

## Local, Slow and Sustainable Fashion

“(While) we search for examples of outstanding sustainable practices, that could be amplified and applied to sustain a more gentle and efficient way of living in future, the authors (of this book) explore slow and indigenous approaches to textiles, while considering the optimal use of precious natural and renewable resources, such as wool. The chapters read as intriguing short case studies on their own, but collectively showcase a deep understanding of the threads that bind us together and how these could be strengthened to optimise natural fibre applications for future generations. Textile nerds will love it and newcomers will be inspired to learn more.”

—Dalena White, *Secretary General IWTO, Brussels, Belgium*

“I have always used wool and then fell in love with woolgrowers when I visited Tasmania in 2016, so for me this book is a total must read for anyone working on sustainability and the future of our planet.”

—Livia Firth, *Creative Director, Eco Age Limited, London, UK*

“Clothing is an essential part of human life, along with food and shelter. Furthermore, its culturally significant, defining who we are and where we belong. Alas, finding better solutions to the harmful ways the industry which supply our clothing operates today, is of utmost urgency. This collection of research articles offers knowledge and insights into the complex world of fiber, specifically wool, and suggests reestablishing more local value chain as part of the solution. It’s a must read for those who want to be part of a much-needed change.”

—Gisle Mariani Mardal, *Head of Development Norwegian Fashion & Textile Agenda, Oslo, Norway*

“Fast fashion is almost as destructive as fast food. And both embody a mindset that treats workers, consumers, livestock, and the environment like disposable commodities. Instead of having the wool pulled over eyes, through deceptive mass marketing and outright lies, we need wool back in our lives. Especially wool that’s been produced locally, regeneratively, with compassion for the people and animals who make it. This important book explains how that can be done.”

—Eric Schlosser, *Author, Fast Food Nation, New York, USA*

“Klepp and Tobiasson have done a remarkable job (...) and have given a comprehensive account of the successful revival of small-scale processing and marketing of local wool in some Scandinavian and Baltic countries, and set this in the context of the global wool industry and its fight to retain share in a market dominated by synthetic fibres. The authors suggest a return to the model of local consumption of local production, where profit and growth are no longer the main drivers, as a more sustainable way of clothing ourselves and our homes and reinvigorating the sheep industry in European countries. (...) Wool, with its deep roots in our European culture, our economies and our wardrobes, is ideally suited to change this.”

—Lesley Prior, *Sheep Farmer, Tellenby Merino, Devon, UK*

“Such an interesting read, showing how everything is intertwined: sourcing, craftsmanship, culture, economy, philosophy, physics, degrowth... A voice that should be heard in the global discussions at a time when a deep transformation is needed: the textile industry must be held accountable for its environmental and social impacts or else our planet will become the ultimate fashion victim. If clothes can tell a story, what message are we leaving for future generations?”

—Valeria Botta, *ECOS – Environmental Coalition on Standards, Brussels, Belgium*

“For the last 20 years I’ve been immersed in the world of fashion and textiles and it’s always struck me that the list of textile features and benefits of wool read like those from a innovative new super-fibre, add the sustainable benefits of localised, small-scale wool production and you may have the most climate positive, high performing textile there is. This book outlines a solid history and case for wool as the fibre of choice for an over-burdened planet and how perhaps it’s not new ideas we need in response to the climate crisis, but a rethinking of what ‘good’ ‘better’ or indeed ‘best’ may look like.”

—Debbie Luffman, *Finisterre, ThinkCircular, Cornwall, UK*

Ingun Grimstad Klepp ·  
Tone Skårdal Tobiasson  
Editors

# Local, Slow and Sustainable Fashion

Wool as a Fabric for Change

palgrave  
macmillan

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ISBN 978-3-030-88299-0      ISBN 978-3-030-88300-3 (eBook)  
<https://doi.org/10.1007/978-3-030-88300-3>

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This Palgrave Macmillan imprint is published by the registered company Springer Nature Switzerland AG

The registered company address is: Gewerbestrasse 11, 6330 Cham, Switzerland

# Preface

This is a book about one fibre, wool, its role in the future of a more sustainable global textile industry, and a new approach to how we can organize how we use local resources in a better way. As a reader, you may wonder why this is important. As the latest report published in August 2021 by the Intergovernmental Panel on Climate Change so clearly states, we must act now. In the clothing and textile sector, several decennials have been wasted on chasing new technology—most hardly suited for reducing the environmental impact at the scale needed—along with a hopelessly unproductive discussion around which fibres are ‘greener’ than others. We have no more time to waste. Not because this industry is the largest or the worst, but because of the overload and pressure on land, oil reserves, chemicals, water and more for producing clothes that are thrown away after too few uses, or not used at all—must stop. A sector with such a gross over-production and over-consumption of finite resources has an enormous potential to improve its footprint. We have chosen the lens of wool, as it is the fibre we know the best and which is Indigenous to our home country, Norway.

This book was written on the initiative of the publisher, Palgrave Macmillan, on the basis of a final report from a research project on wool. KRUS—enhancing value chains in Norway, sought to take better care of the Norwegian wool and discuss what local clothes are or can be. As KRUS ended, we saw new projects emerging in the international landscape, some in cooperation with the ‘team’ that had been forged through the aforementioned project. WOOLUME is such a project, and continues the work with local wool and value chains; however, transferred to Polish mountain sheep and their fleeces. With both the projects and with this book, we want to contribute to sustainable development and a good place to live for all who walk the Earth, on two or four legs, or with wings and fins for that matter. We want positive change to happen faster, dig deeper and galvanize more effect than what politics and business have so far been willing to. We also want people to feel at home in their clothes, feel beautiful, warm and partake in all settings—be they social or in lone communion with nature—with the freedom of being well-dressed. We believe that living within the planetary boundaries does not have to make our lives poorer, nor less filled with fun or colour.

KRUS was mainly a Norwegian project, but sheep, and other animals that have those much-coveted fibres, are found all over the globe. In many places, we find clothes, textiles, use patterns, techniques and production modes that have been adapted and developed over thousands of years. However, cultural diversity, heritage and richness of variation are threatened by the globalized industrial development and are currently poorly safeguarded. We hear reports from around the world that the cost of shearing sheep has surpassed the economic gain—though the animals must be shorn, for animal welfare reasons, and wool is a valuable and versatile fibre. So, something must be wrong. We will seek to provide insight into exactly what ails the system and a way out of this conundrum through the infinite abundance of examples of value chains for wool, current and historical, and how they have evolved and changed—and in many ways remained the same. In other words, our goal is neither to write a book about Norwegian nor Polish wool but to provide insight into better care-taking of both wool and other natural fibres, through learning from history and looking towards a more sustainable future.

Textile production is one of the world's most globalized industries, where not only does the production involve a massive transfer of raw materials and processed goods through a long and complicated supply chain, but where the second-hand clothing market is also massive, global and problematic. In other words, each garment has travelled more than most people in the world travel in a lifetime. It is as if this global aspect of clothes is so obvious that the word 'local clothes' gets stuck in the mouth. The same giant apparel chains are found in every city around the world, and to be blunt—they don't necessarily bring more diversity or beauty into our lives.

At the same time, clothing is also one of the things that actually characterizes local cultures. In Norway, the bunad (national costume) indicates which valley you or your closest relatives come from (at least that is one of the features), and most Indigenous peoples are recognized and create community precisely through clothing, often with a long history and advanced craft techniques. These have been developed based on locally available raw materials or those imported, perhaps also decorated with imported valuables.

The editors of this book have their professional roots in consumer research and textile sustainability. We are specialists mainly in the use of clothing but have studied fashion, tailoring, crafts, ethnology and sociology. At the same time, KRUS was a project with an emphasis on the *collaboration* that happened and happens in the value chain. This means that it was important for us to see production and consumption in context. Sheep farmers (or wool growers as they are called in other parts of the world), carders, spinners, knitting factories, weaving mills and designers have something in common with you and me—we are all part of the value chain—also sometimes called the textile 'sector'. We believe that it is through closer cooperation in these localized value chains that the greatest environmentally positive results can be achieved. This is a radical thought. Closer cooperation can be achieved, among other things, through production and consumption taking place closer to where we are, linked to our territories—or *terroir*. This book attempts to bring forward this connection between consumption and production, two processes in which it is just as fruitless to discuss what is the cause

and what is the effect, as debating about which came first, the chicken or the egg.

However, the place for wool fibres in the wardrobe and in markets of the future also depends on a variety of political decisions and economic processes. No man is an island. We believe that the wicked problem, that a majority of the raw wool in the EU is thrown away before it is even used, is now a crisis of magnitude. The crisis has been augmented by the Covid-19 pandemic, but this does not excuse that any fibre causes serious environmental problems, alongside animal and human suffering, nor that this is the result of the same economic system where profit is the goal and competition is the means. That is why we have included a discussion about economic models which is part of the ‘green growth’ debate. Is growth crucial, or is it even part of the future our Earth demands? Is a paradigm shift with continuous growth, however ‘green’, possible?

How the discussion about sustainability develops is also important for the future. What are the premises for the debate? Who owns the truth and, not least, what should count when we measure? We not only need to contribute to wool being availed and used more sustainably, we also need to contribute to the debate so that we do not become helpless observers as wool is removed from the list of fibres with eco-credentials. It may sound incredible to those who have not followed the ongoing debate, but this is a very real outcome of today’s discussions around sustainability, whether it be climate change, biodiversity, environmental footprint and even animal welfare. Let this book enlighten you to the seemingly counter-intuitive greenwashing of non-renewable fibres.

Wool is close to our hearts, and the book is written to spread knowledge about how wool can contribute to sustainable development. Whether wool and products from animals are generally better or not, opinions are divided. We have a growing vegan movement that does not in any way or form accept products from animals, be it honey, eggs or—wool. We want to contribute with perspectives related to this debate, so that you, the reader, can think this through. In this discussion, we draw on other natural fibres and their status against the alternative: synthetic fibres. Don’t misunderstand us, synthetics have their place in some products, where their properties are unsurpassed. However, their cheap price

and exponential growth in the market offers concern when they displace more expensive and better-suited fibres for a given use. Especially if this is based on industry tools that give a green light for their eco-credentials.

While the environmental debate has been about what we CANNOT continue to do, less has offered a way forward. We have tried to make the centre of gravity as forward-leaning as possible. We want to show what is possible if we want to make the change. We must set the stage for a world where we can be well-dressed without ruining the access to resources for future generations. That was the essence of Norway's former Prime Minister, Gro Harlem Brundtland's, definition of sustainability. An equilibrium. This may be too late, but it is high time to roll up our sleeves and get started.

The book consists of 7 chapters. They can be read as separate articles, or as a complete volume. We think the latter will be most useful. We also have a glossary that explains difficult words and those pesky acronyms. All in all, we hope that language and acronyms will not be what stands in the way of better collaboration, vibrant communities and beautiful textiles—with provenance and value for us all.

We would like to thank: The Norwegian Research Council, The National Centre for Research and Development, EEA Norway Grants and the Norwegian Agricultural and Food Industry Research Funds. We are also thankful to anonymous peer reviewers and those in our professional networks who have participated and will cooperate in this important work going forward. Our most profound thanks, however, goes to Vilde Haugrønning, Lisbeth Løvbak Berg and the rest of the clothing research team at SIFO, OsloMet<sup>1</sup> for their invaluable help in getting everything in order during the very last inning of this book-marathon and because they, together with all those engaged young people out there, are our true hope for the future.

Oslo, Norway

Ingun Grimstad Klepp  
Tone Skårdal Tobiasson

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<sup>1</sup> <https://clothingresearch.oslomet.no/about-us/>

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community organizer and coordinator, agricultural cooperative organizer, in-field design and implementation capabilities specific to regenerative agriculture demonstration, advanced textile weaving (mechanical and handloom), natural dye recipe developer, farm-to-skin textile product development and management, published author (Workman & Chelsea Green publishing houses). She is currently involved in the Amazing Grazing project, which we describe in this book.

**Maria Ehrnström-Fuentes** is an assistant professor at the Department of Management and Organization at Hanken School of Economics in Finland. Her research focuses on the interaction of people, places and nonhuman beings in the organizing of sustainability in the local sphere. She has also an extensive record of critical examination of the politics of CSR in natural resource-based industries, Indigenous ways of knowing and organizing around issues of sustaining land-based practices. Her current Finnish Academy Project focuses on the organizational aspects of grassroots movements engaged in building alternatives from below, through regenerative land practices, and how these place-based organizations contribute to beneficial outcomes for the climate and the ecology in different parts of the world.

**Ingvild Svorkmo Espelien** CEO of Selbu spinneri in Norway, is a biologist (Cand sci.). Selbu Spinning Mill is a wool mill, currently employing four. A passion for wool, quality and caring for the local natural resources is a great driver for both her and the mill she started, aiming from the start to increase the demand and price of pigmented wool from the old, indigenous Norwegian sheep breeds. Developing and disseminating knowledge about the different properties of wool and traditional crafts is also important. The spinning mill cooperates with a number of other local/national businesses in the wool value chain. Espelien is one of the active partners in WOOLUME, and is also part of Amazing Grazing and hiWOOL projects; besides having a vital role in KRUS.

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**Vilde Haugrønning** is a Ph.D. Candidate in the research project CHANGE at Consumption Research Norway (SIFO). She holds a master's degree from the Centre for Environment and Development (SUM) at the University of Oslo and a bachelor's degree in Social Anthropology and Visual Culture from NTNU. She has previously researched food consumption in Norwegian households, and her current research area is consumer research on clothing consumption and sustainability. Her Ph.D. project is about the use of clothing in everyday life from a practice oriented perspective, investigating the underlying drivers of growth and the dynamics and complexities behind women's and men's clothing consumption.

**Kjellaug Isaksen** is a Sámi duojár and scholar, and works as head of the Museum Department at the Davvi álbmogiid guovddáš/Centre for Northern peoples in Norway, and situates her approach within contemporary Sámi reality. She is educated in duodji, Sámi culture and art history, and builds her work on multicultural experiences and rootedness in Sámi culture and identity. Her main focus is on research and working practice with traditional Indigenous knowledge within the Sámi art and craft field. Her work includes how research can be conducted and how institutions engage and disseminate Indigenous perspectives by sharing strategies relating to the value, the transmission and representation of Indigenous knowledge from within.

**Ingun Grimstad Klepp** is a Professor in Clothing and Sustainability at Consumption Research Norway (SIFO), at Oslo Metropolitan University. She has led a number of research projects on wool, including KRUS, and has been central in all the projects from which this book springs. She currently leads two research projects on clothing and sustainability, CHANGE and Wasted Textiles. The relationship between clothes, social and physical characteristics and how these are woven together is at the

core of her interest. She hates waste and loves to spin threads and words together into texts and textiles as well as to share the joy of developing knowledge. She has written several books and articles about sustainable textile, wool, knitting, laundry and clothing together with good colleagues and uses a lot of time on popular dissemination and discussions. Klepp wrote her M.A. and Ph.D. in Ethnology on leisure time and outdoor life at the University of Oslo. She combines historical perspectives with knowledge of the textile's technical properties and social aspects.

**Katarzyna Kobiela-Mendrek** works as an Assistant Professor at the Faculty of Materials, Civil and Environmental Engineering of the University of Bielsko-Biala, Poland. She is a graduate of the Lodz University of Technology, Branch in Bielsko-Biala. She received Ph.D. in textile engineering from the University of Bielsko-Biala in 2006. Her scientific interests have evolved from issues related to aesthetic properties through the hygienic properties of textiles to fatigue research of composites based on textiles. In recent years, she has participated in international projects on the application of geotextiles and wool waste fibres for soil reinforcement and erosion control on slopes and embankments. She is an active partner in the WOOLUME project.

**Kirsi Laitala, Ph.D.** is a Senior Researcher at Consumption Research Norway (SIFO), Oslo Metropolitan University. Her main research area is sustainability and clothing consumption, and she has researched and published on areas related to clothing quality, maintenance, safety, environmental issues, design, as well as fit and size issues. Her current interests include sufficiency connected to standard of living. She uses interdisciplinary research methods based on her educational background in textile engineering (M.Sc.), Ph.D. in Product Design and long experience working with social science research methods. She currently heads the LASTING project.

**Lorrie Miller** (settler) is an artist, educator and writer. She weaves her passion for textile art forms with her interest in slow and Indigenous pedagogies. She holds a Ph.D. and an M.A. from the University of British Columbia and a B.Ed. from the University of Regina. She teaches

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**Mafalda Pacheco** is a Ph.D., Architect by the IST/University of Lisbon (2018) and a research fellow at CHAM—Centre for the Humanities of the FCSH/NOVA University. In 2015 she founded the project and the association *Salva a Lã Portuguesa* (Save the Portuguese wool), being the president since then. She is part of the scientific committee of DTEx International Textile Design Conference. Her research focuses on the history of traditional architecture, construction and textiles with several works published on these subjects.

**Jane Philbrick** is the artist founder of the farm-specific wool initiative TILL: bioFASHIONtech in New London, Connecticut. In 2021, the name changed to Wear Wool New London, and the initiative is anchored by an environmentally sensitive wool scouring system providing the flexibility to serve the rich diversity of breeds of the small (compared to the American West) sheep industry in the Northeast. She also was instrumental in launching the local UCRF Connecticut Chapter on March 7, 2020.

**Monika Rom** is an Assistant Professor at the University of Bielsko-Biala, Faculty of Materials, Civil and Environmental Engineering in Poland, where she has been since 2003. She received M.S. from Lodz University of Technology in 2001, and a Ph.D. in Textile Engineering from the University of Bielsko-Biala in 2008. Her research interest lies in the broad areas of textile engineering and materials from bioresources. Specifically, her research focuses on the following areas: (1) structure and properties of wood-based cellulosic fibres from enzymatically bio-transformed pulps, (2) structure and biodegradation of polymers from bioresources, (3) biodegradation of wool and valorization of low-quality

wool by nonstandard applications. She is an active partner in the WOOLUME project.

**Anna Schytte Sigaard** holds a master's degree from the Centre for Development and the Environment (SUM) and a bachelor's degree in Sociology, both from the University of Oslo. She has previously researched cotton production in India and is currently a Ph.D. Candidate in the project Wasted Textiles at Consumption Research Norway (SIFO). The topic of her Ph.D. project is synthetic textile waste in Norwegian households.

**Tone Smith** is a researcher in the fields of ecological economics, social-ecological transformation and degrowth. Originally a human geographer, she recently completed a doctoral degree in ecological economics at the WU Wien. After a career in the field of sustainability indicators, environmental performance assessment and environmental statistics (with Statistics Norway and the OECD), her doctoral thesis was a critical examination of the role of numbers in environmental politics. Since 2019, she is an independent researcher and freelance writer. She is also head of the advisory board of Rethinking Economics Norway and is active in the international degrowth movement. She is originally from Norway.

**Tone Skårdal Tobiasson** journalist and author, went from managing editor of fashion magazines in Norway to become a founder of NICE (Nordic Initiative Clean & Ethical) Fashion, originally a platform for sustainable development within the Nordic Fashion Association. Currently, she is responsible for the dissemination of several major research projects in Norway, related to wool, localism, sustainable, slow and regenerative fashion, and has been involved in all the projects mentioned in the book. One of these, Amazing Grazing, also involves food. She has co-written 'Pure Wool', the history of Norwegian knitting, 'Knit with Norwegian wool', and three books on apparel care, sustainable apparel and repairing clothes together with Klepp. She is a contributor to EcoTextile News, Wool2Yarn and other international publications, and is a Board member of the Union of Concerned Researchers in Fashion.

# Abbreviations

AWI	Australian Wool Innovation
ELRP	Earth Logic Research Plan
GND	Green New Deal
GWP	Global Warming Potential
IWTO	International Wool Textile Organisation
LCA	Life Cycle Assessment
NIBIO	Norwegian Institute of Bioeconomy Research
NRC	Norwegian Research Council
NSG	Norwegian Association of Sheep and Goat Breeders
NSRS	Norwegian National Sheep Recording System
PDO	Protected Designation of Origin
PEF	Product Environmental Footprint
PGI	Protected Geographical Indication
SAC	Sustainable Apparel Coalition
SDG	Sustainable Development Goals (as defined by the United Nations)
SIFO	Consumption Research Norway
SPT	Social Practice Theory
TBL	Triple Bottom Line

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