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Final report

Ridskolan som framtida lärandecenter för en miljömässigt hållbar hästsektor och för samhället i stort
Riding Schools as Future Learning Centers for an Environmentally Just Equine Sector and Broader Society

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Part 1: Detailed summary

Syftet med projektet var att – i samarbete med ridskolor, förbund och högre utbildningsinstitutioner – generera en miljöomvandling av sektorn med fokus på beteende och beslutsfattande. Projektet har arbetat med att identifiera utmaningar och hinder som är förknippade med att skapa en mer miljövänlig hästsektor i Sverige och Norge, utveckla hållbara lösningar på de identifierade utmaningarna för hästsektorn i Sverige och Norge samt att designa effektiva pedagogiska verktyg som kommer att främja en varaktig transformation mot en mer miljövänlig hästsektor.

Metod

Vi har använt flera källmaterial för våra studier:

1) Policydokument från nationella och lokala representanter för hästsektorn samt kursplaner från hästsektorns utbildningsinstitutioner
2) Enkät (697 svar)
3) Intervjuer (36 djupintervjuer)
4) Deltagande observationer
5) Förändringsworkshops

Genom textanalys, beskrivande statistik samt tematisk och reflexiv analys har vi undersökt attityder till och praktiker runt hållbarhet inom hästsektorn.

Project results, including preliminary results with description of needs for the latter to be confirmed

I våra studier identifierar vi utmaningar och hinder som är förknippade med att skapa en mer miljövänlig hästsektor i Sverige och Norge. Vi visar att representanter i sektorn är medvetna om miljöutmaningarna (om än i olika grad) och att de vill förändra sektorn i en mer hållbar riktning (i Sverige mer än i Norge). Samtidigt känner sig många rådlösa kring hur de ska ta sig an utmaningarna. Det är även tydligt att social hållbarhet är starkare företrätt på ridskolorna än den ekologiska hållbarheten. På nationell nivå finns policydokument och visst stöd att hämta när det gäller den ekologiska hållbarheten, men på lokal nivå behövs ökade insatser, såsom lokala policydokument och samverkan med lokalsamhället vad gäller riktlinjer och regler. De policydokument som finns anknyter ofta till de globala SDGerna, men i likhet med liknande policydokument för andra idrotter saknar de mål kopplade till lärande. Detta behövs för att skapa lösningar för ekologisk hållbarhet. Här finns en potential, eftersom ridskolor på många nivåer arbetar med lärande. Det skulle därför inte vara alltför svårt att i det vardagliga arbetet inkludera miljömässig hållbarhet som en del i undervisningen samt lärandet på ridskolor. Fler lärandemål kopplade till miljöutmaningar behövs även i läroplaner/kursplaner vid utbildningsinstitutionerna. Vidare behövs praktiska exempel och ett ökat erfarenhetsutbyte. På ett övergripande plan är ett skifte i synen på relationen mellan människa och miljö samt relationen mellan människa och häst, där det antropocentriska perspektivet byts mot ett artöverskridande perspektiv, nödvändigt för en omställning.

Precis som i andra delar av samhället är behovet av transporter en stor utmaning för sektorn. Foder, strö och gödsel behöver transporteras och det finns ekonomiska incitament

för att hitta mer lokala lösningar. När det gäller transport av människor och hästar är utmaningen större. Några i sektorn efterlyser att tävlingssystemet ses över så att ryttare och hästar slipper resa långa sträckor (vid flera tillfällen). Hållbara lösningar kan vara att utveckla samordning av tävlingar eller digitaliserade alternativ. När det gäller att ta sig till ridskolorna behöver samarbetet med lokala myndigheter förstärkas så att (alla) barn och vuxna kan åka kollektivt till sina fritidsaktiviteter. Detta är även viktigt för den sociala jämlikheten, eftersom det annars bara är möjligt för dem med bil att ta sig till ridskolan.

Även konsumtion har pekats ut som en utmaning. Inom sektorn finns exempel på hur konsumtionen skulle kunna minska med hjälp av andrahandsförsäljning och bytardagar. Det finns även exempel på hur man på olika sätt kan göra om äldre produkter, exempelvis täcken, så att dessa kan användas längre.

Hästsektorn arbetar med olika energibesparingar. Äldre anläggningar står inför särskilt stora utmaningar eftersom omställningen kan vara dyr. I sektorn finns en efterfrågan på hur man skulle kunna arbeta med lösningar där energi tillverkas med hjälp av gödsel. Sopsortering verkar vara något som de flesta redan infört, och många oroar sig för nedskräpning. Samtidigt är detta något av en paradox eftersom stallmiljöerna inte är särskilt nedskräpade (i den betydelse som exempelvis Håll Sverige Rent arbetar med). Men plasthantering (balplast) utgör en utmaning.

Hållbara lösningar kan komma till stånd när olika aktörer samverkar. De inom sektorn som har kommit längst med sitt miljöarbete arbetar nära andra lokala aktörer, exempelvis kommunerna. Genom detta samarbete öppnas möjligheter med smarta energilösningar, och planer för hur vatten kan samlas och användas klokare. Här öppnas även möjligheter att planera mer miljövänliga transporter.

Potential for implementation in the practical horse sector; which efforts towards implementation have been performed within the project, and what remaining efforts are necessary for future implementation?

Sedan projektets start har vi arbetat nära representanter för sektorn för att forma relevanta undersökningar och dela resultat. Vi har exempelvis arbetat tillsammans med våra samverkanspartners för att ta fram frågor till en enkät och intervjuguider. Under projekttiden har resultat delats under möten med samverkanspartners och genom föreläsningar för olika grupper. Vidare har vi publicerat texter på svenska för att lättare nå ut.

Vi har designat pedagogiska verktyg som kan användas för att att främja en transformation mot en mer miljövänlig hästsektor. För det första har vi tagit fram ‘best practice’ kort. För det andra har vi arbetat tillsammans med representanter från sektorn i förändringsworkshops för att identifiera lokala utmaningar och behov, samt lösningar. Workshoparna har varit uppbyggda kring två olika modeller som kan användas för framtida arbeten. För det tredje arbetar vi med en lärobok inom området för hippologstudenter och kursdeltagare på ridlärarutbildningarna inom Hästsportens Folkhögskola. I detta arbete har vi samarbetat med illustratör och författare i workshops. Boken ska färdigställas under 2026.

För att komma längre med omvandlingen behöver representanter för sektorn på lokal nivå stöd för erfarenhetsutbyten med andra aktörer. Vi föreslår att dessa samordnas av kommuner samt sektorns övergripande organisationer såsom HNS och/eller förbunden. För att ytterligare stötta sektorn i omställningen behövs stöd i arbetet med samverkanspartners

såsom kommunerna. Vidare behöver policydokument och utbildningar utvecklas och inkludera pedagogiska mål. Miljöarbetet borde kunna integreras som en naturlig del av utbildningskulturen vid ridskolor och på ridinstitutioner. Praktikerna kan ses som en del av arbetet med hästvälfärd och fasas in i rutinerna kring häst- och stallskötseln.

Part 2: Main report (max. 10 pages)

Introduction

While the equine sector in Sweden and Norway provides leisure activities, entertainment and employment for many people of all ages, these come with associated negative effects. In a book by the journalist Arne Müller (2021), the equine sector is cast as a 'climate villain' that emits more carbon dioxide than domestic aviation. Müller concludes that while research is scarce, feed and transport are serious threats to the environment. Similar conclusions are found in other studies on the environmental impact caused by the equine sector, which show how nutrient leakage from manure piles, paddocks and pastures is a major problem, alongside the aforementioned issues of feed and transport (Blomberg & Välimaa 2016).

Responding to Müller's book, voices from the equine sector have emphasized that the sector is aware of the challenges and that work to counteract the environmental impact of the sector has begun and is ongoing. There are, for example, booklets on horses and sustainable development which were published to inform and inspire stakeholders in the equine sector (Hästen och hållbar utveckling 2021; Hesten som resurs – Lokal næringsutvikling, 2018); policy documents; and local recommendations concerning the handling of stables from an environmental perspective. Little, however, is known about how recommendations and policies are operationalized in practice, and there is a need for studies to concentrate specifically on evaluating strategies used to implement pro-environmental changes in daily work at stables. As demonstrated by environmentalists in other fields, sector-wide transformations are challenging (Steyaert & Jiggins 2007). This is chiefly because knowledge about environmental impact is not enough; it must be combined with motivation for change and action.

The ultimate purpose of the project is to spearhead a pro-environmental transformation of the equine sector. In collaboration with riding schools, federations and higher education institutions in the sector, the project aimed to gain a deep understanding of the decision-making processes and actions taken by individual and collective actors, as these are crucial for a lasting change to occur. We aimed to interrogate and explain how stakeholders in the sector shape, perform, perceive, and value environmental challenges and solutions, at local levels of practice. In media, agents within the sector have been cast as potential threats to the environment, rather than as carriers of solutions (Svt 2020 & 2021, Miljö & utveckling, 2017). We wanted to change this: a sector that better understands itself will be more effectively positioned to transform itself into a positive force for enduring pro-environmental change.

Objectives

1. Identify the challenges and obstacles associated with creating a more environmentally just equine sector in Sweden and Norway.
2. Develop sustainable solutions to the identified challenges for equine sector in Sweden and Norway.
3. Design effective educational tools that will foster an enduring transformation towards a more pro-environmental equine sector.

Theoretical framework

The project is framed by *directional transformation* – a normative and prescriptive perspective. Our project assumes that environmental sustainability is both urgent and necessary. In that way our study stands in contrast to traditional Earth system research, in which studies are mainly descriptive and analytical (European Environment Agency, 2018). Scoones et al (2020) have problematized the narrow framing of environmental issues by natural scientists and call for a shift from top-down modes of change informed by expert knowledge to activities from below. Others have suggested that for broader societal shifts to low carbon living to occur, transformations are needed in the way knowledge is produced and used. We have also used other framing perspectives that will be further developed in the presentation of the sub-studies below. These theories have helped us understand and explain results as well as create solutions and tools for change. There are also ethical dimensions of the project. Franks, Hanscomb and Johnston (2018) highlight connections between the environmental crisis, ethics and the potential for change that can come out of increased ethical awareness. In the project, we have taken a practical approach to environmental ethics, focusing on its transformative potential.

Material and methods

Documents: Policies and steering documents from the National Equestrian Federations (NEF) and the National Equestrians Centers (NEC); curricula and syllabi from educational institutions within the equine sector.

Survey: A survey with questions regarding environmental challenges and opportunities. (697 answers)

Interviews: 36 semi-structured interviews with representatives of the equine sector on national as well as local levels in Sweden and Norway.

Participant observations at riding schools, federations and institutions for higher education in Sweden and Norway.

Transformative workshops with representatives from the sector.

Results and discussion

The project has resulted in several sub-studies. These are described and discussed below. Thereafter we present the overarching conclusions.

Pro-Environmental Transformation of the Equine Sector – Facilitators and Challenges

To improve horse welfare and ensure a sustainable equestrian future, we need to understand human behavior in relation to the challenges of the sector. The purpose of this study was to map and analyze how individuals within the equine sector in Sweden and Norway define the environmental challenges they are faced with and how these are related to questions about horse welfare (Hedenborg et al., 2023). A mixed-methods parallel design was used. The data consisted of survey answers and semi-structured interviews. The survey, responded to by 697 Swedish and Norwegian participants, ensured statistical validity and power through a sample size calculation yielding approximately 385 participants. To deepen the understanding, 36 semi structured interviews with Swedish and Norwegian interviewees were conducted. An

analysis of convergencies and divergencies between the data sets provided robust insights into the perceptions and behaviors within the equine sector in Sweden and Norway.

The equine sector has cultivated a stronger environmental commitment over the last 15 years. However, many participants express a perceived lack of influence over this transformation. The COM-B model (Michie, Van Stralen & West, 2011; Michie, Atkins & West, 2014) and previous research on 'thinking structures on climate delay' (Wormbs & Wolrath, 2023) were used to interpret the data. The analysis indicates that there is an overall capacity for change, and that skills and knowledge exist, but some individuals desire more information and a deeper understanding of the issues at hand. Higher barriers to change were found in the opportunity component, where physical constraints such as location, resources, and time seem challenging for individual actors to influence. Economic factors are also identified as impediments to transformation. Cultural norms related to orderliness within stables, although not directly addressing ecological nor ethical challenges, might serve as a foundation for promoting environmental initiatives that will also improve horse welfare.

The social dimension of sustainable development is strongly represented

Sport has an important role to play in contributing to sustainable development in society at both a local and a global level. However, sport often has difficulties meeting the demands of sustainable development. To bring about change and make sport more sustainable it is important to extend our knowledge of the promoters and challenges for specific sport activities. The aim of this study was to understand why there were differences in Sweden and Norway when questions about environmental sustainability was asked (Radmann et al., 2025). We wanted to increase knowledge with a specific focus on how different stakeholders in Norwegian equestrian sports understand and make sense of sustainable development. The three dimensions of sustainable development and insights from institutional theory informed the discussion. Institutional theory can explain continuity, and hence friction towards change (North, 1990; Scott, 1995; Magnusson & Ottoson, 1997; Pierson, 2000). Institutions consist of formal and informal norms, and in this project, we investigated how institutions foster and hinder pre-environmental transformations. Institutions are social structures with a high degree of resilience and must conform to certain rules and belief systems to receive legitimacy. This also includes non-governmental organizations and social organizations that, like corporations, "look to their peers" for cues to appropriate behavior rather than optimize decisions and practices. Altering institutional arrangements, both formal and informal ones, can be expensive – not least because devising new institutional solutions requires time and energy. Also, in contrast to technological innovations, such alterations may not generate increased income. It is therefore crucial to identify these various costs to develop alternative strategies for development. By analyzing formal and informal norms, routines, and cognitive patterns, the theory explains why transformations do not occur, even though changes are urgent.

The study was based on eighteen in-depth interviews with representatives from ten different riding schools and observations at three riding schools in Norway. We also used steering documents from Norwegian Equestrian Federation.

We show that the social dimension of sustainable development is strongly represented in steering documents, interviews and in the day-to-day life at Norwegian riding schools. There are traces of the other sustainability dimensions too. However, the ecological

dimension is not high on the agenda. Finally, we suggest that the resilience of social structures and the need for legitimacy within the equine sector can create friction towards change. To change the equine sector, it is necessary to examine institutional change – how established practices are challenged and transformed over time.

The horse industry's need for transportation

In Sweden and Norway, the horse industry offers many leisure activities and work. But the horse industry also affects the environment through, for example, its dependence on transport, consumption of feed, production of manure and waste, as well as needs for energy. This study explored and analyzed how actors in the horse industry understand their transport dependency (Hedenborg et al., 2025). The analysis was based on 697 survey responses and 22 in-depth interviews with people in the equine sector as well as seven observations of riding schools in Sweden and Norway.

The results are presented as five stories about how people with different roles in the industry relate to the need for transport and are analyzed using the COM-B model. The model, used to spur behavioral change, is developed by the British health psychologist Susan Michie. It is behavior-oriented and aims to clarify how behaviors are governed and can be altered (Michie et al 2014). The COM-B model amalgamates 26 other models of behavior change and is part of a larger framework known as the Behavior Change Wheel (BCW). The letters in the COM-B model stand for the components: behaviors (B) influenced by our capabilities (C), opportunities (O), and motivation (M). Each of these three main components comprises various subparts.

In summary, we show that the industry's knowledge needs vary for different groups. Furthermore, we see that the opportunities to transform the sector are partly dependent on the actions of other actors. For example, municipalities and regions need to review how children, and adults can get to riding schools in other ways than by car. Finally, our study shows that motivation varies, but that those who participated in this study desire a change.

Ecological sustainability in policy and practice at riding schools in Sweden

The equine sector provides work and leisure activities for a high number of people in Sweden. Simultaneously, the sector faces challenges with taking an active role in sustainable development. In recent years, there is an increased desire to act toward sustainability. The aim of this study was to investigate how riding schools can become active agents in the ecological dimension of sustainable development (Andersson et al., forthcoming). Sustainable development and ecolinguistics (Stibbe, 2021) were used as an analytic frame. Sustainable Development, Agenda 2030, and the Sustainable Development Goals are not scientific or theoretical in nature and are not intended to be used as analytical tools. Instead, they function as policy instruments, and as such, it is interesting to see whether and how they influence sustainability practices in various contexts – in our case, riding schools in Sweden. However, coupled with the field of *ecolinguistics* we have used Sustainable development to analyze policies and interviews to understand how participants conceptualize sustainability Stibbe (2021) shows that language use related to environmental issues can both reflect and influence individuals' and organizations' awareness and engagement. We have explored whether the

horse sector has adopted a language that contributes to a ‘story’ of environmental sustainability.

The source material consists of 12 policy documents and 17 semi-structured individual interviews with representatives from national organizations in the equine sector and riding school managers. The analysis of policy documents and interviews, show an ambition to contribute to sustainable development. At the same time, there is a lack of knowledge and authority to address the more extensive and complex environmental challenges. In the learning environments that riding schools represent, systematic teaching about the environment and sustainability tends to have a marginal place. Yet, by serving as role models, riding schools appear to be a stronger pedagogical voice than previously recognized.

Rethinking places for sport in the Anthropocene

Anthropogenic climate change has profound effects globally. This scenario necessitates a renegotiation not only of the future of sports but also of humanity's shared history and the individual emotions and identities associated with sports. Changes in nature due to climate change shape sports culture and redefine the understanding of the role sports mean to us. Drawing on a sociological and cultural–geographical perspective on place and belonging, this study explored how an approach centred on the relationship between the physical environment, symbolic representation, and human emotions can offer new insights into sports in the Anthropocene (Carlman & Torell-Palmquist, 2025). The three dimensions – material, symbolic, and emotional – was applied to understand equestrian centres, including the interaction between humans and horses. The material dimension highlights the physical changes that occur in the Anthropocene through ecological, technological, and infrastructural processes. Climate change, such as increased rainfall or extreme heat, has affected both the availability of forage and horse health around the world (see Millen, 2024; Mair and Webster, 2022; Aftonbladet, 2018). Beyond uncertainty regarding feed, many Swedish equestrian centres today require upgrades, but municipalities do not always recognize riding schools as sports facilities. As a result, equestrian sports lack essential resources for facility improvements (SvRF, 2024). Equestrian facilities also face increasing exposure to natural events such as flooding, drought, fires, and storms (French, 2020). Additionally, urbanization and changes in land use may limit access to natural riding environments, further increasing the need for indoor facilities.

Equestrian sport and leisure riding cannot be taken for granted (Millen, 2024). Climate change can impact the symbolic dimension of equestrian centres. As these changes become more tangible, they affect historical and cultural values within the equestrian sector. Riding schools in Sweden hold symbolic significance, serving an important role as meeting places centred around horses for people of all ages, genders, ethnicities, and abilities (Hedenborg et al., 2021). Many individuals describe a strong sense of belonging, viewing riding school facilities as sanctuaries and spaces where both children and adults can spend time together. Climate change and environmental sustainability must be given greater symbolic value within the equestrian sector overall. Being around horses is an emotional experience that requires total presence of both body and mind. Sensory experiences can also be linked to the stable environment – the smell of hay, the sound of hoofbeats, the sensation

of touching a horse – all of which contribute to an individual's identity and sense of belonging to the place, becoming part of the individual's everyday practice and engagement in this social setting (Dashper, 2016). Feelings of safety and community are shaped through interaction with others in the stable environment, with the riding school functioning as a social and emotional sanctuary. However, loss and change can affect an individual's sense of belonging to a place (cf. Albrecht et al., 2007). Including horses as co-creators of rural life could lead to new ways of thinking about sustainability, which are needed in a world where human impact is inevitable.

Transformative potentials of the equine sector

Equestrian sport has faced criticism for its environmental impact, particularly concerning greenhouse gas emissions linked to feed production and transportation (Müller, 2021). Similar concerns have been identified in scientific studies of the broader equine industry, where environmental issues such as nutrient leakage from manure piles, paddocks, and grazing areas have also been highlighted (Blomberg & Välimaa, 2016). To transform the equine sector questions of how climate change is perceived, valued, and experienced by equestrians in Sweden need to be examined in greater depth to understand the meaning and significance of these changes in relation to people's perceptions of these places and activities (Carlman & Torell Palmquist, 2025). In addition, transformative tools must be developed. The aim of this study was to examine the challenges and opportunities that Swedish and Norwegian equestrian educational institutions encounter in relation to environmental sustainability (Torell-Palmquist et al, forthcoming). By bringing forward experiences, creative suggestions, and ideas for potential solutions, this study also seeks to propose how representatives of the equestrian sport can implement and integrate didactic and pedagogical methods and tools into everyday educational practice to support a more environmentally sustainable future. Sport ecology and institutional theory (introduced above) are used to frame the study. The concept of *sport ecology* has been introduced to analyze the relationship between sport and the environment, with a focus on its bidirectional effects (Breitbarth et al. 2023). McCullough et al. (2020) define sport ecology as a conceptual framework for examining the mutual relationship between sport and the environment, focusing on how sport affects the environment and how environmental change, in turn, affects sport.

The study was based on a qualitative approach, employing workshops as a methodological tool. The workshops can be likened to focus group interviews (cf. Wibeck, 2010). The methodological procedure also partially adopted an approach like the World Café method (see Löhr et al., 2020) by gathering diverse perspectives from many participants, with the aim of fostering open and inclusive dialogue in a relaxed setting. The workshops were conducted over a total of five sessions, including seven to 20 participants.

In the workshops, we used two models. First, the *Transtheoretical Model of Behavioral Change* (Pennington, 2021) integrates diverse psychotherapeutic models for behavioral change. In workshops we used the 'stages-of-change' in the model to help the participants identify where, on a scale, their organizations position themselves in relation to changing behaviors to become more environmentally sustainable. The model predicts seven stages: precontemplation, contemplation, preparation, action, maintenance, termination, and relapse. Second, the *COM-B model* was used (see presentation above).

Participants were foremost occupied with how the equine sector was impacted by climate change. However, there were also some issues related to how the equine sector impacts climate change. The discussions focused on energy, manure management, waste sorting, arena surfaces, and consumption patterns. Current practices reflect a conscious yet fragmented stage of environmental work. There is a growing awareness of the importance of environmental issues, yet limited resources, time, and overarching strategies continue to slow progress. Although many participants regard actions as positive steps, they also stress that environmental efforts are seldom systematic. Interventions are often isolated initiatives rather than strategic measures, and long-term plans or follow-up procedures are generally lacking. Basic, practical measures have become established, but more substantial structural changes remain to be implemented. The participants underlined that education is a crucial tool for the transformation of equestrian sports, yet they do not present any examples of how formal education in the sector organizes courses or other educational initiatives where environmental sustainability are integrated.

Riding schools och institutions have a unique opportunity to serve as role models for children and youth, making environmental issues a natural part of everyday activities. Initiatives such as swapping days, repair evenings, and local reuse projects can promote both environmental awareness and social cohesion. Likewise, smaller everyday changes, such as encouraging cycling, carpooling, and clear waste sorting, can help develop a culture of responsibility and sustainable choices. Overall, several groups emphasized the importance of a holistic approach – recognizing that change requires participation from all actors within the equestrian sector. Without broad engagement, substantial changes are unlikely, especially if the outcomes of interventions are not clearly communicated. Environmental efforts also need to be linked to other aspects, particularly horse welfare, to increase incentives for change.

Conclusions

In this project we have identified the challenges and obstacles associated with creating a more environmentally just equine sector in Sweden and Norway. Representatives from the sector are aware of the environmental challenges and that they want act (in Sweden more than in Norway), but many are at a loss as to how to tackle them. The work is, in many cases, dependent on dedicated board members or riding school managers, rather than being integrated into everyday work. We show that formal and informal norms present in the stable culture can hinder an ecological transformation of the equine sector. The social dimension of sustainability is more strongly represented at all levels (more in Norway than Sweden), than ecological sustainability. Time and economic resources are challenges to transformation too. Other limitations are a lack of knowledge and not least a lack of control over the conditions at the riding school. The latter is often explained by the fact that the ownership and organizational structure of Swedish riding schools usually is complicated, with different stakeholders who have responsibility and power over different parts. Representatives from the riding schools would like to take part of existing knowledge about environmental work, regarding both its theoretical and practical parts.

At national level, there are policies and some support to be obtained in terms of ecological sustainability, but at the local level, increased efforts are needed (including local

policies in both Sweden and Norway). Existing environmental policies are often linked to global SDGs on a national level, but the policies lack goals linked to education and learning. Sustainable solutions should include policy and learning outcomes related to all sustainability dimensions and to promote ecological transformation of the sector policies and goals must relate to education and learning. There is potential here, as riding schools work with learning. More learning objectives linked to environmental challenges and learning are needed in curricula/curriculums at educational institutions too. Furthermore, sustainable solutions can be gained through practical examples and exchange of experiences between different actors in and outside of the equine sector.

Just like in other parts of society, the need for transport is a major challenge för the equine sector. Feed, litter, and manure need to be transported. A motivator for change is economic incentives to find more local solutions. When it comes to transporting people and horses, the challenge is greater. Some in the sector are calling for the competition system to be reviewed so that riders and horses do not have to travel long distances several times, and they present ideas about how competitions can be coordinated and digitalized. When it comes to transports to and from stables and riding schools, sustainable solutions are connected to collaboration with local authorities needs to be strengthened so that (all) children and adults can travel to their leisure activities by public transport (this also affects social equality, as if this is not changed it is only possible for those with a car to get to the riding school.

Representatives from the equine sector work with various energy solutions. However, older facilities face challenges as transformation can be prohibitively expensive. There is also a demand for how to work with solutions where energy is produced with the help of manure. Garbage sorting seems to be something that most people already do, but at the same time many worry about littering. This is a paradox because the stable environments are not littered (in the sense that, for example, Håll Sverige Rent works with). Sustainable solutions can be seen in best practices. Those within the sector who have come to the furthest with their environmental work collaborate with other local actors in the municipality. Through this collaboration, opportunities are opened with smart energy solutions and plans for how water can be collected and used more wisely.

Riding schools need support to develop their sustainability work and become a more forward-looking actor in sustainability efforts at large. To ensure both that riding schools can become more active sustainability actors, and that their environmental work (for example, in relation to manure management) is not so inadequate that the very existence of the riding school – its social license to operate – is threatened, riding schools must engage more closely with municipalities' sustainability initiatives and with the broader sustainability discourse. This presupposes that riding schools are welcomed into these arenas. This is important for horse welfare, too. As shown, the equine sector and horse riding are already affected by climate change and not until the Anthropocene perspective is challenged and the close intertangled relationships between humans, non-human animals and the environment are acknowledged transformation is feasible. Including horses as co-creators of rural life could lead to new ways of thinking about sustainability, which are needed in a world where human impact is inevitable and for the equine sector to be carriers of solutions rather than potential threats to the environment.

Relevance for the practical horse sector incl. recommendations

During the project period, results have been shared at meetings with collaboration partners and through lectures for different groups of students (students in hippology, sport sciences, vocational riding teacher education) and we have worked together with partners from the equine sector to co-create the survey and interview guides. To spur change further, we have worked with representatives from the sector in transformative workshops to identify local challenges and needs, as well as solutions. In the workshops, the Transtheoretic model and the COM-B model were used to facilitate discussions. First, the participants identified their awareness and actions of their environmental work. Second, they chose to work with specific behaviors with the support of the Com-B model. We have also designed educational tools such as 'best practice' cards. Now we are working on a textbook in the field for hippology students, riding teachers and staff at riding schools as well as vocational riding teacher education. In this work, we have collaborated with illustrators and writers in workshops. The book is to be completed in 2026.

For the transformation to continue, representatives of the equine sector at the local level need support and exchange of experience with other actors. These could be coordinated by overarching organizations such as HNS and/or unions. To further support the sector to adjust, support is needed in the work with collaboration partners such as the municipalities. Furthermore, policies and trainings need to be developed to also include educational goals. In addition, systematic inclusion of environmental solutions is needed.

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Part 3: Result dissemination

Scientific publications, *published*	*Author(s), year, title, journal, Vol, No, pp., doi-link*
	Hedenborg, S., Kronborg, M., Sätre, A., Radmann, A., Palmquist, T. G. & Andersson, P. (2023). Pro-Environmental Transformation of the equine sector – facilitators and challenges. *Animals*, 14(6), https://doi.org/10.3390/ani14060915
	Carlman, P., & Palmquist, T. G., (2025) Rethinking places for sport in the Anthropocene. *International Journal for the Sociology of Sport*, 60(8), https://doi.org/10.1177/10126902251335820
	Radmann, A., Kronborg, M., Sätre, A., Andersson, P., Torell Palmquist, G. & Hedenborg, S. (2025). 'We ensure that children and young people have a place to be and something meaningful to do'. Sustainable development in the Norwegian Riding Schools. *Frontiers in Sports and Active Living*. DOI: 10.3389/fspor.2025.1690419
	Hedenborg, S., Kronborg, M., Sätre, A., Radmann, A., Palmquist, T. G. & Andersson, P. (2023). Hästsportens miljöarbete: Viljan finns – men också stora utmaningar. *Idrottsforum.org.* URL: https://idrottsforum.org/wp-content/uploads/2023/10/hedenborgetal231024.pdf
	Hedenborg, S., Torell Palmquist, G., Sätre, A., Andersson, P. & Radmann, A. (2025). Måste man köra bil för att komma till stallet? Hästnäringens behov av transporter. *Idrottsforum.org* URL: https://idrottsforum.org/wp-content/uploads/2025/06/hedenborgetal250609.pdf
Scientific publications, *submitted*	*Author(s), title*
	Andersson, P., Sätre, A., Torell Palmquist, G., Radmann, A. & Hedenborg, S. (forthcoming). Difficult to implement, but a high degree of creativity. Ecological sustainability in policy and practice at riding schools in Sweden. *Annals of Leisure Research. IN REVIEW.*
Scientific publications, *manuscript*	*Author(s), title*
	Torell Palmquist, G. & Hedenborg, S. (forthcoming) Educational work on ecological sustainability in the horse riding schools in Sweden and Norway. (Planned publication in: *Sport, Education and Society*)
Conference publications/ presentations	*Author(s), year, title, conference name, location and date, (link if applicable)*
	Kronborg, M., Hedenborg, S., Palmquist, T. G., Radmann, A., Sätre, A (2023). "Attitudes to Environmental Change in Equestrian Sports". European College of Sport Science (ECSS), Paris 5-7 juli. Poster-presentation.
	Sätre, A., Hedenborg, S., Palmquist, T. G., Radmann, A., Kronborg, M. (2023). "Environmental Challenges, Obstacles and Wishes in Equestrian Sports: Consumption, Lack of Power, and Knowledge". (ECSS), Paris 5-7 juli. Poster-presentation.
	Torell Palmquist, G., Hedenborg, S., Kronborg, M., Sätre, A., Radmann, A., Andersson, P., Beames, S. (2023) Transforming Equestrian sports to a more environmentally just activity. European College of Sport Science (ECSS), 4-6 july 2023, Paris, France. Oral presentation.
	Hedenborg, S, Palmquist, G & Andersson, P, "Challenges and solutions for a sustainable equine sector", oral presentation at the network

	meeting ‘Sustainable equestrianism from a social science perspective’, SLU Uppsala, 29/3 2023.
	Sätre, A., Hedenborg, S., Palmquist, T. G., Radmann, A., Kronborg, M. (2023). **“**En hållbar miljö – utmaningar, hinder och önskningar inom ridsporten: Konsumtion, maktlöshet och kunskap”. SVEBI, Göteborg, 2–24 November.
	Kronborg, M., Hedenborg, S., Palmquist, T. G., Radmann, A., Sätre, A (2023). “Attitudes to Environmental Change in Equestrian Sports”. SVEBI, Göteborg 23–24 November.
	Hedenborg, S, Horses and People. Past, present, and future challenges. Horse Welfare Summit 13–14 September 2024.
	Hedenborg, S., Keynote: Managing equine welfare: From prayer to provision, protection and participation, Equine Cultures in Transition 2025: Decent Work, Decent Leisure, Decent Lives. Faculty of Business & Law, Manchester Metropolitan University, Tuesday 3rd -–Thursday 5th June 2025.
	Torell Palmquist, G, Hedenborg, S., Sätre, A, Kronborg, M, Radmann, A, Broms, L. and Andersson, P, Exploring Equestrian Education through the Concept of Sport Ecology, 30th Annual ECSS Congress Rimini/Italy, July 1–4 2025.
Oral communication, *to horse sector, students etc.*	*Title, year/date, group presented to (link if applicable)*
	Meetings with collaborative partners in Sweden and Norway where we have shared results: RISE 21/9 2022, Partners in the equine sector 13/12 2022, Partners meeting in Flyinge 19–21/6 2023; CUS 7/11 2023; Norwegian partners 8/11 2023, Norwegian partners Oct and Dec 2023, HNS and SEF 23/1 2024.
	Lectures and presentations: Teachers RS Strömsholm 13/10 2022; Wångens students oct 2022; Flyinge students 11/1 2023, Riding school representatives; Feb and March 2023 Masterstudents MAU 23/2 2023; Equestrian social science network 29/3 2023; Wångens students oct 2023; RS Strömsholm students nov 2023; Norsk Hestecenter 14/11 2023; Starum 3/2 2024; Wångens students oct 2024; RS Strömsholm students nov 2024; Miljörevisionen RS Strömsholm 24/4 2025; HNS miljökommitté 20/1 2025; SHF board 22/5 2025; Akademiryttarna, Göteborgs universitet, 15/5 2025; RS Strömsholm students Oct 2025; Wångens students oct 2025; GyYRK Luleå 2025,
	Workshops with representatives of the sector: 19/9 2022, 5/10 2023; 7/10 2023; Feb 2024; Oct 2024X2; Oct 2025
Other	Hedenborg, S., Andersson, P., Beames, S., Radmann, A., & Torell-Palmquist, G. (2022). Riding Schools as Future Learning Centers for an Environmentally Just Equine Sector and Broader Society. Feature article, Idrottsforum.org, https://idrottsforum.org/feature-hedenborgetal220302/
	Sätre A. & Kronborg, M., Creation of ‘best practice’ in Swedish and Norwegian cards to be posted (see next page)

BEST PRACTICE

ALLA KAN

1. KÖPA BEGAGNAT ELLER ANORDNA EN KLÄDBYTESDAG
2. LAGA TRASIG UTRUSTNING
3. SAMKÖRNING ELLER ÅKA KOLLEKTIVT
4. CYKLA ELLER GÅ TILL STALLET
5. SOPSORTERING
6. MOCKA HAGAR OCH BOXAR
7. SLÄCK LAMPORNA
8. KÖP EKOLOGISKT ELLER NÄRPRODUCERAT FODER
9. SVAMP OCH TRASA I STÄLLET FÖR VÅTSERVETTER PÅ UTRUSTNING (?)
10. VÅR EN GOD FÖREBILD!

#HESTEFORSKINGSPROSJEKTET

BEST PRACTICE

STALLEN

1. ARRANGERA ANDRAHANDSFÖRSÄLJNING
2. HA SYMASKIN TILL ATT LAGA UTRUSTNING
3. GE MILJÖVÄNLIGA PRISER PÅ TÄVLINGAR (?)
4. SOPSORTERA
5. STÄLL FLERA SOPTUNNOR RUNT OMKRING I STALLET
6. MOCKA HAGAR (OCH PADDOKER?)
7. KÖR FULLA TVÄTTMASKINER OCH DISKMASKINER (?)
8. KÖR EL-BIL
9. KÖP MILJÖVÄNLIGT STRÖ OCH HÖ
10. ANVÄND DIGITALA LÖSNINGAR PÅ TÄVLINGAR OCH RIDLEKTIONER
11. VAR EN GOD FÖREBILD!

#HESTEFORSKINGSPROSJEKTET

BEST PRACTICE

STYRE/ KOMMUNEN

1. SÄTT UPP SOLCELLER PÅ RIDHUSTAKET
2. FÖRBRÄNNINGSANLÄGGNING FÖR GÖDSEL
3. SAMLA REGNVATTEN TILL SKÖLJNING AV RIDBANAN
4. VÄRMEPUMP I HUSET
5. LÅT HÄSTARNA VÄRMA UPP STALLET
6. BYT TILL LED
7. TIMER PÅ ELSTÄNGSLET
8. SENSORSTYRD BELYSNING
9. SKAPA FÖRUTSÄTTNINGAR FÖR CYKLING OCH KOLLEKTIVTRAFIK
10. MINSKA TRANSPORTEN – GÖR BESTÄLLNINGARNA TILLSAMMANS
11. ANVÄND EGENPRODUCERAT GROVFODER
12. MILJÖVÄNLIGT MATERIAL TILL NYBYGGEN
13. HA EN MILJÖPOLICY
14. VAR EN GOD FÖREBILD!

#HESTEFORSKINGSPROSJEKTET

BEST PRACTICE

ALLE KAN

1. KJØPE BRUKT ELLER HA EN KLESBYTTEDAG
2. REPARERE ØDELAGT UTSTYR
3. SAMKJØRING ELLER REISE KOLLEKTIV
4. SYKLE ELLER GÅ TIL STALLEN
5. KILDESORTER
6. MØKKE HAGER OG BOKS
7. SLÅ AV LYS
8. KJØP ØKOLOGISK ELLER LOKALPRODUSERT FÔR/MAT
9. SVAMP OG KLUT ISTEDEN FOR VÅTSERVIETTER PÅ SELEUTSTYR
10. VÆR ET GODT FORBILDE !

#HESTEFORSKINGSPROSJEKTET

BEST PRACTICE

STALLEN

1. ARRANGERE BRUKT SALG
2. HA SYMASKIN TIL Å LAPPE UTSTYR
3. GI MILJØVENNLIG PREMIER PÅ STEVNE
4. KILDESORTER
5. SETT FLERE SØPPELBØTTER RUNDT I STALLEN
6. MØKKE HAGER OG PADDOKER
7. SETT PÅ FULLE VASKE OG OPPVASKMASINER
8. KJØRE EL-BIL
9. KJØPE MILJØVENNLIG STRØ OG HØY
10. BRUKE DIGITALE LØSNINGER PÅ STEVNE OG RIDETIMER
11. VÆR ET GODT FORBILDE !

#HESTEFORSKINGSPROSJEKTET

BEST PRACTICE

STYRE/ KOMMUNEN

1. SETT OPP SOLCELLEPANEL PÅ RIDEHUSTAK
2. FORBRENNINGSANLEGG FOR GJØDSEL
3. SAMLE REGN OG SNØVANN TIL VANNING AV RIDEBANEN
4. VARMEPUMPE I HUS
5. LA HESTENE VARME OPP STALLEN
6. BYTTE TIL LED
7. TIMER PÅ STRØMGJERDET
8. SENSOR BELYSNING
9. BEDRE SYKKEL OG KOLLETIV TILBUD
10. MINSKE KJØRING. BESTILL FLERE LEVERANSER SAMMEN
11. BRUK EGET PRODUSERT GROVFÔR
12. MILJØVENNLIG MATERIALE TIL NYBYGG
13. HA EN MILJØPOLICY
14. VÆR ET GODT FORBILDE !

#HESTEFORSKINGSPROSJEKTET