

## Strategy for the VH Faculty 2017–2020



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## 1. Strategy aims and content

The aim of the faculty's strategy is to set the overall operational direction for 2017–2020 as it relates to research, education, environmental monitoring and assessment (FOMA) and collaboration. The faculty's strategy includes the five focus areas described in SLU's strategy - *Employees, Students and education, Research infrastructure, External collaboration and Our shared SLU*. The faculty's strategy also highlights specific external conditions and a selection of particularly relevant research areas.

The priorities outlined in SLU's strategy (SLU ua 2015.1.1.1-409) have been clarified and concretised from the faculty's perspective. The strategy's focus areas contain clearly formulated operational goals so that it's content can be converted into concrete action plans.

The faculty's strategy is regarded and put into practice in the operational plans of the departments. Responsibility for monitoring rests with the VH Faculty Board. Persons/units appointed in separate decisions are responsible for the implementation, reporting and evaluation of activities.

## 2. The VH Faculty in the world

### 2.1 Mission, vision and values

The faculty is responsible for research and education on healthy animals and animals with disease. This is done with a sustainability perspective in which ecological/environmental, economic and societal impact are considered.

Based on SLU's mission and vision, the faculty has formulated a more specific vision for our operations:

*The sustainable use of animals for global food supply, public health, and with the well-being and health of the animals themselves in focus.*

SLU's core values – a scientific approach, creativity, openness and responsibility – permeate our activities and we believe they should be kept alive in our daily work.

The faculty is a leading actor in issues relating to veterinary medicine, veterinary nursing, and animal science, thereby contributing to SLU's vision of being a world-class university within life and environmental sciences. Activities include both basic and applied research.

Academic integrity and freedom are important key words for the faculty. The faculty focuses on being an *equal opportunities employer* and is committed to treating all employees equally with regard to working conditions, salaries, participation and career opportunities, as well as complying with all legal requirements relating to discrimination.

Consideration of environmental factors permeates the VH Faculty's activities, which are conducted within a certified environmental management system (ISO 14001).

### 2.2 Faculty profile and role

The VH Faculty's mission is to conduct high-quality research and teaching in veterinary medicine, veterinary nursing, and animal science. We also conduct environmental monitoring and assessment. The faculty has the overarching responsibility for issues relating to animals, which includes agriculture, sport and companion animals, aquaculture, reindeer herding, as well as laboratory animals and wildlife. Research and education within the government-commissioned One Health Initiative will be clarified during the strategy period. The Swedish Centre for Animal Welfare (SCAW) is a part of the VH Faculty and is tasked with developing European animal welfare efforts in the coming period.

The VH Faculty conducts basic and applied research with clear societal relevance, characterised by research and collaboration that includes support of authorities, problem resolution, and translational research.

The faculty is responsible for SLU's professional and general degree programmes in the animal sector. To carry out our mission, we have access to appropriate facilities for food-producing animals with well-developed systems for the collection of large amounts of data (big data), knowledge in bioinformatics, and the University Animal Hospital.

The faculty is strongly committed to global food supply and to strengthening the competitiveness of domestic Swedish food production through research and strong vocational training. In addition, the faculty is strongly committed to the development of animal health care and improved health for sport and companion animals nationally and internationally.

### 2.3 External conditions

The global population is growing, with continued urbanisation and changing consumer patterns as a result. With this follows a modified view of animals and animal husbandry.

Total livestock production is increasing while it remains necessary to manage the environmental impact of agriculture. Within the EU, there is discussion about the consumers' willingness to pay for locally produced foods that are climate-, environment- and animal-friendly. There is increased focus on innovation and more applied and interdisciplinary research that benefits employment and reduces environmental impact. Consumers are demanding transparency in the production chain and traceability. Livestock production must contribute to environmentally, economically and socially sustainable development, and this is where feed efficiency, animal housing, and animal health and welfare are of particular importance, as are questions about the issues of antibiotic resistance and anti-parasitic agents. A restrictive use of medications in food-producing animals is an important contribution to reducing the risk of multi-resistance. Sweden is a world leader in this area. Antibiotic use for sport and companion animals has not been given the same priority and needs much more attention.

In general, Swedish livestock production has fallen sharply over the last 20 years, while domestic consumption of food products derived from animals has risen due to increased import. There are, however, exceptions, for example production of poultry and lamb has increased. Demand for locally produced products has also increased significantly. There is a trend toward fewer but larger herds for all animal species, which may have implications including the spread of disease, animal health and welfare, productivity, and climate impact. There is a continuing need to identify animal husbandry's total impact (positive and negative) on the environment and animal welfare, and to include such factors as organic versus conventionally produced foods. Sweden's alarmingly low level of self-sufficiency is being discussed more and more, as rapid changes in global political and trade agreements dramatically affect supply and demand of agricultural products. Aquaculture is a growing food sector and continued rapid development requires long-term solutions relating to feed, environment, and animal health and welfare.

Increased globalisation and a changing climate have major implications for food security and for the spread of zoonoses in ways other than through food products, for example through the transport of animals between countries and continents. Sweden and other countries in northern Europe will be expected to take more responsibility for production of animal-based foods when anticipated climate changes alter conditions for animal husbandry in southern and central Europe. A holistic approach to 'one world - one health' (One Health), which includes humans, companion animals and wildlife is necessary for good animal and public health. This should be manifested within the framework of the faculty's One Health initiative together with other SLU faculties as well as other universities and institutes, primarily in human medicine, veterinary medicine, ecology and biology.

The animals' perspective is accorded greater significance in animal husbandry. This is reflected, for example, in the draft revision of the Swedish Animal Welfare Act, which in addition to good animal protection aims to promote respect for animals and their welfare, since animals have an intrinsic value of their own, regardless of any benefit humans derive from them.

The number of sport and companion animals has increased significantly in recent decades. These animals are transported and follow their owners across borders and continents in a way that we have never before experienced. Animal owners, both nationally and internationally, are increasingly demanding specialised care, and increasingly large sums are being spent on the care and health of these animals. Taking a sick animal to a specialist within or outside of Sweden is no longer remarkable or unusual. A rapid consolidation of ownership of private veterinary hospitals for sport and companion animals is a recent trend, nationally and internationally. The market's demand for advanced diagnostics and treatment in a range of specialist topics is being met through large investments in equipment and infrastructure, as well as access to highly trained and specialised staff. This affects the working conditions and competition for veterinary personnel, but also SLU's ability to recruit and retain staff who carry a high market value. Even the market for advice on how these animals should be fed, managed and trained is on the rise. Most students trained at the faculty today will earn their livelihood through working with sport and companion animals.

We also see an increase in the use of animals in the care sector, farm stays, and in various animal-based therapies. Collaboration with researchers in human medicine and psychiatry is necessary to increase the understanding of the significance animals have for human beings. The faculty's mission is to study animals and how they experience their situation.

Care, handling and use of research animals is an area under constant development, and the Swedish Board of Agriculture will establish a 3R Centre (reduce, refine, replace) in 2017. The faculty's expertise in this area is necessary to optimise management and minimise use of laboratory animals. In addition to classic research animals (rodents and pigs), interest in studying companion animals with spontaneous diseases is on the rise, as these are often greatly resemble conditions in humans. The expertise to properly diagnose and treat these diseases is necessary to optimise results from these comparative studies. The faculty's expertise is of utmost importance here as well.

### 3. Operations during 2017-2020

#### 3.1 Research

The faculty conducts research in veterinary medicine, veterinary nursing, and animal science. Level of activity, financial stability and flexibility are examined through annual follow-up of the faculty's subject areas, including analyses of external conditions.

##### *3.1.1 SLU's prioritised research domains*

The following are the faculty's activities within the four priority domains established in SLU's strategy for 2017–2020.

### ***Sustainable and secure food supply***

The faculty's objectives for the strategy period are:

- to develop and increase the demand for research on sustainable animal husbandry, secure food supply and food safety;
- that basic and applied research help strengthen the competitiveness of national animal husbandry where sustainability perspectives are also central to the faculty's commitment in developing countries;
- that the faculty's unique competencies in preventive animal health care, animal welfare, housing and general care, as well as bioinformatics and technology, continue to contribute to the development of modern decision-making tools for animal husbandry – *Precision Livestock Farming* (PLF);
- that the faculty's intention to continue contributing actively to the upcoming national food strategy by increasing focus on applied research that contributes to Swedish livestock management's good animal health, animal welfare and low antibiotic consumption has an impact on Swedish and international markets, thus giving Swedish agricultural enterprises the economic prerequisites to survive;
- that the faculty contributes to raising the nutritional value of food derived from animal raw materials through increased cooperation within SLU and with other centres of learning.

### ***The importance of nature and companion animals for human health and well-being***

For many people in today's urban society, contact with animals, cultivation for private consumption, spending time in nature or in green zones in an urban environment are of great importance for well-being. The faculty's objectives for the strategy period are:

- to use the new platform Future Animal Health and Welfare, which has its organisational headquarters at the faculty. This is to highlight and develop SLU activities relevant to the individual, and also includes values other than those contained in our mission statement;
- to ensure that the well-being of animals is constantly in focus to achieve the objectives of this focus area.

### ***Bio-based materials***

Projects within this research domain can be found at several of the faculty's departments. The faculty's objectives for the strategy period are to:

- stimulate research on the manufacturing of new products from domestic and imported raw materials such as feed, biofuel, and synthetic materials based on the forest, animal by-products and materials from seas and lakes;
- stimulate research on synthetic proteins and stem cells, which are also included in this domain.

### ***Economy***

The VH Faculty will not establish staff positions in the field of Economics; however, within our operations as well as our courses and programmes, the faculty will enhance knowledge about business profitability and the long-term significance of the economic domain from a sustainability perspective. The faculty's objectives for the strategy period are:

- to include financial expertise in platforms, boards, centres and courses.

#### *3.1.2 The faculty's priorities*

In addition to SLU's four priority research domains at the university-wide level, the faculty has also established the following objectives:

- to prioritise research on animals for their own sake, but also where animals can serve as models for human diseases. These two goals need not conflict with each other, as research can lead to significant improvements in health and quality of life of the animals being studied;
- to reduce the use of antimicrobial substances through strengthening One Health as a field of study – locally, nationally and globally, and to widen the field of study from the core of infectious diseases and antimicrobial resistance which has thus far been the focus. Increased research efforts to be placed on the prevention of infectious diseases for example through increased understanding of mechanisms that impact the spread of infection, the development of effective and safe vaccines, appropriate feeding, housing and care. SLU is already successfully collaborating with Uppsala University, Linnaeus University and the Swedish National Veterinary Institute within One Health and this collaboration will be strengthened and developed;
- to conduct research on complex diseases and diagnostics in collaboration with researchers in human medicine, where we can find treatments for sport and companion animals that can later be transferred to humans. The trend toward more individualised treatment and diagnosis (so-called personalised medicine) can be developed with this type of research;
- to safeguard the SLU's strong position in wildlife research where veterinary medicine research today is primarily focused on infectious diseases, disease dynamics, food safety, and reproduction in various wildlife populations. A key for continued knowledge development in the field, however, is to increase collaboration across disciplines and faculties;
- to develop Systems biology, which is an interdisciplinary field where information from different levels of detail and approaches are integrated to build understanding of how biological systems work. The topic has emerged as a result of technological developments in the biotechnology subject field that have contributed to the ability to extract large amounts of data from biological material (so called big data management). This is expected to contribute to more interdisciplinary collaboration and can also contribute to a decline in the use of laboratory animals (in accordance with 3R);

- to continue, but also expand, international research and educational collaboration, with a focus on low-income countries where capacity development is already well-integrated at the faculty;
- to create sustainable systems in animal husbandry that benefit biodiversity and ecosystems and which do not have negative effects on the climate and environment;
- to develop animal feed and the raw materials from which it is made for animals used in food production and companion animals, such that they do not compete with, but rather complement, our production of food from cultivation and fishing. The focus should be on feed that is not suitable for humans, but that animals in food production can transform into food with high levels of the desired quality.

### 3.2 Education at undergraduate and Master's level

During the strategy period, the faculty will contribute to efforts to meet the intermediate objectives for the focus area *Students and education* described in SLU's strategy, and prioritised measures specified in the strategic direction document for education at undergraduate and Master's levels (SLU.ua 2016.1.1.1-3768). Intermediate objectives are:

- to increase the competition for places at all levels and that the students better reflect the full breadth of society;
- that programmes and courses are more clearly characterised by educational quality and stimulating learning environments;
- that all degree programmes at undergraduate and Master's level be given stronger links to research and relate to the needs of society nationally and globally.

The strategic direction document defines the subject specialisation of courses, educational structure, quality improvement efforts, efficient use of resources, and implementation and follow-up.

#### 3.2.1 Subject specialisation

The faculty has programmes in the following subject fields: veterinary nursing, equine science, animal science and veterinary medicine.

#### 3.2.2 Educational structure

The faculty's programmes vary from short (veterinary nurse and equine science) to long (agriculture – animal science and veterinary medicine) professional programmes, and general Bachelor degrees (ethology and animal welfare, and sport and companion animals) and Master's programmes (animal science).

To further develop the faculty's degree programmes, work is being done on the five priority measures in SLU's strategy to reach the intermediate objectives, where activities are defined in the action plan for undergraduate studies. The priority measures are:

- to increase the impact of student recruitment efforts;
- to set aside work time for professional development of teaching staff;
- to strengthen skills training within course degree programmes;



- to elaborate on and execute plans for external collaboration;
- to enhance international mobility among students and teachers.

In addition, the faculty wants to increase the number of international specialist places in veterinary residency programmes.

### 3.3 Postgraduate education

Postgraduate education is important for the faculty's recruitment for future employment and for development of national and international research in our subject fields.

The faculty's objectives for the strategy period are:

- increase the number of newly enrolled PhD students, while continuing to provide high-quality education, resulting in a competitive degree;
- increase the number of students trained at the faculty to pursue postgraduate studies;
- make it easier for all PhD students to take advantage of the faculty's range of PhD-level courses and seminars regardless of where they are placed;
- the faculty's research school Veterinary Medicine and Animal Sciences (VMAS) will be more proactive and visible, as well as provide more support for doctoral students and supervisors;
- work out clearer career paths for doctoral students and postdoctoral researchers;
- review the working situation of foreign doctoral students so that all doctoral students have access to the best possible living conditions regardless of how they are financially supported;
- work towards integration of postgraduate education within veterinary medicine and specialisation in residency programmes for veterinarians, to obtain synergies and increase the number of graduates with degrees in both fields.

### 3.4 Environmental monitoring and assessment (FOMA)

During the strategy period, the faculty will contribute to the FOMA objectives outlined in SLU's strategy, and the prioritised measures specified in the strategic direction document for environmental assessment (SLU.ua. 2016.5.1-4389). The FOMA objectives for the strategy period are:

- to work proactively to deliver to the primary target group environmental information and contribute to science-based decision-making for sustainable development, which makes balanced consideration of the use of natural resources and the environmental impact of this use possible;
- to position SLU as a leader in national and international development of environmental analysis in areas where the university is strong;
- to make the environmental data SLU handles easily available to the primary target group, quality-controlled, well-described and effectively managed.

The faculty is responsible for the *Toxin-free Environment* programme. The programme was evaluated in 2016 and improvement proposals identified in the assessment are the basis for further development in the coming strategy period.

### 3.5 Collaboration

During the strategy period, the faculty will contribute to attainment of objectives for the focus area *Collaboration* as outlined in SLU's strategy, and the prioritised measures specified in the strategic direction document for collaboration (SLU.ua. 2016.1.1.1-4390).

- Strengthen the merit rating of collaboration.
- Structure and organise work with 'strategic partnerships'.
- Streamline internal coordination of collaboration.
- Support skills development in collaboration.
- Develop forms for collaboration common to multiple SLU locations.

In addition to these objectives, the faculty's own collaboration objectives for the strategy period are:

- the faculty should be the obvious academic collaborative partner within the faculty's areas of expertise;
- the faculty's employees shall have a better understanding of the benefits and need for collaboration within SLU and externally;
- the faculty will work for increased mobility between academia, industry and government agencies.

The faculty established a collaboration committee in 2016. In addition, a committee was formed for agricultural food-producing animals, and together with earlier committees for small animals and for horses, these will provide the faculty with a comprehensive organisation for collaboration within our areas of responsibility, with clear ingress. The faculty will develop modalities for collaboration through these committees.

The faculty's work includes:

- participation in SLU's new organisation established to coordinate collaboration and contribute to the development of effective forms of collaboration;
- following up on interdisciplinary meeting places and platforms to ensure optimal use of resources;
- increasing the presence of faculty employees at national gatherings where industry and government agencies meet;
- developing the faculty's strategic partnerships;
- in cooperation with other faculties, increasing SLU's presence in parts of Sweden other than where SLU currently operates.

## 4. Focus areas in SLU's strategy for 2017–2020

The faculty intends to contribute actively to the implementation of the measures in SLU's strategy for the focus areas *Employees*, *Students and education*, *Research infrastructure*, *External collaboration* and *Our shared SLU*. This will be done in accordance with the mandate given in SLU's allocation of funds, specific instructions from the vice-chancellor, and through our own priorities. The practical implementation and monitoring of the work in the focus areas is described in the faculty's operational plan/action plan. For the focus area *Employees* (not addressed above), the faculty will pay particular attention to the following points:

- Through the creation of VHC (Centre for Veterinary Medicine and Animal Science), there are new facilities where researchers and teachers can meet. In addition, developments in technology have decreased the distance between our various locations, although further efforts are needed to increase communication between employees.
- The faculty intends to maintain the level of research support provided to lecturers.
- A positive and creative work environment: The faculty feels strongly responsible for the career development of younger employees. During the forthcoming strategy period, career support will thus be offered to young researchers to strengthen competitiveness and create regrowth in our operations.
- Appropriate measures based on the 2016 staff survey will be implemented during the strategy period.
- The special circumstances that employees enjoy at departments shared by more than one faculty (inter-faculty departments) shall be given more attention and dialogue to optimise relations.

Within the focus area *Infrastructure*, we raise the following points:

- There are strong infrastructures in place at VHC, the research facilities at Lövsta, Götala and Röbbäcksdalen, and the University Animal Hospital (UDS), including the new SLU Animal Locomotion Laboratory. These will be utilised optimally and marketed better to external stakeholders, thereby contributing to, amongst other things, increased funding and better opportunities for research and clinical specialisation.
- The faculty operates an infrastructure board which inventories requirements to ensure that we release resources to allow for new investments and maximise utilisation.