THE UNITED REPUBLIC OF TANZANIA

MINISTRY OF LIVESTOCK AND FISHERIES DEVELOPMENT

INFORMATION TECHNOLOGY POLICY

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Abbreviations and Acronyms

HQ   - Headquarters
ICT   - Information and Communication Technology
IS   - Information System
LAN   - Local Area Network
WAN – Wide Area Network
M&E   - Monitoring and Evaluation
TIX   - Tanzania Internet Exchange
IT   – Information Technology
ISP   – Internet Service Provider
LAN   – Local Area Network
LGA   – Local Government Authorities
MDA   – Ministries, Departments and Agencies
MLFD – Ministry of Livestock and Fisheries Development
PS   – Permanent Secretary
USB   - Universal Serial Bus

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FOREWORD

The Ministry of Livestock and Fisheries Development (MLFD) is increasing dependency on IT for daily functional activities and data storage. It is therefore essential to have continuous successful operations, for effectiveness and efficiency of the Ministry's execution of her functions. Thus, the availability, integrity and confidentiality of its IT and data should be highly observed and sustainably maintained.

In addition, an Information Technology Policy built on reliable human resources and infrastructure constitutes the fundamental tool and means of assessing, planning, managing development change innovations, e-Governance and for achieving sustainable MLFD prosperity.

I am responsible to provide directives and decisions to ensure that IT systems are designed, implemented and maintained for the integrity of information processed therein at the Ministry.

To achieve this, the IT Policy has been introduced, everyone is expected to read and to ensure that its contents are fully understood and abided to.

Each staff of MLFD and any other user of MLFD IT systems is responsible to ensure that the contents of this IT policy are complied with in its totality, and a deliberate breach will render staff/user liable to actions under the Public Service Act No. 8 of 2002 and its Regulations of 2003 and MLFD Staff Regulations and Codes of Conduct and Ethics.

This IT policy shall be used with effect from financial year 2010/2011 and in case you need any clarification regarding the meaning and implementation of any part of the policy, please contact the MLFD's IT unit.

This Policy document provides a framework of credible consistency policies which allows all stakeholders to move together with confidence. In order for the objective of this policy to be realized, the Ministry will develop strategies and implementation plans.

This Policy is the outcome of a collective responsibility and cooperation of many parties involved in its preparation. I would like to thank all stakeholders who in one way or another played a role in the preparation of this policy.

To all, I say thank you for a job well done.

Dr. David Mathayo David (MP)
Minister for Livestock and Fisheries Development
DAR-ES-SALAAM.
January, 2011

PREFACE

This MLFD IT policy is derived from MLFD's vision and mission; the role of IT as an important tool in facilitating efficiency and effectiveness of operations in the Ministry. Implementation of the vision of livestock and fisheries industries depends on human resources, working tools and technology.

The Policy outlines the anticipated IT services, which are considered of strategic relevance to the Ministry. The issues involve objectives together with the policy statements; it is expected that the Policy shall guide establishment of sustainable, efficient, user-friendly, secure operations and the deployment of anticipated IT services and resources.

In unexpected event that, the policy is not clearly interpreted or stays silent on an issue, the National IT policy shall prevail.

This Policy document provides a framework of credible consistency policies which allows all stakeholders to move together with confidence. In order for the objective of this policy to be realized, the Ministry will develop institutional arrangement for the IT unit.

I take this opportunity to thank the Ministry's IT experts for developing this policy, stakeholders who in one way or another played a role in the preparation of this policy and the Management Committee for advising, guidance and thoroughly discussing this policy document at different stages.

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Dr. Charles Nyamrunda
Permanent Secretary
Ministry of Livestock and Fisheries Development
Dar Es Salaam
January, 2011

1.0 INTRODUCTION

1.1 BACKGROUND

The establishment and application of Information Technology (IT) systems are in integral part of the MLFD activities along the lines of Government resolve towards e-Governance. The application of IT in the Ministry facilitates integration of support systems that enable efficient implementation of core functions of the Ministry.

The Ministry has made a substantial investment in physical, human and financial resources to establish and implement IT. The use of IT is subject to rapid technological changes leading to rapid turnover in hardware and software as well as subject to abuse in terms of unauthorised access to Ministerial information.

In order to guide the development and deployment of IT in the Ministry to guarantee the efficient and effective use of the IT systems, this IT policy has to be in place.

The approach adopted by MLFD aimed to ensure maximum level of protection of the IT systems; the Ministry is operating in such a way that unauthorized staff is not allowed to access MLFD network system.

This MLFD IT Policy is the set of procedures reflecting management's guidance and directions of controls over information systems and related controls.

1.2 MLFD IT Vision

"MLFD to become a leading MDA in the efficient and effective use of IT Infrastructure and IT solutions in achieving her vision 2025 and mission that centers on sustainable socio-economic development, environmental sustainability and accelerated poverty reduction in the Livestock and Fisheries Sectors."

1.3 MLFD IT Mission

"To promote IT activities, facilitate and regulate the growth of modern livestock, fisheries, aquaculture and their products for sustainable socio-economic development."

This will be done through the following:

(i) Supporting stakeholders to build their capacity to efficiently deliver quality services to livestock farmers and fishers by bringing closer and easy access of information through IT facilities; and

(ii) Enhancing IT usage for partnership with the private sector in the provision of quality livestock and fisheries products and stipulating investment opportunities to the domestic and foreign market.

1.4 Scope of the IT Policy

The IT policy covers all aspects of implementation of IT within MLFD mission, vision, functions and mandate as contained in the Ministry's strategic plan, expenditure framework research and public services delivery. This policy covers the following broad areas:

(i) Data Communication Infrastructure and Internet Services
(ii) IT Hardware and software acquisition, maintenance and disposal
(iii) IT usage and security management
(iv) Database Management Information System
(v) Support systems
(vi) IT Skills Training
(vii) IT research and development
(viii) Quality control of IT systems and services
(ix) Management and sustainability of IT services

The scope of application of this IT policy will involve MLFD -:
(i) Departments
(ii) Affiliated institutions
(iii) Agencies
(iv) Stakeholders interface (websites, WAN, LAN, WIFI)

2.0 STATUS OF IT IN THE MLFD

MLFD has implemented IT by developing infrastructure and acquire hardware, software and databases.

(i) Local Area Network (LAN)

Installation of LAN at the Ministry was previous undertaken as part of initiatives within Division/Directorate of the Ministry or as a part of a specific donor funded projects as a result, the networks are of different designs and standards are not linked to each other, thus minimizing the benefits of sharing information electronically, network resources and hence increase operating cost. Besides, because of lack of centralised antivirus software, viruses are spread through USB flash disks from one computer to another rendering low performance of the whole system. In addition to that, unreliable power supply is a major constraint affecting the network.

(ii) Internet Services

There is no coordinated provision of Internet at the Ministry, with each Division/Directorate making its own initiative for the same. As a result the Ministry is not taking advantage of economies scale and centralised internal support for the service.

(iii) Hardware

The MLDF owns a number of IT hardware equipment which is procured from local suppliers who import from abroad at a considerably high cost due to absence of IT procurement coordination. The hardware procured is of low quality with no professional standards at all. The MLFD has not developed procedures for procurement, upgrading, replacement and disposal of obsolete IT equipment; despite presence of IT professionals the procurement process does not involve them.

(iv) Software

The MLFD uses different operating systems are used by different users in the same Division/Directorate and different operating systems from Division/Directorate thus increasing difficulties in giving support and incompatibility problems.

Other software applications available are Geographical information system, specialised application systems which includes Vessel Monitoring Systems (VMS), Fisheries Information and Statistics (FINSS) from Africa Union and different antivirus programs. However there is no approved guideline for usage and installation of software.

(v) Database

MLFD is implementing database developed by foreign countries for example TADInfo, and LIMS which are based on donor driven interests. However, there are also locally developed databases for example Catch Assessment Survey System (CAS) was developed in Tanzania and now neighbouring countries that share with us Lake Tanganyika are interested in using it in the Lake Tanganyika Integrated Management Program.

3.0 IT POLICY ISSUES, OBJECTIVES AND STATEMENTS

This section will elaborate policy statements that will be derived from policy issues, objectives and challenges for the following broad areas:-

(i) Data Communication Infrastructure and Internet Services
(ii) IT hardware and software acquisition, maintenance and disposal
(iii) IT Usage and security Management
(iv) Database Management Information System
(v) Support systems
(vi) IT Skills Training
(vii) IT Research and development
(viii) Quality Control of IT Systems and Services
(ix) Management and sustainability of IT services

The policy statements will cover the period 2010/11 to 2013/14 due to fluidity of IT.

3.1 Data Communication Infrastructure and Internet Services

IT application requires data communication infrastructure and internet services that include facilities for LAN, WAN, WIFI and outside linking facilities. These entities are many in market with different specifications, quality, brands, models and thus have different capabilities and prices. For efficiency, intended and cost effective use, it is necessary to control their deployment in any institution.

3.1.1 Issues

(i) Communication infrastructure between Ministry's headquarter and affiliated institutions are inadequate;
(ii) Absence of or unsatisfactory Local Area Networks in the Ministry's headquarter and affiliated institutions; and
(iii) Lack of or unsatisfactory Internet services in the MLFD and affiliated institutions.

3.1.2 Policy Objectives

(i) To facilitate adequate communication infrastructure between Ministry's headquarter and the outside stations institutions and agencies
(ii) Installation and upgrading of Local Area Networks in all outside stations institutions and agencies
(iii) To facilitate availability of rapid and efficient Internet services to MLFD and affiliated institutions.

3.1.3 Policy Statements

(i) The Ministry shall promote and strengthen IT connectivity within and in MLFD affiliated institutions using the most viable technology.
(ii) The Ministry shall strengthen connectivity to Tanzania Internet Exchange (TIX) point and Tanzania Education and Research Network (TERNET)
(iii) The Ministry will promote the collaborations with the Ministry of Science and Technology, Tanzania Communication Regulatory Authority (TCRA) and other institutions dealing with IT to ensure efficient use of IT in e-Governance.

3.2 IT Hardware and software maintenance, replacement and disposal

IT hardware and software are rapidly changing due to technological advancement and often become obsolete needing replacement, upgrading or disposal. In addition, they are subjected to frequent breakdown from the results of various users, continuous applications and sometimes novice users thus needing frequency maintenance. The later, is costly and therefore requiring policy guidelines.

3.2.1 Issues

(i) Lack of approved guidelines for acquisition and use of IT hardware and software.
(ii) Lack of approved procedures for documentation of IT equipment (when it was purchased, serial number, model, brand, specifications, licence, warranty, or expiry dates).
(iii) Lack of adherence to policy and procedures for disposal of obsolete IT equipment.
(iv) Lack of procurement guidelines of IT hardware and software.
(v) Lack of IT equipment replacement and upgrade policy.
(vi) Lack of systematic and regular preventive maintenance culture.

3.2.2 Policy Objectives

(i) To make sure that guidelines are in place to ensure that all hardware and software acquired by the MLFD.
(ii) To ensure that the procedures for documentation of IT equipment are in place.
(iii) Abide to existing guidelines and disposal of IT equipment.
(iv) To have in place procurement and usage guidelines of IT hardware and software.
(v) To have in place IT equipment replacement policy.
(vi) To institute a systematic and regular preventive maintenance culture.

3.2.3 Policy Statements

(i) The MLFD shall develop procedures for procurement, upgrading, replacement and disposal of obsolete IT equipment.
(ii) The MLFD shall develop and operationalize procedures and conditions for acceptance of donated IT equipment.
(iii) The MLFD shall not accept used IT equipment
(iv) The MLFD shall put in place a maintenance program to ensure that the hardware are serviced, repaired and replaced as appropriate by designated IT expert.
(v) The MLFD shall enhance in-house IT repair and maintenance capability.
(vi) The MLFD shall discourage the use of pirated copies of software.
(vii) The MLFD shall ensure that a systematic and regular preventive maintenance culture is instituted and outsource when necessary.

3.3 IT Usage and Security Management

IT applications and use are subjected to misuse, abuse and corruption from hackers, viruses and unauthorised users. This calls for institutionalisation of guided use and security management in the form of putting in place guidelines, norms, information access levels to IT facilities and software, confidentiality to data access and authorisation of access to information. Malware, viruses and spyware must be curbed in order to maintain sustainable IT infrastructure.

3.3.1 Issue

(i) Lack of operationalisation of the disaster recovery plan or mechanism.
(ii) Lack of enforcement of IT security Policy and Procedures.
(iii) Inadequate network security management including uncontrolled access to Internet services.
(iv) Inadequate physical security in server room.
(v) Improper use of IT facilities.

3.3.2   Policy Objectives

(i)   To put in place and operationalise a proper disaster recovery plan
(ii) To ensure the security of IT assets and data owned by MLFD and individual staff.
(iii) To have appropriate network security management including controlled Internet services.
(iv) To ensure proper use of the MLFD IT facilities.
(v)   To have proper physical security in server room.

3.3.3   Policy Statements

(i)   The MLFD shall develop and operationnmalize a disaster recovery plan.
(ii) The MLFD shall operationalize IT security policy and procedures.
(iii) The MLFD shall enhance physical security facilities.
(iv) The MLFD shall put in place appropriate network security management and control of access to Internet services.

3.4   Database Management Information System

Database management information systems are useful tools for storing information for easy access when required. If these systems are not properly managed, several consequences should be expected. Pre-cautionary measures such as backing-up, access levels and passwords restrictions must be imposed.

3.4.1   Issue

Inadequate livestock and fisheries database management system such as:-
(i)   Human resource management system;
(ii)   Students' records management system;
(iii) Livestock identification and registration database management database;
(iv)   Livestock movement permit;
(v)   Livestock disease database management system;
(vi)   Web based fish export database management;
(vii) Catch assessment database management system;
(viii) Fisheries legislation and licensing database management system;
(ix)   Prawn fisheries database management system; and
(x)   Livestock production database management system.

3.4.2   Policy Objectives

To improve database management information systems.

3.4.3 Policy Statements

The MLFD shall enhance and streamline livestock and fisheries database management information system.

3.5 IT Skills Training

IT application requires both specialized and non-specialize skills for operators, system administrators, database administrators and users. Therefore IT skills training are necessary to optimally utilise IT.

3.5.1 Issues

(i) Necessary IT skills to optimally utilise IT are still limited for both MLFD staff and institutions affiliated to MLFD
(ii) Lack of skills related to e-learning pedagogies by IT staff

3.5.2 Policy Objectives

(i) To impart necessary basic IT skills to all MLFD staff and institutions affiliated to MLFD

(ii) To impart e-learning pedagogical skills to all IT staff.
(iii) To ensure that all IT skills given to MLFD staff and institutions affiliated to MLFD are in-line with the technological development worldwide.
(iii) To ensure newly recruited staffs have necessary IT skills.

3.5.3 Policy Statements

(i) The Ministry's shall promote and support IT skills training to staff in the Ministry and affiliated institutions;
(ii) The Ministry's shall ensure that basic IT skills are included as entry qualification to all employees to be recruited.
(iii) The Ministry's shall promote the acquisition of e-learning pedagogical to staff.
(iv) The Ministry's shall ensure that content, level and target groups for all IT skills training programmes, are in line with the technological advancement and actual training needs.

3.6 Support Systems

IT support systems are entities in IT applications that addresses proper and efficient use of IT infrastructures. They involve software applications, documented guideline and standard operating procedures, skills in maintenance and repair of IT infrastructure. There is a need to have proper support system documentation in the form of computerised and inventory list for easy troubleshooting and maintenance.

3.6.1   Issues

(i)   Lack of comprehensive documentation of the available IT support systems.
(ii) The support systems are not properly aligned towards ensuring adequate support to the core functions of the MLFD
(iii) Existing information systems are not integrated and thus reduce productivity of the systems and the staff manning the systems.
(iv) Some IT support systems are not computerised.

3.6.2   Policy Objectives

(i)   To avail a comprehensive and up-to-date documentation of the available IT support systems.
(ii) To ensure that all IT support systems are computerised.
(iii) To ensure that IT support systems are properly aligned and integrated to facilitate implementation of core functions of the Ministry.

3.6.3   Policy Statements

(i)   The MLFD shall make available a comprehensive and up-to-date documentation of IT support systems.
(ii) The MLFD shall ensure that all IT support systems are computerised.
(iii) The MLFD shall ensure that all IT support systems are properly aligned and integrated.

3.7 Research and Development

The Ministry deals with the Livestock and Fisheries industry in order to increase productivity. IT is an important tool for dissemination of research findings to stakeholders.

3.7.1   Issues

(i)   Limited access to online research findings and journals; and
(ii) Lack of IT skills to upload research findings.

3.7.2   Policy Objectives

(i)   Collaboration amongst researchers and IT experts to facilitate sharing of research findings with other stakeholders must be enhanced; and
(ii) To ensure research findings are disseminated online.

3.7.3 Policy Statements

(i) The MLFD shall collaborate with other Institution in Tanzania and rest of the world to facilitate access research findings; and

(ii) The MLFD shall collaborate with development partners to facilitate dissemination of research findings online.

3.8 Quality Control of IT Systems and Services

In order to have a functional and effective quality assured system there must be a quality control procedure. MLFD through IT unit shall ensure that all systems developed and services shall adhere to professional standards.

3.8.1 Issues

(i) Inadequate quality assurance system to ensure efficient and effective IT services;
(ii) Lack of operationalisation monitoring and evaluation (M&E) system;
(iii) Lack quality and standard control structure;
(iv) Lack of standards in hardware and software;
(v) Inconsistence IT facilities acquisition; and
(vi) Inadequate IT helpdesk support.

3.8.2 Policy Objectives

(i) To have in place functional and effective quality assurance system;
(ii) Implement measures for effective monitoring and evaluation of IT services;
(iii) Strengthen the existing quality control structure;
(iv) To establish standards for hardware and software used across MLFD;
(v) Establish consistent and systematic IT facilities acquisition; and
(vi) To strengthen IT helpdesk support.

3.8.3 Policy Statements

(i) The MLFD shall put in place a functional and effective quality assurance system;
(i) The MLFD shall put in place monitoring and evaluation systems;
(ii) The MLFD shall strengthen the existing quality control structure;
(iii) The MLFD shall establish standards for hardware and software;
(iv) The MLFD shall ensure that consistency and systematic ICT facilities acquisition is established; and
(v) The MLFD shall strengthen helpdesk support.

4.0 IT POLICY Implementation

IT department shall be the focal point in the implementation of the policy and responsible for initiating projects, implementation and monitoring. The primary tasks of this department shall be to provide MLFD

wide oversight of all IT related activities and act as a central custodian. The department in its role shall include among other things management, control and maintenance (MCM) of the IT systems, end-user support and training. The IT Policy shall be implemented using phase-wise implementation plan and shall be reviewed once every three years.

5.0 Conclusion

This policy intends to improve the overall IT environment at the MLFD. The improvement shall be done in phases depending on the availability of funds and other support resources. It is expected that the improvement shall be carried out on the basis of priorities described in the IT Master Plan. Mid term review can also be carried out to improve this policy before the end of the prescribed time.