



NATIONAL RESEARCH AGENDA

for the Malawi 2063 first 10-year
implementation plan (MIP-I)



NATIONAL RESEARCH AGENDA

This document must be referenced as follows:

Malawi Government 2023, National Research Agenda

Operationalizing the Malawi 2063 First 10-year Implementation Plan (MIP-1)

Contact addresses for the implementation coordinating agencies

National Commission for Science and Technology,
Lingadzi House, Along Robert
Mugabe Crescent
P/Bag B303
Lilongwe
Tel: + 265 1 771 550
E-Mail: directorgeneral@ncst.mw

National Planning Commission
2nd Floor, Chief M'Mbelwa
Building
Private Bag B316
Lilongwe 3
Tel: +265 1788 884
Email: dg@npc.mw

ACRONYMS

ACB	Anti-Corruption Bureau
ARET	Agriculture Research and Extension Trust
BAM	Bankers Association of Malawi
CFTC	Competition and Fair-Trading Commission
CGIAR	Consultative Group for International Agriculture Research
CSOs	Civil Society Organisations
DARS	Department of Agriculture Research Services
ECD	Early Childhood Development
GBA	Green Belt Authority
ICT	Information and Communication Technology
KUHeS	Kamuzu University of Health Sciences
LUANAR	Lilongwe University of Agriculture and Natural Resources
MACRA	Malawi Communications Regulatory Authority
MBS	Malawi Bureau of Standards
MCCCI	Malawi Confederation of Chambers of Commerce and Industry
MALGA	Malawi Local Government Association
MDAs	Ministries, Departments and Agencies
MEC	Malawi Electoral Commission
MEPA	Malawi Environmental Protection Agency
MEAL	Monitoring, Evaluation, Accountability and Learning
MERA	Malawi Energy Regulatory Authority
MHRC	Malawi Human Rights Commission
MSG	Malawi School of Government
MIP-1	Malawi 2063 First 10-year Implementation Plan

MITC	Malawi Investment and Trade Centre
MLS	Malawi Law Society
MSME	Micro, Small and Medium Enterprises
MUBAS	Malawi University of Business and Applied Sciences
MUST	Malawi University of Science and Technology
MW2063	Malawi 2063
MZUNI	Mzuzu University
NAC	National AIDS Commission
NCIC	National Construction Industrial Council
NCST	National Commission for Science and Technology
NLGFC	National Local Government Finance Committee
NPC	National Planning Commission
NRA	National Research Agenda
NRB	National Registration Bureau
NYCOM	National Youth Council of Malawi
PPDAA	Public Procurement and Disposal of Assets Authority
PPPC	Public Private Partnership Commission
RBM	Reserve Bank of Malawi
SDGs	Sustainable Development Goals
SMEDI	Small and Medium Enterprise Development Institute
TEVETA	Technical, Entrepreneurial, Vocational Education Training Authority
TRFCA	Tea Research Foundation of Central Africa
UCAM	Universities and Colleges Association of Malawi
UNICEF	United Nations Children’s Fund
UNIMA	University of Malawi
WASH	Water, Sanitation and Hygiene

CONTENTS

Acronyms	iii
List of Tables	vi
ACKNOWLEDGEMENT	vii
Foreword	viii
Chapter 1: Introduction	1
1.1 Context	1
1.2 Objectives of the National Research Agenda (NRA)	1
1.3 Development Process	2
Chapter 2: Pillars, Themes and Priorities	3
2.1 Research Pillar 1: Agricultural Productivity and Commercialisation	3
2.2 Research Pillar 2: Industrialisation (including Mining)	11
2.3 Research Pillar 3: Urbanisation (including Tourism)	15
2.4 Research Pillar 4: Mindset Change	20
2.5 Research Pillar 5: Effective Governance Systems and Institutions	24
2.6 Research Pillar 6: Enhanced Public Sector Performance	30
2.7 Research Pillar 7: Private Sector Dynamism	32
2.8 Research Pillar 8: Human Capital Development	35
2.9 Research Pillar 9: Economic Infrastructure	43
2.10 Research Pillar 10: Environmental Sustainability	46
Chapter 3: Operationalisation of the National Research Agenda	51
3.1 Implementation Coordination	51
3.2 Financing of the NRA Implementation	51
3.3 Monitoring, Evaluation, Accountability and Learning (MEAL)	51
3.4 Dissemination of Knowledge, Technologies, and Innovations	53

LIST OF TABLES

Table 1. Research themes and priority areas on Agriculture Productivity and Commercialisation

Table 2. Research themes and priority areas on Industrialisation (including Mining)

Table 3. Research themes and priority areas on Urbanisation (including Tourism)

Table 4. Research themes and priority areas on Mindset Change

Table 5. Research themes and priority areas on Effective Governance Systems and Institutions

Table 6. Research themes and priority areas on Enhanced Public Sector Performance

Table 7. Research themes and priority areas on Private Sector Dynamism

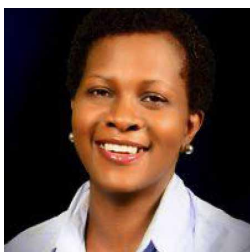
Table 8. Research themes and priority areas on Human Capital Development

Table 9. Research themes and priority areas on Economic Infrastructure

Table 10. Research themes and priority areas on Environmental Sustainability

Table 11. Monitoring Evaluation Accountability and Learning Framework

ACKNOWLEDGEMENT



Ms Gift A. Kadzamira

Acting Director General
National Commission for Science and
Technology



Dr. Thomas Chataghalala Munthali

Director General
National Planning Commission

The development of the National Research Agenda (NRA) followed a consultative process that involved the academia, think-tanks, research institutions, Government Ministries, Departments, Agencies (MDAs) and private sector organisations in the country, to whom the National Commission for Science and Technology (NCST) and the National Planning Commission (NPC) are greatly indebted.

The NCST and NPC greatly appreciate the financial and technical support from the United Nations Children's Fund (UNICEF) towards the development of the NRA. Further appreciation goes to MDAs, University of Malawi (UNIMA), Mzuzu University (MZUNI), Malawi University of Science and Technology (MUST), Malawi University of Business and Applied Sciences (MUBAS), Lilongwe University of Agriculture

and Natural Resources (LUANAR), Kamuzu University of Health Sciences (KUHeS), Universities and Colleges Association of Malawi (UCAM) and MwAPATA Institute, for their technical input throughout the process of developing this document. Further, the NCST and NPC applaud the media for the sustained publicity of the activities that led to the development of the NRA, and look forward to more collaboration in its dissemination and operationalisation.

The NCST and NPC envisage that the operationalisation of the NRA will create the desired knowledge-based economy that will make Malawi a lower middle-income country and achieve most of the Sustainable Development Goals (SDGs) by 2030, towards the realisation of an inclusively wealthy and self-reliant nation by 2063.

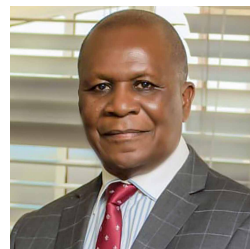
FOREWORD



Professor Emmanuel Kaunda

Board Chairperson
National Commission for Science and
Technology

The Government of Malawi launched the Malawi 2063 First 10-year Implementation Plan (MIP-1) in 2021 pursuing two key milestones: (i) graduate Malawi to a lower-middle income country; and (ii) meet most of the Sustainable Development Goals (SDGs) by 2030. Within the aspiration of an inclusively wealthy and self-reliant nation by 2063 as per the Malawi 2063 (MW2063) is the creation of a vibrant knowledge-based economy with a strong and competitive manufacturing industry that is driven by a productive and commercially vibrant agricultural and mining sector. However, Malawi's development efforts are being undertaken in a highly competitive and ever-changing global and regional socio-economic and political context that requires innovative ways of 'thinking' and 'doing things'. As such, the need for the design and operationalisation of evidence-based policies, programmes, competitive technologies and innovations that are informed or validated by robust research is of utmost importance.



Professor Richard Mkandawire

NPC Chairperson

The development of this National Research and Agenda (NRA) signals Malawi's unwavering commitment and effort to develop and promote the knowledge-based economy as a vehicle for realising MIP-1 milestones and MW2063 aspirations. The NRA outlines themes and priority areas that will guide research, innovation and technology development initiatives with which to meet Malawi's development aspirations. The themes and priority areas in the NRA are grouped and organised according to MW2063 Pillars and Enablers as follows: Agricultural Productivity and Commercialisation; Industrialisation that includes Mining; Urbanisation that includes creation of secondary cities and tourism hubs; Mindset Change; Effective Governance Systems and Institutions; Enhanced Public Sector Performance; Economic Infrastructure; Human Capital Development; Private Sector Dynamism; and Environmental Sustainability.

Guided by its mandate, the National Commission for Science and Technology (NCST) will ensure that

stakeholders in Malawi's research and innovations space generate quality and competitive innovations and technologies. The NCST will, further, disburse grants for research, innovation and technological development to researchers and innovators in Malawi, following a competitive process under the Science and Technology Fund. Development partners, private sector institutions and think-tanks will provide financial and technical support towards research, technologies and innovations outlined in this NRA, and ensure their diffusion towards Malawi's development.

Using its mandate to oversee Malawi's implementation of medium- to long-term development plans, the National Planning Commission (NPC) will monitor the operationalisation of the NRA and ensure that the research, technologies and innovations developed in the country

align to MW2063 aspirations and MIP-1 priorities. The NPC will, further, ensure that research outputs emanating from this NRA inform policies and interventions that will lead to socioeconomic transformation to realise Malawi 2063 aspirations. Jointly, the NPC and NCST will, from time-to-time, hold research dissemination events to provide space for researchers and innovators to exhibit their research results and innovations for adoption, replication, scaling-up and utilisation for socio-economic transformation and development.

It is our expectation that this NRA will catalyse joint efforts by both state and non-state actors towards informed and evidence-based policy and programmatic decision making, and drive technologies and innovations that will make Malawi an inclusively wealthy and self-reliant nation in the shortest time possible.

“

*Research, Evidence,
Innovation and
Technology - keys to
unlocking potential,
transforming lives and
sustaining the future in
Malawi*

”

Chapter 1.

Introduction

1.1 Context

Malawi's development is guided by its Vision, Malawi 2063 (MW2063), which is pursuing an inclusively wealthy and self-reliant industrialised upper-middle-income country by 2063. The MW2063 is anchored by three Pillars, namely: Agricultural Productivity and Commercialisation; Industrialisation (including mining); and Urbanisation (including tourism). These Pillars are supported by seven Enablers, namely: Mindset Change; Effective Governance Systems and Institutions; Enhanced Public Sector Performance; Economic Infrastructure; Human Capital Development; Private Sector Dynamism; and Environmental Sustainability. The MW2063 is being implemented through a series of 10-year medium-term plans the first of which runs from 2021 to 2030 and is called the MW2063 First 10-year Implementation Plan (MIP-1). The MIP-1 pursues two key milestones, namely: (i) graduate Malawi to a lower middle-income country; and (ii) meet most of the Sustainable Development Goals (SDGs) by 2030. The MIP-1 outlines the quick-wins, game changers, flagships and prioritised interventions to be implemented to achieve these milestones.

The achievement of the two MIP-1 milestones calls for a vibrant knowledge-based economy with a strong and competitive manufacturing industry, driven by a productive and commercially vibrant agricultural and mining sector. Research will, therefore, foster development of the requisite skills, innovations and technologies to deliver the MIP-1 milestones and the MW2063 aspirations. This is based on the understanding that generating productive and impactful knowledge, innovations, and technologies is key to a nation's competitiveness towards economic and social prosperity.

The NRA will facilitate focused generation and production of the much-needed and impactful knowledge, innovations and technologies through sustained coordination of various stakeholders. Further, the NRA will enable the leveraging of synergies on financial and technical capacities and other resources that will facilitate the implementation of interventions towards the attainment of the country's development plans.

1.2 Objectives of the National Research Agenda (NRA)

The main objective of the NRA is to guide researchers, academic institutions, think-tanks, Centres of Excellence (CoE), local and international research

and development stakeholders in generating knowledge, technologies and innovations that will build a knowledge-based economy for

Malawi, towards inclusive wealth creation and self-reliance. The specific objectives of the NRA are to:

- (a) provide prioritised broad-based areas that will guide research, science, technology, and innovations development;
- (b) facilitate and enhance multidisciplinary and multi-institutional coordination and collaboration in the implementation of research, innovation, and technology programmes;
- (c) increase uptake of research outputs, innovations, and technologies in Malawi's development space;
- (d) provide impetus for effective resource mobilisation for research, technologies, and innovations development; and
- (e) promote research and innovations that address implementation challenges and needs for the MIP-1.

1.3 Development Process

(a) Consultations

This NRA was developed through an inclusive and consultative process that involved various actors in the country's research, development and innovation ecosystem spaces. These stakeholders brainstormed research ideas, themes and issues that culminated into the NRA. Three regional meetings were held in the southern, central, and northern regions of Malawi, during which think-tanks, research and academic institutions and policy makers identified the research, innovations and technology needs of the country, guided by the MW2063 and MIP-1. The research ideas were then consolidated into broad-based research themes and focus areas without necessarily limiting to specific research questions.

(b) Expert Review

The themes and focus areas for each pillar and enabler of the MIP-1 were reviewed by experts to ensure that they were broad-based and prioritised towards generating knowledge, technologies and innovations for the achievement of the MIP-1 milestones and the realisation of the MW2063

aspirations. The experts also worked on improving the overall quality of the draft NRA to ensure that the research themes and areas were concisely presented for ease of understanding and use by stakeholders.

(c) Validation

Following the expert review, the revised NRA was presented for validation to a wider stakeholder group comprising policy makers, private sector, non-governmental organisations, academic and research institutions, think-tanks, research centres and development partners, among others. This involved examining the comprehensiveness of research themes and areas of focus for each research pillar in terms of coverage of areas essential to Malawi's development aspirations and milestones; and priority research areas in line with the country's development plan.

The validation also identified potential organisations to operationalise each research pillar and the preferred time frame within which the research studies are to be conducted.

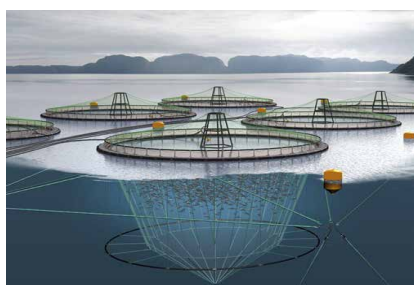
Chapter 2.

Pillars, Themes and Priorities

This Chapter presents research pillars, themes and priority areas reflecting the MW2063 Pillars and Enablers, and MIP-1 interventions. Each pillar has a goal, themes, areas of focus and potential institutions that would operationalise the research area, given available technical and financial capacities. It also provides

the preferred execution time-frame within which the research would be undertaken, given the urgency of the need under the pillar and theme. The research for each pillar will be undertaken with prior consultation with the NCST, NPC and responsible leads of the relevant Pillar and Enabler Coordination Groups (PECGs)¹.

2.1 Research Pillar 1: Agricultural Productivity and Commercialisation



The goal of this research pillar is to foster an optimally productive and commercialised agricultural sector. Research, technologies, and innovations conducted and generated under this research pillar will provide input for a strong agricultural diversification programme that is backed by effective extension services of priority agricultural commodities' value chains (crops, livestock, and fisheries), largely destined for export markets. Specifically, the research pillar will focus on the following themes:

Legislation & Institutional Capacity

Building: Creation of an enabling environment for increased agricultural commercialisation that will sustain productivity and provide agricultural surplus to industries.

Agricultural Diversification:

Meaningful diversification coupled with profitable agricultural production systems and genetic improvement

¹ PECGs were established to provide a forum for prioritisation, policy dialogue and agreement of plans, resources and undertakings among Government, private sector, civil society organisations, development partners, academia and research institutions at the Pillar and Enabler level of the MW2063.

programmes for the generation of high yielding and disease resistant varieties and breeds of crops and livestock, including fisheries.

Sustainable Irrigation Systems: Harnessing utilisation of water for optimal productivity and commercialisation, while averting effects of climatic change and variability.

Anchor Farms: Developing and scaling-up best practices and innovations for aggregate farms and cooperatives that unleash the potential production and productivity of commercial and smallholder farmers to generate surplus raw materials for industrialisation.

Agricultural Mechanisation: Developing and enhancing use of farm machinery and modern technologies, including digitisation, to improve agricultural productivity.

Sustainable High-quality Input Supply and Access System: Methods and models for scaling-up seed and animal multiplication and access systems.

Functional Structured Agricultural Markets: Developing effective markets that generate high income for producers and stimulate sustainable and competitive supply for industrialisation.

Table 1. Research themes and priority areas on Agricultural Productivity and Commercialisation

Theme	Priority Area	Preferred Execution Time-frame	Potential Stakeholders ²	Responsible Institutions to be engaged before commencement of the research
Legislation & Institutional Capacity Building	Land tenure systems	2023	Universities, MwAPATA Institute, Malawi Law Society (MLS), private sector	NCST, NPC, Ministries responsible for lands and agriculture
	Status, functionality and impact of Government supported agricultural schemes	2023	Universities, Department of Agriculture Research Services (DARS), MwAPATA Institute, Consultative Group for International Agriculture Research (CGIAR)	NCST, NPC, Ministry responsible for agriculture
	Contract farming systems	2023	Universities, DARS, MwAPATA Institute, private sector	NCST, NPC, Ministry responsible for agriculture

Theme	Priority Area	Preferred Execution Time-frame	Potential Stakeholders ²	Responsible Institutions to be engaged before commencement of the research
Agricultural Diversification	Standardisation of agricultural commodities	2023	Malawi Bureau of Standards (MBS), Competition and Fair-Trading Commission (CFTC), universities, DARS, CGIAR, commercial commodity sector research institutes	NCST, NPC, Ministry responsible for trade
	Commercial farming (policies, procedures, quality, value addition, inputs, markets, and marketing)	2023	Universities, DARS, MwAPATA Institute, CGIAR, Green Belt Authority (GBA)	NCST, NPC, Ministries responsible for trade and agriculture
	Diversification of valuable traditional and non-traditional crops	2023-30	MwAPATA Institute, universities, DARS, Agriculture Research Extension Trust (ARET), CGIAR, private sector, Tea Research Foundation of Central Africa (TRFCA)	NCST, NPC, Ministries responsible for agriculture and trade
	Viable aquaculture production systems	2023-30	Universities, CGIAR centres, National Aquaculture Centre, Fisheries Research Institute, private sector	NCST, NPC, Ministries responsible for agriculture and natural resources
	Agricultural and agroforestry innovations and technologies	2023-30	DARS, universities, ARET, MwAPATA Institute, private sector	NCST, NPC, Ministry responsible for agriculture

Theme	Priority Area	Preferred Execution Time-frame	Potential Stakeholders ²	Responsible Institutions to be engaged before commencement of the research
	Fish feed development and competitive commercialisation	2023-25	Universities, CGIAR centres, National Aquaculture Centre, Fisheries Research Institute, private sector	NCST, NPC, Ministries of responsible for agriculture and industries
	Agricultural value chains – development and scaling	2023-30	Universities, Malawi Investment and Trade Centre (MITC)	NCST, NPC, Ministries responsible for agriculture and trade
	Crop and animal genetic improvements	2023-30	Universities, CGIAR centres, TRFCA,	NCST, NPC, Ministry responsible for agriculture
	Livestock nutrition and productivity (feed and fodder production)	2023-30	DARS Universities, CGIAR centres	NCST, NPC, Ministries responsible for agriculture and industry
	Emerging pests and diseases, impacts, policy, and programmes	2023-30	Universities, MwAPATA Institute, CGIAR centres, private sector, Commercial Commodity Sector Research Institutes	NCST, NPC, Ministry responsible for agriculture
	Post-harvest Losses (PHL) management (causes, innovations for addressing PHL)	2023-30	DARS, universities, MwAPATA Institute, CGIAR Centres, private sector	NCST, NPC, Ministry responsible for agriculture
	Soil and water management practices, including optimal and effective fertilisation	2023-30	DARS, Universities, CGIAR, Leadership for Environment and Development (LEAD)	NCST, NPC, Ministries responsible for agriculture and environment

Theme	Priority Area	Preferred Execution Time-frame	Potential Stakeholders ²	Responsible Institutions to be engaged before commencement of the research
Irrigation Development	Biodiversity and climate-sensitive agricultural production systems	2023-30	Universities, private sector, LEAD, CGIAR	NCST, NPC, Ministries responsible for agriculture and environment
	Innovations for irrigation development	2023-30	Universities, private sector, CGIAR	NCST, NPC, Ministries responsible for agriculture and irrigation
	Precision Agriculture (approaches, interventions, impact)	2023-30	Universities, DARS, private sector, CGIAR	NCST, NPC, Ministries responsible for agriculture and irrigation
	Crop-specific irrigation systems	2023-30	Universities, private sector, CGIAR, MwAPATA institute	NCST, NPC, Ministries responsible for agriculture and irrigation
	Financing models for irrigation infrastructure	2023	Universities, private sector, CGIAR, MwAPATA institute	NCST, NPC, Ministries responsible for agriculture, irrigation and finance
	Ground water assessments and efficient utilisation	2023	Universities, CGIAR	NCST, NPC, Ministries responsible for agriculture and water
	Water harvesting and agricultural production	2023-30	Universities, DARS, LEAD, CGIAR	NCST, NPC, Ministries responsible for agriculture and irrigation
	Analyses of area-specific mega and anchor farms	2023	Universities, CGIAR, DARS, CGIAR, MwAPATA institute	NCST, NPC, Ministries responsible for agriculture and trade, Smallholder Associations (Tea, Sugarcane, Coffee)
Mega and Anchor Farms				

Theme	Priority Area	Preferred Execution Time-frame	Potential Stakeholders ²	Responsible Institutions to be engaged before commencement of the research
	Greenhouse farming and aquaponics	2023-30	Universities, CGIAR, National Aquaculture Centre, Fisheries Research Institute, DARS, private sector	NCST, NPC, Ministry responsible for agriculture
	Agri-entrepreneurship and start-ups frameworks	2023-30	Small and Medium Enterprise Development Institute (SMEDI), universities, DARS, Fisheries Research Institute, Malawi Investment and Trade Centre (MITC), MwAPATA Institute	NCST, NPC, Ministries responsible for agriculture, finance and trade
	Models for agricultural commercialisation	2023-23	Universities, CGIAR, MwAPATA Institute, private sector	NCST, NPC, Ministries responsible for agriculture and industry
Agricultural Inputs	Seed multiplication and seed supply systems (including livestock and fish)	2023-30	CGIAR, universities, private sector, ARET, MwAPATA Institute	NCST, NPC, Ministry responsible for agriculture
	Biotechnology in seed systems	2023-30	DARS, CGIAR, ARET, universities, private sector, CGIAR	NCST, NPC, Ministry responsible for agriculture
	Innovations for agricultural subsidy and management	2023-30	Universities, ARET, MwAPATA Institute, CGIAR	NCST, NPC, Ministries responsible for agriculture and finance
	Fertilisation – formulations for both organic and inorganic with area-specificity	2023-30	Universities, DARS, CGIAR, MwAPATA Institute	NCST, NPC, Ministry responsible for agriculture

Theme	Priority Area	Preferred Execution Time-frame	Potential Stakeholders ²	Responsible Institutions to be engaged before commencement of the research
Agricultural Mechanisation	Innovations in agricultural equipment and commercialisation	2023-30	MwAPATA, Universities, DARS, CGIAR	NCST, NPC, Ministries responsible for agriculture and industry
	Dynamics of agricultural mechanisation - practical applications for Malawi	2023	Universities, think-tanks, research centres, CGIAR, MwAPATA Institute	NCST, NPC, Ministries responsible for agriculture
	Sustainable agricultural mechanisation (enablers, technologies, etc.)	2023-30	Universities, think-tanks, research centres, CGIAR, MwAPATA Institute	NCST, NPC, Ministries responsible for agriculture and industry
	Financing models for agricultural mechanisation	2023-25	Universities, think-tanks, research centres, private sector, CGIAR, MwAPATA Institute	NCST, NPC, Ministries responsible for agriculture and finance
	Agricultural engineering - situation, prospects, and applications - best fit for Malawi	2023-30	Universities, DARS, private sector, CGIAR, MwAPATA Institute	NCST, NPC, Ministries responsible for agriculture and industry
	Agricultural mechanisation (farm power)	2023	Universities, CGIAR, MwAPATA Institute	NCST, NPC, Ministries responsible for agriculture and industry
Structured Markets	Structured markets and operations	2023-24	Universities, MITC, CGIAR, MwAPATA Institute	NCST, NPC, Ministries responsible for agriculture and trade
	Economies of scale for high-value commodities	2023-30	Universities, MITC, private sector, CGIAR, MwAPATA Institute	NCST, NPC, Ministries responsible for trade and agriculture

Theme	Priority Area	Preferred Execution Time-frame	Potential Stakeholders ²	Responsible Institutions to be engaged before commencement of the research
	Competitiveness of high-value crops, tree nuts, livestock, and fish	2023	DARS, universities, MwAPATA Institute, private sector, NPC, NCST, CGIAR	NCST, NPC, Ministries responsible for agriculture and trade
	e-agriculture marketing and e-commerce	2023-30	Universities, MITC, private sector, CGIAR	NCST, NPC, Ministries responsible for agriculture and digitalisation
	Argo-processing, value addition, quality assurance storage, preservation, and marketing	2022-30	Universities, MITC, DARS, private sector, MBS, CGIAR, MwAPATA Institute.	NCST, NPC, Ministries responsible for agriculture, trade and industry
	Extension services (innovations in agricultural production, education, and training)	2023-23	DARS, CGIAR, ARET, private sector, MwAPATA Institute, TRFCA	NCST, NPC, Ministry responsible for agriculture

2 The list of stakeholders for each theme and/or research area is not exhaustive.

2.2 Research Pillar 2: Industrialisation (including Mining)



The goal of this research pillar is to contribute to the development of a vibrant knowledge-based economy with a strong manufacturing industry that is driven by productive and commercially vibrant agricultural and mining sectors, including research on viable public-private partnership models. The

research pillar is tailored towards economic diversification through value addition and enhanced competitiveness in agriculture and extractive raw material transformation for high-value export products. Investments in industrial research, science, technology and innovation will be undertaken to spur commercialisation. Specifically, this research pillar will focus on the following themes:

Legislation and Institutional Capacity Building: Enabling environment for industrial growth and mining.

Industrialising Mining: Best practices and models for negotiating, contracting and financing, including public-private partnership.

Diversification, Value Addition and Competitiveness: Promoting local industries to increase the transformation of raw materials from the agriculture and mining sectors into high value products, largely for export and creation of employment.

Creation of Special Economic and Export Processing Zones: Promoting trade and exports in special economic and export processing zones and commercialising manufacturing of local industrial products.

Table 2. Research themes and priority areas on Industrialization (including Mining)

Theme	Priority Area	Preferred Execution Time-frame	Potential Stakeholders ²	Responsible Institutions to be engaged before commencement of the research
Legislation and Institutional Capacity Building	Management of industries	2023-23	CFTC, Malawi Confederation of Chambers of Commerce and Industry (MCCCI), private sector, universities	NCST, NPC, Ministries responsible for industry and justice
	Special Economic Zones (SEZs) development and operationalisation	2023-25	Universities, MCCCI, CFTC	NCST, NPC, Ministry responsible for industry
	Export Processing Zones (EPZs)	2023-25	Universities, MCCCI, DARS,	NCST, NPC, Ministries responsible for trade and finance
	Financing industrialisation - impactful options and operationalisation	2023-25	Universities, Public Private Partnership Commission (PPPC), Malawi Agriculture Industrial Investment Corporation (MAIIC)	NCST, NPC, Ministries responsible for industry and finance
Industrialising Mining	Political economy of mining	2023-25	Universities, MAIIC	NCST, NPC, Ministries responsible for mining, justice and finance
	Innovation and technology development for mining	2023-2025	Universities, private sector, MAIIC, Geological Survey	NCST, NPC, Ministry responsible for mining
	Sustainable management of extractive mineral resources	2023-30	Geological Survey, Universities,	NCST, NPC, Ministries responsible for mining and environment

Theme	Priority Area	Preferred Execution Time-frame	Potential Stakeholders ²	Responsible Institutions to be engaged before commencement of the research
	Health and environment in the mining sector	2023-25	Universities, Geological survey	NCST, NPC, Ministries responsible for mining, environment and health
	Geo-mineral resource mapping	2023-30	Geological Survey, private sector, universities	NCST, NPC, Ministry responsible for mining
	Mining and mineral processing - potential, priorities, and operational aspects	2023-30	Universities, private sector, Geological surveys	NCST, NPC, Ministries responsible for mining and trade
	Ethics, corporate responsibility in mining and manufacturing, operational aspects	2023-30	Universities, Geological Survey	NCST, NPC, Ministries responsible for mining, justice and industry
	Mineral and mining auditing	2023-30	Geological Survey, universities, think-tanks,	NCST, NPC, Ministries responsible for mining, finance, justice
	Small-scale mining and wealth creation	2023-30	Universities, SMEDI, private sector, think-tanks, Geological Survey	NCST, NPC, Ministries responsible for mining and trade
Diversification, Value Addition, and Competitiveness	Value addition, commercialisation, and market competitiveness	2023-25	Universities, MwAPATA Institute, private sector	NCST, NPC, Ministries responsible for trade and industry
	Anchor firms' practices and models, best fits for Malawi	2023-30	Universities, Geological Survey, think-tanks	NCST, NPC, Ministries responsible for trade and industry

Theme	Priority Area	Preferred Execution Time-frame	Potential Stakeholders ²	Responsible Institutions to be engaged before commencement of the research
	Financing models for MSMEs innovations, technology development and marketing	2023-25	Universities, SMEDI, PPPC	NCST, NPC, Ministries responsible for finance, trade, and industry
Creation of Special Economic and Export Processing Zones	Zoning and operationalisation of EPZs	2023-25	Universities, private sector, MCCCCI	NCST, NPC, Ministries responsible for industry and trade
	Economic incentive structures and programming	2023-25	Private sector, think-tanks, NPC, NCST, MCCCCI, Economic Association of Malawi (ECAMA), universities	NCST, NPC, Ministries responsible for industry, trade and finance

2 The list of stakeholders for each theme and/or research area is not exhaustive.

2.3 Research Pillar 3: Urbanisation (including Tourism)



The goal of this research pillar is to spearhead the development of world-class urban centres and tourism hubs across the country, with requisite modern socioeconomic amenities. Thematic areas under this research pillar include the establishment of secondary cities planned around economic growth; generation of

data and information on infrastructure; land tenure; and infrastructure development and planning to support governance, communication, transportation, and social services. Specifically, the research pillar will focus on the following themes:

Legislation and Institutional Capacity

Building: Policy and legal environment for systematic programming, guided by public and private investment in existing urban settlements.

Creation of Secondary Cities Anchored

by Economic Activities: Economic opportunities for the development of secondary cities.

Infrastructure Development Planning and

Investment in Cities and Towns: Controlled and regulated infrastructure development, easy communication, and closer connectivity to socioeconomic amenities.

Sustainable Municipal Self-financing

Mechanism: Revenue generation options and effective management capacities for cities, towns, and district councils.

Tourism Development:

Social justice, economic development, and environmental integrity in developing a world-class tourism industry in Malawi.

Table 3. Research themes and priority areas on Urbanisation (including Tourism)

Theme	Priority Area	Preferred Execution Time-frame	Potential Stakeholders ²	Responsible Institutions to be engaged before commencement of the research
Legislation and Institutional Capacity Building	Legal and regulatory frameworks on urbanisation	2023-25	Universities, MLS	NCST, NPC, Ministries responsible for local government and justice
	Funding models for urbanisation, feasible options for Malawi	2023-25	National Local Government Finance Committee (NLGFC), universities, MALGA, PPPC	NCST, NPC, Ministries responsible for local government and finance
	Land resettlement models best fit for Malawi	2023-24	Universities, MwAPATA Institute, MALGA, Institute of Architects, Institute of Surveyors, Habitat for Humanities, private sector	NCST, NPC, Ministries responsible for local government, lands, justice and finance
	Decentralisation, governance, and development	2023-25	MALGA, universities	NCST, NPC, Ministries responsible for local government and justice
Creation of Secondary Cities Anchored by Economic Activities	Land use planning and small towns administration - master planning	2023-25	Universities, Institute of Architects, Institute of Surveyors, Habitat for Humanities, private sector	NCST, NPC, Ministries responsible for local government, lands and finance
	Cities competitive value chain analysis for economic anchorage	2023-25	Universities, think-tanks, private sector, IFPRI	NCST, NPC, Ministries responsible for local government, finance and trade
	Sustainable urbanisation		Universities, think-tanks, MALGA, private sector	NCST, NPC, Ministries responsible for local government, environment and lands

Theme	Priority Area	Preferred Execution Time-frame	Potential Stakeholders ²	Responsible Institutions to be engaged before commencement of the research
Infrastructure Development Planning and Investment in Cities	Modalities/models for accelerating creation, development, and operationalisation of secondary cities	2023-25	Universities, think-tanks, Institute of Architects, Institute of Surveyors, Habitat for Humanities, private sector	NCST, NPC, Ministries responsible for local government, finance and lands
	Industrial development for urbanisation	2023-25	Universities, private sector, Institute of Architects, Institute of Surveyors, Habitat for Humanities	NCST, NPC, Ministries responsible for local government, industry, lands and finance
	Sustainable buildings materials, and technology for quality and resilient low-cost housing	2023-30	Universities, private sector, NCIC	NCST, NPC, Ministries responsible for local government, lands and environment
	Improvements in informal settlements	2023-302	Universities, think-tanks	NCST, NPC, Ministries responsible for local government and lands
	Condominium development and transformation of the cities	2023-30	Universities, private sector, NCIC, think-tanks, private sector	NCST, NPC, Ministries responsible for local government and transport
	Resilient infrastructure development	2023-30	Universities, NCIC, private sector	NCST, NPC, Ministries responsible for local government, lands and environment
	Sustainable transport system	2023-24	Universities, private sector, think-tanks	NCST, NPC, Ministries responsible for local government, transport and environment

Theme	Priority Area	Preferred Execution Time-frame	Potential Stakeholders ²	Responsible Institutions to be engaged before commencement of the research
	Master planning for green cities	2023-24	Universities, private sector, think-tanks, Institute of Architects, Institute of Surveyors, Habitat for Humanities	NCST, NPC, Ministries responsible for local government, lands and environment
	Rural and urban settlement - priorities and operations	2023-30	MALGA, universities, private sector, think-tanks	NCST, NPC, Ministries responsible for local government and lands
	Models for sustainable financing of local authorities	2023-23	Think-tanks, universities, MALGA, private sector	NCST, NPC, Ministries responsible for local government and finance
Sustainable Municipal Self-financing Mechanism	Digitisation of rateable properties in all councils	2023-24	Universities, MALGA, private sector	NCST, NPC, Ministries responsible for local government and digitisation
Tourism Development	Sustainable tourism development, including e-tourism, amusement parks	2023-30	Universities, private sector, think-tanks	NCST, NPC, Ministries responsible for local government, tourism and digitisation
	Sustainable domestic tourism	2023	Universities, private sector, think-tanks	NCST, NPC, Ministries responsible for local government, tourism and environment
	Culture, musicology and creative arts development	2023-30	Universities, private sector, think-tanks	NCST, NPC, Ministry responsible for culture
	House of history (museums) and archives for Malawi	2023-25	Universities, think-tanks	NCST, NPC, Ministry responsible for culture

Theme	Priority Area	Preferred Execution Time-frame	Potential Stakeholders ²	Responsible Institutions to be engaged before commencement of the research
	Human-wildlife interaction	2023-30	Universities, think-tanks	NCST, NPC, Ministry responsible for wild life
	Tourism geographies, economies, and marketing	2023-25	Universities, private sector, think-tanks	NCST, NPC, Ministries responsible for tourism and trade

2 The list of stakeholders for each theme and/or research area is not exhaustive.

2.4 Research Pillar 4: Mindset Change



The realisation of the MW2063 aspirations requires cultivating a new way of thinking and doing business. There is need to ensure reorientation of the mindset at the individual, community, and national level to instil a culture of self-reliance towards the inclusive wealth creation agenda. The goal of this research pillar is to generate knowledge and innovations on how Malawi can develop a united but culturally diverse nation; and patriotic and proud people that believe in their own abilities and are active in building the nation. Specifically, this research pillar will focus on the following themes:

Legislation and Institutional Capacity

Building: Transformative skills framework, policy information and designs to enhance the culture of building positivity and changing mindset.



Visionary and Transformative Leadership:

Bold and focused leadership at all levels, with long-term planning.

Patriotism: Devotion and collective attachment to inclusive development and transformation of Malawi.

Religious Values: Enlightenment and religious pathways for influencing morals, values, and social connections.

Integrity: Creating trust, confidence, responsibility, and ethics.

Hard Work and Self-reliance: Fostering and inculcating a practical culture of self and national consciousness to development and working approaches.

Building Positivity: Optimism and evidence-based civic education for transformative development.

Table 4. Research themes and priority areas on Mindset Change

Theme	Priority Area	Preferred Execution Time-frame	Potential Stakeholders ²	Responsible Institutions to be engaged before commencement of the research
Legislation and Institutional Capacity Building	Frameworks and effective programmes for transformative skills	2023-24	Universities, private sector	NCST, NPC, TEVETA, Ministries responsible for civic education and justice
	Future mindset shifts – (culture, identity) for social and policy change	2022-30	Think-tanks, universities	NCST, NPC, Ministries responsible for civic education and justice
Visionary and Transformative Leadership	Leadership models for development – vision and transformation	2023-24	Think-tanks, universities	NCST, NPC, Ministry responsible for civic education
	Nation building	2023-24	Universities, think-tanks	NCST, NPC, Ministry responsible for civic education
	Youth and leadership	2023-24	National Youth Council of Malawi (NYCOM), universities	NCST, NPC, Ministries responsible for civic education and youth
	Models and practices for inclusive development	2023-24	Universities, think-tanks	NCST, NPC, Ministries responsible for economic planning and development, and local government
	Civic engagement and volunteerism	2023-24	private sector, universities, think-tanks	NCST, NPC, Ministries responsible for civic education, information, labour and youth
Patriotism	Civic education and value systems	2023-24	Universities, think-tanks	NCST, NPC, Ministries responsible for civic education, education and information

Theme	Priority Area	Preferred Execution Time-frame	Potential Stakeholders ²	Responsible Institutions to be engaged before commencement of the research
	Growth mindset	2023-24	Universities, think-tanks	NCST, NPC, Ministries responsible for civic education, education, youth, labour
	Capacity development for a growth mindset	2023-24	Universities, think-tanks, private sector	NCST, NPC, OPC, Ministries responsible for civic education, and education
Integrity	Corruption and the political economy	2023-24	Anti-Corruption Bureau (ACB), universities, think-tanks, MLS	NCST, NPC, Ministries responsible for civic education, justice and finance
	Social and institutional response to corruption - 5Cs	2023-24	ACB, universities, think-tanks, MLS	NCST, NPC, OPC, Ministries responsible for civic education and justice
	Social-cultural, behaviour and practice	2023-24	Universities, think-tanks	NCST, NPC, Ministries responsible for civic education and culture
	Growth-centred education system and curricula	2023-30	Universities, think-tanks	NCST, NPC, TEVETA, Ministries responsible for education, civic education and labour
	Ethics and integrity	2023-30	Think-tanks, universities	NCST, NPC, Ministries responsible for civic education, and education
Religious Values	Belief systems, national unity, and development	2023-24	Universities, think-tanks	NCST, NPC, Ministries responsible for civic education, economic planning and development, culture and local government

Theme	Priority Area	Preferred Execution Time-frame	Potential Stakeholders ²	Responsible Institutions to be engaged before commencement of the research
Building Positivity	Culture and development	2023-24	Universities, think-tanks	NCST, NPC, Ministries responsible for civic education, economic planning and development, culture and local government
	Communication for mindset change	2023-24	Think-tanks, universities	NCST, NPC, Ministries responsible for civic education and information
	Church and democratic socialism and capitalism	2023-30	Think-tanks, universities	NCST, NPC, Ministries responsible for religious affairs and civic education
	Hard work for self-reliance	2023-30	Universities, think-tanks	NCST, NPC, Ministries responsible for civic education and labour
	National positive value systems	2023-30	Universities, think-tanks	NCST, NPC, Ministries responsible for civic education, and education
	Self and national consciousness	2023-30	Universities, think-tanks	NCST, NPC, Ministries responsible for civic education, and education
	Civic education and value systems	2023-30	Universities, think-tanks	NCST, NPC, Ministries responsible for civic education, and education

2 The list of stakeholders for each theme and/or research area is not exhaustive.

2.5 Research Pillar 5: Effective Governance Systems and Institutions



In keeping with the vision of inclusive wealth creation and self-reliance, Malawi will have to build effective and efficient governance systems and institutions. The goal of this research pillar is to generate information which will serve as evidence for enhancing institutional capacity building, inclusive governance, meaningful participation of citizens, accountability, openness, and transparency. Furthermore, the research pillar will provide knowledge for designing appropriate and effective interventions for: enhancing adherence to the rule of law; sustainable development; improved financial and economic management;

human rights; and sustainable peace and security. Specifically, the research pillar will focus on the following themes:

Legislation and Institutional Capacity Building: Governance systems and institutions with strict adherence to the rule of law.

Citizen Engagement, Participation and Fair Conduct of Elections: Fostering accountability, responsiveness, integrity and partnerships for development and equitable decision-making and planning.

Openness and Transparency: Processes and decisions through which choices are made, including access to underlying data and information.

Rule of Law: Democratic systems based on the principles of constitutionalism and law.

Sustainability and Long-term Orientation: Evidence-based decisions and actions that protect the rights of children and future generations.

Sound Financial and Economic Management: Systems that promote prudence in financial and economic management.

Human Rights and Cultural Diversity (Social Cohesion): Human rights in and through the delivery of public service.

Sustainable Peace and Security: Understanding conflicts and the mechanisms for effective conflict management and resolution within the context of sustainable peace and security.

Table 5. Research themes and Priority areas on Effective Governance Systems and Institutions

Theme	Priority Area	Preferred Execution Time-frame	Potential Stakeholders ²	Responsible Institutions to be engaged before commencement of the research
Legislation and Institutional Capacity Building	Migration - rural-urban and international	2023-25	Universities, research centres, think-tanks	NCST, NPC, OPC, Ministries responsible for justice and immigration
	Enhancement of rural development	2023-26	Universities, research centres, Think-tanks	NCST, NPC, Ministries responsible for local government, economic planning and development
	Robust systems for councils to control trade and business for the informal sector and informal settlement	2023-27	Universities, research centres, think-tanks	NCST, NPC, Ministry responsible for local government
	Work permit tracking and national wealth development	2023-26	Universities, research centres, think-tanks	NCST, NPC, Ministry responsible for immigration
	Streamlining of immigration legislation and services	2023-27	Universities, research centres, think-tanks, Law Commission	NCST, NPC, Ministries responsible for immigration and justice
	Capacity for effective governance – central and local level	2023-24	Universities, think-tanks, Malawi School of Government	NCST, NPC, OPC, Ministry responsible for local government
	Justice system(s) and institutions, including judicial system, alternative dispute resolution and arbitration	2023-24	Law Commission, MLS, Malawi Human Rights Commission (MHRC), Judiciary, think-tanks, universities	NCST, NPC, Ministry responsible for justice

Theme	Priority Area	Preferred Execution Time-frame	Potential Stakeholders ²	Responsible Institutions to be engaged before commencement of the research
Citizen Engagement, Participation and Fair Conduct of Elections	Citizen participation systems	2023-25	Malawi Electoral Commission (MEC), research centres, think-tanks, universities	NCST, NPC, Ministries responsible for civic education and local government
	Effective mechanisms on decentralisation	2023-25	Research centres, think-tanks, universities	NCST, NPC, OPC, Ministry responsible for local government
	Electoral systems and digitisation	2023-25	Research centres, think-tanks, MEC, National Registration Bureau (NRB)	NCST, NPC, Ministry responsible for digitisation
	National IDs and access to public services	2023-26	Research centres, think-tanks, NRB, MEC universities	NCST, NPC, Ministry responsible for internal security
Openness and Transparency	Public expenditure tracking systems	2023-25	Research centres, think-tanks, universities	NCST, NPC, Ministries responsible for finance, economic planning and development
	Procurement and supply behavioural change, ethics and integrity	2023-26	Research centres, think-tanks, Public Procurement and Disposal of Assets Authority (PPDAA), universities	NCST, NPC, OPC, Ministries responsible for finance and civic education
	Approaches to transparent access to and dissemination of information	2023-30	Universities, research centres, think-tanks	NCST, NPC, Ministry responsible for information
	Public data management systems	202M2-23	Universities, research centres, think-tanks, NSO	NCST, NPC, Ministries responsible for economic planning and development, and information

Theme	Priority Area	Preferred Execution Time-frame	Potential Stakeholders ²	Responsible Institutions to be engaged before commencement of the research
	Demand, availability, and use of public data	2022-24	MHRC, universities, research centres, think-tanks	NCST, NPC, Ministries responsible for economic planning and development, and information
Rule of Law	Approaches to ensuring adherence to the rule of law and constitutionalism	2023-25	Universities, research centres, think-tanks, MLS	NCST, NPC, Ministry responsible for justice
	Measuring rule of law	2023-25	MHRC, universities, research centres, think-tanks, Office of the Ombudsman (OoO), ACB, Legal Aid Bureau, MLS	NCST, NPC, Ministries responsible for economic planning and development, and justice
	Participation in decision-making	2023-2030	MHRC, Law Commission, OoO, ACB, Legal Aid Bureau, universities, research centres, think-tanks	NCST, NPC, Ministries responsible for civic education, justice, and local government
	Inclusive development planning	2023-25	Universities, research centres, think-tanks	NCST, NPC, Ministry responsible for economic planning and development
Sustainability and Long-term Orientation	Social, environmental, and economic foresight	2023-30	Universities, research centres, think-tanks	NCST, NPC, Ministries responsible for economic planning and development, and environment
	Effective systems for mindset change on long-term planning	2023-30	Universities, research centres, think-tanks	NCST, NPC, Ministries responsible for economic planning and development, and civic education

Theme	Priority Area	Preferred Execution Time-frame	Potential Stakeholders ²	Responsible Institutions to be engaged before commencement of the research
	Assessment of training institutions' curriculum programmes on long-term planning for national development	2023-25	National Council for Higher Education (NCHE), universities, research centres, think-tanks	NCST, NPC, Ministries responsible for economic planning and development, and education
	Performance assessment/ appraisal approaches and mechanisms for Ministers, PSs and Directors in line with long-term development goals	2023-30	Universities, research centres, think-tanks	NCST, NPC, OPC, Ministry responsible for economic planning and development
Sound Financial and Economic Management	Public sector finance management	2023-24	Universities, research centres, think-tanks, NLGFC	NCST, NPC, Ministry responsible for finance
	Cost-effectiveness in public spending	2023-25	Universities, research centres, think-tanks	NCST, NPC, Ministry responsible for finance
	Digital management information systems in decision making, policy and programmes formulation, monitoring, evaluation, and accountability	2023-25	Universities, research centres, think-tanks	NCST, NPC, Ministry responsible for economic planning and development, and digitalisation
Human Rights and Cultural Diversity	Governance systems that are inclusive and sensitive to the needs of marginalised groups, including women, children and persons with disabilities	2023-25	CSOs, MHRC, universities, research centres, think-tanks, MLS,	NCST, NPC, OPC, Ministries responsible for social welfare, and gender

Theme	Priority Area	Preferred Execution Time-frame	Potential Stakeholders ²	Responsible Institutions to be engaged before commencement of the research
Sustainable Peace and Security	Universal human rights in political ideologies and practices	2023-25	Universities, research centres, think-tanks, CSOs, MHRC	NCST, NPC, Ministry responsible for justice
	Human rights, globalisation, and economic development	2023-25	Universities, research centres, think-tanks, MLS, MHRC	NCST, NPC, Ministries responsible for economic planning and development, and justice
	Integrated security database	2023-25	Universities, research centres, think-tanks	NCST, NPC, OPC, Ministry responsible for internal security
	Peace building and resilience	2023-25	Universities, research centres, think-tanks	NCST, NPC, Ministry responsible for internal security
	Peace and development	2023-30	Universities, research centres, Think-tanks	NCST, NPC, Ministry responsible for internal security
	Conflict resolution models	2023-25	Universities, research centres, think-tanks	NCST, NPC, Ministries responsible for internal security, and civic education

2 The list of stakeholders for each theme and/or research area is not exhaustive.

2.6 Research Pillar 6: Enhanced Public Sector Performance



The goal of this research pillar is to provide insights on how Malawi can create a world-class, high-performing and professional

public sector for efficient delivery of public goods and services. It is premised on the understanding that an efficient public sector is vital for accountability, openness, and transparency in the delivery of public services. Research under this pillar is important for maintenance of human capacities, performance, and reward system that attracts, promotes, and retains world-class talent in different spheres of technical operations in the public sector. Specifically, this research pillar will focus on the following themes:

Legislation and Institutional Capacity

Building: Improving the public sector and related legislation, regulations and standards for the effective delivery of services.

Public Sector Reforms: Procedures, including the structure and organisational efficiency of public institutions in managing public sector development programmes.

Public Sector Delivery: Efficient use of resources, including personnel, to provide timely and quality services to Malawians.

Table 6. Research themes and priority areas on Enhanced Public Sector Performance

Theme	Priority Area	Preferred Execution Time-frame	Potential Stakeholders ²	Responsible Institutions to be engaged before commencement of the research
Legislation and Institutional Capacity Building	Public sector regulations	2023-25	Universities, think-tanks	NCST, NPC, OPC, Ministry responsible for justice
	Local governance models best fit for Malawi	2023-30	Universities, think-tanks, MALGA	NCST, NPC, OPC, Ministries responsible for local government, and justice
Public Sector Reforms	Contract management systems	2025-25	Universities, think-tanks, SDI, Malawi School of Government	NCST, NPC, OPC, Ministry responsible for justice
	Functionality/ streamlining of MDAs	2023-25	Universities, think-tanks,	NCST, NPC OPC, Ministry responsible for economic planning and development
Public Service Delivery	Information Management Systems – efficiencies and integration	2023-25	Universities, think-tanks	NCST, NPC, Ministry responsible for information
	Public sector coordination	2023-25	Universities, think-tanks, SDI, Malawi School of Government	NCST, NPC, OPC
	Fiscal management - budgets, debts, resources	2023-25	Universities, think-tanks, ECAMA	NCST, NPC, Ministry responsible for finance

2 The list of stakeholders for each theme and/or research area is not exhaustive.

2.7 Research Pillar 7: Private Sector Dynamism



Malawi aspires to have a dynamic and vibrant private sector that effectively spearheads industrialisation within the shortest time possible. The goal of this research pillar is to provide direction in catalysing private investments in prioritised value chains. It will, further, provide insights in the development of a macro-economic environment and economic infrastructure that promotes investment; adoption of

digital innovations; and promotion of e-commerce, such as e-marketing and e-service provision. The research pillar is expected to provide impetus on inclusive participation of Micro, Small and Medium Enterprises (MSMEs); and promote the establishment of anchor firms with strong local and international market value chains. Specifically, this research pillar will focus on the following themes:

Legislation and Institutional Capacity Building: Addressing distortions in business regulations and marketing that restrain the participation and competitiveness of the private sector.

Creation of Enabling Business Environment: Understanding micro, market and macro-economic environment and economic infrastructure that is pro-investment.

Digital Economy Promotion: Efficient adaptation of electronic technologies in business that provide and ensure resilience during pandemics and other shocks.

MSME Development: Regular understanding of behaviour, financing, and development changes in the needs of MSMEs.

Anchor Firms Development: Processes and frameworks by which anchor-entrepreneurship advances industries with strong connection to regional and local value chains.

Table 7. Research themes and priority areas on Private Sector Dynamism

Theme	Priority Area	Preferred Execution Time-frame	Potential Stakeholders ²	Responsible Institutions to be engaged before commencement of the research
Legislation and Institutional Capacity Building	Improvements in legislation for private sector	2023-23	MCCCI, universities, think-tanks, Bankers Association of Malawi (BAM), private sector	NCST, NPC, Ministries responsible for trade, industry and justice
	Frameworks for establishing innovative and competitive SMEs and community banks	2023-25	Universities, SMEDI, think-tanks, Bam, private sector	NCST, NPC, Ministries responsible for trade, finance and justice
Creation of Enabling Business Environment	Taxation and markets	2023-23	Universities, think-tanks, private sector	NCST, NPC, Ministries responsible for trade and finance
	Monetary policy and wealth creation	2023-23	Universities, think-tanks, ECAMA	NCST, NPC, RBM, Ministries responsible for finance and justice
	Trade and competitive markets	2023-24	Universities, think-tanks, MCCCI, MITC	NCST, NPC, Ministry responsible for trade
	Recovery mechanisms from external shocks (pandemics, prices, wars, disasters, etc.)	2023-30	Universities, think-tanks, MCCCI, private sector	NCST, NPC, Ministries responsible for economic planning and development, and finance
Digital Economy Promotion	Cost-effective digital connectivity	2023-30	Universities, think-tanks,	NCST, NPC, Ministries responsible for digitisation, finance, MACRA
	Digital business strategies	2023-25	Think-tanks, universities	NCST, NPC, Ministry responsible for digitisation

Theme	Priority Area	Preferred Execution Time-frame	Potential Stakeholders ²	Responsible Institutions to be engaged before commencement of the research
Small and Medium Enterprises Development	Digital platforms and sustainable development goals	2023-25	Universities, think-tanks	NCST, NPC, Ministry responsible for digitisation
	Digital value creation, capture and digital business models	2023-25	Universities, think-tanks	NCST, NPC, Ministries responsible for digitisation and trade
	Digital Innovations, including high performance computing	2023-30	Universities, think-tanks	NCST, NPC, Ministry responsible for digitisation
	Sustainable financing models for SMEs	2023-25	Universities, SMEDI, MCCCCI, think-tanks	NCST, NPC, Ministries responsible for finance, trade and industry
	SMEs competitiveness	2023-23	Universities, think-tanks, CFTC	NCST, NPC, Ministry responsible for trade and industry
	Malawian products development and/or improvement/competitiveness	2023-30	Universities, think-tanks, MBS, MCCCCI	NCST, NPC, Ministry responsible for trade and industry
	Models of anchor firms in the private sector	2023-25	Universities, private sector, think-tanks	NCST, NPC, Ministry responsible for industry, trade
	Global, regional and local value chain development	2023-30	Universities, MBS, MCCCCI, MITC, private sector, think-tanks	NCST, NPC, Ministry responsible for trade and industry
	Local council/ community-led industrialisation	2023-30	Universities, think-tanks, private sector, MCCCCI	NCST, NPC, Ministries responsible for trade and industry, and local government

² The list of stakeholders for each theme and/or research area is not exhaustive.

2.8 Research Pillar 8: Human Capital Development



The goal of this research pillar is to provide solutions for making Malawi globally competitive by developing highly motivated human resource through investments in education, skills development, and a healthy population. Specifically, this research pillar will focus on the following themes:

Legislation and Institutional Capacity Building: Models and practices for human capital development - with essential and fit-

for-purpose skills that provide meaningful opportunities for self-reliance and effective contribution to national development.

Education and Skills Development: Approaches to building strong academic excellence and technical and vocational skills fit for the labour market.

Science, Technology, and Innovation: Defining and catalysing a vibrant knowledge-based digital economy through Science, Technology, and Innovation (STI).

Health and Nutrition: Practices and approaches to prevent, manage and treat diseases, including food systems that ably respond to building a healthy nation.

Managing Population Growth: Size and quality of the population characterised by a healthy, well-educated, and skilled population.

Water, Sanitation and Hygiene (WASH): Practices and approaches for increasing the number of people with safe water and sanitation services.

Sports and Creative Arts: Approaches in expanding the sports and creative arts ecosystem in Malawi that includes recognising creative individuals and scaling creativity.

Gender Equality and Equity: Social structures that promote inclusivity, equity and equality in development programming, decision making and benefit sharing.

Social Welfare: Pathways for ensuring that marginalised and vulnerable people are cushioned and provided with basic social needs.

Table 8. Research themes and priority areas on Human Capital Development

Theme	Priority Area	Preferred Execution Time-frame	Potential Stakeholders ²	Responsible Institutions to be engaged before commencement of the research
Legislation and Institutional Capacity Building	Policy, legal, and regulatory framework for human capital development	2023-25	Universities, think-tanks	NCST, NPC, Ministries responsible for education, labour, health and justice
	Institutional capacity (for building human capital)	2023-25	Universities, think-tanks	NCST, NPC, Ministries responsible for education, labour, health and justice
Education and Skills Development	Inclusiveness, relevance, and effectiveness of education programmes	2023-25	Universities, NYCOM, think-tanks	NCST, NPC, TEVETA, Ministries responsible for education, youth and labour
	Funding models for education systems	2023-25	Universities, think-tanks	NCST, NPC, Ministries responsible for education and finance
	Early Childhood Development (ECD)	2023-25	Think-tanks, universities, research centres	NCST, NPC, Ministries responsible for ECD
	Education, skills development, and labour	2023-25	Universities, research centres, think-tanks, NYCOM	NCST, NPC, TEVETA, Ministries responsible for education, youth and labour
Science, Technology, and Innovation	Financing models for STI	2023-25	Universities, think-tanks	NCST, NPC, Ministries responsible for STI and finance
	Curriculum responsiveness to STI	2023-25	Universities, think-tanks	NCST, NPC, Ministries responsible for education and STI

Theme	Priority Area	Preferred Execution Time-frame	Potential Stakeholders ²	Responsible Institutions to be engaged before commencement of the research
	Innovation and technology development and operationalisation	2023-25	Universities, think-tanks	NCST, NPC, Ministries responsible for STI and education
	Crypto-currencies and economic development, considerations	2023-25	Universities, research centres, think-tanks	NCST, NPC, RBM, Ministries responsible for finance, and economic planning and development
	Information, education, and communication	2023-25	Universities, research centres, think-tanks	NCST, NPC, Ministry responsible for information and education
	High performance computing	2023-30	Universities, research centres, think-tanks, private sector	NCST, NPC, Ministries responsible for digitisation, ICT and education
Managing Population Growth	Population and development nexus	2023-25	Universities, think-tanks, AFIDEP	NCST, NPC, Ministries responsible for economic planning and development, and health
	Population dynamics	2023-25	Universities, think-tanks, AFIDEP	NCST, NPC, Ministries responsible for economic planning and development, and health
	Sexual and reproductive health	2023-25	Universities, research centres, think-tanks	NCST, NPC, Ministry responsible for health
	Maternal, new-born, child and adolescent health	2023-25	Universities, research centres, think-tanks	NCST, NPC, Ministry responsible for health

Theme	Priority Area	Preferred Execution Time-frame	Potential Stakeholders ²	Responsible Institutions to be engaged before commencement of the research
Water, Sanitation, and Hygiene (WASH)	WASH financing	2023-25	Universities, research centres, think-tanks	NCST, NPC, Ministries responsible for water and sanitation
	WASH innovations and technologies	2023-25	Universities, research centres, think-tanks,	NCST, NPC, Ministries responsible for water and sanitation
	Water quality	2023-25	Universities, research centres, think-tanks	NCST, NPC, Ministry responsible for water
	Waste management and sanitation	2023-25	Universities, research centres, think-tanks,	NCST, NPC, Ministries responsible for water, sanitation and environment
	WASH governance	2023-25	Universities, research centres, think-tanks	NCST, NPC, Ministries responsible for water, sanitation and justice
	Trans-boundary water management	2023-25 ³	Universities, research centres, think-tanks	NCST, NPC, NWRA, Ministries responsible for water, justice and foreign affairs
	Water resources management	2023-25	Universities, research centres, think-tanks	NCST, NPC, NWRA, Ministry responsible for water
Health and Nutrition	Food systems to changing environments and economic status	2023-30	Universities, research centres, CGIAR, think-tanks	NCST, NPC, Ministries responsible for agriculture and nutrition
	Health service design and delivery	2023-25	Universities, research centres, think-tanks	NCST, NPC, Ministry responsible for health

Theme	Priority Area	Preferred Execution Time-frame	Potential Stakeholders ²	Responsible Institutions to be engaged before commencement of the research
	Emerging epidemics, inequalities and ending AIDS	2023-30	Universities, research centres, think-tanks, National Aids Commission (NAC)	NCST, NPC, Ministry responsible for health
	Environmental health	2023-30	Think-tanks, universities, research centres, think-tanks	NCST, NPC, Ministries responsible for health and environment
	Neglected tropical diseases	2023-30	Universities, research centres, think-tanks, CGIAR	NCST, NPC, Ministries responsible for health and agriculture
	Trauma and Emergency Medical Services (EMS)	2023-30	Universities, research centres, think-tanks	NCST, NPC, Ministries responsible for health and industry
	Social and behavioural research	2023-30	Universities, research centres, think-tanks	NCST, NPC, Ministries responsible for civic education and culture
	Nutrition and dietary diversity	2023-30	Universities, think-tanks, research centres	NCST, NPC, Ministries responsible for agriculture and nutrition
	Capacity for health systems	2023-30	Universities, research centres, think-tanks	NCST, NPC, OPC, Ministry responsible for health
	Infectious diseases and non-communicable diseases	2023-30	Universities, research centres, think-tanks	NCST, NPC, Ministry responsible for health
	Youth-friendly health services	2023-25	NYCOM, universities, research centres, think-tanks	NCST, NPC, Ministries responsible for youth and health

Theme	Priority Area	Preferred Execution Time-frame	Potential Stakeholders ²	Responsible Institutions to be engaged before commencement of the research
	Community health	2023-30	Universities, research centres, think-tanks	NCST, NPC, Ministries responsible for health and local government
	Health informatics	2023-30	Universities, research centres, think-tanks	NCST, NPC, Ministry responsible for health
	Health financing	2023-30	Universities, research centres, think-tanks	NCST, NPC, Ministries responsible for health and finance
	Mental health	2023-30	Universities, research centres, think-tanks	NCST, NPC, Ministry responsible for health
	Medicine and pharmaceutical	2023-30	Universities, research centres, think-tanks, MBS	NCST, NPC, Ministries responsible for health and industry
	Integrated disease surveillance and response	2023-30	Universities, research centres, think-tanks	NCST, NPC, Ministries responsible for health and local government
	Regenerative medicine	2023-30	Universities, research centres, think-tanks	NCST, NPC, Ministry responsible for health
Sports and Creative Arts	Inclusive sports and arts	2023-30	NYCOM, Universities, Research centres, think-tanks	NCST, NPC, Ministries responsible for sports, culture and education
	Physical fitness	2023-30	Universities, research centres, think-tanks, NYCOM	NCST, NPC, Ministries responsible for sports, culture, health and education

Theme	Priority Area	Preferred Execution Time-frame	Potential Stakeholders ²	Responsible Institutions to be engaged before commencement of the research
	Sports and arts infrastructure	2023-30	Universities, research centres, think-tanks, private sector	NCST, NPC, Ministries responsible for sports, culture and education
	Models of sports and arts financing and commercialisation	2023-30	Universities, research centres, think-tanks, private sector	NCST, NPC, Ministries responsible for sports, culture and finance
	Political economy of sports and arts	2023-30	Universities, research centres, think-tanks	NCST, NPC, Ministries responsible for sports, finance and justice
	Sports and arts governance	2023-30	Universities, research centres, think-tanks, NYCOM	NCST, NPC, Ministry responsible for sports
Gender Equality and Equity	Financing models for gender equality, focused on inclusive entrepreneurship	2023-25	Universities, research centres, think-tanks	NCST, NPC, Ministries responsible for gender and trade
	Gender studies	2023-25	Universities, research centres, think-tank	NCST, NPC, Ministry responsible for gender
	Inclusive and gender-focused development programming	2023-25	Universities, research centres, think-tank	NCST, NPC, Ministries responsible for economic planning and development, and gender
	Social protection programming for vulnerable and marginalised populations	2023-25	Universities, research centres, think-tanks	NCST, NPC, Ministry responsible for social welfare

Theme	Priority Area	Preferred Execution Time-frame	Potential Stakeholders ²	Responsible Institutions to be engaged before commencement of the research
	Inclusive and substantive participation in national development	2023-25	Universities, research centres, think-tanks	NCST, NPC, Ministries responsible for economic planning and development, and gender
	Catalytic and transformative social cash transfer systems	2023-25	Universities, research centres, think-tanks	NCST, NPC, Ministries responsible for social welfare, finance, economic planning and development
Social Welfare	Child protection systems to reduce vulnerability, violence, abuse, and exploitation	2023-25	Universities, research centres, think-tanks	NCST, NPC, Ministry responsible for child protection
	Targeted mechanisms for social safety nets	2023-25	Universities, research centres, think-tanks	NCST, NPC, Ministry responsible for social welfare

2 The list of stakeholders for each theme and/or research area is not exhaustive.

2.9 Research Pillar 9: Economic Infrastructure



Malawi aspires to have a globally competitive economic infrastructure that will promote domestic economic activity and spur foreign direct investments for inclusive wealth creation. The goal of this research pillar is to provide technologies and innovations that will accelerate inclusive wealth creation through infrastructure investments in ICT

(to increase digital access and technological adoption); transport (roads, railway, water and airports); and energy, among others. Work on this research pillar will unlock alternative sources of financing from the private sector, PPP arrangements and other sources; and ensure legislation that focuses on diversification of energy production to reduce over-dependency on hydro-electric power. Specifically, this research pillar will focus on the following themes:

Legislation and Institutional Capacity Building: Legal frameworks that support competitive economic infrastructure and promote economic activities.

Energy Generation and Supply: Technologies and means for diversifying energy generation, largely focusing on renewable and sustainable energy to reduce over dependence on hydro generated power.

Transport Development: Technology and practices that save costs, reduce congestion, improve safety, maintain infrastructure integrity, and enhance resilience to future uncertainties such as extreme weather in all modes of transport (road, water and air).

ICT Development: Innovations in ICT development and infrastructure to increase digital access and technological adoption.

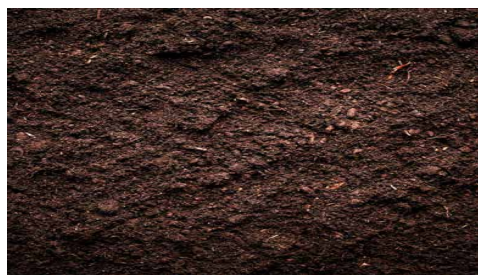
Table 9. Research themes and priority areas on Economic Infrastructure

Theme	Priority Area	Preferred Execution Time-frame	Potential Stakeholders ²	Responsible Institutions to be engaged before commencement of the research
Legislation and Institutional Capacity Building	Legal frameworks on economic infrastructure development	2023-25	Universities, think-tanks, NCIC	NCST, NPC, Ministries responsible for public works, transport, energy and justice
	Policy framework for economic infrastructure development	2023-25	Universities, think-tanks	NCST, NPC, Ministries responsible for public works, transport, energy and justice
Energy Generation and Supply	Alternative construction materials	2023-25	Universities, NCIC, private sector, think-tanks	NCST, NPC, Ministries responsible for public works and energy
	Energy infrastructure financing models	2023-25	Universities, think-tanks, private sector	NCST, NPC, Ministries responsible for energy and finance
	Sustainable energy systems	2023-25	Universities, think-tanks, private sector	NCST, NPC, Ministries responsible for energy and finance
	Energy efficiency and conservation	2023-25	Universities, think-tanks, private sector	NCST, NPC, Ministries responsible for energy and natural resources
	Local manufacturing of energy materials	2023-25	Universities, think-tanks, private sector, NCIC	NCST, NPC Ministries responsible for energy and industry
	Transport systems and planning	2023-25	Universities, think-tanks, private sector	NCST, NPC, Ministries responsible for transport, public works and local government

Theme	Priority Area	Preferred Execution Time-frame	Potential Stakeholders ²	Responsible Institutions to be engaged before commencement of the research
	Economics of transport infrastructure (rail, water, air)	2023-25	Universities, think tanks, ECAMA, private sector	NCST, NPC, Ministry responsible for transport
	E-transport and logistics	2023-25	Universities, think-tanks, private sector	NCST, NPC, Ministries responsible for transport and ICT
	Alternative ways for road construction	2023-25	Universities, think-tanks, private sector, NCIC	NCST, NPC, Ministries responsible for transport, public works
	Aviation systems and management	2023-25	Universities, think-tanks, private Sector	NCST, NPC, Ministry responsible for transport
	Infrastructure financing models		Universities, think-tanks, private sector	NCST, NPC Ministries responsible for transport and finance
	ICT infrastructure	2023-25	Universities, think-tanks, private sector	NCST, NPC, MACRA, Ministry responsible for ICT
	Digitisation and data management	2023-25	Universities, think-tanks, private sector	NCST, NPC, MACRA, Ministry responsible for digitisation
	Artificial intelligence	2023-25	Universities, think-tanks, private sector	NCST, NPC, MACRA, Ministry responsible for ICT
	ICT financing Models	25-2023	Universities, think-tanks, private sector	NCST, NPC, Ministries responsible for ICT and finance
ICT Development				

2 The list of stakeholders for each theme and/or research area is not exhaustive.

2.10 Research Pillar 10: Environmental Sustainability



Environmental sustainability is key to sustainable development on the premise that development programmes that are conscious of minimising depletion of natural resources and maximising replenishment efforts can be sustained without causing further harm to the environment. Malawi aspires to have a clean, secure, and sustainable environment. As such, the goal of this research pillar is to foster ecosystem-based approaches in managing the environment; generate knowledge for ensuring adequate waste disposal,

treatment, and recycling, and addressing air and water pollution; and ensuring prudent water resources management. The research pillar will also focus on climate change financing for mitigation and adaptation measures, and effective approaches to disaster preparedness. Specifically, the research pillar will focus on the following themes:

Legislation and Institutional Capacity

Building: Legal frameworks for sustainable development and utilisation of natural resources for current and future generations.

Ecosystem Conservation and

Environmental Management: Measures and systems for a holistic approach to sustainable development and restoration of degraded areas.

Waste Management and Green Economy:

Renewable energy, green buildings, sustainable transport, water management and waste management.

Climate Change Management: Weather and climate monitoring for early warning, preparedness, and timely response.

Environment and Climate Change

financing: Effective financing, resource utilisation and coordination in the natural resource management sector.

Natural Disaster and Climate Adversities

Preparedness: Disaster coping capacity; and planning, decision making and support for disaster management.

Table 10. Research themes and priority areas on Environmental Sustainability

Theme	Priority Area	Preferred Execution Time-frame	Potential Stakeholders ²	Responsible Institutions to be engaged before commencement of the research
Legislation and Institutional Capacity Building	Legal and regulatory framework on disaster management, pollution, and waste management	2023-2025	Universities, LEAD, think-tanks	NCST, NPC, Ministries responsible for environment and justice
	Legislation and regulation for a green economy	2023-2025	Universities, think-tanks, FRIM, LEAD	NCST, NPC, Ministries responsible for environment and justice
Ecosystem Conservation and Environmental Management	Political economy of the environment	2023-25	MEPA, universities, think-tanks, private sector, LEAD	NCST, NPC, Ministries responsible for environment, finance and justice
	Environmental management and governance	2023-25	Universities, think-tanks, private sector, LEAD	NCST, NPC, MEPA, Ministry responsible for environment
	Biodiversity conservation	2023-25	Universities, think-tanks, private sector, National Herbarium and Botanic Gardens (HBG) of Malawi, LEAD	NCST, NPC, MEPA, Ministries responsible for environment, agriculture, wildlife, forest and fisheries
	Blue economy, bio economy	2023-25	Fisheries Research Unit, Universities, Think-tanks, private sector	NCST, NPC, Ministries responsible for natural resources, water, fisheries, marine and transport
	Technology, innovations, and entrepreneurship for environmental sustainability	2023-25	DARS, universities, think-tanks, private sector	NCST, NPC, Ministry responsible for environment

Theme	Priority Area	Preferred Execution Time-frame	Potential Stakeholders ²	Responsible Institutions to be engaged before commencement of the research
Waste Management	Integrated waste management	2023-25	Think-tanks, private sector, universities, think-tanks	NCST, NPC, Ministries responsible for environment and industry
	Renewable energy	2023-25	Universities, think-tanks, private sector	NCST, NPC, MERA, MEPA, Ministries responsible for energy and environment
Environment and Climate Change	Climate change financing models	2023-25	Universities, think-tanks, private sector, LEAD	NCST, NPC, Ministries responsible for climate change and finance
	Climate change adaptation and mitigation	2023-25	Universities, think-tanks	NCST, NPC, Ministries responsible for climate change, environment and agriculture
	Environmental accounting, education, and communication	2023-25	Universities, think-tanks	NCST, NPC, MEPA, Ministries responsible for environment and finance
	Modelling climate change and its impact	2023-25	Universities, think-tanks, LEAD	NCST, NPC, Ministry responsible for climate change
	Climate smart infrastructure development	2023-25	NCIC, universities, think-tanks, private sector	NCST, NPC, Ministries responsible for climate change, industry and transport
	Effective generation and utilisation of reliable climate services	2023-30	Universities, think-tanks, LEAD	NCST, NPC, Ministry responsible for climate change

Theme	Priority Area	Preferred Execution Time-frame	Potential Stakeholders ²	Responsible Institutions to be engaged before commencement of the research
	Land use cover and water resources	2023-30	Universities, think-tanks, LEAD, DARS, CGIAR	NCST, NPC, Ministries responsible for environment, forest and agriculture
	Human and climate change nexus - dimensions and policy implications of global change	2023-30	Universities, think-tanks LEAD, DARS, CGIAR	NCST, NPC, Ministries responsible for environment, agriculture, forestry, fisheries and water
	Modulations of the composition of the global atmospheric changes	2023-30	Universities, think-tanks	NCST, NPC, Ministries responsible for environment and climate change
Environment and Climate Change Financing	Effective financing mechanisms for conservation, adaptation, and mitigation measures	2023-30	Universities, think-tanks, private sector, LEAD	NCST, NPC, Ministries responsible for environment, finance, agriculture, forestry and fisheries
Natural Disasters and Climate Adversities Preparedness	Land resettlement pathways	2023-23	Universities, think-tanks, CGIAR	NCST, NPC, Ministries responsible for lands and finance
	Land adaptation models and land restoration	25-2023	Universities, think-tanks, LEAD	NCST, NPC, Ministries responsible for environment, lands, agriculture and forestry
	Resilient infrastructure	2023-30	Think-tanks, universities, NCIC	NCST, NPC, Ministries responsible for local government, buildings, transport and environment

Theme	Priority Area	Preferred Execution Time-frame	Potential Stakeholders ²	Responsible Institutions to be engaged before commencement of the research
	Science, education, and communication	2023-25	Universities, think-tanks	NCST, NPC, Ministries responsible for education and civic education
	Models for disaster preparedness	2023-25	Universities, think-tanks	NCST, NPC, OPC, Ministries responsible for climate change AND finance
	Human induced disasters, policies and programmatic considerations	2023-25	Universities, think-tanks,	NCST, NPC, Ministries responsible for environment AND justice
	Prediction systems through automation and ICT methodologies	2023-30	Universities, think-tanks	NCST, NPC, Ministries responsible for climate change and ICT
	Effective early warning	2023-30	Universities, think-tanks	NCST, NPC Ministry responsible for climate change

2 The list of stakeholders for each theme and/or research area is not exhaustive.

Chapter 3.

Operationalisation of the National Research Agenda

This NRA runs from 2023-2030 in alignment with the MIP-1. Its implementation will be guided by four key essentials, namely: Coordination;

Financing; Monitoring, Evaluation, Accountability and Learning (MEAL); and Dissemination for Leveraging on Knowledge.

3.1 Implementation Coordination

Implementation of the NRA will be coordinated by the NCST and the NPC, guided by their respective Acts, mandates, and operating procedures. In keeping with its oversight mandate on medium and long-term development plans in the country, the NPC will ensure and promote alignment of all research, innovations and technologies to the

MW2063 and MIP-1. The NCST will promote the advancement of quality scientific research, technologies and innovations in the country through sustained interface with researchers and innovators. Further, the NCST will ensure adherence to standards for quality scientific outputs (innovations and technologies) in addressing Malawi's development challenges.

3.2 Financing of the NRA Implementation

The main source of financing for implementing this NRA will be the Government of Malawi through the Science and Technology Fund (Fund) coordinated by the NCST as established under the Science and Technology Act, Cap. 30:10 of the Laws of Malawi. The NCST will ensure that implementers of this NRA access the Fund through prescribed procedures and conditions in order to generate knowledge, technologies and innovations in accordance with

Malawi's development aspirations and plans. Further, development partners and the private sector are expected to finance the NRA by contributing to the Research Fund and/or through bi-lateral and multi-lateral agreements with various stakeholders in Malawi's STI ecosystem. The universities, centres of excellence and research-based think-tanks are also on their own accord expected to mobilise resources to support the operationalisation of the NRA.

3.3 Monitoring, Evaluation, Accountability and Learning (MEAL)

Public investment in research (science, technology and innovations)

is expected to generate returns that benefit the economy. As

such, the outputs of the NRA must be evaluated based on economic and social outcomes. The Monitoring, Evaluation, Accountability, and Learning (MEAL) will involve a comprehensive tracking and analysis of progress, effectiveness and

impact of programmes and interventions being implemented under the NRA towards national development plans. The diagram below illustrates how MEAL will be undertaken in the context of this NRA.

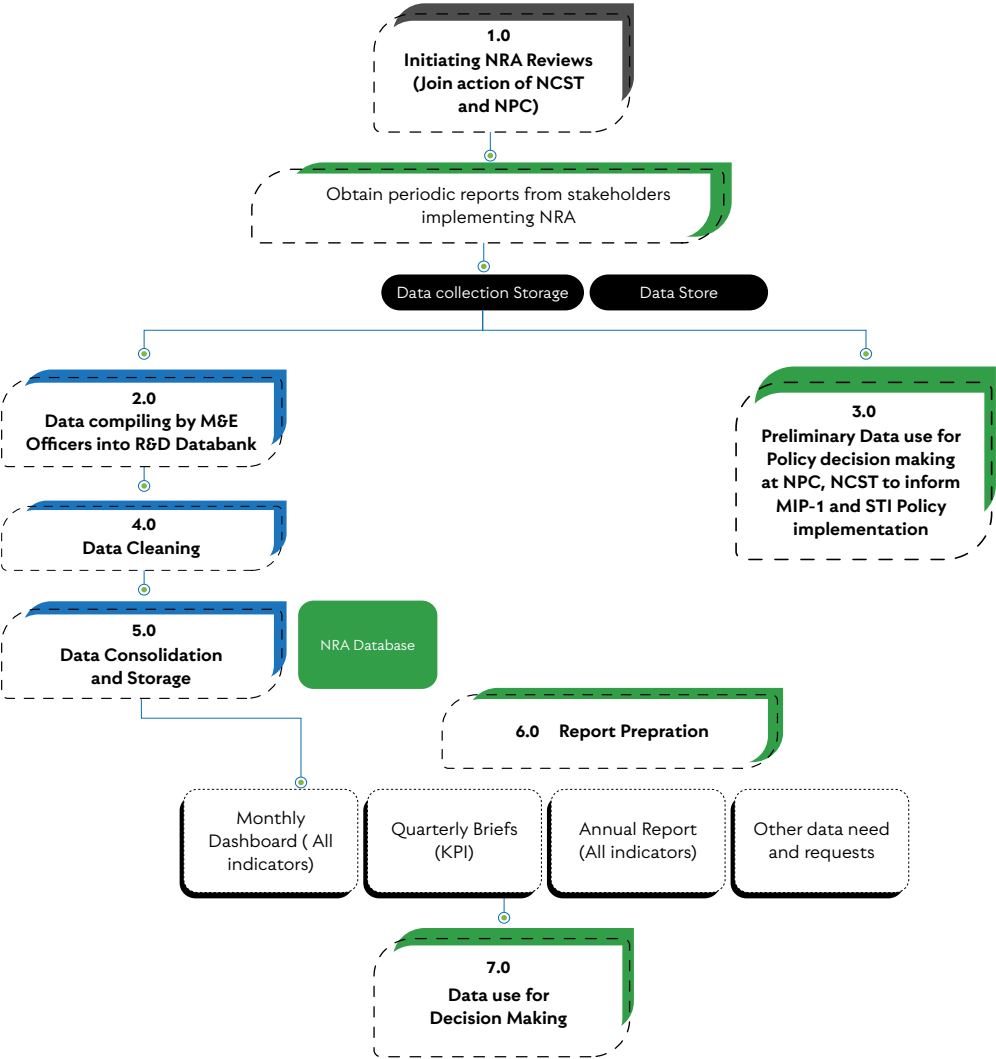


Figure 1: The MEAL approach

The MEAL processes will be coordinated through the partnership of the NCST, NPC, Ministry responsible for economic planning (including National Statistics Office (NSO)) and leads of PECGs. The NCST, NPC and Ministry responsible for economic planning shall develop instruments for assessing progress of research and innovations, and their contribution to the achievement of the MIP-1 milestones and MW2063 aspirations. Monitoring reports on the NRA will be produced annually and reviewed by all stakeholders for relevant action. The

purpose of such reviews will be to assess or evaluate the country's progress towards the realisation of the knowledge-based economy and the contribution of research to the realisation of Malawi's development goals. The reviews will also provide space for the introduction of emerging research priorities and new implementers that will address Malawi's emergent pressing needs. A mid-term and final evaluation of the NRA will be done soon after the mid-term evaluation of the MIP-1 and in 2030, respectively.

3.4 Dissemination of Knowledge, Technologies, and Innovations

Dissemination of knowledge, technologies, and innovations from this NRA will be coordinated by the NCST and NPC. National Research, Technologies and Innovations Dissemination (NRTID) for shall be organised bi-annually to provide space for an enriching interface among researchers, innovators and users of research and innovations outputs such as the Government, private sector,

and development partners. Independent researchers, technologies and innovations institutions shall, at their own time and using their own resources, conduct research dissemination and innovations events on annual basis to show-case their work and share findings from research studies for possible uptake and scaling.

ANNEX 1. HIGH-LEVEL MONITORING, EVALUATION, ACCOUNTABILITY AND LEARNING FRAMEWORK

Outcome 1: Prioritised broad-based areas for research, technologies and innovations produced and generated to achieve MIP-1 milestones, dis-aggregated by research pillar, theme, and priority area												
Indicator No.	Indicator	Baseline (2021)	Annual Targets							Data Source	Responsible Institution(s)	
			2023	2024	2025	2026	2027	2028	2029			2030
1.1	Number of published research outputs	978	1243	1491	2148	2577	3092	3710	4452	5342	NRA Survey, R&D Survey, Web of Science	NCST, NPC, NSO
1.2	Number of technological innovations produced and generated	70	93	106	122	141	162	214	246	283	NRA Survey, R&D Survey, NCST Innovation Database, Malawi Patent Records	NCST, NPC, NSO, Registrar General's Office
1.3	Percentage increase in patented innovations and technologies	4	3	3	4	4	4	6	6	8	NRA Survey, R&D Survey, NCST Innovation database, Malawi Patent Records	NCST, NPC, NSO, Registrar General's Office

Outcome 2. Enhanced multidisciplinary and collaborative research, innovation, and technologies generated												
Indicator No.	Indicator	Baseline (2021)	Annual Targets							Data Source	Responsible Institution(s)	
			2023	2024	2025	2026	2027	2028	2029			2030
2.1	Percentage increase in multi-disciplinary research generated	10	27	29	32	35	39	43	47	50	NRA Survey, R&D Survey	NCST, NPC, NSO
2.2	Percentage increase in multi-disciplinary innovations and technology generated	10	17	20	23	25	27	30	35	40	NRA Survey, Innovations survey	NCST, NPC, NSO
2.3	Percentage increase in collaborative research produced	5	10	15	20	25	30	35	40	45	NRA Survey, R&D Survey	NCST, NPC, NSO
2.4	Percentage increase in collaborative innovations and technology produced	2	5	7	10	12	15	20	25	30	NRA Survey, R&D Survey	NCST, NPC, NSO

Outcome 2: Enhanced multidisciplinary and collaborative research, innovation, and technologies generated												
Indicator No.	Indicator	Baseline (2021)	Annual Targets							Data Source	Responsible Institution(s)	
			2023	2024	2025	2026	2027	2028	2029			2030
2.5	Percentage increase in published multidisciplinary technologies and innovations	2	7	0	12	15	18	20	22	25	NRA Survey, R&D Survey	NCST, NPC, NSO
2.6	Percentage increase in patented multidisciplinary and collaborative research, innovations, and technologies	1	4	4	5	7	10	15	23	35	NRA Survey, R&D Survey	NCST, NPC, NSO

Outcome 3: Increased uptake of research outputs, innovations and technologies generated by research pillar, theme and priority area												
Indicator No.	Indicator	Baseline (2021)	Annual Targets							Data Source	Responsible Institution(s)	
			2023	2024	2025	2026	2027	2028	2029			2030
3.1	Percentage of research outputs influencing policies by pillar	10	20	30	40	50	70	80	90	100	NRA Survey, R&D Survey	NCST, NPC, NSO

Outcome 3: Increased uptake of research outputs, innovations and technologies generated by research pillar, theme and priority area												
Indicator No.	Indicator	Baseline (2021)	Annual Targets							Data Source	Responsible Institution(s)	
			2023	2024	2025	2026	2027	2028	2029			2030
3.2	Percentage of research outputs influencing generation of technologies and innovations	20	25	30	40	50	70	80	90	100	NRA Survey, R&D Survey	NCST, NPC, NSO
3.3	Number of innovations and technologies licensed	7	10	15	20	25	35	40	45	50	NRA Survey, R&D Survey	NCST, NPC, NSO
3.4	Number of start-up formulated technologies and innovations	5	10	15	20	25	45	55	65	75	NRA Survey, R&D Survey	NCST, NPC, NSO

Outcome 4: Resources mobilised for operationalisation of the NRA										
Outcomes No.	Indicator	Baseline (2021)	Annual Targets							
			2023	2024	2025	2026	2027	2028	2029	2030
4.1	Percentage of national budget allocation to research and development.	0.08	0.16	0.24	0.34	0.49	0.7	1	1.4	2.1
4.2	Percentage of research and development expenditure to national budget	0.2	0.34	0.44	0.57	0.74	0.97	1.25	1.63	2.1
4.3	Percentage of research and development expenditure to GDP	0.05	0.09	0	0	0	0.01	0.02	0.02	0.03
4.4	Percentage of expenditure of business sector enterprise research aligned to NRA	5	7	9	11	12	13	14	15	18
									NRA Survey, R&D Survey	NCST, NPC, NSO
									NRA Survey, R&D Survey	NCST, NPC, NSO
									NRA Survey, R&D Survey	NCST, NPC, NSO
									NRA Survey, R&D Survey	NCST, NPC, NSO

Outcome 4: Resources mobilised for operationalisation of the NRA												
Outcomes No.	Indicator	Baseline (2021)	Annual Targets							Data Source	Responsible Institution(s)	
			2023	2024	2025	2026	2027	2028	2029			2030
4.5	Percentage of higher education institutions research expenditure aligned to NRA	50	52	54	56	58	60	63	66	70	NRA Survey, R&D Survey	NCST, NPC, NSO
4.6	Percentage of private sector research expenditure aligned to NRA	18	22	23	24	26	28	39	32	34	NRA Survey, R&D Survey	NCST, NPC, NSO
4.7	Percentage of public sector expenditure aligned to the NRA	27	30	32	33	34	36	38	39	40	NRA Survey, R&D Survey	NCST, NPC, NSO

Outcome 5: Enhanced synergies among researchers, think-tanks, academia, industry (private sector) in generating and leveraging knowledge and resources for prioritised research, technologies and innovations												Responsible Institution(s)	
Indicator No.	Indicator	Baseline (2021)	Annual Targets										Data Source
			2022	2023	2024	2025	2026	2027	2028	2029	2030		
5.1	Percentage of co-located research programmes	5	6	7.2	8.6	10.4	12.4	14.9	17.9	21.5	25.6	NRA Survey, R&D Survey	NCST, NPC, NSO
5.2	Percentage of co-created research programmes	5	6.2	7.6	9.3	11.4	14.1	17.3	21.3	26.2	32.2	NRA Survey, R&D Survey	NCST, NPC, NSO
5.3	Percentage of co-delivered research programmes	5	6.3	7.8	9.8	12.2	15.3	19.1	23.8	29.8	37.3	NRA Survey, R&D Survey	NCST, NPC, NSO
5.4	Percentage of co-located innovations and technologies	5	5.5	6.1	6.7	7.3	8.1	8.9	9.7	10.7	11.8	NRA Survey, R&D Survey	NCST, NPC, NSO
5.5	Percentage of co-created innovations and technologies	5	5.6	6.3	7	7.9	8.8	9.9	11.1	12.4	13.9	NRA Survey, R&D Survey	NCST, NPC, NSO
5.6	Percentage of co-delivered innovations and technologies	5	5.7	6.5	7.4	8.4	9.6	11	12.5	14.3	16.3	NRA Survey, R&D Survey	NCST, NPC, NSO

NATIONAL RESEARCH AGENDA DRAFTING COORDINATING TEAM

NATIONAL COMMISSION FOR SCIENCE AND TECHNOLOGY

Ms. Gift A. Kadzamira – Acting Director General

Mr. Kondwani Gondwe – Acting Director of Planning

Mr. Isaac Chingota – Chief Technologies Transfer Officer

Mr. Frederick Munthali – Chief Research Officer, Engineering and Energy

Mr. Lyson Kampira – Chief Research Officer, Agriculture

Mr. Mwizapanyuma Simkonda – Monitoring and Evaluation Consultant

NATIONAL PLANNING COMMISSION

Dr. Thomas Munthali – Director General

Dr. Joseph Nagoli – Director of Knowledge and Learning

Dr. Grace Kumchulesi – Director of Development Planning

Dr. Andrew Jamali – Research Manager

Mr. Austin Chingwengwe – Monitoring and Evaluation Manager

Mr. Thomson Khanje – Communications and Public Relations Manager

Mr. Mtamandeni Liabunya – Legal Counsel

Mr. Frank Kamanga – Research Officer

Mrs. Tissie Kumpata – Monitoring and Evaluation Officer

Mr. Harold Fote – Monitoring and Evaluation Officer

UNICEF Malawi

Dr. Mussarrat Youssuf, Chief – Research, Evaluation and Knowledge Management

Dr. Abiba Longwe-Ngwira, Research and Evaluation Specialist

Ms. Nissily Mushani, UNV – Research and Evaluation Officer

Ms. Olipa Shaba, UNV – Monitoring and Evaluation Officer

