Hello, I am Helen Crowley and I am the Head of Sustainable Sourcing Innovation at Kering. I will tell you a little bit more about what I actually do at Kering a little later. My background is not in fashion and luxury but rather I was trained as an ecologist and for many years worked around the world in conservation and sustainable development programs. I spent a lot of time in Africa and Madagascar working with governments, local communities and NGOs (non profit organizations) and of course the “wildlife” to find ways to balance the needs of people and nature. Many think this work is exotic – and I guess it was – I got to see amazing places and fantastic wildlife - but I have to say moving into business and especially the luxury sector was “exotic” and different for me! I made the move because, fundamentally, I believe that business can be a driver of change and it can lead in making the world a better place. But, here is the interesting thing, the two worlds of nature conservation and business are not as disconnected as you may think.

At Kering, in a nutshell, my job is to identify innovative and sustainable ways to source raw materials for the products and supply chains of Kering brands. I travel the world visiting farms, mines and other wild (and not so wild) places in search of the highest quality raw materials that are produced in the most ecologically and socially responsible manner. Behind the glamour of luxury fashion and runway shows – there is in fact a complex and fascinating network of supply chains and sourcing that link products back to people and communities, nature and wildlife. My colleagues and I work to make sure that we support and catalyze the most responsible and sustainable production of materials. In this way, we can also ensure that we contribute to protecting biodiversity, regenerating soils, mitigating climate change and building resilient livelihoods for people. You will hear how we do this with some of our important materials such as leather, cashmere, cotton and gold, and these are just some examples of how we identify the sustainability challenges with our raw materials and then go out and work on ways to improve them.

Why do we have such as focus on our raw materials? Well, it is certainly true that we need these high quality materials for our business to succeed, but also the production of these materials have a surprisingly high environmental impact. In fact, when we measure our “environmental footprint” as a company across all our supply chains – through our Environmental Profit and Loss account - we find that majority of impact is at the very beginning of our supply chains – it is connected to how we grow and extract our materials – in fact, it is all about agriculture and mining. While, of course, other processes have an impact, such as dyeing, tanning and manufacturing, and also we need to work on those, perhaps the most change we can leverage is in fact in the way our materials, our raw materials, are produced.
So, over the last several years, I have meet with sheep farmers, goat herders and gold miners and all sorts of other experts to figure out ways of working together to build a more sustainable world through more sustainable fashion materials. After years in the field working for nature conservation and sustainable development, and now at Kering, I really believe that we really can make a difference – We can ensure that our “natural capital” remains and that we help people and communities around the world - through

the , sometimes small, choices we that make – particularly in the way we design, make and buy our clothes and accessories.
Please stay tuned for more.

COTTON

Cotton is a miracle material, made from air and sunshine!
It is a fibre produced from a plant, so - photosynthesis (sunshine) and Carbon dioxide (air) - along with water and nutrients created it.
There are several varieties of cotton – you may of hear about some of them, like Suuvin, Pima, Sea Island – and these all differ in their fineness and their length – and they result in more silky or more bulky yarns. Cotton is really a "basic" fibre for apparel but also its qualities and variety allow it to be used for products from everyday to luxury.

You probably hear a great deal about cotton being the "thirsty crop" as it's cultivation can require a lot of water which is a scarce resource in the drier environments that cotton prefers to grow. Also, there are other sustainability concerns associated with the fact that cotton cultivation may use as much as 1/3 of the world's chemical pesticides and synthetic fertilizers and the fact that in some cotton countries cotton picking may be done by children and others that are forced into the work. These are very real concerns and cotton does sometimes have a somewhat bad reputation when it comes to sustainability.

However, as a versatile and renewable material upon which many millions depend for their livelihoods, it deserves a deep dive into the details to better understand how we can support more sustainable cotton.

Firstly, it is important to know that cotton can be grown on different types of farms.
Some farms are large scale and quite mechanized - such as in the USA and Australia – where cotton is the only crop grown on those farms.
However most cotton around the world is grown by "small hold" farmers. in fact there are millions and millions of people that depend on cotton cultivation. These farmers and their families grow their cotton on small plots of land of up to 4 hectares (or 10 acres) and they grow their cotton alongside many other crops.

As I said, Cotton is a plant that grows well in dry places – it has a long tap root to seek out water - so the challenge of water use is a big one - it needs water in areas where water is scarces. Although, a little anecdote here – when I was with farmers in Zambia, they actually said to me they really liked having cotton growing on their mixed farms because, they said, it helped bring the water up to the surface, for the other crops to use. Arguably, the problem is cotton has been grown on a large scale in places where perhaps it should not be grown like this – for example, in Central Asia the Aral Sea has been drained for agricultural (mostly cotton cultivation) in surrounding countries . This is possibly one of the greatest environmental disasters of the 20th century with all sorts of social and cultural ramifications also.

Cotton grown with lots of chemical inputs also leads to greenhouse gas emissions, the loss of soil productivity and water pollution. Over the last 20 years there has also been a rapid increase in the amount of genetically modified cotton that is in cultivation. Farmers using this type of cotton cannot grown their own seeds but instead need to buy them along with the chemical inputs that support the growth of genetically modified cotton.

So, you get the idea on how complicated this can be - on the one hand – we have an agricultural product, cotton, that is hugely important for livelihoods of farmers, that is renewable and natural and that is a valuable raw material for many, many products. On the other hand, because of the way it is often grown, we have the challenges of water and chemical use, labour conditions ,soil degradation and contribution to climate change. It seems overwhelming - I know - but in fact it is not.
There are solutions – we focus on supporting better ways of cultivating cotton and using the certification and traceability schemes that exist to help us verify and enforce best practices.

One example of this, that is perhaps the “gold standard” of sustainability for cotton is the certification ‘Organic’ and ‘Fair trade’. Now, while certifications are not always a 100% guaranteed, we can say that with ‘Organic’ and ‘Fair trade’ they are both super well established and well managed certifications. Fair trade mainly covers the social/labour aspects of cotton production while organic primarily covers the cultivation aspects. Then, you also have the certification Global Organic Textile Standard (commonly called “GOTS”) that can help you ensure that the cotton from the organic farm really does end up in your yarn, your fabric and your product.

Let’s dig a little deeper - if this is the gold standard – what does organic farming actually mean? Well, technically, it means that farmers cannot use synthetic fertilizers, chemical pesticides and that they cannot use genetic modified seeds. But actually what it really means is the creation of a resilient and robust and sustainable agriculture system. Organic farming is based on natural ecological process rather than artificial inputs but it also uses science and innovation to ensure the health and well being of the farmers, soils and the land. Organic small hold cotton farms usually grow a variety of crops – including food and fibre crops for cash income but also for their consumption by the farmer’s families – for example – soya, sunflower, beans and so on. On farms I visited in Northern India and Madagascar – there were up to 17 other crops being produced alongside cotton. Importantly, these crops can actually help improve the soil and create a system of pest management in a natural way. So organic cotton farmers do not need to rely on only one crop for their livelihood. Also, from the perspective of the farmer the fact that they can make their own biological (organic) fertilizers and pesticides and the fact that they can grow their own seeds for the next years crop, means they do not have to spend money to buy synthetic inputs and seeds and happily, they are also healthier because they are not exposed to toxic chemicals.

Additionally, but importantly, organic agriculture contributes to the biodiversity of the soil – it actually replenishes the soil – restoring the important fungi and microorganisms that

give soil its fertility and that absorb Carbon dioxide from the atmosphere. Also, when the soil is healthy it also retains a lot more water so less irrigation is needed.

Organic and Fair trade cotton – clearly offers positive biodiversity, climate and livelihoods benefits. There are of course still risks for the farmer – pest outbreaks that cannot be managed and conversion to organic can take a lot of time and effort – and this is, in part, why there is often a premium price on organic cotton. Farmers need to be supported.
While I really try to promote transformative change – sometimes we do need to look to incremental change first – so, let me say, it is important to acknowledge that, in some cases, it may not be possible to move entirely to organic production any time soon. And in these cases it is important to look to other types of farming practices and certification that encourage things like reduced use of pesticides and synthetic chemicals, better soil and water management and good labour practices

There is still much work to do to ensure there is a growing market for organic cotton, that the farmers derive benefits from organic production and that the supply chain respects the integrity of organic cotton – but it is demand *from you* that would help make this a reality. It is really not a hard choice to make – choose organic wherever you can, whenever you can – it will make a difference! the question is not why would you do that but rather why not?

What we all want is that cotton – a versatile, amazing, natural and renewable material – can continue to be produced in a sustainable, responsible and healthy way!

GOLD

Who doesn't love gold ? It is a precious and beautiful material that has been used in lovely products for millennia! Although it seems ubiquitous, it is in fact it is quite rare, all the gold that has ever been taken from the earth would fit in just over 3 Olympic swimming pools – and interestingly all that gold it still is around – in jewelry, gold ingots, electronics,coins and so on – it can be (and in fact is) recycled over and over again. We will get back to recycling a little later on– but first let's first focus on the sustainability challenges with the mining of gold.
Behind the "glitter" there can be a story that is not nearly as seductive as the metal itself and, in fact, gold has been called the "dirtiest metal". Gold mining can be associated with a long list of serious and dramatic environmental and social challenges including things like:
- The release of toxic chemicals such as Mercury and Cyanide into the environment that in turn, inflicts, harm on the health of people and animals.
- The loss of natural habitats and wildlife as land is cleared for mining
- Support of armed conflict and use of child labour, slavery and forced labour

Sourcing "responsible" or, as it is sometimes known, "ethical", gold means taking these risks and issues seriously and dealing with them. It means knowing where your gold is

coming from and ensuring that it is mined and processed according to strict standards and practices. It also means supporting mining practices that not only mitigate the negative environmental impact but that can lead to opportunities for communities and positive outcomes for people and the environment.
Gold can be mined in two major ways – firstly through large scale industrial mines and secondly, through small scale artisanal mines. While perhaps only 20% of the world's gold is extracted by small scale miners with very basic instruments – the number of people, families and communities supported by this type of mining is between 100 and 200 million. This is 10-20 times more than those employed and supported by industrial mining. So it is clear, that when well managed, small scale mining can offer a significant livelihood to many millions of people. And it is therefore very important that we consider both types of mining - industrial and artisanal small scale - when we want to create positive outcomes through our responsible and ethical sourcing.
I have visited many small scale artisanal miners and mining communities in South-Western Peru – you would not believe how hard these people work to make a living from mining gold – they dig straight into rock in the steep mountainsides – sometimes reusing the ancient holes that were dug 1000s of years ago and with the simplest of instruments. The women of the communities are not allowed into the mines – as it is considered bad luck – but they work doubly hard on the dumps of waste rock sorting through to find if some gold has been missed.
The good news is that there is increasing focus on how to support best practices in mining and also how to verify this with certifications and standards. For example, there is a Responsible Jewelry Council, the International Responsible Mining Alliance, Fairmined and Fair Trade. Also, there are international guidelines such as those from the OECD that are being used more and more as the basis for government legislation – which means we are becoming legally obligated to respect certain standards in mining. These certifications and the support to the mining communities that go with them, mean things like basic safety and working conditions are respected, that chemicals are well-managed and that women are paid and respected for their work. There are Many companies in the jewelry and electronics sectors who are working hard to ensure that they know their gold is mined and processed in a responsible manner.
Some companies have decided to only use "recycled" gold and depending on the global market anywhere from 25%-40% of gold being sold is from recycled sources. This can be a good approach but even there – we need to know where the gold came from before it was recycled. So while sourcing recycled gold is a good choice, it is not a choice that is really driving change and rewarding improved practices for responsible and ethical mining.
So, next time you use or buy something golden think about making sure it comes from from a good sources and let's make sure that there is a beautiful story behind that beautiful material!

CASHMERE

Cashmere is probably one of the most well-known of the "noble fibres" - a natural luxurious fibre with special characteristics of fineness, softness and warmth. It has been

used for centuries – in fact Genghis Khan was probably wearing cashmere as he galloped across the Central Asian plains nearly 1000 years ago.
Cashmere is actually produced in the cold desert grassland regions of Central Asia – now a days – most cashmere comes Mongolia and Inner Mongolia in China. A variety of domestic goats has adapted to the cold climate of this region by growing a fine and warm "undercoat of hair" – this is cashmere – and it is collected by hand-combing the goats each year in early Spring. In Mongolia, the cashmere goats are central to the livelihoods of traditional, nomadic herders who move between winter and summer pastures across the vast grasslands – seeking out the best conditions for their goats.

So, if for centuries, this traditional herding practice has been going on, why are we concerned about sustainability? Interestingly, all the sustainability challenges stem from the fact that the market situation has fundamentally changed - cashmere has basically become less of a "luxury" and more of a "commodity" – it used to be much rarer and regarded as more precious than it is now. So, to make a long story short, over the last 20-30 years the cashmere market has expanded in 'high street' retail and this new consumer demand has lead to a rapid increase in the number of goats – in fact there are now around four times as many goats in Mongolia then there were 30 years ago. The problem is simply that the fragile cold desert environment cannot sustain this level of grazing – as you may or may not know – goats are really effective grazers – they will eat everything. So overgrazing over the last two decades has led to massive land degradation and soil erosion and this has been compounded by a changing climate that is becoming hotter and drier in this region. One of the most noticeable consequences of the overgrazing has been the huge dust storms that form over Central Asia and sweep across China with impacts beyond China, over the Pacific to even the West Coast of the USA.
The result of all this is that, in spite of an increased market for cashmere, it has actually become more difficult to have productive and sustainable cashmere systems and it is harder, not easier, for the goats to produce quality cashmere and their herders to get a good livelihood.
The Chinese are dealing with this by changing the system by which cashmere is produced in their country - making it a more intensive system but this may have significant social and culture impacts as the herding livelihood is radically changed. In the case of Mongolia, where the land is generally in a better state than in China, there are various initiatives underway to change grazing practices and to improve pastureland.
So in order to ensure that cashmere is sustainably produced and remains a beautiful natural material for fashion – we need to consider how the land is used and managed and the social and cultural context of the herders. There is also actually another challenge we need to address and it is somewhat "hidden" – this challenge has been highlighted in recent years by some of my conservation colleagues. One of the consequences of increase in domestic livestock, like goats, has been the decrease in native wildlife. These grassland regions should be full of animals such as wolves, snow leopards, wild asses, antelope and so on, but for two main reasons this is not the case any more. Firstly, these animals can compete directly with goats for pasture and water and secondly, the predators – such as the wolves and snow leopards - who have less

natural prey – suffer – and they also sometimes resort to eating goats and are hunted for that reason. So, those reasons have led to disastrous decline in native wildlife, and in fact, it means the whole grassland system is not functioning properly.
Some of the more advanced initiatives developing sustainable cashmere – such as the one that Kering is supporting in the South Gobi of Mongolia – are working with herders to find ways of protecting local biodiversity as well as developing systems of sustainable grazing. This will ultimately lead to maintaining the grasslands by creating a more "natural" system that can regenerate and that can, at the same time, support goats as well as native wildlife.
I have visited magnificent Mongolia and met with the proud herders who work so hard to produce marvelous cashmere fibre – to work with them and local experts to design sustainable and wildlife friendly grazing practices. By the way, if you ever have a chance, I would encourage you to visit Mongolia one day. So we are all just at the beginning of creating new production systems for sustainable cashmere and in creating ways to certifying and verifying these systems. You can help with this by being sure you know where your cashmere comes from and seeking out, where you can – more sustainable and traceable cashmere. You also need to understand that you sort of get what you pay for and if something is cheap, like "cheap cashmere" it is probably cheap for a reason, and it may be lower quality, mixed with other fibres that are not even cashmere. It also probably comes from unsustainable sources and is not delivering real benefits to the herding families that work hard to produce it.
Let's not turn away from using cashmere because it is perceived as "unsustainable" but rather let's work together to make cashmere a real "luxury" noble fibre again and one that delivers benefits to people and nature.

LEATHER

Let's talk about leather – an amazing material that we have been using for millennia – in fact a leather shoe was found in a cave in Armenia that was dated 5500 years old – now that says something about stone age tanning techniques! However, as you probably know, leather – because it is linked to livestock farming and many other process steps - has some very real sustainability challenges associated with it.
Basically, leather is made from the skin of animals – predominately domestic farmed animals such as cattle, sheep and goats. It is seen as a "co-product" of the food and meat industry, and this means that the animals are raised primarily for their meat but their "hide" or skin also has an economic value. It may represent only 8-10% of the economic value of the animal as a whole but it is still a key part of the industry. So, when we want to focus on "sustainability", it is important for us to acknowledge that the leather is associated with the broader impacts of the food and meat industry right down to the farm level.

There is a vast array of different 'qualities' of hides and leather based of the variety and the race and the age and the health of the animal. So, "leather" is not simply one type of animal or one type of skin – and, depending on the brand and the product, there are

different types of leather that are prefered and used. This makes things a little more complicated in terms of sustainability because we have to look at the many ways farming is done in different parts of the world.

Of course, to get to “leather” - the hides and skins go through several stages of processing including pickling and tanning that basically stop the leather degrading and make it something long lasting – even for 1000s of years. There are many innovative initiatives exploring new (and old) ways of tanning that have a lower environmental footprint - they use less chemicals, less water and less energy.
Let's note then that it is important to understand that all along the supply chain of leather – from the animal on the farm to the processing and tanning and to the final manufacture into shoes and handbags and accessories – that there are sustainability challenges both environmental and social. However, for today we are going to look at farming and agriculture – because it is here where there are huge impacts and that is here where we can catalyze change.

The way we use our land, and the type of agriculture we practice can have a significant local and global negative environmental impact. For example – it is estimated that anywhere between 8 and 18% of the greenhouse gases emitted each year comes from livestock production. Additionally, livestock production uses as much as 20% of the worlds scarcer and scarcer freshwater. Then there are the challenges of clearing of natural forests and grasslands and other natural habitats for the animal grazing and for the production of the livestock feed. And, on top of these environmental challenges, there are also important concerns for the welfare of people and animals on the farms. So, while tackling greenhouse gas emissions, water use, water pollution from agricultural run off, biodiversity conservation, animal welfare, labour standards and so – seem a long way from handbags and shoes we do need to recognize these impacts of our final products before we can make the right choices to improve the situation.

I am sure you all hear about the “doom and gloom” aspects of cattle raising and agriculture - and it can be overwhelming - but let's talk solutions. Simply put – farming does not have to be that destructive – it can actually be positive for people, for the land and animals – and we need to change the system and promote more sustainable farming and more sustainable production – because it is possible!

If we do that and also get more efficient and careful in the way we manufacture and sell leather products – then we will start to make a difference!
So here are some first steps to think about as you commit to more sustainable leather:

As I have said, you need to understand what is happening at the farm level, what is sustainable or not. Well, for that, of course the first thing you need to know is where does your leather comes from – that is really a tough challenge but many brands and their suppliers are working on this and, every day, there are more technologies that can help with traceability of leather. Keep in mind – somewhere, someone knows where the leather is coming from, so with focus getting that information is actually becoming easier.

Once you know where the hides come from you can figure out the type of farming system that was used to produce them and you can get the answers to important questions like:

- Is there any conversion of natural ecosystems to farmland?
- Are they using a lot of synthetic chemical inputs such as fertilizers and pesticides?
- Do they use a system of “planned grazing” or “holistic management” to make sure they do not overgraze their farms?
- Are they protecting native wildlife on their farms or not?
- Are they irrigating – and if so where does the water come from?
- What are the standards of animal welfare?

That's just to name a few.

The answers to these questions will give you a picture of what is happening on the farm, and then you will start having the information to determine whether your leather is coming for a more or less sustainable source. Be cheered that in fact there are a lot of farmers all over the world that are trying out new ways of grazing – grazing that can regenerate the land and the soil and that can protect wildlife. There are also an increasing number of farm certifications that can help you identify who is doing best practices. I am not going to list them all here but some examples include the following: In South Africa there is a certification called the ‘Karoo Meat of Origin’ and that's for the production of lamb that supports best practices for land management on native Karoo bushland. Another example is the ‘Rainforest Alliance Sustainable Agriculture Network’ (SAN) this is a certification that you can find around the world for farming systems. And just recently a new initiative was launched by the Textile Exchange to develop a sustainable leather standard and certification. In addition, as you probably see in your supermarket, there are more and more farms that are promoting their sustainable practices – through “grass fed”, “free range”, “local and organic” and these are also good indications of sources of more sustainable produced meat and hides. All of these will help highlight improved, low impact and sustainable farming.

So, I have to be honest with you, it is not that easy to leverage change in leather production and farming through the supply chain. One choice that individuals can make is to not use leather at all and it is important that people can use their “shopping votes” in different ways. However, many will still want to use leather and ultimately, it is going to be important to change agricultural systems for the better - to reward farmers that do the best practices for the land and for the animals. Agriculture that restores soils and cares for animals has the potential to drive significant environmental improvements including mitigating climate change and supporting billions of people in sustainable livelihoods. So in fact it is not just “less bad” but rather about doing “more good”. We can all contribute to driving global change through choosing how things are made and what they are made from – you can do this by asking more about your leather, making choices of what to buy, what you use, all this so you can be proud of your leather products.

Thank you all for listening – so just to leave you with some final points that help me be more optimistic in my work and life and that I hope help you a little too:
- First, have an understanding on how materials and raw materials are produced, it is super important if we want to be sustainable – and more and more people are caring about this.
- Second, It is complicated but there are solutions out there – think out of the box - and it is exciting to be be part of the movement to make theses solutions more powerful and effective
- Third, It is clear we can leverage significant change through sometimes not so big decisions and choices –and it is getting easier to educate and empower ourselves to make those choices
And finally from the brilliant mind of Albert Einstein – keep in your minds:
We cannot solve our problems with the same thinking we used when we created them.
Thank you.