

A Fresh Look at Wool

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Abstract

The paper is based on work done within the project Valuing Norwegian Wool, where the main objective is providing knowledge on how Norwegian wool can contribute to a more environmentally sustainable textile production and consumption, but also increase value creation in agriculture, the textile industry, retailing and design. With wool's enormous environmental benefits in a lifecycle perspective along with a growing demand for quality wool apparel, this is an opportune moment to explore the potential of Norwegian wool where both knowledge and strategic action has been fragmented. Our findings – from the whole value chain from farmers to consumers – are the basis for new strategies for an industry that is slowly dying as wool is seen as a bi-product of sheep farming, and most of the production is exported. Norwegian designers, along with textile companies and garment industries currently use very little local wool, while the consumers increasingly favour qualities that Norwegian producers currently are unable to meet. Since Norwegian wool has technical, environmental and symbolic values that have not been fully exploited, our findings will show how existing qualities can meet new expectations both nationally and internationally. Product development, traditional crafts and communication strategies are also part of the project.

Key words

wool, sustainability, innovation, added value, “renewawool”, fashion, Norway, tradition

Wool is under fire and has been in trouble for a long time. Recent global developments seem to have given this fibre an up-swing, but can it last? In the light of “local being the new organic”, could the fashion-business follow the food-business in taking a fresh look at wool, making local wool the "new black"?

The paper is based on work done within the project Valuing Norwegian Wool, where the main objective is providing knowledge on how Norwegian wool can contribute to a more environmentally sustainable textile production and consumption, but also increase value creation in agriculture, the textile industry, retailing and design. This is an on-going three-year project headed by SIFO¹ in collaboration with several Norwegian and International partners, among others NICE² Fashion, European Outdoor Group, the RITE³ Group, the Norwegian Fashion Institute, design schools – and the value-chain in Norway from sheep to shop. There are several work-packages in the project including mapping the value-chain, reviewing the cultural history, the environmental benefits and the consumer barriers, along with setting up an innovation lab. Comparing the situation in Norway to developments in the world market is also an important work-package, and one that will be addressed in this paper.

Decline in price and volume

30 years ago 70 % of all Norwegian wool was sold in Norway, now only 10 to 20 % stays in the local market, and the volume has been steadily shrinking according to Animalia⁴. Add into the mix that the sheep-farmer is being paid less by the two buyers in Norway⁵ based on shrinking world wool prices, so that the amount of income for wool, in spite of government

¹ The National Institute for Consumer Research in Norway (Statens Institutt for Forbruksforskning)

² Nordic Initiative Clean & Ethical

³ Reducing the Impact of Textiles on the Environment

⁴ Animalia (Meat and Poultry Research Centre) - is the research and knowledge centre of the Norwegian meat industry, a non-profit organisation, funded by the Norwegian farmers and the industry, and operating under the supervision of the Norwegian Agriculture Authority

⁵ All wool in Norway is bought by the private company Fatland or the farmer cooperative Norilia/Nortura

subsidies, is dwindling steadily – one would wonder whether the future for locally sourced wool in Norwegian textile projects is an issue worth considering.

Sheep-farming has the lowest profitability of all livestock- and farming-practices (Klepp and Lutnæs, 2007), and in the last 20 years the European sheep population has declined by 20 % (Popescu, 2010). Globally one has seen the same tendency, with a decline in clean weight production of 2.5% world-wide in 2008 with the largest falls in some of the largest wool-exporting countries: Australia was down by 8%, New Zealand down by 6% and Argentina down by 16%. Fine wool production (24.5 microns⁶ and finer) was estimated to have fallen by 5%, and the IWTO⁷ estimated that the world wool production and supply were likely to be lower in 2009 and 2010, particularly for apparel wool. The major wool-growing countries expected to see production fall by around 2% in the 2009/10 season. Sheep numbers are continually falling, as growers shift from wool towards meat, together with continuing drought in Australia and in South America⁸ (IWTO, 2009).

The shift towards meat⁹ is a consequence of higher meat-prices (Nicholson, 2010). One sees the “pull” between food production and fibres increasing in other sectors too, as problems surrounding drought, flooding (recently in Pakistan) and population growth shifts focus of agriculture towards food rather than clothing; according to several news-sources the Chinese government has decided that former cotton-fields will be designated for rice instead.

But scarcer resources can mean better prices for suppliers. Apparel wool prices fell sharply in October 2008 as the result of the downturn from the Global Financial Crisis, and prices reached a low point in February 2009 before recovering a little by the end of the 2008/09 season. Trends in the prices for wool used for interior textiles were more mixed in 2008/09 since the decline was not as significant, in part because prices for interior textiles wool had not lifted as much as apparel wool prices in 2007/08¹⁰. A further support for wool prices since has been the very low levels of wool production and supply, particularly of apparel wool. It is interesting to note that the decline in wool prices in absolute terms as a result of the two financial crises¹¹ was about the same, but the price level at the low point in 2009 was well above the low point in 1998. This illustrates the impact of the low supply level, particularly when one considers that the global financial crisis was more widespread and deeper than the Asian financial crisis¹² (IWTO, 2010).

Looking at scoured and treated wool, global wool trade in wool top fell by 17%, wool yarn fell by 14%, woven fabric wool saw a 13% fall in global exports in 2008 from the 2007 levels and a fall in worsted wool fabric exports (down 14%). Similarly on the import side, there was a significant drop in wool yarn imports by many of the top 20 importing countries¹³. Global trade in wool carpets was 9% lower in 2008 as the fall in housing markets and construction hit hard. But according to the IWTO’s report the worst of the financial crisis seems to be over,

⁶ Measurement of fineness of wool, a lower number being finer than a higher

⁷ International Wool Textile Organisation

⁸ <http://www.iwto.org/about/History.htm>

⁹ Which means animals are slaughtered earlier and do not yield the same amount of wool as they would if they lived longer

¹⁰ Increased demand from China pushed prices on the world market

¹¹ Asian and global

¹² <http://www.iwto.org/about/History.htm>

¹³ Except for Australia, Denmark, the US and Romania who all recorded an increase in imports, and the UK reported a surprising 83% lift of imports of wool fabric

and there are solid signs that the major wool consuming countries of the US, Japan, Italy, Germany, the UK and South Korea that have been in recession are starting to recover:

With demand expected to improve from the lower levels in 2008, wool prices should rise. The extent of the rise in prices could be significant, given the low wool production. There could be important differences in the extent of price movements for wool used in apparel and that used in home textiles. The supply of apparel wool is expected to be tighter than the supply of wool used for home textiles and, to some extent, hand-knitting yarn.

Market players and confidence, or lack thereof

The Woolmark-label was a revolutionary step in international promotion for wool that first appeared in 1964. Any housewife worth her salt who bought wool-products in the 1960's and 70's would look for the tell-tale Woolmark-label, as there were Woolmark-offices around the world ensuring quality control, marketing- and information-campaigns. The label was the brain-child of Sir William Vines of the IWS¹⁴ and the logo was designed by Italian graphic artist Francesco Saroglia. Vines had argued that there had to be an international identity for wool, an individual image, which would hold consumer confidence and represent quality standards. In 1993 AWRAP¹⁵ was founded and the activities of the two groups were merged and managed as one organization under AWRAP's control from 1995. The last update on the IWS is from 1996/97, when the IWS becomes incorporated in order to provide a tighter, more commercial focus, and its shareholders are AWRAP and SAWB¹⁶, while the Uruguayan Wool Secretariat has associate member status¹⁷ (IWS, 1997). The Woolmark Company Pty Ltd was established in 1997, as a result of the IWS undergoing a change of name. The Company was initially a subsidiary of the AWRAP but later became a subsidiary of Australian Wool Services Ltd¹⁸ (Encyclopedia of Australian Science, 2000). For on 1 January 2001, AWS replaced the AWRAP. AWS was established with two subsidiaries: AWI¹⁹ and The Woolmark Company Pty Ltd. On 30 April 2002 AWI separated from AWS to become a fully independent public company limited by shares²⁰ (AWI, 2010) October 5th 2007 heralds the announcement that the AWI has completed the acquisition of Woolmark, the AWS and the IWS no longer have a role in the world of wool²¹ (Just Style, 2007).

Between the end of the 1990s and until recently Woolmark has been conspicuously low-key. The whole issue seemed to be shrouded in mystery and intrigue, but at the last IWTO conference we did ask around and through informal conversations were able to get a picture of what had happened: A mismanaged pension-fund had toppled the economy within Woolmark/IWS/AWS, and what had been an organisation with ties to several continents became a purely Australian label controlled by the AWI. However, those who use the label in all continents are still expected to pay the AWI for the privilege. It was during the 50's and 60's that several new synthetic fibres were developed, resulting in consumer-confusion what textiles actually were made of. Brand names and generic names were used inter-changeably, and the simple world were wool, silk, linen and cotton had dominated, was left behind. The Woolmark label was developed before the laws governing fibre labelling were passed in the

¹⁴ International Wool Secretariat, founded in 1937, as rayon was becoming a major threat as a fiber of choice

¹⁵ Australian Research and Promotion Organisation

¹⁶ South African Wool Board

¹⁷ <http://www.mlm.com.au/work/woolmark/world/history/middle.html>

¹⁸ <http://www.eoas.info/biogs/A000826b.htm#related>

¹⁹ Australian Wool Innovation

²⁰ <http://www.wool.com/About-AWI.htm>

²¹ http://www.just-style.com/news/awi-completes-woolmark-acquisition_id98719.aspx

1970's, so they were in many ways ahead of their time. Laws concerning textile labelling in the EU (and Norway) have since ensured that the correct fibre-content is marked – so that “wool” in whatever percentage is clearly stated and the question arises what practical purpose the Woolmark label has for *today's* consumer (Klepp, 2006). In addition other issues concerning the confidence in the label had arisen.

Mulesing²² is today a important factors regarding consumer's attitude towards wool and this issues fall on the shoulders of Woolmark, and AWI. In 2008 Just Style announced that high street fashion chain H&M²³ has shelved Australian merino wool products derived from sheep subjected to mulesing – since the Swedish company is frustrated by the slowness of a projected 2010 phase-out of the practice. As Australia has pushed the phase-out to 2013, Don Hamblin, President of Wool Producers Australia's announcement at the IWTO spring-congress in 2010 in Rambouillet, France, that mulesing is a ‘Northern hemisphere problem and our market is in Asia’ did not exactly enamour him to the audience. A little earlier, on the same stage, Michael C. Appleby, Chief Science Advisor for the WSPA²⁴ had told the same audience that in spite of the economic down-turn and a lessened willingness to pay more for organic products, consumers were just as concerned as before the financial crisis about animal welfare (Tobiasson 2010a). As animal welfare is gaining momentum, the question arises whether Woolmark's direct association with the organization that defends mulesing, could actually be hurting wool in general as a fibre.

After a lengthy period when Woolmark has been conspicuously missing in the media-mix touting whatever fibre's benefits for designers and textile companies (a quick read-through of Women's Wear Daily or EcoTextileNews as two pertinent media-examples will offer ample advertising from other fibres), the AWI recently announced a much more pro-active attitude in its magazine, Beyond the Bale. Among their many initiatives are: Appointing Euro RSCG²⁵ to promote and educate consumers about the many benefits of wool, supporting HRH Prince of Wales Campaign for Wool²⁶, launching two new collections of knitwear innovations at the SpinExpo New York trade show to inspire high volume manufacturers and brands to work with merino wool, planning a retailer and brand Consultation Forum, along with a fashion and design Consultation Forum, instigating online marketing initiatives such as app development and search engine optimization to drive traffic to digital assets (McCullough, 2010). Interestingly enough, the AWI also states that: In line with the reduced size of the industry, AWI will continue to actively review its size and resource base, reducing it wherever possible without compromising its ability to achieve its Vision and Goal, along with reviewing the role of AWI brands (*for example, the Woolmark*) and *define a long-term strategy to rebuild the brand and its value to consumers and trade.*²⁷

But there is another organization working to the wool industry to help understanding the textile demands of the consumers and enhance the response to consumers with products and promotional activities especially to meet their needs with wool: The IWTO. They started out as a cooperation between the British and the French Wool Textile industries in 1924, were

²² Mulesing is surgical removal of pieces of skin/tissue around the tail, a common practice in Australia as a means of fighting the sheep-fly parasite *Lucilia cuprina* which causes the painful disease Myiasis. This method is mainly applied to Merino-sheep and without any form of anesthetics

²³ Hennes & Mauritz

²⁴ World Society for the Protection of Animals

²⁵ The world's fifth largest global agency for advertising, marketing research, etc.

²⁶ Launched fall 2010 in London, also supported by the British Wool Marketing Board

²⁷ Our italics

joined by Germany, Italy, Belgium and Czechoslovakia in subsequent years and in 1928 a formal organization was formed, with statutes being approved in 1930 and its head offices being in Bradford in the UK. Today the IWTO counts 24 member-countries through national committees, including China, Brazil, USA and even Thailand and Mongolia. The AWI/Woolmark company are also associate members²⁸ (IWTO, 2010).

For those who had thought Woolmark had rolled over and died, they seem set on making a come-back. During London Fashion Week recently, The Merino wool education project was launched as an extension of the Campaign for Wool, spot-lighting that the royally-backed campaign is very much an AWI-funded affair, even though the poster-sheep for the campaign actually is the British Bowmont-breed²⁹. The targeting that animal welfare groups have done in the light of the mulesing controversy, which has led to severe criticism from the NRF³⁰ and BRC³¹ has resulted in the AWI sending a delegation to the US and UK. (McCullough, 2010) Some would claim that the mulesing controversy has already hurt an ailing wool-industry substantially, and judging by measures taken by for example the New Zealand sportsbrand Icebreaker, one could easily draw the conclusion that their baacode³² is an answer to the pickle, since New Zealand merino-sheep are not mulesed, and this ensures the story gets told (Saporito, 2010).

Different views on environmental issues and user-qualities

Another issue that is becoming increasingly important is a fibre's environmental footprint. This was also an area where wool was challenged in 2010: The Dutch organization Made-By's assessment and ranking of fibres from Class A to Class E³³ had placed wool alongside conventional cotton and generic viscose in the "dunce" class. Interestingly enough, Mowbray (2010) unearthed a significant flaw in the proclaimed LCA³⁴ on the included fibres – since the index only considered one part of the textiles' life-cycle – from fibre growth to the point of spinning. The self-proclaimed eco-organisation justified this by saying 'after preparing the fibres in order to be ready for the spinning process, most types of yarn can be treated in a similar way and therefore the spinning, textile processing, distribution, use and maintenance or disposal stages were not included in this benchmark'.

But this is not true: During textile processing yarns and fabrics are prepared for spinning in a myriad of ways, and they are dyed, finished and processed differently. A true LCA would also consider durability, wash, care and how a fibre can be disposed, decomposed or recycled. Issues concerning land-use and water were simplified, according to Mowbray, since the land sheep graze on is generally not fit for other agricultural enterprises. He adds that: 'Also in wool's favour is that in addition to being a natural carbon store, wool is produced from a sustainable grassland system which itself has the capacity to store carbon.' So double whammy there. He postulates that the environmental impacts of wool fibre could very well be divided among the textile, cosmetics (because of the lanolin), meat, and in some cases cheese industries. And since a substantial part of wool could meet current EU Ecolabel's standard if required he states: 'We have a real problem with how wool is scored under this system and do not accept its findings' (Mowbray, 2010). Strong words indeed.

²⁸ <http://www.iwto.org/about/History.htm>

²⁹ Tom Podkolinski at the Valuing European Wool meeting, Oslo, September 6th, 2010

³⁰ National Retail Federation

³¹ British Retail Consortium

³² An acronym for the "barcode" which allows the product to be tracked from shearer to wearer

³³ A being "green" and E being "red"

³⁴ Life Cycle Assessment

One of the strongest points for wool in the environmental footprint was completely ignored by the Made-By Index, namely the user-stage (Klepp, 2010). For most textiles it is the washing and drying that leads to the biggest energy-consumption (Allwood, 2006). The life-time of a given textile is also vital in a LCA, since environmental impact of production is calculated towards the amount of times a piece of clothing is worn (Fletcher, 2008). Wool has the unique ability that it virtually is self-cleaning. Smell disappears with airing and soiled clothing is easily cleaned either by using a damp cloth or by rinsing out. In addition wool is a durable fibre that we associate with tradition, quality and longevity. On the opposite side of the scale we find cotton, a fibre that is washed often and at high temperatures, and which we associate with so-called fast-fashion (Klepp, 2003, Simpson and Crawshaw, 2002).

Wool also has very good user-qualities, it feels cool when it's hot and feels warm when it's cold. It sheds creases due to its' natural 'memory', making it good for travel. Wool absorbs 30% of its weight in water without feeling wet so is an ideal next to the skin fabric and for physical activities out-doors. It is non-flammable and biodegradable. It can be made in a range of yarn counts and lends itself to all types of fabric construction to provide virtually every type of clothing item from fine lingerie to heavy winter coats (Patterson, 2009).

Wool has been an excellent textile fibre for centuries and the recent conference Textiles UK in London this year even called it "the cloth of kings". Wool naturally embodies many of the qualities we try to mimic in synthetic fibres or so-called "intelligent fibres". But these qualities can also be construed to represent a problem in some instances. Therefore different treatments have been developed. That wool shrinks and felts is good when developing strong materials like felts and frieze, but can cause problems in washing. In the latter half of the last century customers began to demand machine washability, good colour fastness and moth-resistance. Mothproofing remains a debating point. Permethrin, the most popular chemical for this purpose is very effective and relatively safe for humans at the levels applied, but can be a problem from an environmental perspective. Efforts now focus on zero discharge application, although many brands ban its use completely. Colour fastness of the dyes traditionally used to dye wool had always been relatively poor but the application of mordants³⁵ cured the problem to a large extent. The use of sodium dichromate in huge quantities delivered textiles with excellent fastness – and this is still used in many dyehouses around the world today. The problem is that chromium salts kill wildlife in rivers and some of the residues that can be left on badly processed textiles (so called Chrome 6 salts) are carcinogenic. The industry has met the challenge with pre-metallized dyes³⁶ and more recently with clever reactive dyes that bond permanently with the wool fibre without the need for any metal content. In the future new revolutionary dye techniques³⁷ may reduce environmental impacts even further (Patterson, 2009).

One area where wool is struggling is with a lot of misinformation on wash and care, which is why Valuing Norwegian Wool is also focusing on these exact issues. The most prevalent misunderstanding is that wool shrinks with heat or centrifugal spinning. But it is the mechanical treatment that is the actual problem (Laitala and Eilertsen, 2009). In addition is the problem of wrong use of washing detergents. Protease enzymes in wash powders destroy wool – in a single wash cycle if you are unlucky – and many accusations levelled at wool in terms of quality are actually down to customer misunderstanding, or one could argue

³⁵ Fixing agents that are metal-based salts

³⁶ Dyes that contain the metal in the dye-molecules to deliver better fastness

³⁷ One example being a patented catalytic dyeing process patented by DyeCat, developed at the University of Leeds

customer ignorance. The felting problem where the fabric shrink was initially overcome by the use of chlorine chemistry, and then by clever acidic pre-treatments and polymer finishes – meaning that washability and even for some wool-fabrics tumble-drying are now normal (Patterson, 2009/10). So-called “Superwash” actually makes the wool softer, as itchiness remains one of the main obstacles in consumers’ view of wool as a fibre of choice. The itchiness of wool that some people experience is mostly related to fibre diameter. Finer fibres, naturally, give greater comfort. The comfort limit for garments worn next to the skin is on the average 28 microns. Many people experience discomfort if more than 3 to 4 % of the fibres are over 28 microns. Wool can be blended with other fibres or lined with other textiles to remove the itch factor³⁸ (Sheep101, 2009). Merino has therefore become almost synonymous with soft wool, as the breed has been bred in Australia and New Zealand to produce “super-fine” (17 - 18,5 microns), “extra-fine” (15 – 16,5 microns) and ultra-fine (below 14,9³⁹ microns) qualities⁴⁰ (IWTO, 2010). At the same time the agricultural authorities have prioritized breeding for meat rather than wool in both Norway and other European countries, resulting in lower wool qualities⁴¹.

It’s natural, sustainable, has a very good eco-profile and is, if you believe the farmers, cheap as chips. So why is it a minority fibre? Customers undoubtedly put a greater focus on comfort than they did half a century ago: Wool grows on sheep, and they don’t have infinitely variable spinnerettes that can produce thick or thin fibres at the touch of a button, so the breeds that produce thick fibres are now pretty much redundant from a clothing point of view. Breeds that gave the world heavy tweed jackets and overcoats (and probably the odd pair of excruciatingly uncomfortable underpants) are now consigned to carpet production, in a time when popularity of laminate flooring, stripped floor boards and tiles means many sheep are on the scrap heap (Patterson, 2009). The fact that a woolless sheep-breed has been developed is thus not surprising; since the cost of shearing wool in some countries makes it uneconomic to use the fibre down-stream. Most European woolgrowers find themselves in a situation where shearing is nothing but pure cost and the fleeces are often abandoned in the countryside, or when collected they are exported as greasy material to be processed outside of Europe (Chaupin, 2010). New Zealand’s Icebreaker has taken this exact problem in to the mix, and CEO Jeremy Moon broke the local commodity cycle that was threatening to break both the supply-chain and the company’s future: Fluctuating prices and inconsistent qualities. Instead he guaranteed multiyear contracts and prices, provided they could produce a uniform high-quality fibre (Saporito, 2010).

Some farmers in Australia are also taking action: NewMerino has introducing a new, fully documented, traceable wool supply chain for verifiably ethical wool; adhering to stringent standards for responsible animal husbandry and environmental farming, the scheme gives retailers, manufacturers and consumers the ability to trace the wool from garment to farm, and confirm the complete pedigree of the products they buy. Specifications range from non-mulesed wool to organic farming techniques to carbon-reducing production methods. The NewMerino network also includes combbers and spinners, and every product has a unique e-number that can be entered in the online trace-back system⁴² (NewMerino, 2010).

³⁸ <http://www.sheep101.info/warmwool.html>

³⁹ The finest bale of Australian merino in 2010 was 11,4 microns

⁴⁰ London, also supported by the British Wool Marketing Board

⁴⁰ <http://www.iwto.org/about/History.htm>

⁴¹ Sissel Berntsen from Fagtjenesten for Ull at the Valuing European Wool meeting, Oslo, September 6th, 2010

⁴² http://www.newmerino.com.au/growers_about.html

It is an open question what the future will bring. As we have described there is a development towards specializing on wool-qualities in some area, with animal-welfare issues, and woolless sheep and increasingly coarser wool in other areas taking in to consideration environmental issues and better use of resources. Alternatively one could see a development where all resources are utilized and wool's superior environmental qualities are taken in to account by the entire value chain.

Norwegian wool, old traditions and new habits

As mentioned earlier, ultra fine merino wool is below 14,9 microns. The majority of wool produced by Norwegian cross-breed sheep in the C1 class, which is the best classification in the Norwegian system, is on average 31,4 microns, but the average with wool coarser than 38 microns is around 20 % according to Animalia (2010)⁴³: Not exactly next-to-skin quality. As lamented above, this is wool that for the most part ends up in carpeting, and almost 90 % of the Norwegian wool-clip is exported to the UK for this purpose. According to the buyers of Norwegian wool, it is particularly renowned for its strength, gloss and elasticity, has special characteristics that make it resistant to wear and maintains its appearance even after long-term use and wash. Furthermore, it has a 'clean' and good colour as the sheep have grown up in a clean environment. However, because of its coarseness it is best suited for the production carpet yarn, or coarser knitting wool according to Norilia (2010)⁴⁴. So perhaps it would be best to forget local wool in apparel?

We don't think things are that simple. There are two reasons for this. One is the rich traditions in Norway for using wool yarns and wool textiles in clothing, the other reason is that wool-qualities are not given once and for all – but can change over time as a result of breeding and selection. But first things first: Norway was industrialized late and traditional handicraft-techniques have long and unbroken traditions. The sale of knitting-yarn is high (1 124 tons in total, of which 826 in produced in Norway according to Haanes-Larsen in Norsk Industri⁴⁵) and the traditional Norwegian knitted sweaters, mittens, hats and socks are perhaps the most popular souvenirs sold to tourists who visit Norway. Norway's big celebrity-magazine *Se og Hør*⁴⁶ has always given a traditional knit *kofte*⁴⁷ to famous film- and pop-stars as their coveted gift. There are also iconic pictures of ex-Prime Minister Gro Harlem Brundtland and the current Minister of Finance wearing their knitted sweaters at official meetings, presumably to send a signal of frugality. In connection with every Winter Olympic Game since 1956 and every Nordic event World Championship, Norway's major producer of traditional sweaters, Dale of Norway, designs a new sweater. The Norwegian couture-designer Per Spook had the audacity to show his versions of the coarse and traditional sweaters on the catwalk during the Haute Couture shows in Paris in the 1970's. There is also a resurgence among younger, hipper crowds in the use of bulky Norwegian knits – Heimen and Husfliden⁴⁸ have reported that local snowboarders frequent their stores alongside tourists, looking for the "Setesdalkofte" specifically⁴⁹.

⁴³ Animalia (Meat and Poultry Research Centre) - is the research and knowledge centre of the Norwegian meat industry, a non-profit organisation, funded by the Norwegian farmers and the industry, and operating under the supervision of the Norwegian Agriculture Authority

⁴⁴ Norilia is responsible for the wool trade under Nortura; Norway's leading supplier of meat and eggs - a result of the merger between Gilde Norsk Kjøtt BA and Prior Norge BA, organized as a cooperative owned by approximately 25.000 farmers.

⁴⁵ Norwegian Industry's main interest-organisation, Haanes-Larsen heads up the textile division

⁴⁶ "See and Hear"

⁴⁷ Sweater or cardigan knit with traditional knitting patterns, often decorated with embroidered wool bands

⁴⁸ Two handicrafts- and souvenir-stores in Norway

⁴⁹ H. Midthjell at Dale's press-conference, Oslo, September 29th, 2010

But even if Norwegians continue to knit traditional sweaters, designers have played with these traditional patterns in later years; modernizing them and updating their expression – a trend which has been observed and exploited by both Commes des Garçon's Rei Kawakubo and trend-expert Li Edelkoort – one of the major trends on the catwalk for the fall/winter season 2010/11 was distilled in the pictures from Dolce & Gabbana's D&G line for both men and women. The collections could have walked straight out of both Heimen and Husfliden, except maybe for some of the more sexy cat suits (Hovland, 2010). The same traditional patterns have earlier showed up in collections from American designer Ralph Lauren and French designer Isabel Marant.

Another traditional garment that has been based on wool, but based on woven textiles and intricate wool-embroideries, is the folk costume. Each district has developed a distinct national costume (which in spite of its name is far from national) and Norwegians own 2,5 million *bunader*⁵⁰ with the estimated value of almost 4 billion €, which they wear on the average 2,5 times a year – generally at formal occasions but most typically on the national holiday May 17th. 55 % of all women own a *bunad*. Queen Sonja, Crown Prince Haakon Magnus, Crown-Princess Mette-Marit and Princess Ingrid Alexandra all own several from different regions of the country (Aftenposten Fakta, 2010). And for politicians wanting to avoid razor-sharp stylists grading their dresses on formal occasions as palace balls, the traditional dress is a safe bet and perfectly acceptable.

But “wearing wool the Norway” doesn't stop here. One could jokingly say that in Norway it is considered child-abuse not to dress your off-spring in wool under-wear. Grandmothers and mothers may still knit thicker wool long-johns and pullovers or cardigans as a second-layer for the coldest days underneath the water-proof playsuit every Norwegian child frolicking in the kindergarten owns, but on the inside is a set of wool undergarments doubling as the playsuit of choice when indoors. In every supermarket in Norway you will find a display of Pierre Robert⁵¹ merino underwear in colourful patterns and if anything could be called “the national kids' costume”, it would be this. For sports, whether grown-up or growing-up, one might choose the more “plain” wool under-wear from ex-sports icon Vegard Ulvang or from the company that boast “Worn by Norwegians since 1853”, namely Devold. But if colourful prints of Norwegian traditional patterns in bright colours tickle your fancy, perhaps ex-snowboarder Kari Traa's collection in merino-wool is more up your alley. Dale of Norway's inner shell underwear in merino is following suit in an area where Icebreaker is one of the few international competitors, as they are for performance ski-outerwear. Both companies have been gaining international attention for creating something very new from something old.

But even though the traditional woolen knit-sweater still may be made with the coarse Norwegian wool, the *bunad* and certainly the wool under-wear next to skin, is not. For the Norwegian products, we are strictly looking at Australian merino. The 100 merino sheep who actually have found their way to Norway, do in no way contribute to these garments. Most of the production is also moved out of the country, as it has in most of Western Europe, perhaps with the exception of Portugal and some of the lower labour-cost-countries in the Baltic region. Even Dale of Norway, which uses Norwegian wool in many of its products and has production facilities in Dale – scours all wool abroad and hand-work like linking the knitted sweaters is done in countries with lower labour-costs. This is a part of the increasingly fragmented value-chain, a phenomenon not purely Norwegian, but a general trend in the European textile industry. Sourcing raw-materials in one continent, producing the textiles in

⁵⁰ The Norwegian name for the folk costumes

⁵¹ Surprisingly enough a Norwegian brand, though we could also have mentioned a slew of other brand-names

another and even sewing the garments in a third has become part of the race for cheaper prices. Norway's once blossoming textile industry has almost completely disappeared (Andersson, 2009).

In light of recent trends, both those on the catwalk (which have been picked up as far downstream as by UK's Tesco in their F&F fashion-collection) and the fact that the SpinExpo Yarn Show and Pitti Filati yarn fair both reported wool prices for apparel as being up because of increased demand (Blecher, 2010), it may be an opportune moment to explore the potential of Norwegian wool where both knowledge and strategic action has been fragmented. Granted, Norwegian designers, along with textile companies and garment industries currently use very little local wool, while the consumers increasingly favour qualities that Norwegian producers currently are unable to meet, but what if there was ways of extracting finer wool qualities – what if there were “hidden” or unexploited qualities? Given that Norwegian wool has technical, environmental and symbolic values that have not been fully exploited, how could existing qualities meet new expectations both nationally and internationally? How could product development, traditional crafts and communication strategies turn the tide?

A Fresh Look

These were some of the questions posed by the Valuing Norwegian Wool project, instigated by SIFO in cooperation with actors from the entire value-chain in Norway. In the food-sector, valuing the local has been an emerging trend and in the EU the system with PDO⁵², PGI⁵³ and TSG⁵⁴ has resulted in 950 protected food-items. The Norwegian coastal wild-sheep is in the process of applying for its meat. (Ironically, the label that is used for food, utilizes the most traditional of all knitting-patterns, the Selbu-rose. But wool is not similarly protected. The only “label” for Norwegian wool, is a private label developed by Curtis Wool in the UK, “Viking Wool”, which Norwegians would be horrified by.) Currently most of the wool from this breed is discarded, even though the breed's undercoat is very fine (Gerhardsen, 2010). Along with the wool from the Spæl-sheep, it just seems hard to card industrially, though both de-hairing machines and mini-mills are ways of extracting the finer microns – again it is a question of cost, of consistency and of return on investment. Why would someone pay a lot more for some of the world's softest wools – maybe as fine as the Vicuna⁵⁵ who supplies the world's most expensive fibre? Except if one was telling the story of sheep-breeds who scare off predators, who ensure Norway's unique cultural landscape, with ties back to Viking-times and who are much brighter than their distant cousins the Norwegian cross-bred (Trodahl, 1998). Mix this in with pictures of Norway's breathtaking nature, the clean air and water – and the environmentally-friendly end result: You may just have a story to sell.

With the high cost of producing anything in Norway, one has to focus on unique items that justify the price-level, according to Trond Giske, Norway's Minister of Trade (Tobiasson, 2010b). Two of the emerging companies working with special sheep-breeds in Norway – Telespinn and Selbu Spinneri – speak passionately about how wool and sheep-breeding is like wine and wine-making⁵⁶. Maybe it is time to get away from the specialized thinking of large-scale farming where sheep are bred for meat, milk or wool? In the US, Tom Chappel who raises Rambouillet sheep and makes underwear from their wool, insists it's a myth that one

⁵² Protected Designation of Origin

⁵³ Protected Geographical Indication

⁵⁴ Traditional Specialty Guaranteed

⁵⁵ One of two wild South American camelids, along with the guanaco, which live in the high alpine areas of the Andes. It is a relative of the llama, and is now believed to be the wild ancestor of domesticated alpacas.

⁵⁶ Espelien and Solheim at the Valuing European Wool meeting, Oslo, September 6th, 2010

has to choose one or the other⁵⁷ (Rambler's Way, 2010). Finisterre, a UK sportswear-brand who sell clothing to surfers have developed a collection of underwear from the local Bowmont-breed, a sheep originally kept for its meat⁵⁸. Ironically the same Bowmont is the poster-sheep for the AWI-backed Wool Campaign.

There is also a recent movement towards product customization within mass production, which does give the users an option to be involved in the design process, at least to some degree (for example Nike iD shoes). This may be a useful tool when designing within the terms of mass production but still having possibility to focus on individualization and user-oriented design (Laitala and Boks, 2010). This is developing rapidly through so-called "crowd-sourcing"⁵⁹ and mobile applications that put designers in direct contact with their customers (Corcoran, 2010). The DIY-movement is also growing rapidly, with knitting as a time-honoured tradition gaining young followers (Bandlien, 2010). We want something unique. The "archivist" digging up old classics like Seil Marschall⁶⁰, Nigel Cabourn⁶¹ and Sealup⁶² have become some of the hottest bloggers in the world of fashion⁶³.

Add to the mix North Circular, the UK knit-design company started by fashion-models Lily Cole and Katherine Poulton who insist that by using the wool from Wensleydale-sheep they save one of the 1800 rasta-looking sheep from slaughter and they have the women who knit the garments hand-write messages on the hand-tags (Aasen, 2010). Norwegian designer Cecilie Melli, who has been designing red-carpet moments for celebrities, recently launched a collection of cardigans from fairly coarse Norwegian wool with frilly decorations, produced in a tiny factory in Northern Norway. Most buyers told her they would never sell, but when she offered them in her own flag-ship store and started telling her customers the story behind them, they flew out the door⁶⁴. And they don't come cheap. But then a recent issue of "How to Spend it" featured a fashion-shoot aptly named "Ahead of the Curve" with mainly woollen items in the price-range of €700 to £3,400 – the latter being an Elie Saab-dress with a wool *under-layer* of all things.

Could wool become a true mainstream fibre again, with double digit market share? It will depend on how wool is positioned as a brand and viewed as a product. Can fine wool give the fibre its old position back? It may be that local lore and tradition will add to the mystique and make local the new organic, Women's Wear Daily among others predict this trend as a consequence of the economic down-turn: Our need to feel safe surfaces in tough times. Oerlikon predicts that consumers will want clothes produced close to home (Engelhardt, 2010). But for European wool this means finding the right breeds, ensuring that they are continually bred for their wool and that one is able to extract the finest fibres, handling them down-stream as they deserve, also pricewise. Last, but not least, the consumer needs to be re-educated on how to treat wool – since it is the consumer-phase that wool wins the life-cycle battle: A good airing and it is ready to go. Along with design for durability.

⁵⁷ <http://www.ramblersway.com/our-story>

⁵⁸ Thomas Podkolinski at the Valuing European Wool meeting, Oslo, September 6th, 2010

⁵⁹ Asking surfers of a web-page to express opinions and give in-put on products in the development-phase

⁶⁰ <http://www.seil-marschall.de>

⁶¹ <http://www.cabourn.com>

⁶² <http://www.sealup.net>

⁶³ Thomas Podkolinski at the Valuing European Wool meeting, Oslo, September 6th, 2010

⁶⁴ Cecilie Melli at the Valuing European Wool meeting, Oslo, September 5th, 2010

The potential for market-uptake on this naturally renewable fibre is there, and with a new look at all the down-stream phases, it could – if one implemented so-called Cradle to Cradle⁶⁵ - processing and design – become *renewawool*⁶⁶. All one needs is a fresh view on wool.

⁶⁵ The system developed by the Environmental Protection Encouragement Agency where products are designed for take-back-system, so they can be disassembled or decomposed

⁶⁶ A word-play on renewable and wool, coined during an informal meeting with the IWTO

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