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Framework for quality assurance and quality development in SLU's research and environmental monitoring and assessment

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1. Purpose

One of SLU's most important strategic goals is to ensure high quality in all operations. SLU's strategy for 2021–2025 states that “Research, education and environmental monitoring and assessment shall be characterised by high quality, a clear international dimension and strong links between the various activities. The university also works to ensure that scientific results and data are disseminated and used in society, in both the short and long term.”

Work on promoting and developing quality is always ongoing throughout the university. The purpose of this framework is to provide a comprehensive description of how SLU systematically works to provide conditions for high quality in research and environmental monitoring and assessment (EMA), and to monitor quality.

This framework is a counterpart and a complement to *Framework for the quality assurance of courses and study programmes at SLU* (SLU ua 2016.1.1.2-4643)¹.

For practical reasons, this document uses the term “operations” as a collective term for research and EMA.

2. SLU's quality work and quality system

2.1 Quality work

In this context, quality work refers to activities aimed at continuously developing and monitoring both the actual quality of operations and the conditions for high quality. SLU's quality work is carried out both within academia and in support functions such as the university administration and the library. Quality work is largely trust-based, and responsibility is shared by all those involved in research and EMA in their various roles.

2.2 Quality system

The quality work and its components can be described as a quality system. SLU's quality system for research and EMA includes frameworks, organisation and responsibilities, tools for monitoring and developing quality, and internal and external stakeholders (see below and Figure 1).

Frameworks

SLU's quality work is based on the Higher Education Act (1992:1434), the Higher Education Ordinance (1993:100), the Ordinance for the Swedish University of

¹ The educational components of third-cycle courses and study programmes are covered in the framework for courses and study programmes. As doctoral students' thesis work is an essential part of their research, some elements of the framework for research and EMA also concern doctoral students and third-cycle education.

Agricultural Sciences (1993:221) and other relevant legislation. It is also guided by the European Charter for Researchers and Code of Conduct for the Recruitment of Researchers. These documents, together with the university's strategy and other internal governing documents, provide the framework for quality work.

Organisation and responsibilities

Responsibility for ensuring high quality of operations is divided between different levels and parts of the organisation in accordance with the rules of delegation. Formal responsibility for the quality of operations rests with the faculty boards². These in turn have delegated some responsibility for recruitment and promotion to boards within the faculties. The heads of department are responsible for the management of their respective departments³. Each individual employee is responsible for ensuring that their own activities are conducted in accordance with the regulations and current academic practice.

Tools for quality enhancement

A number of tools are used in daily quality work that aim to develop and monitor the quality of operations. One important tool is external and internal peer review of publications, grant applications and individual qualifications (e.g. for recruitment or promotion). Other tools relate to the development of conditions that enable good quality research and EMA (working environment management, gender equality and equal opportunities work, discussion on research developments, sharing of knowledge and data, etc.).

Staff

The main quality work is carried out by individual staff members as part of their daily work – at individual, research group and department level. A good working environment based on SLU's core values, as well as skills development incentives and support, are examples of important criteria to allow employees and students to develop, as well as for the recruitment of new talent.

The wider world

The quality of operations is influenced by interaction with sponsors, co-creators and users of our knowledge. Research is often carried out in collaboration with other research organisations, companies, etc., and increasingly in collaboration with the general public. Interaction with authorities is a key element in EMA.

Operational support and infrastructure

High quality research and EMA requires access to appropriate infrastructure. Furthermore, effective operational support at different levels within the university is required.

² Organisation and assignment of responsibilities relating to the Board of SLU and bodies directly subordinate to it (SLU ID: SLU.ua.2022.1.1.1-1562)

³ Organisation and assignment of responsibilities relating to the vice-chancellor of SLU and bodies directly subordinate to the vice-chancellor (SLU ID: SLU.ua.2022.1.1.1-1424)

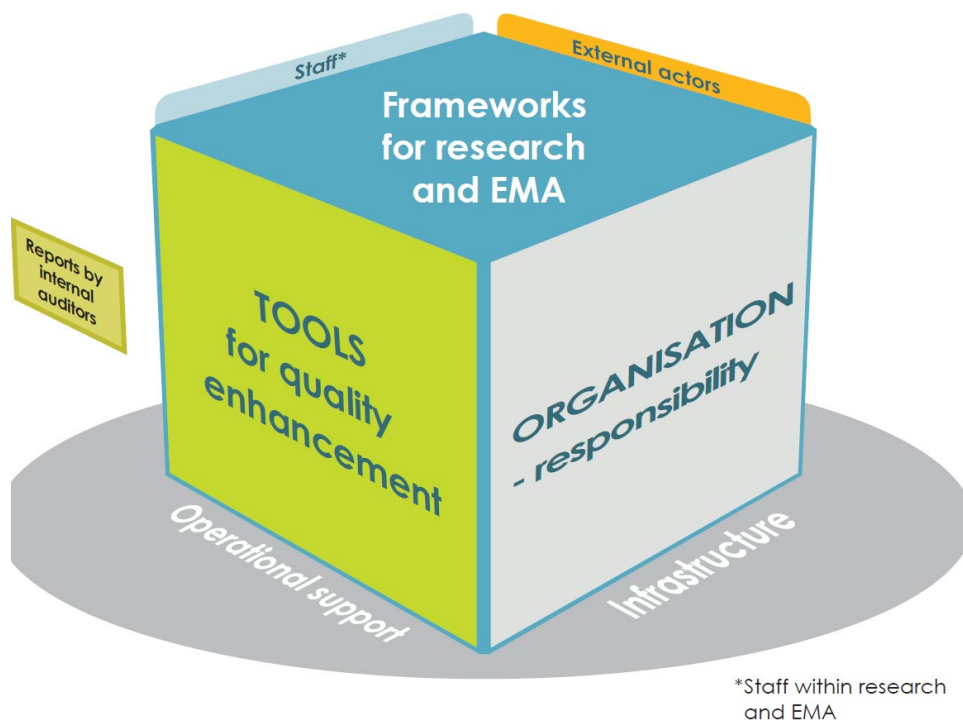


Figure 1. Schematic diagram of the quality system for research and EMA.

3. Systematic quality assurance

The aim of systematic quality assurance is to ensure and improve the conditions that enable high quality through structured and systematic work. Quality assurance is a process for which the vice-chancellor holds ultimate responsibility. Systematic quality assurance is conducted in a coordinated manner at different levels of the organisation in accordance with established guidelines. In this way, SLU ensures that the university offers conditions that promote high quality in its activities.

SLU's systematic quality assurance includes:

- *Internal analysis* of how well the prerequisites for high quality operations are met within the organisation.
- *External review* of the quality of operations *per se*, combined with assessment of the prerequisites for high quality from an external perspective.

SLU's systematic quality assurance of research and EMA must be compliant with national and international requirements and be known, visible and understandable within the organisation.

3.1 Quality areas and quality standards

The systematic quality assurance of research and EMA is based on five *quality areas* which describe prerequisites for high quality activities. These areas are

largely based on the national framework developed by the Association of Swedish Higher Education Institutions (SUHF)⁴. These quality areas are:

- Skills supply and skills development
- Development and renewal
- Infrastructure
- External collaboration and mutual learning
- Good research practice

Annex 1, *Standards for quality*, defines what SLU is striving to achieve in each quality area in order to provide conditions that enable high quality of operations. The standards thus constitute an internal benchmark for quality assurance. Criteria for assessment of quality *per se* of research and EMA will be defined by means of a specific process prior to each evaluation.

3.2 Systematic quality assurance process

Systematic quality assurance is carried out in a cyclical process that includes information gathering and analysis, identification of development measures, monitoring of measures implemented and their results, and communication. The quality assurance process consists of *situation analysis*, *quality dialogues* and *evaluation* and has a dual purpose: quality assurance and quality development.

The process is outlined below (a detailed description is provided in Instructions for systematic quality assurance of research and EMA, SLU.ua.2022.1.1.1-2210).

a) Situation analysis

A situation analysis of conditions for high-quality research and EMA is carried out every four years. In this situation analysis, each department reflects on its own situation in relation to the internal benchmark, i.e. how well the standards for each quality area are met, and also identifies development needs.

Development needs identified in the situation analysis and proposals for action are described in a *quality report*, which is then discussed in a *quality dialogue* between the department and the faculty management. Based on the quality report that the faculty then compiles, a corresponding quality dialogue is held between the faculty management and the vice-chancellor.

Working on the basis of needs identified during the quality dialogues, actions within operational support are discussed in a quality dialogue involving the vice-chancellor, the chief operating officer and the library director.

⁴ Gemensamt ramverk för lärosätenas kvalitetssäkring och kvalitetsutveckling av forskning [Common framework for quality assurance and quality development of research by higher education institutions] (SUHF 2019). SLU's quality areas correspond roughly to the "Topics and prerequisites" in the SUHF framework.

Decisions are made at departmental, faculty or university level depending on the nature of the measures. Measures are planned and implemented in integration with regular operational planning.

b) Quality and Impact evaluation (Q&I)

A peer review is also conducted every other time the situation analysis is carried out (i.e. every eight years) with the help of external experts. This *evaluation*, Quality and Impact (Q&I, or in Swedish “KoN”), is a development of the research evaluation that SLU has carried out on two previous occasions ⁵ and is intended to provide a basis for further development of the quality of operations and underpin strategic planning.

The evaluation covers both the prerequisites for high quality and the quality and societal impact of research and EMA. The external reviewers bring an external perspective to the analysis of strengths, weaknesses and development opportunities in this regard.

The departments' situation analyses and quality reports as described in a) above form a basis for the evaluation, supplemented by a self-assessment in which the departments analyse the quality and impact of their operations from an international perspective.

Guidelines for the peer review, including criteria for assessing the quality and impact of research and EMA, will be established by specific decisions made by the vice-chancellor. The evaluation format should be developed continuously and adapted to relevant needs within the organisation, as well as to the evolution of evaluation methodology taking place in the research community.

The results of the external review form the basis for the subsequent quality dialogue between the department management and faculty management, in a similar way to a) above.

c) Annual follow-up – quality dialogues

Quality dialogues between departments and faculty management, as well as between faculty managements and the vice-chancellor, are also held in years in which no situation analysis or evaluation takes place as described in a) or b) above. The quality dialogues are conducted in conjunction with annual operational dialogues at the level in question.

The aim of these quality dialogues is to follow up on the implementation and results of the development measures identified in a) or b) above. These dialogues may lead to decisions on further measures or changes to planned measures at the relevant level within the organisation.

⁵ Quality and Impact evaluation (Q&I) for 2009 and 2018 respectively.

The vice-chancellor also conducts annual quality dialogues with the chief operating officer and the library director in order to follow up on operational support actions.

Conclusions from the quality dialogues are documented and made available on the staff website.

3.3 Organisation and responsibility for systematic quality assurance

The vice-chancellor, with the support of the Vice-Chancellor's Management Group, is responsible for the framework and instructions for quality assurance work. The vice-chancellor informs the SLU Board annually about the progress of the quality work.

The vice-chancellor is also responsible for deciding on assignments for the library. The university director is responsible for deciding on assignments for divisions within joint activity support.

The faculty management and head of department are responsible for ensuring that quality dialogues and monitoring at faculty and department level are carried out in accordance with the guidelines set out in this framework and the instructions decided upon by the vice-chancellor.

Students and doctoral students are given the opportunity to comment on the faculties' quality reports and participate in quality dialogues between faculty management teams and the vice-chancellor. Doctoral students also participate in the departments' situation analyses in their capacity as employees.

The vice-chancellor is responsible for ensuring that instructions and results are communicated internally and externally and that the work is documented. The vice-chancellor is also responsible for monitoring the systematic quality assurance process.

Operational support at all levels assists the management in the quality assurance process. The planning division is responsible for ensuring that internal governing documents for quality assurance are kept up to date with external requirements.

Annex 1. Standards for quality

The systematic quality assurance of research and EMA at SLU is based on five quality areas which describe *conditions that enable high quality operations*. A standard, i.e. an internal benchmark, has been defined for each quality area. Each standard is divided into a number of sub-standards which highlight different aspects.

Note: The term “operations” here refers to both research and EMA. Some standards and sub-standards are more relevant to one or the other, but most are applicable to both research and EMA.

The standards are based on the following legislation and governing documents:
HL = Higher Education Act, SFS 1992:1432; HF = Higher Education Ordinance, SFS 1993:100 FSLU = Ordinance for the Swedish University of Agricultural Sciences, SFS 1993:221 FL = Administrative Procedure Act, SFS 1986:223; Systematic Work Environment Management (AFS 2001:1); Act on responsibility for good research practice and the examination of research misconduct (2019:504); ECR = European Charter for Researchers; CRR = Code of Conduct for Recruitment of Researchers; Common framework for quality assurance and quality development of research by higher education institutions] (SUHF 2019).

1. Skills supply and skills development

Standard:

Skills supply is based on needs in research, EMA and education. Recruitment takes place in open competition. Employees are given the opportunity to develop their skills.

Sub-standards:

1.1 Skills supply planning efforts are systematic and long-term, and include gender equality and equal opportunities perspectives.

1.2 The recruitment process is open, transparent and merit-based.

1.3 Employees are offered opportunities for skills development on equal terms and regardless of gender.

1.4 Establishment and development of researchers early on in their careers is particularly supported.

2. Development and renewal

Standard:

Operations are characterised by good leadership and co-workership and a sustainable working environment on equal terms. The working environment and the organisational framework promote development and renewal of operations.

Sub-standards:

2.1 The organisation works systematically to promote equal opportunities, gender equality and a good working environment that is free from discrimination.

2.2 The organisation offers good opportunities for creative and open academic discussion, making use of the expertise of the staff.

2.3 A continuous strategic discussion is held on priorities and the need for actions for development and renewal.

2.4 The operations are developed and renewed through internal, national and international cooperation, including mobility.

2.5 Doctoral education is an integral part of operations and contributes to development and innovation.

2.6 Research and EMA evolve through participation in education at undergraduate and Master's level.

3. Infrastructure

Standard:

The infrastructure for research and EMA reflects the needs and evolution of both, and is characterised by accessibility and efficient use of resources.

Sub-standards:

3.1 Employees are aware of and have access to the necessary infrastructure within SLU and externally.

3.2 Resources for infrastructure are allocated and prioritised based on the needs of research, EMA and education.

3.3 Infrastructure develops in line with research development and technological development.

4. External collaboration and mutual learning

Standard:

Collaboration with other actors in society leads to mutual learning and development of new knowledge and skills.

Sub-standards:

4.1 Research and EMA evolve through interaction with stakeholders outside academia.

4.2 Collaboration with other actors in society is developed and planned strategically, taking advantage of co-workers' skills and experience related to collaboration.

4.3 Open science in the form of publications, decision support and publication of data develops the organisation and its external collaboration.

4.4 Participation in government enquiries, consultative procedures, policy work and expert assignments of other types contribute to the development of the organisation and its external collaboration.

4.5 Channels and tools for communicating new knowledge are available and used within the organisation.

4.6 Opportunities to develop results from research and EMA into innovations are known and exploited.

5. Good research practice

Standard: Research and EMA are carried out with academic integrity according to good research practice.

Sub-standards:

5.1 Ethical guidelines and principles of good research practice are well known and adhered to within the organisation.

5.2 There is an ongoing discussion within the organisation on academic integrity and research independence.

5.3 Suspicions of misconduct, i.e. deviations from good research practice, are followed up and action is taken if necessary in accordance with SLU's internal guidelines.