirm and comply with emerging issues in the maritime sector.

The policy is reviewed every two years, with the most recent review focussing on setting up funds for environmental issues such as pollution.

OSH, they have a committee

The OSH policy was reviewed since they were renewing their ISO certification, which required that institutional policies have to be up-to-date with emerging issues.

They have an employment act, HRM policy

Seafaring is a huge trade, which is why it is included in Vision 2030.

They have a strategic plan available on the website

Concern:

Climate change and how to deal with it:

Prevention of emissions from the shipping industry

The idea of green port-but why would Africans be pushed for this agenda when they do not own most of these ships?

An oil spill is their greatest concern, like the case of Mauritius

Local and international investors are concerned about establishing ship recycling in the country, but there is no policy on it, yet it is associated with many risks.

Despite the Merchandise Act providing for the structure of the institutions, many positions remain unfilled, thus affecting their daily operations as the already existing staff is overstretched.

Most regulations are about enforcement instead of creating a conducive environment for business.

Costly training of officers in the docket; those who are in the industry are old. Some had to be trained in Singapore, the UK etc.

Blue Economy needs to integrate maritime policy. There are about 13 conventions on the blue economy. Integrate the approach and benefit (port, KMA etc.)

Recommendation

Collaborative initiatives with other agencies should be anchored in law, with the responsibilities of each clearly stipulated.

Enhance intermodal transport to ease pressure on the roads.


S/No	World Bank ESS	High	Medium	Low	Why?/Reason
1.	Assessment and Management of Environmental and Social Risks and Impacts	x			
2.	Labour and Working Conditions	x			
3.	Resource Efficiency and Pollution Prevention and Management		x		
4.	Community Health and Safety	x			
5.	Land Acquisition, Restrictions on Land Use, and Involuntary Resettlement			x	No projects that displaces people
6.	Biodiversity Conservation and Sustainable Management of Living Natural Resources	x			

7.	Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities	X			They have corporate social responsibility policy
8.	Cultural Heritage	X			They respect where people come from
9.	Financial Intermediaries		M		
10.	Stakeholder Engagement and Information Disclosure	H			As per the CoK 2010

Min 4/24 Adjournment

The KMA officials were thanked for participating in the process.

The meeting adjourned at 5:33 pm.

Minutes Drafted by Albert Ochieng-Project Manager 

Minutes Confirmed by Dr. John Muriuki-Team Leader 

Minutes of Stakeholder Consultation, Meeting Held on 21st April 2023 at Eldoret Airport, Eldoret at 10:30 pm.

Agenda

Preliminaries

Discussion of INTP

Other concerns

Members present

Walter Agong-Kenya Airport Authority, Eldoret

Albert Ochieng'-Talito Holdings Ltd.

Min 1/23: Preliminaries

The host welcomed the Consultant and requested the consultant representatives to introduce themselves.

The Team leader began by intruding the consultant team to the KAA official. He began by explaining that the Integrated National Transport Policy (INTP) is a framework designed to guide the development and management of the country's transport sector. It was launched in 2012 with the goal of creating an efficient, cost-effective, safe, secure, and integrated transport system that supports national and international development objectives in a socially, economically, and environmentally sustainable manner. He also said the document was under review to ensure it was SESA compliant.

Min 2/23: Discussion of the issue

He was not aware of the INTP.

Kenya's airports have taken steps to comply with strategic environmental and social assessment (SEA) laws, as outlined in the Environmental Management and Coordination Act (EMCA) of 1999 and its associated regulations.

Kenya Airports Authority (KAA): The KAA developed a Strategic Environmental Assessment (SEA) for its Airspace Master Plan 2015-2030. This SEA identified the plan's potential environmental and social impacts, such as noise pollution, air quality, and community displacement. The KAA also committed to conducting individual ESIA's for specific projects undertaken within the master plan.

Eldoret International Airport: Eldoret Airport conducted an EIA for its expansion project in 2019. The EIA identified potential impacts such as increased noise pollution, water use, and waste generation. The project incorporated mitigation measures such as constructing noise barriers and improving waste management systems.

Challenges and Future Prospects:

While Kenya's airports have made progress in complying with SEA and EIA laws, there are still some challenges:

- **Limited capacity:** Some airports, particularly smaller ones, may lack the technical expertise and resources to conduct proper environmental and social assessments.
- **Public participation:** There is sometimes limited public participation in the SEA and EIA processes, which can lead to concerns about transparency and accountability.
- **Encroachment:** the land belonging to the airports are being encroached on by communities that reside around the regions. This has led to the erection of high-story buildings along the flight corridors, thus posing security and safety threats to the planes and to the individuals residing in these areas.
- **Future expansion:** the airport is lying at the migration routes of some birds like Ugandan Cranes and other species. Therefore, any prospect of future expansion should deal with such issues. Nonetheless, the location of the airport has created a problem of dealing with bird strikes along the flight paths.

Despite these challenges, Kenya's airports are increasingly recognizing the importance of complying with environmental and social laws. This is evident in the development of SEAs and EIAs for major projects and the incorporation of mitigation measures to address potential impacts. As Kenya's aviation sector continues to grow, environmental and social considerations must be integrated into airport development and expansion plans. This will ensure that the sector contributes to sustainable development and meets the needs of future generations.

Occupational health and safety

Kenya's airports have taken measures to comply with occupational health and safety (OHS) regulations set forth by the Directorate of Occupational Safety and Health Services (DOSHS).

Eldoret International Airport: Eldoret Airport has implemented a number of safety measures, such as the provision of personal protective equipment (PPE) to employees, the installation of safety signage, and the development of emergency response plans.

Specific Actions Taken:

- **Regular training and awareness programs** are conducted for employees on various OHS topics, such as safe work practices, emergency procedures, and the use of PPE.
- **Risk assessments** are carried out to identify potential hazards in the workplace and to develop appropriate control measures.

- **Incident reporting and investigation procedures** are in place to ensure that all safety incidents are reported and investigated promptly and that corrective actions are taken to prevent similar incidents from occurring in the future.
- **Regular inspections** of the workplace are conducted to identify and address any potential safety hazards.
- **Provision of PPE** such as hard hats, safety glasses, earplugs, and respiratory masks to employees who are exposed to risks.
- **Implementation of safe work practices** such as lockout/tagout procedures for machinery, proper lifting techniques, and the use of appropriate tools and equipment.

Challenges and Future Prospects:

While Kenyan airports have made progress in complying with OHS regulations, there are still some challenges:

- **Limited resources:** Some airports, particularly smaller ones, may lack the financial and human resources to implement all OHS requirements effectively.
- **Informal work practices:** Informal work practices, such as the use of non-certified contractors and the lack of proper training for casual workers, can pose safety risks.

Min 3/24 Adjournment

The KAA Official was thanked for participating in the process.

The meeting adjourned at 11:20 am.

Minutes Drafted by Albert Ochieng-Project Manager



Minutes Confirmed by Dr. John Muriuki-Team Leader



Minutes of Stakeholder Consultation, Meeting Held on 18th April 2023 at Isiolo Town at 10:25 am.

Agenda

Preliminaries

Discussion of INTP

Issues on the proposed review of the INTP

Other concerns

Members present

S/No	NAME	CONTACT
1	Rev. Joseph Elibit	0723148170
2	Pst. Peter Bahati	0701563861
3	Sheikh Wario Adan	0710357200
4	Justus Matiebo	0728028144
5	Colr. Sheikh H. Bonaya	0722608942
6	Halima Dida	0723883374
7	Dabaso Boru	0721383564
8	Rashid Ali	0721994987
9	Francis Achuka	0721457805
10	Gladys Losike	0741212409
11	Philip Muriuki	0710591988
12	Dennis Mumu	0708876164
13	Moses Lemantile	0714790199
14	Ann Ebulon Milliong	0724433966
15	Elizabeth Muthoni Mithamo	0792363501
16	Elizabeth Nyawira	0719434089
17	Hawa Galgalo	0110532031
18	Habiba Hussein	0729781151
19	Caroline Adong'a	0714127673
20	Margaret Nasike	0700767460
21	Francis Achuka	07214457805
22	Dennis Mumo	0708876164
23	Philip Mwirici	0710591988

Min 1/23: Preliminaries

The meeting began at 10:25 am with a word of prayer from one of the participants.

The host welcomed the Consultant and requested both teams to introduce themselves.

The Team leader began by introducing the consultant team to the community. He outlined the key agenda of the meeting by describing what the Integrated National Transport Policy (INTP) is. He explained that the Integrated National Transport Policy (INTP) in Kenya is a strategic

framework that aims to enhance the country's development by integrating production, marketing, and population centers, thereby facilitating mobility in rural and urban areas, national and regional integration, trade promotion, and improving the overall welfare of the people and Kenya's competitiveness.

Min 2/23: Discussion of the issue

Benefits of the INTP:

The consultant explained that the Kenya Integrated National Transport Policy (INTP), launched in 2012, aimed to create an efficient, cost-effective, safe, secure, and integrated transport system that supports national and international development objectives in a socially, economically, and environmentally sustainable manner. Here are some of the key benefits of the INTP:

1. **Improved mobility of people and goods:** The INTP has led to investments in infrastructure development, such as roads, railways, ports, and airports, which has improved connectivity and reduced travel times.
2. **Increased economic growth:** An efficient and affordable transport system is essential for economic growth, as it allows businesses to move goods and people more easily. The INTP has played a role in Kenya's economic growth by improving connectivity and reducing transport costs.
3. **Improved safety and security:** The INTP has led to improvements in road safety, such as the introduction of stricter traffic laws and the enforcement of seat belt and helmet use. The policy has also led to increased security measures at airports and other transport hubs.
4. **Reduced environmental impact:** The INTP has promoted the use of more environmentally friendly transport modes, such as public transport, walking, and cycling. The policy has also encouraged the use of fuel-efficient vehicles and the adoption of cleaner technologies.

The consultant also explained some of the challenges that the implementation of the policy faced.

1. **Inadequate infrastructure:** The transport sector in Kenya is characterized by inadequate infrastructure, which limits the capacity to meet the growing demand for transport services
2. **Limited resources:** The implementation of the INTP requires significant financial and human resources, which may not be readily available due to budget constraints and capacity limitation
3. **Technological challenges:** The integration of information and communication technologies in transport development is crucial for enhancing service quality, safety, and security. However, Kenya faces challenges in adopting and implementing these technologies due to limited technical expertise and infrastructure.

4. **Social and environmental concerns:** The INTTP must consider social and environmental concerns, such as the impact of transport activities on local communities and the environment. Addressing these concerns may require additional resources and policy interventions

Min 3/23: issues on the proposed review of the INTTP

The following issues were raised by the community members regarding the INTTP:

a. Inclusive transport

Citizens raised concerns about whether the INTTP addresses the needs of elderly individuals, people with disabilities, and other marginalized groups. They wanted to know if the policy ensures accessible and inclusive transportation options for everyone.

Response

The consultant informed the members of the community that INTTP is aiming for an inclusive transport system; therefore, the review is to mainstream the needs of various groups in the policy.

b. Environmental impact

With the growing concerns about climate change, citizens were interested in knowing if the INTTP includes provisions for eco-friendly transport options. They wanted to see initiatives promoting electric vehicles, reducing carbon emissions, and encouraging sustainable transportation practices.

Response

The consultant informed the members of the community that:

- The policy is under review to ensure that it prioritises environmentally friendly transport modes, for example, promoting non-motorized transport. This is by investing in infrastructure for walking and cycling, such as sidewalks, bike lanes, and safe crossings. Encourage walking and cycling through awareness campaigns and incentives.
- The policy is under review to integrate environmental considerations into project planning by conducting thorough environmental impact assessments (EIAs), adopting sustainable construction practices, and protecting sensitive ecosystems.

c. Safety and Security

Citizens were concerned about the safety and security of transportation systems. They wanted reassurance that the INTP considers measures to enhance road safety, minimize accidents, and prevent crimes in public transportation.

Response

The consultant informed the members of the community that the INTP aims to improve road safety; concerns remain about the high number of road accidents in Kenya and the effectiveness of measures to address them; thus, the review of the policy to ensure it effectively deals with safety and security.

d. Infrastructure

Citizens were concerned about the state of transport infrastructure, such as roads, bridges, and railways. They wanted to know if the INTP addresses issues like maintenance, expansion, and improvements to existing infrastructure.

Response

The consultant informed the members of the community that infrastructure is the central pillar of the INTP. The policy explicitly recognizes the crucial role of infrastructure in achieving its overall objectives. The consultant further explained how the infrastructure forms the core of the INTP:

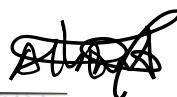
- **Investment Focus:** A significant portion of the INTP's budget and implementation efforts are directed towards infrastructure development projects like the Standard Gauge Railway (SGR), expansion of airports, and construction of new roads and bridges.
- **Policy Objectives:** Many of the INTP's objectives, such as improving safety, and integrating different transport modes, rely heavily on robust and well-maintained infrastructure.
- **Challenges Addressed:** Infrastructure gaps are identified as key challenges hindering Kenya's transport sector. The INTP aims to address these challenges by prioritizing infrastructure development, particularly in underserved areas.

Min 4/23 Adjournment

The consultant thanked the members of community for participating in the process.

The meeting adjourned at 12:18 pm.

Minutes Drafted by -Project Manager



Minutes Confirmed by-Team Leader



Minutes of Stakeholder Consultation, Meeting Held on 22nd April 2023 at Lamu Town at 9:25 am.

Agenda

Preliminaries

Discussion of INTP

Issues on the proposed review of the INTP

Other concerns

Members present

Twenty-three (23) community members attended the meeting.

Min 1/23: Preliminaries

The meeting began at 9:25 am with a word of prayer from one of the participants.

The host welcomed the Consultant and requested both teams to introduce themselves.

The Team leader began by introducing the consultant team to the community. He explained that INTP takes a holistic approach to transportation, considering all modes of transport, including road, rail, air, and water. It aims to integrate and coordinate these modes to ensure an efficient and sustainable transportation network. The INTP emphasizes the importance of infrastructure development to support transportation systems. It identifies priority areas for infrastructure investment, such as improving existing roads, constructing new highways, expanding airports, and enhancing rail networks.

The policy focuses on establishing seamless multimodal connectivity throughout the country. It aims to integrate various modes of transport, such as developing intermodal terminals, implementing effective transfer facilities, and facilitating smooth interchange between different modes of transport. Equally, INTP recognizes the need for sustainable transportation solutions. It promotes environmentally friendly practices, encourages the use of alternative fuels, and incorporates measures to reduce greenhouse gas emissions and air pollution.

Min 2/23: Discussion of the issue

Key areas of INTP:

The Consultant explained to the members of the community the key aspects of INTP. He gave some of the key areas:

Sustainable Development: The INTP incorporates sustainable transport practices and principles. It emphasizes the use of cleaner and more efficient transport technologies, promotes alternative fuels, and encourages the integration of environmentally friendly measures. This focus on sustainability helps reduce greenhouse gas emissions, air pollution, and overall environmental impact.

Improved Safety and Security: The INTP includes provisions for enhancing the safety and security of transport systems. This involves improving road infrastructure, implementing traffic management systems, and enforcing safety regulations. By doing so, the policy aims to reduce the number of accidents and ensure the well-being of transport users.

Improved Transport Efficiency: The INTP aims to enhance the efficiency of transport systems in Kenya. By integrating different modes of transport such as road, rail, air, and water, the policy aims to streamline transportation networks, reduce congestion, and improve overall travel times.

Enhanced Trade and Economic Growth: The INTP focuses on promoting a well-connected transportation network that can facilitate the movement of goods and people across the country. By improving transport infrastructure, the policy helps to reduce transportation costs, boost trade activities, and stimulate economic growth.

The Consultant also explained some of the challenges that the implementation of the policy faced.

Environmental considerations: Ensuring that the INTP prioritizes environmental sustainability by reducing carbon emissions, protecting natural habitats, and promoting the use of clean energy can be a significant challenge. Balancing economic development with environmental conservation requires careful planning and implementation.

Stakeholder coordination: Coordinating multiple stakeholders, including government agencies, private sector entities, and local communities, can be complex. Ensuring effective communication and collaboration to align their interests and priorities can be a major challenge.

Infrastructure development and maintenance: Building and maintaining an efficient and well-connected transport network is crucial for the success of the INTP. However, challenges such as limited resources, technical expertise, and bureaucratic hurdles can hinder the timely completion of infrastructure projects.

Min 3/23: issues on the proposed review of the INTP

The following issues were raised by the community members regarding the INTP:

e. Road safety

The community members were concerned about the high rates of road traffic accidents. Citizens expect the INTP to focus on improving road safety measures, such as better traffic law enforcement, awareness campaigns, and infrastructure modifications like pedestrian crossings and speed bumps.

Response

The Consultant informed the community members that INTP recognizes road safety as a critical concern and outlines several strategies to address it. For example,

- a. It is enhancing Road Infrastructure and Design through the improvement of road safety standards. The INTP emphasizes upgrading roads to meet established safety standards.

This includes features like wider lanes, proper signage, markings, and lighting, and addressing black spots prone to accidents. Promoting safer pedestrian and cycling infrastructure, the policy advocates for building dedicated sidewalks, cycling lanes, and crosswalks to separate pedestrians and cyclists from motorized traffic.

- b. Strengthening Law Enforcement and Regulations through stricter enforcement of traffic rules. The policy emphasizes stricter enforcement of traffic laws. The INTP advocates for enhancing driver education and training programs to equip drivers with the necessary skills and knowledge for safe driving. Lastly, the policy promotes regular vehicle inspections and maintenance to ensure vehicles are in good working condition and meet safety standards.

f. Accessibility and Inclusivity

Members of the community with disabilities, the elderly, and those with limited mobility had concerns about the accessibility of transportation services. They expected INTP to address these concerns by promoting infrastructure modifications, ensuring accessible vehicles, and creating inclusive policies.

Response

The Consultant informed the members of the community that the policy recognizes the importance of addressing the issue of accessibility and inclusivity in the transport sector. This is by promoting infrastructure development for all through prioritizing pedestrians and cyclists. The policy advocates for creating safe and accessible infrastructure for pedestrians and cyclists, including well-maintained sidewalks, designated cycling lanes, and pedestrian crossings. This caters to individuals who may not have access to motorized vehicles or prefer active travel options. The policy also emphasizes improving the quality, affordability, and reliability of public transport systems. This involves making public transport vehicles accessible for people with disabilities, providing adequate information and signage, and ensuring regular and efficient services.

g. Environmental Impact

With growing concerns about climate change, the members of the community expect the INTP to address the environmental impact of the transportation sector. This could include promoting the use of electric or hybrid vehicles, investing in renewable energy for transportation, and integrating sustainable urban planning.

Response

The Consultant informed the members of the community that the INTP seeks to promote sustainable modes of transport by encouraging walking, cycling, and public transport. The INTP aims to create safe and accessible infrastructure for pedestrians and cyclists, as well as improve the quality and affordability of public transport systems. This will reduce reliance on private vehicles, which are a major source of air pollution and greenhouse gas emissions. The INTP requires that all major transport infrastructure projects undergo environmental impact assessments (EIAs). This helps to identify and mitigate potential negative impacts on the environment.

Min 4/23 other concerns

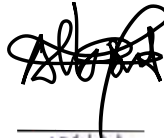
The locals indicated cultural sites should also be prioritised in the INTP because they are powerful symbols of a community's identity, heritage, and values and are often impacted by transport-related activities.

Min 5/23 Adjournment

The Consultant thanked the members of the community for participating in the process.

The meeting adjourned at 11:10 pm.

Minutes Drafted by Albert Ochieng-Project Manager



Minutes Confirmed by Dr. John Muriuki-Team Leader



Appendix 2: Registration Form (for all participants)

Registration form: Project: Review of the INTP by SDoT

Name: (optional)

Affiliation: _____

Cell phone (optional) _____

Email Address

Willingness to participate Yes No

1. What is the scope of transport sectors and modes covered by the INTP document, and what are the missing gaps?
2. What is the current environmental and social issues status in the INTP document?
3. What are the transport sector's environmental and social challenges/impacts in Kenya, and are they adequately covered in the INTP?
4. What environmental and social safeguard gaps exist in the INTP document?
5. What are the best practices in other countries that contribute towards enriching Kenya's INTP?
6. What is the SESA data needed to fill the gaps; and give a nationally and internationally acceptable policy document that adequately addresses social and environmental safeguards, addresses all stakeholder needs and aspirations in planning and programming; and ensures gender equitability and sustainability in the transport sector?
7. How can the SESA findings be effectively mainstreamed in the INTP document and be disseminated to the transport sector stakeholders?

Appendix 3: Kenyan Stakeholder Activities

i. Stakeholder Engagement-Kenya

1. Samples of Stakeholders' Participation Photos



Stakeholders Engagement-SDoT Board Room



Stakeholder Engagement-KPA, Mombasa



Stakeholder Engagement-Kenya Maritime Authority, Coast



SESA Team at Likoni Floating Bridge, coastal region



Public meeting consultation in Isiolo

ii. Observation Plates



Discussion with vendors along the roadside- section of Mau Mau Road

iii. Sample List of Participants

Isiolo Meeting

S/No	NAME	CONTACT
1	Rev. Joseph Elibit	0723148170
2	Pst. Peter Bahati	0701563861
3	Sheikh Wario Adan	0710357200
4	Justus Matiebo	0728028144
5	Colr. Sheikh H. Bonaya	0722608942
6	Halima Dida	0723883374
7	Dabaso Boru	0721383564
8	Rashid Ali	0721994987
9	Francis Achuka	0721457805
10	Gladys Losike	0741212409
11	Philip Muriuki	0710591988
12	Dennis Mumu	0708876164
13	Moses Lemantile	0714790199
14	Ann Ebulon Milliong	0724433966
15	Elizabeth Muthoni Mithamo	0792363501
16	Elizabeth Nyawira	0719434089
17	Hawa Galgalo	0110532031
18	Habiba Hussein	0729781151
19	Caroline Adong'a	0714127673
20	Margaret Nasike	0700767460
21	Francis Achuka	07214457805
22	Dennis Mumo	0708876164
23	Philip Mwirici	0710591988

Mombasa and Lamu Meeting

	Participant	Sector/Expertise	Tel Contact
1	Mr. Mwangi Nganga	Marine Expert -KEMFRI	0721590625
2	M/S Everyn Munyi	Aviation – (Pilot –YK-11684-PL	0701754197
4	Javan	Pwani University	0724588826
5	Shauri Halimu	Pwani University	0733811767
6	Dr Patrick Kimani	Environmental Consultant	0726040499
7	Dr Nyaga Kanyange	Blue- Economy and Fisheries	0725139003
8	Mr Daniel Maina Githinji	KPA-Environment	0722176147
9	Ciampwii Mwithi	Business person -City Centre	0717297051
10	George Mahinda	Climate /Waste Management Policy Expert -Destiny Africa	072550084
11	Yasil Owino	Climate Justice-Destiny Africa	0725334731
12	Dr Michael Wairagu	Consultant -Forestry	0721274358
13	Dr Joseph Tunje	Pwani University	0799467336
14	H. Katini	Kilifi County	0707030774
15	Enock Nyakundi		0723869149
16	Jonathan Fondo	Solid Wastes Entrepreneur	0720723102

Nairobi Meeting

S/No	Name	Organisation	Phone No:
1	Mr. George Wanjau	Director Planning State Department of Transport	0722620683
2	George Ndegwa	Masaai Mara University	0722577650
3	Eng. Roy Nyakech	Lamu Port South Sudan Ethiopia Transport Corridor Project (LAPSSSET)	0725019434
4	Abigael Torotich	State Department of Transport	07055973781
5	Kusinyo Marion	State Department of Transport	0710827042
6	Wilfred J. Kagimbi	SDSM	0722269431
7	Connie Ngachu	Nairobi Metropolitan Area Transport Authority	0721411396
8	Paul Kingori	State Department of Transport	0722256476
9	Esther Gacanja	State Department of Transport	0725602822
10	Abdi Hire	SDI	0727053801
11	Major Tallam	Kenya Civil Aviation Authority	0711455517
12	Brenda Mwangi	State Department of Transport	0721663138
14	Dr. John Muriuki	Talito Holdings Ltd.	0721333922
15	Albert Ochieng'	Talito Holdings Ltd-	0714718553
16	Dr. Thomas Kibutu	Talito Holdings Ltd.	0720662376
17	Jemmiah Iuka	State Department of Transport	0790247392
18	Pauline Kione	Kenya Railways Corporation	0729996114

Appendix 4: Benchmarking Exercises

i. Benchmarking Report for Dubai



STRATEGIC ENVIRONMENTAL SOCIAL IMPACT ASSESMENT (SESA) ON THE INTEGRATED NATIONAL TRASPORT POLICY (INTP)

BENCHMARKING REPORT ON UNITED ARAB EMIRATES – DUBAI

DATE: 22ND – 26TH MAY 2023

1.0 Introduction

The Kenya transport sector which comprises of road, rail, maritime and air transport is an enabler to other sectors contributing to economic development of the country. The sector is working on enhancing transport infrastructure and service delivery through the review of the Integrated National Transport Policy (INTP). The Environmental Management Coordination Act (EMCA) 1999 requires all policies and plans undergo Strategic Environmental and Social Impact Assessment (SESA) to ensure the policies and programmes comply with environmental sustainability. To achieve best practice, the sector undertook benchmarking in United Arab Emirates – Dubai, to ensure the INTP has environmental social safeguards that are compliant with National and International standards.

1.1 Objectives of Benchmarking

The objectives were to:

- i. Establish the optimal type of operating and regulatory environment best suited for improvement and enhancement of the effectiveness of the INTP in handling environmental and social issues in Kenya’s transport sector;
- ii. Establish how our counterparts, operate, which will help us to identify best practices to improve INTP;
- iii. Establish best practices for achieving higher performance levels in the National Transport Sector;
- iv. Examine transport policies that can positively enhance Kenya’s INTP; and
- v. Note new and emerging transport modes, technology and innovations in service delivery

2.0 Findings/Observations:

2.1 Rail

Rail is the main public transport system in the city of Dubai offering metro and light rail, trams, being highly integrated with other transport modes (road, marine, air and non-motorized). The following observations were made:

- i. The existence of Meter Gauge Rail track;
- ii. The existence of a dual track urban passenger rail network operating across the city at an interval of 10 minutes apart;
- iii. Existence of digitally operated (driverless) trams. The trams serve specified sessions of the city;
- iv. Stations and trains had facilities to support different gender needs, People Living with Disabilities (PLWDs) and the vulnerable;
- v. Effective interconnectivity with other modes of transport;
- vi. Clear signage’s and continuous notification on safety and security in all stations and inside the trains;



2.2 Road

Road infrastructure has a wider coverage and is the main mode of transport involving both private and public within the city of Dubai and offers the greatest connectivity to other transport modes. The city offers public transport on road vide buses that ply different routes and are connected to rail, marine and airports.

The following was noted for road transport:

- i. All urban roads are paved and well maintained;
- ii. Highways are largely continuous with very few exits. The exits are constructed and operationalized in accordance to the master plan and no variation is done to meet other business interests;
- iii. Road reserves are well demarcated, wide enough to accommodate expansions, beautified and greened with ornamental plants;
- iv. Utility services put up along the roads appear well controlled;
- v. Pedestrian paths found adjacent to urban roads are well developed and maintained;
- vi. Wide road recovery paths for safety and security of vehicles and passengers
- vii. Road-side parking is automated, uses solar power, and well distanced from the main lanes;
- viii. There was a high level of road inter-connectivity, many fly-overs at road inter-sections, thus minimizing traffic jams;
- ix. Utilization of ITS along the roads to provide information on announcements
- x. Buses have designated areas to support different gender needs, People Living with Disabilities (PLWDs) and the vulnerable;
- xi. Automated public announcement systems within the bus that notify commuters on stages, arrival and departure times and any other critical announcement;
- xii. All taxis are regulated by Road and Transport Authority (RTA) are metered;
- xiii. No Business developments or hawking takes place a long road reserve area, thus no road vision or attention obstruction;
- xiv. There were no passenger motor cycles or large Lorries in the city in conformity to recommended minimum and maximum C.C. for urban roads. Motor cycles found in the city are only for delivery/courier services only; and
- xv. There appeared to have an extremely low level of emissions or noise as a result of vehicles.



2.2.1 Non- Motorized

The following was observed:

- i. There exists non-motorized transport infrastructure and services within the city to serve cyclists, pedestrians, electric cycles among others;
- ii. Existence of clearly demarcated mixed use facilities to ensure customer safety and mobility;
- iii. Existence of electric charging points to facilitate electric cycles;
- iv. Level crossing with automated detectors that are connected with traffic light system to enable pedestrian notification to cross the road; and
- v. Rest areas with seats along the urban roads.

2.2.2 Road safety

- i. Road safety aspects have been mainstreamed in road design, implementation and road use
- ii. Integrated planning and implementation, that enables planning for trips and urban expansion through urban (land use) planning.
- iii. Strong corporate strategy and governance department that ensures analysis, projection,
- iv. Strong ICT and innovation that drive enforcement and compliance, the Police and safety departments manage the control room together (collaboration).
- v. The initiatives directed towards road safety are similar to Kenya, the main departure is in governance and enforcement.
- vi. Proper trip management, efficient and reliable transport
- vii. Instant fines to deter offenders- fines are posted in strategic places



2.3 Marine

Dubai being a city surrounded with mass water and existence of a creek uses marine as a form of transport as well as an economic hub for the United Arab Emirates. Marine is the oldest form of transport within the City of Dubai and it supported the subsistence economy through trading in fishing and harvesting of pearls prior to the discovery of Oil and other natural resources in UAE. Being the oldest form of transport, Dubai has maintained the archaic boats to promote and facilitate tourism and cultural heritage.

The following was observed:

- i. The marine transport carters both for public and private services which are integrated with other transport modes;
- ii. All marine facilities (boats) are controlled from a central point;
- iii. All licensing (operations and seafarers) is done by RTA;
- iv. They are well served with systems for fire control and waste management; and
- v. Existence of an environmental department that takes care of bio diversity conservation and sea protection.

2.4 Aviation

Dubai international airport is one of the busiest international airports in the world serving over 240 destinations across six continents. The Airport with a capacity to handle about 92.5 Million passengers annually served 86.4Million passengers in 2019, 66Million in 2022 and is projected

to serve 78Million in 2023. The Airport is well connected to both rail and road transport infrastructure. Other key features were observed as follows:

- i. Demonstration flight powered by 100% sustainable aviation fuel (SAF) done on 25th January 2023 using Boeing 777-300 ER Aircraft;
- ii. Use of LED installation on lighting fixtures, way finding signage and energy efficient advertising;
- iii. Use of digital information display and communication systems within terminal facilities as opposed to sound/ audio communication systems thus keeping noise levels low
- iv. Passive terminal building design that allows sufficient natural lighting and reduction in artificial lighting;
- v. Green mobility initiative by using hybrid and electric ground service vehicles;
- vi. Installed electrical vehicles charging points at Terminal 1 and 2; and
- vii. Installation of 15, 000 panel solar array at Terminal 2.

3.0 Coordination of Transport

The transport sector in Dubai is highly coordinated and integrated to ensure multimodal, seamless and safe travel. The Roads and Transport Authority (RTA) provides construction, coordination and oversight role on road, rail and marine transport. The following was observed:

- i. RTA is the lead transport policy making institution and manages and is in charge of road, rail and marine transport;
- ii. They have master plans extending to 2070;
- iii. There is great inter-ministerial and sectorial collaboration and integration in transport policy making and management;
- iv. There is great utilization of IT systems in management and control of transport;
- v. There is a very big element of human face (passenger comfort, happiness and safety) in transport decisions;
- vi. Environmental and social considerations in the transport sector are prominent and form core elements in transport decision making;
- vii. There have been great investments in security and conformity to traffic rules. There is a network of video cameras for surveillance in the city, road and rail network systems;
- viii. RTA is able to get real-time information on current traffic within the Emirate of Dubai and emergency/warning messages displayed on traffic control room boards;
- ix. Transport needs and traffic operations are based on day to day data gathered;
- x. There is continuous improvement of lanes for cyclists and pedestrians—with continuous assessments being made on safety and friendliness of infrastructure to cyclists and pedestrians;
- xi. Urban law being developed to ensure conformity to the masterplan for developers for securing of road corridors and maintenance;
- xii. A Zero-emission target in public transportation by 2050 through Net Zero Emission Strategy;
- xiii. Development of the overall transport sector is guided by three pillars namely environmental sustainability, economic prosperity and social stewardship. Sustainability in the transport sector places great emphasis on integrated planning and climate change actions;
- xiv. Use of risk-based management for safety analysis in the transport sector;

- xv. Undertake analysis based on real time data to improve customer service delivery such as:
- Annual measurement of transport success using travel time index approach to analyse traffic pain index;
 - An analysis to determine monitoring of road performance to guide transport infrastructure expansion, fleet capacity, public transport network and safety and security aspects;
 - Economic analysis to ensure that all policies are paying back towards ensuring customers comfort; and
 - Energy analysis to track through KPIs and report Green House Gases (GHG) emissions in the sector based on enterprise responsibility and governance.



4.0 Cross Cutting Issues

- i. The buses and railway ticketing system appear coordinated and efficient, with the card system helping to ease passenger movements as well as revenue collection;
- ii. The trains and buses are very clean suggesting maintenance of high-level hygiene in the public transport sector;
- iii. Ticketing control – Metro cards integrated to serve road and rail transport;
- iv. Movements along the highway appear well organized, with no regular mix-ups, and with vehicles maintaining the recommended road speeds;
- v. Road is managed by the Road Transport Authority (RTA) and are well maintained in order to give passengers the comfort, satisfaction and happiness they need from transport services;
- vi. Ample parking for all;
- vii. Transport system facilities are extremely clean, and had a high level of aesthetics as a way of maintaining happiness of passengers;
- viii. The levels of noise inside the air-port buildings are low and no announcement are made;
- ix. Facilities to support different gender needs, people with disabilities and vulnerable within the airport, including small transportation cars instead of wheel chairs have been availed and have good signage;
- x. The Dubai airport is decongested despite it receiving very many international passengers. Passenger are served in many specific locations based on needs and

requirements, time of arrival and travel destinations thus eliminating an “combined passengers queuing”; and

- xi. Airport taxi movement is well streamlined and efficient.





5.0 Challenges

Congestion – Low control of boarding commuters despite capacity of those on board;

6.0 Conclusion and Recommendations

- i. There is need do policies review and allow greater inter-ministerial and sectorial collaboration and integration in transport decision-making in order to fully support the transport sector goals;
- ii. There is need for the transport sector to specially design some large road intersections (e.g. Globe Cinema roundabout) in a way that can bring greater connectivity and movement efficiency, security, accommodate business ventures and have a policy that would allow investors to develop them thus saving government development costs and be a source of future revenues;
- iii. There is need for urban laws that would allow for acquisition of transportation land, centralized management of utilities along roads and traffic management actions;
- iv. There is need for policy to specifically guide the use of roads in the central business areas of cities and big towns by cargo or passenger motorized transport systems based on minimum and maximum CCs; and
- v. There is need to review policy on training of drivers for curriculum comprehensiveness for efficiency and safety e.g. to cover specific elements of road driving such as lanes usage.

SESA DUBAI TEAM: 22ND TO 26TH MAY 2023

S.N O	NAME	INSTITUTION	DESIGNATION	ROLE
1.	Esther W. Maina	SDOT	Secretary/Admn	Team Leader
2.	Dr. Susan Mwangi	Talito Ltd	Consultant	Member
3.	Dr. John Muriuki	Talito Ltd	Consultant	Member
4.	Paul Kingori	SDOT	Director/Policy	Member
5.	Wilson Njuki	SDOT	Economist	Member

6.	Esther Gacanja	SDOT	Economist	Member
7.	Mumbi Tanu	SDOT	Finance Officer/PA	Member
8.	Sheila Kitsao	KRC	Ag. Mgr/Strategy and Planning	Member
9.	Samuel Kiai	KAA	LEED Arch	Member
10.	Charles Kombo	KCAA	Chief Planning Officer	Member
11.	Beatrice Olwa	NTSA	Dep. Dir/Corporate	Member

ii. Benchmarking Exercise-Dubai

Dubai Benchmarking Team 1



iii. Observation Plates Dubai



Clear signage for *boda boda* sector operators and pedestrians



Instructions to the public on security and safety in Dubai metropolis

iv. Benchmarking Report for South Africa

STRATEGIC ENVIRONMENTAL SOCIAL IMPACT ASSESSMENT (SESA) ON THE INTEGRATED NATIONAL TRANSPORT POLICY (INTP)

BENCHMARKING REPORT ON SOUTH AFRICA

DATE: 5TH -9TH JUNE 2023

1.0 Introduction

The Kenya transport sector, which comprises of road, rail, maritime and air transport, is an enabler to other sectors contributing to the country's economic development. The sector is working on enhancing transport infrastructure and service delivery through the review of the Integrated National Transport Policy (INTP). The Environmental Management Coordination Act (EMCA) 1999 requires all policies and plans to undergo a Strategic Environmental and Social Assessment (SESA) to ensure the policies and programmes comply with environmental sustainability. To achieve best practice, the sector undertook benchmarking in The Republic of South Africa to ensure the INTP has environmental and social safeguards that are compliant with National and International standards.

1.1 Objectives of Benchmarking

The objectives of the benchmarking were to:

- i. Establish the optimal type of operating and regulatory environment best suited for improvement and enhancement of the effectiveness of the INTP in handling environmental and social issues in Kenya's transport sector;
- ii. Establish how our counterparts operate their transport sector, which will help us identify best practices to improve INTP;
- iii. Establish best practices for achieving higher performance levels in the National Transport Sector;
- iv. Examine transport policies that can positively enhance Kenya's INTP and
- v. Note new and emerging transport modes, technology and innovations in service delivery

Preamble

The Kenyan benchmarking team left for South Africa on 4th June and returned on 10th June 2023. The benchmarking activities were held between the 5th and 9th of June, 2023. The team was hosted by South Africa's Department of Transport, with three staff from the Department's International Relations department accompanying the Kenyan team throughout the benchmarking exercise. The benchmark comprises of interactive presentations, guided tours of facilities and general observations. On Monday 5th June 2023, visited the Department of Transport of the Republic of South Africa in the city of Durban, where a presentation was

given, on Tuesday, 6th June 2023, the team visited SANRAL Road Network Management and SANRAL Central Operations Centre, where presentations were made on the Network Management public engagement. The team was also taken on a guided tour of SANRAL Central Operations Centre. On the 7th of June, the team went for a site visit to O. R. TAMBO INTERNATIONAL AIRPORT (ORTIA), where presentations were made on the ORTIA Master Plan, and a guided tour was given. On the 8th and 9th of June, the team visited the Port of Durban, where presentations and a guided tour of the port and railway facilities were made.

1.2 DEPARTMENT OF TRASPORT IN SOUTH AFRICA

The team visited the Department of Transport, Republic of South Africa in the city of Durban, where the Senior Manager National Transport Master Planning made a comprehensive and interactive presentation. This was a very interactive session with the Kenyan delegation. As a preamble, the team was informed that the Constitution of the Republic of South Africa identifies the legislative responsibilities of different levels of government with regard to airports, roads, traffic management, and public transport. Transport is a function that is legislated and executed at all levels of government. The implementation of transport functions at the national level takes place through public entities, which the Department oversees. Each public entity has a specific delivery mandate.

In summary form, the presentation centred on the following:

- i. **History of transport in South Africa:** where he traced transport infrastructure development from the early days of mineral discovery to the more recent development of the National Transport Master Plan 2050.
- ii. **Structure of Transport and Roles in South Africa:**
 - The structure comprises of (i) the National Department of Transport, (ii) Provincial Departments of Transport, and (iii) Municipalities (Metropolitans, District and Local). Each has its own responsibilities.
 - They also have Integrated Transport Planning (for Roads, Maritime, Civil Aviation, Rail, Public Transport, Maritime and Corporate Services).
- iii. **Overview of the National Transport Master Plan 2050 (Natmap 2025)**
 - The plan's development was achieved through a bottom-up approach and forecasting modelling.
 - It lays out a vision for transport based on SA's development principle.
 - It also promotes the integration of transport planning, infrastructure and operations with land use management while advocating for transient-oriented development.
- iv. **Natmap 2050 Interventions per mode**

These interventions were developed with a view to seeking vertical and horizontal alignment with the following:

- Medium-term Strategic Framework (MTSF) priority outcomes
- National Development Plan NDP 2030) Priorities

- Presidential Infrastructure Coordinating Commission (PICC) – Strategic Infrastructure Projects
- Spatial Planning and Land Use Management Act (SPLUMA)
- Other emerging policy Planning drivers

[The team also noted that a National White Paper had been developed in 1996 and revised in 2021. The broad objectives and goals of the White Paper are centred on the smooth and efficient interaction that allows society and the economy to reach their potential].

National Strategy	National Development Plan 2030				
Sector Departments	Department of Transport	Department of Human Settlement	Economic Development Department		Department of Rural Development and Land Reform & CoGTA
Plans, Programs, Frameworks	NATMAP 2050	Master Spatial Plan (DoT partaking in the Development Phase)	SEZ/IDZ Program IPAP	NIP (SIPs)	NSDF & IJDF (DoT partaking in the Development Phase)
Implementation (Alignment and Integration) National, Provincial, District, Local	Moloto Passenger Corridor (DOT)	Gap Identified: Dispersed settlement patterns	Gap identified: Economic Development Corridor	SIP 1 (DOT Role) Road Improvement Rail Corridor Investigation	Potential: Re-alignment of future land use in conjunction with corridor development
	Harrismith Development Node (DOT, FEDC, District and Local Municipalities)	Potential: Plans to develop Mixed-Use Development	SEZ and Harrismith Logistics Hub Spatially disconnected	SIP 2 (DOT Influence) Improve linkages to N5 Improve N3 mobility	Potential: Re-alignment of future land use, mobility and access improvements
	Cornubia Development Node (eThekweni Municipality)	Cornubia Housing Settlement (anchor)	Dube Trade Port linkages King Shaka International Airport linkage	SIP2 – improved N3 links SIP 7 – BRT expansion to housing development	Potential in re-alignment of future land use
	N2 Wild Coast (DoT- SANRAL)	Tolling implications on marginal settlements and communities	Limited to tourism Potential to improve links SIP 3 node (PE), KZN & WC	SIP3 – strong Transport and Logistics link to the regional area	Gap identified
	Port Elizabeth – Coega IDZ (Dept. Human Settlement)	Several housing developments planned within vicinity of IDZ	Port of Nqura Coega IDZ	SIP 7 – BRT expansion Sip 3 Manganese Line (Rail/Road)	Potential in re-alignment of future land use

v. Presentation’s conclusion

- Integrated Land use-transport planning is imperative for the successful delivery of transport infrastructure and services.
- Long-term transport planning is important for the sustained implementation of transport programmes.
- It is important to enhance transport investment through various options.
- It is important to accelerate the speed of transition from planning to implementation.

Issues that arose from the presentation and discussions

- SA has customised international best practices on social and environmental issues

- ii. They conform with the statutory requirements of the country's National Environmental Act
- iii. *Climate change and environmental issues* are taken seriously in the transport sector
- iv. All transport projects are subjected to EIA
- v. *Social Impact Assessments* are carried out for all PPPs before proposal are taken to the cabinet for approval.
- vi. E-ticketing widely used
- vii. Emphasis is placed on intermodal transportation, which *concerns the movements of passengers or freight from an origin to a destination relying on several modes of transportation.*
- viii. Aviation sector: The need to separate regulation and operation so that the minister should not investigate him/herself?
- ix. Port and marine: We need to establish a National Shipping Company like our SA counterparts.
- x. National Transport Master Plan: This is still a challenge in Kenya. We need to pick up from our earlier efforts at achieving the same....maybe come up with one for 2060.

1.2 ROAD TRANSPORT

Presentations were made on i) SANRAL Road Network Management, ii) SANRAL Stakeholder Engagement and iii) SANRAL Central Operations Centre. We were taken on a guided tour of SANRAL Central Operations Centre.

Brief of SANRAL

The South African National Roads Agency SOC Ltd or SANRAL, is a South African parastatal responsible for the management, maintenance and development of South Africa's proclaimed National Road network, which includes many (but not all) National ("N") and some Provincial and Regional ("R") route segments.

SANRAL was established in 1998 by an Act of Parliament as an independent operating company to operate SA's national road network (+/- 22 000km)

- Established in terms of the National Roads Act of 1998
- Governed by a board appointed by the Minister of Transport, of which one member is appointed by the Minister of Finance • The CEO is an executive member of the Board
- SANRAL is a category 3A SOE:
- Not-for-profit entity
- Not a business enterprise
- Revenue options available to SANRAL
- Grants from national fiscus

- Toll Revenue
- Other Revenue cannot cross subsidise between road portfolios (non-toll / toll)

SANRAL'S ROLE

- Responsible for proclaimed national roads (toll and non-toll network); these form the economic arteries
- Maintain, fund, operate and rehabilitate national roads
- Levies toll to service toll roads
- Manage concessionaires
- Advise the Minister on road-related matters
- Create public value
- Provide safely engineered, well-maintained roads
- Transformation
- Create opportunities for employment, business, and tourism Improve journey experience

Issues that arose from the presentation, discussions and guided tour

- i. There is need for proper budgeting of projects and paying contractors in time. In SA bills were settled within a month.
- ii. SANRAL has a Stakeholder Engagement *department* that is well-funded.
- iii. Stakeholder engagement (not management) should begin at the *conceptualisation phase* of PPPs.
- iv. Before engaging external stakeholders, it is important to start by engaging *internal stakeholder*, who will then become ambassadors of the PPPs. For instance, in Kenya, a national road will be constructed through a county, yet the county engineers are often unaware.... and they are key stakeholders.
- v. Much as there are serious encroachment issues in SA, there have been *no forceful evictions* in the transport sector operations. This is an important lesson!
- vi. Need to adopt the “beyond and exceed” approach – beyond statutory requirements?
- vii. Need to increase our toll network coverage???
- viii. Need to enhance road safety campaigns/education on high accident zones? Given that many accidents are caused by human error.
- ix. Need to come up with standard Axle Loads for the region to avoid conflicts emanating from different standards, for instance, those of Kenya and SA (*kindly give the figures*)
- x. Proper drainage is key to the well-being of roads and, thus, the operation of the transport sector and economy.

1.3 AVIATION TRASPOT

The team visited O. R. TAMBO INTERNATIONAL AIRPORT (ORTIA), where the Regional General Manager (RGM) - Cluster 1, made presentations on the ORTIA Master Plan. The team was also taken on a guided tour of International Ddepartures Terminal A and CTB check-in area, Terminal B departures check-in area, Security Check Point – Terminal B, AMC Tour and Baggage Control Room, and a Walk through the parking, Level 2 MSP1(including Gautrain Station) and the lower roadway.

Preamble

Johannesburg - OR Tambo International Airport was formerly known as Johannesburg International Airport and prior to that was called Jan Smuts Airport. The airport was renamed in 2006 to honour the memory of one of South Africa's national heroes and icons, Oliver Reginald Tambo. It is situated in Kempton Park, Gauteng Province and serves as the economic engine of the country and Gauteng Province. It also serves as the primary airport for domestic and international travel for South Africa and is the biggest airport in the country. Airports Company South Africa runs it. They have a master plan which, when fully implemented aim at handling 80 million passengers from the current 28 million.

Issues that arose from the presentation, discussions and guided tour

1. They apply the concept of aerotropolis, which is being driven by local municipalities. The concept consists of the airport's aeronautical, logistics and commercial infrastructure anchoring the airport city at its core and outlying corridors and clusters of aviation-oriented businesses and residential development that feed off of each other and their accessibility to the airport.
2. They carry out EIA for airport expansion, which is self-funded.
3. They do international benchmarking on environmental management.
4. Their Aerodrome Manual has an Airport Environmental Management Program meant to deal with air quality, wildlife and spirages, among others.
5. Land acquisition for airport expansion is guided by South African law, which requires that negotiations and compensation precede this.
6. The airport has special economic zones (SEZ) for food/agro-processing, jewellery, diamonds and the biggest hydrogen energy plant.
7. Intermodal now is mainly by road; rail is there but not as well integrated as would be desired. They have an e-hailing taxi and shuttle.
8. Domestic freights are very expensive due to low sitting capacity
9. They have an electronic ticketing system.
10. They have 80% of their security staff outsourced and 20% internal.
11. Issues of security - e-gate.
12. They also have a special rate for children and pensioners.
13. They have an employment equity forum that meets quarterly and deals with gender and minorities. They derive their gender policy from the national policy.
14. All cargo handling companies are being encouraged to use electric power instead of fossil fuels.
15. Efforts are being made toward zero emissions. Are level 3 accredited.

1.4 PORT and RAIL TRASPORT

The team visited the Port of Durban and was given presentations on the overview of The Port, Durban Port Master Plan, Environmental Compliance and Transnet Freight Rail. The team was also taken a guided tour of the port and railway facilities within Durban Port.

The port of Durban

The port of Durban is situated on the east coast of South Africa and occupies the natural expanse of Durban Bay - an area of 1850ha, with the water area being 892 ha in extent at high tide and 679ha at low. The emerging Point waterfront development and central business district

are to the north and northeast, Maydon Wharf to the west, the Bayhead ship repair area to the south, and the Bluff Peninsula to the southeast. The port of Durban operates 24 hours a day, 365 days a year. Through the Ports Master Plan (PMP), the Transnet National Ports Authority (NPA) has identified several new projects for the port of Durban. This includes the widening and deepening of the Durban harbour mouth to enable safer access and access to larger ships. In order to do this the base of the breakwaters has to be excavated and repacked, and the main sewage outfall for Durban has to be rebuilt at the required depth. In the redevelopment of the port of Durban, the north shore of the harbour and the adjacent land (including the Point, Yacht Basin and Embankment areas) will continue to be reserved for leisure and tourism developments.

The port is owned by TRASNET SOC Ltd, which is the custodian of the port, rail and pipelines and has the largest railway line in Africa. And handles 3900 per year.

Issues that arose from the presentation, discussions and guided tour

16. They have an Environmental Act that is port-specific.
17. They have a TNTA Environmental Department for instance, license waste handlers.
18. The port meets *OSO 14001 Environmental Standards*.
19. EIAs are a critical component of delivering projects.
20. There is *legislative clarity* in the transport sector in SA, which minimises conflicts between various agencies - they have created platforms for corroboration among different agencies (something we could emulate?).
21. Port, pipeline and railway services are *under one roof*. This *creates synergy and improves coordination*. By loading cargo into intermodal containers, shipments move seamlessly between trucks, trains and cargo ships.
22. Shunting by pushing from behind using diesel engines saves on time.... It takes a few minutes. This takes about two hours in Kenya.
23. *Trains in South Africa use electricity* (diesel is only used in shunting). This is environmentally sound and relatively cheap. Ours use diesel.
24. They have *special projects* that include water desalinisation, renewable energy and planning, improvement and performance management.
25. It has corporate social responsibility, for instance, supporting nearby schools, e.g., science lab support and other community projects.
26. They have a very *lucrative cruise ship business* (a sector we could consider a priority).
27. They are highly automated. However, this makes them susceptible to hacking (they have been hacked in the past. To mitigate this, they have trained staff on cybercrime).
28. They use standard gauges as compared to Kenya, which has both standard and metre gauges.
29. Their level-crossing challenges are the same as ours.

1.5 OBSERVATIONS

1. Very clear signage along the roads.
2. Roads were quite well maintained and spacious.
3. Shunting of trains by pushing using diesel engines
4. Online live monitoring of traffic and thus a prompt response to incidences.
5. Pedestrian paths found adjacent to urban roads are well-developed, and most are fairly well-maintained.

6. The level of road interconnectivity is quite high, with many flyovers at road intersections. This minimizes traffic jams.

SESA SOUTH AFRICA TEAM PARTICIPANTS AND ATTENDANCE: 5th TO 9TH JUNE 2023

S.NO	Name	Institution	Role
1.	Dunkan Hunda	SDoT	Team Leader
2.	Martin Eshiwani	SDoT	Member
3.	Henry Ogoye	KAA	Member
4.	Irene Ireri	KAA	Member
5.	Evelyne Pakine	NTSA	Member
6.	Kega Muthoni	SDoT	Member
7.	Thomas Kibutu	Talito Holdings Ltd	Member

v. Benchmarking Exercise-South Africa



South Africa Bench Marking 1



South Africa Benchmarking 2



South Africa Benchmarking 3

vi. South Africa Benchmarking Tentative programme.

	9 – 12 noon	2 - 4	4 -6
	Interviews in institutions	Observation of transport systems/modes Site visits	Debriefing meeting to consolidate day findings

Observation Sheet

S/no.	Entity to be observed	Specific issues	Indicators and comments
1	Transport infrastructure e.g. road types, railway type, water transport types, air transport infrastructure.	E.g. road types, railway type, water transport types, air transport infrastructure. -Check any unique features of the infrastructure	
2	Transport modes	Differences between Kenya and foreign transport modes and movement patterns and controls.	
3	Emerging transport modes/technologies	For instance electric vehicles, drones; and other innovations.	
5	Environmental	Biodiversity Pollution Hazardous materials	
6	Occupation Safety and health	Traffic controls, signage, wastes disposal and other health and safety issues	
7	Social	Movement of people, workers in the various transport modes etc.	