



**MZUMBE UNIVERSITY  
(CHUO KIKUU MZUMBE)**

# **RESEARCH AGENDA**

**2022/23 – 2032/33**

*Approved by the University Council's 123<sup>rd</sup> Meeting held on the 9<sup>th</sup> day of June, 2022*

## FOREWORD

Mzumbe University (MU) has developed its first research agenda to provide a roadmap for management of research activities. The agenda is intended to address the longstanding desire by various stakeholders in research to have a more focused and coordinated research ecosystem, hence facilitate and enhance coordination of research efforts across the University. It is clustered in research priorities drawn from international, regional, national and local levels.

The agenda embraces a participatory approach whereas all relevant stakeholders in the University who are involved in generating research ideas of similar interest, form clusters, sub-clusters and priority areas. Research works attain value when the outputs are of high quality. By producing high quality research outputs for socio-economic development of Tanzania and beyond, Mzumbe University will consolidate her position as a *Center of Excellence in Management and Allied Sciences* and as a result, attract national and international stakeholders to turn to MU as “*provider of solutions to their developmental challenges*”. Dissemination of research outputs will contribute towards raising the University’s profile both at global and national ranks. It will also attract research high caliber and high value research projects from various partners, and more enrolment into our programmes. Research outputs will also be used to advance the University outreach arm as part of corporate social responsibility.

I appeal to our stakeholders and partners in research to undertake high quality research as promulgated in this document. The University is determined to conduct due diligence to ensure that all research activities at MU adhere to standard ethical principles and the outputs provide benefits to our communities, stakeholders, and the country at large. I am optimistic that with the cooperation of all actors in the research ecosystem, MU will make a significant contribution to and impact on the social and economic development of our nation through generating, preserving, and disseminating new knowledge, products and services.

Finally, I would like to acknowledge the inputs of all those who made this Research Agenda a reality.

**Prof. Lughano J.M. Kusiluka**

Vice Chancellor

A handwritten signature in black ink, appearing to read "L. Kusiluka", is written over a horizontal line. The signature is fluid and cursive.

## **EXECUTIVE SUMMARY**

This Research Agenda provides a framework for all research and innovation activities at the University. It draws pertinent issues from the United Nations Agenda 2030 for Sustainable Development Goals; Africa Union Agenda 2063; Science, Technology and Innovation Strategy for Africa 2024; SADC Vision 2050; SADC Regional Indicative Strategic Development Plan 2030; African Strategic Plan of 2020- 2025; and EAC Vision 2050. It as well draws its priorities from the Tanzania Development Vision 2025, the National Five-Year Development Plan 2021/22-2025/26; CCM Election Manifesto 2020-2025; the Long-Term Perspective Plan 2010/11 - 2025/26; Zanzibar Blue Economy Policy of 2020; MU 4<sup>th</sup> Corporate Strategic Plan (2017/2018-2021/2022); and the MU Research and Innovation Policy and Operational Guidelines of 2020.

The document presents research clusters and their corresponding research areas which MU will work on. The research agenda is divided into four clusters. The first cluster is Competitive Economy, Industrialization and Technology. This is divided into four sub-clusters namely; accounting, finance and economy; competitive economy and industrialization; science, technology and innovation; and business management and human capital development. The second cluster focuses on Education and Health which is divided in two sub-clusters grouped as education and health. While the third cluster is on Natural Resources Management, Environment and Climate Change, the fourth is about Governance, Law, Policy, Gender, and Leadership. For each cluster and corresponding sub-clusters, the goal and specific research priority areas are identified. This document is organized into three chapters. The first chapter provides an introduction of MU Research Agenda with a focus on the background, linkage of MU research agenda to global and research national priority areas; rationale, objectives, and MU key research stakeholders. The second chapter describes research clusters, sub-clusters and priority areas. The last chapter presents implementation, monitoring and evaluation strategies.

## ACRONYMS AND ABBREVIATIONS

ACCA	Association of Chartered Certified Accountants
CBOs	Community Based Organizations
CCM	Chama Cha Mapinduzi
COSTECH	Commission for Science and Technology
CSR	Corporate Social Responsibility
DCC	Dar es Salaam Campus College
DRPC	Directorate of Research and Publication Committee
DRPS	Directorate of Research and Postgraduate Studies
EASTECHO	East African Science and Technology Commission
ESDP	Education Sector Development Plan
FDI	Foreign Direct Investment
FOL	Faculty of Law
FSS	Faculty of Social Science
FST	Faculty of Science and Technology
GDP	Gross Domestic Product
HRM	Human Resource Management
HSM	Health System Management
HSSP	Health Sector Strategic Plan
ICT	Information and Communication Technology
IDS	Institute of Development Studies
IIDS	Integrated Industrial Development Strategy
MCC	Mbeya Campus College
MOEST	Ministry of Education, Science, and Technology

MOFP	Ministry of Finance and Planning
MU	Mzumbe University
NEP	National Environmental Policy
NEPAD	New Partnership for Africa's Development
NEMC	National Environment Management Council
NGOs	Non-Governmental Organizations
NRA	National Research Agenda
NRP	National Research Priorities
NTFP	Non-Timber Forestry Products
ODI	Overseas Development Institute
PPP	Public-Private Partnership
PRSP	Poverty Reduction Strategy Programme
RISDP	Regional Indicative Strategic Development Plan
SDGs	Sustainable Development Goals
SIDP	Sustainable Industrial Development Policy
SMEs	Small and Medium Enterprises
SOB	School of Business
SOPAM	School of Public Administration and Management
SP	Strategic Plan
STI	Science, Technology, and Innovation
TCU	Tanzania Commission for Universities
UN	United Nations
URT	United Republic of Tanzania

# TABLE OF CONTENTS

<b>FOREWORD</b> .....	ii
<b>EXECUTIVE SUMMARY</b> .....	iv
<b>ACRONYMS AND ABBREVIATIONS</b> .....	v
<b>CHAPTER ONE: INTRODUCTION</b> .....	1
1.1 Background.....	1
1.2 Linkage of Research Agenda to Global and National Priorities.....	2
1.3 Rationale.....	3
1.4 Objectives of MU Research Agenda.....	4
1.5 Scope.....	4
1.6 Key Stakeholders.....	5
1.6.1 The contribution of MU Research Agenda to its stakeholders.....	5
<b>CHAPTER TWO: MU RESEARCH CLUSTERS</b> .....	7
2.1 Introduction.....	7
2.2 Research cluster 1: Competitive Economy, Industrialization and Technology.....	7
2.2.1 Sub-Cluster 1: Accounting, Finance and Economy.....	8
2.2.1.1 Research Areas.....	8
2.2.1.2 Key players.....	8
2.2.2 Sub-Cluster 2: Competitive Economy and Industrialization....	9
2.2.2.1 Research Areas.....	9
2.2.2.2 Key players.....	10
2.2.3 Sub-Cluster 3: Science, Technology and Innovation.....	10
2.2.3.1 Research areas.....	11
2.2.3.2 Key players.....	11
2.2.4 Sub Cluster 4: Business Management and Human Capital Development.....	11
2.2.4.1 Research Areas.....	12
2.2.4.2 Key players.....	12
2.3 Research Cluster 2: Education and Health.....	13
2.3.1 Sub-Cluster 1: Education.....	13
2.3.1.1 Research Areas.....	13

2.3.1.2 Key Players.....	14
2.3.2 Sub-Cluster 2: Health.....	14
2.3.2.1 Research Areas.....	14
2.3.2.2 Key Players.....	15
2.4 Research Cluster 3: Natural Resources Management, Environment and Climate Change.....	15
2.4.1 Research Areas.....	16
2.4.2 Key Players.....	16
2.5 Research Cluster 4: Governance, Law, Policy, Gender, and Leadership.....	17
2.5.1 Research Areas.....	19
2.5.2 Key Players.....	20
<b>CHAPTER THREE: IMPLEMENTATION, MONITORING AND EVALUATION.....</b>	<b>21</b>
3.1 Introduction.....	21
3.2 Implementation.....	21
3.3 Monitoring and Evaluation.....	22
3.4 Conclusion.....	23
<b>REFERENCES.....</b>	<b>24</b>
<b>APPENDICES.....</b>	<b>27</b>
<b>APPENDIX I: MU RESEARCH AGENDA MATRIX.....</b>	<b>27</b>
<b>APPENDIX II: MU STAFF (PhD) COMPETENCE AREAS BY CLUSTERS.....</b>	<b>34</b>

# CHAPTER ONE

## INTRODUCTION

### 1.1 Background

Mzumbe University was established by the MU Charter, 2007 under Section 25 of the Universities Act. No. 7 of 2005 which repealed MU Act. No. 9 of 2001. The Charter provides the University with a broad mandate to initiate and conduct research activities in the areas that match the institutional core competences. In line with this mandate, the current mission call for MU to provide opportunities for acquisition, development, preservation, and dissemination of knowledge and skills through training, research, technical and professional services. Since its establishment, MU has trained and continues to train the substantial number of human resources in the areas of management, allied sciences and related fields at all education levels. For effective development, preservation, and dissemination of new and impactful knowledge and skills to its community and stakeholders, MU embraces research and innovation activities as the main driving force to attain this mission. In all core functions, research emerges as the cornerstone for other university's functions. It means that research complements other core functions of the University. MU is bestowed with highly trained human capital in the specialty of public, business, and local government administration and management, economics, accountancy, finance, education, health, information technology and law. The University also enjoys the privilege of having three campuses which are strategically located in Dar es Salaam, Mbeya, and Morogoro.

As a public University, it is obliged to contribute to the national development through the execution of its core functions. It fully supports the national goals and priorities and ready to play its fundamental role in generating, preserving, and disseminating basic knowledge through research activities. MU feels responsible for promoting socio-economic development through increasing the quality of lives of people in various ways, increasing productivity and discovering new and innovative technologies that solve socio-

economic problems. It can only be possible to achieve this if all research activities are streamlined and guided by the University. Thus, in fulfilling its role, MU community has taken a step forward in formulating a research agenda that will act as a roadmap for all research activities within its units. MU recognises the diversity of research, as such, in formulating the research agenda; the University confined its research clusters, sub-clusters and priorities within its mandates, functions, and core competences. This strategic document will serve as a MU research agenda for the foreseeable future. Future changes, including national development goals and research priorities will compel the University to review this document to produce research outputs that are in tune with the trend of time.

## **1.2 Linkage of Research Agenda to Global and National Priorities**

In formulating its research agenda, MU draws the research priorities from various global and local policy documents. From the global perspective, it draws pertinent issues from the United Nations Agenda 2030 for Sustainable Development Goals (SDGs-2030) that aim to eradicate poverty in all its forms and dimensions including extreme poverty - the greatest global concern and indispensable requirement for sustainable development. It as well responds to the Africa Union Agenda 2063 and Science, Technology and Innovation Strategy for Africa 2024 (STISA-2024) which engrosses inclusive social and economic development, continental and regional integration, democratic governance and peace and security amongst other issues, with the purpose of repositioning Africa to becoming a dominant player in the global arena. MU Agenda also takes on board EAC Vision 2050, SADC Vision 2050, SADC Regional Indicative Strategic Development Plan (RISDP–2030), and the African Strategic Plan of 2020- 2025. Aforesaid protocols, among other issues, emphasizes on closer collaboration among institutions and researchers; support broader and deeper regional networking; ensure judicious allocation and use of resources; and elimination of duplication of efforts for accelerated regional integration; promotion and coordination of the development, management and application of science and

technology to enhance sustainable socio-economic development and regional integration.

MU Agenda as well responds to national concerns drawn from various documents covering the third National Five-Year Development Plan 2021/22-2025/26; the Long Term Perspective Plan 2010/11 - 2025/26; CCM Election Manifesto 2020-2025; President speech in the National Assembly on 12<sup>th</sup> November, 2020; Tanzania Development Vision 2025, Zanzibar Blue Economy Policy 2020, MU 4<sup>th</sup> Corporate Strategic Plan (2017/2018-2021/2022), and the MU Research and Innovation Policy and Operational Guidelines 2020, among others, which aim at stimulating an inclusive and competitive economy, strengthening industrial production capabilities and service delivery, promoting investment and trade, bringing development to our citizens and building human resource capacity in various areas including research.

It is imperative to note that thorough implementation of global and local priorities will lead to achieving sustainable development. This is a long-standing requisite to continue to produce scientific research outputs. High-quality research outputs are vital to corporate world, international agencies, the policy-makers, and governments to bring about changes that will sustainably enhance socio-economic development that will ultimately improve the quality of living and people's well-being. Thus, MU took a conscious effort to align its research initiatives to the global and national priorities.

### **1.3 Rationale**

This is the first MU Research Agenda. Before the inception of this strategic document, apart from the Research and Innovation Policy, and Operational Guidelines 2020, the University did not have a proper tool to streamline its research and innovation activities within its units. The lack of this important document ended up causing a lack of focus in research activities that match with the global and national priorities and the University core competences. Henceforth, the development of this agenda was inevitable because the University cannot isolate itself from the globe. The agenda takes onboard current issue stipulated in

various protocols including SDGs-2030; and Tanzanian Government's Long-Term Perspective Plan (LTPP) of 2011/12–2025/26, among others. This agenda responds to the increasing demand of higher learning and research institutions to provide unique and valuable research contributions towards global and national development. To attain research goals and targets, MU needs this agenda as a roadmap for all research and innovation activities. Besides, it will create a linkage between external and internal stakeholders to address research questions of priority to tackle socio-economic problems on the road to attaining economic growth and development.

#### **1.4 Objectives of MU Research Agenda**

Apart from complementing its other core functions, MU has formulated a research agenda to meet different objectives related to research, innovation, and invention. The following are some of the essential goals that the University wants to achieve through the formulation of this document: -

- i. To prioritise and streamline research clusters/areas to match with the University resources and core competences
- ii. To mobilize MU human resource in conducting multidisciplinary research and innovation activities through the formation of research clusters.
- iii. To enhance communication among MU community, collaborators, and other stakeholders in all issues related to research and innovations.
- iv. To promote research funding from all relevant stakeholders
- v. To build a strong core and reputation in conducting specialized and focused research activities, and
- vi. To communicate MU research priorities to legislators, policy makers, and other stakeholders.

#### **1.5 Scope**

Research is extremely diverse concept where multiple research themes, priorities, and areas may arise. This shows that for the country to achieve its goals, higher learning institutions have a role to execute quality research activities. Making this dream true the University has developed research agenda within its core competences. MU has formulated its research agenda by

considering its mandates, core functions, and institutional capacity which led to selection of research priority areas from both national and international policy documents.

## **1.6 Key Stakeholders**

MU needs to communicate its priority areas to key stakeholders (i.e. internal and external) who are the major supporters of the same. Internal stakeholders include staff from various MU units, graduate and undergraduate students who are involved in research in one way or another. External stakeholders to MU include both governmental (legislators and policy-makers) and non-governmental institutions from both global and local contexts. Hence, MU recognises their future contributions in making MU research agenda a success. Some of the important stakeholders are:

- i. Mzumbe University
- ii. Ministries
- iii. Tanzania Commission for Science and Technology (COSTECH)
- iv. Tanzania Commission for Universities (TCU)
- v. Universities
- vi. Research institutions
- vii. Local Government Authorities
- viii. Local and International funding agencies, collaborators, NGOs, CBOs, among others.

### **1.6.1 The contribution of MU Research Agenda to its stakeholders**

The formulation of MU research agenda aims at providing specialized research outputs which will contribute to discovery of new approaches that will improve socio-economic well-being of individuals and societies in Tanzania. The following is the list of contributions that MU Research Agenda is targeting:

a) Benefits of this agenda to internal stakeholders:

- i. Provide opportunity to MU staff and students particularly postgraduates to assume collaborative research activities with other external researchers.

- ii. Enhance the University attract investment in research and innovation from various stakeholders across the orb.
- iii. Facilitate formation of research teams that could be funded centrally in pursuit of nationally identified solutions.
- iv. Contribute towards rising the profile of the University's both at global and national levels through dissemination of research outputs in the form of publications in various media as well as commercialization of products or services emanating from research.
- v. Attract more postgraduate students and fellows to study and pursue research at the University, thereby building the MU image as a hub for training and research in management and allied sciences.
- vi. Redirect research focus and performance within a clear University framework and national priorities that may result to staff promotion through publications.

b) Benefits of this agenda to external stakeholders:

- i. Assist the Government ministries in addressing various socio-economic problems in education, health management, public administration, technology, natural resources management, among others.
- ii. Act as a guiding document for Government ministries to allocate research assignments and resources.
- iii. Output of research will be used to advance outreach arm of the University by extending to the community solutions that are relevant to contemporary problems.

# CHAPTER TWO

## MU RESEARCH CLUSTERS

### 2.1 Introduction

This chapter presents four main research clusters based on their competences (see Appendix 2). The first cluster is competitive economy, industrialization, and technologies while the second cluster is education and health. The third cluster is natural resources management, environment and climate change. The fourth cluster is governance, law, policy, gender, and leadership as discussed in details hereunder.

### 2.2 Research cluster 1: Competitive Economy, Industrialization and Technology

Country's competitiveness, strong and sustainable industrial base, science and technology are central to sustainable development. In essence, growth and prosperity of any society depends greatly on country's ability to develop and sustain competitive advantages, and the potential to developing a strong industrial, science, and technology and innovation base. Experience indicates that hardly any country has attained its socio-economic development and growth goals successfully without developing sound bases in these aspects. Industrial development, competitiveness, science, technology and innovation (STI) are, therefore, powerful tools and drivers for growth and wellbeing, through their contribution to improved output and competitiveness, sustained economic growth, and creation of employment opportunities. The basis of this cluster draws from the research priorities presented in the global and national agenda in which the importance of STI, strong and competitive economy, is highlighted. The main goal of this cluster is, therefore, to enhance contributions of competitive advantage, science, technology and innovation to country's competitiveness and sustainable industrialization towards creating wealth and prosperity in society.

## **2.2.1 Sub-Cluster 1: Accounting, Finance and Economy**

Research in accounting, finance and allied subjects such as taxation and auditing are necessary when economy, social, legal, and political situations change. It is argued that lack of relevant accounting information becomes a severe problem when the company goes through unfavorable cycles due to changes in the business environment (ACCA, 2012; Baily & Elliott, 2013). The purpose of this sub-cluster is to promote informed decision by different users of accounting and financial information.

### **2.2.1.1 Research Areas**

The research areas are as follows:

- a) Taxation, Monetary Policy and Public Finance
- b) Accounting Profession and Industrialization
- c) Resource Mobilization, Sustainable Financing and Economic Growth
- d) Financial Markets and Investment financing
- e) Financial Reporting and Analysis
- f) Digital Finance Technologies
- g) Public Sector Accounting
- h) Corporate Governance and Performance
- i) Financial Resources Management
- j) Behavioral Finance
- k) Auditing and Risk Management
- l) Applied Corporate Finance
- m) Planning, Budgeting and Reporting in the Public Sector and local government
- n) Auditing and Financial Transparency
- o) Financial Inclusion, Microfinance and Rural Economy
- p) Banking
- q) Insurance
- r) Emerging issues

### **2.2.1.2 Key players**

Accountants, auditors, tax consultants and experts, economists, financial managers, bankers, MFIs, financial analysts, budget officers, lawyers, policy makers, accounting professionals, and researchers

## **2.2.2 Sub-Cluster 2: Competitive Economy and Industrialization**

In both history and economic theory, industrialization is widely recognized as the main engine of economic growth and development (Page, 2012). Hardly any countries have developed without industrializing. By this recognition, the Government of Tanzania has embarked onto industrialization drive towards middle income economy by 2025. Since independence the government in different phases has been developing different strategies to support industrial development. The Sustainable Industrial Development Policy for Tanzania (SIDP 1996 -2020) was adopted in 1996. In 1999 Tanzania's Development Vision 2025 set the goal of achieving semi-industrialized economy by 2020. In addition, Tanzania developed the Integrated Industrial Development Strategy 2025 (IIDS) with its main focus on type of industries to be established, the need for clustering industries based on the availability of raw materials and energy resources. IIDS also recognizes the importance of infrastructure

Research in this area serves to build a strong and competitive economy through industry. This sub-cluster will research on the potentials of blue economy in achieving competitive economy and sustainable development as envisioned in the Zanzibar Development Vision 2050 and highlighted in Zanzibar Blue Economy Policy 2020 (Zanzibar Blue Economy Policy, 2020, CCM Manifesto, 2020). Central to this, as stated in various policy and strategic documents including CCM Manifesto, RISDP 2020-2030 and the global SDGs (economic growth goals 8-11) are the contribution of Foreign Direct Investment (FDI), local content and engagement of private sector through Public Private Partnership (PPP) in engendering competitiveness and industrial development (NEMC, 2017). The other priority is to enhance contribution of Diasporas on the economic growth.

### **2.2.2.1 Research Areas**

The research areas are as detailed below:

- a) Industrial Revolution
- b) Sustainable Industrialization
- c) Foreign Direct Investments and Free Economic Processing Zones

- d) Public-Private Partnership (PPP) and Industrial Development
- e) Public Procurement
- f) Diaspora and Economic Contribution
- g) Economic Empowerment for Indigenous
- h) Technology Transfer and Innovation
- i) Project Planning and Management
- j) Transportation and Logistics Management
- k) Local Content and Development of Backward Linkages
- l) Tourism Economics
- m) Agriculture Economics and Value Chain Development
- n) Natural Resources Economics
- o) Emerging issues

### **2.2.2.2 Key players**

Industrialists, agriculturists, economists, technologists, lawyers, supplies professionals, policy makers, development partners, development activists, planners, investors, Diasporas, librarians, and researchers

### **2.2.3 Sub-Cluster 3: Science, Technology and Innovation**

Science, Technology and Innovation (STI) play a critical role in transforming any economy. STI serves to foster social transformation and economic competitiveness, through human capital development, innovation, value addition, industrialization and entrepreneurship (STISA -2024). This sub-cluster reflects on research priorities presented in the SDGs-2030, East African Community Regional Research Agenda 2020–2030, Africa Union Agenda 2063; STISA-2024; and MU Research and Innovation Policy 2020. Research in this area will enhance contribution of STI to competitive economy and industrial development by providing support towards related research in engineering management, computing sciences, and mathematics and statistics (for detailed research areas see appendix 1). It will also provide research based useful insights necessary in addressing, among others, how to respond to fourth industrial revolution (Schwab, 2016; Zervoudi, 2020), how to revolutionize the economy for the wellbeing of the entire society, and how to manage technology and innovation in this rapid changing world (OTF Group, 2005).

### **2.2.3.1 Research areas**

- a) Technology Transfer and Innovation
- b) Production and Operations Management
- c) Industrial Engineering and Management
- d) Business Process Re-engineering
- e) Machine Learning and Artificial Intelligence
- f) Digital Financial Technologies
- g) Cyber security and Cybercrime
- h) Internet of Things (IoT)
- i) Cloud Computing
- j) Virtual Assistants
- k) Automation and Data Science
- l) E-Learning and E-Business Technologies
- m) Digital Libraries; Cryptography and Security
- n) Management Information System
- o) E-governance and Mobile Governance
- p) Mathematics, Insurance mathematics and Applied Statistics
- q) Statistical and Mathematical Modeling for development
- r) Fluid dynamics (Blood flow and Boundary layers)
- s) Mobile and Transactions
- t) Decision Science Modeling
- u) Emerging issues

### **2.2.3.2 Key players**

Scientists, mathematicians, statisticians, technologists, engineers, librarians, industrialists

### **2.2.4 Sub Cluster 4: Business Management and Human Capital Development**

Business management and human capital development play a vital role in attaining competitive economy and sustainable industrial development. There is unquestionable link between management and organizational performance. For instance, evidence suggests that no country has attained its socio-economic development and growth without investing in human capital. In this regard, human capital development is fundamental to realizing competitive economy as well as sustainable industrial development.

Literally, management is about a multi-purpose organ that manages a business, managers, worker and work (Kaeher & Grundei, 2019). Of interest is the influence of management on market, production, resource operations in an organization that may address diversified people and non-people centered issues. Business management literally entails managing the coordination and organization of business activities. Business management typically includes the production of materials, money, and machines, and involves both innovation and marketing. It is about understanding how to achieve organizational goals through planning, organizing, leading, and controlling the human, physical, financial, and information resources of the organization in an effective and efficient manner. In this case, for competitive economy and sustainable development to happen, there must exist a strong and supportive management base. Research in this area will enhance contribution of business management practices and human capital development to growth and sustainable development.

#### **2.2.4.1 Research Areas**

The research areas are as detailed below:

- a) Entrepreneurship, Business Development Services and Innovation
- b) Marketing, Networking and Digital Business Analytics
- c) E-Commerce
- d) Business Financing and Growth
- e) Operations Management
- f) Business Process Re-engineering
- g) Procurement and Supply Chain Management
- h) Strategic and Sustainable HRM Practices
- i) e-HRM practices
- j) Modern Workplaces and Organizational Development
- k) Human Resource Information Systems
- l) Records and Archive Management
- m) Emerging issues

#### **2.2.4.2 Key players**

Key players for this sub-cluster will be entrepreneurs, marketers, administrators, managers, human resource officers, systems

analysts, supplies professionals, librarians, archivists, operation management engineers, engineers, industrialists, policy makers, and researchers,

## **2.3 Research Cluster 2: Education and Health**

Education and health strategic issues are imperative to any country's economic development. An educated and healthier society provides a country with healthier and educated human capital. This proves that there is strong relationship between education and health.

### **2.3.1 Sub-Cluster 1: Education**

A well-educated society is a key to national development. The Government is continuing to put more investment in education projects in order to enhance access, quality, and equity of education services as stated in Tanzania Development Vision 2025, CCM Election Manifesto 2020-2025, and SDG number 4. Educated society supply reliable human capital to the economy. Educated people can also initiate small business ventures in agriculture, services or manufacturing industries that will reduce the unemployment, and ultimately reduce the poverty levels in the country. Therefore, MU will participate in research in the areas of education that contribute to enhancing access, quality, and equity of the same. The research activities will focus on the following broad research areas.

#### **2.3.1.1 Research Areas**

- a) Education Management
- b) Education Policies
- c) Curriculum and Learning Systems Management
- d) Education Access, Quality and Equity
- e) Innovative and Sustainable Models for Education Financing
- f) ICT and Library Management
- g) Community Engagement and Education
- h) Language
- i) Educational and Pedagogical Sciences
- j) Science Education
- k) Emerging issues

### **2.3.1.2 Key Players**

Educationists, managers, librarians, ICT experts, journalists, Bankers, linguists

### **2.3.2 Sub-Cluster 2: Health**

Research activities in health sector are paramount in discovering new ways of improving health systems, provision, and management of health services and care in Tanzania. Health as a research area is wider in scope. However, MU will concentrate its research efforts on health systems and related matters. Research activities in this area are geared to support the national and international goals and priorities in ensuring that societies are healthy and people can contribute towards national development. As such, this sub-cluster is brought about to address research issues in the pertinent areas in managing health systems.

MU as one of the institutions with experience in offering health management systems courses, participating in consultancy activities in health, will concentrate on conducting researches related to this research priority area. This research area is aligned with the SDG number 3 (ensure healthy lives and promote well-being for all at all ages), and Health Sector Strategic Plan Five (HSSP V 2021/22-2025/26) which focuses on management of pandemic diseases, like COVID - 19 due to globalization. The HSSP V vision is to have a healthy and prosperous society that contributes fully to the development of individuals and the nation. It covers the following research areas.

#### **2.3.2.1 Research Areas**

- a) Public Health Management
- b) Health Systems Management
- c) Health Economics
- d) Health Projects, Monitoring and Evaluation
- e) Health Financing
- f) Healthcare Analytics
- g) Food Quality, Safety and Nutrition
- h) Emerging issues

### **2.3.2.2 Key Players**

Public health managers, medical doctors, health specialists, journalists, educationists, sociologists, nutritionists and researchers

## **2.4 Research Cluster 3: Natural Resources Management, Environment and Climate Change**

There is a great relationship between natural resources management, environment, and climate change particularly by using appropriate technology in enhancing sustainable socio-economic development. The use of appropriate technology can facilitate socio-economic performance through effective harnessing or utilization of gifted natural resources; enhancing adaptation, cooperative action to reduce greenhouse gas emissions, and actions on mitigation of climate change. For example, remote sensing technology can be used to monitor natural disasters such as earthquakes and tidal waves, and improved communications. Around developed and developing countries people are experiencing both the subtle and stark effects of climate change like steadily shifting weather patterns, rising sea levels, and more dangerous weather events. Climate change threatens mankind ability to ensure global food security, eradicate poverty and severe droughts for sustainable development. Further climate change poses hazardous effects on the ecosystem, structure, function and productivity at large.

It is argued that the absence of a health ecosystem may lead to vulnerability on community wellbeing, water availability, sustainable agriculture, health and biodiversity (SDGs-2030; STISA-2024; CCM Election Manifesto 2020-2025; MU- 4<sup>th</sup> SP). In line with this, unmanaged human activities like deforestation, overstocking, dynamite fishing, quarrying and natural processes affect the ecosystem components leading to environmental degradation. Degradation of the environment is heightened by limited incentives for sustainable management, limited alternative livelihoods and unsustainable land management practices which escalate the vicious cycle of poverty and hamper sustainable development. Sustainable development in this context requires balancing the use of natural resources to meet the changing

human needs while ensuring the long productive potential of these resources and conservation of environmental functions (NEP, 1997 and the National Five – Year Development Plan, 2021/22-2025/26). This is fundamental because mankind depends significantly on the natural resources for the basic needs and livelihoods. The lives of all Tanzanians are intimately connected to the environment. Present mankind and future generations' survival depends on the harmonious relationship with the natural elements. Like many countries, Tanzania inclusive has no choice but to strive to manage the environment and its natural resources embracing modern technologies in the way that enhances the potential growth and opportunity for sustainable development of present and future generations.

Therefore, this would eventually lead to economic growth for the wider community as well as ensuring a clean, healthy, sustainable environment and sustainable socio-economic development. Development is sustainable if it is carried out within limits and tolerance of the environment of human lives through various methods. Research activities will focus on the following areas.

#### **2.4.1 Research Areas**

- a) Climate Change and Eco-systems Management
- b) Biodiversity Conservation and Management
- c) Urbanization and Waste Management
- d) Environmental Management
- e) Corporate Social Responsibility for Sustainable Environment
- f) Disaster Risk Management
- g) Management and Sustainable Use of Natural Resources
- h) Emerging issues

#### **2.4.2 Key Players**

Conservationists, ecologists, scientists, destination management organizations, researchers, policy makers, industrialists, media and lawyers

## **2.5 Research Cluster 4: Governance, Law, Policy, Gender, and Leadership**

Despite the implementation of several political, economic, legal and social reforms over three past decades, Tanzania still faces challenges in reducing poverty, promoting good governance, reducing corruption, enforcement of laws, respect of human rights, implementation of policies, reducing gender inequality and promoting equality, leadership principles, and the like (SDGs-2030, National Five-Year Development Plan 2021/22-2025/26). Thus, there is need for research on the effectiveness of these reforms to contribute to achieving favorable environment for economic growth, poverty reduction, good governance, respect of law, and effective policy implementation, gender equality, and good leadership, absence of corruption, respect of human rights, and access to services.

Governance in general and good governance in particular is critical factor in the process of creating the wealth of the nation and sharing the benefits thereof, and in enabling Tanzanians to acquire necessary capacity to make their elected leaders and public officials accountable (Msekwa, 2013). In fact, it is an important determinant of sustainable development as it facilitates and fosters faster development (Pattanaik, 2016). Governance denotes the nature of rules that regulate the public realm space, where state and economic and societal actors interact to make decisions (ODI, 2006), but good governance is that which is oriented to solve common natural development problems and create new opportunities and achieve common national development goals (United Nations, 2009). Although for decades numerous reforms have been undertaken to promote good governance, Tanzania still faces challenges in participation, accountability, transparency, respect of law, human rights, fight against corruption, responsiveness, effective and efficient performance, consensus orientation, and equity building where all men and women have opportunities to improve their wellbeing (COSTECH, 2016). Thus, there is need for research promotes principles of good governance which is necessary for socio-economic development, as emphasized in the CCM Manifesto (CCM, 2020).

Law is a fundamental component of development in any society. And, in fact, as a society grows, different rules and principles also emerge to regulate such growth, developing them to regulations, and finally laws governing the society whose basis is the society's practice, norms, and cultural practices (ILC, 1975). Law touches many disciplines that without it there could be no respect of what is reached as a common consensus. It is therefore another important factor necessary for socio-economic development in the country. Tanzanian Government has taken several measures to introduce new legislations, and create new institutions, all aimed at improving good standards and good governance based on the rule of law (Msekwa, 2013), however, challenges related land environment and property ownership, as well as in human rights violation still exist. Legal framework is expected to be fair and enforced impartially especially the law on human rights where individuals and businesses may have access to opportunities without fear of any interference or expropriation (Dool, 2005). Research on law could contribute in achieving adherence to respect of rule of law, and observance of human rights which in turn contribute to not only good governance but also development of the country.

It is argued that in many developing countries stakeholders are weakly organized on a national level, making it difficult to influence the policies referring to actions to be undertaken instead of ad-hoc or discrete decision formulated and implemented in such a way that fosters development of the country (Dool, 2005). The thrust the Tanzanian Development Agenda since independence has been focused on economic growth and poverty reduction, the prime objective being to make sure the majority of Tanzanians enjoy the fruits of development (Msekwa, 2013). As such, various policies have been formulated and implemented for the same purposes ranging from industrial, transportation, education, agriculture, mining, and tourism and wildlife sectors. Research on this area is important in order to improve the process of policy formulation and implementation and thereby achieve the intended national development goals.

A good government is expected to promote gender which has become increasingly an important focus in development

particularly since in the late 1980s (Subbo, 2002). Gender is a cross-cutting issue and therefore its implementation is expected to be undertaken by all sectors and at all levels of the society to improve governance and access to social services for all men and women, girls and boys (MU Gender Policy, 2020). For several decades now, Tanzania has employed several efforts to reduce gender inequality and promote gender equality to increase women access to education, employment and similar opportunities (CCM, 2020). Still, there are incidences of gender-based violence, sexual harassment, segregation and the like in various places of the country that need to be fought continuously. There is a need for research in this area to ensure that gender is examined and integrated in various development activities.

Governance and leadership are related just as law, policy and gender do. However, all these require good leadership. In line with that robust leadership is that which embraces attributes of governance including taking onboard leadership code of ethics. Research on this area is imperative because decline of morality is rampant in both public and private organizations, though deliberate efforts have been done by the government to build strong institutions for sustainable development.

Thus, through this, researchers would be able to enhance good governance, integrate laws in many aspects of development, improve policy implementation process, promote gender equality and human rights, and enhance leadership principles.

### **2.5.1 Research Areas**

- a) Governance for Development
- b) Corporate Social Responsibility
- c) Corruption and fraudulent activities
- d) E-Government and E-Governance
- e) Governance of Human and Financial Resources
- f) Democracy and Election, Civic engagement, Decentralization and Local Government Systems
- g) Human Rights, Intellectual Property Rights, Economic Rights and Freedom for and Development
- h) Environmental Justice
- i) Laws in land, Environmental and Natural Resources Management

- j) Constitutional and Public Law
- k) Regional Integration for Development
- l) Commercial and Business Transaction Laws
- m) Refugee, Forced Migration and Humanitarian Laws
- n) Policy Reforms for Development
- o) Policy Formulation, Implementation and analysis
- p) Gender and Development
- q) Interconnectedness between poor performance and leadership
- r) Leadership and socio-economic transformation
- s) How governance, law, policy, and gender affect leadership
- t) Administration and management
- u) Development Policy
- v) Cyber Security
- w) Emerging issues

### **2.5.2 Key Players**

Policy makers, lawyers, activists, researchers, legislators, community, educationist, engineers, entrepreneurs, managers, leaders, students, journalists, librarians, economists, and technologists

# CHAPTER THREE

## IMPLEMENTATION, MONITORING AND EVALUATION

### 3.1 Introduction

This chapter presents strategies for implementation, monitoring and evaluation of the research agenda discussed throughout this work.

### 3.2 Implementation

Having determined the research agenda, it is important to consider prospective strategies relevant for successful implementation. Implementation of the MU Research Agenda will adhere to the MU Research and Innovation Policy. The Directorate of Research, Publications, and Postgraduate Studies (DRPS) will take the lead in the implementation. The following strategies are suggested for operationalization of the research agenda:

- a) Identification of sources of funds and mobilisation of resources for research activities
- b) Tailored capacity training for academic staff to cope with the increased demand for research and enhance their skills and competences in research function.
- c) Strengthening academic research and innovation capacity building through training on research project development and management.
- d) Enhancement of collaboration and partnership with other universities in bidding for research grants at national, regional and international level.
- e) Engaging in University –Private sector partnership to attract research funds in the areas of mutual interest
- f) Building research teams at the unity level to participate in big research competitions that attract research funds to the university
- g) Engaging University unity in screening research proposals funded by the university
- h) Improving communication on research opportunities

- i) Strengthen networking with big research granting institutions
- j) Strengthening linkages with relevant government ministries and agencies; Non-governmental organisations (NGOs), and Community Based Organization (CBOs) to attract research fund to the University.
- k) Engaging research programmes that support national development agenda.
- l) Rationalising research fees to motivate staff to participate in research activities
- m) Providing monetary incentives to researchers attracting funds to the University
- n) Promoting mentorship in research activities to build capacity of junior researchers in research proposal writing and research skills
- o) Enhancing visibility of the University through publicity and marketing
- p) Conducting awareness and sensitization programmes to promote research culture
- q) Conducting regular monitoring and evaluation

### **3.3 Monitoring and Evaluation**

The monitoring and evaluation of this research agenda will reside on established key performance indicators. A monitoring and evaluation system will be established alongside with the MU Research Action Plan. In fact, systems for periodicity, collection and reporting will be established to ensure minimum deviations from the research agenda. This shall include the following

- 1) Quarterly research reports
- 2) Annual progress research reports
- 3) Meetings of relevant research committees
- 4) Research Committees independent/ self-evaluation reports
- 5) Research reports from all research projects at the university
- 6) Dissemination of research findings
- 7) Policy briefs

### **3.4 Conclusion**

Research activity has potential to influence informed policy decisions for socio-economic development of a nation. The present research agenda document was developed by this recognition. This research agenda sets out the MU research priority areas for the period ten years. Implementation of this research agenda will contribute towards the realization of the University mission and vision in the research arena, thereby contributing positively towards the national development.

## REFERENCES

- Baily, M.N and Elliott, D.J. (2013), *The Role of Finance in the Economy: Implications for Structural Reform of the Financial Sector*, The Brookings Institution. Washington
- Chama Cha Mapinduzi (CCM). (2020), *Ilani ya CCM kwa Ajili ya Uchaguzi Mkuu Mwaka 2020*.
- COSTECH. (2016), *Research Opportunities for Tanzania 2015-2020*. Apex Media Limited. Dar es Salaam.
- Dool, L.V.(2005), *Making Local Government Work. An Introduction to Public Management for Developing Countries and Emerging Economies*. Institute of Housing and Urban Development (IHS) Erasmus University Rotterdam. Eburon Delft.
- East African Community (EAC) (2012), *East African Community Industrialisation Strategy 2012-2032*. Retrieved from: [http://repository.eac.int/bitstream/handle/11671/542/Final\\_EAC\\_Industrial\\_Strategy\\_edited%20final-%20FINAL-17-04-2-12.pdf?sequence=1&isAllowed=y](http://repository.eac.int/bitstream/handle/11671/542/Final_EAC_Industrial_Strategy_edited%20final-%20FINAL-17-04-2-12.pdf?sequence=1&isAllowed=y)
- EAC (2017), *East African Science & Technology Commission (EASTECO) Strategic Plan (2017/18 – 2021/22)*. Retrieved from: <http://repository.eac.int/handle/11671/24314>
- EAC (2018), *East Africa Community Trade and Investment Report 2018: Maximizing Benefits of Regional Integration*. Retrieved from: <http://repository.eac.int/handle/11671/2057>
- East Africa International Law Commission (ILC) (1975). *Law and Development: The Future of Law and Development Research*. International Legal Center. New York.
- Kaehler, B and Grundei, J. (2019) *HR Governance A Theoretical Introduction*, Springer
- Msekwa, P. (2013), *50 Years of Independence. A Concise Political History of Tanzania*. Nyambari Nyangwine Publishers, Dar es Salaam.
- Mzumbe University.(2020), *Mzumbe University Gender Policy on Gender for Development*. Third Edition. Mzumbe University. Morogoro

- NEMC. (2017) National Environment Management Council (NEMC) (2017) The National Environmental Research Agenda for Tanzania 2017-2022. NEMC. Dar es Salaam
- New Partnership for Africa's Development (NEPAD) (2010). *Africa Innovation Outlook 2010*. Pretoria: NEPAD Planning and Coordinating Agency.
- ODI. (2006), *Governance, Development and Aid effectiveness: A Quick Guide to Complex Relationship*. Odi Briefing Paper, March 2006.ODI. London.
- Page, J. (2012) Can Africa industrialize? *Journal of African Economies*, 21(Supp\_2), ii82-ii124.
- Pattanaik, B.K. (2016), *Introduction to Development Studies*. Sage Texts. Sage India.
- Revolutionary Government of Zanzibar (2020) *Zanzibar Blue Economy Policy*. Ministry of Finance and Planning. Zanzibar
- Schwab, K. (2016), *The Fourth Industrial Revolution*. World Economic Forum
- Strategic Development Goals 2016-2030, UNDP
- Southern African Development Community (SADC) Secretariat Report (2017)
- Southern African Development Community (SADC) Regional Indicative Strategic Development Plan (RISDP) 2020–2030, Gaborone, Botswana, 2020.
- Subbo, W (2002), The Conceptualization of Gender. In Ghirmazion, A., Nyabera, A., Kamweru, E.W, (2002). *Perspective on Gender Discourse*. Newtec Concept; London
- United Nations, (2009), *The Least Developed Countries Report*. The State and Governance
- URT (1977), *The Constitution of the United Republic of Tanzania*, Fourth Amendment. United Republic of Tanzania. Dar es Salaam
- URT (1997), National Environmental Policy (NEP), 1997, Dar es Samaam. Retrieved from:[https://www.tnrf.org/files/E-URT\\_POLICIES\\_National\\_Environmental\\_Policy\\_1997\\_0.pdf](https://www.tnrf.org/files/E-URT_POLICIES_National_Environmental_Policy_1997_0.pdf)
- URT (2015) National Research Priorities (NRP) for Tanzania 2015 -2020, Dar es Salaam

URT (2016) National Five Year Development Plan 2016/2017-2020/2021. Ministry of Finance and Planning. Dar es Salaam.

URT (2020), National Research and Development Policy 2020.  
Retrieved from:

[http://www.tzonline.org/pdf/National\\_Research&DevPolicy.pdf](http://www.tzonline.org/pdf/National_Research&DevPolicy.pdf)

URT (2021), Health Sector Strategic Plan Five (HSSP V) 2021/22-2025/26). Ministry of Health, Community Development, Gender, Elderly and Children, Dar es Salaam.

Zervoudi, E.K .(2020), *Fourth Industrial Revolution: Opportunities, Challenges, and Proposed Policies*, Athens University of Economic and Business. Athens, Greece

## APPENDICES

### APPENDIX I: MU RESEARCH AGENDA MATRIX

S/N	CLUSTERS	SUB -CLUSTERS	RESEARCH AREAS
1	<b>Competitive Economy, Industrialization and Technology</b>	Accounting finance and economy	a) Taxation, Monetary Policy and Public Finance b) Accounting Profession and Industrialization c) Resource Mobilization, Sustainable Financing and Economic Growth d) Financial Markets and Investment financing e) Financial Reporting and Analysis f) Digital Finance Technologies g) Public Sector Accounting h) Corporate Governance and Performance i) Financial Resources Management j) Behavioral Finance k) Auditing and Risk Management l) Applied Corporate Finance m) Planning, Budgeting and Reporting in the Public Sector and Local Government n) Auditing and Financial Transparency o) Financial Inclusion, Microfinance and Rural

		Competitive economy and industrialization	<ul style="list-style-type: none"> <li>a) Industrial Revolution</li> <li>b) Sustainable Industrialization</li> <li>c) Foreign Direct Investments and Free Economic Processing Zones</li> <li>d) Public-Private Partnership (PPP) and Industrial Development</li> <li>e) Public Procurement</li> <li>f) Diaspora and Economic Contribution</li> <li>g) Economic Empowerment for Indigenous</li> <li>h) Technology Transfer and Innovation</li> <li>i) Project Planning and Management</li> <li>j) Transportation and Logistics Management</li> <li>k) Local Content and Development of Backward Linkages</li> <li>l) Tourism Economics</li> <li>m) Agriculture Economics and Value Chain Development</li> <li>n) Natural Resources Economics</li> <li>o) Emerging issues</li> </ul>
--	--	---	--

		<p>Science, Technology and Innovation (STI)</p>	<ul style="list-style-type: none"> <li>a) Technology Transfer and Innovation</li> <li>b) Production and Operations Management</li> <li>c) Industrial Engineering and Management</li> <li>d) Business Process Re-engineering</li> <li>e) Machine Learning and Artificial Intelligence</li> <li>f) Digital Financial Technologies</li> <li>g) Cyber security and Cybercrime</li> <li>h) Internet of Things (IoT)</li> <li>i) Cloud Computing</li> <li>j) Virtual Assistants</li> <li>k) Automation and Data Science</li> <li>l) E-Learning and E-Business Technologies</li> <li>m) Digital Libraries; Cryptography and Security</li> <li>n) Management Information System</li> <li>o) E-governance and Mobile Governance</li> <li>p) Mathematics, Insurance mathematics and Applied Statistics</li> <li>q) Statistical and Mathematical Modeling for development</li> <li>r) Fluid dynamics (Blood flow and Boundary layers)</li> <li>s) Mobile and Transactions</li> <li>t) Decision Science Modeling</li> <li>u) Emerging issues</li> </ul>
--	--	---	---

		<p>Business Management and Human Capital Development</p>	<ul style="list-style-type: none"> <li>a) Entrepreneurship, Business Development Services and Innovation</li> <li>b) Marketing, Networking and Digital Business Analytics</li> <li>c) E-Commerce</li> <li>d) Business Financing and Growth</li> <li>e) Operations Management</li> <li>f) Business Process Re-engineering</li> <li>g) Procurement and Supply Chain Management</li> <li>h) Strategic and Sustainable HRM Practices</li> <li>i) e-HRM practices</li> <li>j) Modern Workplaces and Organizational Development</li> <li>k) Human Resource Information Systems</li> <li>l) Records and Archive Management</li> <li>m) Emerging issues</li> </ul>
--	--	--	--

2	<b>Education and Health</b>	Education	<ul style="list-style-type: none"> <li>a) Education Management</li> <li>b) Education Policies</li> <li>c) Curriculum and Learning Systems Management</li> <li>d) Education Access, Quality and Equity</li> <li>e) Innovative and Sustainable Models for Education Financing</li> <li>f) ICT and Library Management</li> <li>g) Community Engagement and Education</li> <li>h) Language</li> <li>i) Pedagogical and education science</li> <li>j) Emerging issues</li> </ul>
		Health	<ul style="list-style-type: none"> <li>a) Health Systems Management</li> <li>b) Public Health Management</li> <li>c) Health Economics</li> <li>d) Health Projects, Monitoring and Evaluation</li> <li>e) Sustainable Health Care Financing Systems and Mechanisms</li> <li>f) Healthcare Analytics</li> <li>g) Food quality, Safety and Nutrition</li> <li>h) Emerging issues</li> </ul>

3	<b>Natural Resources, Environment, Climate Change and Technology</b>		<ul style="list-style-type: none"> <li>a) Climate Change and Eco-systems Management</li> <li>b) Biodiversity Conservation and Management</li> <li>c) Urbanization and Waste Management</li> <li>d) Environmental Management</li> <li>e) CSR Activities for Sustainable Environment</li> <li>f) Disaster Management</li> <li>g) Management and Sustainable Use of Natural Resources</li> <li>h) Emerging issues</li> </ul>
4	<b>Governance, Law, Policy, Gender, and Leadership</b>		<ul style="list-style-type: none"> <li>a) Governance for Development</li> <li>b) Corporate Social Responsibility</li> <li>c) Corruption and fraudulent activities</li> <li>d) E-Government and E-Governance</li> <li>e) Governance of Human and Financial Resources</li> <li>f) Democracy and Election, Civic engagement, Decentralization and Local Government Systems</li> <li>g) Human Rights, Intellectual Property Rights, Economic Rights and Freedom for and Development</li> <li>h) Environmental Justice</li> <li>i) Laws in land, Environmental and Natural Resources Management</li> </ul>

			<ul style="list-style-type: none"><li>j) Constitutional and Public Law</li><li>k) Regional Integration for Development</li><li>l) Commercial and Business Transaction Laws</li><li>m) Refugee, Forced Migration and Humanitarian Laws</li><li>n) Policy Reforms for Development</li><li>o) Policy Formulation, Implementation and analysis</li><li>p) Gender and Development</li><li>q) Interconnectedness between poor performance and leadership</li><li>r) Leadership and socio-economic transformation</li><li>s) How governance, law, policy, and gender affect leadership</li><li>t) Administration and management</li><li>u) Development Policy</li><li>v) Cyber Security</li><li>w) Emerging issues</li></ul>
--	--	--	---

## APPENDIX II: MU STAFF (PhD) COMPETENCE AREAS BY CLUSTERS

CLUSTER	Cluster 1: Competitive Economy, Sustainable Industrialization, Technologies, and Innovation			Cluster 2: Education and Health Management		Cluster 3: Natural Resources, Climate Change and Environmental Management	Cluster 4: Governance, Law, Policy, Gender, and Leadership
SUB-CLUSTERS	Accounting finance and economy	Technologies, industrialization and economic development	Business management and human capital development	Education	Health		
SOPAM			3	3	3	2	7
FST	1	2	2	2			2
SOB	10	3	12				
FSS		11	02	8		1	
DCC	3	5	3	1	1	1	9
MCC	1		4		1		3
FoL							6
IDS				1	1	4	2

