

Sokoine University of Agriculture



CODE OF CONDUCT FOR RESEARCH ETHICS

**Directorate of Research and Postgraduate Studies
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ABBREVIATIONS

CBD	Convention on Biological Diversity
CIOMS	Council for International Organizations of Medical Sciences
DNA	Deoxyribonucleic acid
DRPGS	Directorate of Research and Postgraduate Studies
GAP	Good Agricultural Practice
GMO	Genetically Modified Organism
IAEA	International Atomic Energy Agency
NHRERC	National Health Research Ethics Review Committee
IP	Intellectual Property
IPPC	International Plant Protection Convention
IPR	intellectual Property Rights
IPRI	Tropical Pesticides Research Institute
ITPGRFA	International Treaty on Plant Genetic Resources for Food and Agriculture
LMO	Living Modified Organism
NEMC	National Environment Management Council
NIMR	National Institute for Medical Research
PIC	Rotterdam Convention on Prior Information Consent
R&PC	Research and Publication Committee
SNAL	Sokoine National Agricultural Library

SOP	Standard operating procedure
SR&PC	Senate Research and Publications Committee
SUA	Sokoine University of Agriculture
UNCLOS	United Nations Convention on the Law of the Sea
UNFCCC	United Nations Framework Convention on Climate Change
WHO	World Health Organization

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DEFINITION OF KEY TERMS

The terms defined under this section are in accordance to the context of this code of conduct:

Animal: Any living non-human creature, which has power of sense, perception and ability to move.

Code: a systematic collection of regulations and rules of procedure or conduct.

Conflict of interests: This arises when the individual's private or personal interests and professional obligations are convergent to such an extent that an independent observer may have doubt as to whether or not the individual's professional actions are influenced by personal considerations, financial or otherwise.

Contract research: All research projects performed for outside organizations and that are regarded as part of the researcher's service dispensation in terms of the provisions of the Rules for Contract Work of the University.

Copyright: The ownership and control of intellectual property in original works captured as a tangible form of expression from which it can be viewed, reproduced or otherwise communicated, whether directly or by means of a machine or device.

Ethics: Moral principles that govern a person's or group's behaviour or

norms for conduct that distinguishes between acceptable and unacceptable behaviour.

Sponsors: Governments, Institutions, Organisations or individuals who financially support research in part or in full

Human subject : An individual on whom a researcher is conducting research by (a) collecting data by intervention or interaction with the individual, or (b) obtaining identifiable private information.

- i. "**Intervention**" includes physical procedures, by means of which information is gathered, as well as engagement of an individual or manipulation of individual's environment for research purposes.
- ii. "**Interaction**" includes communication or interpersonal contact between a researcher and the human subject.
- iii. "**Private information**" information furnished by an individual for specific purposes on condition that his/her identity will not be made public.

Participants in research: Individuals involved in conducting the research

Integrity: The consistent maintenance of ethical values in all words and behaviours.

Intellectual property: is an asset/possession that results from creations of human mind (the intellect)

Intellectual Property Rights: Are the economic and moral rights conferred upon the owner of intellectual property by the relevant government in exchange of the disclosure of such property to the public.

Research/research activities: Any systematic investigation aimed at development of, or contribution to knowledge.

Research misconduct: This entails any practice that constitutes a serious deviation from what is generally accepted within the scientific community in the proposal submission, conducting of research and reporting of findings.

Researcher: Includes an individual taking part in conducting research activity

University: Mean Sokoine University of Agriculture (SUA), unless otherwise stated.

1.0 INTRODUCTION

1.1 Background Information

Ethical clearance prior to conduction of certain research using humans, animals, plants and hazardous chemicals is a prerequisite in most institutions in the world. Worldwide, codes of conduct for research ethics at national and/or institutional levels exist and are responsible for guiding consideration of ethical aspects of various research activities. This is accordance with various conventions, including the Vancouver Convention. For instance, the National Health and Medical Research Council (NHMRC) of Australian Government have an institutional Animal Ethics Committee (AEC) that handles animal research ethical issues to ensure compliance with animal welfare. In Denmark, Danish Agency for Science, Technology and Innovation has produced a publication, which offers directional guidelines to researchers in relation to research ethics within the disciplines of Social sciences.

In Tanzania, the Commission of Science and Technology (COSTECH), the institution that is mandated to oversee all research and technology development, has not yet developed the code of conducts for research ethics. However, currently only a few institutions which are engaged in research have established their own codes of conduct. These institutions include National Institute for Medical Research (NIMR), Kilimanjaro Christian Medical University College (KCMUC) and Muhimbili University of Health and Allied Sciences (MUHAS) have some laid down ethically oriented regulations related to use of human subject in research. Sokoine University of Agriculture (SUA) is among the institutions, which do not have such code to guide ethical issues in research. Currently, SUA researchers dealing with research directly or indirectly involving human subjects, products or properties are obliged to seek ethical clearance from NIMR. This process takes long time making some donors to despair. Researchers dealing with

animal and plant products are constrained because, besides permits from relevant authorities, there is no ethical clearance mechanism.

SUA is compelled to have code of conduct for research ethics because Tanzania is part to the international conventions that require ethical consideration in research. For example, The International Plant Protection Convention (IPPC), The International Treaty on Plant Genetic Resources for Food and Agriculture¹ (ITPGRFA) of 2004, The International Code of Conduct on the Distribution and Use of Pesticides (1985) just to mention a few. In addition, Tanzania has national acts that demand ethical consideration. These include The Animal Welfare Act (2008), The Plant Breeders Rights (2002), The Plant Protection Act (1997), The Environment Act (2004), etc.

SUA is rapidly expanding its research programmes in order to meet the increasing demand for national and global research and development activities. The University research focus areas and strategies are well stated in the research policy (DRPGS, 2010²). The coordination of research activities is undertaken by the Directorate of Research and Postgraduate Studies (DRPGS) through Senate Research and Publications Committee (SR&PC). This committee is also responsible for monitoring and evaluating compliance to ethical conduct of research. However, despite the fact that Tanzania has acceded to a number of international conventions that encourage promotion of human dignity, animal welfare, conservation of biological diversity and sustainable use of resources, SUA has no approved document, which guides the behaviour of researchers when conducting research activities. These international conventions are clearly outlined in section 2.5 (paragraph 2) of this document.

With the foregoing background information and given the volume of research activities going on at SUA, the institution needs a code of conduct

¹ The International Treaty on Plant Genetic Resources for Food and Agriculture (2004) is available on <http://www.planttreaty.org/>

² DRPGS (2010). Directorate of Research and Postgraduate Studies, SUA Research Policy, Focus Areas, Guidelines and Regulations, Sokoine University of Agriculture, Morogoro, Tanzania

for research ethics, which will be a guide to researchers and to SR&PC in making decisions on ethical issues in research.

1.2 Justification

Ethical adherence is necessary for most of research undertakings, especially those involving human subjects, access to personal records and/or property, animals, animal products, plants and plant products. The University carries out many research activities which, directly or indirectly affect humans, people's properties, animals, plants and the environment, all of which needs to be regulated. The code of conduct for research ethics will help researchers and the research community be cognisant of their ethical views and attitudes, raise their awareness of ethical standards, promote good judgement and enhance their ability to make well-founded decisions in the face of conflicting considerations.

Moreover, some donors or development partners funding research require ethical clearance as prerequisite for approving requests for financial and material support for research projects. Similarly, some collaborative research projects involving other institutions require ethical clearances of all collaborating institutions. In order to facilitate compliance to the above requirements, it is imperative for the University to have a code of conduct which provides the modality for developing such clearances within the Institution or in collaboration with approved authorities.

Due to the role issues of ethics play in the society, some of the ethical standards for research embodied in codes of conduct can also be found in legislations, meaning legislations and research ethics overlap. Cognizant to these facts, provision of most legislations encourage formulation of guidelines and procedures to be abide by the practitioners in the relevant research fields. This document, in addition to identifying relevant factors that researchers should or ought to take into account when conducting research, also highlights the most relevant acts of legislation of which researchers ought to be aware, and it is upon adherence to the provisions of this code and such legislations, they will be able to implement research

activities without infringing the rights of others or breaching the law.

In addition, Tanzania has acceded to a number of international conventions that encourage promotion of human dignity, animal welfare, conservation of biological diversity, sustainable use of resources, fair and equitable sharing of benefits arising from use of such resources and respect to the rights of indigenous and local communities. In recognition of challenges and opportunities which come with subscription to such Treaties and Conventions it becomes necessary for the nation and its institutions to develop own codes of conduct for research ethics in order to provide instruments to guide, monitor, evaluate and enforce compliance.

2.0 AREAS OF RESEARCH REQUIRING ETHICAL CONSIDERATION

2.1 Conduct and handling of research involving human beings

Ethical research and knowledge transfer activities involve a fundamental duty of care to subjects and participants. Researchers must show respect for human dignity in their choice of topic, in relation to their research subjects, and in reporting research results. This includes ensuring such conditions as confidentiality and anonymity, informed consent, treatment with dignity, avoidance of harm or deception, and appropriate dissemination. The physiological, psychological and social well-being of, and avoidance of deleterious consequences for, the research participant should always be a significant consideration of the researcher or research team.

All human related research activities must be approved by SR&PC before the research study commences. These include:

- i. Interaction with human subjects
- ii. The use of potentially identifiable personal records or information
- iii. Use of human organs, tissue specimens, progenitor or stem cells
- iv. Testing drugs, food or nutritional supplements

Such research activities must comply with the following principles:

- i. Research must be relevant to the needs and interests of the community in which the study is conducted
- ii. Research must have a valid scientific methodology
- iii. Researchers must ensure a fair selection of research participants
- iv. All research involving human subjects must include Tanzanian researcher(s)
- v. Researchers shall work on the basis of basic respect for human dignity and are obliged to respect their subjects' integrity, freedom and right to participate
- vi. Any research must be preceded by a thorough risk analysis to prevent research subjects from being exposed to harm or other suffering
- vii. Research subjects are to be given all the information they require to gain a reasonable understanding of the field of research in question, of the consequences of participating in the research project, and of the purpose of the research. Subjects shall also be informed about who is funding the research.
- viii. Researchers are responsible for explaining to their subjects the limitations, expectations and requirements that pertain to their roles in research.
- ix. Research projects that include individuals can be initiated only after securing subjects' free and informed consent. The subjects have the right to withdraw from the participation at any time, without this entailing any negative consequences for them.
- x. Research subjects are entitled to a guarantee that all information they provide about their private lives will be treated confidentially. Researchers must prevent the use and dissemination of information

that could harm individual research subjects.

- xi. Identifiable personal data collected for one particular research purpose cannot be automatically used for other research. Such data must not be used for commercial or administrative purposes. Consent of the subjects must be obtained before using data for any other purpose than originally assented.
- xii. Data related to identifiable individuals shall be stored responsibly. Such data shall not be stored any longer than what is needed to attain the objective for which it was processed. Research subjects are entitled to be able to check whether confidential information about them is accessible to others.
- xiii. Researchers must show respect to the values and views of research subjects, even if they differ from those generally accepted by the society at large. Researchers should not ascribe irrational or unworthy motives to anyone without providing convincing arguments for doing so.
- xiv. When children and people with special needs participate in research, they are entitled to special protection that should be commensurate with their age and needs.
- xv. Caution shall be exercised when deceased people are the subject of research. The fact that the deceased can no longer raise objections does not reduce the requirement for meticulous documentation. Out of respect for the deceased and their surviving relatives, researchers must choose their words with care. Graves and human remains must be treated with the utmost respect where research is concerned.
- xvi. Researcher should consider and anticipate effects on third parties that are not directly included in the research.
- xvii. Where relevant researchers must comply with Guidelines for conducting clinical trials in Tanzania (2011)³ and other relevant

³ Tanzania Food and Drugs Authority Regulations and Guidelines can be obtained aits

guidelines provided under section 63(1) of the Tanzania Food, Drugs and Cosmetics Act (2003)⁴

- xviii. All human health research projects must be submitted to the Medical Research Coordinating Committee (MRCC)⁵ through National Human Health Research Ethics Review Committee (NHRERC) hosted at the National Institute for Medical Research Institute (NIMR) until when the University establishes its own approved review body.
- xix. Where relevant researchers must comply with International Ethical Guidelines for Biomedical Research Involving Human Subjects (2002)⁶ as provided by the Council for International Organizations of Medical Sciences (CIOMS) and World Health Organization (WHO).
- xx. Researchers should observe and respond to ethical regulations and guidelines as may be stipulated by various documents issued by relevant International bodies, Ministries and Local Government Authorities.

2.2 Conduct and handling of research involving animals and animal products

The use of animals in scientific research can only be justified if the benefits to both humans and animals outweigh the potential harm to the animal subject. Justification for causing psychological or physical distress, illness or pain to animals should not be based on any explicit or implicit assumption

website <http://www.tfda.or.tz/regulation.php>

⁴ Tanzania Food, Drugs and Cosmetics Act (2003) and other Acts of legislation are available on the web page <http://www.lexadin.nl//wlg/legis/nofr/oeur/lxwetan.htm>

⁵ Guidelines for submission of research proposals to Medical Research Coordinating Committee are available on <http://www.nimr.or.tz/documents/Ethical%20Clearance.pdf>

⁶ International Ethical Guidelines for Biomedical Research Involving Human Subjects (2002) Prepared by the Council for International Organizations of Medical Sciences and the World Health Organization, Geneva

that animals experience these conditions in qualitatively different ways to humans. Before commencement of any research, a formal evaluation of the potential harm to the research subjects against benefits to animals/mankind must be undertaken and reported when seeking research ethical clearance.

All research involving animals and animal products must comply with relevant National Policies⁷ and acts of legislation. Such policies include The National Livestock Policy (2006) and Wildlife Policy (2007) and Fisheries Policy. Legislations which must be adhered to when conducting research on animals and animal products include but not limited to, the Wildlife Conservation Act (2009), The Veterinary Act (2003), Fisheries Act (2003), The Animal Diseases Act (2003), The Beekeeping Act (2002), The Meat Industry Act (2006), The Animal Welfare Act (2008), and the Grazing Land and Animal Feed Resources Act (2010).

In addition to compliance to legal provisions, all animal research conducted under the auspices of this University should uphold the “Three R” principles for humane animal research, namely:

- i. *Replacement* of animals, wherever possible, with research models or systems in order to eliminate unnecessary use of animals.
- ii. *Reduction* of the numbers of animals in experiments by designing strategies that facilitate use of the smallest number that will allow valid information to be obtained from the study.
- iii. *Refinement* of animal sourcing, care, experimentation and disposal procedures to eliminate physical and psychological distress within limitation imposed by the objectives of the research.

In addition to the principles listed above, researchers conducting research on animals and animal products shall adhere to relevant professional codes

⁷ Policies of the Government of Tanzania are available on <http://www.hakikazi.org/policies.htm>

of conduct provided by various International and National professional bodies such as Code of Professional Conduct and Ethics for Veterinarians and Veterinary Specialists (2005).

SR&PC shall have mandate and responsibility to oversee and monitor the care and use of all laboratory and other animals kept under the auspices of the University.

2.3 Conduct and handling of research involving plants and plant products

All researchers undertaking research on plants and plant products must ensure that they familiarize themselves with current National Agriculture Policy, Forest Policy, Environmental Policy and other relevant policies

To ensure compliance with appropriate phytosanitary procedures researchers must observe and adhere to provisions of acts of legislation guiding and regulating research conducted on plants and plant products. Such acts include, Plant Protection Act (1997), The Seeds Act (2003), The Protection of New Plant Varieties/Plant Breeders Rights Act (2002), The Tropical Pesticides Research Institute Act (1979), The Fertilizers Act (2009), The Environment Act (2004) and The Food Security Act (1991).

In addition to national policies and laws, International treaties, conventions, commissions and advisory bodies play a major role in international cooperation for plant production, protection and food security. Researchers working in this area need to acquaint themselves and comply with the provisions treaties and conventions which the country has acceded to. Such agreements include:

- i. **The International Plant Protection Convention (IPPC)** which sets standards for the safe movement of plants and plant products to prevent the spread of plant pests and diseases internationally. Compliance with IPPC obligations and International Standards for

Phytosanitary Measures (ISPMs)⁸ is a vital element in countries' food security and ability to trade internationally. These standards are important as they allow for the protection of domestic consumers, producers and the environment from the risks of introduced pests, and help exporters demonstrate that their products are safe.

- ii. **The International Rice Commission (1949)** aims to promote national and international action in matters relating to the production, conservation, distribution and consumption of rice.
- iii. **The International Treaty on Plant Genetic Resources for Food and Agriculture⁹ (ITPGRFA)** of 2004 is an international agreement with the overall goal of supporting sustainable agriculture and global food security. The Treaty, allows governments, farmers, research institutes and agro-industries to work together by pooling their genetic resources and sharing the benefits derived from their use. The fair sharing of benefits arising from the use of these resources has for the first time been practically implemented at the international level through its Multilateral System and its Standard Material Transfer Agreement.
- iv. **The International Code of Conduct on the Distribution and Use of Pesticides (1985)¹⁰** was one of the first voluntary Codes of Conduct in support of increased food security, while at the same time protecting human health and the environment. The Code established voluntary standards of conduct for all public and private entities

⁸ International Standards for Phytosanitary Measures are available on The International Plant Protection Convention website [https://www.ippc.int/index.php?id=ispms&no_cache=1&L=0]

⁹ The International Treaty on Plant Genetic Resources for Food and Agriculture (2004) is available on <http://www.planttreaty.org/>

¹⁰The International Code of Conduct on the Distribution and Use of Pesticides was adopted in 1985 by the 21st session of FAO Conference and was subsequently amended to include provisions for the Prior Informed Consent (PIC) procedure at the 25th Session of the FAO Conference in 1989 available on FAO website.

engaged in, or associated with, the distribution and use of pesticides, and since its adoption has served as the globally accepted standard for pesticide management.

- v. **The FAO Regional Commissions for Locust Control** are a major international collaboration for the exchange of data regarding actual and potential locust upsurges between neighbouring countries. The information is especially useful for control of trans-boundary plant pests and diseases.
- vi. The Cartagena Protocol on Biosafety to the Convention on Biological Diversity is an international agreement which aims to ensure the safe handling, transport and use of living modified organisms (LMOs) resulting from modern biotechnology that may have adverse effects on biological diversity, taking also into account risks to human health. It was adopted on 29 January 2000 and entered into force on 11 September 2003.

No researcher of plants or plant products shall be allowed to deviate from the provisions of the policies, legislations and international conventions and treaties. To ascertain compliance research involving plants and plant products must be subjected to review and approval of SR&PC prior to commencement of the project.

2.4 Conduct and handling of research involving hazardous materials

Hazardous chemicals such as pesticides, poisons, radioactive materials, carcinogens, mutagens, teratogens and inflammable materials are increasingly being used in research. The use of such materials in the laboratory and field, as well as their disposal should be properly controlled in order to protect workers, the public, animals and the environment. All

research involving hazardous materials that could potentially cause harm to humans, animals and/or the environment must be submitted to Senate Research and Publication Committee (SR&PC) for clearance. Researchers working on such materials must ensure they familiarize themselves and comply with appropriate safety and containment procedures as provided in relevant International and National regulations and guidelines. Such researches include:

i. Radioactive materials

Extreme care should be observed when handling radioactive materials. Researchers should sustain strict adherence to safety and containment Regulations as provided by International Atomic Energy Agency (IAEA), National Atomic Energy Act (2003) and Regulations governing handling of radioactive material (2011)¹¹

ii. Recombinant DNA techniques and genetically modified organisms (GMOs) or Living Modified Organisms (LMOs)

Before embarking on research on genetically modified organisms (GMO), researchers should understand the legislative provisions and global protocols governing biosafety issues. Such protocols include Cartagena Protocol on Biosafety to the Convention on Biological Diversity ¹² (2000) which provides an international regulatory framework to reconcile the respective needs of trade and environmental protection with respect to a rapidly growing global industry, the biotechnology industry. The Protocol thus creates an enabling environment for the environmentally sound application of biotechnology, making it possible to derive maximum benefit from the potential that biotechnology has to offer, while minimizing the possible risks to the environment and to human health.

¹¹ The Atomic Energy Act: Regulations, 2011 available on <http://www.taec.or.tz/>

¹² Cartagena Protocol on Biosafety to the Convention on Biological Diversity (2000). Secretariat of the Convention on Biological Diversity, Montreal, Canada

- iii. Pathogenic organisms (The Plant Protection Act and regulations (1997)), The Seeds Act (2003) and The Animal Diseases Act (2003)
- iv. Exotic plants, animals and microorganisms (The Plant Protection Act (1997), Seeds Act (2003),
- v. Research which may potentially cause harm to the natural environment

In addition to the Regulations provided in the National Pesticide Management Act and guidelines issued by the Tropical Pesticides Research Institute (TPRI) researcher should be aware of the Rotterdam Convention which covers international trade in certain hazardous chemicals with the aim of protecting human health and the environment. The Convention also contributes to the environmentally sound use of these chemicals, with exchange of information about their characteristics, by providing for a national decision-making process on their import and export and by disseminating these decisions to Parties.

- vi. Research involving material prohibited by law or government order

Researchers should refrain from conducting research using materials which are banned by the law or restricted by government order or any other legal provision.

2.5 Conduct and handling of research affecting the environment

The SR&PC will be responsible for ensuring that all research is carried out with the necessary respect for the impact that it could have on environment. Where a scientific investigation involves the physical, biological or spatial environment as subject of investigation or otherwise, the researcher should comply with relevant International Conventions, the National Environmental Management Act (2004) and guidelines and regulations provided by the National Environment Management Council

(NEMC) .

The following are some prominent International Conventions, which researchers need to be aware of and comply to:

- i. Ramsar Convention on Wetlands of International Importance¹³ (1975) aims at stemming the loss of and promoting the wise use of all wetlands. The convention addresses one of the most important issues in Tanzania, namely the conservation of the country's water supplies for the use of both the natural and the human environments.
- ii. Convention on Biological Diversity¹⁴ (CBD) of 1993 which aim at effective international cooperation in the conservation of biological diversity and to promote the sustainable use of living natural resources worldwide. It also aims to bring about the sharing of the benefits arising from the utilisation of natural resources.
- iii. United Nations Framework Convention on Climate Change¹⁵ (UNFCCC) of 1993 addresses the threat of global climate change by urging governments to reduce the sources of greenhouse gases. The ultimate objective of the convention is to stabilise greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous interference with the climate system of the world.
- iv. Basel Convention on the Control of Transboundary Movement of Hazardous Wastes and their Disposal¹⁶ (1994) provides restrictions on transboundary movement and disposal of such waste. It also aims to ensure that any transboundary movement and disposal of hazardous

¹³ Ramsar Convention on Wetlands of International Importance (1975) available on <http://www.ramsar.org>

¹⁴ Convention on Biological Diversity (1993) <http://www.biodiv.org>

¹⁵ United Nations Framework Convention on Climate Change (1993) available on <http://www.unfccc.de>

¹⁶ Basel Convention on the Control of Transboundary Movement of Hazardous Wastes and their Disposal (1994) available on <http://www.basel.int>

waste, when allowed, is strictly controlled and is undertaken in an environmentally sound and responsible way.

- v. Rotterdam Convention on Prior Information Consent¹⁷ (PIC) of 1998 ensures obligatory detailed information exchange between countries on hazardous chemicals and pesticides allowing informed decision-making.
- vi. World Heritage Convention Concerning the Protection of the World Cultural and Natural Heritage¹⁸ of 1972 aims to promote cooperation among nations to protect all forms of natural and cultural heritage that are of such outstanding universal value that their conservation is of concern to all people..
- vii. Montreal Protocol for the Protection of the Ozone Layer¹⁹ (1990) aims at ensuring measures to protect the earth's ozone layer.
- viii. United Nations Convention on the Law of the Sea²⁰ (UNCLOS) of 1982 represents a codification of international law rules for states to observe in marine-related operations.

3.0 RESPONSIBILITIES OF RESEARCHERS AND COLLABORATORS

3.1 General conduct

Researchers should be guided by a profound conviction of the value and

¹⁷ Rotterdam Convention on Prior Information Consent (1998) available on <http://www.chem.unep.ch/pic/>

¹⁸ World Heritage Convention Concerning the Protection of the World Cultural and Natural Heritage of 1972 available on <http://www.unesco.org/whc>

¹⁹ Montreal Protocol for the Protection of the Ozone Layer (1990) available at <http://www.unep.org/ozone/montreal.shtml> or <http://www-esd.worldbank.org/mp>

²⁰ United Nations Convention on the Law of the Sea (1982) http://www.un.org//Depts/los/convention_agreements/convention_overview_convention.htm

dignity of the promotion of knowledge and should recognize the particular responsibilities imposed on them by this code of research ethics. The primary obligations of researchers shall be to:

- i. Pursue and present true information about their research
- ii. Exercise critical self-discipline and judgment in their decisions regarding the use, expansion and dissemination of knowledge.

Researchers should accept responsibility for:

- i. Design methodology and execution of their research
- ii. Plan research in such a way that the findings will be credible and valid
- iii. Fill and maintain laboratory book which shall remain the property of the University
- iv. Report findings and their limitations
- v. Use of funds in responsible manner
- vi. Ensuring adherence to the signed research agreements

3.2 Research collaborations

Researchers have a responsibility to establish and maintain close collaboration and clear understanding of respective roles and responsibilities of each collaborator. Such collaboration should be established at the beginning of the research project as stipulated in SUA intellectual property rights (IPR) policy. Research collaborators include:

- i. Clients or sponsors
- ii. The society and the government
- iii. Fellow researchers
- iv. Students

3.2.1 Clients or Funding Agents

Research conducted for clients and sponsors who prescribe specific objectives is subject to the normal conventions of contract research and also to the applicable University rules for contract work and SUA research policy (DRPGS, 2010). The following important ethical issues should be observed when dealing with clients or sponsors of research:

- i. **Conflict of interests** - Any conflict of interests should be avoided, and all researchers are required to make known any potential conflict of interests. Interference by clients or sponsors that could compromise the integrity of the research is unacceptable.
- ii. **Confidentiality of research results** - Agreements with clients and sponsors of research are subject to the SUA IPR Policy (DRPGS, 2005²¹). Information regarding the identity of participants in contract research will not be made available to sponsor(s), unless the individual participants agree.
- iii. **Financial obligations** - Remuneration agreements for participants and researchers should be set out in the contract or in the conditions of grant (often based on a funding application), as well as other approved budgetary items. Although the legal agreement for the funding of a specific project is between the sponsor and SUA, the general responsibility for the financial management of a funded project rests with the project/programme leader. Funds should be spent within the confines of the contract or grant.
- iv. **Equipment control** - Control of both University and state property is usually determined by external contracts and allocations as well as by University policy. Project/programme leaders are responsible for the required approval for purchasing equipment, for reporting it to the University and for ensuring that it is properly marked, and also for the removal thereof where necessary.

²¹ DRPGS (2005), SUA Intellectual Property Policy , Sokoine University of Agriculture, Morogoro, Tanzania.

- v. ***Funds for new fields of research*** - The costs of the preparation of research proposals and other activities in support of new fields of research may not be offset against funded projects or project costs intended for other purposes.
- vi. Researchers should accomplish the objectives of research within the agreed period

3.2.2 The society and government

Researchers should, at all times endeavour to serve the whole society and contribute to the well-being of all Tanzanians. They should be aware and respond to the priorities identified by the government and the University with regard to pressing socio-political and economic issues in the society. However, they must not be forced to confine their activities only to the immediate priorities of the government.

In addition researchers should recognize the right of the community to have access to research findings and information in as far as it does not encroach upon the right of clients, sponsors or participants in research.

3.2.3 Fellow Researchers

SUA researchers are encouraged to undertake joint research projects with colleagues within SUA, other local and foreign institutions and to promote inter- or multidisciplinary research or to take part in such research. In such instances, researchers have responsibility to:

- i. Ensure that they are familiar with relevant policies and regulations of the institutions concerned, e.g. Research Policy and Intellectual Property Right Policy.
- ii. Emphasize rightful acknowledgement in the presentation of ideas and the publication of manuscripts.
- iii. Ensure authorship is awarded only to those persons who have made

an original and significant contribution to the conceptualization, design, execution and interpretation of the published work. All authors should approve the final version of the manuscript and should be prepared to accept responsibility for the work in public.

3.2.4 Research students

The University has an obligation towards the broad academic community, the students and the public to ensure that all students involved in research activities do so with responsibility and with respect for the highest professional standards.

Research supervisor, project leaders and heads of department share the responsibility for providing an open and equal research environment which protects the interests of students, assistants and other vulnerable persons undergoing training. They must ensure that students are:

- i. Given fair acknowledgement for original work,
- ii. Treated as peers with the same professional courtesy
- iii. Aware of their obligations and sign relevant research contracts as stipulated in the University's IPR Policy

Research supervisors and project leaders are responsible for:

- i. Providing a training environment in which issues relating to ethical values are discussed freely.
- ii. Ensuring that students have at least a basic understanding of research ethics and are able to identify and deal with the ethical issues relating to their research, results and publications.
- iii. Ensuring that the research relationship or project is begun with a clear understanding of mutual responsibilities, a commitment to maintain a supportive research environment, proper supervision and review and an understanding that the main purpose of the relationship is to prepare trainees to become successful researchers.

Students in turn have a responsibility to:

- i. Complete assigned work diligently,
- ii. Respect the authority of others working in the research setting,
- iii. Follow research regulations and protocols and
- iv. Abide by agreements established for authorship and ownership intellectual properties.
- v. Understand, sign and abide by research agreements provided by Technology Transfer Office (TTO).

4.0 RESEARCH INTEGRITY

Researchers are expected to maintain the highest standards of honesty and integrity. Researchers must at all times function within the existing research paradigm and ethically acceptable methodological framework. Any form of research dishonesty, including but not limited to the following, will be regarded as a serious offence:

- i. Failure to give proper acknowledgement to the inputs of collaborators
- ii. Fraudulent inclusion or reporting and manipulation of factual information
- iii. Plagiarism as the appropriating of literary work, or portions of such work, by someone else, and the presentation thereof as if it were the guilty person's own work
- iv. Unauthorized use of confidential research results (research theft) where this is not in accordance with acceptable academic or collegial behaviour
- v. Unacceptable acquisition, allocation and misuse of funds allocated for research purposes
- vi. Retribution of any nature against a person who has acted in good

faith in reporting suspected or alleged research misconduct or in giving information in this regard

- vii. Unlawful and unauthorized use of University property and equipment
- viii. Violation of copyrights or any other form of intellectual property rights provided in the University policies, National legislation and global treaties and conventions to which Tanzania has acceded
- ix. Failure to comply with research tasks forming part of work duties
- x. Undermining other individuals' fundamental rights in the execution of research
- xi. Violation of Vancouver Conventions related publications
- xii. Social misbehaviour practices e.g. sexual favours, racist appellation and gender discrimination.

If a researcher is found guilty of research misconduct, appropriate action against the person concerned will be taken as set out in the conditions of service and disciplinary code of Sokoine University of Agriculture.

5.0 INTELLECTUAL PROPERTY RIGHTS

The commercialization of the University's knowledge base and technology transfer are regarded as an integral part of the University's responsibility to the broader community. The University is committed to encourage research and development which may lead to inventions, products or business ideas that can be exploited commercially and to unlock the value of its knowledge base to the benefit of both inventors and the broader community. The provisions of SUA regarding intellectual property ownership, rights and modes of disposition are set out in the University's Intellectual Property Rights (IPR) Policy (DRPGS, 2005). Researchers should be aware of these provisions and should utilize them for their own benefits and for the benefit of the University.

In addition to the University IPR policy, various National legislations provide

statutory expression to moral and economic rights of IP generators as a deliberate act to promote creativity in research and disclosure of new knowledge. Among the national legislations which govern such rights include the Copyright Act (1999), the Merchandise Marks Act (1963), The Trade and Service Mark Act (1986), the Patent Act (1987) and The Protection of Plant Varieties (Plant Breeders' Right) Act (2002). Researchers should familiarize themselves with the provisions of these legislations and exploit them whenever handling, seeking protection and marketing intellectual property.

Tanzania is a signatory to a number of global Conventions and Treaties that govern the protection and exploitation of intellectual Property. Examples of such treaties and conventions include the Berne Convention (1886)²² and its subsequent revisions and amendments, Paris Convention (1883)²³ and its subsequent revisions and amendments, Convention for Biological Diversity (1992), the Trade-Related Aspects of Intellectual Property (TRIPS) and the International Union for Protection of New Plant Varieties (1961).

6.0 ADMINISTRATION OF THE CODE

According to SUA Research Policy and Guidelines (Third Edition of 2010, Page 55), the responsibility of monitoring and evaluating compliance to ethical conduct of staff and students undertaking research reside within the Directorate of Research and Postgraduate Studies (DRPGS).

All research conducted using University resources shall require ethical clearance by DRPGS through SR&PC. The SR&PC shall also be comprised of a Director of DRPGS, Legal Officer and representatives from

²² Berne Convention for the Protection of Literary and Artistic Works of (1886), revised at BERLIN (1908), at ROME (1928), at BRUSSELS (1948) at STOCKHOLM (1967) and at PARIS 1971 and amended on (1979),

²³ Paris Convention for the Protection of Industrial Property of March 20, 1883, as revised at Brussels (1900), Washington (1911), The Hague (1925), London (1934), Lisbon (1958) and Stockholm (1967)

Faculties/Institutes/Centres (Figure 1).

7.0 TERMS OF REFERENCE FOR THE SENATE RESEARCH & PUBLICATION COMMITTEE (SR&PC)

The terms of reference of SRPC with regard to research ethics shall be:

- i. to develop a research ethics policy and standard operating procedure (SOP) that comply with national and international regulations and norms as reflected in this proposed code of research ethics;
- ii. to oversee the implementation and compliance with the code of conduct for research ethics in all the research activities undertaken by the University;
- iii. to put a procedure in place, according to acceptable norms and standards, for dealing with appeals and
- iv. to conduct capacity building and awareness creation courses for researchers and students (similar to UTILP)

ORGANOGRAM OF THE RESEARCH ETHICS COORDINATION

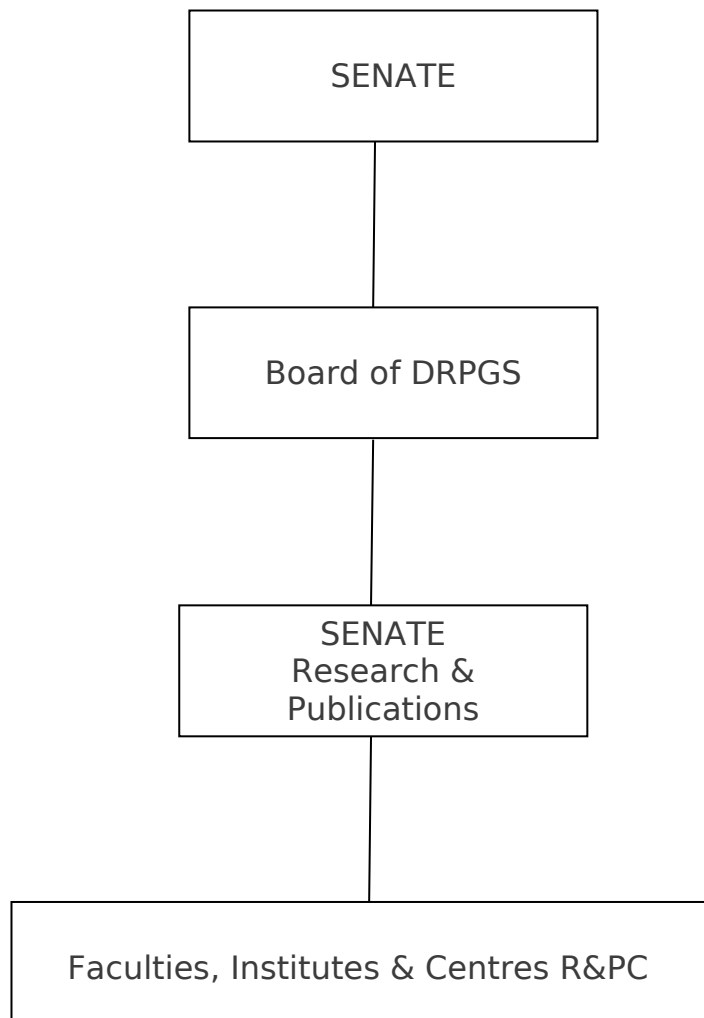


Figure 1: Organogram of research ethics coordination

8.0 FINANCING ARRANGEMENTS

The sources of funds to facilitate SR&PC to deal with research ethics issues will be:

- a) Part of research administrative fee charged to donor funded projects
- b) Portion of revenue from commercialization of intellectual property rights (IPR).
- c) The University funds by increasing others charges (OC) for DRPGS.

9.0 IMPLEMENTATION

This Code of Conduct shall be implemented in harmony with the University Acts (2005) and shall also observe University Financial Regulations.

Cognizant of the fact that Tanzania is a signatory to a number of international Conventions and Treaties influencing the global research ethics issues, provisions in the government guidelines and regulations shall take precedence upon events of conflicting interpretations.

The experience above notwithstanding, any event that exceptional circumstances require any exception to the terms of this Code of Conduct; such exceptions shall require the written consent of the Chairman of Senate