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SAEON Code of Research Ethics

This document outlines the code of research ethics for SAEON operations. The code is comprised of two components. The first is a Statement of Ethical Research and Scholarly publishing practice that has been adopted by, *inter alia*, the NRF, the DSI and ASSAf. This document is adopted in its entirety. The second part of this document consists of a number of principals for ethical research in the SAEON context which are not captured in the NRF statement, and expand the context for conducting ethical research for SAEON.

1 Ethical Research and Scholarly Publishing Practice

[This](#) statement on ethical research and Scholarly publishing practice adopted directly from those of the NRF and the DSI as jointly issued by Academy of Science South Africa (ASSAf), Council on Higher Education (CHE), Department of Science and Innovation (DSI), the National Research Foundation (NRF), and Universities South Africa (USAf). In this statement the following principles should inform ethical research and scholarly publishing practice:

Responsibility: It is the responsibility of individual researchers, postgraduate students, academic societies, journal publishers and boards, universities, all university staff (including research support services) and all organisations supporting research and knowledge generation, to be aware of and adhere to regulations related to research, to actively maintain academic and research integrity and to report or act upon any unethical practices they may discover. At an institutional level, requisite policies and procedures for monitoring, investigating, censuring and reporting unethical practices, must be developed. The anonymity of those reporting such practices must be protected.

Ethics and integrity: Researchers are responsible for their own research, and for research performed under their supervision, and must take due care to ensure the publication only of authentic, accurate and reproducible findings, including findings that do not support their working hypotheses.

Methodology and data: Researchers must use appropriate research methods, assess all outcomes critically, maintain a full record of the research including all supporting data, and objectively interpret and report findings.

Authorship: All authors who made an intellectual contribution to the research publication, and only those authors, must be included as contributing authors. The sequence of authors should follow discipline-specific practices. All authors must read and approve the final draft prior to submission.

Acknowledgement of contributions: As well as acknowledging all authors, researchers must acknowledge all those who made a material contribution to the research or publication but who do not meet authorship criteria. This includes indigenous originators of the knowledge, funders, sponsors, manuscript editors and language reviewers. In addition, all knowledge (published or unpublished) used in the research must be appropriately referenced/cited and acknowledged.

Peer review: Peer-reviewers must be sufficiently qualified for the role, and the process of review must be fair, objective, and rigorous, while respecting anonymity and confidentiality where this is applicable. All research publishers and funders of research must avail their peer-review policies to authors.

Social awareness: Researchers and institutions must be sensitive to the potential impact of their research on society, marginal groups or individuals, and must consider these when weighing the benefits of the research against any harmful effects, with a view to minimising or avoiding the latter where possible.

Conflicts of interest: All possible conflicts of interest, whether financial or personal, must be declared and preferably avoided in research and in other scholarly activities such as peer review, research proposals and public comment.

Editorial: In cases where editors or members of editorial boards submit manuscripts to their own journals, editorial handling of the papers concerned must be independent of the author in process terms, up to and including the decision to publish or not, as the case may be.

Research publishing environment: Research institutions (including agencies supporting and funding research) must ensure an environment which encourages ethical research practices through education, stewardship, and clear and fair policies and practices that promote research ethics, integrity and compliance. This includes the way in which research funding or research incentives are allocated and spent. Care has to be taken to ensure that the research funding system does not incentivise perverse research and publication practices that compromise research integrity

Predatory journals and unethical editorial practices: Researchers are responsible for avoiding falling victim to predatory publishing or unethical editorial practices. The onus is on an individual or group of researchers, and institutional processes of scrutiny, to ensure that the avenues selected for publishing their research are authentic and credible.

Quality over quantity: Researchers are reminded that publishing the outputs of their research in good quality, high impact journals, is always preferable from a longer-term career perspective to the publication of incremental outputs in low-quality journals. ‘Salami slicing’ of outputs to increase publication numbers should be avoided. (For NRF specific context please see the [NRF Statement on Open Access to Research Publications](#))

2 Principles for ethical research in the SAEON context

In addition to the statement on ethical research and scholarly publishing practices, a number of specific considerations need to be taken into account due to the special needs of the type of research conducted by or facilitated by SAEON.

2.1 The principle of respect and protection when dealing with human subjects or communities

A commitment needs to be made to the following criteria:

1. Research and the pursuit of knowledge should never be regarded as the supreme goal at the expense of participants' personal, social and cultural values.
2. No harm will be done to study participants;
 - a. Given the disparities in capacity in the South African society, researchers have a responsibility to, where ever possible and appropriate, reasonably empower research subjects, at least in terms of their confidence and understanding.
 - b. Study Leaders shall ensure that researchers and interviewers in projects are familiar with the stipulations of this document and are aware of their ethical responsibilities;
 - c. Participants may be suitably recompensed **for costs incurred** in participating in the study on condition that all participants are offered similar compensation and that such compensation is related to the inputs required of them to make their contribution, e.g. transport costs, meals, and tokens of appreciation, thereby observing the norms of justice and the avoidance of detriment. Please note section 3.
3. Researchers should be conscious of the risks and benefits associated with their research. In particular, they shall:
 - a. Consider any psychological, physical, social, environmental, and economic harm that might come from the research to both the research participants and the researchers.
 - b. Strive to minimise the risk and maximise the benefit to participants, society and the knowledge that can be gained from the research.
4. The researcher must respect the autonomy and protect the welfare of all participants, and must, therefore, obtain the informed consent of the participants. The following criteria apply:
 - a. Participation by selected elements of a study population is voluntary; subjects shall be asked if they are willing to participate;
 - i. Informed consent shall be sought from selected subjects (See Template form **Error! Reference source not found.**).

- ii. This consent should be given in writing if possible, especially if the research is of a sensitive nature.
 - iii. The researcher shall respect the right of individuals to refuse to participate in research and to withdraw their participation at any stage
 - b. The researcher should be concerned particularly about the rights and interests of more vulnerable participants, such as children, the aged and the disabled.
 - c. In general, all research must observe the international norms of avoiding harm, providing benefit wherever possible and acting justly.
 - d. Participants should not be overburdened with research participation (this is particularly important to consider in areas where long term research is occurring)
 - e. Recruitment methods shall be neutral and properly described in the project plans.
- 5. Methodology and data
 - a. Research findings relating to specific individuals, institutions and organisations shall be reported in a way that protects the personal dignity and right to privacy of participants.
 - i. Furthermore, whenever methodologically feasible, participating individuals and institutions shall be allowed to respond anonymously or under a pseudonym to protect their privacy or their details should be captured via a number rather than their name.
 - ii. The researcher should be constantly aware that the research may prejudice the position of research participants if measures are not taken to prevent such prejudice.
 - b. Scientists will act to ensure in their data collection, analysis and display methodologies that respondent data is kept both confidential and anonymous
 - i. Data management protocols compliant with Protection of Personal Information (POPI) Act, requirements or other relevant legislation will be adhered to
 - ii. Subjects shall be given the opportunity to withdraw from a study at any time and request that their information (given to that point) be withdrawn from the study
 - iii. Information obtained in the course of research that may reveal the identity of a participant or an institution shall be treated as confidential unless the participant or institution agrees to its release.
- 6. All research should preferably be undertaken with, and not merely on, the identified community.
 - a. Where appropriate, researchers are encouraged to engage through key role players such as established community structures and community leaders. Clear lines of communications need to be established with the community.
 - b. When conducting research with Traditional Authorities or other structures, informed consent is needed and should be established through the submission and approval of research proposals indicating the scope of the research, the methodologies to be employed, expected outcomes and potential impacts.
 - c. It is important to delineate early in the project how data will be collected and handled and to resolve potential conflicts around data interpretation and publication (Harding et al., 2012). This should be captured in the project proposal and data management plan. Factors to be mutually agreed upon include (inter alia):
 - i. Whether data include information heard in conversations, informal discussions, or social gatherings
 - ii. Permissions and ownership of data collected formally or informally during the course of research

- iii. Principals of co-authorship and a transparent review process for publications, presentations, online postings or other forms of data dissemination
 - iv. Conditions for data analysis including the scope of research, privacy issues and intellectual property rights
 - v. Types of materials and data collected and collection methods, including:
 1. analytical sampling results,
 2. demographic attributes,
 3. collection of organic materials,
 4. transcripts of group discussions and project-specific questionnaires
 5. Two-way knowledge sharing conversation/ co-learning not formally transcribed but rather is a tacit knowledge exchange
 6. Co-collection of data e.g. citizen science projects, fieldwork etc.?
 7. Photographs, the taking and publication of photographs of human subjects
 - vi. Constraints on material and data use,
 1. Includes procedures for publication and return of materials, images and data
 - vii. Data access and security
 1. Procedures for maintaining physical security of the data
 2. Access to the data who require it
 - viii. Efforts and care must be taken to ensure that individuals know what they are consenting to including:
 1. Clear and concise descriptions of the research (including a summary translation into the vernacular)
 2. How the research will be used
 3. Relevance in relation to their lives and livelihoods
 4. Issues of anonymity, including compliance with relevant national legislation such as (inter alia) the Protection of Personal information (POPI) Act
7. Indigenous, traditional and local knowledge shall always be attributed to its source. Such sources can be anonymised, if necessary, for protection of individuals or if the study as a whole anonymises the sources.
 8. Findings of studies will be peer-reviewed prior to release and publication; limitations to the study will be described, and the study respondents will be provided an opportunity to view findings.

2.1.1 Special Case - Working with children

Research that can equally well be done with adults should never be done with children. However, where children are the participants, legal consent shall be given in writing by either the parents, guardian, or custodian - on the understanding that the child has the freedom to withdraw from the research at any stage.

Note: Constitutionally a child is any person under the age of 18

2.3 Due Consideration of Consequence

In the planning of research, researchers should consider the foreseeable consequences of their research.

1. The ability to reasonably predict the consequences of research will rely on an understanding of the context of the research subjects or environment.
2. Due diligence on the part of the researchers should, therefore, be shown in terms of understanding the context and the anticipated research consequences within the given context.

3. Due diligence facilitates attention to fairness towards research subjects in the planning phase of the research.

2.4 The Principle of Transparency

Before undertaking any research, the researcher should ensure that the participants are clearly briefed on the aims and implications of the research as well as the possible outcomes and benefits of the research.

1. Participants shall be informed of any additional factors that might reasonably be expected to influence their willingness to participate.
2. Should the methodology of a research project necessitate the concealment of information;
 - a. The researcher should, before conducting such a study, determine whether the use of such a methodology is justified by the project's prospective scientific, educational or applied value,
 - b. Determine whether alternative procedures that do not require the concealment of information could be used instead, and
 - c. Ensure that the participants are given the reasons for the concealment of information as soon as is practically possible.
3. In the communication of their findings, researchers should subscribe to the principles of honesty, transparency and scrutiny by the public and their peers.
4. No financial or other inducement should be offered to participants, to ensure a particular research result
5. The researcher should always be aware of the potential conflict inherent in the principle of transparency stated above and a client's/sponsor's request for total confidentiality in the reporting of research results. In such a situation the following principles will apply:
 - a. Should the client/sponsor insist on total confidentiality in the reporting of research results, the researcher should consider this insistence in the light of the principles underlying the SAEON Code of Research Ethics.
 - i. The client/sponsor should then be informed that: although SAEON respects the need for confidentiality for strategic and other reasonable purposes, and will consider prohibition of the publication of such results for a reasonable period, this period should preferably not be for more than 12 months following the completion of the research.
 - ii. The researcher should endeavour to convince the client/sponsor of the importance of publishing research findings in scientific journals and depositing datasets in a national data archive – even if such publication occurs after the period of prohibition

2.5 The Principle of Scientific and Academic Professionalism

Researchers should conduct their research, if applicable, in accordance with the professional code of the association of which they are members.

1. Researchers should not misuse their positions or knowledge as researchers for personal power or gain.
2. Researchers should at all times strive to achieve the highest possible level of scientific quality in their research.

2.6 The Principle of Accountability

Researchers should ensure that they have an explicit written research mandate from the client/principal/sponsor in which the general conditions and terms of the research or service (e.g. research problem, expected deliverables, financial commitments and time framework) are set out clearly.

1. The acceptance of a mandate should be sealed by a legally binding written contract/agreement between the parties specifying the terms agreed upon.
2. The researcher should recognise the right of the client/principal/ sponsor to request information from the researcher at the conclusion of the research - or at any stage in the course of the research. However, interference by clients/principals/sponsors that may jeopardise the scientific integrity of the study or prejudice the interests of the participants in the research, may oblige the SAEON to cancel the contract.

2.7 General

1. The involvement of the participants or the research process should be brought to the immediate attention of the supervisor concerned and should be satisfactorily resolved before the researcher commences or continues the research project.
2. It will be expected of consultants, researchers and organisations not attached to SAEON to adhere to this Code of Research Ethics when participating in research projects when collaborating with SAEON or using SAEON research infrastructure.
3. SAEON invites anybody who at any stage enters into a research relationship with SAEON to co-operate with SAEON researchers in upholding the values and principles contained in this Code of Research Ethics.

3 SAEON Animal Ethics and Biological Samples (Drafted and modified from the SAIAB policy)

SAEON does not have a core function of obtaining or maintaining collections of plant, animal or tissue samples, however, in the course of the operations and the types of activities undertaken by SAEON such samples may be required, it is preferable that the policies of the appropriate organisation be applied (e.g. SAIAB, SANBI et cetera) and specimens are to be offered to the appropriate collections especially IZIKO, SANBI or SAIAB for long term preservation. However, a few key points need to be highlighted.

3.1 Unethical, illegal and irresponsible traffic:

SAEON employees may not perform identifications or otherwise authenticate natural history materials for persons or organizations under circumstances that could encourage or benefit illegal, unethical, or irresponsible traffic in such materials.

3.2 Storage and Security responsibilities:

- All collection materials shall be stored and maintained in such a manner at all times, as to reasonably prevent loss, deterioration, unauthorized access, or divulgence of confidential information.
- Required material to be transferred to an appropriate collection as soon as practicable

3.3 Collection and research involving live animals

Ethical clearance of research is a fundamental requirement for institutions dealing directly with the collection or use of animals for scientific research. Animal research undertaken under the auspices of SAEON is potentially complex and includes research on invertebrates and vertebrates, and includes:

- Collection of animals as museum specimens and for reference collections
 - Collection of animals for biodiversity census
 - Collection of animals for ecological studies including the subsequent examination of these animals whole or in part for biological analyses
 - Collection of animals for taxonomic identification, new species descriptions or verification
1. All research protocols involving the use of live animals are subject to an ethical review process

2. All research involving live animals requires clearance by an internal Ethics Committee or valid ethical clearance from the university where registered.
 - a. The mandate of the EC is to scrutinise research proposals in order to judge whether the proposed project research methods fall within accepted norms for animal research. The EC is guided by literature on the ethical use of animals in research and may call on specialist help in the decision-making process.

3.4 Collecting ethics:

All collecting by SAEON staff or associated researchers shall be conducted within the bounds and guidelines of local, national and international laws and treaties; and accepted ethical guidelines shall be followed at all times.

1. In the case of collecting living organisms from the natural environment, all steps to avoid unnecessary stress, pain and suffering, or of excess kill, shall be taken. Damage to the environment shall be minimised.
2. Collecting permits shall be obtained from the relevant authority prior to any collecting event and must be carried by SAEON staff during the collection period.
 - a. If collections are made in partnership with conservation staff on their permit, the details of that permit must be provided in the EC application. In all cases permit requirements and stipulations need to be adhered to.
3. The care and use of experimental animals must comply with the SANS 10386:2008 South African National Standard: The care and use of animals for scientific purposes.
4. Wherever possible, sampling in a National Park or in other protected areas, (including Marine Protected Areas) should be avoided, but if essential will not take place in areas accessible or visible to members of the public wherever possible.
 - a. If approached by members of the public, SAEON staff must inform them of their research activity in a transparent and courteous manner.

3.1.1 Field Collecting:

In the case of collecting living organisms from the natural environment, all steps to avoid unnecessary stress, pain and suffering, or of excess kill, shall be taken.

1. Any procedures that cause adverse effects or lasting harm to a sentient animal, particularly procedures that involve lethal endpoints, will need to be specifically justified and any harm caused will need to be justified against the benefit gained.
2. The choice of collection method shall take into account the welfare of the animals, their habitat and worker safety, as well as the research objectives and seasonal conditions pertaining to the study
 - a. Sampling equipment and strategies should be designed to minimize “by-catch” and non-target species. For all sampling methods, by-catch of live individuals will, as a matter of high priority during the sampling exercise, be returned to and released at the capture location in a manner that will maximise their probability of survival
 - b. Animals collected as part of faunal surveys and other fieldwork should be collected as humanely as possible.
 - c. Specimens intended for museum deposition should be killed before preservation by an acceptable means
 - d. The investigator has the responsibility of choosing an appropriate euthanasia method based on ethical grounds, the experimental data needs from post-mortem examinations, and the constraints of the sampling design.
3. Field and Population Considerations

- a. Irrespective of the purpose for which live animals are being collected, a strict ethic of habitat conservation and humane treatment of the animals shall be observed
 - b. In all collections, the conservation status of the population and species should be evaluated so that sampling and collecting wild animals avoid causing severe population and habitat disturbances
 - c. The number of animal subjects required for an investigation will depend on the research questions being asked.
 - i. Field and laboratory studies require very different experimental statistical designs.
 - 1. Field and early life stage studies sometimes require large numbers of specimens to be sampled. The use of adequate and appropriate numbers of animals to establish variance and assure the reliability of results is essential to prevent needless repetition of studies or experiments, thus leading to animal overuse.
 - 2. Whenever possible a statistician should be consulted to develop study designs that have the appropriate statistical power to accomplish sound objectives.
 - ii. While the study design usually dictates the number of animals required, the principle of only taking the smallest number of animals required shall be observed.
 - d. Collection of large series of animals from breeding populations should be avoided, as well as unacceptable collection techniques and habitat destruction
4. Bioprospecting: needs to be in line with the SA bioprospecting [regulatory framework](#).