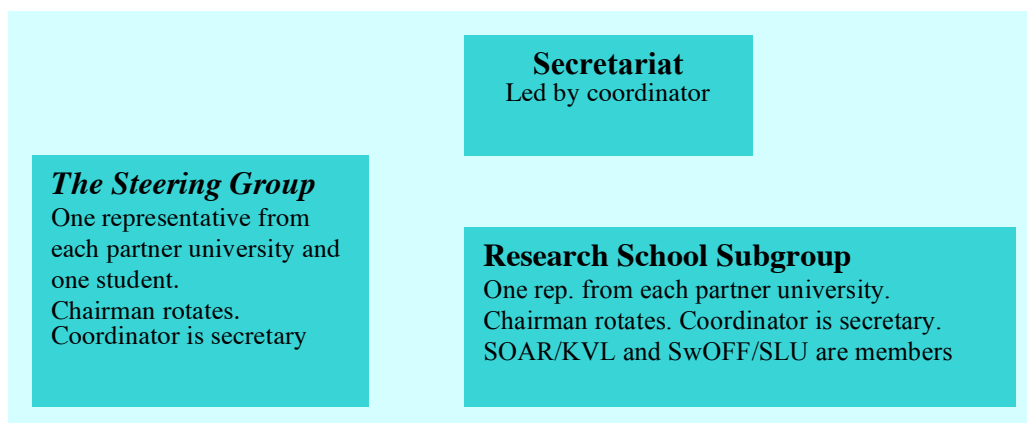




Annual Report, 2006

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The representatives of the steering group and the secretariat in 2006 were:

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Other working group members and active participants in the work in 2006:

Institution	Participant
KVL	Associate Professor Vibeke Langer
	SOAR Academic Assistant, Sofie Kobayashi
	Professor Henning H Jensen
	Professor John Porter
HU	Study Planner, Aija Taskinen
	Research Director Jouni Kujala
	Senior Planning Officer, Jukka Rajala
UMB	Study Planner, Ritva Myntinen
	Professor Tor Arvid Breland
SLU	Adviser Michael Kirby Moulton
	Dr. Ulrika Geber
	SwOFF Academic Ass. Dr. Charlotte Lagerberg-Fogelberg

The members of the AGROASIS network in 2006 have:

- Worked on improving the integration of the MSc offers at the different NOVA universities by:
 - Draft an ideal structure of a Nordic master in agroecology
 - Defining a structure possible with today's limitations
- Continuous updating of agroecology courses in the NOVA course database
- Taught / are teaching master level agroecology courses to 146 students, totalling **1871 ECTS**
- Supervised / are supervising 16 masters thesis projects in the field of agroecology, totalling **210 ECTS**
- Taught / are teaching PhD level courses to 31 students, totalling **141 ECTS**
- Supervised / are supervising 59 PhD thesis projects in the field of agroecology (within the research school SwOFF and SOAR)
- Made improvements to PAE301/ÖÄ0310, a 100% internet-based master level course
 - Ran PAE301/ÖÄ0310 for the third time as a collaborative effort with involvement from KVL, UMB, SLU, HU and University of Lincoln Nebraska.
 - 9 students from 6 countries took the internet course
- Re-designed and updated the agroasis website, www.agroasis.org
- Fulfilled a Nordforsk application for a Agroasis Research Training Network in Organic Food and Farming, implemented as a Nordic network of national research schools, with members from the Nordic and Baltic countries, in close relation to existing research schools SOAR (Denmark) and SWOFF (Sweden)
- Wrote a MSc integration report
- Worked to implement the ideas for an integrated Nordic programme
- Delivered an integration PhD report and continued the discussion for a possible Nordic PhD school
- Initiated and started a self evaluation within the AGRAOSIS network

List of meetings in 2006

Uppsala, Sweden, January 12-13th

The main goals of this meeting were to make the final preparations for the Internet course PAE301/ÖÄ0310, and more fully develop the plan of action for 2006. The teachers have exercises in the course lab on the computers with the conference program First Class. Research priorities and cooperation in MSc and PhD was discussed. Present: Geir Lieblein, Lennart Salomonsson, Jessica Alm, Nadarajah Sriskandarajah, Sofie Kobayashi, Juha Helenius, Charles Francis and Karin Svanäng.

Copenhagen, Denmark, June 26-27th

The focus of this meeting was on the main goal of 2006: MSc development and integration. Strategy for a common MSc was deeply discussed and an outline for a structure was presented. We did an excursion to Krogagergaard, the case study in the Internet course, and took photos and video to document the farm visit. We also discuss a review of the feedback from students and a discussion on PAE301/ÖÄ0310 in 2006. Present: Vibeke Langer, Nadarajah Sriskandarajah, Geir Lieblein, Lennart Salomonsson, Charles Francis, Mike Moulton, John Porter, Sofie Kobayashi and Karin Svanäng.

Stange, Norway, August 13-15th

At our third meeting of 2006 we focused our efforts on the development of an integrated Nordic MSc programme. Improvement of the homepage AGROASIS.ORG was discussed. Plans for the Internet course in 2007 were also made. In addition the group discussed our plans for 2007. Present: Geir Lieblein, Lennart Salomonsson, Helena Georgsson, Nadarajah Sriskandarajah and Karin Svanäng.

Telephone Meeting, October 25th

On the telephone meeting the AGROAIS teacher group revisited the goals for running the web course as an AGROAIS team project. The teachers discussed the organisation and improvements of the course, how to share responsibility and teaching costs. SLU has the course responsibility 2007 with Lennart Salomonsson as the main responsible teacher and Karin Svanäng as the course coordinator. Around 20 students have applied to the course this year. To maintain a high quality the resources (students compensation) in relation to teaching time between the universities has to be divided. The group decided to test the First Class conference in advance at home and collect detailed questions to the course web support on the next meeting in Uppsala. Mike Moulton took the responsibility to improve the case study with some new photos and a video clip from the farm. Proposals for the winter meeting in Uppsala was discussed. Participants: Juha Helenius, Vibeke Langer, John Porter, Geir Lieblein, Nadarajah Sriskandarajah, Lennart Salomonsson and Karin Svanäng.

Uppsala, Sweden, November 22nd

A one day of planning meeting of the summer PhD-course “*Scales and cross-scales in ecosystem services in agriculture and organic farming*”, 27 May to 2 June 2007, in Bohuslän, Sweden, was done in November, with Lennart Salomonsson, John Porter, Juha Helenius and Jan Bengtsson. The course takes its departure in the possibility for the agriculture systems to develop in a sustainable way, connected to changes in other ecosystems and decisions made by other institutions than agricultural. The focus was on detail scheduling for integration of theoretical concepts and group processing of excursions. (The final schedule is attached).

Different aspects on scales and cross scale in researching connected social and natural systems will be presented by the main teachers (John Porter, Juha Helenius and Jan Bengtsson and Torbjörn Rydberg). The course teachers will also select literature on their different course content for literature reading and processing by the students before the course week in Bohuslän.

Meetings funded by other sources

Faroe Islands, May 18 – 19th

Geir Lieblein participated in the NOVA seminar on Faroe Islands, and shared his experiences from the AGROASIS network with the delegates.

Uppsala, Sweden, June 8-9th

Workshop to prepare an application to Nordforsk, in the Nordic and Baltic cooperation. The cooperation is as an expansion of the NOVA Network in Agro-ecology/Ecological Agriculture to include the Baltic countries, and to expand on activities that will strengthen PhD supervision, mobility and competences of PhD students.

Informal meetings

Uppsala, Sweden, June 12th

Lennart Salomonsson and Karin Svanäng met Knut Wählstedt and Paul Jensen together with the NOVA coordinator Anna Lauritz at SLU, to discuss how to make a master in agroecology to a joined programme in NOVA. The AGROASIS network has to intensive the efforts to realize more agroecology courses within the Nordic network and get more students in the courses, if the master programme in agroecology can become a pilot project in NOVA.

Results to date:

General student recruitment results:

Table 1: Student enrolment in MSc level courses held in English in 2006

Institution	Course	Total number of students	Number of Nordic students	Number of total study credits (total students*ECTS)
UMB	Agroecology and farming systems	21	4	21*15=315
	Agroecology and food systems	20	4	20*15=300
KVL	Ecological Agriculture Ia	22	0	22*15=330
	Ecological Agriculture Ib	14	0	14*15=210
	Global Seminar	12	5	12*15=180
SLU	Adaptive management – theory course	3	2	3*15=45
	Adaptive management – project course	4	2	4*15=60
	Environmental Issues in Crop Production	5	2	5*15=75
	Management of Pests, Diseases and Weeds	14	10	14*15=210
HU	Sustainability in agri-food systems	16	2	16*4,125=66
HU: Mikkeli	Organic food systems	8	2	8*4,75=38
Joint	Internet course: Ecology of farming and food systems	7	3	7*6=42
Total		146	36	1871 ECTS

Table 2: Students enrolment in the Agroecology master programme in 2006

Institution	First year	Second year
UMB	16	9
HU*		5 total

*MSc Plant production, specialisation in agroecology

Table 3: Master student thesis titles & credits in 2006 (completed and in progress)

Institution	Thesis title	ECTS
KVL	1. Planning communication about farm nature plans - interventions and reflections	48
	2. Til- og fravalg af økologisk drift I Danmark – resultater fra casestudier	48
UMB	3. Anteneh Belachev Gezmu: Organic farming: a Means for Sustainable Agriculture. Insight from Uganda. Supervisor: Geir Lieblein and Charles Francis. <i>Completed.</i>	30
	4. Petra Bakewell-Stone: Sustaining Livelihoods through Organic Agriculture in Tanzania: A Sign-Post for the Future. Supervisor: Geir Lieblein. <i>Completed.</i>	30
	5. Corinne Kolm: Agritourism as a revitalization strategy for the Central Platte River Regions. Supervisor: Geir Lieblein and Charles Francis. <i>Completed.</i>	30
	6. Ali English: Growing Future Farmers: Developing a Certificate Program linking Guelph University and the Ontario CRAFT Apprenticeship Programme. Supervisor Geir Lieblein. <i>In review.</i>	30
	7. Erandi Ediriweera: Analysis of ecological agriculture for food security in Sri Lanka. Supervisor: Geir Lieblein. <i>In review.</i>	30
	8. Bastian Hoffmann: Organic agriculture in Norway: Factors for success. Supervisor: Geir Lieblein. <i>Completed.</i>	30
	9. Louis Byrne: Investigating the reasons for conversion to and re-conversion from organic farming, and how to stimulate more conversion to organic milk production in eastern Norway. Supervisor Tor Arvid Breland. <i>In review</i>	30
	10. Nicholas Willis: Meat goat production in Norway: Applying principles from agroecology in the search for an economically sound, sustainable production system.. Supervisors: Geir Lieblein and Lars Olav Eik. <i>In review.</i>	30
	11. Elin Volder Rutle: Peasant cooperatives and local control over the food system. Supervisor : Geir Lieblein. <i>In progress</i>	60
	12. Daniel Todt: Conservation and Restoration of the cultural landscape in Langfjord as a socio-ecological ecosystem. Supervisor: Geir Lieblein. <i>In progress</i>	30
	13. Menaka Fernando: Achieving Sustainability in Organic Vegetable Production System in Matara, Sri Lanka - The Potential Role of the Agroecologists-. Supervisor: Geir Lieblein. <i>In progress</i>	60
	14. Mikaela Vasström: Facilitating Agricultural Innovation and Learning – a Systemic Action Research approach. Supervisor: Geir Lieblein, Nadarajah Sriskandarajah and Dorthe Christensen. <i>In progress.</i>	30
	15. Ana Marunic. Lactic Acid Bacteria (LAB) for production of sourdough bread with unique characteristics. Supervisor: Geir	30

Lieblein. *In progress.*

16. Andrea Erika Lawseth: An Urban Agriculture Strategy for Increased Food Security: The Victoria Food System as a Community Learning Process. Supervisor: Geir Lieblein and Charles Francis. *In progress.* 30

Total

210 ECTS

Table 4: PhD project titles in 2006 (completed and in progress)

University	Title
SLU (connected to SwOFF)	1. "Interactions Between Soil Bacteria and Arbuscular Mycorrhizal Fungi". Doctoral Thesis No. 2006:39. 2. "Soil Microorganisms and Plant Nutrient Cycling in Green Manure Cultivation Systems". <i>In progress</i> 3. "Green Tractor – Bio-based Fuels For Use In Organic Farming In a Long Term Perspective". <i>In progress</i> 4. "Spiders on Arable Land – Migration, Condition, and Diversity in Cereal Fields". <i>In progress</i> 5. "Germination Ecology of Annual Weeds". <i>In progress</i> 6. "Effects of Intercropping On The Life Cycle of The Turnip Root Fly (<i>Delia floralis</i>)". <i>In progress</i> 7. "The Influence of Large-scale Changes in Production Systems On Birds and Insects". <i>In progress</i> 8. "Dairy Cows Adapted For Organic Production". <i>In progress</i> 9. "Biodiversity, Ecosystem Services and Farmers – In Cooperation For a Rich Agricultural Landscape". <i>In progress</i> 10. "PCR-based Gut Analysis: A Study of Aphid and Collembola Predation By Generalist Predators". <i>In progress</i> 11. "Chemical Ecology and Dispersal of the Carrot Psyllid, <i>Trioza apicalis</i> ". <i>In progress</i> 12. "Näringsförsörjning, hälsa och köttkvalitet I ekologisk grisköttsproduktion". <i>In progress</i> 13. "Animal Health in Organic Dairy Farms". <i>In progress</i> 14. "Protein Enrichment of Feed Grain With Microfungi". <i>In progress</i> 15. "Feed protein support in organic poultry production with special emphasis on the use of mussel meal". <i>In progress</i> 16. "Vitamins A, D and E of Forages and Their Utilisation By Dairy Cows In Organic Production". <i>In progress</i> 17. "The Sulphur Availability To Arable Crops – The Role of Farmyard Manure, Soil Organic Matter and Mineral Fertilizers In Conventional and Organic Farming Systems". <i>In progress</i> 18. "Ecological and Social Impacts On Resource-poor Small-scale Farming By The Introduction of Bt-maize in South Africa". <i>Initial</i>
HU	19. Plant species diversity of buffer zones in agricultural landscapes: in search of determinants from local to regional scale. <i>In pre-examination</i> 20. Ode to a Skylark: what is in future for birds of farmland in the Baltic region. <i>In pre-examination</i> 21. Factors affecting productivity, yield stability and nitrogen fixation of organic leys. <i>In progress</i> 22. Interactions between actors in organic food chains. <i>In progress</i>
KU/LIFE RUC,AAU DTU (connected to SOAR)	23. Consumer Demands on Organic Food Products. Roskilde University Center. <i>Graduated</i> 24. Modeling development of disease complexes on barley cultivar mixtures under organic farming practice. <i>Graduated</i> 25. Organic Food Networks and Sustainable Development. Aalborg University. <i>Graduated.</i>

26. Transmission, infection dynamics and alternative control of helminths in organic swine. *Graduated*
 27. Bacterial infection risk associated with outdoor pig production with special reference to *Salmonella* and *Campylobacter* infection. *Graduated*.
 28. Application of alternative medicine in organic dairy herds with special emphasis on the effect of veterinary homeopathy on udder health. *Graduated*.
 29. Optimization of growing media for greenhouse production. *Graduated*.
 30. Technology for reduction of environmental impact and loss of nitrogen from livestock manure. Aalborg University. *Graduated*.
 31. Production of N₂O in grass-clover pastures. *Graduated*.
 32. Competition and complementarity between intercropped barley, rape and field pea in ecological cropping systems – the role of plant available nitrogen and sulphur as well as cropping design. *Graduated*.
 33. Dairy breed bull calves in organic beef production. *Graduated*.
 34. Optimisation of nitrogen use efficiency in organic vegetable production. *In progress*
 35. Modeling of processes at the farm level, with special emphasis on nitrogen and carbon flow and turnover. *In progress*
 36. Organic meat processing - non-nitrite alternatives to conventional meat curing. *In progress*
 37. The use of natural amino acids as a nitrogen source in organic farming. *Submitted*
 38. Landscape changes under ecological farming. Roskilde University Center. *Graduated*
 39. Dual purpose varieties of grain legumes, impacts of their adoption on soil nitrogen cycling and forage protein availability within the farming systems of the west African moist savannah. *In progress*
 40. Below-ground turnover processes in perennial grass-clover leys. *In progress*
 41. The importance of nutritional factors and the physiological background for the development of liver abscesses in veal calves and young bulls – Perspectives for organic beef production. *In progress*
 42. Strategies for increased foraging in organic layers. *Graduated*
 43. Production of organic milk of high quality considering the future demands for use of organically produced feed and natural vitamins. *In progress*
 44. Control systems in organic egg production, focusing on animal welfare and food security. *Submitted*
 45. Soil ecological studies of decomposition of urban fertilisers. *Submitted*
 46. Cultural barriers and potentials for recycling of human urban waste. *In progress*
 47. Environmental assessment of selected Danish or imported organic agricultural products. *In progress*
 48. Content and stability of vitamin E in milled organic wheat and spelt. *In progress*
 49. Empowerment of organic enterprises - values, identity and learning in food processing. *In progress*
 50. Crop-Weed interactions determined by sensor techniques. *In progress*
 51. Consequences of growing genetically modified crops in co-existence with organic crops. *In progress*
 52. Control of soil-borne diseases by the biofumigation effect of *Brassicacae*. *In progress*
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	53. Investigation on mortality and interactions of selected diseases in free-range chickens. <i>In progress</i>
	54. Future supply and marketing strategies in the Danish organic food sector. <i>In progress</i>
	55. The sustainability of organic farming in a global food chains perspective: The agroecology of organic farming systems. <i>In progress</i>
	56. Vitamin D status and supply in organic dairy cows. <i>In progress</i>
	57. The biological activity of <i>Phytoestrogens</i> in organic and conventional milk. <i>In progress</i>
	58. Meta analyses and their application in agriculture: A case study on variety mixtures of cereals. <i>In progress</i>
UMB	59. A systemis analysis for development of cereal growing in organic farming with a low stocking rate

MSc education

The potential for an agroecology education program is to assemble the challenges facing food systems and societies in the Nordic region in close communication with farmers and rural communities on one hand, and the globalise economy on the other. One challenge is to develop an attractive program that will draw people and generate support to the universities in the region.

To meet the new needs for the agricultural sector (to produce food, fibres and energy as well as general life support functions, i.e. to *integrate* production and conservation), also need an agricultural education program that shift from disciplinary to more interdisciplinary perspectives, from molecular to higher system level focus, and shift from disciplinary theories to the complex agricultural reality as the bases for the education (shifting from traditional class room teaching to experiential learning). These needs and strategies, for such a new kind of agricultural education program, have been researched by the AGROASIS network of NOVA.

The main idea of the program is to give students a learning environment to develop knowledge and skills to analyse and understanding of agroecosystems at different situations, as well as skills and relevant attitudes to be active in development processes in the systems (action skills). This learning environment is based on a comprehensive view, where social, economical and ecological systems are connected and integrated.

Goal 1: Report on relevant courses for MSc specialisations in Agroecology at the different NOVA universities with a suggested course succession for a number of specialisations.

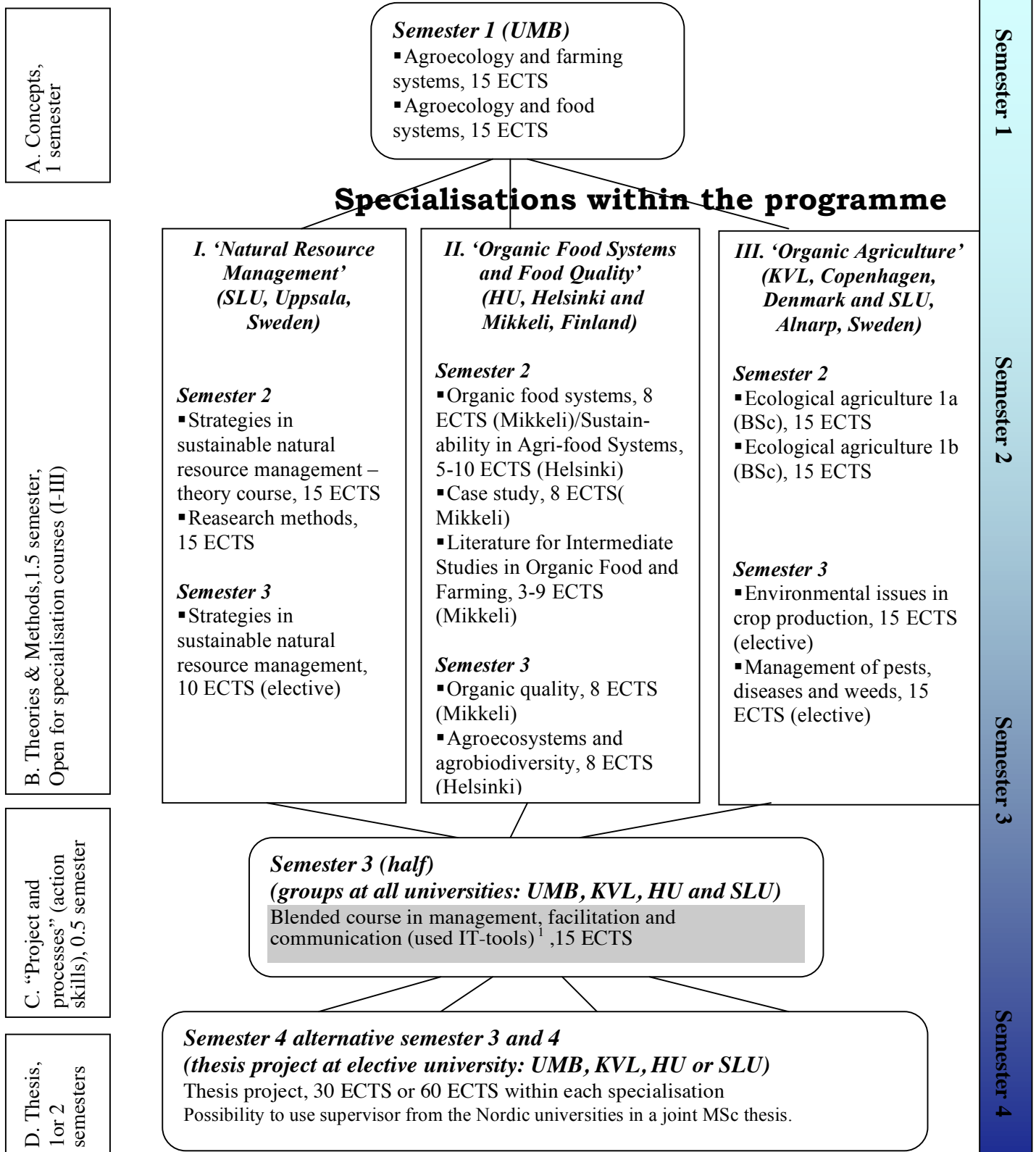
Achievement: A first proposal of course succession with four specialisations within the program and the context of agroecology. The program is built on a succession of *core concept courses* (1 semester), *methods and theory courses within 3 specialisations* (1.5 semester), *action skills course* (0.5 semester) and *thesis project* (1 semester). More details were presented in the MSc integration report delivered 30th September.

Follow-up actions: Continuing discussion how the course planning has to change as a consequence of the new masters programs at SLU (Master in Rural Development and Natural Resource Management).

Goal 2: Documentation of a suggested process of partitioning of responsibilities among AGROASIS partners

Achievement:

Principle structure of the programme¹



¹ ideal structure with all the boxes, possible structure with only the white boxes and courses (not the shaded ones)

Follow-up actions: Further detail planning of responsibility and name of contact person in each specialisation. Incorporating the suggested NOVA master with the national masters.

Goal 3: Report on the possibilities and barriers for an implementation of the Agroecology MSc course structure at the different NOVA universities and relevant faculties

Achievement: A draft presentation of a Nordic master in agroecology, with both ideal and possible structure. A blended course in facilitation and processing has to be planned if the ideal structure will be possible. Master integration report was delivered on 30th September. New application to NOVA was written for creating and planning the new blended course.

Follow-up actions: Meeting schedule for creating and planning the new blended course.

PhD education

The AGROASIS PhD network, comprised of actors of the Swedish University of Agricultural Sciences (SLU), The University of Copenhagen, Faculty of Life Sciences, Denmark (KVL), University of Helsinki (HU), and the Norwegian University of Life Sciences (UMB), has the overall aim to strengthen research training in the interdisciplinary research area of organic food and farming. The scientific scope is broad, covering all aspects of the organic food chain from primary production to consumption. Thus PhD students of the network work in different disciplines, but all can relate their research to the principles of organic agriculture.

Courses are offered to all students in the network thereby achieving mutual benefits in making best use of resources and knowledge among the universities while students gain momentum through collaborations and more available courses/training. This organisation creates a climate for the cultivation of knowledge across disciplines and support students in developing their understanding of their own research within a wider context.

Table 4: Enrolment in PhD level courses in 2006

Institution	Course	Total number of students	Number of Nordic students	Number of Baltic and Russian students	Number of total study credits (number of total students * ECTS)
SwOFF	Study tour to Denmark	4	4	0	4*1.5=6
SOAR	Potential of Organic Farming to contribute to Rural Development in Europe	27	13	11	27*5=135
Total		31	17	11	141 ECTS

Goal 1: A meeting with the AGROASIS work group and representatives from SwOFF and SOAR will be focused on the common planning of NOVA PhD courses the next held in 2007 and a common Nordic PhD school.

Achievement: Implemented the Network of Research Schools in Organic Food and Agriculture, 'Agroasis Research Training Network', as an expansion of the NOVA Network in Agro-ecology/Ecological Agriculture to include the Baltic countries, and to expand on activities that will strengthen PhD supervision, mobility and competences of PhD students in the Nordic and Baltic countries. The approach will build on experiences from the involved research groups, specially the two national research schools in the network: SOAR (Denmark) and SwOFF (Sweden). Proposal written during a workshop with all partners at SLU, Ultuna, Uppsala, Sweden, June 8-9th. Proposal submitted to Nordforsk in June 2006. Application was declined by Nordforsk. Proposal submitted to NOVA for funding of preparatory meetings for PhD course and supervision course in 2006. Funding granted.

Follow-up actions: Planning meetings in March 2007 to prepare application to NOVA.

Goal 2: Documentation of a suggested process, suggested PhD course in 2007.

Courses planned in the near future are presented in table 5 below. In addition to courses offered with financial support of NOVA, other courses and activities are offered to the students of the network, such as the course "Sustainable Nutrient Management in Agri-Food Systems - An Industrial Ecology Approach. offered in 2007 by HU, "Emergy Synthesis" offered by SLU in 2006, and "Qualitative Research Methods" offered by UMB in 2006. The course in focus for 2007 is "Scales and Cross-Scales in Ecosystem Services in Agriculture and Organic Farming" which is a part of a series of planned courses.

Achievement: Proposal for the course "Scales and Cross-Scales in Ecosystem Services in Agriculture and Organic Farming" is accepted from NOVA. Detailed schedule decided with dates, May 27th – June 2nd 2007, and lecturers.

Follow-up actions: Continue spreading information and marketing of the courses. Further planning and development of courses in the future.

Table 5. Agroasis PhD courses

University \ Year	2006	2007	2008	2009	2010
University of Helsinki (HU)		Sustainable Nutrient Management in Agri-Food Systems - An Industrial Ecology Approach			
The Royal Veterinary and Agricultural University, Denmark (KVL)	<i>Potential for Organic Farming to Contribute to Rural Development</i>		Research Methodologies in Relation to the Principles of Organic Farming and Food Production	↑	The real cost of food – a Food Chain Perspective
Norwegian University of Life Sciences (UMB)	Qualitative Research Methods	→ possibly repeated		↓ Rethinking agriculture and food production	
Swedish University of Agricultural Sciences (SLU)	Emergy Synthesis	Scales and Cross-scales in Ecosystem Services in Agriculture and Organic Farming			

Italics means funded by NOVA

Bold means funding applied through NOVA

Normal text means funded through other sources than NOVA

Goal 3: Documentation of suggested actions for a Nordic PhD school to start in 2008, including clarification of the role of NOVA in a Nordic PhD school, identification of potential funders of a PhD school at Nordic (e.g. NKJ) and European (e.g. Marie Curie; CORE organic) level, identification of advantages and disadvantages of different PhD school models and cooperation at European level.

During the workshop in June at Ultuna all the partners decided in a first step to have a NOVA Network in Agro-ecology/Ecological Agriculture (include the Baltic countries). The Nordic countries have different experiences of PhD schools and the way of cooperation between them has to be investigated further.

Achievement: Discussion started up. Overview of the research area is presented in the report: 'Status of research and research training in the Nordic countries' (appendix to the Nordforsk application). Final PhD integration report was delivered 30th November 2006.

Follow-up actions: Continue discussion and investigation to find connections how to do Nordic PhD cooperation

Improving international linkages in education and research

The efforts on cooperation with the Baltic states and Russia are now channelled to the Network of Research Schools in Organic Food and Agriculture, 'Agroasis Research Training Network', as an expansion of the NOVA Network in Agro-ecology/Ecological Agriculture to include the Baltic countries, see description above.

Information/communication

Students have many choices regarding courses, and it is very important to market our course offers, and to be visual. We think this work is essential in enhancing the mobility of Nordic students.

Goal 1: Maintain and improve the AGROASIS website (www.agroasis.org)

Achievement: The page has been updated during spring 2006. Helena Georgsson, the webmaster, has informed the network how to build a successful home page and sent out a list of improvement to the group members. New buttons on the front page and new background with pictures (photos) from the group members has been implemented.

Follow-up actions: Sending in materials from the group will be a continuing task.

Networking

The AGROASIS group has initiated and accomplished a self-evaluated questionnaire concerning the aim, needs and expectations according to the goals for the network. The results will be presented in 2007 but already now we have found out that the AGROASIS network is useful both on national and international level. The benefits are both on pedagogical and systemic levels, through reflective discussions. The network is effective in sharing information and function as a spotlight for students that are interested in agroecology/ecological agriculture/organic farming. The strength for the group is both the pedagogical experiences and the capacity to plan and realize courses and projects. Future inputs to the network is to deal with interdisciplinary research and to implement this on Nordic and global levels.

Publications related to the network:

Journal Articles:

Gillebo, T., and C. Francis. 2006. Stakeholder cooperation in sustainable development: three case studies in Norway. *J. Rural & Community Devel.* 2(1):28-43.

Rotolo, G.C., T. Rydberg, G. Lieblein, and C. Francis. 2007. Emergy evaluation of grazing cattle in Argentina's Pampas. *Agriculture, Ecosystems & Environment* 119:383-395.

Book Chapters:

Sriskandarajah, N., C. Francis, L. Salomonsson, H. Kahiluoto, G. Lieblein, T.A. Breland, U. Geber, and J. Helenius. 2006. Education and training in ecological agriculture: Nordic Region and U.S.A. Chapter 16 in: *The Science in Organic Agriculture*, P. Kristiansen, A. Taji, and J. Reganold, editors. CSIRO, Australia. p. 385-406.

Seppänen, L. and Francis, C. 2006. Design of farmer education and training in organic agriculture. Chapter 17 in: P. Kristiansen, A. Taji, and J. Reganold, editors. *Organic Agriculture: a Global Perspective*. CSIRO, Australia. p. 407- 419.

Symposia presentations:

Francis, C., T.A. Breland, G. Lieblein, U. Geber, L. Salomonsson, N. Sriskandarajah, J. Porter, and J. Helenius. 2006. Creating a Nordic regional research network in agroecology: links to MSc education. Proc. International Farming Systems Association (IFSA) Symposium, Agricultural Knowledge and Innovation Systems in Transition, 7-11 May, Wageningen, The Netherlands. p 320-324.

Francis, C., T.A. Breland, G. Lieblein, M. Moulton, L. Salomonsson, U. Geber, V. Langer, N. Sriskandarajah, J. Porter, and J. Helenius. 2006. Agroecology research and education: an academic platform for organic farming. In: Proc. Organic Farming and European Rural Development, Odense, Denmark, May 30-31. p. 38-39.

Lieblein, G. and C. Francis. 2006. Learning agroecology for responsible action. Agroecology seminar at ESA Angers, France, April 19.

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Accounting 2006

	Budgeted, €	Spent, €
Expenses		
Meetings: Travel and accommodation	6 400	5 346
Internet course improvement	3 000	4 960
Information/communication	3 000	3 447
MSc and PhD development coordination and integration	12 600	11 955
Other		72
Sum expenses:	25 000	25 780
 Income		
Funds transferred from NOVA earlier in 2005		15 000
Funds remaining from NOVA:		
25 000 € granted		
<u>-15 000 € transferred earlier</u>		
10 000 € remaining to be transferred		10 000