Accreditation Report
Agriculture

University of Akureyri (UNAK),
Akureyri, Iceland

November 2007

Arnarhvoll

Expert Committee
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Introduction

Accreditation Report on the University of Akureyri site visit conducted in October 2007.

1.1 The Expert Committee

Professor Maurice Boland, Head, School of Agriculture, Food Science and Veterinary Medicine, University College, Dublin, Ireland, Chairman.

Professor Gerhardus Schultink, International Development Planning, College of Agriculture and Natural Resources, Michigan State University, USA.

Professor Ragnar Ludvig Olsen, Norwegian College of Fishery Science, University of Tromsø, Norway.

Dr Anna Kristin Danielsdottir, Senior Advisor, Division of Research and Innovation, The Icelandic Centre for Research – RANNIS, Reykjavik, Iceland, Liaison Officer.

1.2 Terms of Reference

The Expert Committee (EC) was appointed by the Minister of Education, Science and Culture to review the applications for accreditation of Higher Education Institutions within the field of Agriculture, and as stipulated in the Higher Education Act, No. 63/2006, cf Rules on Accreditation of Higher Education Institutions according to Article 3 of Higher Education Act, No. 1067/2006. The role of the EC is to review applications and subsequent information on the basis of the National Qualification Framework of Iceland and Rules on Accrediation of Higher education Institutions No. 1067/2006.

The EC shall include the results of evaluation using the criteria as laid out in Article 2(3)(a)-(i) in the Rules of the following factors:

Objectives and roles.

Administration and Organisation.

Organisation of teaching and research.

Personnel qualifications requirements.

Admission requirements and student rights and obligations.

Teacher and student facilities and services.

Internal quality system.

Description of study according to learning outcomes.

Finances.
The review shall further evaluate the following, cf Article 3 of the Rules:

Expertise and competence in the field of study and the administration therein, taking account of the quality of teaching and research and the appropriate facilities, dissemination of knowledge and relative status within society.

The manner in which the support of the Higher Education Institution is arranged towards: the academic forum as a whole, teaching staff and experts in the relevant field and appropriate measures for the education and training of its students.

Special attention shall be paid to research and any subdivisions therein, with regard to educational infrastructure, especially cooperation between undergraduate and graduate studies and any other relevant fields of study, as appropriate.

The status of fields of expertise and subdivisions therein on a national and international level. Attention shall be paid to cooperation with other Higher Education Institutions and other bodies on a national and international level in that particular field of study.

1.3 Working Method

The three foreign members of the Expert Committee (EC) received the UNAK accreditation application along with the appendices in advance of arrival in Iceland by accessing it electronically from a webpage. The additional documents were circulated electronically to the EC members by Dr. Anna Kristín Danielsdóttir (AKD), the Icelandic member of the group.

The EC came together initially in the morning on Sunday, September 30th at the hotel’s meeting room, meeting for the first time. This allowed the committee members to get to know one another in an informal setting and learn more of individual members’ background experience. The EC started to prepare for the three site visits and divide the writing between the members. AKD arrived after lunch to explain the role of each member, providing local support and contextual information but maintaining neutrality in terms of the expression of opinions and influencing decisions. The remainder of the day was spent in preparatory work, discussions of the materials provided and issues arising. At 19:00 the committee drove to Sauðárkrókur arriving at Hotel Tindastöll at 23:30.

Monday 1st October, was spent at a site visit of Hólar University College at Sauðárkrókur and Hjaltidalur. The EC drove from Hjaltadalur to Hotel KEA, Akureyri in the late afternoon, where they had a meeting at Hotel KEA to crystallize thoughts from the HUC visit and prepared questions for the site visit to University of Akureyri.

Tuesday 2nd October 2007, started with an EC meeting in the Múlaberg Meeting Room at hotel KEA, Akureyri to finalize preparation work for the visit to University of Akureyri (UNAK). The EC visited UNAK and met first the Liaison officer of the UNAK, Hreiðar Þór Valtýsson, branch manager MRI and lecturer UNAK and Prof. Bjarni Hjarðar, Dean of Faculty of Business and
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Sciences. First the EC met with the Rector of UNAK and members of the administrative staff in the Austurborg meeting room in Sólborg at UNAK. Þorsteinn Gunnarsson Rector, introduced the different facilities of the UNAK, number of staff, main emphasis and future vision. The EC asked questions of the Rector and other staff present: Sigrún Magnúsdóttir Director of Quality Management, Ólafur Halldórsson Managing Director, Bjarni Hjarðar Dean of Faculty of Business and Sciences. The discussion focussed on structures and management.

Next the EC had a site visit on teaching facilities and library at Sólborg. Starting with the Gagnasmiðja and distant education facilities (7 min) – Erlendur Steinar Friðriksson, Program manager for distance education and communication, graduated in Fisheries Sciences from UNAK. Then the Library (7 min) – Sigrún Magnúsdóttir, director of quality management as a stand in for Astrid Margrét Magnúsdóttir director of information services and the Cafeteria, teaching rooms and offices walkthrough (6 min). Finally the registration office and registration system (10 min) – Ása Guðmundardóttir, Office manager Faculty of Business and Sciences and Stefán Jóhannsson specialist in information technology.

The EC was impressed with the physical facilities and space available. Some concern was expressed as to the long-term title security of the physical infrastructure because the University does not currently own some part of the facilities; these are leased for a twelve-year period.

The EC had a Meeting over lunch at the Borgir meeting room with representatives of Departments of Natural Resource and Computer Sciences. Bjarni Hjarðar Dean of Faculty of Business and Sciences introduced the education and research activities of the Faculty of Business Administration and Natural Science. This was followed by presentations by: (1) The Faculty of Business and Sciences, Bjarni Hjarðar; (2) Computer sciences, Nik Whitehead programme manager for computer sciences; (3) Fisheries Sciences, Hreiðar Þór Valtýsson; (4) Biotechnology, Oddur Vilhelmsson acting programme manager for Natural Resource Sciences; (5) Environmental and Energy Sciences, Hrefna Kristmannsdóttir professor; (6) MSc studies, Jóhann Örlygsson senior lecturer. Also present was Rannveig Björnsdóttir head of department Matís, lecturer UNAK.

During and after the presentation the following issues were discussed:

- Faculties were recently reorganised to address the financial deficit.
- Most students are local but distance learning is considered very important.
- Graduates are trained for middle management.
- A relatively high drop out in the middle of academic program changes.
- Very high rate of grant writing success (90-95%) by Matís staff.
- Some staff members are not fully aware of the financial situation.
• Biotechnology students are much more likely to do postgraduate courses.
• There are problems with recruitment, because of lack of funds.
• The Environment and Energy specialization did not admit students this year because of funding; this was not clear to all staff members and concerns were expressed with respect to its future program status.

Conclusions:
• There was considerable frustration about not admitting students to the Environment and Energy specialisation, this year.
• Academic staff shows a high degree of responsibility and a willingness to work together to improve the financial situation.

After the lunch meeting, the EC had a site visit on teaching and research facilities and cooperating institutions at Borgir escorted by the Liaison officer, Hreiðar Bóður Valtysson, branch manager MRI and lecturer UNAK and Prof. Bjarni Hjarðar, Dean of Faculty of Business and Sciences: 7th floor (5 min) – MSc students and visiting teacher facilities – Tómas Árnason MSc student. 6th floor (5 min) – Energy and industry institutions – Ágústa S. Loftsdóttir scientist Energy agency. 5th floor (5 min) – Arctic institutions and programmes – Niels Einarsson director of Stefansson Arctic Institute and Jón Haukur Ingimundarson site manager. 4th floor (10 min) – Natural institutions – Starri Heiðmarsson scientist at the IIINH, temporary instructor at UNAK. 3rd floor (10 min) – The Research and Developmental Centre of UNAK. Hjalti Jóhannesson assistant director and Lára Guðmundsdóttir research assistant, graduated in environmental sciences from UNAK. UNAK offices and computer science labs - Nik Whitehead. 2nd floor (10 min) – UNAK offices and teaching and research facilities for environmental sciences – Hrefna Kristmannsdóttir and Skírnir Sigurbjörnsson research assistant, graduated in environmental and energy sciences from UNAK. 1st floor (15 min) – wetlab, Hreiðar Bóður Valtysson; Matis research facilities, Rannveig Björnsdóttir, lecturer; laboratory in biotechnology, Arnheiður Eyþórsdóttir, adjunct UNAK; teaching facilities for biology and chemistry, Oddur Vilhelmsson, lecturer; X-ray lab, Prof. Hrefna Kristmannsdóttir; Physics lab, Einar Júlíusson, lecturer.

The EC considered the facilities very good and suitable to meet programmatic needs. Some laboratories would benefit from more up-to-date and fully functioning equipment.

Next, the EC had three meetings with the Lecturers, Professors, Research Scientists and others in the meeting room at Borgir. The professors present in the first session were: Hrefna Kristmannsdóttir, Ragnar K. Stefánsson, Sigþór Pétursson, Steingrimur Jónsson, Nikolai Gagunashvili.

The issues raised with Professors included perceived strengths and weaknesses of programs and any issues of concern.
Main observations include:

- A very strong sense of collaboration.
- A willingness to working closely with the surrounding community, which is considered a distinct advantage.
- Some perceived administrative weaknesses.
- Where a single staff member represents a single discipline or specialization, a feeling of isolation exists.
- Less than critical mass does not encourage interdisciplinary cooperation.

The Lecturers in the second session were: Einar Júlíusson, Hreiðar Þór Valtýsson, Jóhann Örlygsson, Oddur Vilhelmssoon, Rannveig Björnsdóttir, Dórir Sigurðsson, Nik Whitehead, Tangming Yuan, Tony Y.T. Chan. The issues raised with Lecturers included strengths and weaknesses and any issues they wished to raise. Main observations include:

- The small size is both a strength and a weakness.
- Academic standards are difficult to maintain with low student numbers.
- Basic entry requirements (e.g. mathematics, chemistry and biology) are too low and should be carefully reconsidered.
- Some staff apathy in participation in the strategic planning process.
- Awareness that there are too many Universities in Iceland.

Other staff members in the third session included: Árnheiður Eyþórsdóttir (adjunct, graduated from MSc studies in Natural Resource sciences), Stefán Gunnaðsson (lecturer in department of Business, graduated from Fisheries Sciences), Axel Björnsson (Professor at the Faculty of education), Margrét Stefánsdóttir (research assistant), Friðbjörn Möller (technical assistant, site manager ISS). The issues and responses were similar to above.

Next, the EC met in Borgir meeting room in three sessions with representatives of undergraduate, postgraduate and graduated students.

The undergraduate students present in the first session were: Ásgeir Hreiðarsson and Jenny Schulze (Computer sciences), Katrín Sigurbjörg Sveinsdóttir and Ragnheiður Ásbjarnardóttir (1st year Natural Resource sciences). Gunnar Harðarsson and Jón Ingi Björnsson (2nd year Natural Resource Sciences). Haraldur Bergvinsson, Máney Sveinsdóttir and Vordís Baldursdóttir (3rd. year Natural Resource Sciences).

Observations:

- Some disagreement among the undergraduates with respect to required courses (e.g. Business courses versus Chemistry). Preferences largely
reflect specializations.

- Concern was expressed with the lack of electives. Providing more electives may be difficult, given limited staff resources.

The MSc students present in the second session were: Tómas Árnason, Jón Eðvald Halldórsson, Sabine Huyer, Eyrún Gígja Káradóttir, Hildur Vésteinsdóttir, Hilma Eiðsdóttir Bakken and Arnheiður Eyþórsdóttir from biotechnology and MSc studies.

**Observations:**

- Post graduate students are in general, quite satisfied with program progress. Some have to take courses elsewhere and this is viewed both as an advantage and a disadvantage.

- Some funding is provided and students get credit for attending and presenting a poster at international conferences. Some are fully aware of the innovative potential in their projects.

The Graduated students present in the third session were: Skírnir Sigurbjörnsson and Gunnur Ýr Stefnisdóttir from environmental and energy sciences (Lára Guðmundsdóttir as backup), Jón Kjartan Jónsson and Óttar Már Ingvason from fisheries sciences (Guðmundur Öli Hilmisson as backup), Þórunn Guðlaugsdóttir and, Haukur Pálmason and Davið Steinar Guðjónsson from computer sciences.

**Observations:**

- The graduates are very happy with the training/education received. Some are running their own business. Some liked the idea of “fly” teachers i.e. those who gave occasional lectures - they are very specialized, but not around for sufficient time to facilitate interaction.

Next the EC had a meeting with representatives of employers of graduates in Borgir meeting room, meeting with: Reynir Eiríksson (production manager Norðlenska ltd), Ásgeir Ívarsson (project manager VGK hönnun), Martha Dis Brandt (project manager Stefna hf), Bjarni Gautason (branch manager Ísor Akureyri).

The employers were generally quite happy with the graduates.

**Main observations:**

- Overall good knowledge base.

- Some graduates lack managerial, decision-making and people skills.

- With small student and staff numbers, it is difficult to provide program specialization.

- The Computer Science graduates were all hand-picked and performed very well.
Some graduates are good theoretically, but lack practical knowledge (e.g. in applied economics).

The perceived work ethic is very good.

The university needs to decide where it wants to specialize and excel.

The EC then had a dinner meeting with Þorsteinn Gunnarsson (rector), Bjarni Hjarðar (dean of Faculty of Business and Sciences), Nik Whitehead (head of Department of Computer Sciences), Oddur Vilhelmsson (head of Department of Natural Resource Sciences). Rannveig Björnsdóttir (head of department Matis, lecturer UNAK), Sigrún Magnúsdóttir (director of quality management) and liaison manager Hreiðar Þór Valtýsson (branch manager MRI and lecturer UNAK).


After the meeting the EC flew to Reykjavík and compared impressions and drew preliminary conclusions and planned the writing of the report.

Much of the report was drafted before the EC members departed on 6th October and a roadmap was made for the remaining work and for editing and rewriting. The draft material was further edited and refined by circulation between the EC members over the next several weeks. A draft of the factual part of the report was sent to UNAK for checking and comment. Following receipt of these comments the report was finalized for submission to the Ministry of Education, Science and Culture.

1.4 Short Evaluation of the work process

The EC found the assessment process to be very efficiently organised and implemented. The team size and composition provided for a collaborative and supportive endeavor. It is essential to have a local person to organize the process; this proved invaluable where additional information was needed. We wish to pay special tribute to Dr Anna Kristin Danielsdottir for her guidance, knowledge and dedication to the process. She was always on time, worked long and hard days and was ever cheerful, which made our task easier. We also want to thank all staff at University of Akureyri for their courtesy, help and frank manner in which they dealt with the EC during the visit. They were well-organised and prepared to discuss any issue raised. If data were not available immediately, they were produced very quickly.

One area of concern for the EC was the large and fragmented volume of material that had to be obtained, read and evaluated before and during the site visit. This could be improved substantially by ensuring that future ECs will receive a single document containing all material relevant to the accreditation process. Of course appendices, weblinks etc. can be used, but it will facilitate the review process.

2. Roles and Objectives

University of Akureyri is a scientific educational and research institution whose
objectives are to train students to Bachelor or Master degree status as follows: BSc – Biotechnology Studies, Fisheries Science; Environmental Energy Sciences; Computer Science; MSc – Natural Resource Sciences. It is the goal of the University to provide its students with an academic education in an ambitious and challenging environment of study and research. The University aspires to provide its academic staff with an environment that is conducive to research and innovation, which in turn will support the growth and prosperity of Icelandic society and stimulate new developments and opinions. It also aspires to provide a challenging personal study environment that will attract students and place increased emphasis on the students participation and benefit from the study and training in critical thinking. A further objective is to improve the quality of teaching, facilities and services for study and always apply state-of-the-art information and communication technology.

Research is recognised as a fundamental component of any University and the University of Akureyri aspires to have 60% of its staff with a doctorate degree by 2011 and to have 150 students enrolled in research-related postgraduate study. There is a strong commitment to research that is industry-linked and strong links are already established with local industry and other academic centres both nationally and internationally. Interactions with local industry are seen as crucial for the growth and development of the University and efforts are being made to strengthen the mutual transfer of knowledge between the University and industry. Improvement of community access to research results and outputs is deemed important. The University aspires to be at the cutting edge of developments in relation to the knowledge and facilities provided and plans to build on its unique interaction with the local community and industry to develop further in its areas of specialization.

The University continues to develop its collaboration and has some or significant collaboration with the following:

(i) Marine Research Institute at Akureyri - there are 2 specialists who both work part-time at the University and at the Institute.

(ii) Matis at Akureyri - there is one specialist who works part-time at the University and at the Institute.

(iii) United Nations University Fisheries Training Programme – where staff of the Food Development Centre oversee the operation of the programme.

(iv) Holar and Akureyri are involved in collaborative research in aquaculture and share facilities and equipment in teaching and research.

Conclusions:

- Institutional roles and objectives could be more clearly articulated.
- Academic staff are aware of the need to specialise and focus with the goal of creating critical mass in research.
• It is clear that the objective is to improve the quality of the education and make students aware of the research findings and their applied use in the local community.

3. Administration and Organisation

The University of Akureyri is composed of four Faculties, namely Business and Science; Education; Health Sciences; Law and Social Sciences. The governing of the University is in the hands of the Rector and University Council. The University Council wields decisive authority within the University and is in charge of matters concerning the University in general and shapes a comprehensive policy for it. The University Council also contributes to and organizes supervision of and cooperation amongst faculties and their communications with parties outside the university including cooperation with other schools and research institutes. The University Council has decisive authority in matters relating to the university, as prescribed by law and as regulation more specifically stipulates. The University Council meets monthly and consists of the following members:

Baldur Guðnason General Director of Eimskip
Hjálmar Stefán Brynjólfsson Student
Sólveig Ása Árnadóttir Lecturer
Þóroddur Bjarnason Professor

The Rector Chairs the University Council to which he is responsible; this is an anomolous situation and should be addressed.

The Management Board supervises the coordination of the daily operations of the University and meets monthly. It consists of the Rector, the Faculty Deans and Managing Director of the University Office.

The University Office is divided into five sections which provide service for students and staff: a) Financial, Staff and Administrative Section, b) Academic Administration, c) Marketing and Public Relations, d) Research and Development Centre and e) Information Services.

A Quality Council consists of the Rector, Deans, Managing Director, Director of Quality Management and a representative from staff and students and meets monthly and its role includes the following:

• assume responsibility for the implementation of the quality management system.

• ensure that the University always satisfies the external requirements concerning operational quality.

• increase interest in quality matters within the University.

• serve as a forum for discussions and decision making on University quality matters.
• promote improvements and seeks to develop teaching and assessment.

• approve, supervise and assure regular revision of study programmes and degrees.

• guard the quality of research within the University.

• collect, assess and react to the information about University operations concerning quality.

• take a stand on important changes in University operations that may affect the quality of its operations.

• discuss preparations and implementation of self-assessment, and external assessment of the University and ensure follow-up.

The Rector appoints the Deans for a three-year term and the Dean chairs the Faculty meeting which is ultimately responsible for all major decisions of the Faculty. Faculty meetings serve as a forum for discussions on Faculty policy, and are held at least twice per semester.

The Research and Development Center is involved with activities relating to administration, supervision, service and advisory services on research at the University. The main objective is to strengthen administration and service to research to boost research, to develop specialist projects and to serve as a link between centres and institutes working within or in connection with the University. It operates as part of the University Office as mentioned above.

Conclusions:

• The University has a good administration and management structure in place.

• There is a good management team in office and the structures are logical and well understood by staff.

Recommendation:

• The University Council should have an independent chair, but must have the Rector as a member.

• Consider appointments of Deans and Department Chairs for a 5-year term to reduce administrative variability and increase the effectiveness in policy formulation and implementation.

4. Organisation of Teaching and Research

The University of Akureyri operates within a structure of four faculties (Business and Science, Law and Social Science, Health Sciences, Education). Courses are given and assessed in standard European Credit Transfer System (ECTS). A full course of study is comprised of 30 ECTS per semester or 60 ECTS per year of two semesters. The courses of study have been organised to meet Guidelines for
Higher Education and Qualifications and the learning outcomes of students are clearly defined.

Every year new students are welcomed at the University for a week where they receive practical information on the University and their future studies. This is called Students Success week because it is the opinion that students who participate improve their chance of success. Students meet other students, meet staff, orient themselves with the computer system, examination rules, library, student counselling and have some indication of what is expected of them during their time at the University.

Teaching assessment takes place at the end of each semester and all students are given a web-based opportunity to assess the quality of the courses and the teaching ability of the lecturers. This information is assessed in an anonymous fashion and is used to improve the quality of the learning experience. Information gathered from students on the quality and delivery of the courses is highly important to the University and contributes to the drive for quality improvement and is part of the quality management system.

The University is a leader in distance learning in Iceland. About one third of the students take distance learning courses with students attending phase-structured studies. In the distance learning courses the emphasis is on students forming local groups and enjoying the services of continuous education centres throughout the country which partly substitute the services and facilities provided in Akureyri.

Research

The data provided in the application indicate that professors, senior lecturers and lecturers have both teaching and research as part of their function. It also stipulates a different time split between different categories of staff in relation to teaching and research. The ratio of teaching: research is 60:40 for professors and 57:43 for lecturers and senior lecturers. This assumes that all staff are research active – the exact level of this activity is not clear for all staff members and depends also on the definition of research-active.

The Research and Development Center oversees research administration for the university, as well as various research-related projects. The research administration manages applications for research and training leave, applications for research and project grants, as well as a point rating system for research staff. It also provides counselling on grant writing. All academic staff can apply for research leave on the basis of a labour contract. In addition, administrative and support staff can apply for work-related training. There are clear guidelines related to this leave option.

Adjunct, lecturers, senior lecturers and professors send in an application for the point evaluation and rating system each year. The point rating affects salary increases and serves also as an application to the work assessment fund.

The formation of the Faculty of Business and Science by the merging of the Faculties of Natural Resource Science, Information Technology and Business
Administration has made it possible to strengthen its recent foundation. This adds to its critical mass and encourages a multidisciplinary approach to future research. Critical mass and focussing on areas of strength encourages progress, particularly in an era of intense international competition for research funds. Adapting academic change to rapid changes in modern society - where business, innovation and technology platforms are working together, ensures that significant and meaningful progress can be made. This requires real leadership to ensure buy-in and contribution from all staff who are prepared to trust the vision of an outstanding leader. Without good leadership, little if any progress will be achieved. It is evident that there are areas of outstanding research, but more progress can be made. To make the real advances will require vision, strategy, focus and the financial resources to ensure that the University is at the cutting edge in a very limited number and clearly-focussed areas of specialization. In addition, the hiring of a number of postdoctoral fellows is required to help develop further research potential.

Conclusions:

- The organisation of teaching and research are adequately described.
- The teaching facilities including the distance learning equipment, are excellent and appropriate for the programmes.
- The research facilities are excellent and major efforts have been made to secure modern equipment.
- Desk space for graduate students is state-of-the-art.
- Providing critical mass and focus on a limited number of specialized research programmes is an issue that must be addressed.

Recommendations:

- Further strengthen the postgraduate programmes by focussing on unique areas of expertise.
- Establish an international committee to advise on development of applied research and teaching programmes to enhance the reputation of the University.
- Develop a focussed and limited number of programmes that are competitive and will attract research funding and make Akureyri a world-renowned centre in 5-10 years time.
- Develop intra- and inter-institutional collaboration in a strategic and focussed manner.
- Build on the current developments in distance education.
- Establish a sustainable multi-annual budget to allow for strategic and specialized initiatives.
• Seek intensive research collaboration with foreign research institutions that may collaborate and cost-share in research and use the unique location and facilities as an applied science laboratory.

• Incorporate overhead charges in proposal procurement to help offset laboratory cost and improvement and personnel support.

• Establish a focused development plan to help finance and increase student and staff numbers.

• Establish a mechanism to hire postdoctoral fellows.

• Develop more depth rather than breadth in research and teaching.

5. Personnel qualification requirements

Hiring and promotion criteria for academic positions are defined in the Law on the University of Akureyri, which includes the establishment of an evaluation committee. Separate rules apply for adjunct and temporary instructors. Currently, the academic staff includes 7 Full Professors, 4 Associate Professors, 8 Assistant Professors, 1 Adjunct Lecturer, 31 Part-time Teachers.

Hiring criteria are based on Act 70/1996 stipulating the rights and duties of state employees, Universities Act 136/1997 and Law of the University of Akureyri No. 40/1999 regarding instructor competence and the operation of the Evaluation Committee. Regulations also apply to employees of collaborating institutions with teaching duties at the University.

Applicants are reviewed based on the quality of scientific work, administrative positions held, writings, development projects, creative work and research record, as well as certification of educational and employment records. Furthermore, it is expected that applicants include evaluations of instruction and administrative work, as relevant. Evaluation is subject to Article 3, Law no.40/1999 of the University of Akureyri and more detailed rules promulgated by the University Council. If more than one applicant is deemed competent, a faculty report is requested.

Minimum standards for hiring and promotion are identified for various Professorial ranks. The role of the Evaluation Committee and upper administration is clearly identified to help provide quality assurance. In addition, the role of the points system (with minimum performance points identified for academic grades), incentives, and self initiative are identified as drivers of the process.

The Evaluation Committee consists of 3 members appointed by the Rector for a 2-year term, according to article 34 of Act 173/2006 and article 18 of Act 63/2006, and judges the qualifications of persons serving in a particular position. In assessment of administrative duties, emphasis is placed on initiative, leadership ability, and organizational, planning, as well as interpersonal skills. Outside evaluators may be included. A detailed check list on the processing of applications for academic positions is provided.
Conclusions:

- The University of Akureyri is in compliance with the requirements of personnel qualification as defined by relevant laws, regulations and any obligations, therein.

- Interviews indicate a strong sense of collegiality among academic staff, a high level of administrative support, loyalty and general support by the local community.

Recommendations:

- Positions for academic employees should always be advertised both nationally and internationally, and in relevant professional journals.

- For all positions of Professorial rank, a PhD should be a minimum requirement for hiring, while minimum years of additional practical experience should be identified for Associate and Full Professors.

- More detailed strategic planning is needed to provide clear guidelines and priorities for future program expansion, concentration and academic position management among departments.

- A clear prioritization of programmatic needs and staffing plan will help address the perception that the teaching loads are high per FTE, with little time for research.

- To improve the quality of applicants, competitive salaries, relocation allowances and on-site incentives should be offered.

- It is suggested to consider the establishment of a university development initiative to help establish an endowment fund for staff recruitment and targeted financial support for new research initiatives.

6. Admission requirements and student rights and obligations

The admission of students to Higher Education Institutions is regulated by Article 19, Higher Education Institution Act (63/2006). The University of Akureyri has formulated general admission requirements and procedures. It identifies the completion of a matriculation examination (stúdentspróf) at an Iceland Junior College or equivalent as a college entry requirement, if a faculty “considers the students’ level of preparation adequate”. The students are usually twenty years old when they complete the matriculation examination. No minimum grade point requirements are specified. It is further stated that the university Council has full discretion on setting student numbers. No maximum levels or quality standards are specifically articulated.

The University of Akureyri is a small institution with a rapidly evolving program. The total number of BSc and MSc students at present is about 1400 and seem to have stabilized during the last 5 years, with the majority (62%) being female. This number is however, still quite small and poses significant
challenges in maintaining sustainable student numbers, cost-effective delivery of instructional services, adhering to fundamental academic admission standards and retaining, at the same time, an acceptable level of quality for an academic education. The University excels in providing distance learning opportunities, ranging from 32-38% of student participants, during the period 2002-07.

It is not evident that tightening admission standards to ensure quality control have been given adequate consideration in light of the pressure to increase student numbers. The EC believes that the proximity of research establishments on campus provides an excellent opportunity to incorporate research institutes more formally into the mission of the University. The potential synergies associated with enhancing critical mass, collaborative research, applied teaching and problem-based learning could be very significant. This in turn will improve the overall academic quality and profile of the University while attracting more students of higher calibre. Critical objectives could include the aggressive development of joint research proposals with institutes, joint staff appointments and research appointments for graduates. The EC considers the planned establishment of the International Graduate School of Renewable Energy Resources in 2008 an important initiative that seeks to capitalize on the unique natural resources and research opportunities of the region. At the same time, the EC is concerned with the lack of programmatic rationale provided by the administration to stop undergraduate admissions in this area of specialization in 2007.

The EC has confidence that the University leadership understands the primary importance of the student recruitment process for the successful and continued academic development of the institution.

While a detailed policy for the development of academic programs was not presented, the EC believes that the leadership is aware of the significant challenges facing the institution in maintaining a viable academic program. Special challenges include the need for more detailed strategic planning vis-à-vis the needs of specialized education in Iceland, the potential for expanded collaboration with other (near-by) academic institutions, and the required specialization, and evaluation of potential complementarities, and redundancies of academic programs.

Detailed principles and policies have been articulated in the Code of Conduct for students, including sanctions associated with violations, such as plagiarism and the role of the Ethics Committee.

**Conclusions:**

- The EC perceives that the rules and procedures governing student admission are in agreement with Article 19 of the HEI Act (63/2006)
- While general rules and procedures are formulated, entrance standards seem to be minimal and somewhat arbitrary, and do not adequately
promote long-term educational quality and reputation.

**Recommendations:**

- Develop and adapt a detailed strategic education plan. This plan should reflect the needs of Icelandic’s society for academic education in the academic specializations offered, the desired and associated sustainable student numbers linked with instructional, research and staffing needs.

- Conduct a systematic identification of the complementarities of educational programs with those at other academic (e.g. near-by) institutions with the objective to develop additional cooperation, including joint and complementary course offerings, promote and articulate clearer and higher admission standards that seek to improve program quality, improve cost-effective delivery of instruction and the provision of more applied research opportunities. One specific example is the opportunity to develop complementary initiatives with Hólar in aquatic resource studies.

- Student concerns were identified with respect to the on-line enrolment process, course and credit changes. It is suggested to provide additional quality assurance in this regard.

- It is suggested to develop more (internal) research funding opportunities for graduate students.

- Special consideration should be given to reward faculty members for successful research proposals in priority areas, especially those that address important societal needs, that are multi-disciplinary or could lead to processes and outcomes that can be patented and provide a future revenue stream for the institution.

- Further articulate and elevate college entrance requirements to ensure program quality and reputation.

- Explore more course offerings in English (especially at the MSc level) and equally explore the opportunity to charge higher tuition rates for foreign students who do not pay local taxes, in order to recoup public subsidies.

**7. Facilities for Teachers and Students and Services Provided**

The EC viewed the generally, up-to-date instructional and research facilities. It is clear that the university is in a period of transition, in terms of instruction and research facilities. Capacity and staff support strains were identified in general terms – such as the shortage of secretarial support mandating a higher non-academic work load for academic staff. Examples include the use of academic staff time for repetitive clerical tasks, and the shortage of funding for laboratory and library facilities.

**Conclusions:**
• The working conditions for teachers and students and associated support infrastructure is overall adequate to support the accreditation of the listed courses and academic program.

Recommendations:

• Improve clerical and technical staff support to create efficiencies in the operation of a more research-intensive institution that can compete at the international level.

• Provide more targeted funding for research by improving research facilities long-term, and provide incentives for research funding procurement, including international travel and publication support.

• Seek intensive research collaboration with foreign research institutions that may collaborate and cost-share in research and use the unique location and facilities as an applied science laboratory.

• Incorporate overhead charges in proposal procurement to help off-set laboratory cost and improvement, and personnel support.

8. Internal quality system

The Quality management system of UNAK is the foundation of the internal quality management and is described in part 7 of the Application for Accreditation. The system which is approved by the University Council covers all activities of the University, teaching, research, governance and support and is commissioned by the Quality Council. The Rector chairs the Council with the other members being the Faculty Deans, the Managing Director, Director of Quality Management, one representative of employees and one representative of the students.

According to the application, the Quality Council devises a 3-year plan for what is called the internal assessment of quality units and emphasis is placed on internal customers and process efficiency. The following points are specifically mentioned:

• Monitoring drop out rates; ensure that degrees and course offerings take into account the needs of the society; monitor and ensure periodic review of courses and degrees; establish a forum for training, coordination and collaboration within the University; provide advice on development of curriculum and courses.

• Provide assessment training to teaching staff; provide a system of performance incentives; conduct staff development interviews; provide introduction sessions for new members of staff; place emphasis on quantity and quality of research projects and on research related postgraduate studies; provide quality inspections and follow-up; collect key statistics on publishing information on quality-control and publish
information on quality improvements.

Although most of the points mentioned are highly relevant for HEI, the EC feels that it is important not to rely solely on formal evaluation systems that are (too) time consuming and may draw (too) much attention and energy away from the “art” of teaching and the potential to inspire first class research. At the end of the day, it is good and inspiring teaching together with high quality research that attracts students, produces relevant results, helps to secure long-term funding and sustain academic excellence.

Teaching assessments in the form of student surveys have been carried out for years to improve teaching and the University plans to support more diverse methods in the coming years. The Dean of the faculty has a clear role in the follow-up process to provide teaching staff with the necessary methods and tools for improvement. It is important to balance the teaching and research load, Concern was expressed that the teaching load is very high and this can inhibit necessary improvements. Shortage of technical and clerical personnel could also contribute to this. It is important that the Director of Quality Management focuses improvement of overall teaching quality. Teaching staff should be able to concentrate on course content and effective delivery rather than on administrative issues. The students were generally happy with the teaching program and expressed satisfaction with access to teaching staff and their ability to discuss matters of academic relevance.

As a relatively small institution, it is obvious that the numbers of courses, particular at MSc level, must be limited. This challenge is partially solved by allowing students to attend courses at other institutions, particularly abroad. Students are apparently provided with some financial support in this respect. This opportunity must be regarded as a benefit and contributes to the quality of the study programs and to the reputation of the University. The students expressed great satisfaction with this possibility.

Conclusions:

• UNAK has an ambitious quality management system which is operated through the Quality Council.

• It is necessary that this system is implemented objectively and with full support of academic and administrative staff.

• The existing evaluation system at UNAK, including teaching evaluation surveys are regularly performed and appears to function well. Similarly, a system of staff development interviews is in operation at the Faculty of Business and Sciences.

• In general, an internal quality management system, as required by law,
exists, seems well-structured and functions well. This is very important, particularly for a small institution like UNAK. It should be handled carefully and consistently, and not divert too much attention and energy away from the principal functions of research and teaching.

9. Description of study according to learning outcomes

Part 8 of the UNAK application describes the levels of study programs given at the University in general and refers to the Internet for the list of study programs and the description of the curricula and courses. The programs to be evaluated by the EC were BSc programs in Biotechnology, Fisheries Science, Environmental Energy Science and Computer Science, and one MSc program in Natural Resource Sciences. On the Internet the BSc in Environmental Energy Science is described as 2 programs; one in Environmental Science and one in Environmental-Energy Science. The description of learning outcomes from course elements in the programs is well described. However, to make the evaluation task more manageable, the EC feels that all the necessary materials for the accreditation process should have been included in application materials, not only as Web references.

Conclusions:

• Details of degree programmes and intended learning outcomes of each programme are included as required by Chapter II of the Act on HEIs No 63/2006.

Recommendations:

• It would be useful to include, together with the general description of the courses, the curricula, the titles of textbooks and other course materials.

10. Finances

The deficit for UNAK decreased from about 6.5% of the total budget in 2005 to about 1% in 2006. The externally earned revenues account for approximately 25% of the total budget.

Staff members complained of being severely underfinanced with respect to technical and administrative personnel support and some indicated that they had too high of a teaching load. With the limited staff numbers and academic program requirements, the EC finds that some of these complaints may be justified. This may impose an obstacle to progress to higher quality in teaching and research, in line with international standards. If the number of teaching staff will not increase significantly in the near-term, it may be necessary to concentrate research and teaching in fewer areas.

One of the weaknesses with respect to financial sources is clearly the fact that
none or little overhead is included on externally-funded research projects. This provides for less financial stability, flexibility and discretionary research funding for strategic research initiatives.

**Conclusions:**

- The financial situation is somewhat difficult and a clear strategy needs to be developed to articulate programmatic priorities and ensure sustainable financial development.

**Recommendations:**

- UNAK should try to establish an endowment and research fund for use in strategic initiatives.

- Seek full overhead cost recovery on all externally-funded programs.

**11. Summary of Findings and Recommendations**

The main findings of the EC are summarized here as conclusions and recommendations to the Ministry of Education, Science and Culture and to the UNAK authorities and staff. Detailed conclusions and recommendations are at the end of each section of this report.

The EC unanimously recommends accreditation of the Programs discussed at UNAK in accordance with the Higher Education Act No. 63/2006 and the Rules of Accreditation of Higher Education Institutions No. 1067/2006. UNAK did not articulate a clear strategic plan in terms of academic sustainability in relation to student numbers, programme development or elimination and improvement of future financial stability. The EC recommends that UNAK develop such a plan, which should include a focussed and limited number of programs that will attract increased numbers of high quality students in the years ahead. This plan should include a detailed strategic initiative with the timing of events together with milestones and deliverables.

The UNAK’s teaching and research programmes address issues of local and regional importance, although national and international collaboration are a significant component. This may in some instances attract international students particularly at the graduate level. However, the postgraduate programmes can be strengthened considerably by focussing on areas of specific staff expertise and societal need. The international component to the plan should be carefully considered and international opportunities for collaboration should be aggressively pursued to leverage the existing academic potential and raise its international profile. The organisation of teaching is well described and the distance learning facilities and equipment are appropriate for the programme.

Efforts must be increased to enhance the qualifications of all new hires and it is not clear that tightening admission standards to ensure quality control has been given adequate consideration in light of the pressure to increase student numbers.
There is an excellent opportunity to incorporate research institutes more formally into the mission of the University, because of the close proximity of these institutes. This may be done through joint position agreements and collaborative efforts in teaching and research. UNAK should proactively seek opportunities for a formal alliance with other higher education bodies with similar goals that will strengthen all organisations concerned, enhance the sustainability of all institution and improve the cost-effective delivery of educational services to the Icelandic population.

**Recommendations to the Ministry:**

- Higher Education Institutes should be required to consider closer amalgamation to ensure greater depth of staff specialization, increased critical mass and higher calibre students in specific areas of study.

- The ministry should require UNAK to develop a comprehensive strategic plan to map the development of the University over the next five years.

**Recommendations to the University:**

To help strengthen the viability and sustainability of the University the following must be considered by UNAK:

- Ensure that there is adequate administrative and technical support to help develop teaching and research programmes.

- Upgrade laboratory equipment.

- Strengthen the postgraduate programmes by focussing on areas of expertise.

- Establish a mechanism to hire postdoctoral fellows.

- Build on the current developments in distance learning.

- Develop and adopt a detailed strategic education plan.

- Consider closer amalgamation with other Higher Education Institutions.

**Appendix 1**

**Agenda for the Expert Committee.**

**Site visit to the University of Akureyri (UNAK) in Akureyri, Iceland.**
Tuesday 2\textsuperscript{nd} October 2007.

**Expert Committee:**

Prof. Maurice Boland (Chairman of the Expert Committee).

Prof. Gerhardus Schultink.

Prof. Ragnar Ludvig Olsen.

**Liaison officer of the Expert Committee:**

Dr. Anna Kristín Danielsdóttir, RANNIS.

**University of Akureyri Liaison officer:**

Assistant prof. Hreiðar bóí Valtýsson, branch manager MRI and lecturer UNAK.

09:00 – 10:45

Final preparation and organization of questions for the University of Akureyri (UNAK).

Múlaberg Meeting Room at hotel KEA, Akureyri.

**Present:** Prof. Maurice Boland (Chairman of the Expert Committee), Prof. Gerhardus Schultink (Member of the Expert Committee), Prof. Ragnar Ludvig Olsen (Member of the Expert Committee) and Dr. Anna Kristín Danielsdóttir, RANNIS (Liaison officer).

11:00 – 11:30

Meeting with the Rector of UNAK and members of the administrative staff at UNAK.

Austurborg meeting room in Sólborg, Akureyri.

**Present:** Porstein Gunnarsson Rector, Sigrún Magnúsdóttir Director of Quality Management, Ölafur Halldórsson Managing Director, Bjarni Hjarðar Dean of Faculty of Business and Sciences.

11:30 – 12:00

Site visit, teaching facilities and library at Sólborg.

Gagnasmiðja and distant education facilities (7 min) – Erlendur Steinar Friðriksson, Program director for distance education and communication, graduated in Fisheries Sciences from UNAK.

Library (7 min) – Sigrún Magnúsdóttir, acting director of information services

Cafeteria, teaching rooms and offices walkthrough (6 min)

Registration office and registration system (10 min) – Ása Guðmundardóttir, Office manager Faculty of Business and Sciences and Stefán Jóhannsson specialist in information technology.
12:00 – 13:30

Meeting over lunch with representatives of Departments of Natural Resource and Computer Sciences. Introduction on the education and research activities

Room R262 Borgir, Akureyri.

Present: Bjarni Hjarðar, Nik Whitehead programme manager for computer sciences, Oddur Vilhelmsson acting programme manager for Natural Resource Sciences, Jóhann Örlygsson senior lecturer, Hrefna Kristmannsdóttir professor, Rannveig Bjórnsdóttir head of department Matís, lecturer UNAK.

Presentations (max 10 minutes each): (1) The Faculty of Business and Sciences, Bjarni Hjarðar. (2) Computer sciences, Nik Whitehead. (3) Fisheries Sciences, Hreiðar Þór Valtysson. (4) Biotechnology, Oddur Vilhelmsson. (5) Environmental and energy sciences, Hrefna Kristmannsdóttir. (6) MSc studies, Jóhann Örlygsson.

13:30 – 14:30

Site visit, teaching and research facilities and cooperating institutions at Borgir.

7th floor (5 min) – MSc students and visiting teacher facilities – Tómas Árnason MSc student.

6th floor (5 min) – Energy and industry institutions – Ágústa S. Loftsdóttir scientist Energy agency.

5th floor (5 min) – Arctic institutions and programmes – Niels Einarsson director of Stefansson Arctic Institute and Jón Haukur Ingimundarson site manager.

4th floor (10 min) – Natural institutions – Starri Heiðmarsson scientist at the IINH, temporary instructor at UNAK.

3rd floor (10 min) – The Research and Developmental Centre of UNAK. Hjalti Jóhannesson assistant director and Lára Guðmundsdóttir research assistant, graduated in environmental sciences from UNAK. UNAK offices and computer science labs - Nik Whitehead.

2nd floor (10 min) – UNAK offices and teaching and research facilities for environmental sciences – Hrefna Kristmannsdóttir and Skírnir Sigurbjörnsson research assistant, graduated in environmental and energy sciences from UNAK.
1st floor (15 min) – Wetlab (Hreiðar Þór Valtýsson), Matis research facilities (Rannveig Björnsdóttir lecturer), laboratory in biotechnology (Arnheiður Eyþórsdóttir, adjunct UNAK), teaching facilities for biology and chemistrty (Oddur Vilhelmsson lecturer), X-ray lab (prof. Hrefna Kristmannsdóttir), Physics lab (Einar Júlíusson lecturer).

Present: Bjarni Hjarðar.

14:30 – 16:00

Meeting with staff (Lecturers, Professors, Research Scientists and others). Coffee brake inbetween. Three sessions.

Room R262 Borgir, Akureyri.

Present:


Session 2 (starts at 15:00): Lecturers - Einar Júlíusson, Hreiðar Þór Valtýsson, Jóhann Órlygsson, Oddur Vilhelmsson, Rannveig Björnsdóttir, Þórir Sigurðsson, Nik Whitehead, Tangming Yuan, Tony Y.T. Chan.

Session 3 (starts at 15:30): Other staff – Arnheiður Eyþórsdóttir (adjunct, graduated from MSc studies in Natural Resource sciences), Stefán Gunlnaugsson (lecturer in department of Business, graduated from Fisheries Sciences), Axel Björnsson (Professor at the Faculty of education), Margrét Stefánsdóttir (research assistant), Friðbjörn Möller (technical assistant, site manager ISS)

16:00 – 17:30

Meeting with representatives of students (undergraduate, postgraduate and graduated students). Three sessions.

Room R262 Borgir, Akureyri.

Present:

Session 1 (starts at 16:00): 8 Undergraduate students - Ásgeir Hreiðarsson and Jenny Schulze (Computer sciences), Katrin Sigurbjörg Sveinsdóttir and Ragnheiður Ásbjarnardóttir (1st year Natural Resource sciences). Gunnar Harðarsson and Jón Ingi Björnsson (2nd year Natural Resource Sciences). Haraldr Bergvinsson and Máney Sveinsdóttir (3rd year Natural Resource Sciences). Svala Hilmarsdóttir.
Session 2 (starts at 16:30): 7 MSc students – Tómas Árnason, Jón Eðvald Halldórsson, Sabine Huyer, Eyrún Gígja Káradóttir, Hildur Vésteinsdóttir, Hilmár Einarsdóttir Bakken and Arnheiður Eyþórsdóttir from biotechnology and MSc studies.

Session 3 (starts at 17:00): 8 Graduated students – Skírnir Sigurbjörnsson and Gunnur Ýr Stefánsdóttir from environmental and energy sciences (Lára Guðmundsdóttir as backup), Jón Kjartan Jónsson and Öttar Már Ingvason from fisheries sciences (Guðmundur Öli Hilmisson as backup), Þórunn Guðlaugsdóttir and, Haukur Pálason and Davíð Steinar Guðjónsson from computer sciences.

17:30 – 18.00
Meeting with representatives of employers of graduates.
Room R262 Borgir, Akureyri.

Present: Reynir Eiríksson (production manager Norðlenska ltd), Ásgeir Ívarsson (project manager VGK hönnun). Martha Dís Brandt (project manager Stefna hf), Bjarni Gautason (branch manager Ísor Akureyri).

18:00 – 18:30
Buffer zone, time for Accreditation Expert Committee to gather their thoughts and perhaps interview selected people.

18:30 – 20:35
Dinner invitation to EC.
Restaurant at hotel KEA, Akureyri.

Present: Þorsteinn Gunnarsson (rector), Bjarni Hjarðar (dean of Faculty of Business and Sciences), Nik Whitehead (head of Department of Computer Sciences), Oddur Vilhelmsson (head of Department of Natural Resource Sciences). Rannveig Björnsdóttir (head of department Matis ohf., lecturer UNAK), Sigrún Magnúsdóttir (director of quality management) and liaison manager Hreiðar Þór Valtýsson (branch manager MRI and lecturer UNAK).

21:00 – 22:15
Flight to Reykjavík.

Appendix A2

List of documents received:

2. Rules on Accreditation of Higher Education Institutions, No. 1067/2006 (Draft

4. Application for Accreditation of Agricultural Science at the University of Akureyri Iceland (UNAK) in the categories of Biotechnology Studies (B.Sc.), Fisheries Science (B.Sc.), Environmental Energy Science (B.Sc.), Computer Science (B.Sc.) and M.Sc. in Natural Resource Sciences with the following Annexes:

   - Annex 1.01 Agreement between the Ministry.
   - Annex 1.02 Environmental Policy.
   - Annex 1.03 Equal Rights Plan.
   - Annex 1.04 Faculty of Business and Science Strategy.
   - Annex 1.05 UNAK Strategy.
   - Annex 2.01 Collaborating Institutions.
   - Annex 2.02 Study programmes and Statistics.
   - Annex 3.01 Academic Competance.
   - Annex 3.02 Assessment of Teaching Agreement.
   - Annex 3.03 Codes for the Faculty of Business.doc
   - Annex 3.04 Contract on Academic Study Programmes.
   - Annex 3.05 Final Year Project Computing.
   - Annex 3.06 Group Projects Computing.
   - Annex 3.08 Guidelines regarding Final Projects.
   - Annex 3.09 Laboratories Admission.doc
   - Annex 3.10 Regulations for Masters Degree.doc
   - Annex 4.01 Agri Academic staff 2006 - 2007
   - Annex 4.02 Evaluation Committee.
   - Annex 4.03 Processing Applications.
   - Annex 4.04 Rules on Exemptions from Advertisements
   - Annex 5.01 Code of Conduct Students-Draft.
   - Annex 5.02 Rules of Penalties for Plagiarism.
   - Annex 6.01 Facilities.
   - Annex 6.02 Facilities and Services.
Annex 6.03 Media Centre and Computers.
Annex 7.01 External04draft.
Annex 7.02 External04letter.
Annex 7.03 External04report.
Annex 7.04 External05draftapril.
Annex 7.05 External05draftnov.
Annex 7.06 External05letter.
Annex 7.07 External05report.
Annex 7.08 External06draftapril.
Annex 7.09 External06draftnov.
Annex 7.08 External06letter.
Annex 7.09 External06report.
Annex 7.10 IMG Assessment.
Annex 7.11 Letter of the Minister on IMG Assessment.
Annex 7.15 UNAK Teaching Assessment.

5. Introductionary slides from presentations.
   a. Þorsteinn Gunnarsson, Rector.


7. Introductionary slides from presentations.
   a. Bjarni Hjarðar, Dean of Faculty of Business and Sciences. The Faculty of Business and Sciences.
   c. Hreiðar Þór Valtýsson, Branch manager MRI and lecturer UNAK. Fisheries Sciences.
   e. Hrefna Kristmannsdóttir Professor Department of Environmental
and energy sciences. Environmental and energy sciences.

f. Jóhann Örlygsson Senior Lecturer. Microbiology. MSc studies.

8. Employment of graduates from UNAK. Attitude survey of graduates towards the value and utility of their studies at UnAk in the year 2005.

9. Staff in natural resource and computer sciences.


11. CV from Axel Björnsson.