

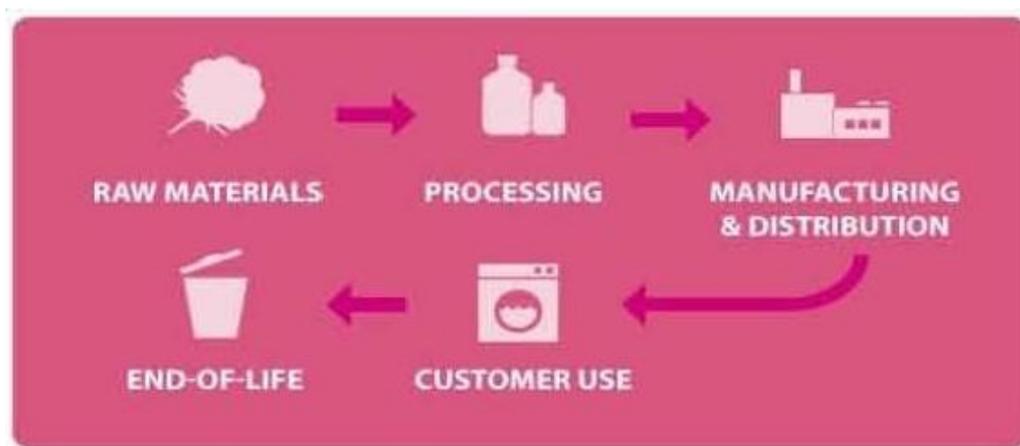


PRESS KIT

PUMA's Product Value Chain

PUMA outsources the majority of its production and approximately 90% of this production takes place in the Far East. With outsourced activities, it is more difficult to control the impact on issues such as sustainability.

The range of environmental impacts that occurs across the value chain differs significantly. The below diagram represents the major sections of the value chain of PUMA products.



PUMA's Supply Chain

Raw Materials represents both natural and synthetic materials in their raw state, for example cotton plants, raw hides and rubber trees. Leather and cotton production require significant quantities of water, land, herbicides, insecticides and fertilizer. These inputs into the fourth tier can cause significant problems such as diminishing local water supplies, deforestation, affecting ecosystem genetics and balance, soil erosion, methane production, eutrophication, soil contamination and water pollution. These problems can then lead to flooding, reduction of biodiversity, decrease in agricultural productivity and the pollution of drinkable water supply; everything is inter-connected.

Processing represents the processing of raw materials, for example a leather tannery or a rubber processing facility. The tanning process transforms a wet blue hide into a useable form of leather and is associated with large environmental impacts. During the tanning process chromium, a heavy metal, volatile organic compounds (VOCs), sulphides and particulates are released into the local environment. In addition, the wastewater from the tanning process is extremely contaminated and requires extensive treatment before it can be released back into the local water supply. Likewise, natural and synthetic rubber processing also creates a highly toxic effluent, VOCs and carbon dioxide. The production of synthetic fibres, such as polyester, also has similar impacts, as well as, high energy use and the release of air pollutants. Cotton dye houses require significant amounts of energy, chemicals and water; up to 200 litres per 1kg fabric, which in turns leads to wastewater.

Manufacturing represents the manufacture of the finished product and is the last stage in the manufacturing process. Some of our suppliers have vulcanisation processes. The vulcanisation of rubber is considered to have a high impact due to its use of heavy metals, such as lead and zinc oxide, which are toxic to many species and can severely affect the local water quality if discharged untreated. The use of solvent based adhesives in the assembly process also utilise a range of harmful VOCs. The facility and machinery also uses a significant amount of energy and water consumption and produces both municipal and hazardous waste. It also represents any outsourced processes, for example embroiders, cutters and printers. The impact at this stage is relatively minimal compared to other stages in the value chain due to the minimal and often simple processes undertaken. The largest impacts arise from energy and water consumption, in addition to, waste generation.

Distribution represents warehouses, retail and offices have relatively little impact compared to other areas of the value chain, the most important being water and energy consumption and municipal waste generation. It also includes Logistics and transportation. Modes used to transport freight include shipping, road, rail and air. The majority of the impact caused by logistics relates to the combustion of fossil fuels such air pollutants produced and include carbon dioxide, nitrogen oxides, particulate matter, ozone, VOCs, water vapour, carbon monoxide, hydrocarbons and sulphur dioxide. There can also be significant marine pollution caused by the shipping of products.

Customer Use

The customer use phase of the value chain includes activities from the point of purchase up to disposal. Impacts include transportation from the retail outlet to the customer's home, washing, drying and ironing of products, and complementary inputs, such as detergent. The majority of the impact in the customer use stage comes from the water and energy used during washing and drying. For footwear products, the only customer use activity is the transportation of the product from the retail outlet to the customer's home.

Disposal

The disposal of a product relies on what the customer does with their worn clothes and shoes. Impacts will vary depending on rates of donation and local re-use and recycling programs. Impacts will also vary depending on where the clothing is sent, for how long it is used, and how often purchasing a used article of clothing replaces a new article. Additionally, clothing is often thrown away and ultimately landfilled or incinerated. Customer education programs about re-use and recycling can improve the amount of clothing that makes its way to landfills and incinerators.