Government of Malawi

MALAWI NATIONAL ICT FOR DEVELOPMENT (ICT4D) POLICY

July, 2006

FOREWORD

The development of the National ICT for Development (ICT4D) Policy is part of the process Malawi, as nation, has had to go through in her efforts to build a knowledge based economy and information rich society. Malawi, like other countries, is convinced that her predominantly agro-based economy can rapidly grow and diversify through participation in the information society. In order to fully benefit from the information revolution, Malawi needs to modernize various sectors of her economy using ICTs.

This policy has a dual focus. It aims at developing the ICT industry and sector; and promoting the development and use of ICTs in all sectors for the greatest impact in socio-economic development.

The ICT4D Policy has focused on eight thematic areas; namely: Strategic ICT Leadership, ICT in Human Capital Development, ICT in Governance, ICT's Growth Sectors as identified in Malawi Economic Growth Strategy (MEGS), ICT Infrastructure Development, Community Access to ICTs, and responsive ICT Legal, and Institutional regulatory framework. All these areas are deemed necessary for ICTs to enhance rapid growth of the economy.

The success in implementing this policy will highly depend on the involvement and participation of the private sector, all government ministries and departments, the academia and many other stakeholders. It requires concerted team efforts of all partners concerned and especially those identified in the policy itself.

Therefore, I call upon all stakeholders to implement the ICT4D Policy with diligence and dedication as we all strive to develop our beloved nation, **Mother Malawi.**

I sincerely thank all the people who have been involved in the development of this ICT4D Policy and ask them to also support its implementation at various levels.

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PREFACE

Information and Communication Technologies (ICTs) are essential to the sustainable development of Malawi, considering the profound transformation impacts they are having at both economic and social levels all over the world. In fact, ICTs need to form a key pillar of Malawi's Economic Growth Strategy.

The world is undergoing a historic transformation in the way people learn, work, communicate and do business as a result of ICTs. Therefore, an information age has been produced and it is now up to us to build an information society.

An information society is an evolving concept that has reached different levels across the world reflecting the different stages of technological development in bridging the digital divide.

ICTs have extraordinary potential to transform commerce, telemedicine, education, agriculture environmental protection and other areas of development providing the ability to improve the standards of living of millions of people.

ICTs though are not a panacea or magic formula for solving problems, but are tools that can propel us towards the Millennium Development Goals.

The Information and Communication Technology for Development (ICT4D) Policy, therefore, aims at providing a direction as to how Malawi will turn the ICT potential into real benefits for its people.

It also aims at putting into place appropriate institutional, regulatory and legal framework that should effectively support successful deployment and utilization of ICTs in all sectors of national development.

It is crucial that strong public-private partnership exists in implementation of this policy. The government will, therefore, continue to provide the right atmosphere for public-private partnership in the development, deployment and utilization of Information and Communication Technologies.

It is my hope that this policy will bring about organized and systematic ICT development and correct the current situation of adhoc, fragmented and uncoordinated development and utilization of ICTs.

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LIST OF ACRONYMS

CHAM	Christian Hospitals Association of Malawi
COSOMA	Copyright Society of Malawi
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
GIS	Geographic Information System
GWAN	Government Wide Area Network
HIV/AIDS	Human Immuno Deficiency Virus/Acquired Immuno-Deficiency Syndrome
ICT	Information and Communication Technologies
ICTSD	Information and Communication Technology Services Directorate/Division
IFMIS	Integrated Financial Management Information System
IMF	International Monetary Fund
MACRA	Malawi Communications Regulatory Authority
MASEDA	Malawi Socio-Economic Database
MCCCI	Malawi Confederation of Chambers of Commerce and Industry
MEGS	Malawi Economic Growth Strategy
NACIT	National College of Information Technology
NICI	National Information and Communications Infrastructure
NICTWG	National Information and Communication Technologies Working Group
R&D	Research and Development
SME	Small and Medium Enterprise
TVM	Malawi Television (TVM) Limited
VICI	Village Information and Communications Infrastructure

1.0 INTRODUCTION

The purpose of this Policy is to provide a framework for deployment, exploitation and development of ICTs to support the process of accelerated socio-economic development in Malawi. It intends to provide direction for systematic ICT program development, implementation, monitoring and review. The Policy also attempts to consolidate an ICT approach for the mobilization, allocation and utilization of resources to realize institutional, community, sectoral and national development mandates within the short, medium and long-term framework in accordance with the Government of Malawi development policies and strategies.

This Policy Document, therefore, outlines the background to the development of the ICT4D Policy; its rationale; key challenges to the development of ICTs; its thrust in terms of vision, mission, and goals, key themes and implementation arrangements.

The development of the policy was made possible through active involvement and inputs of various stakeholders who were drawn from all sectors of the society.

1.1 Background

Information and Communication Technologies (ICTs) have increasingly become one of the dominant factors affecting every facet of development not only in Malawi but the world over. Significant ICT advances are constantly taking place and continue to impact on socio-economic operations at various levels of society. In particular, ICT advances have brought about changes in the way business is conducted among and within nations, organizations, communities and individuals. More than ever before various nations and organizations are investing more resources into the development and use of ICT in order to be more efficient and effective in their operations as they respond to ever changing trends and ensure to achieve desired outcomes especially in the area of social and economic progress.

In this respect, it is an established fact that the primary difference between developed and developing countries; successful and unsuccessful organizations is

not only based on the quality of available human capital but also by the level and quality of knowledge and information at their disposal that support and facilitate appropriate decisions and actions. It is usually said knowledge is power and knowledge is accumulated or gained through access to relevant information. Therefore, nations, organizations and or communities that lag behind advances in ICT and lack an appropriate policy framework are likely to increasingly struggle in their efforts to foster and manage sustainable socio-economic development initiatives and interventions.

In this context, Malawi is no exception. As one of the least developed economies in the world the country has over the years faced a number of socio-economic challenges which are associated, among other things, with weak or inadequate ICT base. In particular, it is recognized the economy of Malawi has not performed well because of the negative impact brought about by various challenges including those associated with the level of ICT development. As a result, the economy is characterized by high dependence on agricultural sector, low growth rates, coupled with a balance of payment difficulties, poor physical, communications and social infrastructure development and problems associated with heavy debt burdens and huge public and social expenditure budgets.

Therefore, given weak ICT base, it seems unlikely Malawi can effectively realize the development aspirations articulated in the Vision 2020 which seeks to promote and accelerate the social and economic development process of the nation. This also means that without the use of ICT it will be extremely difficult for Malawi to develop a vibrant, globally competitive industrial and services sector in the emerging new economic order or to ably compete with other nations within Africa and beyond.

However, it should also be noted that despite the weak or fragile ICT base, the advent of multiparty politics and the birth of democratic rule in Malawi have reinforced government's conviction and commitment on the role and use of ICTs in Malawi's socio-economic development. The commitment is demonstrated in, among others, the introduction and establishment of several institutions and services. Among the institutions that have been established include but not limited to Malawi Television (TVM) Limited, Malswitch, National College of

Information Technology (NACIT) and CISCO Networking Academies. On the other hand, national ICT application services introduced as part of facilitating the development of ICT sector, include; IFMIS and MASEDA. In addition, the upgrading of telecommunication services from analogue to digital, liberalization of the telecommunications sector, introduction of mobile phone services and the introduction of high capacity transmission media, that is, fibre optic links have led to improved telecommunication service delivery. Overall, the establishment of the various institutions and provision of various services bears testimony of the evolution of systematic development of ICT in Malawi.

In view of the foregoing and especially having noted that the world economy is experiencing the impact of rapid globalization and the emerging information age, which is bringing about a new global economic order to be dominated by information and knowledge-based economies, the Government of Malawi embarked on developing its own Information and Communications Technology for Development (ICT4D) Policy. As noted, the policy has been developed in order to steer Malawi's economic development and align with the world information society. In particular, by putting in place this Policy the Government of Malawi has initiated the process of creating and providing an enabling environment for ICT-driven development agenda.

1.2 Rationale for the National ICT4D Policy

Given the benefits and opportunities offered by ICTs, it is acknowledged that Malawi cannot effectively forge ahead with its development agenda without putting in place an appropriate framework of information and communication technology to support and accelerate various national and sector initiatives and interventions at all levels of society. Therefore, this ICT4D Policy Statement sets out Malawi's development agenda in the digital age based on the Policy Framework Document: *"An Integrated ICT-led Socio-economic Development Policy and Plan Development Framework for Malawi''*

In this regard, a number of factors have informed the development of the Policy including the following:

1.2.1 Problem Statement

In today's competitive environment it is not possible for any country including Malawi to remain competitive without using ICTs to support and sustain the development process. While efforts have been made by the Government of Malawi to champion the development and utilization of ICTs, there are currently a number of problems which are frustrating and limiting such efforts. Key problems that have unfolded include, among others, the following:

i. Inadequate market information flow especially on small domestic markets.

ii. Brain-drain in the ICT Sector due to low remuneration packages. Essentially, the brain-drain is at two levels, namely; from Malawi to other countries especially within the SADC region and from the public sector to the private sector.

iii. Inadequate institutional capacity at national, sectoral and organizational levels.

iv. Negative attitude towards technology change.

v. Underdeveloped telecommunications infrastructure especially in the rural areas.

vi. Outdated laws that support ICT development, deployment and utilization.

vii. Fragmentation of administrative and political leadership in the ICT sector.

viii. Proliferation of sub standard ICT schools, syllabi and service delivery.

ix. Underdeveloped Research and Development capacity in ICTs.

x. Underdeveloped ICT Private Sector.

It is envisaged that the development of this policy will, among other things, help Government and various stakeholders to effectively deal with the above mentioned and any emerging problems associated with ICTs at different levels of Society.

1.2.2 Broad Aim

The ICT4D Policy has two interrelated and interdependent aims. First, it aims to improve the operations and efficiency of all economic sectors by deploying and utilizing ICTs as a facilitator to attain sustainable economic growth and development. Second, it aims to develop ICT as a sector that will facilitate the development of ICT products, ICT knowledge transfer and related information flow between the ICT sector and other sectors of the economy.

The achievement of these aims is expected to greatly contribute to the building of Malawi's information rich society and knowledge based economy.

1.3 Linkages with other relevant policies

A number of existing policies, legislation and programmes have in one way or other informed and fostered the development of this ICT4D Policy. Within the ICT sector, for example, relevant policies that have contributed to the development of the Policy include the Malawi Communications Sector Policy Statement and the Science and Technology Policy. In addition to these, several existing enactments and programs have also encouraged this process. Of particular significance include the Communications Act, Science and Technology Act, establishment of School Net Malawi, removal of import duty on pre- assembled computers and printers, introduction of computer studies in secondary school curriculum and the establishment of Government Wide Area Network (GWAN).

The ICT4D Policy has also been developed in cognizance of the existing long term development policies and strategies such as the Vision 2020, Malawi Growth and Development Strategy (MGDS), Millennium Development Goals and Decentralization. Specifically, the ICT4D Policy intends to be instrumental in supporting and accelerating the implementation of all development policies and strategies.

1.4 Key Challenges to ICT Development

Change is the constant factor confronting all aspects of development and human life. Therefore, in acknowledging the present status of ICT, the Government of Malawi realizes that much more needs to be done in order to effectively promote, utilize and deploy ICTs in all sectors of the economy as well as manage resultant

change processes. In this context, Malawi faces a number of challenges that must be taken into account in order to achieve sustainable development processes and outcomes and promote the development and use of ICT. More often such challenges have affected and derailed the implementation of policies and strategies on one hand and intended outcomes, on the other.

In terms of development and use of ICT, therefore, the main challenges currently drawing attention for solutions especially in view of this policy include:

(i) Inadequate resources including human, financial, material, technological and capacity to train personnel.

(ii) Poor allocation and utilization of available resources

(iii) Over-dependence on donor aid

(iv) High cost structures in the economy including transport, telecommunications and electricity

(v) Low levels of education resulting in high illiteracy rate that makes it difficult to implement ICT programmes particularly amongst women, youth, and other disadvantaged groups

(vi) Tax burden on computer and other ICT products and services

(vii) Unreliable commercial power resulting in frequent power interruptions

(viii) The impact of HIV/AIDS pandemic.

2 BROAD POLICY DIRECTIONS

2.1. The National Development Vision

The ICT4D Policy seeks to support and accelerate socio-economic development as envisaged in the Malawi Vision 2020. The **National Vision Statement** as expressed in the Malawi Vision 2020 states that:

"By the year 2020 Malawi, as a God fearing nation, will be secure, democratically mature, environmentally sustainable, self reliant with equal opportunities for and active participation by all, having social services, vibrant

cultural and religious values and a technologically driven middle income economy''

The ICT for Development Policy has, therefore, in terms vision, mission and objectives been guided by the above shared Vision for Malawi.

2.2 The ICT4D Vision

An ICT-led Malawi

2.3 Mission

To facilitate the creation of an enabling environment for efficient, effective and sustainable utilisation, exploitation and development of ICTs in all sectors of the economy in order to attain an information rich and knowledge based society and economy

2.4 Goal

The goal of the Policy is "To attain innovative development and maximum integration of ICTs in the socio-economic development process".

2.5 Objectives

Implementation of the ICT4D Policy will be guided by the following objectives:

(i) To promote and support the acquisition, deployment, utilisation, and exploitation of ICTs within the economy and society.

(ii) To promote the development of a competitive local ICT industry.

(iii) To support the development of an ICT-literate nation.

(iv) To develop a competitive high value-added services sector through the utilization of ICTs.

(v) To establish an effective, focused and visionary leadership that will harness ICT initiatives with National and Sectoral priorities in order to promote Socio-economic growth.

3 THEMES

The transformation of Malawi into a predominantly information-rich society and knowledge-based economy requires targeting areas of priority and of major contribution to the economy in a more integrated approach. In this respect, eight themes or priority target areas have been addressed by the policy; namely: Strategic Leadership for ICT for development, Human Capital, Governance, ICT Industry, ICT Infrastructure, Growth Sectors, Community, Legal and Regulatory Framework.

These are elaborated as follows.

3.1 STRATEGIC ICT LEADERSHIP

Leadership is about taking responsibility and influencing others towards desired goal or end result. Leadership is also important in sourcing; creating an attractive environment for investors and consumers; identifying areas needing priority funding and support; and obtaining direct resources from either national or international sources for organizations involved in ICT as well as for political and executive responsibilities. In this connection, successful implementation of the ICT4D Policy will depend very much on committed and visionary leadership at all levels of society and economy in Malawi. Visionary leadership inspires people for action and team work.

However, an analysis of Malawi's ICT environment currently indicates lack of focused ownership and visionary leadership for an integrated and responsive ICT programme. In particular, there is no leadership that takes into account the multi-sectoral, cross-cutting and catalytic nature of ICT itself and or is responsible for ICT initiatives that can effectively merge national and sectoral priorities consistent with realities and expectations of various stakeholders.

Objective(s)

To develop leadership capacity for enhanced appreciation and support of ICT innovations, programme implementation and provision of ICT services.

Strategies

- Increase the use of awareness on the role, use, application and potential of ICT among those in leadership
- Raise the level of awareness on the role, use, application and potential of ICT
- Create awareness among leaders and the public, and political championing of ICT.
- Create an authoritative national organization to effect, coordinate and review the ICT policy on regular basis.
- Prioritize ICT investment in development assistance policies and programmes
- Enhance synergy, economies of scale and productivity in all ICT matters.
- Create a favourable environment for cooperation and partnership in ICT among public and private sectors, civil society, and between all stakeholders at local, national, regional and international levels.
- Empower and facilitate Malawi's participation in the Global Knowledge Society

3.2 HUMAN CAPITAL

Human Capital refers to people and their ability to be economically active. Human capital constitutes the most important asset in all development and organizational efforts in Malawi. It is, therefore, recognised that education, healthcare and training can help increase the value of human capital. It is in this regard that ICT is envisaged to facilitate and promote the interventions in human capital development.

The three the sub-themes are elaborated briefly as follows.

3.2.1 Education

Malawi, like many other countries in Africa, has a high illiteracy rate. As a result, a lot of pressure has been exerted on social expenditure in areas like education in order to provide adequate and quality ICT services. The aim is to reduce the current illiteracy levels and increase the knowledge and information base among the population.

Objective(s)

Objective 1

To facilitate the deployment, utilisation and exploitation of ICT within the educational system in order to improve access, quality, relevance and delivery at all levels.

Strategies

- Mainstream ICT throughout the entire educational system to promote life-long learning.
- Ensure that primary schools, secondary schools and colleges have adequate and reliable computers.
- Build facilities to promote ICT training and computer-aided training at all levels of education including Primary Schools and Nurseries.
- Intensify ICT education and training in all training institutions.
- Encourage collaboration between local and international educational institutions in order to facilitate educational exchange and the promotion of ICT education and training.
- Facilitate collaboration between the Ministry of Education and various accreditations agencies and examination bodies for ICT education and training.

Objective 2

To achieve universal basic ICT literacy and improve the level of ICT literacy in the country

Strategies

- Promote basic training in ICTs skills in all schools and tertiary institutions.
- Introduce ICT technical colleges in all regions of the country.
- Promote e-learning and e-teaching including e-distance education, training and virtual learning systems to complement and supplement face-to-face campus, televised and broadcast education and training systems.
- Ensure that all local universities and colleges take steps to progressively offer their programmes and courses on-line to broaden access to higher education to a large section of the population.

Objective 3

To transform Malawi into an information and knowledge-driven ICT literate nation

Strategies

- Promote awareness on available opportunities to enable students, teachers and educational institutions to purchase ICTs.
- Facilitate the automation of libraries as a tool for e-research and e-learning.
- Set up special libraries to support ICT Research & Development.

Objective 4

To improve the management of education systems through the utilisation of ICT

Strategy

- Develop user-friendly electronic educational management information systems to improve the quality of management of educational institutions.

3.2.2. Health

Malawi has limited health facilities and resources. However, the Government of Malawi can seize opportunities emanating from ICTs to facilitate the modernization of the operations of the health delivery system and improve access to the nation's limited health facilities, resources and health information.

Objectives

Objective 1

To encourage and promote the implementation of telemedicine applications within the health sector

Strategies

- Network all healthcare institutions to collate information and share data.
- Encourage communication online.
- Provide full ICT access for healthcare professionals at all levels (primary, regional and tertiary).

Objective 2

To integrate and deploy ICTs in health program delivery with targets for health education, training and preventive detection

Strategies

- Make ICT skills acquisition mandatory for all healthcare professionals.
- Motivate healthcare professionals to utilize ICTs in their service.

Objective 3

To support and encourage the use of ICT in the dissemination of health and clinical information for the general public on various diseases such HIV/AIDS

Strategy

- Restructure the healthcare system by providing a national electronic data depository to support on-line national healthcare information, administration and management at primary, regional and tertiary levels.

Objective 4

To facilitate the utilization of ICTs as a tool for medical research, linking health care professionals and enhancing health administration, remote diagnostics, and distribution of medical supplies.

Strategy

- Use ICTs to provide medical education and support medical research in combating major national emerging and existing health threats such as HIV/AIDS, malaria.

Objective 5

To improve the management of health systems through the utilisation of ICT

Strategies

- Utilize ICTs to establish and update a user-friendly national electronic Health Management Information System (e-HMIS) across primary, regional and tertiary healthcare systems.
- Encourage the e-HMIS in making health management decisions.

3.2.3. Accelerated Human Resource Development

Malawi is currently facing a human resource problem in technical and managerial areas. The shortage is so critical in ICT skills due to low literacy levels among other various reasons. Therefore, the availability of a diverse pool of technical

and managerial skills and professionals in critical areas to design, implement, manage, and use ICT applications and services is most crucial for supporting the development, deployment, exploitation and the application of ICTs for economic and social development.

The availability of ICT skills will help to transform the entire economically productive population into value added asset and provide a supporting environment for utilizing ICT resources for socio-economic development purposes.

Objective(s)

Objective 1

To promote and improve Research and Development capacity in ICT

Strategies

- Develop appropriate and responsive ICT training programmes to address requirements of different sectors of the economy including research institutions and the industry.
- Support and strengthen R&D to develop ICT within universities, research institutions and the private sector.
- Promote ICT R&D knowledge acquisition in the new and emerging sciences.

Objective 2

To target the development and enhancement of technical, managerial and operational skills in the use and deployment of ICTs in the public, private and informal sectors

Strategies

- Facilitate, encourage and create a conducive environment for public and private sector to train and up-date the ICT skills of their personnel.
- Support and facilitate the training of women, the youth and the disadvantaged in key skills required by the information and knowledge economy.
- Reform and strengthen the traditional and informal apprenticeship systems with ICT skills.

- Promote and enforce high standards in ICT to facilitate the development of a globally competitive quality and professional manpower to support the development of Malawi's information-driven and knowledge-based economy.

Objective 3

To develop a pool of professional ICT workforce with emphasis on critical skill areas

Strategies

- Facilitate the development of a large pool of ICT professionals with state of-the-art ICT skills.
- Promote networking of ICT professionals and interns for collaborative work and placements of interns.
- Develop human resources to support the deployment and maintenance of state-of-the-art ICT infrastructure.
- Facilitate the mobilization of private sector funding for ICT human resource development capacity building in key sectors of the economy.

Objective 4

To improve the human resource development capacity of the nation's public and private universities and colleges offering ICT courses and research.

Strategies

- Promote technical and vocational training with emphasis on the use of ICT to facilitate the training and learning process.
- Promote recognized international ICT standards to support nation-wide professional ICT skills accreditation.
- Encourage ICT internships and work-study programmes at all levels within various ICT institutions.

3.3. GOVERNANCE

In the context of ICT4D Policy, issues of governance have to be understood in terms of e-Governance and e-Government, ICT security, and national security, law and order. The significance of this is that there is currently need to improve on the operations and activities of security, civil and public services through

institutional renewal and dynamic organizational reforms to avert inefficiencies in their operations by focusing on the following sub-themes.

3.3.1 Promoting Electronic Government and Electronic Governance

The Government of Malawi recognizes the key role that the civil and public services play in Malawi's socio-economic development process. ICTs can play a crucial role in improving the efficiency of the operations of the civil and public services; particularly in improving the quality of delivery of services to the general public. However, it should be acknowledged that the deployment and exploitation of ICTs in the civil and public services require changes in organizational structures, procedures and processes as well as attitudes.

Objective(s)

Objective 1

To facilitate the establishment of an efficient intra-and inter-departmental, inter-sectoral, national and sub-national system of communication, for the necessary feed-back in policy formulation and programme implementation, monitoring and review

Strategies

- Provide a favourable environment for the provision of electronic government.
- Develop an e-government interoperability framework to facilitate cross-departmental operations of ICT systems and services.
- Encourage information sharing, transparency and accountability and facilitate the process that will lead to reduction in bureaucracy within and between organizations within the civil and public service.
- Introduce electronic electoral processes.
- Establish an ICT network for corruption-prevention institutions.

Objective 2

To modernize the operations and work ethics of the Public Services through the deployment of ICTs to facilitate administrative cost reduction

and their effectiveness and efficiency in the delivery of its services to the public

Strategies

- Facilitate the delivery of modernized public services in the area of provision of government information, social, health and educational services through the deployment, utilization and the exploitation of information and communications technologies within the society and economy.
- Promote the deployment and the use of ICTs to facilitate universal access to public and government information and services to support the promotion of the principle and practice of good governance.
- Re-orient the Civil and Public Servants with the aim of improving administrative efficiency, effectiveness and service delivery through the implementation of electronic government and governance initiatives set within the wider scope of the institutional engineering and renewal of the service.
- Promote the exploitation of information and communication technologies within the Civil and Public Services to make public services more efficient, productive and accessible to the public at large.
- Develop and promote standards, guidelines and procedures to facilitate the acquisition, installations and maintenance of ICT equipment and systems within Government Ministries and other Public Sector institutions and establishments.
- Engage and maintain ICT specialists to support and maintain public service ICT infrastructure.
- Create a working and efficient government wide area network (GWAN) which should expand to include the entire public sector.

3.3.2 Promoting ICT Security

The digital age has brought with it a number of security issues and concerns relating to privacy, data and consumer protection as well as those relating to the security of computer networks and information systems and their information and data contents.

Policy mechanisms and measures shall be put in place aimed at the protection of the Malawian public from undesirable impacts of the digital age, in particular those relating to the Internet including the spread of pornographic materials, cyber-crimes and digital frauds.

Objective(s)

Objective 1

To create a secure environment of ICT networks and systems against various types of attacks on their availability, authenticity, integrity and confidentiality

Strategies

- Formulate and enforce laws and regulations that combat cyber crimes.
- Institute mechanism and laws to curb vandalism and theft of ICT infrastructure.
- Enact a law to validate digital signatures on documents in relation to the technology on the market today.

Objective 2

To protect the general public from undesirable impacts of the ICT sector

*Strategie**s***

- Formulate and enforce laws and regulations to protect the general public from undesirable impacts of the ICTs.
- Preserve Malawi's cultural heritage, national image and national identity through the utilization of ICTs.
- Put in place mechanisms that will safeguard girls, boys and women from fraud, misuse of information and immoral behavior brought about by the use of ICTs.

3.3.3 Promoting National Security, Law and Order

Globalization and pervasiveness of crime and other security challenges have brought perverse tendencies which are proving to be threats to national security.

As a result, surveillance and readiness of security agencies require the use of specialized skills and ICTs.

Government shall, therefore, put in place policy measures and mechanisms to address national security, law and order issues through the deployment, exploitation and the utilization of ICTs within the security realm.

Objective(s)

Objective 1

To enhance the capacity of the security agencies in order to be up to date with development in the ICT sector

Strategies

- Encourage and implement ICT applications and services to enhance command and control activities within private security agencies and aid in their interaction with the general populace.
- Research, advance and implement ICT-based solutions that will enable interaction between the Security Agencies and the populace.
- Promote networking of e-security services among security agencies.

Objective 2

To promote the use of ICTs to improve general national security

Strategies

- Facilitate the deployment of the required infrastructure for advancement of ICTs and related services within the public security agencies.
- Reorient members of the security agencies to e-security services
- Incorporate e-services in the training regime for new entrants into public security agencies.
- Develop inter-linked ICT-based National Identity systems.

3.4. ICT INDUSTRY

The ICT industry, properly harnessed, will influence the development of the private sector. This industry must, therefore, be supported in order to produce for export. In this connection, the ICT4D Policy will support and facilitate the development of the private sector and export oriented industry as these two aspects are of critical importance to the development of the ICT industry as a whole.

3.4.1. Facilitating the Development of the Private Sector

The private sector has a crucial role to play as a key partner to the Government in the process of moving the country into an information and knowledge-driven economy. However, the role of the private sector in Malawi is currently not clearly defined and promoted. Therefore, Government recognizes the need to promote and facilitate the role of the private sector in the development of the country's information society and economy.

Objective(s)

Objective 1

To promote local and foreign investment, innovative production, R&D and diffusion of ICTs by the private sector

Strategies

- Encourage and promote local research, development and production of globally competitive ICT products and services.
- Fund ICT R&D in the nation's universities, colleges and research institutes.
- Develop a nation wide academic network in ICT Research & Development to facilitate the acquisition, adaptation and dissemination of new developments in ICTs.
- Facilitate the transfer of technology and collaboration on R&D between local Centers of Excellence and international R&D centers.
- Establish ICT R&D institutions with unique and clear mandates.

- Introduce incentives for industries to set up ICT-related R&D centers in the universities and research institutes.
- Institute mechanisms for soliciting ICT research projects that will be made open to both research institutes and universities to facilitate the selection of good and innovative projects for national development.
- Provide incentives to local R&D institutions to enter into collaborative ICT-related research with foreign universities as well as with local companies and multinationals.
- Promote a favourable fiscal and investment climate for the development of a globally competitive ICT-enabled economy.
- Establish a National ICT Development Fund to finance the development of the ICT Sector in Malawi.
- Mobilize private sector funding to support ICT initiatives.
- Stimulate a diversified, innovative and fully integrated ICT industrial sector with active participation of the private sector.
- Promote knowledge transfer and joint partnerships in ICT initiatives.
- Promote ICT Fairs.
- Transform Malawi into a secure and attractive destination for ICT related FDI with the potential to become a competitive regional ICT and business hub.

Objective 2

To prevent Malawi from becoming a dumping place for substandard ICT products.

Strategies

- Encourage technology development institutions and private sector establishments to exploit and utilise modern ICT tools to enable them produce high quality capital equipment and machinery.
- Develop and strengthen regulators and standardization bodies in ICT activities.
- Encourage standardization of software used in public institutions and the private sector.

- Promote and facilitate R&D work targeting recyclable ICT products to minimize industrial waste in the environment.
- Promote Research and Development of ICT in the new and emerging sciences.

Objective 3

To establish and promote an enabling environment for private sector investment in ICT

Strategies

- Promote the active participation of local Small and Medium Enterprises (SMEs) and other private sector stakeholders in the ICT industry.
- Promote Public Private Partnership (PPP) to accelerate the development and implementation of ICT policies as well as the necessary legal and technical standards to support widespread electronic readiness.
- Lobby for the reduction of taxes on ICT parts, components, software and related terminals and accessories.

Objective 4

To promote the development of a Competitive Value-Added Services Sector through the exploitation and utilization of ICTs.

Strategies

- Encourage ICT innovations to support product development and service provision and delivery.
- Promote improvements in the quality of services and products within the services and industrial sectors through the exploitation and utilization of ICTs.
- Encourage and facilitate the use of open electronic marketplaces, secure e-business solutions, and electronic payment systems to support the development of electronic commerce in the country.
- Facilitate the introduction of electronic banking and the use of credit cards.

3.4.2. Developing an Export-Oriented ICT Industry

Malawi has an under-developed ICT sector dominated by SME ICT companies which are mainly involved in retailing and distribution of imported computer products and services. In this respect, the development and delivery of ICT products and services has been identified as a strategic focus area of the Policy. For one thing, the development of information and knowledge based economy will require a vibrant ICT industry that focuses on export-oriented ICT products and services development; and the provision of global ICT services.

Objective(s)

Objective 1

To promote and support the development of an innovative local industry for the manufacture, assembling, repair and maintenance of ICT products for domestic and export markets.

Strategies

- Establish ICT oriented export processing zones.
- Stimulate growth of the local ICT industry through public and private sector patronage of local ICT industry products and services.
- Promote the development of a broad ICT engineering base, especially in the maintenance, repair and fabrication of machinery and equipment.
- Promote the adoption and enforcement of international standards within the ICT industry to facilitate the development of world-class and globally competitive local ICT industry and services sector.
- Advocate for the use of open source software as a viable alternative to proprietary software.
- Encourage the development of a secure broadband information and communications infrastructure to support the development and provision of world-class off-shore ICT services in the areas like software development, financial services and other ICT services targeted at the export market.

3.5. PROMOTION OF ICT INFRASTRUCTURE

Malawi's physical ICT infrastructure is currently under-developed and limited in coverage. It is, therefore, acknowledged that special policy measures and initiatives will need to be aimed at developing the ICT infrastructure to improve universal access and service.

Objective(s)

Objective 1

To develop a reliable, fast, adaptive and robust national ICT infrastructure

Strategies

- Promote the development and deployment of basic and integrated multi-platform ICT infrastructure to facilitate public access to information and services.
- Modernize and expand Malawi's information and communications infrastructure and services to improve universal access and Quality of Service (QoS).
- Expand the physical ICT infrastructure of Malawi.

Objective 2

To promote and facilitate domestic and foreign private sector investments in ICT infrastructure development

Strategy

- Put in place special ICT promotion packages, policy instruments and incentives to facilitate the expansion of the information and communications infrastructure.

3.6. GROWTH SECTORS

The Malawi Growth and Development Strategy (MGDS) identifies and recognizes a number of growth sectors which include Agriculture, Tourism and Mining. There is potential for ICT to stimulate and sustain the processes and systems in these

sectors. Particular attention will, among other areas, focus on the following sub-themes.

3.6.1. Modernization of the Agriculture Sector

As part of its vision for the future, the Government of Malawi is committed to modernizing the agricultural sector to enable it play its expected role in the economy. In particular, Government shall put in place policy measures and mechanisms to aid the process of the development and the modernization of the key sub-sectors of agriculture namely: subsistence farming (for food security and employment generation for the rural population); cash crop sector (for foreign exchange and rural employment); livestock and fisheries sector (for food security and employment) and the forestry sector (for employment creation and foreign exchange generation).

Objective(s)

Objective 1

To promote the utilization of ICTs in agro-business industry

Strategy

- Promote the exploitation and utilization of ICTs in the production and processing of non-traditional export commodities to enhance the foreign exchange earning power of the country.

Objective 2

To strengthen the development, application and transfer of agro-based technologies using ICTs to support sustainable agriculture production and improve quality of agricultural produce

Strategy

- Encourage the incorporation of ICT in the production of agro-equipment and the processing of raw materials.

Objective 3

To support and promote research in Agricultural production and processing using ICTs in order to come up with more efficient methods and inputs

Strategies

- Encourage the exploitation, development, adaptation and utilization of ICTs to reduce pre-harvest and post-harvest losses in agricultural production.
- Promote and support agricultural e-research targeting the development of a modernized and globally competitive agriculture sector.
- Encourage the use of ICT to improve research competence and promote the application and transfer of new technologies to support improved agricultural production and processing.

Objective 2

To strengthen agricultural and natural resources extension using ICTs

Strategies

- Revitalize the agricultural extension services by empowering and equipping farm extension service workers with relevant ICT skills.
- Utilize ICTs to link farmers and farmers' groups and associations to resources and services that they need to improve their livelihoods through agricultural productivity, profitability and food security.
- Establish clear forward and backward linkages between agricultural education (formal and informal), Research and Development, farming, agro-industry and marketing through ICT.

Objective 3

To support the modernization and commercialization of the key sub-sectors of agriculture using ICTs in order to achieve long-term growth in the agricultural sector and the economy as a whole.

Strategy

- Develop Geographical Information Systems (GIS) applications to monitor and support sustainable environment usage in areas like land and water management, yield assessment and livestock management.

Objective 4

To promote the deployment and exploitation of ICTs to support the activities of the agricultural sector including, the production, processing, marketing and distribution of agricultural products and services

Strategies

- Promote the establishment of electronic agriculture information systems to provide support for the planning, production, storage and distribution of crops, livestock, and fisheries products.
- Strengthen the irrigation systems through the exploitation, development, adaptation and utilization of ICTs to develop and implement suitable irrigation methods and techniques.
- Encourage market research through the use of ICTs to improve access to established foreign markets and to break into new markets for both traditional and non-traditional exports.

3.6.2. Promoting E-Tourism

Malawi, as a tourist destination is not well known. In addition, the tourism industry is underdeveloped, heterogeneous and fragmented. However, there are many different players with widest possible range of cross-cutting skills who are involved in the tourism industry and these come from both private and public sectors.

Globalization and new information and communication technologies (ICTs) are radically transforming the tourism industry worldwide. Well used, ICT can make Malawi more self-sufficient in constructing their own brand images and promoting their own tourist attractions. In this way, the usual capital flight can be reduced thus maximizing its comparative advantage in this sector. This potential rebalancing of the international tourism system is today becoming necessary as more and more tourists make use of the ICT.

Objective(s)

Objective 1

To support the provision of up-to-date tourism information

Strategy

- Improve and diversify ICT facilities in information centers, tourist attraction centers, airports and border posts, hotels and lodges.

Objective 2

To promote access to global and local tourism information

Strategies

- Encourage the provision of up-to-date aviation information through ICT.
- Develop and maintain a versatile national tourism website.

Objective 3

To facilitate the use of ICTs in promotion techniques and more effective marketing strategies

Strategies

- Encourage ICT training for tourism intermediaries and stakeholders to promote the development and extension of the range of their business development services linked to tourism promotion.
- Develop and maintain electronic tourism-related information system for research and monitoring.

3.6.3. Modernization of the Natural Resources

Malawi's natural resources are mainly confined to protected areas such as national parks, wildlife reserves and forest reserves which cover about 21% of the total land area. These resources also include mineral deposits scattered across the country. Currently, the country's natural resources are under heavy pressure from encroachment, poaching and destruction from fires.

Therefore, the effective and efficient management of these resources through conservation and sustainable utilisation is very important as a means of enhancing tourism which in this country is eco-based. A number of reasons support the need for improved management in this area. First, tourism is one of the government major sources of foreign exchange. Second, mining is potentially another major source of foreign exchange.

It is also worth noting that the use of ICT in conservation and sustainable utilisation of natural resources would help combat desertification and climate change and maintain a suitable environment for habitation.

Objective(s)

Objective 1

To strengthen sustainable natural resource and environmental management practices using ICTs

Strategy

- Promote the use of ICTs to generate and disseminate information on natural resource management and on environmental hazards.

Objective 2

To promote the utilization of ICTs to improve agricultural and natural resources information sharing and networking both locally and internationally

Strategy

- Encourage the exploitation and utilization of ICTs in awareness campaigns throughout the country.

Objective 3

To ensure the timely collection, reporting and dissemination of environmental information to communities and relevant stakeholders

Strategies

- Train staff in ICT-based monitoring systems.
- Develop ICT networking systems at all monitoring stations for the environment.
- Develop and maintain electronic natural resources databases for research and monitoring.
- Promote the utilization of ICT in the mapping of all important natural resources of the country.

- Promote the utilization of ICT in the development of the mining industry, including digital mapping, extraction, processing and marketing minerals.

3.7. COMMUNITY

Malawi's participation in the information age is greatly hampered by inadequate and limited access to ICT services and products in the community. Therefore, currently, ICT services do not effectively cater for the youth, women and other disadvantaged groups. Therefore, Malawi's entry into the information age will demand rapid extension of access to ICTs to all sections of the society. To reach out to, and benefit, the majority of the population in, for instance, health, education and commerce, special efforts shall be made to extend services and access to all sections of the society including rural and underserved disadvantaged communities.

Objective(s)

Objective 1

To promote development of local content in local languages

Strategy

- Promote, stimulate and support the development of innovative local content and applications in the ICT sector to meet the needs and requirements of the nation.

Objective 2

To diversify and improve the quality of information; increasing accessibility to ranges of information resources within and outside the country and creating a supportive environment for the development of the mass media and the private press through the deployment and exploitation of ICTs.

Strategies

- Encourage and support networking with the print and electronic media.
- Provide support for broadcasters ICT interventional programmes that mobilize the communities to participate in ICTs.

Objective 3

To improve public access to information and services to facilitate business and administrative processes to increase productivity and economic growth

Strategies

- Sensitize and train rural and peri-urban communities in the use of ICTs as information sources.
- Build facilities to promote ICT training and computer-aided training for all communities.
- Enhance access to ICT services and applications through rural community libraries and resource centers.
- Develop and implement ICT-based tools to help communities tap the international market.

Objective 4

To build the capacity of women, the youth and other disadvantaged groups to implement ICT initiatives.

Strategies

- Promote access to the National ICT Development Fund to finance the development of and the smooth running of ICT youth organizations in Malawi.
- Encourage donor agencies, non-government organizations and other development partners of the country to help in ICT capacity building initiatives.
- Encourage Public and Private Partnerships (PPPs) to facilitate the roll-out of Community-based ICT Youth initiatives.

Objective 5

To ensure the active participation of all Malawians including women, youth and persons with disabilities in developing the information society

Strategies

- Put in place specific ICT for Development Policy measures and initiatives targeting all the Malawian population including the visually, mentally and physically impaired and disadvantaged.

- Impart ICT skills to girls, boys and women of Malawi.
- Promote interaction among girls, boys and women with government and stakeholders on ICT issues through special ICT fora such as fairs, open days, conferences, seminars, meetings.

Objective 6

To promote equal and universal access to ICT services and resources in rural and peri-urban communities and underserved

Strategies

- Develop Rural telecommunications Policy
- Develop ICT infrastructure in rural communities.
- Accelerate the process of the provision of e-government, e-health, e-learning, and e-commerce services across the country.
- Develop and implement village information and communications infrastructure (VICI) initiatives targeting the implementing of NICI programmes at the local government and district administration levels.
- Develop Government telecommunications policy

Objective 7

To strengthen environmental and disaster warning systems

Strategies

- Equip the Department of Meteorological Services with modern weather monitoring and forecasting equipment (weather radars, high speed computers and radio-sounding equipment).
- Equip the Ministry of Water Development with modern water level monitoring equipment.
- Equip District Assemblies with ICT services for collection and dissemination of environmental and disaster warning information.
- Establish a wide area network for all organizations involved in disaster management.
- Provide radios to communities to be used for transmitting early warning messages.

- Establish communication link between District Assemblies and the Department of Poverty and Disaster Management Affairs (DoPDMA).

3.8. THE LEGAL AND REGULATORY FRAMEWORK

The convergence of information and communication technologies, systems and services and the resultant changes in user demand, choices and preferences has resulted in rapid developments in the communications industry, characterized by rapid technological advances and evolutions. The Government acknowledges, therefore, that the development and the exploitation of ICTs in the economy and society as well as the development of information and knowledge economy will need to be supported and facilitated by the necessary legal, regulatory and institutional framework.

Therefore, there is a need for Malawi to periodically review the legal and regulatory framework designed to facilitate the development of the ICT industry.

Objective(s)

Objective 1

To establish a harmonized legal and regulatory framework in order to facilitate the development of ICT as well as the country's participation in the information age and economy

Strategies

- Support the review of the existing laws and enactment of appropriate legislation consistent with the Constitution and relevant international standards.
- Establish and entrench institutional capacity for the ICT sector.
- Facilitate the introduction of ICT law as one of the core subjects taught at the Universities in Malawi.

Objective 2

To create an enabling environment that takes into account technological evolutions and convergence of ICT.

Strategies

- Promote a legal and regulatory framework that is responsive to new and rapid changes in the global ICT industry
- Ensure that the development, deployment and exploitation of ICT within the economy and society and related legal provisions will balance as well as protect community and individual interests, including privacy and data protection issues.

4. IMPLEMENTATION ARRANGEMENTS

ICT is a cross-cutting tool which will affect almost all important spheres of life and all aspects of the economy. Therefore, ICT is expected to facilitate functions of most of the organizations, sectors and individuals. However, in this policy statement only those organizations and sectors that play key roles and assume outstanding responsibilities have been covered as part of institutional arrangements for ICT administration and management. The aim is to clarify roles and responsibilities for a more responsive ICT service delivery and coordination.

4.1. INSTITUTIONAL ARRANGEMENTS, ROLES AND RESPONSIBILITIES

The implementation of the policy will be centrally coordinated and supported by key sector agencies and institutions. As a result an attempt has been made to clarify roles and responsibilities for the respective key sector agencies and players.

4.1.1. Central ICT implementing Agencies

The following institutions or agencies will play a central role in the coordination of implementing the ICT4D Policy:

- Ministry responsible for ICT matters,
- The Department of Information Systems Technology and Management Services (DISTMS),
- Malawi Communication Regulatory Authority (MACRA), and

The specific roles and responsibilities of each agency are as follows:

Ministry responsible for ICT matters

The Ministry will be responsible for the provision of policy direction in ICT. The Ministry will also coordinate the implementation of the National ICT Policy through the Ministry's department that is responsible for the development and utilization of ICTs. Currently the department is known as the Department of Information Systems and Technology Management services (DISTMS). The ministry will also monitor and review policy implementation progress through a National ICT Working Group (NICTWG), an the ministry will regulate policy implementation through MACRA.

The Department of Information Systems Technology and Management Services (DISTMS)

DISTMS will be responsible for the implementation of the Policy. This additional responsibility will necessitate restructuring and strengthening the department. The department will also serve as a secretariat to NICTWG.

Malawi Communications Regulatory Authority (MACRA)

MACRA will take a leading role in regulatory activities in the implementation of the National ICT for Development Policy. MACRA is already undertaking the regulatory responsibilities in the communications sector. Institutional capacity strengthening will still need to be undertaken in order for the organization to embrace all aspects of ICTs.

The National Information and Communication Technology Working Group (NICTWG)

In order to ensure that there is coordinated effort of Public, Private and Civil Society institutions for the successful realization of the policy objectives, a National ICT Working Group (NICTWG) should be appointed by the minister responsible for ICT. The NICTWG will be responsible for reviewing and monitoring policy implementation progress. The NICTWG will also serve as a handy stakeholder group on which urgent ICT issues can be bounced on.

4.1.2. Other Implementing Agencies and Institutions

A number of public and private sector institutions will take part and play various roles in the implementation of the ICT4D Policy. In regard to the private sector, the whole sector is to be involved given its critical role in the development of industry and commerce. Within the public sector, it is expected that all key institutions, at central and sector levels, will be involved in the implementation process.

The specific roles and responsibilities the sector agencies and public institutions are as elaborated below.

4.1.2.1. Private Sector and other Partner Agencies

The Private sector

The primary responsibility of the private sector is to mobilize financial resources and actively participate in research activities, adoption and utilization of ICTs in both the private and public sectors and facilitate the diffusion of ICTs in the communities.

The Media: All media houses (electronic and print media)

They will promote mass awareness to various stakeholders and the general public on ICT-related issues and programs and influence change through ICT-based message dissemination in all fields.

The Financial and Banking Sector

Institutions in this sector will be responsible for influencing and supporting the development of e-commerce services.

Consumers Association of Malawi (CAMA)

These will be involved in protecting community and consumer rights in ICT including data privacy protection issues.

COSOMA

These will be involved in copyrights of ICT products made in the country.

Electricity Supply Commission of Malawi (ESCOM)

ESCOM will support the development of the ICT industry and supply of ICT services.

Donors and International Agencies

The donors and international agencies will assist in funding ICT initiatives, training and education. They will also offer technical support.

Internet Service Providers (ISP's)

They will be responsible for the provision of internet services and other value-added ICT services to organizations and the general public.

Local and International Research Institutions

They will promote ICT research and development. They will also encourage collaboration, information exchange and knowledge transfer in ICT between local and international research institutions.

Malawi Bureau of Standards (MBS)

MBS will be responsible for developing, promoting and enforcing high international standards in ICT to facilitate and to support the development of Malawi's information-driven and knowledge-based economy. The bureau will also be responsible for the development and strengthening regulators and standardization bodies in ICT activities and promote international ICT standards to support nation-wide professional ICT skills accreditation.

Malawi Censorship Board

The Board will be responsible for addressing ethical issues of the digital culture in order to ensure the protection of the rights of the vulnerable consumers.

Malawi Confederation of Chambers of Commerce and Industry (MCCCI)

MCCCI will be responsible for facilitating the mobilization of private sector funding for national ICT initiatives and lobby for incentives to facilitate investments in

ICT.

Malawi Law Commission

The Commission will be responsible for facilitating the review and development of the laws of Malawi that impinge on ICT in order to bring them into conformity with the Constitution and International standards.

The Malawi Defence Force

The Defence Force will be responsible for researching and implementing ICT applications that will enhance command and control its internal operations and in its interaction with other partners.

Malawi Police Service

Will be responsible for implementing ICT applications and services to enhance and aid in their interaction with the general populace and with other security agencies in the country and beyond. The Malawi Police Service will also be responsible for the development and implementation of mechanisms that will curb theft of ICT facilities.

Medical Council of Malawi & CHAM

They will be responsible for promoting health information sharing within the CHAM hospitals and with the National health institutions through the utilization of ICTs throughout all levels of health workers.

Malawi Libraries Association

The Association will be responsible for providing access to information for investment opportunities, education and research to all communities through the installation, networking and utilization of state-of-the-art ICT equipment and systems.

National Research Council of Malawi

The Council will be promoting ICT research to facilitate accelerated adoption of ICTs.

National, Regional and District Farmers' Groups and Associations

They will be responsible for facilitating the provision of appropriate information to farmers and farmers groups.

Academic Institutions (Schools, Universities)

Academic institutions at all levels will play a very strategic role in the implementation of the ICT4D Policy. In particular, they will be involved in all educational matters related to teaching, research and development, facilitated by and facilitating ICT in all relevant fields.

Technical and Vocational Training Institutions

The institutions will be responsible for reforming and strengthening the apprenticeship systems with ICT skills; promoting the integration of ICT in all training programmes and introducing ICT programmes in all institutions.

Telecommunication Services Providers

They will be responsible for developing and expanding ICT infrastructure in rural communities; and deploying secure broadband and integrated multi-platform ICT infrastructure throughout the country.

The Malawi Export Promotion Council (MEPC)

The Council will be responsible for establishing ICT oriented export processing zones and the promotion of high quality ICT production and exports.

The Malawi Investment Promotion Agency (MIPA)

MIPA will be promoting investments in ICT initiatives in the country.

Youth Organisations

They will be responsible for promoting the universal access to information by the youth through the exploitation of ICTs and the formation of ICT youth clubs.

4.1.2.2. Government Ministries and Departments

Ministry responsible for Health

The Ministry will be responsible for restructuring the National health care system by promoting health information sharing between all health care institutions and healthcare providers. This will be done through networking and central databases. The Ministry will also be responsible for empowering all its health workers at all levels with ICT skills.

Ministry responsible for Agriculture

The Ministry will be responsible for promoting the utilization of ICTs in all areas of agricultural and natural resources management including mapping, research, production and marketing, and information dissemination.

Ministry responsible for Defence

The Ministry's main responsibility will be to facilitate the deployment of the required infrastructure for advancement of ICTs and related services within the public security agencies.

Ministry responsible for Economic Planning and Development

The Ministry will be responsible for promoting the creation and appraisal of ICT projects and solicit funding for those projects that will hasten economic growth in the country.

Ministry responsible for persons with disabilities

The Ministry will be responsible for promoting the utilization of ICTs by the visually, mentally and physically impaired and disadvantaged groups to enable them participate fully in the information society.

Ministry responsible for Education

The Ministry's responsibility will be to promote and facilitate the ICT skills acquisition and utilization in all areas and levels of education and training in order to eliminate illiteracy in the country.

Ministry responsible for Energy, Environmental Affairs and Mining

The ministry will be responsible for supporting the electronic mapping of all natural resources in the country and assist in the management of the environment through the utilization of ICTs.

Ministry responsible for Land Management, Surveys and Physical Planning

It will be responsible for **c**onstructing, managing and disseminating the electronic geographical information system of the country.

Ministry of Finance

Ministry of Finance will be responsible for mobilization of funds for ICT projects and initiatives carried out by the government. It will also be responsible for creation of the proposed National ICT Fund.

Ministry responsible for Gender, Child welfare and Community Service

The Ministry will ensure that disadvantaged and marginalized communities participate fully in the information society through specific ICT initiatives.

Ministry responsible for Industry, Science and Technology

The Ministry's responsibility will be to facilitate research in ICT that will spearhead the development and the advancement of the ICT manufacturing industry in the country.

Ministry of Justice and Constitutional Affairs

The Ministry will take charge of facilitating the setting up of a legal framework that will support the information society.

Ministry responsible for Labour and Vocational Training

The Ministry will be responsible for incorporating ICT in all vocational and technical training programmes.

Ministry responsible for Local Government and Rural Development

The Ministry will be responsible for coordinating and motivating the use of ICTs in all programmes, activities and initiatives in the Assemblies.

Ministry responsible for Trade and Private Sector Development

Stimulate growth of the local, diversified, innovative and fully integrated ICT industrial sector with active participation of the private sector

Ministry responsible for Transport and Public Works

The Ministry will take the responsibility of modernising the aviation and climatic data collection, analysis and dissemination through the deployment and utilization of state-of-the-art ICTs in all its weather monitoring stations.

Ministry responsible for Youth, Sports and Culture

It will be responsible for **p**romoting the active participation of boys, girls, women and disadvantaged groups in the information society through ICT clubs and other ICT promotional incentives.

The Ministry responsible for Home Affairs and Internal Security

It will be responsible for the development and implementation of electronic applications for internal security.

The Ministry responsible for Water Development

The Ministry will be responsible for ICT related research and implement the deployment of modern equipment for mapping, water level monitoring and for sustainable irrigation systems.

Other Government Ministries and Departments

These will take ICT initiatives and influence operations in their line of service that affect the human and institutional resources. They will also provide the environment for proliferation of ICTs.

Department of Human Resource Management Development (DHRMD)

The Department will be responsible for facilitating ICT human resource development and support in the public service.

Agricultural Research Institutes and Organizations

These will be involved in agricultural research and dissemination of information

facilitated by ICT. Their functions will also extend to the promotion of ICT applications in the agricultural sector.

The Department of Poverty and Disaster Management Affairs

The Ministry will be responsible for ensuring the provision of ICTs for efficient data collection and develop a centralized system that is linked to all organizations and stakeholders in disaster management.

Local Authorities

They will be responsible for creating a conducive environment and oversee the implementation of all ICT initiatives that line ministries and other organizations will be promoting in the districts. They will also be responsible for encouraging the use of ICT facilities in the rural communities.

4.2. IMPLEMENTATION PLAN

It is envisaged that the Policy will have an operational life of between sixteen (16) to twenty (20) years, subject to regular reviews. All focus areas will happen concurrently and will be implemented according to the action plans.

A detailed implementation arrangement is attached as annex to the policy. However, a detailed implementation plan will be prepared and presented as a separate document to this Policy document.

4.3. MONITORING AND EVALUATION

The implementation of the Policy shall be monitored and evaluated for effectiveness and responsiveness in meeting intended goals and objectives. Monitoring will be done on a regular basis as may be determined. Evaluation shall occur less frequently than monitoring and shall look at the bigger picture to assess whether and to what extent policy implementation have succeeded in making the intended impact. There will be cost based Monitoring and Evaluation Plans with performance indicators.

4.4. REVIEW OF POLICY

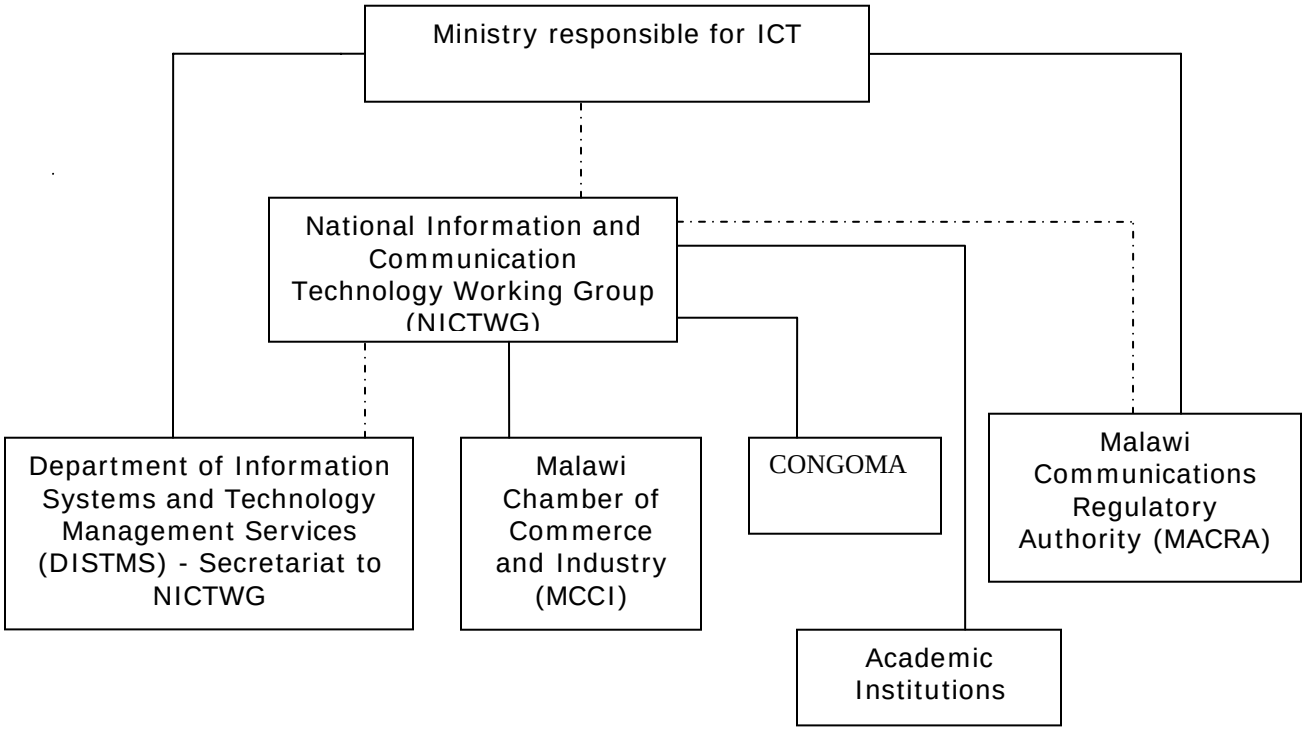
During the life-span of the ICT4D Policy, necessary periodic and regular revisions shall be made in relation to its key elements to meet changing developmental objectives and priorities as well as changes in the global economy and advances in the technological environment. Periodic reviews will be carried out every four years. Therefore, the implementation plan will be adjusted according to lessons learnt during the four years reviewed.

ANNEXES

Annex 1: Institutional Arrangements for Implementation of ICD4 Policy Development

Annex 2: Detailed Implementation Arrangements

Annex 1: Institutional Arrangements for Implementation of the ICT4D Policy



Annex 2: Detailed Implementation Arrangements

	Objectives and Strategies	Action By
1.	**To facilitate the deployment, utilisation and exploitation of ICT within the educational system in order to improve access, quality, relevance and delivery at all levels**	
1.1	Mainstream ICT throughout the entire educational system to promote life-long learning.	Ministry responsible for Education
1.2	Ensure that primary schools, secondary schools and colleges have computers.	Ministry responsible for Education
1.3	Build facilities to promote ICT training and computer-aided training at all levels of education including Primary Schools and Nurseries.	Ministry responsible for Education
1.4	Intensify ICT education and training in all training institutions.	Ministry responsible for Education
1.4	Encourage collaboration between local and international educational institutions in order to facilitate educational exchange and the promotion of ICT education and training.	Ministry responsible for Education
1.6	Facilitate collaboration between the Ministry of Education and various accreditations agencies and examination bodies for ICT education and training.	Ministry responsible for Education
2.0	**To achieve universal basic ICT literacy and improve the level of ICT literacy in the country.**	
2.1	Promote basic training in ICTs skills in all schools and tertiary institutions.	Ministry responsible for Education
2.2	Introduce ICT technical colleges in all regions of the country.	Ministry responsible for Education
2.3	Promote e-learning and e-teaching including e-distance education, training and virtual learning systems to complement and supplement face-to-face campus, televised and broadcast education and training systems.	Ministry responsible for Education, Malawi Libraries Association
2.4	Ensure that all local universities and colleges take steps to progressively offer their programmes and courses on-line to broaden access to higher education to a large section of the population.	Ministry responsible for Education, Academic Institutions

3.0	**To transform Malawi into an information and knowledge-driven ICT literate nation.**	
3.1	Promote awareness on available opportunities to enable students, teachers and educational institutions to purchase ICTs.	Ministry responsible for Education
3.2	Facilitate the automation of libraries as a tool for e-research and e-learning.	Malawi Libraries Association
3.3	Set up special libraries to support ICT Research & Development.	Malawi Libraries Association
4.0	**To improve the management of education systems through the utilisation of ICT.**	
4.1	Develop user-friendly electronic educational management information systems to improve the quality of management of educational institutions.	Ministry responsible for Education
5.0	**To encourage and promote the implementation of telemedicine applications within the health sector.**	
5.1	Network all healthcare institutions to collate information and share data.	Ministry responsible for Health
5.2	Encourage communication online.	Ministry responsible for Health
5.3	Provide full ICT access for healthcare professionals at all levels (primary, regional and tertiary).	Ministry responsible for Health
6.0	**To integrate and deploy ICTs in health program delivery with targets for health education, training and preventive detection.**	
6.1	Make ICT skills acquisition mandatory for all healthcare professionals.	Ministry responsible for Health, Ministry responsible for Education
6.2	Motivate healthcare professionals to utilize ICTs in their service.	Ministry responsible for Health
7.0	**To support and encourage the use of ICT in the dissemination of health and clinical information for the general public on various diseases such HIV/AIDS.**	
7.1	Restructure the healthcare system by providing a national electronic data depository to support on-line national healthcare information, administration and management at primary, regional and tertiary levels.	Ministry responsible for Health
8.0	**To facilitate the utilization of ICTs as a tool for medical research, linking health care professionals and enhancing health administration, remote diagnostics, and**	

	distribution of medical supplies.	
8.1	Use ICTs to provide medical education and support medical research to combat major national emerging and existing health threats such as HIV/AIDS, malaria.	Ministry responsible for Health
9.0	**To improve the management of health systems through the utilisation of ICT.**	
9.1	Utilize ICTs to establish and update a user-friendly national electronic Health Management Information System (e-HMIS) across primary, regional and tertiary healthcare systems.	Ministry responsible for Health
9.2	Encourage the e-HMIS in making health management decisions.	Ministry responsible for Health
10.0	**To promote and improve Research and Development capacity in ICT.**	
10.1	Develop appropriate and responsive ICT training programmes to address requirements of different sectors of the economy including research institutions and the industry.	Ministry responsible for Education, Local and International Research Institutions
10.2	Support and strengthen R&D to develop ICT within universities, research institutions and the private sector.	Local and International Research Institutions, Academic Institutions
10.3	Promote ICT R&D knowledge acquisition in the new and emerging sciences.	Local and International Research Institutions, Academic Institutions
11.0	**To target the development and enhancement of technical, managerial and operational skills in the use and deployment of ICTs in the public, private and informal sectors.**	
11.1	Facilitate, encourage and create a conducive environment for public and private sector to train and up-date the ICT skills of their personnel.	DHRMD, Private Sector
11.2	Support and facilitate the training of women, the youth and the disadvantaged in key skills required by the information and knowledge economy.	Ministry responsible for Gender, Child welfare and Community Service
11.3	Reform and strengthen the traditional and informal apprenticeship systems with ICT skills.	Technical and Vocational Institutions
11.4	Promote and enforce high standards in ICT to facilitate the development of a globally competitive quality and professional manpower to support the development of Malawi's information-driven and knowledge-based economy.	MACRA

12.0	**To develop a pool of professional ICT workforce with emphasis on critical skill areas.**	
12.1	Facilitate the development of a large pool of ICT professionals with state of-the-art ICT skills.	DHRMD, Private Sector
12.2	Promote networking of ICT professionals and interns for collaborative work and placements of interns.	DISTMS
12.3	Develop human resources to support the deployment and maintenance of state-of-the-art ICT infrastructure.	DISTMS, Private Sector, DHRMD
12.4	Facilitate the mobilization of private sector funding for ICT human resource development capacity building in key sectors of the economy.	Private Sector, MCCI
13.0	**To improve the human resource development capacity of the nation's public and private universities and colleges offering ICT courses and research.**	
13.1	Promote technical and vocational training with emphasis on the use of ICT to facilitate the training and learning process.	Ministry responsible for Education, Technical and Vocational Training Institutions
13.2	Promote recognized international ICT standards to support nation-wide professional ICT skills accreditation.	MACRA, DISTMS
13.3	Encourage ICT internships and work-study programmes at all levels within various ICT institutions.	DISTMS
14.0	**To facilitate the establishment of an efficient intra-and inter-departmental, inter-sectoral, national and sub-national system of communication, for the necessary feed-back in policy formulation and programme implementation, monitoring and review.**	
14.1	Provide a favourable environment for the provision of electronic government.	DISTMS
14.2	Develop an e-government interoperability framework to facilitate cross-departmental operations of ICT systems and services.	DISTMS, Government Ministries and Departments
14.3	Encourage information sharing, transparency and accountability and facilitate the process that will lead to reduction in bureaucracy within and between organizations within the civil and public service.	DISTMS
14.4	Introduce electronic electoral processes.	Electoral Commission
14.5	Establish an ICT network for corruption-prevention institutions.	Anti Corruption Bureau (ACB)
15.0	**To modernize the operations and work ethics of the Public Services through the deployment of ICTs to facilitate administrative cost reduction**	

	and their effectiveness and efficiency in the delivery of its services to the public.	
15.1	Facilitate the delivery of modernized public services in the area of provision of government information, social, health and educational services through the deployment, utilization and the exploitation of information and communications technologies within the society and the economy.	Government Ministries and Departments
15.2	Promote the deployment and the use of ICTs to facilitate universal access to public and government information and services to support the promotion of the principle and practice of good governance.	Government Ministries and Departments
15.3	Re-orient the Civil and Public Servants with the aim of improving administrative efficiency, effectiveness and service delivery through the implementation of electronic government and governance initiatives set within the wider scope of the institutional engineering and renewal of the service.	Government Ministries and Departments
15.4	Promote the exploitation of information and communication technologies within the Civil and Public Services to make public services more efficient, productive and accessible to the public at large.	Government Ministries and Departments
15.5	Develop and promote standards, guidelines and procedures to facilitate the acquisition, installations and maintenance of ICT equipment and systems within Government Ministries and other Public Sector institutions and establishments.	DISTMS, MACRA, Malawi Bureau of Standards (MBS)
15.6	Engage and maintain ICT specialists to support and maintain public service ICT infrastructure.	
15.7	Create a working and efficient government wide area network (GWAN) which should expand to include the entire public sector.	DISTMS, Government Ministries and Departments
16.0	**To create a secure environment of ICT networks and systems against various types of attacks on their availability, authenticity, integrity and confidentiality.**	
16.1	Formulate and enforce laws and regulations that combat cyber crimes.	Malawi Law Commission, Ministry responsible for Justice
16.2	Institute mechanism and laws to curb vandalism and theft of ICT infrastructure.	Malawi Law Commission, Ministry responsible for Justice, Malawi Police
16.3	Enact a law to validate digital signatures on documents in relation to the technology on the market today.	Ministry responsible for Justice
17.0	**To protect the general public from undesirable**	

	impacts of the ICT sector.	
17.1	Formulate and enforce laws and regulations to protect the general public from undesirable impacts of the ICTs.	Malawi Law Commission, Ministry responsible for Justice
17.2	Preserve Malawi's cultural heritage, national image and national identity through the utilization of ICTs.	CAMA, Malawi Censorship Board, Ministry responsible for Culture
17.3	Put in place mechanisms that will safeguard girls, boys and women from fraud, misuse of information and immoral behavior brought about by the use of ICTs.	Ministry responsible for Gender, Child welfare and Community Service, Ministry responsible for culture
18.0	**To enhance the capacity of the security agencies in order to be up to date with development in the ICT sector.**	
18.1	Encourage and implement ICT applications and services to enhance command and control activities within private security agencies and aid in their interaction with the general populace.	Ministry responsible for Defence, Ministry responsible for Internal Security
18.2	Research, advance and implement ICT-based solutions that will enable interaction between the Security Agencies and the populace.	Ministry responsible for Defence, Ministry responsible for Internal Security
18.3	Promote networking of e-security services among security agencies.	Ministry responsible for Defence, Ministry responsible for Internal Security
19.0	**To promote the use of ICTs to improve general national security.**	
19.1	Facilitate the deployment of the required infrastructure for advancement of ICTs and related services within the public security agencies.	Ministry responsible for Defence, Ministry responsible for Internal Security
19.2	Reorient members of the security agencies to e-security services	Ministry responsible for Defence, Ministry responsible for Internal Security
19.3	Incorporate e-services in the training regime for new entrants into public security agencies.	Ministry responsible for Defence, Ministry responsible for Internal Security
19.4	Develop inter-linked ICT-based National Identity systems.	Ministry responsible for Internal Security
20.0	**To promote local and foreign investment,**	

	innovative production, R&D and diffusion of ICTs by the private sector.	
20.1	Encourage and promote local research, development and production of globally competitive ICT products and services.	Private Sector, Local and International Research Institutions, National research Council
20.2	Fund ICT R&D in the nation's universities, colleges and research institutes.	Private Sector, MCCI, Local and International Research Institutions
20.3	Develop a nation wide academic network in ICT Research & Development to facilitate the acquisition, adaptation and dissemination of new developments in ICTs.	Local and International Research Institutions
		Local and International Research Institutions
20.4	Facilitate the transfer of technology and collaboration on R&D between local Centers of Excellence and international R&D centers.	Local and International Research Institutions
20.5	Establish ICT R&D institutions with unique and clear mandates.	Local and International Research Institutions
20.6	Introduce incentives for industries to set up ICT-related R&D centers in the universities and research institutes.	Local and International Research Institutions, Academic Institutions
20.7	Institute mechanisms for soliciting ICT research projects that will be made open to both research institutes and universities to facilitate the selection of good and innovative projects for national development.	Local and International Research Institutions
20.8	Provide incentives to local R&D institutions to enter into collaborative ICT-related research with foreign universities as well as with local companies and multinationals.	Local and International Research Institutions
20.9	Promote a favourable fiscal and investment climate for the development of a globally competitive ICT-enabled economy.	Ministry responsible for Finance
20.10	Establish a National ICT Development Fund to finance the development of the ICT Sector in Malawi.	
20.11	Mobilize private sector funding to support ICT initiatives.	MCCI, Private Sector
20.12	Stimulate a diversified, innovative and fully integrated ICT industrial sector with active participation of the private sector.	MCCI, Private Sector
20.13	Promote knowledge transfer and joint partnerships in ICT initiatives.	Private Sector, Government Ministries and Departments,

		Academic Institutions
20.14	Promote ICT Fairs.	MIPA, MCCI
20.15	Transform Malawi into a secure and attractive destination for ICT related FDI with the potential to become a competitive regional ICT and business hub.	MCCCI, MIPA, Private Sector
21.0	**To prevent Malawi from becoming a dumping place for substandard ICT products.**	
21.1	Encourage technology development institutions and private sector establishments to exploit and utilise modern ICT tools to enable them produce high quality capital equipment and machinery.	Private Sector
21.2	Develop and strengthen regulators and standardization bodies in ICT activities.	Malawi Law Commission, Ministry responsible for Justice
21.3	Encourage standardization of software used in public institutions and the private sector.	MACRA
21.4	Promote and facilitate R&D work targeting recyclable ICT products to minimize industrial waste in the environment.	
21.5	Promote Research and Development of ICT in the new and emerging sciences	Local and International Research institutions, Academic Institutions
22.0	**To establish and promote an enabling environment for private sector investment in ICT.**	
22.1	Promote the active participation of local Small and Medium Enterprises (SMEs) and other private sector stakeholders in the ICT industry.	Private Sector, Financial and Banking sector
22.2	Promote Public Private Partnership (PPP) to accelerate the development and implementation of ICT policies as well as the necessary legal and technical standards to support widespread electronic readiness.	Private Sector, DISTMS
22.3	Lobby for the reduction of taxes on ICT parts, components, software and related terminals and accessories.	DISTMS
23.0	**To promote the development of a Competitive Value-Added Services Sector through the exploitation and utilization of ICTs.**	
23.1	Encourage ICT innovations to support product development and service provision and delivery.	Private Sector
23.2	Promote improvements in the quality of services and products within the services and industrial sectors	Private Sector

	through the exploitation and utilization of ICTs.	
23.3	Encourage and facilitate the use of open electronic marketplaces, secure e-business solutions, and electronic payment systems to support the development of electronic commerce in the country.	Financial and Banking Sector
23.4	Facilitate the introduction of electronic banking and the use of credit cards.	Financial and Banking Sector
24.0	**To promote and support the development of an innovative local industry for the manufacture, assembling, repair and maintenance of ICT products for domestic and export markets.**	
24.1	Establish ICT oriented export processing zones.	Private Sector, MEPC
24.2	Stimulate growth of the local ICT industry through public and private sector patronage of local ICT industry products and services.	Private Sector
24.3	Promote the development of a broad ICT engineering base, especially in the maintenance, repair and fabrication of machinery and equipment.	Training Institutions
24.4	Promote the adoption and enforcement of international standards within the ICT industry to facilitate the development of world-class and globally competitive local ICT industry and services sector.	MACRA
24.5	Advocate for the use of open source software as a viable alternative to proprietary software.	DISTMS
24.6	Encourage the development of a secure broadband information and communications infrastructure to support the development and provision of world-class off-shore ICT services in the areas like software development, financial services and other ICT services targeted at the export market.	Internet Service Providers, Telecommunications Service providers
25.0	**To develop a reliable, fast, adaptive and robust national ICT infrastructure.**	
25.1	Promote the development and deployment of basic and integrated multi-platform ICT infrastructure to facilitate public access to information and services.	DISTMS
25.2	Modernize and expand Malawi's information and communications infrastructure and services to improve universal access and Quality of Service (QoS).	Private Sector, Telecommunications Services Providers, ISPs
25.3	Expand the physical ICT infrastructure of Malawi.	Private Sector, Telecommunications Services Providers, ISPs, DISTMS
26.0	**To promote and facilitate domestic and foreign private sector investments in ICT infrastructure development.**	

26.1	Put in place special ICT promotion packages, policy instruments and incentives to facilitate the expansion of the information and communications infrastructure	MIPA, MCCCI
27.0	**To promote the utilization of ICTs in agro-business industry.**	
27.1	Promote the exploitation and utilization of ICTs in the production and processing of non-traditional export commodities to enhance the foreign exchange earning power of the country.	MEPC
28.0	**To strengthen the development, application and transfer of agro-based technologies using ICTs to support sustainable agriculture production and improve quality of agricultural produce.**	
28.1	Encourage the incorporation of ICT in the production of agro-equipment and the processing of raw materials.	Agricultural Research Institutes and Organizations
29.0	**To support and promote research in Agricultural production and processing using ICTs in order to come up with more efficient methods and inputs.**	
29.1	Encourage the exploitation, development, adaptation and utilization of ICTs to reduce pre-harvest and post-harvest losses in agricultural production.	Agricultural Research Institutes and Organizations, National, Regional and District Farmers' Groups and associations
29.2	Promote and support agricultural e-research targeting the development of a modernized and globally competitive agriculture sector.	Agricultural Research Institutes and Organizations
29.3	Encourage the use of ICT to improve research competence and promote the application and transfer of new technologies to support improved agricultural production and processing.	Agricultural Research Institutes and Organizations, Research Institutions
30.0	**To strengthen agricultural and natural resources extension using ICTs.**	
30.1	Revitalize the agricultural extension services by empowering and equipping farm extension service workers with relevant ICT skills.	Ministry responsible for Agriculture
30.2	Utilize ICTs to link farmers and farmers' groups and associations to resources and services that they need to improve their livelihoods through agricultural productivity, profitability and food security.	Ministry Responsible for Agriculture, Local Authorities, National, Regional and District

		Farmers' Groups and associations
30.3	Establish clear forward and backward linkages between agricultural education (formal and informal), Research and Development, farming, agro-industry and marketing through ICT.	Ministry Responsible for Agriculture, Ministry responsible for Education
31.0	**To support the modernization and commercialization of the key sub-sectors of agriculture using ICTs in order to achieve long-term growth in the agricultural sector and the economy as a whole.**	
31.1	Develop Geographical Information Systems (GIS) applications to monitor and support sustainable environment usage in areas like land and water management, yield assessment and livestock management.	Ministries responsible for Agriculture, Water, Natural Resources
32.0	**To promote the deployment and exploitation of ICTs to support the activities of the agricultural sector including, the production, processing, marketing and distribution of agricultural products and services.**	
32.1	Promote the establishment of electronic agriculture information systems to provide support for the planning, production, storage and distribution of crops, livestock, and fisheries products.	Ministry Responsible for Agriculture
32.2	Strengthen the irrigation systems through the exploitation, development, adaptation and utilization of ICTs to develop and implement suitable irrigation methods and techniques.	Ministry Responsible for Agriculture
32.3	Encourage market research through the use of ICTs to improve access to established foreign markets and to break into new markets for both traditional and non-traditional exports.	Ministry Responsible for Agriculture
33.0	**To support the provision of up-to-date tourism information.**	
33.1	Improve and diversify ICT facilities in information centers, tourist attraction centers, airports and border posts, hotels and lodges.	Ministry responsible for Tourism
34.0	**To promote access to global and local tourism information.**	
34.1	Encourage the provision of up-to-date aviation information through ICT.	Ministry responsible for Tourism
34.2	Develop and maintain a versatile national tourism website.	Ministry responsible for Tourism

35.0	**To facilitate the use of ICTs in promotion techniques and more effective marketing strategies.**	
35.1	Encourage ICT training for tourism intermediaries and stakeholders to promote the development and extension of the range of their business development services linked to tourism promotion.	Ministry responsible for Tourism
35.2	Develop and maintain electronic tourism-related information system for research and monitoring.	Ministry responsible for Tourism
36.0	**To strengthen sustainable natural resource and environmental management practices using ICTs.**	
36.1	Promote the use of ICTs to generate and disseminate information on natural resource management and on environmental hazards.	Ministry responsible for Natural resources, Local authorities
37.0	**To promote the utilization of ICTs to improve agricultural and natural resources information sharing and networking both locally and internationally.**	
37.1	Encourage the exploitation and utilization of ICTs in awareness campaigns throughout the country.	DISTMS, Media houses
38.0	**To ensure the timely collection, reporting and dissemination of environmental information to communities and relevant stakeholders.**	
38.1	Train staff in ICT-based monitoring systems.	Ministry responsible for Natural resources
38.2	Develop ICT networking systems at all monitoring stations for the environment.	Ministry responsible for Natural resources
38.3	Develop and maintain electronic natural resources databases for research and monitoring.	Ministry responsible for Natural resources
38.4	Promote the utilization of ICT in the mapping of all important natural resources of the country.	Ministry responsible for Natural resources
38.5	Promote the utilization of ICT in the development of the mining industry, including digital mapping, extraction, processing and marketing minerals.	Ministry responsible for Natural resources
39.0	**To promote development of local content in local languages.**	
39.1	Promote, stimulate and support the development of innovative local content and applications in the ICT sector to meet the needs and requirements of the	Censorship Board, Media houses, Local authorities

	nation	
40.0	**To diversify and improve the quality of information; increasing accessibility to ranges of information resources within and outside the country and creating a supportive environment for the development of the mass media and the private press through the deployment and exploitation of ICTs.**	
40.1	Encourage and support networking with the print and electronic media.	Media houses
40.2	Provide support for broadcasters ICT interventional programmes that mobilize the communities to participate in ICTs.	Media houses
41.0	**To improve public access to information and services to facilitate business and administrative processes to increase productivity and economic growth.**	
41.1	Sensitize and train rural and peri-urban communities in the use of ICTs as information sources.	DISTMS, Local authorities
41.2	Build facilities to promote ICT training and computer-aided training for all communities.	Local authorities
41.3	Enhance access to ICT services and applications through rural community libraries and resource centers.	Malawi Libraries Association
41.4	Develop and implement ICT-based tools to help communities tap the international market.	Local Authorities
42.0	**To build the capacity of women, the youth and other disadvantaged groups to implement ICT initiatives.**	
42.1	Promote access to the National ICT Development Fund to finance the development of and the smooth running of ICT youth organizations in Malawi.	DISTMS, Youth Organizations
42.2	Encourage donor agencies, non-government organizations and other development partners of the country to help in ICT capacity building initiatives.	CONGOMA, DISTMS
42.3	Encourage Public and Private Partnerships (PPPs) to facilitate the roll-out of Community-based ICT Youth initiatives.	DISTMS, Youth Organizations, Local authorities
43.0	**To ensure the active participation of all Malawians including women, youth and persons with disabilities in developing the information society.**	
43.1	Put in place specific ICT for Development Policy measures and initiatives targeting all the Malawian	Ministry responsible for ICT matters,

	population including the visually, mentally and physically impaired and disadvantaged.	Ministry responsible Gender, Child welfare
43.2	Impart ICT skills to girls, boys and women of Malawi.	Ministry responsible Gender, Child welfare
43.3	Promote interaction among girls, boys and women with government and stakeholders on ICT issues through special ICT fora such as fairs, open days, conferences, seminars, meetings.	Ministry responsible Gender, Child welfare
44.0	**To promote equal and universal access to ICT services and resources in rural and peri-urban communities.**	
44.1	Develop ICT infrastructure in rural communities.	Private Sector, Local Authorities, Telecommunications Services providers, ISPs
44.2	Accelerate the process of the provision of e-government, e-health, e-learning, and e-commerce services across the country.	DISTMS, Private Sector, ESCOM
44.3	Develop and implement village information and communications infrastructure (VICI) initiatives targeting the implementing of NICI programmes at the local government and district administration levels	Local authorities
45.0	**To strengthen environmental and disaster warning systems.**	
45.1	Equip the Department of Meteorological Services with modern weather monitoring and forecasting equipment (weather radars, high speed computers and radio-sounding equipment).	Ministries responsible for Natural resources, Disaster management
45.2	Equip the Ministry of Water Development with modern water level monitoring equipment.	Ministry responsible for water development
45.3	Equip District Assemblies with ICT services for collection and dissemination of environmental and disaster warning information.	Ministry responsible for Local Government and rural development
45.4	Establish a wide area network for all organizations involved in disaster management.	Ministries responsible for Natural resources, Disaster management
45.5	Provide radios to communities to be used for transmitting early warning messages.	Ministry responsible for Local Government and rural development, local authorities
45.6	Establish communication link between District	Ministry responsible

	Assemblies and the Department of Poverty and Disaster Management Affairs (DoPDMA).	for Local Government and rural development
46.0	**To establish a harmonized legal and regulatory framework in order to facilitate the development of ICT as well as the country's participation in the information age and economy.**	
46.1	Support the review of the existing laws and enactment of appropriate legislation consistent with the Constitution and relevant international standards.	Law Commission, DISTMS, Ministry responsible for justice
46.2	Establish and entrench institutional capacity for the ICT sector.	Private Sector
46.3	Facilitate the introduction of ICT law as one of the core subjects taught at the Universities in Malawi.	Ministry responsible for Education
47.0	**To create an enabling environment that takes into account technological evolutions and convergence of ICT.**	
47.1	Promote a legal and regulatory framework that is responsive to new and rapid changes in the global ICT industry	Law Commission, Ministry responsible for justice
47.2	Ensure that the development, deployment and exploitation of ICT within the economy and society and related legal provisions will balance as well as protect community and individual interests, including privacy and data protection issues.	Law Commission, Ministry responsible for justice