

Stipendiat –

Tverrfaglig undervisning for bærekraftig matforbruk(ere): Elev- og lærerperspektivet

PhD call – Background:

Awareness raising and educational efforts to promote behavior change for sustainable consumption practices has previously failed to effectively overcome the well-documented “attitude-behaviour” or “value-action” gap. With the integration of sustainable development as an interdisciplinary theme of the Norwegian L20 curriculum and the wider global call to achieve fundamental societal transitions to sustainable development and halt the dangerous processes of climate change within the coming decade, the need for identifying effective learning approaches and methods to develop an actionable capability within students for sustainable behaviour change is crucial.

Aligning this research with a nationally-funded project on sustainable food consumption within the Norwegian context, the PhD candidate will focus on understanding how education can best support the increasing of awareness, knowledge and competence of children and youth that will achieve a positive impact on their long-term food consumption practices and reduction of food waste (and with the intention that these findings will be transferable to educational efforts on sustainable behavior practices on a range of specific topics).

Research Project Context:

The position is part of the project [Sustainable eaters: Consumers in a sustainable Norwegian food system](#) financed by The Research Council of Norway under the program [Samarbeidsprosjekt for å møte utfordringer i samfunn og næringsliv](#), under Land-based food, the environment and bioresources. The PhD candidate will be part of a larger research team across multi institutions related to Work package 3 “education, awareness raising and experiential learning for sustainable food consumption in a Norwegian context”, and in collaboration with all other project partners. Work package 3 will include a research component on the achievement of learning outcomes and impacts on behavior through differentiated learning approaches. It is expected that the PhD candidate’s work will contribute directly to this research.

The project envisions a quasi-experimental research design which will provide for comparative evaluation of teaching approaches between a “test-group” of schools and a “sample-group” of schools. The research will examine: 1) how teachers evaluate the use and performance of the teaching program, 2) how students respond to their experiences following the teaching program, 3) students’ achievement of curriculum learning outcomes, and 4) impacts on students’ short-term and medium-term behavior change. Specific tasks related to the nationally funded research project will include:

- the development of surveys, assessment/evaluation forms, interview/focus group schedules;
- collection of narrative insights on learning experience, real-world application, and connections to home-life practices through interviews and focus groups;
- comparative evaluation of data, comparing results obtained from the test group and the sample group;
- analysis of the variations on how sustainability is being taught today in Norwegian schools and what teachers feel is lacking in materiel and resources.

Goals of Sustainable Eaters project:

The Sustainable Eaters project will contribute with scientific advancements, innovation in the industry and public sectors, to support a more sustainable food system in interaction with the consumer. The project builds upon current industrial and societal challenges and initiatives in Norway, and addresses the call on *Land-based food, the environment and bioresources*. In Norway, the recent Klimakur 2030 report expresses a crucial need for good instrument design to evolve consumer behaviours, that involves complementary strategies to educate, empower and enable consumers to individual action on climate change and sustainability.

The long-term ambition of the project is to enable and amplify consumers' contribution to achieve a sustainable Norwegian food system. To allow this, the project aims to:

- Develop intervention strategies, industry- and policy recommendations for reduced food waste, healthy and sustainable diets, and increased recycling of food packaging. These shall respond to the diversity of individual consumer profiles in the Norwegian society.
- Refine scientific knowledge on what sustainable food means in the Norwegian agroindustry context.
- Develop knowledge, awareness and new sustainability habits in the younger generation.
- Elaborate industry solutions that support consumers in embracing sustainable behaviours
- Optimize the dynamics of the online shopping value chain toward higher resource efficiency, lower food waste, and lower climate impact from producer to consumer.

The **main outputs of the project** will be a set of nationally relevant and internationally transferable scientific knowledge and methodological approaches, innovative industry technologies and solutions, intervention and implementation strategies reaching households, school children and students, and policy recommendations promoting sustainable consumption.

The project adopts a research structure organised in four WPs and four thematic cases. We will investigate behavioural consumer typologies and behaviour change (WP1), estimate behavioural impacts on the value chain (WP2), educate young generations and connected citizens (WP3), develop industrial innovations (WP4), and develop strategies for societal challenges of food waste, healthy eating and recycling (Cases 1-3). In connection with the different WPs, the online food shopping system will be investigated across consumer behaviour, value chain segments, technology innovations and consumer communication (Case 4). Through the different activities, the following overarching research questions will be answered:

- What are sustainable behaviours, in connection to the value chain, in the Norwegian context?
- What intervention, education, and industrial approaches/solutions work for which consumer?
- How to develop the online shopping food system for better resource efficiency, food waste reduction, reduced climate impact and healthier consumption choices?

Structure of Work Package 3:

WP3: Education, awareness raising and experiential learning aims to raise awareness, knowledge, empowerment and actionable capability in the adult population of today and tomorrow. In this work package, actionable knowledge is considered key to raise perceived self-effectiveness and trigger behaviour change. The workpackage consists of three tasks:

- T3.1 Development and pilot testing of teaching packs
- T3.2 Learning performance and behavioural impact through differentiated learning approaches
- T3.3 Awareness raising and behaviour change through a smartphone app

T3.1 Development and pilot testing of teaching packs: Digital teaching packs targeting two different grades and competence aims related to sustainable development will be developed. These packs will provide distinct learning strategies and pedagogical approaches for interdisciplinary teaching. *Method:* 8-10 schools will be recruited and divided into “test” and “sample” groups. Test schools will be provided facilitation for implementation of the new teaching programs, including instructional videos for teachers. The implementation will be tracked and monitored. Annual surveys of teachers and students will be conducted in years 2, 3 and 4 to assess learning performance outcomes and behaviour change impacts on the students. Yearly revisions of the teaching packs will be made based on the pilot assessments.

T3.2 Learning performance and behavioural impact through differentiated learning approaches: A quasi-experimental research design will provide for comparative evaluation of teaching approaches between a “test-group” of schools (i.e. employing the selected teaching program) and a “sample-group” of schools (i.e. employing a random selection of teaching approaches). The research will examine: 1) how teachers evaluate the use and performance of the teaching program, 2) how students experience the teaching program, 3) students’ achievement of curriculum learning outcomes, and 4) impacts on students’ short-term and medium-term behaviour change. *Method:* Surveys, interviews/focus groups on learning experience, real-world application, and connections to home-life practices, and comparative evaluation of data to uncover variations in how sustainability is taught in Norwegian schools and what teachers feel is lacking in material/resources.

T3.3 Awareness raising and behaviour change through a smartphone app: Potential effects of the UN’s newly launched ActNow app on sustainability will be investigated. *Method:* Intervention study with smartphone users of two distinctive consumer profiles (T1.1, N=300). Both groups will answer digital questionnaires before, during and after intervention for evaluation of the app’s effects on awareness raising, perceived self-effectiveness, sustainability attitudes, and self-reported behaviour change, with a focus on the food-related functionalities of the tool.

Deliverables: D3.1a Two teaching programs on sustainable food consumption (24Q2). D3.1b Guidance materials and instructional videos for teachers (22Q2). D3.2a Research brief: Status of teaching sustainability in Norwegian schools (25Q1), D3.2b Research brief: Effectiveness of pedagogical approaches (25Q1), D3.2c PhD – Outcomes of learning approaches for sustainable development (2-3 papers) (25Q1). D3.3a MSc thesis (22Q2). D3.3b Paper: Encouraging sustainability through the ACTNOW app (22Q4).

Milestones: M3.1a Draft Learning Packs x2 for review (21Q3), M3.1b Revised learning packs for T5.3 (24Q1), M3.3 Norwegian households recruited (21Q3).

Note for Stipendiat: The relevant research will be conducted directly in relation to T3.2, and it requires the publication of 2-3 related peer-reviewed articles. The research in T3.2 is also directly connected to the interventions to be carried out in T3.1, and the availability of data from this task must be accounted for in the research design.