RESEARCH, INNOVATION AND KNOWLEDGE MANAGEMENT POLICY

MARCH, 2023

Vision

The leading Authority in the provision of national trunk roads

Mission

To develop and manage quality and adequate national trunk roads through innovation and optimal

utilization of resources for sustainable development

Core Values

The guiding principles in the operations of KeNHA are:

Teamwork
Accountability
Innovation

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The **Research, Innovation and Knowledge Management** Policy has been approved and issued under the signature of:

Ms. Winfrida Ngumi   …………………............. **Date:** …………………
Chairman, Board of Directors

FOREWORD

In this globalization era, the construction industry is well known as a knowledge-intense sector relying on a wide range of technical expertise from many different sources. Over the years, the sector has continued to accumulate knowledge. However, due to various organizational cultures internally developed and where in most cases, Research, Innovation and Knowledge Management has been reportedly minimal, the sector has been left continually reinventing its processes. Research, Innovation and Knowledge Management RI&KM) operationalization at KeNHA has become handy and would play a very important role in the success of the organization.

RI&KM results in future growth by developing new products or methods that improve operations. KeNHA recognizes that the world is constantly and rapidly changing with developments in science and technology in the road sector and intends to utilize RI&KM to enhance efficiency in operations and ensure sustainable growth in output and services provided.

As we move in the 21st century, infrastructure is faced with significant challenges such as traffic growth and increased congestion, ever-increasing sensitivity to the environment, limited budgets and an aging transportation system with an increasing percentage of the infrastructure in need of significant repair.

These among other aspects make it imperative for the Authority to have a strong RI&KM policy to guide its development agenda taking into consideration the significant attention to improving quality and ensuring that we get the highest performance possible from current and future highway projects.

The overriding expected results of Research, Innovation and Knowledge Management to the Authority is to avail information that will improve the economic viability of the construction and maintenance of highways; increase the safety and efficiency of road traffic and vehicles; enhance sustainability in highways construction and maintenance; reduce traffic and construction-related environmental pollution; and create an efficient road transport system.

I am optimistic that the implementation of this policy will enable the management to make informed decisions and embrace more scientific approaches in running the Authority.

This policy shall be the overarching guiding policy in relation to matters Research, Innovation and Knowledge Management in line with ISO 9001:2015 as well as the vision and mandate of the Authority.

Ms. Winfrida Ngumi
Chairman of the Board

PREFACE

The Authority adopted its Strategic Plan (2018-2022) in tandem with national development policies outlined in Vision 2030 and road sector policies to chart out its strategic objectives and activities towards being a leading Authority in the provision of national trunk roads. In executing its responsibilities, the Authority acknowledges Knowledge Management and Innovation as a means for sustainable development.

This policy is intended to guide Research, Innovation and Knowledge Management activities in KeNHA with a view to controlling the quality of research, knowledge retention & transfer and innovations. It will also contribute to identifying policy issues that should be addressed in management of the roads, provide a deeper understanding of problems faced during execution of our mandate, and engaging with relevant stakeholders in discussing and recommending solutions to the problems.

Towards this end, the Research, Innovation and Knowledge Management policy will guide all internal and external stakeholders through pertinent processes including planning, funding, ethical issues and critical knowledge and innovative ideas documentation and dissemination. It is hoped that the policy will facilitate decision making, setting of goals and strategies, and providing a framework for developing consistency, quality management, accountability, and strategic direction for research activities.

As a step forward in the effectively operationalizing the Authority's mandate through aggressive pursuit of the mission: "to develop and manage quality and adequate National Trunk Roads through Innovation and optimal utilization of resources for sustainable development," the Authority shall continue to invest, institutionalize and nurture Research, Innovation and Knowledge Management initiatives that promotes successful implementation of its core functions.

Eng. Kungu Ndungu
Director General

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LIST OF ABBREVIATIONS AND ACRONYMS

CoP	:	Communities of Practice
HRPP	:	Human Resource Policy and Plan
ICT	:	Information Communication Technology
KeNHA	:	Kenya National Highways Authority
KM	:	Knowledge Management
KMA	:	Knowledge Management Awareness
KMP	:	Knowledge Management Policy
KRT	:	Knowledge Retention and Transfer
MoTIUD & PW	:	Transport, Infrastructure, Housing, Urban Development and Public Works
MoU	:	Memorandum of Understanding
MSDS	:	Material Safety Data Sheets
MTEF	:	Medium Term Expenditure Framework
MTRD	:	Materials Testing and Research Department
PRC	:	Planning, Research and Compliance
PSC	:	Public Service Commission
RICC	:	Research and Innovation Coordination Committee
RI&KM	:	Research, Innovation and Knowledge Management

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RMLF   :   Roads Maintenance Levy Fund

SME   :   Subject Matter Experts

DEFINITION OF TERMS

Technical terms should be well-defined.

S/No.	WORD/PHRASE	MEANING
1.	The Roads Act	The Kenya Roads Act, 2007, of the Laws of Kenya.
2.	Authority	The Kenya National Highways Authority.
3.	Research	The systematic investigation into and study of materials and sources in order to establish facts and reach new conclusions.
4.	Basic Research	Experimental or theoretical work undertaken primarily to acquire new knowledge of the underlying foundations of phenomena and observable facts, without any particular application or use in view. The results of basic research are not generally sold but are usually published in scientific journals or circulated to interested colleagues.
5.	Strategic Research	Research carried out with the expectation that it will produce a broad base of knowledge likely to form the background to the solution of recognized or expected current or future problems or offer possibilities for solving them.
6.	Applied Research / Oriented research	Original investigation in order to acquire new knowledge. It is, however, directed primarily towards a specific practical aim or objective. The results of applied research are intended primarily to be valid for a single or limited number of products, operations, methods or systems. The knowledge or information derived from applied research is often patented but may also be kept secret.
7.	Research Proposal	A document proposing a research project that constitutes a request for sponsorship of that research. Proposals are evaluated on the cost and potential impact of the proposed research, and on the soundness of the proposed plan for carrying it out.
8.	Innovation	The process of translating an idea or invention into a good or service that creates value.
9.	Process Innovation	Practical application of creative ideas that results to changes that affect the methods of producing outputs in an organization.
10.	Product Innovation	Practical application of creative ideas that results to changes in actual outputs of the organization.
11.	**Knowledge**	The fluid mix of framed experience, values, contextual information, intuition, judgment and expert insight that provides a framework for evaluating and incorporating new experiences and intelligence.

12.	**Tacit knowledge**	Knowledge that is hard to encode and communicate. It is personal, context-specific and hard to formalize. It is un-codified and resides in people's mind which can be expertise, technical know-how, experience and skills. This can be transferred and shared via mentoring, face-to-face communication, training, group project/task execution among other forms of elicitation.
13.	**Explicit knowledge**	Knowledge that is codified and easy-to-transfer knowledge usually embedded in physical formats such as books, memos, database, electronic media among others, which can easily be acquired, captured, communicated, shared, leveraged or stored.
14.	**Knowledge Management**	The process of identifying capturing, leveraging, sharing and effective utilization of intellectual assets within an organization to achieve its objectives.
15.	**Knowledge discovery**	The process of extracting/finding critical knowledge from past data, information, experiences and skills to produce new knowledge (tacit or explicit).
16.	**Knowledge creation**	Process of development of new knowledge and creation of innovation – new innovation not owned in the organization.
17.	**Knowledge capture**	Process by which knowledge is obtained (either tacit or explicit) that resides in people, artifacts, or organizational entities.
18.	**Knowledge sharing**	Process of mutual exchange of employees' knowledge, ideas, skills, and experiences to influence performance and productivity in an organization.
19.	**Knowledge application**	Process of integrating knowledge into the organization to make strategic decisions and perform tasks effectively and efficiently.
20.	**Organizational culture**	A set of norms and values concerning individual and organizational behavior in the processes of developing new knowledge.
21.	**Organizational structure**	The formal rules, tasks, functions and authorities which are in an organization, including policies, processes, reporting relationships, reward systems, departmental separations.
22.	**Knowledge Retention and Transfer**	The process of capturing unique and critical knowledge and expertise from employees either exiting or joining the Authority.
23.	**Subject Matter Expert**	A person who is an Authority in a specific subject or field of specialization in business process.
24.	**Knowledge Assets**	The accumulated intellectual resources of the Authority that can be published in the knowledge repository.
25.	**Intellectual Capital**	A group of knowledge assets that are attributed to the value creation of an organization.

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26.	Journal	A journal is a collection of articles (like a magazine) that is published regularly throughout the year. Journal articles are shorter than books and written about very specific topics.
27.	Abstract	A brief summary of a research article, thesis, review, conference proceeding, or any in-depth analysis of a particular subject and is often used to help the reader quickly ascertain the paper's purpose.
28.	Peer-review	The evaluation of work by one or more people with similar competences as the producers of the work (e.g. Engineering peer-review).
29.	Publication	The act of making information or stories available to people in a printed or electronic form.
30.	Panel research	A group of researchers pre-identified to research on specific research topics.
31.	Proprietary technology	Materials, products and tools that are the property of a business or individual and have unique characteristics that meet the required realistic performance specifications and can only be used with the express Authority of the promoter.
32.	Non-conventional products, tools	Technologies which are not provided in the approved road Design Manual, Design Guidelines and Standards Specifications.

1. Introduction

The development, rehabilitation, management and maintenance of all National Trunk Roads remains a core business of the Kenya National Highways Authority (KeNHA) for the provision of quality and adequate road network. The Authority has made it clear that it is committed to ensuring achievement of its vision "A leading Authority in the provision of national trunk roads."

As a step forward in the effectively operationalizing the Authority's mandate through aggressive pursuit of the mission: "to develop and manage quality and adequate National Trunk Roads through Innovation and optimal utilization of resources for sustainable development," the Authority shall continue to nurture and institutionalize an appropriate corporate culture that promotes successful implementation of its core functions, besides advising the Cabinet Secretary for Roads and Transport.

Key in all these undertakings, is the centrality of Research, Innovation and Knowledge Management. The Sessional Paper No. 5 of 2006, a policy framework for the development and management of the roads sub-sector, describes research as a means of enhancing cost effectiveness and quality control of road construction materials and methods. Although the paper places the overall responsibility of Research on the Materials Testing & Research Department (MTRD), best practices emphasizes on the need for individual organizations to develop research capacities within their jurisdiction for the purpose of providing customized Research and Innovation based on their individual mandate and improving quality and sustainable services.

Research in this context is recognized as a central tool in the provision of accurate, precise and systematic information for operation efficiency. The Authority recognizes that there are many ways, means and levels of research and shall establish and make use of the widest possible range consistent with its needs.

The policy emphasizes the need for demand–driven and cost-effective Research, Innovation and Knowledge Management programs that respond to emerging challenges in the context of resource constraints and the continually increasing demand for more and better roads.

2. Policy Objectives

The goal of the Research, Innovation and Knowledge Management policy is to ensure that the Authority has a structured approach to conduct and manage research, document and transfer critical knowledge and innovative ideas for efficiency and sustainable development.

The specific objectives of this policy are to:

2.1. Promote and facilitate research, knowledge and innovation using a holistic, multi-disciplinary approach and to provide a strategy on how to achieve its goals;
2.2. Establish a framework for the governance of research, knowledge and innovation;
2.3. Ensure integrity, quality and ethics in research;
2.4. Promote research for new business opportunities;
2.5. Promote new technologies i.e. product and process innovation, materials and designs that are safe, low cost and energy efficient;
2.6. Create and assign adequate financial resources for supporting and facilitating research.

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Knowledge and innovation initiatives and programs;

2.7. Strengthen the Authority's' research capacity through cooperation and collaboration with relevant stakeholders including the private sector, research professionals & institutions and other government institutions at local, regional and global platforms;

2.8. Define an enabling framework for data and knowledge sharing to ensure mainstream learning and growth within the Authority.

2.9. Instill a culture of continued learning, expertise building and critical knowledge accountability.

3. Policy Scope

3.1. This policy sets out the requirements for the implementation of Research, Innovation and Knowledge Management by establishing, maintaining and expanding an enabling research environment, knowledge-driven and innovation culture through production, domestication and exchange of ideas within and without the Authority.

3.2. This policy shall be the overarching guiding policy in relation to matters Research, Innovation and Knowledge Management.

3.3. The management accords importance to Research, Innovation and Knowledge Management. Thus, the policy applies to all KeNHA staff, Consultants, Contractors, Development Partners, Tertiary Institutions, Private Institutions and Professionals through pertinent matters of research, knowledge and innovation.

3.4. The Authority will encourage both corporate and individual research/innovation on the following approved programs.

a) Process analysis on functional areas;

b) Surveys on management issues;

c) Performance monitoring and evaluation of research trials;

d) Major studies on the following thematic areas.

Asset Management	Materials	Road Safety	Traffic
Economic analysis	Value for Money	Market Research	Pavement
Contract Management	Geotechnical & Structures	Drainage & Hydraulics	Technical Innovation

Transportation planning and land use	Tools, equipment and machinery	Environment/sustainable construction	Standards and specifications for road construction, design and material testing.

4. Policy Statement

KeNHA seeks to be a knowledge and innovation driven organization. It is KeNHA's policy to institutionalize knowledge management in order to lead to superior value creation and business performance.

KeNHA recognizes that sound research, knowledge and innovation remain critical in the provision of solid solutions through shared perspectives, ideas and experiences; to ensure that staff are knowledgeable and innovative and that research results are available to enable informed decisions; and to improve organizational efficiency.

The policy seeks to foster initiatives, procedures and tools that will allow KeNHA to effectively and efficiently manage its research undertakings, critical knowledge and innovative ideas in order to deliver high quality services for sustainable growth and development.

The Authority shall initiate demand-driven research activities that focus on gaining knowledge and developing systems that increase KeNHA's efficiency and effectiveness for internal processes and the management, development, rehabilitation, and maintenance of the National Trunk Roads.

The Authority shall encourage innovation of whatever nature that creates value and efficiency in the delivery of its mandate as determined in the Strategic Plan.

5. Guiding Principles

The effective implementation of the RI&KM policy will be guided by the following principles:

5.1. **Integrity**: Researchers must comply with all legal and ethical requirements relevant to their research study. They should declare any potential or actual conflicts of interest relating to

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research and where necessary take steps to resolve them.

5.2. **Confidentiality:** The confidentiality of data and information supplied by research and innovation participants and the anonymity of respondents must be respected.

5.3. **Excellence:** The responsibility for ensuring the quality and reliability of research, research outputs and innovations shall rest with the researcher (s)/innovator concerned.

5.4. **Technology and Innovation:** The Policy recognizes innovation as central to meeting the rapid developments in infrastructure while also boosting productivity and competitiveness.

5.5. **Relevance:** Research activities including basic, strategic and applied research will aim at fulfilling the Authority's Vision, Mission and strategic goals, and the national goals as set out in Vision 2030.

5.6. **Cost effectiveness:** There shall be use of the most cost-effective means to achieve the desired results.

5.7. **Networking and partnership:** Strengthening partnerships with institutions both local such as MTRD & Universities and international that undertakes research relevant to this policy.

5.8. **Promotion of knowledge creation, storage and dissemination:** Establishing a data repository.

5.9. Knowledge is a critical asset and a strategic initiative for productivity, efficiency and innovation in the organization. The Authority to ensure that critical knowledge assets (both in tacit and explicit form) are identified, created, shared, preserved and managed to maximize effective operation of the organization;

5.10. KeNHA is becoming a knowledge and innovation driven organization. The Authority to ensure that knowledge management and innovation promotes and encourages a culture in which acquired knowledge, ideas, skills, and experiences are documented, exchanged and shared among employees in the organization. Once knowledge is shared among employees in the organization, the shared knowledge should be applied to solve problems and foster innovation;

5.11. Set up reward and recognition systems through which employees will be motivated to continued learning, expertise building in order to acquire and share knowledge as well as encouraging innovation;

5.12. Endeavor to acquire tools and technologies necessary to support employees and processes involved in knowledge management practice.

5.13. Intellectual capital is the basic foundation for the sustainable growth and

development in the Organization. There is need to maximize and respect intellectual capital of individual and organizational knowledge in the Authority.

5.14.　　The need to create organization-wide collaborative, team work and knowledge sharing setting.

5.15.　　The need to align knowledge management to the competencies and requirements set out in the Authority's strategic plan.

6. Policy Implementation Process

6.1. Research

The Authority will encourage both corporate and individual research on approved programs.

Research Knowledge and Innovation Department shall develop Standard Operating Procedures (SoPs) Manual to guide stakeholders on the procedures and processes for RI&KM.

The Director General will establish a Research and Innovation Coordination Committee (RICC) headed by a Director through appointment.

The committee shall meet on a quarterly basis or at such other interval as decided by the Chairman of the Committee and the Research, Innovation and Knowledge Management Department shall serve as Secretariat to the RICC.

6.1.1. Research panel (Consultancy Services)

The Authority may outsource research and innovation services to research centers, institutes and/or appoint a panel of qualified researchers to conduct research on its behalf and fill identified knowledge gaps that contribute to execution of its mandate. Outsourcing shall be carried out upon internal capacity assessment to determine how the research will be conducted.

All Consultancies will be governed by a clear agreement signed by the Director General as recommended by D (PRC). The agreements will clearly stipulate the obligations of the research team and those of the Client as well as the timelines and funds available to undertake the work.

The research panel shall be comprised of researchers/individuals with relevant skills and experience in specific thematic areas. Qualifications shall be set out for the researchers based on their expertise and experience.

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6.1.2. Research Collaboration

The Authority may partner with institutions in Kenya and in other regions of the world, as well as research centers, institutes and organizations of scholars for mutual benefit.

The implementation of collaborative research and innovation activities shall be based on specific work plans agreed upon by respective parties. Such activities, including budgets shall be developed and modified through mutual agreements and approved by both parties through the exchange of letters of agreements or MoUs. Sources of funding shall be clearly documented in the agreement.

Any publications or presentations arising from collaborative research work including papers, books and proceedings of conferences, seminars and workshops will be authored jointly to reflect partnership in such programs.

This Policy also enhances the linkage between internal staff and external parties in collaboration and engagement with the Authority on Research under the coordination of the Department of Research, Innovation and Knowledge Management.

6.1.3. Proprietary Technology

The Authority shall encourage new innovative products, methods and materials that improve road construction and maintenance as well as efficiency.

For non-conventional products or vender-based technologies, the promoter or manufacturer shall provide the following information and documents:

i. A certificate of approval from the Materials Testing & Research Department (MTRD);
ii. Verification or approval certificates provided by a competent National Agency of the country of manufacture;
iii. Manufacture's Material Safety Data Sheets (MSDS) providing information on the potential hazards (health, fire, reactivity and environmental), handling and disposal and certification by National Environmental Safety/Authority of the country of manufacture;
iv. A letter from a road Agency of the country of manufacture certifying that the product has been used in the construction of a public road, including a brief description of the road, scope of work and a copy of a completion certificate; and
v. Sample cost analysis of construction using the proprietary technology compared to

conventional.

Where applicable, pilot sections for performance trials of length not less than one hundred metres (100m) shall be established with prior approval by the Director General (DG). The promoter shall be financially responsible for the cost of the products, materials or tools. The DG may also approve cost-sharing on certain research trials of mutual benefit.

The user Department together with the Department of Research, Innovation and Knowledge Management in partnership with MTRD shall carry out performance monitoring of the research trial.

6.1.4. Funding

The Authority will, as much as possible, provide adequate funding, and corporate commitment to capacity building for promotion of research and innovation.

Funds for Research, Innovation and Knowledge Management programs will be sourced from:

i.   KeNHA's RMLF recurrent budget at a rate of 0.5% Annual allocation and 0.5% from Development project budget.
ii. Grants, private, public organizations and development partners as additional funding and grants.

6.1.5. Reporting Framework

Reporting is an integral function for updating information to promote action. Reports are also valuable and essential tools for the Authority because they provide a means to track, analyze the performance and overall achievement while identifying areas for improvement and opportunities for growth.

In carrying out its mandate, the Department of Research, Innovation and Knowledge Management shall generate the following reports to be actioned as per the matrix below:
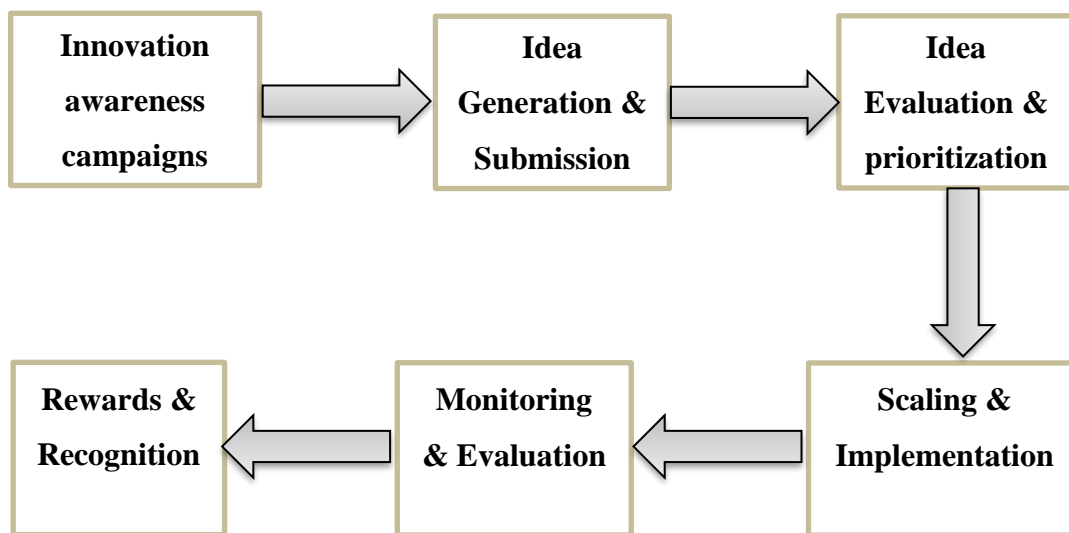
S/No	Report	Expected action
i.	Annual Work Plans.	Information.
ii.	External engagements.	Information & Approval.
iii.	Proposed research programs.	Information & Approval.
iv.	Ensuing periodic updates arising out of i, ii & iii above.	Information.

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These shall be processed bi-annually through the Technical & Strategy Committee of the Board of Directors for onward submission to the Board.

6.2. Innovation

Innovation refers to the process of implementing new ideas to create value for an organization. This can be in the form of products, processes, systems, business concepts /strategies or service. The Innovation function within the Authority is mandated to spearhead a culture of creativity and innovation in the Authority and coordinating evaluation of innovative ideas submitted by staff and stakeholders through the Innovation Management Portal – KeNHAVATE.

As such, Innovation Management at KeNHA shall follow the following process:

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┌──────────────┐      ┌──────────────┐      ┌──────────────┐
│  Innovation  │      │     Idea     │      │     Idea     │
│  awareness   │ ───▶ │ Generation & │ ───▶ │ Evaluation & │
│  campaigns   │      │  Submission  │      │prioritization│
└──────────────┘      └──────────────┘      └──────────────┘
                                                    │
                                                    ▼
┌──────────────┐      ┌──────────────┐      ┌──────────────┐
│  Rewards &   │      │  Monitoring  │      │  Scaling &   │
│ Recognition  │ ◀─── │ & Evaluation │ ◀─── │Implementation│
└──────────────┘      └──────────────┘      └──────────────┘
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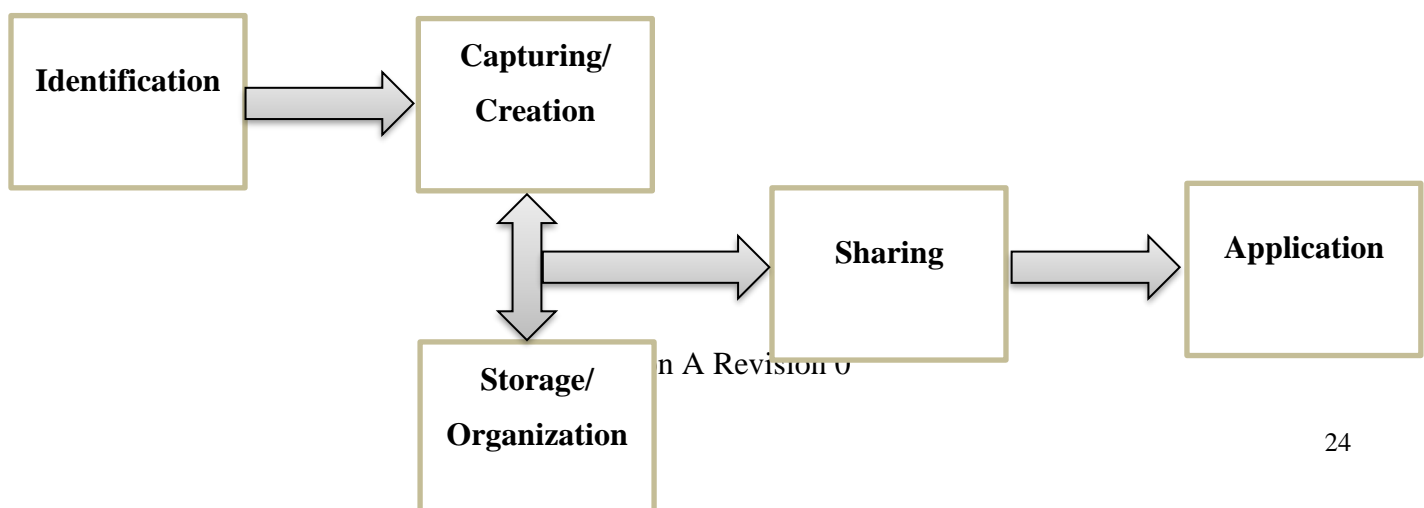
Approach

I. Innovation and Awareness Creation – The Authority shall have sustained efforts to educate and boost awareness on Innovation to all staff and stakeholders.

II. Idea Generation and Submission – The Authority shall encourage submission of Ideas on KeNHAVATE. The submitted Ideas shall be screened by the Research, Innovation and Knowledge Management Department.

III. Idea Evaluation – The Director General shall appoint Subject Matter Experts (SMEs). The SMEs shall be listed on the Innovation Management Portal. Ideas submitted shall be allocated to the SMEs through the Research, Innovation and Knowledge Management Department (RI&KM) for evaluation. The SMEs shall determine the viability of the ideas.

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IV. Idea Prioritization and Implementation – Evaluated ideas through RI&KM shall be prioritized for broader implementation within the Authority by the user departments, subject to availability of funds.

V. Monitoring and Evaluation – RI&KM shall follow up on the implementation status of the recommended ideas. RI&KM shall outline guidelines/evaluation criteria and frequency on how the recommended ideas for implementation will be monitored against established metrics.

VI. Rewards and Recognition – RI&KM in collaboration with the Human Recourses Management Department shall determine the rewards and recognition for the recommended ideas. The Idea authors shall be rewarded and or recognized using the KeNHA's Human Recourses Management Policy guidelines.

6.3. Knowledge Management

While knowledge is identified as a key factor in production and/ or service processes, the path to knowledge management institutionalization must be leveraged based on the critical knowledge available and created, evidence and best practice for the organization's strategic competitive advantage, superior value creation and enhancement of organizational performance. Knowledge management provides a better use of knowledge for sustainable growth and development in line with the Authority's core mandate.

The practice of knowledge management is a processes that entails critical knowledge identification, knowledge creation, knowledge storage (tacit or explicit), knowledge sharing and application of knowledge. Every knowledge management practice must therefore put these processes in place to achieve successful service delivery outcome. As such, KM at KeNHA shall follow the following KM framework which provides a detailed roadmap to enable the Authority design, implement and sustain its knowledge management efforts.

Identification → Capturing/ Creation ⇅ Storage/ Organization → Sharing → Application

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KM Modules	Detailed descriptions
1. Determine KM current state	• RI&KM shall define the value proposition for enhancing the flow of knowledge at KeNHA. • Understand current and future knowledge needs within KeNHA's ecosystem. • Understand the extent of the gaps and deficiencies and identify how KM may help solve it.
2. Identify critical knowledge	• Based on KeNHA Ecosystem KM current state. • RI&KM shall synthesize/obtain critical knowledge • Analyze critical knowledge.
3. Align KM to business priorities & functions	• Modeling knowledge-sharing behaviours. • Knowledge-driven Innovation.
4. Design a KM & Innovation Strategy	• RI&KM shall document KM&I strategy to plan how KeNHA will acquire, store, share and apply knowledge to improve its programs using KM interventions.
5. Establish KM Policies and Procedures	• This policy shall provide guidances for how knowledge of KeNHA ecosystem will be acquired, stored, shared and applied as well as guidelines for how employees and stakeholders should participate in the KM process.
Create a KM Culture	• The Authority shall foster a culture that values knowledge sharing and collaboration within KeNHA ecosystem. This will involve training and development/ capacity building initiatives to help employees and stakeholders understand the value of knowledge management and how to participate in the KM process.
Implement KM Technology Solutions (Design, Select, Tailor, Implement Inventions)	• RI&KM shall implement technology that support KeNHA ecosystem and KM and Innovation Strategy using new KM and Innovation tools and techniques or adapting existing ones to meet Authority ecosystem knowledge needs.
Monitor & Evaluate KM Activities & Outcomes	• RI&KM shall regularly assess the effectiveness of the KM program and adapting to respond to changing needs and realities as needed. This will involve tracking key performance indicators such as the number of knowledge assets created, the number of employees and stakeholders participating in the KM process, and the impact of knowledge sharing forums on the Authority's ecosystem's performance.
Sustain Knowledge use	• RI&KM shall integrate a continuous improvement process on KM program that involves identifying areas for improvement, testing new approaches, and implementing changes that enhance the effectiveness of the KM program in KeNHA and its ecosystem.

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Approach

VII. **Critical knowledge Identification/Mapping** – Before knowledge is acquired, generated or created, it is essential to identify the knowledge needs of the Authority to achieve its mandate.

Knowledge needs in KeNHA shall be identified based on the Authority's mandate as stipulated in the Kenya Roads Act 2007 and the Authority's Strategic Plan.

VIII. **Knowledge Capturing/Creation** – Acquiring or generating knowledge for exploration and exploitation through explicit knowledge (formal and informal writings, research, best practice – lessons learnt) and tacit knowledge (brainstorming, and communities of practice (workshops, knowledge sharing sessions)) as well as through the knowledge retention and transfer programmes.

Explicit knowledge would entail largely a process of discovering knowledge within existing data and knowledge repositories.

Tacit knowledge would entail discovering and detecting tacit knowledge through employees' ideas, skills, and experiences. Knowledge sharing sessions/communities of practice, expert locators and knowledge retention and transfer programmes would be used to harvest tacit knowledge.

KeNHA shall promote and facilitate critical knowledge creation opportunities at both individual, team, and organizational levels.

IX. **Knowledge Storage/Organization** – The knowledge created and acquired needs to be properly organized for easy access and usage. In like manner, knowledge created and acquired needs to be properly stored and preserved on knowledge repositories (such as SharePoint) for subsequent access and use.

KeNHA shall promote and facilitate critical knowledge documentation and preservation so that they can be easily reused in the future.

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X.   **Knowledge Sharing** – Knowledge sharing is an act through which, acquired knowledge, ideas, skills, and experiences shall be exchanged and shared among employees and the Authority at the right time. Knowledge sharing would allow for employees to leverage the knowledge gained. Properly knowledge sharing mechanisms, would lead to reduced risk of critical knowledge loss in the Authority.

Knowledge Sharing in KeNHA shall entail continued practical learning as a key component in knowledge management. All employees shall be encouraged to share their individual practical knowledge ideas and experiences to the entire organization in order to mitigate the risks of knowledge loss.

KeNHA shall promote and encourage knowledge sharing culture in which acquired knowledge, ideas, skills, and experiences are documented, exchanged and shared among employees in the organization. In addition, KeNHA shall endeavour to put in place a reward and recognition mechanism through which employees will be motivated to share knowledge in a view to ensure that critical knowledge is shared and to discourage knowledge hoarding.

KeNHA shall;

a) Direct all Directorates and Heads of Departments to practice knowledge-oriented leadership in which facilitation, mutual respect and willingness is exercised, in order to build and support strong teams in knowledge management practices and innovation. Since, Leadership behavior is one of the important factors that greatly influences the direction and effectiveness of knowledge management within the organization.

b) Develop knowledge workers through senior management leadership. This will entail: developing and training knowledge workers; identifying and developing competencies; identify and develop mentors, trainers, champions, subject matter experts; provide resources and support KM initiatives; and recognize and reward knowledge workers for their knowledge sharing and innovative efforts. Developing knowledge workers through senior management leadership is

necessary for an organization that wants to become and remain high performing and knowledge enabled.

c) Review of performance appraisal systems to include knowledge management performance.

XI. **Knowledge application** – Once the knowledge is identified, captured and shared among employees in the Authority, it has to be applied to improve processes, make strategic decisions, and solve problems as well as foster innovation in the organization.

KeNHA shall promote proper application of knowledge which would lead to improved productivity, and increased efficiency in service delivery.

The Authority shall ensure knowledge management processes are embedded in the Authority's business processes.

7. Policy Implementation Responsibilities

7.1. Board of Director

a) The Board of Directors shall be the approving Authority and review of this policy as well as provide oversight.
b) The Board of Directors shall allocate resources for the policy implementation.

7.2. Director General

a) Ensure the policy is approved by the Board of Directors.
b) Provide top leadership support and encourage a knowledge and innovation driven culture within the Authority.
c) Appoint Subject Matter Experts (SMEs) and Knowledge & Innovation Champions.
d) Appoint Research and Innovation Coordination Committee.
e) Approve Research, Innovation and Knowledge Management program financial resources.
f) The Director General shall be principally responsible for all research conducted in the Authority and ensure compliance with respect to implementation of this policy.

7.3. The Research and Innovation Coordination Committee

The appointed Chairman shall schedule and officiate the committee meetings as well as oversee implementation of this policy.

In entirety, the committee shall:

i. Vet and prioritize RK&I programs;

ii. Recommend to the DG for approval;

iii. Monitor annual research, knowledge and innovation programs;

iv. Take decisions on the utilization of research outputs; and

v. Establish a pool of professional qualified and competent researchers (Panel).

The Chairman shall then periodically brief the DG and the Senior Management on RK&I proposals and programs.

7.4. Deputy Director Research, Innovation and Knowledge Management

The management and co-ordination of Research, Innovation and Knowledge Management programs shall be the responsibility of the Department of Research, Innovation and Knowledge Management. The department shall be responsible for the development and implementation and review of the RI&KM policy. The DD (RI&KM) shall:

i. Be the Secretary to the Authority's RI&KM Coordinating Committee.

ii. Co-ordinate all RI&KM programs of the Authority and review them periodically for tabling to the committee.

iii. Receive and review research papers, business concepts, proposals and proprietary products before tabling to the committee.

iv. Recommend to the DG for approval of Research requests by external researchers seeking to use KeNHA's Road Assets as guided by the framework.

v. Link RI&KM to the MTEF budgeting process.

vi. Review income streams for the Authority and advice the DG;

vii. Provide technical support to RI&KM programs at all levels of the Authority for standardization.

viii. Monitor and evaluate implementation of the RI&KM policy.

ix. Establish and maintain a KeNHA – RI&KM inventory.

   x.   Establish direct link with Department of Research (Material Testing and Research Department) at ministerial level and Tertiary Institutions.

  xi.   Establish Physical and digital Library and Central Knowledge Repository as well as the Innovation Management Portal for research output, Innovation and knowledge assets publication.

7.5. Heads of Departments

    i.   Each Head of Department is responsible for the initiation, implementation and review of Department's specific research, knowledge and innovation programs.

   ii.   Appoint a Research, Innovation and Knowledge Champion to promote awareness and coordinate research activities within the department.

 iii.   Advocate for inclusion of research, knowledge and innovation programs in their respective annual work plans and budgets.

  iv.   Promote research, knowledge and innovation for decision making at all levels.

   v.   Forward and table research proposals to the Deputy Director, Research, Innovation and Knowledge Management for consolidation.

8. Action to address risks and responsibilities

   a)   Obtain and perform critical knowledge loss risk register and assessment.

   b)   Obtain and perform Research and innovation register and assessment.

   c)   Undertake Research, Innovation and Knowledge Management awareness plan.

   d)   Measure and evaluate the Research result, Innovative ideas submitted and knowledge shared and transferred within the Authority.

9. Monitoring and Evaluation

Monitoring of this policy shall be done annually and evaluation at mid-term and end of the three (3) years.

10. Policy Review

This Policy shall be reviewed every three (3) years from the date it comes into effect in order to accommodate changes in Law, Government regulations and operating environment as and when such a change arises.

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