HUGO BOSS

RAW MATERIAL ASSESSMENT

We analyze and prioritize our materials using a volume-based scale approach. Cotton and polyester are our most used materials and in the center of this analysis.
The assessed criteria are Climate Change, Water and Biodiversity & Land. All information contained below is based on third-party standards and studies, which are summarized accordingly. To understand the valuation please refer to the legend below.

HUGO BOSS internal valuation of impact and effects			
Low negative impact	-	Low to neutral positive effect	+
Negative impact	--	Positive effect	++
High negative impact	---	High positive effect	+++

COTTON: Cotton accounts for 57% of our production volume.
Our preferred cotton is sourced from regenerative agriculture or recycled materials, as outlined in the analysis below.

		Climate Change		**Water**		**Biodiversity & Land**
General		Cotton in general has rather low greenhouse gas emissions compared to other fibers. Source		Water depletion in cotton cultivation depends on the local climate conditions. In dry areas irrigation technology can help to reduce the water footprint. Source		With only 3% of the world's agricultural area, cotton has a rather limited impact on biodiversity. The applied agriculture practice can still have an impact on local biodiversity and land use change. Source
Conventional cotton	-	The production of conventional cotton generates the highest greenhouse gas emissions among the various types of cotton evaluated. The emissions are roughly 2 $kgCO_2e$/kg material (according to industry standards). Source	-	Water depletion can become an issue under certain climatic conditions if irrigation technologies or water-saving initiatives, such as water productivity, are not implemented. Source	--	For conventional cotton, restrictions on land use changes, as well as any biodiversity safeguarding measures, are only regulated by the national laws of each countries. Source
Other recognized standards	-	Other recognized cotton standards slightly improve the impact on climate as compared to conventional cotton, with roughly 1 $kgCO_2e$/kg material (according to industry standards). Source	+	The various recognized cotton standards are based on water consumption reduction measures or rely on rain-fed systems. Source	-	Most other recognized standards have minimal restrictions on pesticide use, impacting biodiversity and land use change. Source
Certified organic cotton	-	Certified organic cotton slightly improves the impact on climate as compared to other recognized cotton standards, with roughly 1 $kgCO_2e$/kg material (according to industry standards). Additionally, the soil has the potential to better absorb carbon, when using organic practices. Source	+	Good soil quality achieved through organic practices enhances resilience and performs better during drought and floods. Source	+	Depending on the specific organic agriculture practices applied, biodiversity conservation is included. Source
Mechanically recycled cotton	+	Due to only mechanical processing required (no agriculture practices are involved), the climate impact is even lower compared to the cotton types above. Emissions are roughly 0.4 $kgCO_2e$/kg material (according to industry standards). Source	+++	Mechanically recycled cotton has little to no (indirect) water impact. Source	+++	Mechanically recycled cotton has little to no (indirect) impact on biodiversity and helps conserve land by reusing resources. Source
Cotton from regenerative agriculture	++	Regenerative agriculture has the potential to absorb more CO2 than it emits. Source	+	Good soil quality achieved through regenerative practices enhances resilience, performing better during drought and floods, similar to organic cotton. Source	++	Conservation and restoration of biodiversity are part of regenerative principles. Source

POLYESTER: Polyester accounts for 13% of our production volume. Our preferred polyester is sourced from closed-loop recycled and degradable sources. Besides, we evaluate biobased sources, such as Polylactic Acid (PLA), under diligent consideration of raw material sources, fiber production as well as degradability aspects.

		Climate Change		**Water**		**Biodiversity & Land**
General		Fossil-based polyester relies on non-renewable feedstocks and, depending on the source (e.g., fracking), can have significant environmental side effects. Additionally, the energy used in its production (e.g., coal) can increase greenhouse gas emissions. Source		The main issue in polyester is water pollution. It comes from the release of microplastics during production as well as during the use phase, and later when disposed in landfills. Source Source		Synthetic fibers, such as polyester, come from fossil fuel mining and shed microplastics that can end up in the ocean and other ecosystems. At the end of their lifecycle, the disposal of synthetic fibers can further impact biodiversity and potentially cause habitat loss. Source
Virgin polyester	---	Virgin polyester is derived from non-renewable, fossil-based resources, contributing to climate change. Emissions are roughly 7 $kgCO_2e$/kg material (according to industry standards). Source	--	The production of raw fibers requires a rather minimal use of water. However, washing releases microplastics that can end up in rivers, lakes, and oceans. (Between 1.1 and 12 million fibers can be released per wash cycle of 2 kg of clothing.) Source Source	--	The extraction of fossil-based feedstock can negatively impact biodiversity, soil quality and land use. Source Source
Polyester chemically recycled (closed-loop)	--	The production of closed-loop chemically recycled polyester requires energy, water, and chemicals. However, transitioning from virgin PET filament to chemically recycled PET filament yarn can achieve a reduction in greenhouse gas emissions. Emissions are roughly 5 $kgCO_2e$/kg material (according to industry standards). Source Source	--	The production of raw fibers requires a rather minimal use of water. However, washing releases microplastics that can end up in rivers, lakes, and oceans. (Between 1.1 and 12 million fibers can be released per wash cycle of 2 kg of clothing.) Source Source	-	Chemically closed-loop recycled polyester has a limited impact on biodiversity and helps conserve biodiversity and land by reusing resources. Source Source
Polyester chemically recycled (closed-loop) and degradable according to standards from ASTM and/or ISO (e.g. ISO 24187)	--	The production of closed-loop chemically recycled polyester requires energy, water, and chemicals. However, transitioning from virgin PET filament to chemically recycled PET filament yarn can achieve a reduction in greenhouse gas emissions. Emissions are roughly 5 $kgCO_2e$/kg material (according to industry standards). Source Source	-	Adding additives allows the fiber to degrade according to ASTM D6691-17 (equivalent to ISO). Source	+	Chemically closed-loop recycled polyester has a limited impact on biodiversity and helps conserve biodiversity and land by reusing resources. Besides, the degradability has a postive environmental effect. Source Source
Bioplastics such as Polylactic Acid (PLA)	+	Bioplastics such as PLA have the potential for lower greenhouse gas emissions compared to the fossil-based counterparts. Emissions range from -1.0 to 1.7 $kgCO_2e$/kg material according to research. Source	**no general evaluation possible yet**	The total water consumption and pollution depends mainly on the different fiber production. Source	**no general evaluation possible yet**	The impact depends on the source of the raw material. It's potential degradability can have a positive effect. Source