

STUDIEPLAN



Regenerativt landbruk

30 studiepoeng

Bryne, 04.01.2019

Background

HLB staff have been developing competence in Regenerative Agriculture over the past three years. This is evidenced by the publication of *Jordboka* and *Jordboka II* by Prof Dag Jørund Lønning. These books resulted from extensive research and training, and were launched in October 2017 and March 2019 in Bryne, with guest lectures from key actors in the Regenerative Agriculture and Regenerative Grazing sectors in the world. At the same time, HLB staff have been developing new approaches to local rural development through these tools, and have started several new r&d projects on regenerative agriculture and community development. Thus, HLB has been developing extensive expertise in the subject, in collaboration with an international network of researchers and practitioners. The development of this course within the existing HLB bachelorgrad represents an opportunity to bring these knowledges to the practice of farming and rural/community development in Norway.

This course will be driven by new ethnopedological understandings of the living soil and human cooperation with the soil food web, and in the science of Carbon Capture through the practices of Regenerative Agriculture.

Regenerative agriculture directly addresses Norwegian government commitments to make the agricultural sector sustainable across all three axes – economically, environmentally and socially. It does so by addressing soil health (and the resulting productivity gains); by understanding the role of a healthy soil in carbon retention and in the retention of water in cases of increased precipitation leading to flooding; and by creating the potential for a new, more-profitable, more-local, and more productive system of food production which directly addresses Norwegian government targets both for food production and for managing climate change.

Indeed, the core message of the course comes from its focus upon the production of high-quality compost with zero emissions in the composting process, to enable carbon sequestration and improved bacterial and fungal production with its impact on production and harvest – using a classic example of the circular economy in the creation of compost from waste.

The course: *Regenerativ landbruk (Regenerative Agriculture)*.

The greatest future challenge for Norwegian agriculture is sustainability. Greater demand, loss of fertility in soils, impacts of climate change and other challenges face the industry. Norwegian society needs farmers who can take leadership and bring such an outcome about, and future agriculture needs new leaders who can address these challenges and produce more food, of higher quality, whilst maintaining the soils and the ecosystems services that maintain them and contributing to moderating on-going climate change through carbon-friendly farming.

This course will help to produce those leaders. In order to lead the sector into sustainable production, the course is divided into four Learning Units which address 1) new innovative ways of producing soil health; 2) improving carbon retention in soils; 3) creating agriculture regimes which provide new opportunities to rural communities facing challenges of job-loss, vocational transition and declining fortunes. Finally, a fourth theme will insure that students understand the potential of Regenerative Agriculture in locations around the world.

Our new leaders of Future Agriculture will gain the subject knowledge, experience and leadership skills needed to create a sustainable agriculture sector in the future.

Expected scope of work for students

This is a course awarding 30 study points corresponding to a half year, full time course. It commences in September and concludes in May/June. Students undertaking this course full time can expect to spend 135 hrs per month in studies. As the course is divided into mandatory Modules/Learning Units this works out to 270 hours per Module. This will comprise:

Lectures – 35 hours per Module;

Readings – 100 hours per Module;

Task preparation (exercises/tutorials) – 90 hours per Module;

Discussion forum – 25 hours per Module;

Review and reflexive practice - 20 hours per Module

Study tour to key pioneer innovators in Regenerative Agriculture in the USA.

This thus totals to 810 hours for the full-time course, including all assignments, both formative and summative.

Study Plan (*indicative*)

Learning Unit/Topics

- 1) Introduction to course; Nature as a resource; Resource Efficient Agriculture; Regen Agriculture + introduction to soil biology and why it matters.
- 2) Economics: Agriculture *for* rural development; Vocational Transition and Regen Ag; Market Gardens as economic opportunity; Community Supported Agriculture (CSA)
- 3) Regenerative Agriculture and Local Food Systems (rural and urban): Study Trip to Singing Frogs Farm and Sonoma County California

- 4) Regenerative Grazing and Holistic Management Systems – with Norwegian and international examples
- 5) Making it real – how to set up Regen Ag, Market Gardens; Learning from the Leaders – web-based lectures and student discussions.
- 6) Course essay and muntlig examen – student presentations to each other of their assignments.

Students will directly access an international network of regenerative agriculture pioneers and practitioners through the use of a study tour to the USA where they will receive instruction, and inspiration from key actors in the international RegenAg movement. In addition, key experts will contribute to lectures. Thus, they will complete the course with much knowledge not only of the science behind the practices, but also, of the challenges and opportunities for the implementation of these practices at the farm level. It is expected that, at the end of the course, students will have enough knowledge, experience and skill development to be able to plan and implement their own regenerative agriculture schemes in Norway.



Singing frogs farm, California.

Course Name

The course name is '*Regenerativt Landbruk*' ('Regenerative Agriculture'). The name reflects the course's orientation towards new practices in agriculture - practices built in response to the environmental, economic and food security challenges brought in the 21st Century, including challenges of managing the carbon footprint of human activity, global climate change, feeding burgeoning human populations and providing sustainable incomes in rural places. The course will empower new leaders in agriculture through giving them tools, knowledge and experience to create innovations in sustainable agriculture which address the challenges we face.

Learning Objectives and Learning Outcomes (*indicative*)

The Learning Objectives of this course will be as follows:

Knowledge

LU1: Upon completion of this course, students will be able to demonstrate understanding of the central concepts, ideas and processes that make up regenerative agriculture, and use those understandings to create, promote and critically interact with innovations in food production, particularly in terms of sustainability across all three legs of the sustainability triad.

LU2: Upon completion of this course, students will have a demonstrated familiarity with cutting edge research and innovation in sustainable agriculture and be able to find new and innovative research going forward.

LU3: Upon completion of this course, students will personally meet key Innovators in the field and will have had access to online networks of innovators and practitioners, giving them the ability to continually update their knowledge beyond the confines of the course.

LU4: Upon completion of this course, students will be able to demonstrate a critical understanding of the history and role of food production in society, and in particular, the potential roles of what are now alternative agricultural practices, such as regenerative agriculture and regenerative grazing, in leading the response to modern day problems in food production.

Skills

LU5: Upon completion of this course, students will understand the multiple inputs of food production systems and be able to choose and use appropriate ones according to criteria which they have personally chosen to implement.

LU6: Upon completion of this course, students will have the knowledge and experience to critically examine their own choices and practices in agriculture in order to lead, in new, innovative, and sustainable food production processes.

LU7: Upon completion of this course, students will have experience with and be able to effectively access professional knowledge and practices as part of a self-reflexive process enabling them to achieve outcomes they have set, or which are set for them by external actors.

LU8: Upon completion of this course, students will have knowledge and experience with the necessary professional tools and processes in order to engage in Regenerative Agriculture and other sustainable farming practices.

General competence

LU9: Upon completion of this course, students will have insight into relevant professional and occupational issues in leading and completing sustainable practices

LU10: Upon completion of this course, students will have experienced planning and carrying out varied work tasks and projects that extend over time, on their own and as members of a group, as well as understanding the ethical issues which affect both personal and, more generally, sustainable development.

LU11: Upon completion of this course, students will have practice communicating ideas, theories and innovations in sustainable agriculture so that they can lead the necessary transitions from traditional to sustainable agriculture. Along the way they will gain experience in dialogue with other

practitioners, as well as with non-farmers who support changes towards sustainability in our food production systems.

LU12: Upon completion of this course, students will have had experience finding, thinking about and using new ideas and innovative practices in sustainable development.

Relevance to Workplace and/or further studies

The core focuses of this course prepare students to innovate themselves, and inspires them to set up such future practices in their own farms and businesses. It also prepares them to be leaders in these types of agriculture, giving them the skills and tools, they need to lead.

Within the wider BA programme, students learn about ideas of innovative rural development as developed by and for other courses in the BA in Nyskaping og samfunnsutvikling, such as 'nyskaping'. This course's focus on the role of agri-business in rural society and economy will provide them with many specifics which will underpin what they learn in these other courses. In these ways, they will gain sufficient knowledge about the central themes, theories, problems, processes, tools and methods within both fields to make evaluative judgements about the role of agri-business and the management in innovative rural development in Norway.

This course is a 30 stp course -- one of three 'option courses' for the second or third year of the BA in Nyskaping og Samfunnsutvikling. As such it will contribute toward educating the next generation of leaders of farming and rural development in Norway. Regenerativt landbruk sits beside courses such as Hest i næring, Landskap og Utvikling and Sirkulær økonomi in providing HLBs students with access to the latest ideas, practices and innovations for sustainable rural development.

The course will also stand as an independent course for farmers. It is designed to support students with an interest in the agricultural sector to identify trends and growth areas in that sector, as well as the issues, ethical challenges and innovative approaches to building profitable and ecologically sustainable farms in a vibrant rural society and economy. It provides a broad overview of developments within the sector and of rural development, nationally and internationally, so that students can identify and evaluate opportunities to satisfy their passion for agricultural management with the creation of appropriate and innovative agro-businesses. It also offers a clear view of the benefits of a sustainable and profitable agricultural sector to Norwegian society and economy. Further, its emphasis on leadership skills – research, analysis, communication – will contribute to the creation of new leaders in agriculture and rural development. As such it offers an interesting opportunity to students by delivering a perspective to which they are seldom exposed in other courses in Norway.

As part of an existing bachelor programme, the course will equip students with relevant knowledge to continue in Higher Education studies in rural business management.

Program of Work and teaching methods

This course is designed to teach and inspire the next generation of leaders in carbon-neutral agriculture. Students will not be typical bachelorgrad students in that many will already have some experience in agriculture or food production. As a result, this course will be very strongly *constructivist*

in its pedagogical orientation. By exposing these students, with their already-passionate interest in food production to new ideas, the opportunities for learning will be created within a growing Learning Community. The course uses the *samlingsbasert* model to support students who already have commitments to land, farm or job. At the same time, the model provides an opportunity for students to build their own Learning Community amongst themselves, out of their passion, presence and the curriculum. There will be four “samlings”, each of three full-time days, approximately once every second month. In addition, the full one week study tour accounts for two “samlings”. Here the students will travel to and learn with some of the leading practitioners of Regenerative Agriculture and Regenerative Grazing in the USA. This extended ‘away-sampling’ will involve pre-study, field learning and presentations, and will produce assessed output so that the students can consolidate their learning experiences.

Between samplings, students will utilize a Moodle VLE course environment, which will involve access to digital resources, Discussion Forums, and self-completion quizzes which will deliver formative feedback so they know how they are progressing. Additionally, these self-completion quizzes will aid in student acquisition of basic, fact-based information in the field.

Students can take the course either in person, F2F, at HLBs premises, or by *Studisenteret* video learning system (employed by HLB for over 3 years now). Either way they will participate in discussions, submit assignments and access Moodle equally, regardless of their participation medium.

Assessment Scheme

This course uses a *mappe evaluering* assessment scheme. Students will deliver two shorter formative evaluation assignments in samplings 2 & 4, and a final Summative assignment for Samling 6. The former will be graded Pass/Fail. The Final assignment will focus upon a Regenerative Agriculture project of their choice, providing the ideas, justifications, plans and future potential of their project, summarizing their learning throughout the year. This will be graded from F to A. The Final assignment will be given as a presentation to the rest of the class in samling 6, and 20% of the final grade on the assignment will focus on the presentation. Students will also undertake an oral exam to assure they have assimilated the whole range of the course contents.

In addition, small formative self-completion quizzes will be created in Moodle so that students can verify their acquisition of practical knowledge and data as they go through the course. These will not contribute to the final grade.

Links between research and student studies

HLB has pioneered research into Regenerative Agriculture and other means of sustainable food production in Norway. Through the writing and publication of *Jordboka and Jordboka II*, HLB participates in a network of leaders and pioneers in this type of agricultural innovation, and students will gain direct access to many of the members of this network through the study tours and expert guest lectures. Further, this international network of advocates and practitioners is growing annually. Students will have access to this network and be able to both contribute to and learn from it as their practices go on beyond the duration of the course.

Arrangements for student exchange and internationalization

At the core of the course is the ability of the students to visit and learn from key expert pioneers and practitioners in the regenerative agriculture movement in the USA. At the same time, HLBs experience with *Jordboka* and *Jordboka II* suggests that there is a demand from students across Scandinavia for this knowledge. HLB holds an Erasmus+ Charter and will be prepared to welcome students from other jurisdictions as demand grows.

Scientific environment associated with study.

In the course of writing the new books on the living soil, Dag Jørund Lønning has undertaken extensive research and study, including certification as a soil life consultant. HLB has adopted Regenerative Agriculture as a key research, teaching and publication theme, beginning in 2017. All staff members currently have existing applications for funded research with Norwegian and European partners focusing on the implementation of RegenAg in a Norwegian context, as well as collaboration in Regenerative Harvesting and Regenerative Grazing.

Employment of staff at the institution

HLBs existing staff are developing competences and experience with this growing field of research. This has been done through the following:

Dag Jørund Lønning is rector of HLB and professor of rural development and innovation. He is the author of *Jordboka* and *Jordboka II* – based on intensive anthropological/ethnopedological research on soil life and regenerative farming techniques. Lønning is also educated as soil life consultant through Soil Foodweb Inc and dr. Elaine Ingham, the world's number one expert.

Rhys Evans: Dr Evans has recently begun a research project on the use and potential of Regenerative Harvesting of berries in forests. This is done in collaboration with the private company Norwegian Berries, and the development authorities of Agder fylke. It will create trials of compost production and the resulting production of fruit in the wild, examinations of soil health measured by the presence of bacteria and fungi; and the use of Regenerative Harvesting as a local rural development opportunity.

Johan Barstad. Barstad is trained as an economist and works as senior researcher/-lecturer at HLB. He has been working with local development, local and regional innovation, public economics and planning since 1989. Between 1996 and 2007 he worked with forestry and rural development, focusing particularly on local cooperation and innovative cooperation systems.

Presently he cooperates with Rhys Evans on the Harvesting project, and has developed a course for Inn på tunet. He is further involved in developing trials and experiments together with our contacts in eastern Europe

A range of renowned international experts will participate as guest lecturers.

Research Background of the Academic Community

HLBs staff have a long history of successful academic research in both Rural and Community Development, and in alternative agriculture, both internationally and in Norway. Since 2010, staff have completed research projects across a range of sustainable development issues, focused upon rural communities and sustainable development. These include landscape conflict management through the use of new Dialogue Processes; the Repurposing of natural and cultural heritage resources for the 21st century economy; development of local food and culture products as new sustainable vocations; Vocational transition in rural Europe – from surplus agricultural labour to self-employment and innovation; the development of alternative economic strategies for farm multifunctionality; the creation of a BA degree in Social Care Farming; Innovation and implementation of nature-based water management strategies; Urban Allotment gardening and sustainability; plus many others. A key research competence which underpins the development of this course is, over the past three years, a focus upon Regenerative Agriculture.

In addition, HLB staff maintain a presence in a number of international research networks including five current COST Actions (and five previous ones); a growing network of Social Care Farming researchers in Central and Eastern Europe; Scientific Advisor to the UN Centre for Regional Excellence in Sustainable Development in the Czech Republic., and others.

HLBs staff have demonstrated a key research capacity to explore new, innovative interventions in agriculture and rural development, and to also bring these to the local level, developing tools such as Asset-based Rural Community Development, the Dialogue Process for Resolution of Landscape Conflict, the Public Goods/Private Goods model of rural entrepreneurship, etc. These tools, developed on behalf of the rural communities served by HLB, are practical exercises that students and innovators can use to pursue their dreams of sustainable local development.

International networks

HLB staff maintain a presence in a number of high quality international research networks including five current COST Actions (and five previous ones); a growing network of Social Care Farming researchers in Central and Eastern Europe; one acts as Scientific Advisor to the UN Centre for Regional Excellence in Sustainable Development in the Czech Republic; etc. In addition, HLB staff also are members of international networks supporting Sustainable Rural Development, such as the Scottish Rural Network, the International Centre for Community Development, and others.

Staff hold responsible positions at an EU level as expert evaluators for H2020 and Erasmus+, as well as membership in the European Association of Animal Scientists.

400 participants from several countries attended the launching conferences for Jordboka and Jordboka II, and the two conferences are some of the biggest regenerative events in the world so far. HLB has through these conferences taken a leading international role in the academic regenerative movement, and are currently building extensive networks to practitioners in many countries.

Practice-based studies

n/a

Støttefunksjonar og infrastruktur

HLB provides NOKUT-validated services to all of its students. Details of this can be found in the Student Handbook ([here](#)). These include the following resources available for the students: internet, library service, meeting rooms (both digital and physical) and dining rooms. HLB's regular communication practice includes ensuring that all necessary information is sent out before the start of the studies (syllabus, timetable and general info); that the Administration and Staff are available to all students between sampling (by email and phone). In addition, HLB provides students with access to the electronic learning platform Moodle, and gives them training in the use of the VLE. HLB gives students access to its Self-service online information system, where students can follow and control their own education plan, keep track of the loan fund status, change personal details (address, e-mail etc.) and keep track of registered results and grades in the various subjects. HLB has participative structures in place to support Quality Standards for students (Student Council and Learning Environment Committee).