

PROCEDURES AND GUIDELINES FOR TECHNOLOGY TRANSFER AND COMMERCIALISATION IN MALAWI





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AND COMMERCIALISATION IN MALAWI**



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ACRONYMS

CTE	Critical Technology Elements
DARS	Department of Agriculture Research Services
ID	Identity
IP	Intellectual Property
IPR	Intellectual Property Rights
IRT	Independent Review Team
MK	Malawi Kwacha
NCITTSC	National Committee on Innovations, Technology Transfer and Science Competitions
NCST	National Commission for Science and Technology
NTTO	National Technology Transfer Office
R&D	Research and Development
SARIMA	Southern Africa Research and Innovation Management Association
TMP	Technology Maturation Plan
TORs	Terms of Reference
TRA	Technology Readiness Assessment
TRL	Technology Readiness Level
TTO	Technology Transfer Office
UNDP	United Nations Development Program
WIPO	World Intellectual Property Organisation

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GLOSSARY OF TERMS

Assignment means an agreement that grants all the rights in an IP to the licensee. Under this arrangement the Licensor ceases to have any rights in the IP

Commercialization means the various ways in which businesses and researchers use the knowledge obtained from innovators, researchers, universities and research institutions to produce economic, social, and industrial progress

Copyright relates to the rights that creators have over their literary, artistic and scientific works. The works covered by copyright, include: books, music, films, paintings, sculptures, computer programs, databases, advertisements, maps and technical drawings. In addition to the rights of creators, the subject of copyright extends to what are known as neighbouring rights

Critical Technology Elements means an element that a technology being created or purchased depends on or poses a risk to the fulfilment of the desired operation of the technology or system. The CTE is new or original, or is used in an innovative or new way.

Exclusive license means a type of license contract that gives one party the right to create, produce, and market the intellectual property to the exclusion of everyone else including the licensor.

Geographical Indications means an indication which identifies goods or products as originating in the territory of a country, region or locality in that territory, where a given quality, reputation or other characteristic of a product is essentially attributable to its geographical origin and in a case where such goods are manufactured goods, one of the activities of either the production or of processing or preparation of the goods concerned takes place in such territory, region or locality, as the case may be.

Industrial Design means a form of intellectual property protection for new and original appearance of product. An industrial design may consist of a three-dimensional feature, such as a shape, or a two-dimensional feature such as patterns or lines. They are generally conferred for a period of five to fifteen years.

Innovation means implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organisation method in business practices, workplace organisation or external relations.

Institutional Technology Transfer Office means an office that is created by a research institution to facilitate the identification, value addition and transfer of intellectual property to the industry

Intellectual Property refers to creations of the mind, such as inventions; literary and artistic works; designs; symbols, names and images used in commerce

Invention means a unique or novel device, method, composition, idea or process. An invention may be an improvement upon a machine, product, or process for increasing efficiency or lowering cost. It may also be an entirely new concept.

Invention disclosure is a confidential document written by an inventor or innovator for use by a company's IP office to determine whether patent protection should be sought for the described invention.

IP Valuation means a process of determining the monetary value of subject IP

License means an agreement where an owner of IP rights (licensor) grants the second party (licensee) the right to use, make and sell such IP with or without financial consideration

Licensing sell sheet means one-page document used to pitch a technology to a possible licensee. It explains what the technology is and how it solves a problem.

Non-exclusive license means an agreement in which the licensor retains the ability to grant additional licenses to third parties while granting the other party the right to use, create, and sell the intellectual property.

Non-registrable IP means IP that does not need to be registered with a national authority in order for its inventor or creator to benefit from the rights and protection arising from such IP. Trade secret and copyright fall under non-registrable IP

Option agreement means a contract that grants the other party the right to purchase the IP at a later time in exchange for a fee.

Patent means to time limited exclusive right that is granted to protect inventions and innovations that fulfil the patentability criteria of novelty, inventive or non-obvious, and industrial applicability or useful. Patent rights are granted in return for full disclosure of the idea underlying the invention. Patent rights last for the maximum of 20 years during which time the owner of the patent is granted the ability to prevent anyone else from making, using, selling, offering for sale, or importing the invention.

Registrable IP refers to those categories of IP that must be registered with a national or regional office before an IP creator can benefit from the rights and protection provided by such national legislation for a specific category of IP. Patents, industrial designs, and trademarks are all registrable forms of IP in Malawi

Research and development means systematic activities done in order to increase knowledge and use of this knowledge in developing new products, processes and services;

Sole license means a type of license contract that gives another party the only authority to use, produce, and market the intellectual property (IP), with the exception of the licensor.

Technology Innovation means a new or improved product or process whose technological characteristics are significantly different from before.

Technology means the application of scientific knowledge to meet the goals, goods and services for sustainable development

Technology Readiness Assessment (TRA) means a rigorous, metrics-based methodology and accompanying report that evaluates the level of development and readiness of technologies. It helps identify immature and important technology components and track the maturity development of those components

Technology readiness level means a type of measurement system used to assess the maturity level of a particular technology

Technology Transfer means the process of transferring scientific findings from one organization to another for the purpose of further development and commercialization;

Trademark means signs or symbols which distinguish the goods or services of one undertaking from another undertaking. A word, word combination, letter, number, design, symbol, color, and sound are all included in a sign. Trademarks have a 20-year protection period with the option of renewal.

1 INTRODUCTION

The Science, Technology and Innovation (STI) system in Malawi is governed by the National Science and Technology Policy of 2002 and the Science and Technology Act Number 16 of 2003 which also established the National Commission for Science and Technology (NCST) to advise Government and other stakeholders on all science and technology matters in order to achieve a science and technology led development. The mission of the Commission is to promote, coordinate and regulate the development and application of science, technology and innovation in order to create wealth and improve the quality of life.

In addition, the STI sector is supported through a number of other policy frameworks which include, Malawi 2063, the National Intellectual Property Policy of 2019, National ICT Policy of 2016, National Biotechnology and Biosafety Policy of 2008, National Energy Policy of 2018, National Climate Change Management Policy of 2016 and National Agriculture Policy of 2016.

The Act stipulates that, among other functions, the Commission is responsible for:

promoting the transfer of technology through conventional methods including information exchange and training, purchase and license agreements and joint venture agreements with foreign partners in which research and development is given prominent consideration and, in support of this, establish and maintain national capacity for negotiating, monitoring and regulating technology for negotiating, monitoring and regulating technology transfer agreements; and promoting the patenting and commercialization of research results to farmers, industrialists and entrepreneurs as end-users in a manner that enhances economic diversification, competitiveness and employment generation (Section 18 (K)).

A recent study conducted by NCST on innovation and commercialization infrastructure revealed a critical gap that exist between the research community and the industry which eventually inhibits the transfer of intellectual property from research to the industry or the intended users of research results or innovations. This missing link is attributed to the absence of a clear technology transfer system anchored by a technology transfer office (TTO) responsible for identifying, protecting and commercializing intellectual property (IP) in research and development (R&D) institutions.

It is against this background that NCST through the National Committee on Innovation, Technology Transfer and Science Competitions (NCITTSC) has developed procedures and guidelines for technology transfer and commercialization in Malawi to provide directionality in the conduct of technology transfer and commercialisation.

These guidelines have been developed for use by researchers, technologists and innovators in the formal and informal sector, covering innovation spaces such as academia, research centres, hubs, accelerators, research institutions and industries.

2 GOAL

The overall goal of these procedures and guidelines is to promote, support, coordinate, and regulate technology transfer and commercialization in Malawi.

3 OBJECTIVES

3.1 General Objective

The general objective of these procedures and guidelines is to facilitate the conduct of quality technology transfer and commercialization of research results, innovations and technologies in

Malawi.

3.2 Specific Objectives

The guidelines shall serve to achieve the following specific objectives:

- 3.2.1 Define procedures for registering or accrediting technology transfer offices
- 3.2.2 Provide guidance on the operations of technology transfer offices in Malawi
- 3.2.3 Regulate the conduct of technology transfer offices in Malawi
- 3.2.4 Provide direction on the conduct of technology transfer and commercialization
- 3.2.5 Provide standards for the conduct of technology transfer in Malawi
- 3.2.6 Provide a framework for monitoring and reporting technology transfer and commercialization developments in Malawi
- 3.2.7 Promote and support capacity building in IP management and technology transfer in Malawi

4 GUIDING PRINCIPLES

- 4.2.1 Technology transfer and commercialisation undertaken in Malawi shall be demand driven in line with relevant policies;
- 4.2.2 Multi-disciplinary, open-innovation and collaborative technology transfer and commercialization drives shall be promoted;
- 4.2.3 Collaborative research and development between the industry and the research community shall be promoted;
- 4.2.4 Excellence by researchers and innovators in producing outputs that respond to industry needs shall be promoted so as to contribute to import substitution and public benefit;
- 4.2.5 Accountability and quality assurance demonstrable through technology transfer shall be promoted;
- 4.2.6 Partnership and collaboration among research institutions and industries in promoting technology transfer and commercialization shall be encouraged;
- 4.2.7 Effectiveness and efficiency of the administrative financial and technical system in the research institutions to support a successful conduct of technology transfer and commercialization shall be enhanced
- 4.2.8 Observance of ethical principles and norms in the promotion of technology transfer and commercialization.

5 NATIONAL TECHNOLOGY TRANSFER MANAGEMENT

5.1 The National Technology Transfer office (NTTO)

The National Technology Transfer Office is established by the Science and Technology Act and its secretariat is in National Commission for Science and Technology. The functions of the NTTO are as follows:

- 5.1.1 Providing guidance and direction for the registration and accreditation of technology transfer offices
- 5.1.2 Coordinate the operations of technology transfer offices in line with applicable guidelines and regulations
- 5.1.3 Provide technical support services to all stakeholders on the conduct of technology transfer and commercialization
- 5.1.4 Support institutions and innovators that, do not have and/or are not affiliated to a technology transfer office, with technology transfer services
- 5.1.5 Monitor and evaluate the developments in the technology transfer and commercialization sector
- 5.1.6 Map and maintain a network of all key stakeholders

The NTTTO is supported by National committee on Innovation, Technology Transfer and Science Competitions

5.2 National Committee on Innovation, Technology Transfer and Science Competitions

The committee is made up of selected institutions that are concerned with technology transfer in Malawi (Refer to annex 1 for the composition of the committee). The following are functions of the committee:

- 5.2.1 Promote public private-partnership in technology transfer and acquisition;
- 5.2.2 Plan and implement programmes that aim at effective dissemination, commercialization and utilization of innovations, technologies and other research results for social economic development;
- 5.2.3 Organize science fairs, awards, technology demonstrations, exhibits, competitions and field days;
- 5.2.4 Institutionalize national and regional awards to promote technological innovations;
- 5.2.5 Develop guidelines for technology transfer and commercialization;
- 5.2.6 Conduct assessment of application dossier for establishment of technology transfer office
- 5.2.7 Train entrepreneurs/business community in technology negotiation and licensing agreements;
- 5.2.8 Create mechanisms for tracking technology developments worldwide;
- 5.2.9 Identify and assess technologies and alert stakeholders of potential opportunities and threats thereby recommending strategic interventions and options;
- 5.2.10 Stimulate and carry out awareness promotion programmes on intellectual property (IP) and technology innovation among researchers, inventors and the business community;
- 5.2.11 Lobby for curriculum review to incorporate technological development and application;
- 5.2.12 Establish technology parks, innovation hubs and incubation centres;
- 5.2.13 Institutionalize and strengthen technology transfer offices in Universities and R&D institutions to facilitate patenting;
- 5.2.14 Develop programmes for strengthening capacity in technology transfer; and
- 5.2.15 Source funding for technology transfer and science awards.

6 INSTITUTIONAL TECHNOLOGY TRANSFER OFFICE

6.1 Registration of TTO

An institution wishing to establish and register a TTO shall submit the following to NCST:

- 6.1.1 An expression of interest providing the justification for establishing an Institutional TTO
- 6.1.2 A list of executive management and/or directors of the institution hosting a TTO including their qualifications and experience;
- 6.1.3 Description of the procedures, requirements and guidelines for the TTO
- 6.1.4 Financial projections for the first year
- 6.1.5 Institutional IP policy
- 6.1.6 List of full-time officers appointed as members of staff in the TTO and physical address of the TTO
- 6.1.7 Job description of the staff in the TTO

6.2 Accrediting a TTO

An entity shall have its TTO periodically accredited by NCST by submitting the following to NCST:

- 6.2.1 A dully filled accreditation form submitted under a cover letter (refer to accreditation application form in the annex 2)
- 6.2.2 A list of executive management and/or directors in charge of the TTO including their qualifications and experience
- 6.2.3 List of full time officers appointed as staff of the institutional TTO
- 6.2.4 Any written institutional policies for promoting technology transfer and commercialisation
- 6.2.5 Written evidence indicating the TTO staff having undergone some formal training/induction in technology transfer and commercialisation
- 6.2.6 At least one copy of the recent annual report of the TTO
- 6.2.7 Terms of reference (TORs) and membership of an institutional Technology Transfer and Commercialisation Committee(s), if available
- 6.2.8 Evidence of any relevant training attended by member(s) of the Technology Transfer and Commercialisation Committee
- 6.2.9 Financial statement for the previous year
- 6.2.10 Financial projections for the next financial year
- 6.2.11 Institutional IP policy
- 6.2.12 Updated technology/innovation assets portfolio as of the day of making an application (refer to annex 3 for IP asset portfolio template)

6.3 Review of Application

Upon receiving the full application dossier, the Commission shall acknowledge receipt by way of

a formal written response to the applicant. Thereafter within a period of 21 days the Commission shall undertake a formal and substantive review of the application and make determination. The review process shall include physical inspection of the proposed TTO facilities. Where need arise, the Commission may request additional information.

6.4 Issuance of Registration Certificate

The Commission, shall issue a registration certificate once it is satisfied with the application. The Registration Certificate shall be valid for 5 years.

6.5 Issuance of Accreditation Certificate

The Commission shall issue an accreditation certificate once it is satisfied with the application. The accreditation certificate shall be valid for 5 years.

6.6 Renew of Registration Certificate

At the expiry of the five-year validity period, the TTO shall apply for renewal of the certificate by submitting the following documents:

- 6.6.1 Expression of interest to renew the registration certificate.
- 6.6.2 Copy of expired registration certificate.
- 6.6.3 An annex of amendments to the standard operating procedures, staff or directors, where applicable.

6.7 Rejection of Application

The Commission reserves the right to reject an application for registration, accreditation or renewal of certificate where it has established that:

- 6.7.1 The application contains information which is misleading, erroneous, deceptive or likely to deceive;
- 6.7.2 The applicant is considered unsuitable or incapable of carrying out the obligations; and
- 6.7.3 The applicant does not meet the conditions required under the applicable laws including these guidelines.

The Commission shall inform the applicant, in writing, of the decision to reject the application, including the reasons for the rejection and option to accept upon revision, within thirty days from the date of making the decision.

6.8 Revision of Institutional Procedures and Policies for Technology Transfer

A TTO shall submit to the Commission, for approval, any revised versions of the guidelines and institutional written policies on technology transfer and commercialization.

6.9 Fees

A TTO applying for registration and accreditation shall pay the following fees:

6.9.1 Review and Registration Fee

The applying institution shall pay to the commission a non-refundable guidelines review fee

amounting to one million five hundred thousand Kwacha (MK1,500,000) and registration fee of five hundred thousand Kwacha (MK500,000).

6.9.2 Accreditation Fee

The applying institution shall pay to the commission a non-refundable accreditation fee amounting to one million five hundred thousand Kwacha (MK1,500,000).

6.9.3 Registration Certificate Fee

An Institution registering a TTO shall pay to the Commission a non-refundable fee of fifty thousand Kwacha (MK50,000) for processing its registration certificate.

6.9.4 Accreditation Certificate Fee

An Institution desiring to accredit a TTO shall pay to the Commission a non-refundable fee of fifty thousand Kwacha (MK50,000) for processing its registration certificate

6.9.5 Renewal of Certificate Fees

An Institutional TTO desiring to renew its registration shall pay to the Commission a non-refundable fee of five hundred thousand Kwacha (MK500,000) for processing its application dossier and renewed certificate.

The commission reserves the right to revise these fees from time to time.

7 FUNCTIONS OF THE INSTITUTIONAL TECHNOLOGY TRANSFER OFFICE

The TTO shall carry out the following duties and functions within the jurisdiction of the institution:

7.1 Administrative functions

- 7.1.1 Develop standard operating procedures and guidelines for the TTO in a manner prescribed by NCST
- 7.1.2 Produce and submit technical and financial reports to NCST in a manner provided for in these guidelines
- 7.1.3 Liaise with institutional management, and relevant internal and external stakeholders to maximize the uptake of research findings;
- 7.1.4 Establish an information management system to support the operation of the office,
- 7.1.5 Recruit or identify relevant personnel to handle administrative, technical, legal, marketing and capacity building services;
- 7.1.6 Develop and review knowledge and communication management strategies for individuals, researchers, inventors and innovators on technology release, transfer, and commercialization;
- 7.1.7 Maintain an institutional IP portfolio and database
- 7.1.8 Establish mechanisms for royalty collection in respect of technical know-how, patents

and other industrial property rights.

- 7.1.9 Maintain and manage administrative functions such as royalty distribution, licensee performance management and patent application management.

7.2 Technical functions

- 7.2.1 Facilitate technology maturity programs in compliance with relevant regulatory frameworks and industry needs
- 7.2.2 Offer technical training on technology transfer and Commercialization to stakeholders.
- 7.2.3 Identify and document research results, technologies and innovations that have Socio-economic value and public benefit and, document the associated discoveries through approved disclosure process.

7.3 Commercial functions

- 7.3.1 Solicit funding and propagate collaborations that aim at enhancing research and development, commercialization and uptake of technologies and innovations under its portfolio
- 7.3.2 Develop a business plan to support the operations of the TTO
- 7.3.3 Develop and implement commercialization strategies for technologies and innovations under its portfolio
- 7.3.4 Build a strong network of industry and public sector collaborators
- 7.3.5 Evaluate commercial potential of disclosed technologies, research results and innovations;
- 7.3.6 Provide support to spin-out companies
- 7.3.7 Conduct market research to identify and engage potential industry partners and off-takers the institutions' research results, technology and innovation;

7.4 Legal Functions

- 7.4.1 Facilitate acquisition of relevant intellectual property protection for IP under its portfolio
- 7.4.2 Draft Technology Transfers agreements
- 7.4.3 Negotiate contracts for transfer and commercialization of intellectual property rights
- 7.4.4 Develop institutional IPR Enforcement mechanism

8 GOVERNANCE OF TTO

A TTO shall be established as part of the parent institution, as a joint-venture with the parent institution or as a separate independent legal entity. A TTO shall have dual reporting lines: to the parent institution and to NCST.

8.1 Multi-Institutional TTO

Where two or more institutions agree through a written consent to use one TTO, they shall write to inform the Commission how the TTO will be managed. A copy of the agreement signed by all parties shall be submitted to NCST together with any other requirements for registering or accrediting a TTO as prescribed in these guidelines.

8.2 Institutions without TTO

Institutions that do not have a TTO and wish to undertake technology transfer activities, shall be affiliated to the National Technology Transfer Office at NCST. As an affiliate to the NTTO, the institution shall be required to:

- 8.2.1 Submit a letter of temporary affiliation to NCST.
- 8.2.2 Commit to a technology transfer and commercialization service agreement with NCST in any of the following areas:
 - 8.2.2.1 *Invention disclosure processing*
 - 8.2.2.2 *IP protection strategy*
 - 8.2.2.3 *Technology readiness assessment*
 - 8.2.2.4 *Technology commercialization strategies*
- 8.2.3 Designate an officer who shall be the liaison between that institution and the Commission
- 8.2.4 Remit applicable service fees to NCST that shall be charged from time to time

8.3 Committees of the TTO

8.3.1 Advisory Board:

The TTO shall put in place an advisory board. The function of the advisory board is to assist a TTO to gain business insights and discover new opportunities. The advisory board shall comprise:

- 8.3.1.1 *Practicing business person/s in the relevant technology fields of the TTO*
- 8.3.1.2 *Official/s from the relevant Government policy making arm*
- 8.3.1.3 *Member/s of the community directly affected by the TTO*

8.3.2 Institutional Technology Transfer and Commercialization Technical Committees:

The institutional technology transfer and commercialization committee of a TTO shall be made up of a team of experts that will provide technology specific technical and commercial recommendations to the management of the TTO.

Membership of the committees shall be drawn from both external and internal experts in the relevant fields. The TTO can decide to put in place more committees that are deemed necessary for the successful execution of its mission.

8.3.3 Secretariat of the TTO

The following are the minimum staffing requirements for a TTO:

- 8.3.3.1 *1 x Head of TTO (fulltime)*
- 8.3.3.2 *1 x Technology Transfer officer responsible for commercialization (fulltime)*
- 8.3.3.3 *1 x Technology Transfer officer responsible for operations (fulltime)*
- 8.3.3.4 *1 x Knowledge Management specialist (fulltime/Part-time)*
- 8.3.3.5 *1 x IP Specialist (fulltime/Part-time)*

8.3.3.6 1 x Finance manager (fulltime/Part-time)

8.3.4 Stakeholders

The TTO shall conduct mapping and maintain a network of key stakeholders necessary for achieving its objective. The stakeholders include the parties that the TTO will depend on for assistance as well as those who will directly or indirectly benefit from its operations.

9 INSTITUTIONAL TTO FUNDING

The TTO shall be financed through:

- 9.3.1 Funds allocated to it by the parent institution
- 9.3.2 Partnerships with industry
- 9.3.3 Upfront or milestone technology license payments
- 9.3.4 Royalties
- 9.3.5 Technology products sales
- 9.3.6 Technical services such as consultancies or trainings
- 9.3.7 Equity in start-up companies
- 9.3.8 Sale of equity in start-up companies
- 9.3.9 Costs splitting (for instance litigation or IP costs, office space costs)
- 9.3.10 Grants, loans, donations,
- 9.3.11 venture capital and angel funding.

10 FINANCIAL PROJECTIONS

The TTO shall keep financial projections that detail the different projected sources of income in a Government financial year, the expected expenses, the projected dividends and break-even point. These projections have to be submitted and endorsed by the management of the parent institution. The approved projections have to be submitted to NCST in the format appearing in annex 4 of these guidelines.

11 REMITTANCE TO SCIENCE AND TECHNOLOGY FUND

All Institutional TTOs shall remit five percent of its gross earnings from commercialising IP to the Science and Technology Fund established under Section 24 of the Science and technology Act No. 16 of 2003. The Fund is established for the advancement of science and technology in Malawi (Section 28 of the Act) through among others provision of grants for science, technology and innovation generation and commercialisation in Malawi. the TTO remitting to the Fund shall follow the procedures below:

11.1 Submission of Income Projections

The TTO shall submit to NCST the income projections for each financial year as per the Govern-

ment's financial calendar. The financial projections shall contain the estimated amount that will be remitted to NCST in the new financial year. The financial projections shall be submitted to the commission latest two months before the end of the financial year.

11.2 Submission of Income Statement

The TTO shall submit to NCST the income statement for each financial year as per the Government's financial calendar. The financial statements shall be submitted to the commission every quarter of a financial year.

11.3 Remittance to the Fund

The TTO shall remit sums computed to be five percent of the total gross income received by the TTO from commercialising IP to a bank account provided by the commission. The commission may issue an invoice to necessitate the payment.

12 INSTITUTIONAL TTO PERFORMANCE MATRIX

The TTO shall put in place internal measures to monitor and evaluate progress pertaining to achievement of its set goals and targets. NCST shall evaluate the performance of a TTO according to the following performance indicators:

12.1 Publicity and Awareness Indicators

- 12.1.1 Number of institutions in their local networks established
- 12.1.2 Number of IP awareness raising activities conducted
- 12.1.3 Number of TTO awareness raising activities conducted
- 12.1.4 Number of consultancies and knowledge exchange activities conducted

12.2 IP Management Indicators

- 12.2.1 Number of invention disclosures received
- 12.2.2 Number of IP registration applications made
- 12.2.3 Number of registrable IP granted
- 12.2.4 Number of Staff employed in the TTO as a ratio of the establishment
- 12.2.5 Number of people trained in IP management
- 12.2.6 Number of IP assets recorded in institutional database

12.3 Technical Indicators

- 12.3.1 Number of technology readiness assessment reports developed
- 12.3.2 Number of technologies in TMP supported
- 12.3.3 Number of technologies in the TMP released
- 12.3.4 Number of collaborative research contracts established

12.4 IP Commercialisation Indicators

- 12.4.1 Amount of revenue generated through non-IP commercialization means

- 12.4.2 Amount of revenue generated through technology commercialisation
- 12.4.3 Number of licenses concluded
- 12.4.4 Number of start-up/ spin-off companies established from institution's technology
- 12.4.5 Number of communities where technology and innovation is being used

The TTO shall submit a quarterly technical report to the Commission by the 10th day of the fourth month (see annex 5 for monitoring and evaluation template).

13 INFORMATION AND KNOWLEDGE MANAGEMENT

The TTO shall maintain an effective and efficient information and knowledge management system. The system shall provide a centralized place to store information, access it readily and streamline organizational processes.

13.1 Minimum Requirements for Information and knowledge Management Systems

TTO shall be required to have the following tools for effective management of information and knowledge:

- 13.1.1 Digital Centralized Storage system (non-Web based/ Web based) and/or
- 13.1.2 Local Area network

13.2 Information and Documents Maintained by the Information and Knowledge Management System

13.2.1 Web Based Information and Knowledge Management System

A TTO shall consider maintaining a web based systems either developed in-house or purchased with

- 13.2.1.1 *Secure – user login, and access levels*
- 13.2.1.2 *Workflow processes and alerts*
- 13.2.1.3 *Electronic document management*
- 13.2.1.4 *Report generation*
- 13.2.1.5 *Relational databases*
- 13.2.1.6 *Data integrity*

13.2.2 IP Information Documentation Tools

The TTO shall have the following tools for capturing information relating to IP

- 13.2.2.1 *Invention disclosure form*
- 13.2.2.2 *IP contributor form*
- 13.2.2.3 *Deed of IP assignment*
- 13.2.2.4 *Beneficiary form*

13.2.2.5 *IP assets database*

13.2.2.6 *Nondisclosure Agreement template*

13.2.2.7 *Patent/IP landscape report template*

13.2.3 Technical Information Documentation Tools

The TTO shall have the following tools for capturing information relating to the technical aspects of technology

13.2.3.1 *Preliminary technical evaluation form*

13.2.3.2 *Technology readiness assessment report template*

13.2.3.3 *Research and development agreement template*

13.2.3.4 *Transfer of know-how agreement*

13.2.3.5 *Material transfer agreement*

13.2.4 IP Commercialization Documentation Tools

The TTO shall have the following tools for capturing information relating to the commercialization of IP

13.2.4.1 *Business model canvases*

13.2.4.2 *Market assessment report template*

13.2.4.3 *IP commercialization strategy template*

13.2.4.4 *Business agreement template*

13.2.4.5 *License terms sheet*

13.2.4.6 *License agreement template*

13.2.4.7 *Clients and stakeholder list*

13.2.4.8 *IP Commercialization due diligence report template*

13.2.5 Financial Information Documentation Tools

The TTO shall have the following tools for capturing information relating to the finances that the TTO will be generating:

13.2.5.1 *Income and Expenditure templates*

13.2.5.2 *Benefit sharing template*

14 COMMUNICATION AND MARKETING

The TTOs shall undertake communication and marketing of its activities to its key stakeholders through mechanisms that include the following:

14.2.1 Sign post with contact details

14.2.2 Digital platforms such as social media and website

14.2.3 Print and electronic media

14.2.4 Events

15 TECHNOLOGY TRANSFER PROCESS

The Technology transfer process shall take the following steps:

15.1 Technology Identification

The TTO shall identify technologies/innovations through the following means:

15.1.1 Directly solicited: This is when the TTO makes a formal deliberate effort to make a public call for technologies or innovations.

15.1.2 Unsolicited: This is when researchers or innovators submit their projects without being requested or being formally referred.

15.1.3 Indirectly Solicited: This is when the technologies or innovations are identified by the TTO in the course of their day-to-day duty or through affirmative action. The TTO shall prescribe:

15.1.4 The office where such technologies or innovations shall be reported.

15.1.5 A format for reporting such technologies or innovations. This could be through filling in a brief electronic or print form.

15.2 Invention Disclosure

The TTO shall require a duly filled invention disclosure form from the innovator or technologist (herein after “applicant”) for support (see annex 6 for contents of an invention disclosure form). The invention disclosure form shall be confidential to both parties. Upon receiving the invention disclosure form, the TTO shall:

15.2.1 Examine required content and attachments in terms of compliance and completeness

15.2.2 Assign reference number for the disclosure

15.2.3 Compile biodata of the inventor/s, contact details, IP contributors and list of beneficiaries to the royalties in the event of the inventor’s demise.

15.2.4 Open an electronic and hard copy file

15.2.5 Circulate a notification of invention disclosure to the TTO staff members and internal review team

15.2.6 Acknowledge receipt to the applicant within ten working days

15.3 Preliminary Assessment

The TTO shall conduct preliminary assessment of invention disclosure to examine the commercial, public benefit and patentability potential of the subject matter (refer to annex 7 for preliminary assessment form).

The assessment shall be conducted by a team comprising staff with technical expertise in the field of science and business environment. A preliminary assessment report shall be submitted to TTO management within 10 working days.

Having examined the preliminary assessment report the TTO management shall make a decision on whether to reject or admit the technology into its portfolio for full assessment. TTO shall inform the applicant about its decision in writing.

15.4 Full Assessment and Due Diligence

The full assessment and due diligence shall be conducted by a team of experts in the relevant science field, business, and intellectual property. Upon completion, the assessment team shall submit a full assessment and due diligence report to TTO management. The report shall contain the following:

- 15.4.1 Description of the technology
- 15.4.2 Value proposition
- 15.4.3 Market information
- 15.4.4 Economic & social benefit
- 15.4.5 IP position and Freedom to Operate
- 15.4.6 Technology Maturation Requirements
- 15.4.7 Commercialization Pathways
- 15.4.8 Possible Risks obstacles
- 15.4.9 Inventors/team
- 15.4.10 Conclusion and recommendations

Upon receiving and examining the full assessment and due diligence report, the TTO management and Directors shall decide whether to invest in the technology or not. The TTO shall inform the applicant of its decision in writing.

15.5 Technology Admission

The TTO and the applicant shall enter into a service level agreement that specifies obligations of either party. The TTO shall acquire authority from the applicant to file for IP protection and, enforce the IP rights. This authority may be stipulated in the IP policy for the institution or, through a deed of assignment of IP rights.

15.6 IP Protection

The TTO shall file for IP protection for the technology in accordance with the recommendations contained in the full assessment and due diligence reports. The TTO shall protect IP by use of any of the following IP regimes: Patents, Utility models (where applicable) Industrial Design, Trademarks, Geographical Indications, Trade Secrets Copyright, and Plant Breeders rights. The TTO shall file for IP protection either independently or through a registered IP agent. The TTO shall follow the procedures below to protect and manage IP:

15.6.1 Carryout Prior Art Search

The TTO, shall conduct in-depth search for prior art in all conceivable databases to determine whether the invention is new or unique over what already exists in the prior art or that the IP can be exploited without infringing on third parties' rights. The search shall be conducted through a designated office at the institution or through an agent. A search report shall be produced and submitted to the TTO management.

15.6.2 Develop Technology IP Protection and maintenance strategy

The TTO shall develop an IP protection and maintenance strategy that stipulates: The IP regimes in which protection will be obtained; territories in which protection will be sought; IP that will be prioritised for protection; the procedure for enforcing the rights. The IP protection strategy shall make part of the full assessment and due diligence report stated in section 14.4 of these guidelines.

15.6.3 Identify Competent Personnel to Draft Application for IP Protection

The TTO shall identify competent personnel to draft the application for IP protection. The team shall be drawn from internal expertise or external professionals. The TTO shall enter into a non-disclosure agreement with the drafting team.

15.6.4 Draft Application for Protection

The TTO shall, through the drafting team and in consultation with the applicant, draft an application for protection of registrable IP (patents, industrial design, trademarks, geographical indicators, plant breeders).

15.6.5 File for Protection

The TTO shall file for IP protection in a prescribed manner with appropriate forms and fees through the designated IP offices for national, regional and International protection.

15.6.6 Technology Launch Plan

The TTO shall develop, in consultation with stakeholders a launch plan that stipulates the steps that the TTO shall undertake to get the technology to the market.

15.6.7 Monitoring and Evaluation

The TTO shall develop monitoring and evaluation tools for assessing technology performance at various stages of its development cycle and application.

16 IP AUDIT

The TTO shall carry out periodic audit of the institution's IP assets whose purpose is to uncover under-utilised IP assets; determine value of its most important IP; identify threats to the TTOs bottom line; enable business planners to devise informed strategies that will maintain and improve the company's market position.

17 TECHNOLOGY READINESS ASSESSMENT

The TTO shall conduct a technology readiness assessment (TRA) to determine the quality and market readiness of the technology. The TTO shall identify technically qualified subject matter experts (SMEs) to form an independent review team (IRT) that shall conduct the TRA. Where necessary, the IRT shall co-opt other specialist to be part of the team.

The TRA shall be conducted at agreed intervals throughout the technology development or acquisition cycle. The IRT shall submit its report to TTO (see annex 8 for TRA report format).

A summary of the TRA shall make part of the full Assessment and Due Diligence report stated in section 14.4 of these guidelines.

17.1 Technology Readiness Levels (TRL)

As part of TRA process, the IRT shall determine the TRL of the technology. The TRL shall be determined based on a TRL calculator endorsed by the TTO management. A report on the TRL assessment shall make part of the TRA (see annex 9 for customizable TRL calculator).

18 DEVELOPMENT OF TECHNOLOGY MATURATION PLAN (TMP)

The TTO shall put in place a technical team that will provide support, where necessary, to the applicant in developing a technology maturation plan (TMP) that details the steps that need to be taken to bring the technology to market readiness, the associated expenses and risks. The technical team shall present the TMP report to the TTO management (see annex 10 for the TMP format).

19 TECHNOLOGY COMMERCIALIZATION STRATEGY

Prior to commercializing a technology, the TTO shall develop a commercialization strategy. The following factors shall be considered when developing a technology commercialisation strategy: Technology maturity and; the capacity of the interested entity intending to adopt new technology and the entity' commercialization goal.

The strategy shall include the following:

- 19.1.1 The technology's positioning in relation to competing technologies.
- 19.1.2 A thorough technical market valuation, including competitor and opportunity assessments (market size, characteristics).
- 19.1.3 The recommended method for bringing the technology to market (start-up, licensing or a combination).
- 19.1.4 The business model (how the TTO organization creates, delivers, and captures value, in economic, social, cultural or other contexts).
- 19.1.5 Financial calculations including the budget required for technology development, commercialization and projected income from the technology.
- 19.1.6 Implementing team.
- 19.1.7 Detailed work plan.
- 19.1.8 Risk assessments.

The TTO shall facilitate commercialization of technology through any of the following methods: licensing (including franchising or distributorship), assignment, donation and creation of a new venture.

19.1 Licensing and Assignment

A TTO wishing to license or assign technology shall follow the procedure below:

19.1.1 Conduct IP valuation

The TTO shall conduct IP valuation to determine the present value of the IP asset prior to initiating assignment discussions.

The TTO shall use any of the following IP valuing methods or a combination: Cost method, market method, income method, and 25% "Rule of Thumb." Annex 11 presents the different scenarios for conducting IP valuation.

19.1.2 Identify Possible licensees or assignees

The TTO shall identify credible licensees through a call for expression of interest or targeted approach. The TTO shall perform due diligence of the possible licensees to ascertain their credibility and capacity.

19.1.3 Develop a licensing Sell Sheet

The TTO shall develop a licensing sell sheet with which it shall use to market the technology to prospective licensee or assignee.

19.1.4 Prepare a Terms Sheet

The TTO shall prepare a licensing or assignment terms sheet which sets out the basis for negotiations between the TTO and the prospective licensee or assignee.

19.1.5 Put in place a Negotiation Team

The TTO shall constitute a team with relevant negotiation skills and knowledge of the business environment, IP and the technology to form a negotiation team for a license or assignment. The TTO management shall select a chairperson of the team.

The TTO shall exclude the inventor in the composition of the negotiation team.

19.1.6 Negotiate License Agreement

The TTO through the negotiation team shall discuss with the prospective licensee the terms of the license agreement. (Refer to annex 12 for licensing terms).

19.1.7 Collect and distribute royalties

The TTO shall collect royalties and upfront lump sum fees from the licensee in a manner stipulated in the license agreement. The TTO shall distribute the royalties to beneficiaries as described in the institutional IP policy and IP contributor form.

19.1.8 Royalty Rates

The TTO shall negotiate a royalty rate of not more than ten percent (10%) of the gross sales of the technology.

The TTO shall submit to the Commission the agreed royalty rates for licensing deals to enable the Commission compile market license rates in Malawi.

19.1.9 Upfront Payment

As part of the licensing agreement, the TTO shall enforce an upfront lump-sum payment. The TTO shall agree with the licensee the intervals in which the lump sum can be paid. However, the TTO shall exercise flexibility in negotiating the lump-sum figure.

The upfront payment shall be determined based on any of the following parameters:

19.1.9.1 20% of the technology's present value.

19.1.9.2 The equivalent of the first three years' earnings.

19.1.9.3 A fixed sum not less than MK1 million for patents (this depends on several factors such as the perceived value of the technology).

19.1.9.4 The amount that the TTO paid to push the technology to a TRL acceptable for the licensee, including acquiring patent.

19.2 Formation of a New Venture

A TTO desiring to form a new venture for commercializing technology shall undertake the following:

19.2.1 Conduct preliminary assessment

The TTO shall conduct preliminary assessment of the viability of forming a new venture. The TTO shall design a business model canvas for the proposed new venture.

19.2.2 Conduct full feasibility assessment

The TTO shall conduct a full feasibility of the new venture in terms of: product development, market, financial management and operational capacity.

19.2.3 Conduct process prototyping and testing

The TTO shall conduct prototyping and testing of the:

19.2.3.1 product manufacturing processes

19.2.3.2 Product distribution and sales process

19.2.3.3 Product marketing and customer relations process

19.2.3.4 Business operations

19.2.4 Develop a Business Plan

The TTO shall develop a business plan for the new venture that will provide the following details:

19.2.4.1 Company Description

19.2.4.2 Business Opportunity

19.2.4.3 Competition Analysis

19.2.4.4 Target Market

19.2.4.5 Product Manufacturing Plan

19.2.4.6 Sales and Distribution Plan

19.2.4.7 Marketing and Customer relations plan

19.2.4.8 Financial Projections

19.2.4.9 Team Composition

19.2.4.10 Risks and Mitigation measures

19.2.4.11 Funding Requirements

19.2.5 Facilitate Registration

The TTO shall facilitate registration of the new venture in accordance with the relevant Business Registration Acts and Regulations of Malawi.

19.2.6 Provide Growth Support

The TTO shall support growth of new venture by providing any of the following support services:

19.2.6.1 Provision of business idea communication tools

19.2.6.2 Technical capacity building for developing business and marketing tools

19.2.6.3 Coaching and mentorship on financial and business management

19.2.6.4 Provision of business incubation space

- 19.2.6.5 *Legal advice regarding IP and technology transfer contracts*
- 19.2.6.6 *Creating networking opportunities with businesses and markets*
- 19.2.6.7 *Technology development space and infrastructure*
- 19.2.6.8 *Office space and human resource*
- 19.2.6.9 *Funding negotiation, acquisition and linkages to financial resources*

20 TECHNOLOGY TRANSFER-RELATED ISSUES IN INSTITUTIONAL IP POLICIES

In developing the institutional IP policy, the following shall be covered:

- 20.2.1** Alignment of the policy with National IP policy
- 20.2.2 Alignment with the mission of the Parent Institution
- 20.2.3 Ownership of IP rights covering the following scope:
 - 20.2.3.1 *IP created within the scope of employment*
 - 20.2.3.2 *IP created through Collaborative Research Projects*
 - 20.2.3.3 *IP created in Contract Research*
 - 20.2.3.4 *IP created by employees pursuing research activities at other institutions*
 - 20.2.3.5 *IP created by visiting researchers or employees*
 - 20.2.3.6 *IP created in the course of forming a spin out/in venture*
 - 20.2.3.7 *IP created by Students.*
- 20.2.4 The designated Office that is responsible for coordinating and promoting intellectual property matters.
- 20.2.5 Obligation for researchers to disclose IP and the procedures for undertaking the disclosure.

- 20.2.6 Acquisition, protection and transfer of institutions' IP
- 20.2.7 Protection of Confidential Information/Know- How
- 20.2.8 Commercialisation of Institution's Intellectual Property
- 20.2.9 Benefit Sharing
- 20.2.10 Non-monetary benefits and incentives



ANNEX 1:

COMPOSITION OF NATIONAL COMMITTEE OF INNOVATION, TECHNOLOGY TRANSFER AND SCIENCE COMPETITION

The committee is composed of the following institutions:

1. Copyright Society of Malawi;
2. Registrar General Department;
3. National Economic Empowerment Fund;
4. National Council for Higher Education;
5. Malawi Confederation of Chambers of Commerce and Industry;
6. Inventors Association of Malawi
7. Small and Medium Enterprises Development Institute;
8. Technical, Entrepreneurial and Vocational Education and Training Authority (TEVET);
9. Department of Agricultural Research Services;
10. Malawi investment and Trade Centre.



ANNEX 2:

TECHNOLOGY TRANSFER OFFICE ACCREDITATION APPLICATION FORM

Please send your completed and signed application to:

Director General,

National Commission for Science and Technology,

P/Bag B303, Lilongwe 3. Email: directorgeneral@ncst.mw

APPLYING INSTITUTION CONTACT DETAILS

Institution Name	
Institution Address	
Office Phone number	
Office email	
Website url (optional)	

CONTACT PERSON DETAILS

Name	
Position	
Address	
Phone number	
Office email	
Website url (optional)	

ACCREDITATION CHECKLIST

(Please ensure that the following are enclosed together with your application letter. Please tick in the applicable column)

	YES	NO
A cover letter expressing interest to have the TTO accredited		
A dully filled Accreditation form submitted under a cover letter (Accreditation Form in the Annex)		
Proof of payment of accreditation fees		

A list of executive management and/or directors in charge of the TTO including their qualifications and experience		
List of full time officers appointed as staff of the institutional TTO		
Any written institutional policies for promoting technology transfer and commercialisation		
Written evidence indicating the TTO staff having undergone some formal training/induction in technology transfer and commercialisation		
At least one copy of the recent annual report of the TTO		
Terms of reference (TORs) and membership of an institutional Technology Transfer and Commercialisation Committee(s), if available		
Evidence of any relevant training attended by member(s) of the Technology Transfer and Commercialisation Committee		
Financial statement for the previous year		
Financial projections for the next financial year		
Existing Institutional IP policy		
Updated technology/innovation assets portfolio as of the day of making an application (refer to annex for the template)		

Submitted by: _____

Position: _____

Signature: _____

Date: _____



ANNEX 3:

INTERNAL IP ASSET PORTFOLIO TEMPLATE

IP Asset	Title	Internal IP ID no.	Reg. Number	Country/Region	Priority date	Date of renewal	Expiry date	IP validity period	Extent of use	Importance rating	Estimated value (MK/\$)	Comment



ANNEX 4:

FINANCIAL REPORT TEMPLATE FOR SUBMISSION TO NCST

[NAME OF TTO]				
INCOME STREAM	BUDGETED (MK)	ACTUAL INCOME	VARIANCE	VARIANCE %
Funds allocated by the R&D institution				
External Grants from other sources (specify)				
Collaborative research funds				
Upfront payment/milestone from licensee				
Royalties				
Technical support services (eg trainings, consultancies)				
Income from spin-off companies				
Others (specify)				
Total Income				
EXPENDITURE	BUDGETED (MK)	ACTUAL INCOME	VARIANCE	VARIANCE %
1. Operating costs				
<i>a. Administrative</i>				
<i>b. Technical</i>				
<i>c. Entrepreneurial</i>				
<i>d. Legal/contractual</i>				
<i>e. Remittance to S&T fund (5% of income)</i>				
<i>f. Others (specify)</i>				
Total Operating Expenditure				
Operating Profit/loss (Total income – Total Expenditure)				

Report prepared by: _____

Signature: _____

Checked by
(Head of department or TTO): _____

Submitted by
(Head of Institution): _____

(Date of Submission): _____



ANNEX 5:

LOGO OF REPORTING TTO

NARRATIVE REPORT FORMAT FOR SUBMISSION TO NCST

[TITLE OF THE REPORT]

[REPORTING PERIOD]

Submitted by:

[NAME OF SUBMITTING TTO]

TITLE:

- 1) **INTRODUCTION** (*provide a brief introduction to the reporting period, the activities that were planned for that period, and the areas that the report will cover*)

- 2) **ACHIEVEMENTS** (*Provide a narration of the activities that the TTO was able to accomplish during the reporting period, and the reasons for the success. Where applicable provide quantifiable success factors both financial and non-financial*)

- 3) **CHALLENGES** (*Provide a narration of the activities that the TTO was unable to accomplish during the reporting period. Where applicable provide quantifiable success factors both financial and non-financial*)

- 4) **LESSONS LEARNT** (*Provide any lessons that the TTO has learnt from executing its activities in the reporting period, whether positive or negative*)

- 5) **RECOMMENDATIONS** (*Provide a narration of the lessons that the TTO has learnt during the reporting period activities that the TTO was unable to accomplish during the reporting period. Where applicable provide quantifiable success factors both financial and non-financial*)

- 6) **OPPORTUNITIES** (*please describe the opportunities that the TTO envisages going forward and how it plans to leverage on the same*)

- 7) **PLANNED ACTIVITIES** (*Please describe the activities the TTO plans to implement in the next quarter*)

- 8) **CONCLUSION** (*please provide a summary of the report, lessons learnt, planned activities. This section can also include any recommendations*)

Report prepared by: _____

Signature: _____

Checked by (Head of department or TTO): _____

Submitted by (Head of Institution): _____

(Date of Submission): _____



ANNEX 6:

MONITORING AND EVALUATION TEMPLATE FOR SUBMISSION TO NCST

Name of Reporting Institution	
submitted by	
Date	
Reporting period	

Reporting Area	Indicator	Baseline	Target in the reporting period (quantity)	Achieved (quantity)	Brief Description of the achievement	challenge	Opportunity	Planned Activity
Awareness Raising	Number of networks established							
	Number of IP awareness activities undertaken							
	Number of TTO awareness raising activities undertaken							
	Number of consultancies or knowledge exchange programs							
	Number of Publications pertaining to technology/innovation under the TTO's portfolio							

Report prepared by: _____

Designation: _____

Signature: _____

Submitted by (Head of TTO): _____

Signature: _____

(Date of Submission): _____



ANNEX 7:

LOGO OF REPORTING TTO

ANNEX 7: CONTENTS OF AN INVENTION DISCLOSURE FORM

The invention disclosure form shall have the following key contents:

1. **Bibliographic information about the technology:** This shall include:
 - 1.1. the name,
 - 1.2. date it was conceived,
 - 1.3. the scientific field it applies such as engineering, agriculture, ICT and others.
2. **Bibliographic information about the inventor:** This information shall include:
 - 2.1. the name of the inventor,
 - 2.2. location,
 - 2.3. contact details among others.
3. **IP contributors form:** Under this section the inventor provides information concerning all who made significant contribution to the development of the invention. The information shall include:
 - 3.1. the name,
 - 3.2. contact details, and
 - 3.3. the description of the contribution that each member made to the work calculated in percentage
4. **Technology Description:** Under this section the inventor shall describe in detail:
 - 4.1. what the invention is,
 - 4.2. what it does,
 - 4.3. how it works
 - 4.4. the problem it solves.
 - 4.5. How novel/unique is it. The description shall include well labeled diagrams where applicable.
5. **Competitive advantage:** Under this section the inventor shall describe the competi-

tor's technologies or prior art, processes or services which attempt to address similar problem and the advantages and benefits of the invention over those of the competitor or prior art.

6. **Commercial application:** Under this section the inventor shall describe where the technology can be applied, for instance in hospitals or farms. The inventor shall describe the community or sectors that cares about the invention, the companies that would use it and the estimate quantification of potential users in the target geographic markets.
7. **Stages of development:** The inventor shall outline the stage at which the invention has been developed.
8. **Public disclosure:** Under this section the inventor shall provide details of any public disclosures of the invention including publications, theses, posters, presentations, abstracts, submitted manuscripts and patents. The information shall include the dates when the disclosure was made, the type of disclosure, aspects of the invention disclosed and details or reference of the conference/paper/journal where the disclosure was made. The inventor shall attach copies or transcripts of the disclosures.
9. **Sources of Funding:** inventor shall list any funding received by the date of filling in the disclosure which has contributed to the development, protection or commercialization of the invention. This section shall further contain information on the prospective sources of funding. The information shall include the name of the sponsor, whether it is public or private funder, the amount of cash or in-kind sponsorship, and the contact information of the funder for reference.
10. **Commercialization Opportunities:** In this section the inventor shall lists any companies that he or she think might be interested in using or commercializing the invention or sponsoring further research or that he or she has engaged before, or if he or she has a start-up company meant to commercialize the invention.
11. **Material Transfer:** In this section the inventor shall provide a list of the tangible materials obtained from individuals other than inventors listed above or from organizations other than the research institution. The details shall include the material used, when it was obtained and also attach any material transfer agreement that was entered for the purpose.
12. **Ownership:** under this section the inventor shall declare who the owns IP in the invention and if any third parties have any rights to the invention and provide details of such parties and their involvement in developing the invention.
13. **Declaration:** Under this section the inventor makes a declaration to the truthfulness of the information provided.
14. **Confidentiality:** under this section the TTO shall commit to keep the information shared with it confidential.



ANNEX 8:

PRELIMINARY ASSESSMENT FORM TEMPLATE FOR TECHNOLOGY

Name of Reviewer	
Date of Review	
Name of Institution Submitting an Application Dossier	
Signature of the Reviewer	

The following aspects shall be considered when assessing the technology:

Assessment Factor	Assessment Criteria	Score	Weight
1. Market Potential	1.1. The ability of the technology to address an unmet industry need 1.2. Estimated market size for the technology 1.3. The competitive advantage 1.4. The cost of production 1.5. Projected time to get the technology to the market 1.6. Level of financial investment risk 1.7. Potential barriers to enter market		25%

2. Technology Development	2.1. The performance 2.2. Ease of use 2.3. Ease of replication 2.4. Production time per unit 2.5. Ease of acquiring raw materials 2.6. Design quality		30%
3. Public Benefit	3.1. Employment creation 3.2. Environment conservation 3.3. Access to basic human necessities such as food, clothing, housing 3.4. Improved access to social services such as health, education 3.5. Empowerment of minority social groups 3.6. Import substitution		25%
4. IP protection and Compliance with Regulations in the Technology field	4.1. Patentability (based on prior art/novelty search) 4.2. Trade secret 4.3. Utility model 4.4. Trademark 4.5. Geographical indication 4.6. Industrial design 4.7. Compliance with relevant regulations in the field of science		20%
	Total Score		100

Reviewer's Comment/Recommendation:



ANNEX 9:

TECHNOLOGY READINESS ASSESSMENT (TRA) REPORT FORMAT

1. **INTRODUCTION** (Briefly state who requested the TRA, what organization is responsible for conducting the TRA, and what technology is to be assessed. State where the technology is being developed (i.e., facility, site).
2. **PURPOSE** (Briefly state the objective of the TRA. Specifically, state how the customer will use the results from the TRA. Additionally, state any other drivers for conduct of the TRA (e.g., Critical Decision milestone support, technology down select support).
3. **TECHNOLOGY BACKGROUND** (Provide a general description of the technology and the project supported by the technology. The description should include details regarding the function that the technology accomplishes for the project and a brief summary of status of the technology development. Additionally, summarize the results of any previous TRAs conducted on the technology).
4. **TRA TEAM**

TRA Team	Title	Company/ organization	Name	Area of Expertise
Team lead				
Team secretary				
Team member				
Team member				
Team member				

Note: the team members may be added where necessary

5. **TRA PROCESS** (Provide an overview of the approach used to conduct the TRA. Reference applicable planning documents. The approach shall include steps undertaken to identify of technology elements or modules that are critical for the successful deployment of the technology or that pose a risk to the technology)
6. **RESULTS** (Provide the following for each technology assessed):
 - 6.1. Function (Describe the technology and its function).
 - 6.2. Relationship to Other Systems (Describe how the technology interfaces with other systems)
 - 6.3. Development History and Status (Summarize pertinent development activities that have occurred to date on the technology).
 - 6.4. Relevant Environment (Describe relevant parameters inherent to the technology or the function it performs).

- 6.5. Comparison of the Relevant Environment and the Demonstrated Environment (*Describe differences and similarities between the environment in which the technology has been tested and the intended environment when fully operational*).
- 6.6. Assessment Methodology (*briefly describe the method that was used to assess the technology*)
- 6.7. Assessment tools (*briefly describe the tools that were used to assess the technology*)
- 6.8. Technology Readiness Level Determination (*State the TRL determined for the technology and provide the basis justification for the TRL.*
- 6.9. Recommendation (*State the recommended developments that need to take place on the technology and possible risks (if available) and how they can be mitigated*)).

Note: do this for every technology being assessed

7. ESTIMATED COST
8. CONCLUSION



ANNEX10:

TECHNOLOGY READINESS LEVEL CALCULATOR

SECTION A: ABOUT THE REVIEWER

Name of Reviewer	
Organization	
Position	
signature	

SECTION B: ABOUT PREVIOUS REVIEWS

Starting TRL	
Anticipated TRL	
Date of Review	

SECTION C: TRL ASSESSMENT FORM

Technology Readiness Level (TRL)	Description	Assessment Questions	Reviewer's assessment (Y=Yes, N=No, N/A=Not applicable)	Remarks
1	Basic Principles are observed and reported	Do rough calculations support the idea? Do basic principles (physical, chemical, mathematical) support the concept? Do paper studies confirm basic scientific principles of new technology? Has a scientific methodology or approach been developed?		
Has TRL 1 been achieved? (note a TRL is achieved when all the answers are yes)				
2	Technology concept and/or application is formulated (concept formulation)	Has the application of the technology been identified? Have paper studies confirmed the feasibility of applying the technology? Has a design for the technology been identified? Have basic parts of the technology been identified? Have the characteristics of the technology been identified? Have performance predictions for each part of the technology been documented? Has the process of generating the functional requirements for the technology started? Does preliminary analysis confirm basic scientific principles of the technology? Have research protocols for the technology been developed?		
Has TRL 2 been achieved? (note a TRL is achieved when all the answers are yes)				

3	Critical function or proof of concept established. At this stage active R&D is initiated. The studies can include analytical or physical experiments to validate the concept established in TRL 2.	Have calculated predictions of the technology components' capability been validated?		
		Can all science applicable to the technology be modeled or simulated?		
		Do experiments or modeling and simulation (M&S) validate performance predictions of the technology?		
		Do experiments verify the feasibility of applying the technology?		
		Do paper studies indicate that the technology can be integrated into the intended system?		
		Have the prospective performance metrics, operational environment and applications of the technology been identified?		
		Has scientific feasibility of the proposed technology been fully demonstrated?		
		Does analysis of present technologies show that proposed technology or system fills a capability gap?		
		Has TRL 3 been achieved? (note a TRL is achieved when all the answers are yes)		

4	<p>Component/breadboard developed and validated in a laboratory environment. (small scale/ugly looking prototype is developed).</p> <p>At this stage, basic technological elements involved in an invention are integrated to establish that the pieces will work together to achieve concept-enabling levels of performance at the level of a component and/or breadboard. Validation at this stage is relatively low fidelity compared to the eventual system application.</p>	<p>Has performance of individual components of the technology been characterized?</p> <p>Have components compatibility been demonstrated?</p> <p>Does the technology demonstrate basic functionality as anticipated in the studies?</p> <p>Has performance of individual components of the technology and, interfaces between different components been understood and documented?</p> <p>Has a prospective application been identified and defined in sufficient detail in terms of expected operational environment, performance requirements, and constituent technologies?</p> <p>Do the studies verify that the new technology can satisfy the requirements of the prospective applications?</p> <p>Have performance characteristics of the technology been demonstrated in a laboratory environment?</p> <p>Have low-fidelity assessments of the engineering and, integration of the technology into a system been completed?</p> <p>Based on the results, is there a viable path forward that would lead the experiment and/or demonstrations forward to the envisioned future application?</p>	
Has TRL 4 been achieved? (note a TRL is achieved when all the answers are yes)			

5	Component/breadboard is validated in relevant environment. Basic technology components are integrated with reasonably realistic elements so that it can be tested in simulated laboratory environment.	<p>Have internal interface requirements of the system been documented? Has analysis of internal interface requirements of the system been completed? Can all system specifications be simulated and validated within a laboratory environment? Is the laboratory environment in which the system is being tested of “high-fidelity”? Have functions of the individual components in the integrated system been verified through testing? Have the requirements for the integrated system’s operational objectives and performance threshold been developed?</p>	
<p>Has TRL 5 been achieved? (note a TRL is achieved when all the answers are yes)</p>			
6	System or subsystem model is demonstrated in a relevant environment. At this stage the technology is integrated into a system that will embody the technology and tested in an environment with relevant characteristics.	<p>Has the new system (or subsystem) that incorporates the new technology been clearly described and modeled? Have system integration issues been addressed? Is the operational environment for the system fully known? Have performance characteristics of the system been verified? Has system been tested in a simulated operational environment in the laboratory? Has system been rigorously tested in realistic environment outside the laboratory? Has system engineering feasibility been fully demonstrated?</p>	
<p>Has TRL 6 been achieved? (note a TRL is achieved when all the answers are yes)</p>			
7	The system is demonstrated in an actual operational environment (field demonstration). The prototype should be near or at the scale of the planned operational system.	<p>Have all system interfaces been tested individually under stressed and anomalous conditions? Has system been tested in a relevant environment (field demonstration)? Are available components/parts of the system or technology a representative of production components/parts?</p>	
<p>Has TRL 7 been achieved? (note a TRL is achieved when all the answers are yes)</p>			

8	The System is fully developed, tested, and qualified (with all manufacturing issues resolved). The system is incorporated into a commercial design and a commercialization-ready system is demonstrated	Are all design, form, fit, and function of the system defined and integrated?	
		Is system design, form, fit, and function compatible with operational environment?	
		Has technology or system design, form, fit, and function been demonstrated in an operational environment?	
		Has a production unit (i.e., the actual subsystem or system deliverable from the project) been fully described and successfully manufactured?	
		Has the specific system in which the technology is to be used been defined with sufficient fidelity to allow accurate cost estimates?	
		Has a production unit been qualified to the satisfaction of one or more customers?	
		Have all technology development standards been demonstrated and verified by relevant standard setting institutions such as Malawi Bureau of Standards	
		Has TRL 8 been achieved? (note a TRL is achieved when all the answers are yes)	
9	Proven commercial system is available and ready for full deployment to consumers. TRL 9 is demonstrated by the successful launch and operation of the new system.	Does technology or system function as defined in Operational Concept document?	
		Is the new unit (subsystem or system) being produced at the levels of performance, cost, quality, reliability, etc. that were originally anticipated?	
		Are any previously unforeseen barriers to cost effective manufacturing of high-quality units been eliminated?	
		Has technology or system been deployed in intended operational environment?	
		Has technology or system been fully demonstrated in the intended market?	
		Has standards compliance tests been successfully completed according to relevant standards regulations?	
		Has TRL 9 been achieved? (note a TRL is achieved when all the answers are yes)	



ANNEX 11:

ANNEX 11: TECHNOLOGY MATURATION PLAN FORMAT

1. INTRODUCTION

- 1.1. Purpose of the project (*Provide a brief summary of the project's mission, status, technology(s) being deployed, etc.*)
- 1.2. Purpose of the Technology Maturation Plan (*Describe the objectives and content of this TMP and relate it to the status of the project.*)

2. TECHNOLOGY ASSESSMENTS OF THE PROJECT

- 2.1. Summary of previous Technology Readiness Assessment (*Summarize any previous or other technical readiness assessment or intellectual property that may have contributed to the need for this Technology Maturation Plan. Include the definition of Technology Readiness Levels (TRLs) as used in the Technology Readiness Assessment (TRA). Provide a list of elements that have been considered very critical for the successful undertaking of the technology. Herein referred as critical technology elements (CTE).*)
- 2.2. Technology Heritage (*Summarize the previous technology development activities that brought the technology to its current state of readiness.*)
- 2.3. Current Project Activities and Technology Maturation (*Describe ongoing technology development activities (if any) that were initiated prior to this TMP. Completion of these activities should define the starting point for this TMP.*)

3. MANAGEMENT OF TECHNOLOGY MATURITY (*Indicate the organizations/individuals that will be responsible for managing the activities described in this TMP. Include a brief discussion of key roles and responsibilities. Use table below*)

ROLE	DESCRIPTION	NAME	ORGANISATION
<i>Project Coordinator</i>			
<i>Project Monitoring and evaluation specialist</i>			
<i>Project Technical Leader</i>			
<i>Project Design and Manufacturing lead</i>			
<i>Project Program and Customer relations lead</i>			
<i>Project Secretary/ies</i>			
<i>Principal Investigator (preferably the innovator)</i>			
<i>Co-investigator, Laboratory</i>			
<i>Co-investigator, Field</i>			
<i>Data Collector</i>			
<i>Research assistant (s)</i>			

TECHNOLOGY MATURATION APPROACH (*Describe the approach used in defining the required technology development activities that will be conducted as described in this TMP. These could include evaluating incomplete criteria in the TRL Calculator, risk assessments, and value engineering (value engineering these are activities done to improve value while reducing the costs).*)

4. SPECIFIC TECHNOLOGY MATURATION PLAN FOR CTEs

Tech. ID	NAME
CTE 1	
CTE 2	
CTE 3	
CTE 4	

Specific TMPs for each CTE will be described following the format below for each CTE that was defined in the latest TRA.

5. CTE 1:

- 5.1. CTE description (*Describe the function that the CTE carries out in the technology.*)
- 5.2. Objective (*state the specific objective of the CTE*)
- 5.3. Current state of art (*Describe in one paragraph the current status of the CT, thus what it is able to do and the gaps, including the specific TRL assigned in the latest TRA.*)
- 5.4. Technology Development Approach (*In paragraph form, describe the needed technology development work to reach the next TRL. Eg if the technology is currently on TRL 4, please state the approach to move from TRL 4 – 5, and then 5-6*)

Note: you can add more CTEs where relevant

Development approach: TRL (state current TRL) to (State the next TRL)(repeat this for each TRL level you need to accomplish)

Test approach <i>(to be completed before starting the work)</i>							
Test ID	Test Question	Steps to be executed	Requisite equipment	Duration	Responsibility	Expected Result	Estimated cost
1							

6. **EXPECTED RISKS AND MITIGATION MEASURES** *(here you list the potential risks in conducting the test and the mitigation measures that have been planned)*
8. **CONCLUSION AND RECOMMENDATION** *(Provide and briefly discuss a high-level schedule of the major technology development activities for each CTE. Any major decision points such as proceeding with versus abandoning the current technology, selection of a back-up technology, etc. should be included. Detailed schedules should be given in test plans or used for status meetings during implementation).*



ANNEX 12:

IP VALUATION SCENARIOS

The TTO shall carry out IP valuation in any of the following scenario to determine monetary value;

Scenario	Description
Conducting business transaction	Licensing of IP assets, Franchising
	Sale or purchase of IP assets
	Merger and Acquisition; divestures; Spin off
	Joint Venture or Strategic Alliance
	Donation of IP assets
Enforcement of IPR	Calculation of Damages when IP assets is infringed
Internal Use	Investment in R&D
	Internal Management of IP assets; Strategic financing and/or raising equity capital
Other Purposes	Financial reporting
	Bankruptcy and liquidation
	Optimizing taxation
	Insurance of IP assets



ANNEX 13:

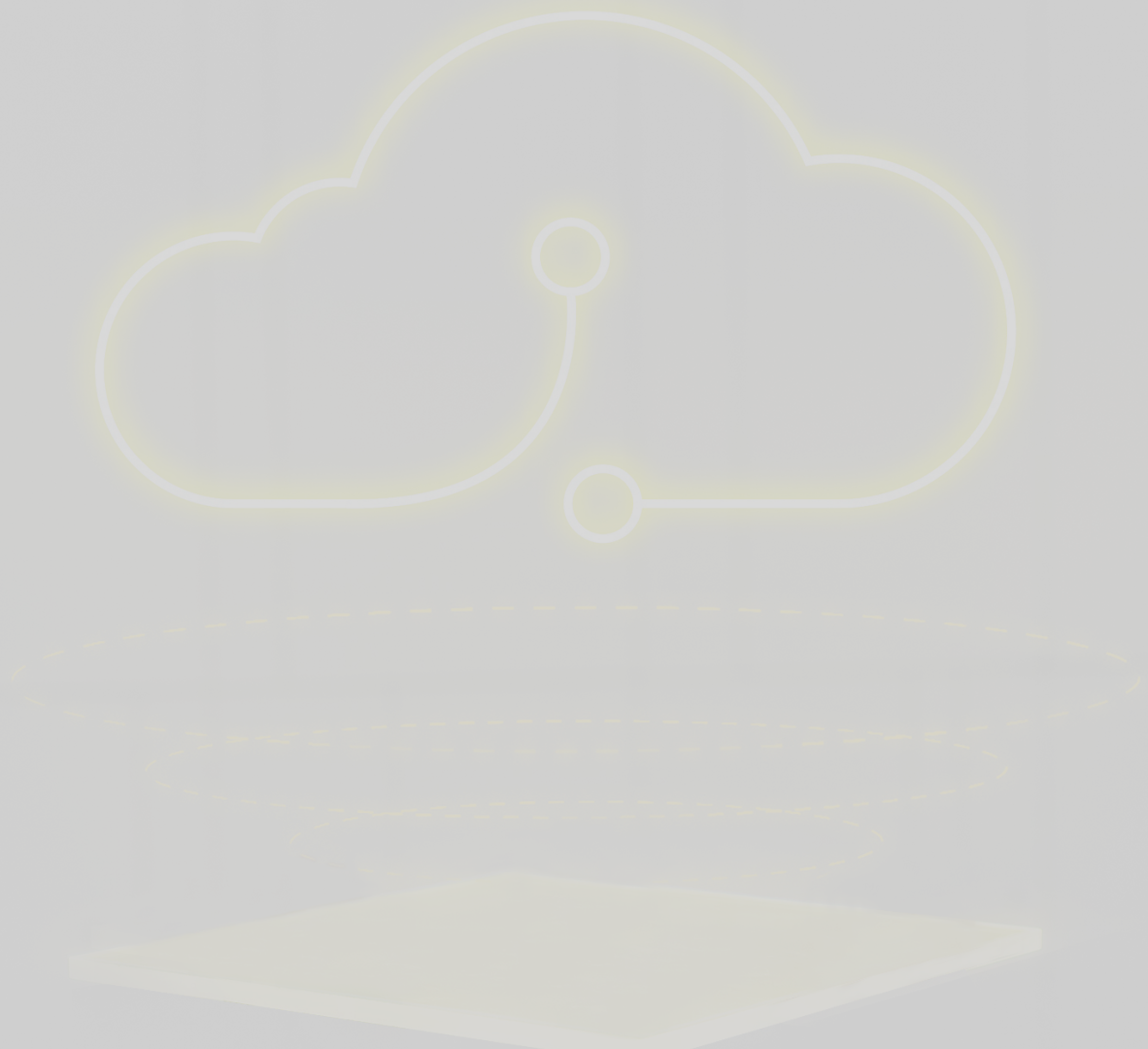
TERMS OF LICENSING AGREEMENT

A TTO shall ensure that an agreement to license IP under it covers the following areas:

TERM	DESCRIPTION
Subject matter	<p>This relates to the definition of the technology that is being licensed. This include among others:</p> <ul style="list-style-type: none"> • Technical description, • Patent Number. (if applicable) • Title of the invention, • Trademark, • Technical specifications, • Standards (where applicable) • Technology development (is it complete or not?)
Scope of the license	This relates to what the rights licensor is granting to the licensee
Field of use	This refers to the purpose for which the license is granted
Ownership	This relates to which party own IP rights in the technology. Is it the licensor or a third party?
Confidentiality	This obliges parties to the agreement to keep confidential or not disclose the information shared among them as part of the agreement
Exclusive or non-exclusive	This relates to whether the licensee is the only party permitted to exploit the technology or not
Sub-licensing	This refers to the permission the licensor may give to the licensee to sublicense the technology to other third parties
Territory	Refers to the countries or areas where the licensee is permitted to exploit the technology
Duration	This relates to the period the license will be active and whether it can be renewed

Financial terms	<p>Financial terms refer to the terms related to payments that the licensee will make to the licensor. These terms shall include, among others:</p> <ul style="list-style-type: none"> • Royalty rates • Lump sum/upfront payments • Payment method • Frequency and time of payment • Currency • Obligation of reports or record keeping • Access to audited reports • Tax issues
Milestones	Relates to the activities which Licensee shall perform for the purpose of developing and commercializing the first Licensed Product
Technical service support or provision of spare parts	This relates to whether the licensor will be obliged to provide service support or spare parts
Derivative works, improvements	This refers to whether the licensee would be allowed to make new products from the licenses products or make improvements to the same
Future version of the technology	This relates to whether the license extends to future versions of the same technology
IP expenses	This relates to which party will be responsible for paying for IP expenses such as renewal fo trademarks
Warranties	This relates to the guarantees that
Dispute settlement	This relates to how the parties will settle disagreements between them





Director General

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