

Sustainable Stitch Fabric Impact Ratings – Sources

	Data	Sources
1	Energy consumption and water requirements of various fabric	http://randd.defra.gov.uk/Document.aspx?Document=EV0420_9092_FRP.pdf
2	Energy-related CO2 emissions for all fabrics	[a] https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator [b] https://www.bsr.org/reports/BSR_Apparel_Supply_Chain_Carbon_Report.pdf
3	Global warming potential of various gases	https://cdiac.ess-dive.lbl.gov/pns/current_ghg.html
4	Pesticide-related CO2 emissions for all plant-derived fabrics (non-organic)	https://dspace.lib.cranfield.ac.uk/bitstream/handle/1826/3913/Estimation_of_the_greenhouse_gas_emissions_from_agricultural_pesticide_manufacture_and_use-2009.pdf
5	Pesticide-related CO2 emissions for all animal-derived fabrics (non-organic)	[a] http://www.fluoridealert.org/wp-content/pesticides/magnesium.fluoro.australia.pdf [b] https://dspace.lib.cranfield.ac.uk/bitstream/handle/1826/3913/Estimation_of_the_greenhouse_gas_emissions_from_agricultural_pesticide_manufacture_and_use-2009.pdf [c] https://www.iwto.org/sheep
6	Methane emissions during end-of-life of natural fabrics	[a] http://www.seas.columbia.edu/earth/wtert/sofos/SK_Methane1.pdf [b] http://datatopics.worldbank.org/what-a-waste/trends_in_solid_waste_management.html [c] https://www3.epa.gov/ttnchie1/efpac/ghg/GHG_Biogenic_Report_draft_Dec1410.pdf
7	Methane emissions by livestock used to produce animal-derived fabrics	[a] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3981797/ [b] http://www.fao.org/3/t0279e/t0279e05.htm [c] https://pdfs.semanticscholar.org/327c/403ea76d618a40c4f64e90a8daba9c2646cf.pdf [d] https://www.iwto.org/sheep [e] https://teara.govt.nz/en/goats-and-goat-farming/page-4 [f] http://www.fao.org/fileadmin/templates/est/COMM_MARKETS_MONITORING/Hides_Skins/Documents/Market_review_hides_and_skins_-_2008.pdf [g] https://extension.tennessee.edu/publications/Documents/PB1822.pdf [h] http://pods.dasnr.okstate.edu/docushare/dsweb/Get/Document-1921/E-974web.pdf
8	Fertilizer-related N2O emissions for all plant-derived fabrics (non-organic)	[a] https://lter.kbs.msu.edu/docs/robertson/Millar_et_al_2012_ACR.pdf [b] http://www.fao.org/tempref/docrep/fao/009/a0787e/A0787E00.pdf

	Data	Sources
9	CO2 emissions during end-of-life of synthetic fabrics	[a] https://www.epa.gov/ghgemissions/overview-greenhouse-gases [b] https://www.ucsusa.org/global-warming/science-and-impacts/science/each-countrys-share-of-co2.html [c] https://www.plasticseurope.org/download_file/force/1089/181 [d] https://www.plasticseurope.org/application/files/5715/1717/4180/Plastics_the_facts_2017_FINAL_for_website_one_page.pdf
10	Water, energy, and land requirements for recycled cotton	https://www.researchgate.net/publication/319710965_LCA_on_Recycling_Cotton
11	Water requirements for organic hemp, organic linen, and organic cotton	[a] https://www.academia.edu/11918134/Watering_the_farm_Comparing_organic_and_conventional_irrigation_water_use_in_the_Murray-Darling_Basin_Australia [b] http://randd.defra.gov.uk/Document.aspx?Document=EV0420_9092_FRP.pdf
12	Land and energy requirements for hemp, organic hemp, cotton, and organic cotton	https://mediamanager.sei.org/documents/Publications/SEI-Report-EcologicalFootprintAndWaterAnalysisOfCottonHempAndPolyester-2005.pdf
13	Land requirements for organic linen and organic wool	[a] https://senr.osu.edu/sites/senr/files/publication_files/Lorenz%20and%20Lal%20Adv%20in%20Agron.pdf [b] http://randd.defra.gov.uk/Document.aspx?Document=EV0420_9092_FRP.pdf
14	Energy requirements for organic linen and organic wool	[a] http://orgprints.org/6784/2/OF0405_909_TRP.pdf [b] http://randd.defra.gov.uk/Document.aspx?Document=EV0420_9092_FRP.pdf
15	Land requirements for soybean fabric	https://farmdocdaily.illinois.edu/2015/12/international-benchmarks-for-soybean-production.html
16	Water requirements, energy requirements, and air emissions for recycled polyester, recycled nylon, and recycled acrylic	[a] https://norden.diva-portal.org/smash/get/diva2:957517/FULLTEXT02.pdf [b] https://ec.europa.eu/environment/eussd/smgp/pdf/JRC_Normalisation_method_and_data_EF_web.pdf [c] http://randd.defra.gov.uk/Document.aspx?Document=EV0420_9092_FRP.pdf
17	Water, land, and energy requirements for recycled wool	[a] https://europeanoutdoorgroup.com/wp-content/uploads/2018/04/2018.04.13-EOG-Recycled-Wool-Report-Final.pdf [b] http://randd.defra.gov.uk/Document.aspx?Document=EV0420_9092_FRP.pdf
18	Land requirements for silk	http://agritech.tnau.ac.in/sericulture/seri_faqs.html

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19	Water, land, and energy requirements for pineapple fabric	[a] https://www.ananas-anam.com/about-us/ [b] https://www.hindawi.com/journals/ijps/2015/950567/ [c] http://pca.da.gov.ph/coconutrde/images/decom.pdf [d] https://www.ocean.washington.edu/courses/envir215/energynumbers.pdf [e] http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.925.347&rep=rep1&type=pdf [f] https://books.google.com/books?id=3rxQAAwAAQBA [g] http://pubs.sciepub.com/ajer/2/3/2/index.html
20	Water, land, and energy requirements for kapok fabric	[a] https://ucanr.edu/sites/UrbanHort/Water_Use_of_Turfgrass_and_Landscape_Plant_Materials/Estimating_Water_Requirements_of_Landscape_Trees/ [b] https://www.nationalgeographic.com/environment/habitats/rain-forests/ [c] http://www.worldagroforestry.org/treedb/AFTPDFS/Ceiba_pentandra.PDF [d] http://www.philfida.da.gov.ph/images/Publications/Technoguides/KAPOK.pdf [e] https://mediamanager.sei.org/documents/Publications/SEI-Report-EcologicalFootprintAndWaterAnalysisOfCottonHempAndPolyester-2005.pdf
21	Land requirements of bamboo fabric	http://www.bambooteam.com/pablo/200810%20INBAR%20TR%2030%20v2.7%20incl%20figures%20SMALL.pdf
22	Water, land and energy requirements for deadstock fabric	[a] https://norden.diva-portal.org/smash/get/diva2:957517/FULLTEXT02.pdf [b] https://ec.europa.eu/environment/eussd/smgp/pdf/JRC_Normalisation_method_and_data_EF_web.pdf [c] https://www.sciencedirect.com/science/article/pii/S0959652618305985#bib8
23	Water requirements for organic wool	[a] https://attra.ncat.org/attra-pub/download.php?id=209 [b] https://www.iwto.org/sheep
24	Water requirements, energy requirements, land requirements, and air emissions for Polypropylene	https://www.plasticseurope.org/en/resources/eco-profiles#
25	Water requirements of alpaca fabric	[a] http://nwschoolanimals.com/alpacas/alpacas-food-water/ [b] https://pdfs.semanticscholar.org/327c/403ea76d618a40c4f64e90a8daba9c2646cf.pdf

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26	Land requirements of alpaca fabric	[a] https://www.uaex.edu/farm-ranch/animals-forages/other-livestock/llamas-alpacas/llamaalpaca_attrapub.pdf [b] https://pdfs.semanticscholar.org/327c/403ea76d618a40c4f64e90a8daba9c2646cf.pdf
27	Water requirements, energy requirements, land requirements, and air emissions for spandex	https://www.plasticseurope.org/en/resources/eco-profiles#
28	Land requirements of all synthetic fabrics	https://www.nrdc.org/sites/default/files/CBD-Fiber-Selection-FS.pdf
29	Air emissions for polyester	http://www.inference.org.uk/sustainable/LCA/elcd/external_docs/peta_311147fa-fabd-11da-974d-0800200c9a66.pdf
30	Air emissions for nylon	http://www.inference.org.uk/sustainable/LCA/elcd/external_docs/n6_311147f6-fabd-11da-974d-0800200c9a66.pdf
31	Air emissions for acrylic	https://www.plasticseurope.org/en/resources/eco-profiles#
32	Water, land, and energy requirements for leather	[a] https://leatherpanel.org/sites/default/files/publications-attachments/benchmarking_final_d2012.pdf [b] http://pods.dasnr.okstate.edu/docushare/dsweb/Get/Document-1921/E-974web.pdf [c] http://www.fao.org/fileadmin/templates/est/COMM_MARKETS_MONITORING/Hides_Skins/Documents/Market_review_hides_and_skins_-_2008.pdf [d] http://www.fao.org/3/t0279e/t0279e05.htm 18.3 kg [e] https://athenaeum.libs.uga.edu/bitstream/handle/10724/33569/Beefherdmgmt.pdf [f] https://extension.tennessee.edu/publications/Documents/PB1822.pdf
33	Water requirements for abacá fabric	[a] http://annalsoftropicalresearch.com/wp-content/uploads/pdf_files/Volume34No.1/1.pdf [b] https://www.academia.edu/26004947/Life_Cycle_Assessment_of_Manila_Hemp_in_Catanduanes
34	Land requirements for abacá fabric	https://www.academia.edu/26004947/Life_Cycle_Assessment_of_Manila_Hemp_in_Catanduanes
35	Energy requirements for abacá fabric	[a] https://www.academia.edu/26004947/Life_Cycle_Assessment_of_Manila_Hemp_in_Catanduanes [b] http://pubs.sciepub.com/ajer/2/3/2/index.html [c] https://www.ocean.washington.edu/courses/envir215/energynumbers.pdf
36	Water requirements for cashmere	[a] https://www.boprc.govt.nz/media/470831/reasonable-stock-water-requirements-guidelines-horizons.pdf [b] https://teara.govt.nz/en/goats-and-goat-farming/page-4

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37	Land requirements for cashmere	[a] https://www.jica.go.jp/nepal/english/office/others/c8h0vm0000bjww96-att/tm_7.pdf [b] https://teara.govt.nz/en/goats-and-goat-farming/page-4
38	Degradation rates for cotton, jute, linen, and wool	[a] http://bada.hb.se/bitstream/2320/9255/1/2011.7.8.pdf [b] https://norden.diva-portal.org/smash/get/diva2:957517/FULLTEXT02.pdf
39	Degradation rates for pineapple fabric and abacá	https://www.researchgate.net/publication/225795213_Biodegradation_of_Coир_and_Sisal_Applied_in_the_Automotive_Industry
40	Degradation rate for silk	https://www.sciencedirect.com/science/article/pii/S0927776515002593
41	Degradation rates for viscose and lyocell	https://pdfs.semanticscholar.org/4fe5/ebfdb75bcbe84202b8fd5fab95b384f827f0.pdf
42	Degradation rate for bamboo fiber	https://www.researchgate.net/publication/273649670_Thermal_and_mechanical_properties_of_biocomposites_based_on_a_cashew_nut_shell_liquid_matrix_reinforced_with_bamboo_fibers#pf11
43	Degradation rate for all synthetic fibers	https://www.iwto.org/sites/default/files/files/iwto_resource/file/Wool%20and%20Biodegradability_IWTO%20Fact%20Sheet_update.pdf
44	Degradation rate for leather	http://icams.ro/icamsresurse/2010/proceedings/0_Plenary_Lectures_02.pdf
45	Global warming potential and water/energy requirements for secondhand clothes	https://cf-assets-tup.thredup.com/about/pwa/thredUP-Clothing-Lifecycle-Study.pdf