Study of SLU's Organization and Structure

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Report to the Board of SLU, 7 September, 2012

Contents

Appendices

Executive summary

The commission has observed several weaknesses in SLU's organization and structure that are detrimental to the university's ability to meet the challenges expected in the near future. In order to realize its full potential and ensure resource-efficiency, SLU has to function as *one university* rather than a number of geographically and organizationally separate entities.

A broadening of SLU's mission to areas related to Quality of Life should be considered in order to extend research and education into areas of greater interest to the general public, while maintaining the university's traditional strengths. The name, Swedish University of Agricultural Sciences, is somewhat misleading, since it does not cover the entire range of activities. A change of SLU's name is therefore recommended.

A main concern is that the current Faculties lack a distinct scientific profile, and thereby internal scientific cohesion. Thus, no single Faculty has the ability to make strategic decisions over an entire scientific area (except Veterinary Medicine). There are also anomalies in terms of education provision, e.g. similar educational programmes given by different Faculties. Two examples on how the Faculties might be reorganized in order to solve this problem are presented, none of which implies relocation of employees between campuses/locations. For the new organization to function, harmonization of resource allocation models and administrative systems is a prerequisite.

In order to achieve commonly accepted goals in an efficient and timely manner, SLU needs a strong line-management with the ability to make strategic decisions. The panel proposes a model that includes a clear line of authority from the SLU Board to the Vice-Chancellor to Deans to Heads of departments to faculty and staff.

The proposed reorganization of the Faculties underlines the need for efficient communication. With excellent communication systems, having multiple campuses/locations in different eco-zones could be a benefit, rather than a liability. Enhanced communication will permit the development of pan-university research themes in different areas, e.g. Food Systems, Plant/Forest Protection, Genomics, Ecology, Soil Science etc.

The panel recommends SLU to broaden its focus on Food Systems to include food processing, human nutrition and health. This requires strategic recruitment of new staff in areas like Food Technology, and Human Nutrition and Community Nutrition, as well as collaboration with medical schools. Similarly, a cross-university network in Social Science is suggested, including strengthening extra-mural collaboration as well as in-house competence.

The commission also presents suggestions on how SLU might strengthen its cohesion and competitiveness through improvements in e.g. international collaboration, PhD education, and recruitment/appointment procedures.

SLU is strongly recommended to make a clear decision on the way forward, including a timetable for the different phases of implementation of the proposed reorganization.

Specific recommendations:

- *SLU should broaden its mission to include areas of greater interest to the general public, i.e. aspects that are related to Quality of Life (section 2).*
- *SLU should strengthen its profile in two main areas, Food and Environment.* (3)
- *SLU should consider changing its name in a way that better reflects the university's present and potential scope*. (3)

- *SLU should reorganize itself into three or four new Colleges, each with a distinct scientific profile and thus, better scientific cohesion. (4)*
- *Immediate steps should be taken to harmonize models for allocation of funds, overhead charges, etc., and to eliminate other administrative obstacles for sharing of departments between colleges. (4)*
- *In order to optimize resource utilization, SLU should review the number of campuses/SLU locations and departments. (4)*
- *SLU should adjust its governance structure in order to create strong line-management with the ability to make strategic decisions that will move the university forward. (5)*
- *In order to enhance internal communication, SLU should ensure that efficient technology is available and encourage staff to use it. (6)*
- *SLU should strive for increased cohesion by establishing pan-university, cross-cutting areas and activities.(6)*
- *SLU should develop a strategy for increasing the number of international students and collaborate with other universities in recruitment efforts. (7.1)*
- *Resources should be set aside for international exchange of staff and students, guest professorships, etc. (7.1)*
- *A deliberate strategy for collaboration with other major Swedish universities should be developed.(7.2)*
- *SLU should take a more strategic approach in order to increase the number of international (and external) candidates that includes active searching of candidates, providing sufficient financial resources for new professors, etc. (7.3)*
- *The potential of young researchers should be evaluated at an early stage.(7.3)*
- *SLU should continue to strive for a professional, cost-effective administration.(7.4)*
- *SLU's website must have a structure that is easily understood and provide readily available, current information adapted to the needs of external as well as internal users. (7.5)*

1. Introduction

1.1. The task

The task of the commission has been to study SLU´s organization and structure, and to present proposals for how the university should be organized to create maximum efficiency in use of its resources. The Instructions provided by the Board of SLU were as follows:

The purpose of the study is to review the current university organization, its strengths and weaknesses at present and over the next ten years. On the basis of this review, the study commission is to propose organizational changes with a view to improving the university's potential for efficient resource utilization, internal collaboration, prioritization and concentration of strengths from an SLU perspective. A fundamental element of the study is the need for high scientific quality and to raise SLU's profile in relation to the national and international higher education landscape. The study should examine the pros and cons of various organizational models, taking particular account of SLU's extensive geographical dispersal. The commission should avail itself of international experience of various organizational models and use that experience as a basis for determining the advantages and drawbacks of using a similar model at SLU. The study should take into account how different organizational models affect the development and quality of both first-cycle programs and postgraduate education. The study should also consider how different organizational models impact other aspects of SLU's operations, such as extension with relevant sectors and the community at large, collaboration with other higher education institutions, the scientific foundation of education

programs, and the dissemination and impact of research findings. The commission should present a main proposal and, if considered appropriate, no more than two alternative proposals.

The commission panel has included the following members:

Professor Lars Rask, Executive Director of the Swedish Foundation for Strategic Research (Chair); Professor Alice Pell, Vice Provost for International Relations at Cornell University; Professor Martin Kropff, Vice-Chancellor of Wageningen University; Professor Carys Swanwick, Faculty of Social Sciences, Director of Learning and Teaching, Sheffield University; Professor Per Holten-Andersen, President of Copenhagen Business School, and Professor Seppo Kellomäki, Vice Head of the School of Forest Sciences, University of Eastern Finland. Research Advisor Boel Åström, SLU, has assisted the panel as secretary.

1.2. Work process

Written background on SLU's profile, current organization, strategy, KoN evaluation, history, campuses, etc., was made available to the panel in mid April. At the panel's request, supplementary information was provided on operational data (staff, students, departments, scientific publication, etc.), a description of the resource allocation models currently used at SLU and the status report to the SLU Board on 31 October 2011 from the Deans' working group on Faculty structure.

The panel has held two physical meetings in Uppsala, on 14-15 May and 12-13 June. On these occasions, the panel requested and carried out meetings with the Vice-Chancellor, Deputy Vice-Chancellor, Chair of the Board, the Deans (Tomas Lundmark met only with the Chair of the Commission), the Council of Researchers (FOR) and representatives for the students (SLUSS). These discussions provided valuable additional information and opportunities to test ideas on significant representatives of SLU.

The physical meetings were complemented by a video meeting on 28 August and discussions via email. The panel chair and the secretary visited the Royal Institute of Technology (KTH) in Stockholm on 4 June in order to study the organizational structure of this university.

Information about the progress of the work was given to the unions at SLU on three different occasions (May, June and September).

The panel would like to point out that the time available did not allow in-depth, detailed investigations and considerations. Thus, this report focuses on broad outlines and general principles rather than on details. This applies especially to the issue of organizational structure (section 4). However, the commission feels that it may in fact be an advantage if details concerning organizational structure are worked out by SLU itself during the discussion of implementation, as this gives opportunity for broad involvement by staff (see section 8).

Since Education is the subject of a separate investigation, it has not been treated either extensively or systematically by the Panel. However, some observations made during a meeting between the mission and student representatives have been forwarded to the separate commission at a meeting between the Chair and the Chair of the investigation of SLU's education, Professor Janerik Lundquist.

1.3. Problem analysis

SLU faces three major challenges: To make the university community and its stakeholders experience the university as "One SLU", to cope with the fact that SLU is a multi-campus university, and to develop a strategy for cross-university collaboration. In order to realize its full potential, SLU has to function as *one university* rather than a number of separate organizational entities and locations.

The Panel has observed several weaknesses in SLU´s organization and structure that affect the ability of SLU to achieve its missions and maintain its academic reputation. The main concern is that the current faculties lack a distinct scientific profile, and thereby internal academic cohesion. Two faculties, the Faculty of Landscape Planning, Horticulture and Agricultural Sciences (LTJ-faculty) and the Faculty of Natural Resources (NL-faculty) are responsible for Agricultural Sciences as well as Landscape Planning. The NL-faculty and the Faculty of Forest Science (S-faculty) carry out research in forest science, ecology, soil science etc. Veterinary Sciences are offered only within the Faculty of Veterinary Medicine and Animal Sciences, but minor activities within Animal Sciences occur also within the NL-faculty and within the LTJ-faculty. Thus, apart from Veterinary Medicine, no single faculty at the university can make strategic decisions over an entire scientific area, and mechanisms to foster communication about educational issues across faculties are not effective. Thus there is an organizational weakness.

There are also anomalies in terms of education provision. For example, both the LTJ-faculty at Alnarp and the NL-faculty at Uppsala run education programs in Landscape Architecture/Landscape Planning, with different curricula and entrance requirements, but leading to the same degree. Logically, both programs should be handled by the same faculty.

External research funding is increasingly difficult to obtain for projects in traditional agricultural and forestry, which constrains the university from expanding its traditional strengths.

Other matters of concern are that SLU and its operations are not very well known to the general public in Sweden and that the name, Swedish University of Agricultural Sciences, does not cover the entire range of the university's activities.

2. Mission, Identity and Vision - The Future of SLU.

SLU´s mission, vision and overall strategic objectives were adopted by the University Board in 2009. According to the "Mission statement", SLU develops the understanding and sustainable use and management of biological natural resources. The term "biological resources" is in this context is defined as "genetic resources, organisms or parts thereof, populations, or any other biotic component of ecosystems with actual or potential use or value for humanity". The vision of SLU is to be "a world-class university in the fields of life and environmental sciences".

The present description of SLU's mission, vision and overall objectives is appropriate apart from that too few Swedish inhabitants feel that they are personally concerned by the endeavors of the university They believe that SLU is important for farmers and for the forest industry, but that it has little to offer the general population. This misperception is partly due to the name of the university "Swedish University for Agricultural Sciences", which covers neither the present research and educational programmes, nor the future potential of the university. However, much of Sweden´s population is concerned with the safety and quality of their food supply and with environmental protection, two of SLU´s core missions. Reorganization and better marketing of SLU´s current programs to reflect changes that have occurred in agriculture and forestry, with emphasis on the consumer, could update SLU´s image and broaden its appeal.

The Panel feels that there are opportunities to broaden the scope of the university as has been done by other agricultural universities. The current mission is very specific, and relates only to the biotic natural resources while abiotic resources such as land, fertilizers, energy etc. also are important. The current mission also fails to accentuate the significance of natural resources for people's everyday life. Why not adopt a broader mission related to Quality of Life? For example, the mission of Wageningen University "to explore the potential of nature to improve the quality of life" shows the public that the university has a broad vision of its mandate. SLU would benefit from a similar mission statement that

includes areas of greater interest to the general population while maintaining SLU´s traditional strengths in agricultural, horticultural, veterinary and forestry sciences. Landscape planning and environmental monitoring both offer opportunities to improve the image of the university, while making important contributions to environmental protection. The new SLU would be in a good position to become *the* Swedish university for study of food safety and security, climate change (effects, adaptation and mitigation), sustainable natural resource management and biodiversity, a list that includes some of the world´s most pressing problems and that has broad appeal to students.

Recommendation: *SLU should broaden its mission to include areas of greater interest to the general public, i.e. aspects that are related to Quality of Life.*

3. Repositioning the profile of SLU – Food, health, people, quality of life, forestry, biofuels, pet and sports animals as well as environmental sciences in addition to agriculture.

Most people are interested in their own health, including nutritional status, so related topics are likely to engage the general population. Globally, more than a billion people are under-nourished while approximately the same number is seriously overweight, causing medical and societal problems related to diet and life-style. Prevention of obesity requires improved diets, more exercise and a less sedentary life style. SLU could follow the lead of many life science universities that have developed expertise in the domain of healthy food and nutrition. This new expertise might be developed in partnership with sister universities such as Copenhagen University and Wageningen University. In this relatively young research field, great scientific challenges are coming up as the area moves from epidemiological studies to intervention studies and further into molecular studies that will provide a mechanistic understanding of our responses to various diets. Thus, the university could extend the research chain from fundamental agricultural sciences into aspects of human nutrition and health. New faculty members would have to be recruited and collaborations with medical faculties would have to be developed. The university should further stress the increased quality of life experienced by people from contact with pet and sports animals, from access to forests and meadows with high biodiversity, and rivers with clean water for out-door life and fishing.

Research related to the production of different types of biofuels is carried out at several departments within the university. Considerable efforts have been made to develop efficient systems for cultivation and breeding of salix, and utilization of coppice for biofuel production. Research is also carried out on the impact of removing stumps for use as fuel on the soil and soil-dwelling organisms. SLU collaborates with Umeå University and Luleå University of Technology to develop processes for utilization of forest raw materials in bio-refineries. These and similar efforts to prepare Sweden for a future without fossil fuels should be emphasized.

The same holds true for the domain of environmental sciences. SLU is already very active in this area but it could be emphasized more. So many of today's issues are related to our living environment including Sweden's many lakes and forests and ecosystems beyond Sweden's borders. SLU is *the* Swedish university addressing the issues related to the sustainability of these natural resources.

The proposed repositioning of SLU's profile is supported in SLU's Strategy for 2013-2016, where the topics of food, human health and wellbeing, as well as environment and bioenergy, are explicitly mentioned in the priority areas described in section 3.2.

A repositioning of SLU's profile is probably the only way to attract more research funding and more students to the university. We have seen such developments in other universities such as Wageningen University, Copenhagen University and Cornell University. The panel is aware that a

broadening of the profile into new areas might necessitate a reconsideration of already existing research areas or units, but has refrained from giving specific recommendations on such issues due to lack of sufficiently detailed knowledge. SLU should develop a clear policy for utilizing the opportunities for repositioning that are created when positions (e.g. Chairs) are vacated.

Another important step to show that SLU provides important service to the entire society would be to change the name of the university in a way that better reflects the whole range of activities at SLU (cf section 2). The Panel proposes that the name should be changed to "*Swedish University of Environmental and Life Sciences*", or alternatively, "*Swedish University of Life Sciences*". These names cover on-going and future research and education better than the present name, and also signal an ambition to expand the university into new areas. Whatever name is chosen for SLU, it is important that the decision is based on a thorough discussion within the university, since the name should strengthen the identity among the staff and enhance their commitment to implement a new strategy for the university.

Recommendations: *1) SLU should strengthen its profile in two main areas, Food and Environment. 2) SLU should consider changing its name in a way that better reflects the university's present and potential scope*.

4. Structure

i) *Locations*: Due to the need for more efficient use of SLU resources, the number of campuses/ locations should be thoroughly reviewed with the aim of reducing the number. Having four campuses for education is not cost-effective for such a small university. To ensure that all campuses with education programs offer students a challenging academic environment, the panel recommends that SLU concentrate resources on its three campuses, Alnarp, Uppsala and Umeå. In addition, the university should minimize the number of field stations to the extent possible and focus resources on the locations that are scientifically most important. Regional policy should not be a major concern for SLU.

ii) Colleges: Today, SLU has a complicated structure, still mirroring the three University Colleges that were once merged to form SLU. There is also a high degree of fragmentation and significant scientific over-lap between departments within and across faculties. Forestry research is carried out at Umeå, Uppsala and Alnarp and is split over two Faculties. Animal science activities are present in Uppsala, Alnarp, Skara and Umeå while Agricultural sciences are provided in Alnarp and Uppsala. In addition, there are numerous research stations and field stations throughout Sweden.

SLU is not a large university; it has a staff of approximately 3000, including 400 Ph.D. students. Despite its small size, the panel believes that an administrative level between the Vice-Chancellor and departments is needed, and proposes that the university should be organized into no more than 3 or 4 Colleges[1].

The new College structure needs to be more logical than the present configuration. The most important principle for determining College organization is that each unit should have a distinct scientific profile, to provide internal academic cohesion. A distinct scientific profile should enable each College to make strategic decisions that are rational and informed and have faculty support, over entire research areas. However, it has not been possible to adhere strictly to this principle in the present proposal, since a stringent, logical division would require a total restructuring of departments and relocation of a large number of research groups. Instead, the panel has sought to find a pragmatic

[1] The Panel has chosen the term *Colleges* instead of *Faculties* as an intermediate term during the implementation phase, simply to indicate a change from the present organization structure;

solution that can be implemented immediately. As a result, in both alternatives below, some academic subjects are present in more than one College, e.g. ecology, economy and plant science.

The panel is of the opinion that the members of the SLU community can provide valuable input on the exact organization of each College. The Panel does not argue for physical movement of research groups or departments between campuses/locations, which would be expensive financially and in terms of human resources. Thus, the Panel has proposed Colleges with activities on more than one campus/location and departments that will belong to more than one College. At least one Dean (or Vice-Dean) should be stationed at each campus.

The two proposed alternatives have been chosen with respect to research. The panel's opinion is that education should be cross-cutting over Colleges and Departments. The panel does not advocate a separate College of Social Sciences, since the interaction of Social Sciences with Natural Sciences is of overriding importance for a university like SLU.

Alternative 1. (For details. see Appendix 1)

College for Forest Science mainly located in Umeå, but also with activities in Uppsala, Vindeln, Grimsö and Alnarp. The college would have a total staff of approximately 650, with about 230 located outside Umeå. The College should share the responsibility for three departments located in Uppsala with the College of Agrifood and Landscape. The Dean would be located at Umeå.

College for Veterinary Medicine and Animal Science primarily located in Uppsala, and with activities also in Umeå and Alnarp. This college would have a total staff of approximately 450, with all but 30 located in Uppsala. The Dean´s office would be located at Uppsala.

College of Agrifood Science and Landscape Architecture (or Plant, Soil, and Landscape) mainly located in Alnarp and Uppsala. This College would encompass all activities at Alnarp except Animal Environment and Building that is proposed to belong to the College for Veterinary Medicine and Animal Sciences, the Departments for Crop Production Ecology, Economics, Urban and Rural Development and Food Science at the Uppsala campus as well as the Crop science part of the Department for Agricultural Research for Northern Sweden at Umeå. The total staff would be approximately 500. The Dean should be located at Alnarp.

College of Environmental and Biosciences mainly located in Uppsala. This college would consist of the Departments for Aquatic Resources at various locations; Aquatic Sciences and Assessment; Chemistry; Energy and Technology; Microbiology: Molecular Biology; Soil and Environment; Swedish Biodiversity Centre; Swedish Species Information Centre; part of the Departments for Ecology; the main part of the Department of Plant Biology and Forest Genetics. The total staff of this college would amount to approximately 750. The Dean should be located at Uppsala.

Alternative 2. (For details, see Appendix 1)

College of Forest Science with the main location and the Dean in Umeå, as in Alternative 1.The staff would be approximately 650.

College of Veterinary Medicine and Animal Sciences with the main location and the Dean's office in Uppsala as in Alternative 1 and with a staff of approximately 450.

College of Agrifood Science and Landscape Architecture mainly located in Uppsala, but also with major activities in Alnarp and a couple of other locations. This college would have the largest

number of staff with some 1250 employees, with approximately 230 located at Alnarp and some 150 at other locations. The Dean would be located at Uppsala and be represented in Alnarp by the Deputy Dean.

The Panel is of the opinion that both college models are possible since they are both based on clear scientific profiles. However, Alternative 1, with four colleges, offers two advantages. In this model there is less variation in the size of the colleges than in Alternative 2. In addition, the Vice-Chancellor is represented by at least one Dean at each campus.

Obviously, there are several other alternatives to organize the colleges. The Department of Food Science might be shared between the College for Veterinary Medicine and Animal Science (Units for Meat and Fish Quality and for Dairy Science) and The College for Life and Environmental Sciences (Units for Plant Product Science and for Food Chemistry). Alternatively, the responsibility for the Department of Aquatic Resources might be shared by the Colleges for Veterinary Medicine and Animal Science (units dealing with fish breeding) and for Forest Science (units dealing with wild fish).

The panel is aware that the proposed structure raises some challenges for departments that would report to more than one faculty. Therefore, SLU should take immediate measures to work out the details concerning what modifications in decision-making and reporting authority, budgeting, daily departmental governance and other administrative issues are needed. Harmonization of administrative systems and incentives is essential. Most importantly, it is vital for the proposed reorganization that all Colleges use the same principles for distribution of funds to the departments.

iii) Departments: A general comment on the department structure of SLU is that the university has many quite small departments. Department sizes are highly variable, and some departments have overlapping activities. SLU's resource efficiency and the effectiveness of the entire line-of-command would benefit from fewer and more coherent departments. The advice from the Panel to SLU is to first implement the reorganisation of Colleges, and then begin work on reorganizing departments Thus, the new Colleges should look into possibilities to move research groups between departments, possibilities for merger of small departments and for strategic appointments to reinforce areas that are important but are judged to be scientifically too weak.

Recommendations: *1) SLU should reorganize itself into three or four new Colleges, each with a distinct scientific profile and thus, better scientific cohesion. 2) Immediate steps should be taken to harmonize models for allocation of funds, overhead charge, etc., and to eliminate other administrative obstacles for sharing of departments. 3) In order to optimize resource utilization, SLU should review the number of campuses/SLU locations, as well as the number of departments.*

5. Overall governance.

As outlined in the previous paragraphs, SLU faces some major challenges, partly caused by internal SLU-issues (i.e. a multi-campus university; the presence of strong university alternatives to SLU close to each of SLU´s three main campus areas; the need for a clearer scientific identity of each faculty; the significant scientific over-lap between departments within and across faculties) and partly caused by generic and global "grand challenges" (i.e. internationalization; increased global demand for a revised focus, by the traditional agricultural Universities, on LIFE Science topics such as Food Science, Human health and nutrition; the role of LIFE Science Universities in the Green Economy, sustainable energy supply, Biorefinery- and Bioenergy developments.)

SLU will face major changes over the coming decades. In order for the institution to be in command of this momentous change, rather than being a "victim" of the changes, SLU needs a very strong line-

management structure and culture with the ability to make strategic decisions that will move the university forward towards commonly accepted goals in an efficient and timely manner, i.e. achieve "One SLU". The current management structure at SLU is not seen as possessing the necessary authority.

At all levels, the leadership and management must be efficient and able to make rational decisions, even if these might be uncomfortable. All staff in any leading position need not just to fight for the goals of the unit that she or he is the immediate leader of, but also to identify with and fight for the overall goals of the university as a whole. Therefore, the panel's opinion is that there must be a clear line of authority from the SLU Board to the Vice-Chancellor to Deans to Heads of departments to faculty and staff.
The panel proposes the following alternatives (changes compared to SLU's current system are indicated in italics):

Alternative 1: The **top management**, i.e. Vice-Chancellor, Deputy Vice-Chancellor, Head of Administration *and Deans*, needs to be a strong, tightly knit group that meets frequently. Members of the top management should therefore be selected to complement each other. Thus, *the Vice-Chancellor should preferably be consulted in the recruitment of the* ***Deputy Vice-Chancellor***, who according to the Swedish regulation, is appointed by the University Board.

Assistant Vice-Chancellors, **Head of Administration** *and* ***Deans*** *should be directly appointed, and, if necessary, also dismissed by the Vice-Chancellor* to ensure their loyalty to the overall university goals. *The appointments should be based on open calls* enabling persons also from outside SLU to be included among candidates. A successful candidate to be appointed Dean should have extensive experience in research and education in the key areas of the respective College. *The appointment period of the Deans should be longer than today (three years), preferably five or six years*. Each person in the top management should, in addition to their specific duties, have some *cross-university responsibilities* in order to increase the cohesion of the university.

Heads of Departments *should, after consultation with the staff of the Departments, be appointed, and if necessary, also dismissed by the Deans*. *The* ***College Board*** *should be composed of the Heads of Departments*, representatives of the students and the unions, with the Dean as Chair.

Alternative 2: This model takes account of the fact that Sweden, and in particular SLU, has a very strong tradition of collegial influence. It is similar to Alternative 1, except that ***Heads of Departments*** *should be elected by the Department staff*. However, the relevant Dean should be consulted regarding the suitability of the candidates prior to election, and finalize the appointments.

A proposal on division of responsibility/authority between the different levels is given in Appendix 2.

According to Swedish regulation, the **University Board** is appointed by the Swedish Government. The **Vice-Chancellor** is also appointed by the Government, after a proposal from the University Board. Vice-Chancellors can be dismissed by the Government after misconduct; however that is an extremely rare event. The models proposed above mean that the university board can hold the Vice-Chancellor personally accountable for whatever happens within the university at all levels. The Vice Chancellor should be recruited from among scientists with an excellent scientific career. She or he must in addition have extensive experience with teaching. She or he must also have proven leadership ability as e.g. Dean or Department Head at a university. The same criteria should be used in the appointment of the Deputy Vice Chancellor. The appointments should be based on open calls for applications, enabling recruitment of qualified persons also from out-side the university.

Recommendation: *SLU should adjust its governance structure in order to create strong line-management with the ability to make strategic decisions that will move the university forward.*

6. Further actions to increase the cohesion of the university.

6.1 Communication

Reorganization of the faculties will lead to more logical decision-making processes and administration, but it will still not be possible to house all faculty members within one discipline on a single campus. Development of a network that permits effective communication on education and research across campuses is essential. Electronic communication technologies such as email and video conferencing combined with regular face-to-face meetings make improvements in cross-campus communication an achievable goal. With better communication, having multiple campuses could become a benefit, rather than a liability. The SLU website should also play an important role in internal communication (see 7.5).

6.2 Cross-cutting thematic areas

SLU's campuses are located in three distinct agroecozones, which positions the university to do innovative comparative research on climate change, land use planning and the plant sciences. While areas of programmatic overlap are inevitable in order to provide students with required courses, enhanced communication will permit development of pan university themes in areas like plant protection, genomics, soil science and food science etc. Detailed examples on such cross-cutting thematic areas are given in Appendix 3. The four Future platforms implemented by SLU after the KoN evaluation is another example of cross-cutting collaboration that should lead to better cohesion,

6.3 Research Schools

Research Schools should be organized so that all research areas are included in one school or another. These schools should be open to all Ph.D. students within the university, and each student should have the opportunity of registering in more than one school. A recent evaluation showed that the model previously used by the Faculty of Natural Resources and Agricultural Sciences was popular among Ph.D. students, supervisors and Department Heads. The Schools should enhance interdisciplinary research at SLU and increase cohesion by providing meeting venues for Ph.D. students from different colleges and campuses. The quality of the research schools should be thoroughly followed and any weaknesses immediately amended.

6.4 Environmental Monitoring and Assessment

Among Swedish universities, SLU has a unique and important mission from the national government to pursue environmental monitoring and assessment. The results from SLU's environmental assessments are used to determine whether environmental objectives are being met and whether Sweden is adhering to its commitments to international conventions and directives in the environmental arena. SLU has organized the ongoing monitoring and analyses into ten programs that relate to Sweden's environmental objectives. Strategic issues are discussed in a coordinating body that includes representation of all Faculties. The Environmental Monitoring and Assessment Programmes are often carried out by two or more departments and thus contribute to the cohesion of SLU. Because of the visible social and environmental benefits of these programmes to the region and to SLU specifically, continued support of these initiatives is recommended.

Recommendations: *1) In order to enhance internal communication, SLU should ensure that efficient technology is available and encourage staff to use it. 2) SLU should strive for increased cohesion by establishing pan-university, cross-cutting areas and activities.*

7. Other observations and recommendations

7.1 Internationalization.

Globalization is a serious trend, especially in the domain of SLU. The global challenges are related to issues that are not limited by country borders. Students are also following programs abroad. Policies differ among countries and the Panel realizes that the Swedish parliament recently has changed its policy regarding tuition fees significantly increasing costs for non-European students. The number of international students has therefore decreased, but since this trend has been seen in other countries as well, it should be possible to attract international students even with higher fees. However, that requires that the university can offer study programs with interesting profiles and also recruitment efforts in different countries. It might be advisable to cooperate with other Swedish universities and with ELLS (Euroleague for Life Sciences) universities. It is also very important to be visible internationally from a scientific point of view. That will require investments in scientific performance to get higher on the ranking list of universities in the domain of life sciences.

It is imperative to increase the competitiveness of SLU research. Close links should be established with a selected number of universities abroad that excel in research areas of importance for SLU. For that purpose, it will be necessary to set aside substantial funding allowing SLU scientists to work in these universities for extended periods of time, for exchange of Ph.D. students and to attract postdoctoral fellows/scientists from these universities to be guest professors etc. at SLU. It is meaningless to just sign Letters of intent to collaborate without funding being available for that. Another important measure to internationalize SLU is to recruit staff from abroad (see under Quality of staff recruitment!) to internationalize education.

It is also important to develop a strategy for recruitment of international students both at the individual level and via joint programmes. This can partly be done through the ELLS network of leading universities cooperating in the fields of Natural Resource Management, Agricultural and Forestry Sciences, Life Sciences, Veterinary Sciences, Food Sciences, and Environmental Sciences. However, collaboration with leading universities in other parts of the world is vital. To enable recruitment of students and teachers from abroad, it is extremely important to establish a language policy that should be followed by all teachers in all education programmes, namely that English should be used in all courses (starting with the Master's programmes) whether or not there are non-Swedish-speaking students on the course. This will improve the language skills of the Swedish students and also of their teachers. Possibly a deliberate language-upgrade programme should be offered to all teachers. Text books and other written course materials should also be in English.

Internationalization has many dimensions, e.g. it requires that the content of the educational programs is international, but also that the university pays attention to intercultural processes. A very important aspect is related to the hospitality and administrative processes.

Recommendations: *1) SLU should develop a strategy for increasing the number of international students and collaborate with other universities in recruitment efforts; 2) Resources should be set aside for international exchange of staff and students, guest professorships, etc.*

7.2 Collaboration with national universities.

The multi-campus structure of SLU is a fact based on the history and sector rationale of the university. In many aspects, this poses major challenges to the unity, cohesion and leadership of the university. However, the multi-campus location across the whole of Sweden may be turned into an advantage that other Swedish universities do not have. SLU's three major campus areas (Umeå, Uppsala and Alnarp) are located close to some of Sweden's strongest universities (Lund University, Uppsala University, Karolinska Institute, Stockholm University, Royal Institute of Technology and Umeå University). It is strongly recommended that SLU develops a deliberate strategy of close collaboration

with the most relevant universities under the Ministry of Education and Research. The strategy must be based either on areas where such collaboration would support the proposed broadening of SLU's profile (cf section 3) or on topics/scientific areas where SLU has distinct and internationally recognized research strengths. As part of this strategy, specific funds and organizational models should be developed/discussed. The combined competencies of these universities are very high, even in areas of interest for SLU. The Umeå Plant Science Center, which is shared with Umeå University, is a good example of a highly successful collaboration between SLU and another national university, where SLU's identity has been preserved. However, under no circumstances should partnerships with local universities be allowed to be detrimental to SLU's cohesion.

Recommendation: *A deliberate strategy for collaboration with other major Swedish universities should be developed.*

7.3 Quality of staff recruitment.

SLU's future depends to a large degree on the quality of its staff and there will potentially be great benefit in recruiting more external staff either from other Swedish Universities or from overseas.

Over the last 20 years, SLU has suffered, perhaps more than any other Swedish university, from the law introduced in1993 that allowed senior lecturers to apply to be promoted to full professors without external competition. This "reform" hit SLU especially hard because, in contrast to other Swedish universities, "researchers" are also eligible to apply for promotion. Since at present "researchers" are recruited directly by Department Heads, not by the Faculties, this means that SLU has effectively lost control over how many "potential" professors the university has and in what areas. As a result, Swedish universities in general, and SLU in particular, have too many full professors relative to the size of the financial resources available from the faculty grant from the University. In real terms, the faculty grant per full professor in Engineering, Medical and Natural Sciences at Swedish universities has, between 1995 and 2007, been reduced to 50% of its initial worth, corrected for inflation. This has led to a fragmentation of Swedish university science with too many research groups that too often are weak. The groups are heavily dependent upon external funding, which often is used even to cover the salary of the professor. The Swedish system for external funding is not designed to cope with this situation.

In the future, SLU should take a more strategic approach and estimate how many full professors the university should have in different research areas in relation to the total Faculty (or College) grant available. All decisions to create or fill a position should be based upon a thorough external recruitment process, involving identification of potential candidates at the best universities, both nationally and internationally. The panel strongly advises SLU to develop a clear strategy for increasing international recruitment.

The most important factors in determining whether or not a researcher will stay at SLU are likely to be highly competent colleagues and access to the necessary equipment and facilities as well as good laboratories. It is imperative that significant and long term financial resources from the Faculty/College grant are set aside as part of the offer to a new professor. To recruit professors who leave after one or two years because they are dissatisfied with the available resources is an inefficient use of time, money and reputation.

In fundamental scientific areas, SLU has been quite successful in the recruitment of professors from other universities, mostly Swedish but also foreign. This does not seem to be the case in the more applied areas, where most recruitment is internal. This is, in the long term, detrimental to scientific quality. The Colleges should therefore publicize all positions, both full professors and senior lecturers, in international journals, and use active searching to identify candidates who it would be desirable to recruit and to encourage them to apply. It would also be highly desirable if the university developed a clear and deliberate policy to restrict recruitment of internal PhDs for permanent positions.

To establish a career path for young scientists, SLU should start, from the time of admission to a program, to evaluate the potential of young researchers to become successful full professors. At present, there is a high probability that a young researcher will be promoted first to senior lecturer and later to full professor with formally the same rights as an externally recruited full professor. SLU should guard against being over generous with promotion of internal candidates to permanent positions. Only the scientifically most successful candidates should end up as full professors. The university cannot afford to have too many full professors who do not meet the highest standards when compared to the external market.

Recommendations: *1) SLU should take a more strategic approach in order to increase the number of international (and external) candidates, that includes active searching of candidates, providing sufficient financial resources for new professors, etc.; 2) The potential of young researchers should be evaluated at an early stage.*

7.4 Professionalizing Administration

The competition between universities both at the national and international levels is very high. It is therefore exceedingly important that SLU in the future should have a cost-effective administration of high quality, focused on areas of high importance for the central tasks of the university, education, research and environmental assessment. It is important for the university to keep overhead costs as low as possible without jeopardizing SLU's scientific infrastructure. High overhead rates on applications for external funding from sources like the European Research Council, the EU framework programs, and most non-governmental research foundations would make the SLU proposals uncompetitive.

Recommendation: *SLU should continue to strive for a professional, cost-effective administration.*

7.5 Internal and external communication.

While the Panel strongly recommends that improving communication across the university and with SLU's stakeholders, several easy steps will make significant progress toward meeting this goal. SLU should have an attractive and informative Website. Use of a common logo and format on all web pages will underscore that SLU is one university, not an arbitrary grouping of programmes and departments. The structure of the website itself should reflect SLU's core missions of research, education and environmental monitoring to communicate effectively with the public and with current and prospective students. Given that SLU aspires to have a strong international reputation, the web site should be in both Swedish and English. SLU works with diverse groups of professionals in agriculture, forestry and veterinary medicine so some sections of the web site should be devoted to communication to these groups specifically.

The internal part of the website for communication within the SLU community needs frequent updating, which can be achieved either by weekly newsletters from university managers or through the website itself. Information of specific benefit to faculty such as material on research funding organizations such as the EU framework programs, the European Research Council, and national research councils and foundations with proposal deadlines will increase the probability that the information will be read. The website can inform the SLU community about Ph.D. courses, scholarships and seminars. With an easily understood site structure and readily available, current information that people want, the website can be a valuable tool to improve university communication, and cohesion.

The web site alone will not resolve SLU's communication challenges so a task force to explore how other technologies and approaches can be used to increase communication between campuses, between students and faculty and across disciplines should be explored by a task force that includes faculty, students and staff (cf. chapter 6).

Recommendation: *SLU's website must have a structure that is easily understood and provide readily available, current information adapted to the needs of external as well as internal users.*

8. Implementation, plan for transition.

In response to this report, and after internal consideration of its proposals, the SLU Board should make *a clear, strong decision on the way forward*, particularly on key matters such as lines of reporting, appointment procedures, and organizational structure. The decision should include *an Action Plan with a clear timetable* with dead-lines for the different phases of implementation. The Panel recommends that the new organizational structure is implemented through a process that *links a top-down approach with strong bottom-up involvement*.

The implementation process must include senior management and dialogues between various constituencies on campus to include physical meetings at all locations, where the leaders will have the opportunity to listen to misgivings about the new plan, to have discussions with staff and students to explain the rationale for and implications of the decision. The faculty, students and staff need reassurance that the quality of SLU's education and research will be enhanced, not compromised by the proposed reorganization. Strong involvement in this process by senior management is a prerequisite for successful implementation of the proposed changes.

Appendix 1

Proposed reorganization of SLU's current Faculties into Colleges

The panel has based its proposal on the following premises:

- SLU will continue to be a multi-campus university, with three main campuses
- No staff is to be moved physically
- All Departments are kept as intact organisational units (at least for the present)
- Colleges can go across locations
- A Dean (or Deputy Dean) should be placed at each (main) campus, i.e. Umeå, Uppsala, Alnarp
- A Department can report to two Colleges, i.e. different parts "belong to" different Colleges

The name "College" has been chosen to indicate change from the old Faculty structure. The name "School" has been rejected since in an international context, Schools usually denote structures for horizontal coordination, i.e. across Departments/Disciplines.

The two proposed alternatives have been chosen with respect to research; the panel's opinion is that education should be cross-cutting over Colleges and Departments.

The proposal represents an effort to create Colleges with a distinct identity and internal scientific coherence . Even so, due to the abovementioned restrictions is is not possible to achieve a structure that is 100% logical and some overlaps are unavoidabe. Thus, in both alternatives, some academic subjects are still present in more than one College (e.g. ecology, economy, plant science).

The panel does not advocate a separate College of Social Sciences, since the interaction of Social Sciences with Natural Sciences is of overriding importance for a university like SLU.

The numbers of staff given in the tables are based on data for 2011, and in the case of parts of Departments, are rough estimates.

Proposal on organisation structure, Alternative 1

College		Department		Current Faculty	Location	No of staff 2011	
1. Forest Sciences		***Entire departments***					
		Forest Ecology and Management		S	Umeå	87	
Dean placed in Umeå		Forest Economics		S	Umeå	24	
		Forest Genetics and Plant Physiology		S	Umeå	91	
		Forest Products		S	Uppsala	29	
		Forest Resource Management		S	Umeå	146	
		Southern Swedish Forest Research Centre		S	Alnarp	42	
		Unit of Biomass Technology and Chemistry		S	Umeå	13	
		School for Forest Engineers		S	Skinnskatteberg	2	(?)
		Field-based Forest Research Station		S	Vindeln	38	
		Parts of departments					
		Wildlife, Fish and Environmental Studies	except Aquaculture	S	Umeå	48	*approx*
		Ecology	Forest Entomology; Conservation Biology; Wildlife Ecolog	NL	Uppsala/Grimsö	75	*approx*
		Forest Mycology and Pathology	Forest Pathology; Plant-Soil-Micro Interactions	NL	Uppsala	40	*approx*
		Plant Biology and Forest Genetics	Forest genetics	NL	Uppsala	10	*approx*
					In total	***645***	
2. Veterinary Medicine		***Entire departments***					
and Animal Sciences		Anatomy, Physiology and Biochemistry		VH	Uppsala	47	
		Animal Breeding and Genetics		VH	Uppsala	71	
Dean placed in Uppsala		Animal Environment and Health		VH	Uppsala/Skara	64	
		Animal Nutrition and Management		VH	Uppsala	65	
		Biomedical Sciences and Veterinary Public Health		VH	Uppsala	70	
		Clinical Sciences		VH	Uppsala	101	
		Parts of departments					
		Agricultural & Horticultural production systems*	Animal Environment and Building Function	LTJ	Alnarp	10	*approx*
		Agricultural research for Northern Sweden	Animal Husbandry	NL	Umeå	13	*approx*
		Wildlife, Fish and Environmental Studies	Aquaculture	S	Umeå	10	*approx*
					In total	***451***	
3. Agrifood and	.	***Entire departments***					
Landscape		Landscape Architecture & Planning*		LTJ	Alnarp	63	
		Plant Breeding and Biotechnology		LTJ	Alnarp	55	*approx*
Dean placed in Alnarp		Plant Protection Biology		LTJ	Alnarp	42	
		Work Science, Business Economics and Environmental Psychology		LTJ	Alnarp	31	
		Crop Production Ecology		NL	Uppsala	49	
		Economics		NL	Uppsala	67	
		Food Science		NL	Uppsala	37	
		Urban and Rural Development		NL	Uppsala	86	
		Parts of departments					
	.	Agricultural & Horticultural production systems*	except Animal env & building	LTJ	Alnarp	36	*approx*
		Agricultural research for Northern Sweden	Crop Science part	NL	Umeå	13	*approx*
		Forest Mycology and Pathology	except parts moved to Forestry	NL	Uppsala	20	*approx*
					In total	***499***	

Alternative 1

Proposal on organisation structure, Alternative 1

4. Environmental and		***Entire departments***					
Biosciences		Aquatic Resources		NL	several locations	146	
		Aquatic Sciences and Assessment		NL	Uppsala	98	
Dean placed in Uppsala		Chemistry		NL	Uppsala	24	
		Energy and Technology		NL	Uppsala	43	
		Microbiology		NL	Uppsala	45	
		Molecular Biology		NL	Uppsala	26	
		Soil and Environment		NL	Uppsala	134	
		Swedish Biodiversity Centre		NL	Uppsala	29	
		Swedish Species Information Centre		NL	Uppsala	64	
		Parts of departments					
		Ecology	except parts moved to Forestry	NL	Uppsala	84	*approx*
		Plant Biology and Forest Genetics	except forest genetics	NL	Uppsala	56	*approx*
					In total	***749***	

** Provisional name used here for the new Dept currently set up at LTJ Faculty*

All Colleges 2344

Logic for placing the Dean of College no. 3 in Alnarp:
1) Swedish agriculture and food industry has its focus and driving force in Southern Sweden.
(SLU's Horticulture is already located in Alnarp only)
2) Alnarp as base may be an advantage for strengthening agrifood links with Denmark (and the continent), e.g in the planned Food KIC.
3) Good possibilities for collaboration with food technology at Lund University (and health/nutrition).

Proposal on organisation structure; Alternative 2

College		Department		Current Faculty	Location	No of staff	
1. Forest Sciences		***Entire departments***					
(as in Alternative 1)		Forest Ecology and Management		S	Umeå	87	
		Forest Economics		S	Umeå	24	
Dean placed in Umeå		Forest Genetics and Plant Physiology		S	Umeå	91	
		Forest Products		S	Uppsala	29	
		Forest Resource Management		S	Umeå	146	
		Southern Swedish Forest Research Centre		S	Alnarp	42	
		Unit of Biomass Technology and Chemistry		S	Umeå	13	
		School for Forest Engineers		S	Skinnskatteberg	2	(?)
		Field-based Forest Research Station		S	Vindeln	38	
		Parts of departments					
		Wildlife, Fish and Environmental Studies	except Aquaculture	S	Umeå	48	*approx*
		Ecology	Forest Entom.; Conserv. Biol; Wildlife Ecol.	NL	Uppsala/Grimsö	75	*approx*
		Forest Mycology and Pathology	Forest Pathol; Plant-Soil-Microbe Interactions	NL	Uppsala	40	*approx*
		Plant Biology and Forest Genetics	Forest genetics	NL	Uppsala	10	*approx*
					In total	***645***	
2. Veterinary Medicine		***Entire departments***					
and Animal Sciences		Anatomy, Physiology and Biochemistry		VH	Uppsala	47	
(as in Alternative 1)		Animal Breeding and Genetics		VH	Uppsala	71	
		Animal Environment and Health		VH	Uppsala/Skara	64	
Dean placed in Uppsala		Animal Nutrition and Management		VH	Uppsala	65	
		Biomedical Sciences and Veterinary Public Health		VH	Uppsala	70	
		Clinical Sciences		VH	Uppsala	101	
		Parts of departments					
		Agricultural & Horticultural production systems*	Animal Environment and Building Function	LTJ	Alnarp	10	*approx*
		Agricultural research for Northern Sweden	Animal Husbandry	NL	Umeå	13	*approx*
		Wildlife, Fish and Environmental Studies	Aquaculture	S	Umeå	10	*approx*
					In total	***451***	
3. Agrifood and	.	***Entire departments***					
Landscape		Landscape Architecture & Planning*		LTJ	Alnarp	63	
		Plant Breeding and Biotechnology		LTJ	Alnarp	55	*approx*
Dean placed in Uppsala		Plant Protection Biology		LTJ	Alnarp	42	
with a Deputy Dean in		Work Science, Business Economics and Environmental Psychology		LTJ	Alnarp	31	
Alnarp		Aquatic Resources		NL	several locations	146	
		Aquatic Sciences and Assessment		NL	Uppsala	98	
		Chemistry		NL	Uppsala	24	
		Crop Production Ecology		NL	Uppsala	49	
		Economics		NL	Uppsala	67	

Proposal on organisation structure; Alternative 2

		Energy and Technology		NL	Uppsala	43	
		Food Science		NL	Uppsala	37	
		Microbiology		NL	Uppsala	45	
		Molecular Biology		NL	Uppsala	26	
		Soil and Environment		NL	Uppsala	134	
		Urban and Rural Development		NL	Uppsala	86	
		Swedish Biodiversity Centre		NL	Uppsala	29	
		Swedish Species Information Centre		NL	Uppsala	64	
		Parts of departments					
	.	Agricultural & Horticultural production systems*	except Animal env & building	LTJ	Alnarp	36	*approx*
		Agricultural research for Northern Sweden	Crop Science part	NL	Umeå	13	*approx*
		Ecology	except parts moved to Forestry	NL	Uppsala	84	*approx*
		Forest Mycology and Pathology	except parts moved to Forestry	NL	Uppsala	20	*approx*
		Plant Biology and Forest Genetics	except forest genetics	NL	Uppsala	56	*approx*
					In total	***1248***	

** Provisional name used here for new Dept currently set up at LTJ Faculty*

All Colleges	***2344***

Appendix 2

Division of responsibility for strategic decisions: A proposed model

(Changes compared to SLU's current system are indicated in italics)

On recommendation from the Vice Chancellor, the **University board** should in an "Operational plan" decide on annual allocations of funds and duties to the Colleges as well as principles for allocation of funds to the departments at the College level. It is imperative that *all Colleges have common rules for allocation of funds and the same overhead rate* (cf section 4). The University Board should also, on recommendation of the Vice-Chancellor, establish/discontinue study programmes leading to professional academic degrees.

The **Vice-Chancellor** should decide on i) the Annual budget in accordance with the "Operational plan", ii) principles for budgeting and follow-up of College operations, iii) a yearly plan for investments in and management of real estate, iv) principles for PhD education and "docent" appointments, and v) establishment or discontinuation of study programmes leading to general degrees. The Vice-Chancellor should also appoint professors based on proposal from the College Boards.

The **College Board** should decide on annual allocation of funds and duties to the Departments. The College Board should also be responsible for the scope and quality of research, and environmental monitoring and assessment carried out within their departments. The College Board should also, after consultation with the Vice-Chancellor, decide on the scientific profiles of professorial chairs and subject areas for Ph.D. education.

The **Deans** should decide on the structure of the departments within their Colleges and appoint Heads of Departments in consultation with the Vice-Chancellor (section 5, Alternative 1), or *confirm appointment after election by Department staff* (section 5, Alternative 2). Staff, other than full professors, should be appointed by the Deans.

Responsibility for Ph.D. training. Ph.D. training is and should be an important component of most research programmes within the university in the future. The theoretical part of the training should be provided within the normal seminar activities offered by the departments, but also via *research schools open for all Ph.D. students within the university (see 6.3). Resources for such schools should be set aside at the university level* to guarantee that the quality of Ph.D. education will be equally high regardless of which College the student belongs to. The responsibility for the quality of the Ph.D. education, admission to the programmes and examination should rely on the College Board. In the case of research schools, the responsibility for quality control should be given to one of the Colleges.

Responsibility for Basic Education. The responsibility for basic education resides with the Deputy-Vice Chancellor, who should lead a Committee composed of representatives from all three/four Colleges and from business/labour market organizations/representatives. *The Committee should be responsible for the quality of the educational programmes and for the efficient use of economic resources allocated to basic education.* Under all circumstances the university should prioritize educational programmes that are in demand by both students and society. A higher level of coordination of the programmes in agronomy is desirable or even necessary.

Appendix 3.

Examples of Cross-cutting thematic research areas

AgriFood Systems: Like many agricultural universities, the SLU curriculum is similar to the programmes offered forty years ago, despite broad changes in food production and processing. A reorganization of the SLU should be based on a clear organizing principle so that it is easy to identify what should be offered and why. SLU could focus on study of the Food System broadly defined to include food production in the field and barn, food processing and human nutrition with the ultimate goal of providing the population with adequate nutrition and good health. Achievement of this integrated university focused on the Food System will require strengthening of the Food Science department with recruitment of new faculty, especially in Food Technology. This investment should pay for itself because external research funding from the private sector is readily available to food scientists and food science. Graduates, even at the Bachelor's level, have excellent prospects for lucrative employment. Currently, with the exception of the nutritionists in Animal Science, SLU has limited expertise in nutrition. Collaboration with medical schools with programmes in clinical nutrition can remedy this deficiency, but this approach will not provide needed expertise in Community Nutrition. SLU should take advantage of its community connections through the extension service to make sure that the discoveries of the Food Science and Nutrition groups are readily available across the country to address food-linked health problems like diabetes, heart disease and obesity. Thus, the panel recommends that a priority investment area should be in Community Nutrition.

Social Sciences: Most of the problems that the refocused SLU will address, whether it is obesity or land use, require change in human behaviour, economic assessments and policy development. Strengthening of the social sciences at SLU is necessary if SLU is to become an effective solver of problems related to food systems and the environment. Development of a cross-university social science network and strong collaborations with nearby universities are needed to bolster the strengths of the social sciences at SLU. Investments are needed in behavioral sciences (especially important for the nutrition and food science programs), sociology, and in governance and policy development.

Molecular Plant Biology: This area includes some of the university's strongest programs and these strengths should be maintained. The improvements in cross-university collaboration should strengthen this group, especially in studies related to environmental stress and responses. The University has many excellent research groups within plan molecular sciences located at Umeå, Uppsala and Alnarp.

Genomics, one of the core disciplines for molecular biology, is essential for cutting-edge research in the plant and animal sciences. There are several highly recognized genomics groups at SLU, mainly in Uppsala , but also at the Umeå campus. SLU's affiliation with the Science for Life Laboratory, which provides access to the latest techniques and the equipment needed to use the new methods, and improved collaboration between these two campuses will help maintain SLU's strong reputation in this area.

Plant and Forest Ecology including wild animals is an area of excellence within SLU. Strong research groups are located at the Uppsala and Umeå campuses, as well as at several research stations like Grimsö. Effective collaborations between these groups in various projects should lead to highly competitive constellations of researchers. The inclusion of the research unit from the Swedish Agency for Marine and Water Management gives new opportunities for research in this area.

Landscape architecture/Landscape planning is a theme highly relevant to the Quality of Life aspect. According to the KoN evaluation, SLU has an extraordinary opportunity to create an internationally recognized centre of research excellence. A university-wide centre could be established by bringing the now scattered units together to develop a common research agenda.