

Gothenburg Sustainable Development Search Strings 2019

Current ref: Håkan Carlsson, Bo Jarneving, Lars Kullman, Eddie Omrcen, Dan Strömberg (2020). Gothenburg Sustainable Development Search Strings 2019. Retrieved from <http://hdl.handle.net/2077/64070>. (please refer back to <https://tinyurl.com/GSSS2019> for updated reference.)

This set of search strings was developed collaboratively by Gothenburg University Library and the Gothenburg Centre for Sustainable Development between 2017-2019.

The method used to obtain the search strings included the following steps:

- Method development using a national reference group of bibliometric experts.
- Establishment of a 120 000-paper starting cohort formed from initial search terms sustainable/global environment/global medicine in Web of Science.
- Bibliometric cword clustering followed by manual analysis suggesting 31 subdisciplines of sustainable development.
- Development of preliminary search strings for each subdiscipline using cword cluster terms.
- Enrichment with journals of high frequency in each subdiscipline.
- Subdiscipline matching to UN SDG suggesting two additional humanities subdisciplines, which are poorly covered in Web of Science.
- Enrichment of subdisciplines with search terms from related SDGs.
- 12 national workshops adding more prospective search strings yielding 1 064 preliminary search strings in one general and 33 subdisciplines.
- Refining the search strings to remove doublets and search strings which contributed fewer than 0,5% to each subdiscipline yielded a final number of 591 search strings.
- Method publication (underway)

The resulting search strings were developed to combined identify all papers related to Sustainable Development.

Sub Discipline	Primary Division	Search Strings Formatted for Web of Science/advanced search
Agriculture	N	TS=("organic agriculture" OR "agroecology" OR "yield gap" OR "agrobiodiversity" OR "grain for green" OR "ecological agriculture") OR SO=("agriculture ecosystems & environment" OR "journal of sustainable agriculture" OR "agronomy for sustainable development" OR "international journal of agricultural sustainability") OR (TS=("land-use" OR "agriculture" OR "nutritio*" OR "crop" OR "livestock" OR "rice" OR "nutrient recycling" OR "rainwater harvesting" OR "fertilizer" OR "food production" OR "maize" OR "soil fertility" OR "farming system*" OR "animal welfare" OR "grain-yield") OR SO=("agricultural water management" OR "acta horticulturae")) AND TS=(sustainab* OR (global* AND (environm* OR health)))
Air and atmosphere	N	TS=("air-pollution" OR "pm2.5" OR "pm10") OR SO=("atmospheric environment" OR "journal of the air waste management association" OR "aerosol and air quality research") OR TS=("persistent organic pollutant*" OR "atmosphere" OR "ozone" OR "air-quality" OR "aerosol" OR "nox" OR "particulate matter" OR "so2" OR "polychlorinated-biphenyls" OR "flame retardant*" OR "voc" OR "polybrominated diphenyl ethers") AND ts=(sustainab* OR (global* AND (environm* OR health)))
Alternative fuels	N	TS=("biofuel*" OR "biodiesel" OR "biogas" OR "bioethanol" OR "biorefinery" OR "clean fuels") OR (SO=("bioresource technology") AND TS=("fuel")) OR (TS=("ethanol-production") AND TS=("fuel*")) OR SO=("biomass & bioenergy" OR "algal research-biomass biofuels and bioproducts" OR "biotechnology for biofuels" OR "bioenergy research") OR (TS=("fuel*" OR "hydrogen" OR "ethanol") OR SO=("energy & fuels")) AND ts=(sustainab* OR (global* AND (environm* OR health)))

Biodiversity	N	TS=("species richness" OR "species-diversity" OR "invasive specie*" OR "endangered specie*" OR "species distribution*" OR "biological invasion*" OR "indicator specie*" OR "plant diversity" OR "poaching" OR "invasive alien specie*" OR "threatened specie*" OR "biodiversity") OR SO=("biodiversity and conservation" OR "current opinion in environmental sustainability") OR (TS=("habitat" OR "arable land" OR "population-dynamic*" OR "population-structure" OR "genetic resources" OR "biogeography" OR "local adaptation" OR "bees") OR SO=("forest ecology AND management")) AND TS=(sustainab* OR (global* AND (environm* OR health)))
Business	E	TS=("csr" OR "corporate social-responsibility" OR "circular economy*" OR "industrial ecology" OR "corporate responsibility" OR "green marketing" OR "corporate sustainability" OR "product stewardship" OR "sustainability reporting" OR (access AND ("financial servic*" OR "credit" OR "value chain*" OR market*)) AND (industr* OR enterprise*)) OR TS=("trade" OR "industry" OR "cooperation" OR "companies" OR "supply chain*" OR "competitiveness" OR "entrepreneurship" OR "competitive advantage" OR "social-responsibility" OR "value chains" OR "corporate governance" OR "information and communication technology") AND TS=(sustainab* OR (global* AND (environm* OR health)))
Chemistry	N	TS=("green chemistry" OR "sustainable chemistry") OR TS(("pfos" OR "pfoa" OR "polybrominated-biphenyls" OR "persistent organic pollutant*") AND "environm*") OR SO=("acs sustainable chemistry & engineering" OR "environmental toxicology AND chemistry" OR "green chemistry") OR (TS=("materials" OR "toxicity" OR "polymer*" OR "chemistry" OR "cadmium" OR "polychlorinated-biphenyls" OR "bisphenol-a" OR "acrolein") AND TS=(sustainab* OR (global* AND (environm* OR health)))) NOT TS=("sustainable drug release" OR "sustainable catalysis"))
Climate-change	N	TS= ("environmental change*" OR "paleoclimate" OR "carbon capture" OR "sea level rise" OR "carbon footprint*" OR "greenhouse gas" OR "climate warming" OR "extreme weather" OR "kyoto protocol" OR "ocean warming" OR "climate impact" OR "climate action" OR "climate-change" OR "climatic change*" OR "co2 capture" OR "global warming" OR ("climat*" NEAR/3 ("carbon*" OR "model*" OR "change*" OR "variabilit*" OR "regime*" OR "ecolog*" OR "scenario*" OR "polic*" OR "anthropogenic*" OR "environm*")) OR ("neutral" NEAR/3 ("co2" OR "carbon dioxide")) OR ("sea level*" AND ("chang*" OR "rising")) OR (("greenhouse") AND ("emission*"))) OR SO=("international journal of greenhouse gas control" OR "climatic change") OR TS=("co2" OR "weather" OR "carbon-dioxide" OR "carbon sequestration" OR "desertification") AND TS=(sustainab* OR (global* AND (environm* OR health)))
Construction	E	TS=("green building" OR "passive house*" OR ((sustainable OR resilient) AND infrastructur* AND develop*)) OR SO=("journal of green building") OR (TS=("building*" OR "construction" OR "infrastructure" OR "concrete" OR "affordable hous*" OR "built environment" OR "cement") OR SO=("energy and buildings" OR "building and environment")) AND TS=(sustainab* OR (global* AND (environm* OR health)))
Consumption	E	TS=("food waste" OR "consumerism" OR "carbon footprint" OR "ecotourism*" OR "sharing econom*" OR "sustainable supply chain" OR "virtual water" OR "water footprint" OR "green consum*" OR "degrowth" OR "ecological footprint" OR "overconsum*" OR "green tourism" OR "overconsumption" OR ("sustainab*" NEAR/3 "tourism*")) OR TS=("consumption" OR "behavior" OR "attitude*" OR "choice" OR "materialism" OR "consumer" OR "nudging" OR "footprint" OR "international-trade" OR "food supply" OR "retail" OR "willingness-to-pay") AND TS=(sustainab* OR (global* AND (environm* OR health)))

Economic Development	E	(SO="ecological economics" OR TS=("environmental economics" OR "ecological economics") AND TS="develop*") OR TS=(("economic development" OR "human well-being") AND (("afford*" OR "equitable") AND "access")) OR TS=("access" NEAR/3 ("affordable" OR "reliable" OR "modern") AND "energy service*") OR (TS=("economic-development" OR ("developing-countr*" AND "econom*") OR "economic growth" OR "economic resource*" OR "microfinance" OR "basic services") OR SO=("world development")) AND TS=(sustainab* OR (global* AND (environm* OR health)))
Ecosystems	N	TS=("ecosystem services" OR "ecosystem restoration") OR ((TS="ecosystem" OR SO="ecological modelling") AND TS=(sustainab* OR (global* AND (environm* OR health))))
Education	S	TS=("access to education" OR "global education" OR "education for sustainab*" OR "sustainab* education" OR "education in developing" OR "equitable education" OR "basic literacy" OR (("scholarship*" OR "qualified teacher*" OR "educat*") NEAR/3 ("develop* countr*" OR "africa*" OR "small island*")) OR (("vulnerable" OR "disabilit*" OR "disabled" OR "indigen*") NEAR/3 "educat*") OR (("equitabl*" OR "free" OR "access") NEAR/3 ("primary education" OR "primary school" OR "secondary education" OR "secondary school" OR "pre-primary education" OR "pre-primary school")) OR (("increas*" NEAR/3 "skills") AND ("employe*" OR "decent jobs" OR "entrepreneur*")) OR (("includi*" OR "equitabl*") AND ("quality education")) OR SO=("environmental education research" OR "international journal of sustainability in higher education") OR (TS= ("teach*" OR "literacy" OR "numeracy" OR "higher-education" OR "esd" OR "basic education") OR SO=("journal of chemical education")) AND TS= (sustainab* OR (global* AND (environm* OR health)))
Energy	N	TS=("hydrogen production" OR "renewable energy" OR "hydrogen energy" OR "wind power" OR "bioenergy" OR "wind energy" OR "solar power*" OR "wind farm" OR "alternative energy" OR "clean energy" OR "offshore wind" OR "concentrat* solar power" OR "reliable energy" OR "peak oil" OR (("clean energy" OR "renewable energy") NEAR/3 ("research" OR "development" OR "production")) OR SO=("energy & environmental science" OR "renewable sustainable energy reviews") OR TS=("energy" OR "hydrogen" OR "coal" OR "battery" OR "emergy") AND TS=(sustainab* OR (global* AND (environm* OR health)))
Fishery	N	TS=("overfish*" OR "illegal fish*") OR (TS=("fish*" OR "aquaculture" OR "seafood") OR SO=("aquaculture")) AND TS=(sustainab* OR (global* AND (environm* OR health)))
Forestry	N	TS=("deforestation" OR "afforestation" OR "reforestation" OR "forest health" OR "community forestry" OR (("degrodat*" OR "degrad*") NEAR/3 ("woodland" OR "forest"))) OR (TS=("forest*" OR "tree") OR SO=("forest ecology AND management")) AND TS=(sustainab* OR (global* AND (environm* OR health)))

Health	S	TS=("burden of disease" OR "global burden" OR "family planning" OR "adolescent birth rate" OR "adolescent mother*" OR ("teen*" NEAR/3 ("mother*" OR "pregnan*" OR "birth rate*")) OR (("epidemic" OR "combat") NEAR/3 ("tuberculos*" OR "malaria" OR "hepatit*" OR "hiv" OR "aids" OR "tropical disease*" OR "zika*" OR "ebola*")) OR (("mortality" AND ("hazardous chemical*" OR ("pollut*" OR "contaminat*" OR "poison*") NEAR/3 ("water" OR "air" OR "soil")))) OR ("tobacco" NEAR/3 "control*") OR (("road" NEAR/3 "traffic") NEAR/3 ("injur*" OR "death*" OR "accident*")) OR ("universal access" NEAR/3 ("healthcare" OR "health-care")) OR (("affordable" OR "quality") NEAR/3 ("medicine*" OR "vaccin*")) OR (("abuse" NEAR/3 ("substance*" OR "drug*" OR "alcohol")) AND ("prevention" AND "treatment")) OR (("reduce" NEAR/3 (("maternal" OR "neonatal" OR "under-five" OR ("under" NEAR/2 ("5" OR "five")) OR "before fifth") NEAR/3 "mortality"))) OR (("health" NEAR/3 ("financing" OR "recruit*" OR "training")) AND "developing countr*") OR (((("early" NEAR/3 "warning") OR ("risk" NEAR/3 "reduction") OR ("risk" NEAR/3 "management")) NEAR/3 "health risk*")) OR (TS=("health") AND TS=(sustainab* OR (global* AND (environm*)))) OR SO=("environmental health perspectives" OR "international journal of environmental research and public health" OR "globalization and health") OR TS=("mortality" OR "disease" OR "pathogen*" OR "sexual" OR "cancer" OR "depression" OR "ageing" OR "aids" OR "heat stress" OR "physical-activity" OR "disability" OR "malaria" OR "obesity" OR "hiv" OR "vaccine*" OR "antibiotic-resistance" OR "epidemic" OR "tuberculosis") AND TS=(sustainab* OR (global* AND (environm* OR health))))
Hunger	S	TS=("food security" OR "global food" OR "child hunger" OR "hungry people" OR (("drought") AND ("hunger" OR "food")) OR ((("hunger") NEAR/3 ("malnutrition")))) OR TS=("malnutrition" OR "food system" OR "improved nutrition" OR "hunger" OR "wasting" OR "malnouris*") AND TS=(sustainab* OR (global* AND (environm* OR health)))
Inequities	S	TS=("human rights" OR "homophobia" OR "affordable housing" OR "ageism" OR "equal opportunity" OR "wealth distribution" OR ((("developing countr*") AND ("world trade organization" OR "wto" OR "world trade organisation"))) OR ((social* OR economic* OR politic*) AND inclusion)) OR TS=("equality" OR "disabilit*" OR "migration" OR "indigenous" OR "equity" OR "justice" OR "discrimination" OR "race" OR ("inequit*")) AND TS=(sustainab* OR (global* AND (environm* OR health)))
Innovation	E	TS=("social entrepreneur*" OR "social innovation" OR "eco-innovation" OR "environmental entrepreneur*" OR ("support" AND "innovation" AND "developing countr*")) OR TS=("innovation") AND TS=(sustainab* OR (global* AND (environm* OR health)))
Interdisciplinary research	S	TS=("sustainability science") OR SO=("sustainability science") OR TS=("transdisciplinary" OR "research policy" OR "interdisciplinarity" OR "science-policy interface" OR "transdisciplinarity") AND TS=(sustainab* OR (global* AND (environm* OR health)))
Marine life	N	TS=("microplastic*" OR "coral bleaching" OR "marine protected area*" OR (("ocean*" OR "marine" OR "coast*" OR "seawater*" OR "sea water*)) AND ("sustainab*" OR "ecosystem*" OR "protect*" OR "preservation*" OR "biodivers*" OR "protected area*" OR "conservation*" OR "ecosystem*" OR "environmental degradation" OR "climat* change*" OR "pollut*" OR "eutrophication*" OR "acidification*" OR "nutrient pollution*" OR "jurisdiction*" OR "legal" OR "law*")) OR SO=("marine ecology progress series" OR "marine pollution bulletin") OR TS=("surface water*" OR "marine" OR "ocean" OR "coastal") AND TS=(sustainab* OR (global* AND (environm* OR health)))

Policy	S	TS=("conflict resolution" OR "environmental law" OR "environmental governance" OR "internally displaced" OR "armed conflict" OR "civil conflict" OR "civil war" OR "conflict management" OR "corruption" OR "ethnic conflict" OR "miscarriage of justice" OR "peace process" OR "terrorism" OR ("human" NEAR/3 "trafficking") OR "organised crime" OR "bribery" OR "human rights" OR "paris principles") OR SO=("land use policy" OR "ecology and society" OR "environmental science & policy" OR "global environmental change human and policy dimensions") OR TS=("polic*" OR "decision-making" OR "politic*" OR "crisis" OR "exploitation" OR "governance" OR "conflict*" OR "equity" OR "discrimination" OR "adaptive management" OR "peace" OR "democracy") AND TS=(sustainab* OR (global* AND (environm* OR health)))
Poverty	S	TS=("financial inclusion" OR "poverty trap" OR "poor AND vulnerable") OR TS=(("poverty") NEAR/3 ("reduc*" OR "alleviat*" OR "living" OR "child" OR "extreme" OR "life" OR "eradicat*" OR "end")) OR TS=("poverty") AND TS=(sustainab* OR (global* AND (environm* OR health)))
Production	E	TS=("remanufacturing" OR "cleaner production" OR "sustainable design" OR "sustainable manufacturing" OR "green manufacturing" OR "ecodesign" OR "green supply chain" OR "product stewardship" OR "sustainable supply chain" OR "sustainab* management" OR ("life cycle" AND "production") OR ("sustainab*" NEAR/3 "product*") OR ("sustainab*" NEAR/3 ("procurement*" OR "buying" OR "policies" OR "policy")) OR (("sustainab*") NEAR/3 ("practice*" OR "information*" OR "report*") AND ("compan*" OR "firm*"))) OR SO=("journal of industrial ecology") OR TS=("natural resources" OR "logistics" OR "chain management" OR "supply chain management") AND TS=(sustainab* OR (global* AND (environm* OR health)))
Resilience	N	(SO=("global change biology") AND TS=(("resilience"))) OR TS=("uncertainty" OR "adaptation" OR "resilience" OR "vulnerability" OR "complex adaptive system*" OR "redundancy" OR "extinct*" OR "adaptive capacity" OR "tipping point") AND TS=(sustainab* OR (global* AND (environm* OR health)))
Rural	E	TS=("ecotourism" OR "rural sociology") OR (TS=("regional" OR "province" OR "landscapes" OR "protected areas" OR "national-park" OR "landscape ecology") AND TS=(sustainab* OR (global* AND (environm* OR health)))) OR TS=("rural") AND (TS=(sustainab* OR (global* AND (environm* OR health))) NOT TS=("rural development"))
Soil and ground	N	TS=("desertification" OR "soil contamination" OR "soil pollution") OR TS=("lead" OR "soils" OR "accumulation" OR "contamination" OR "drought" OR "sediments" OR "metals" OR "denitrification" OR "land degradation" OR "trace-elements" OR "soil health" OR "drylands") AND TS=(sustainab* OR (global* AND (environm* OR health)))
Transport	E	TS=("electric vehicle" OR "public transport" OR "travel patterns" OR "plug-in hybrid" OR "electromobility" OR "travel mode" OR "travel behaviour" OR "electric car" OR "sustainable mobility" OR "electric bus" OR "hybrid car" OR "hybrid bus" OR "regional infrastructure" OR "travel habit*" OR "electri* road" OR "car sharing") OR (TS=("urban mobility" OR "roads") OR SO=("transport policy")) AND TS=(sustainab* OR (global* AND (environm* OR health)))
Urban	E	TS=("urban planning" OR "smart city" OR "smart cities" OR "urban sprawl" OR "green space*" OR "urban climate" OR "urban ecology" OR "urban ecosystem*" OR "urban greening" OR "urban metabolism") OR SO=("urban forestry & urban greening" OR "urban ecosystems") OR TS=("urban" OR "city" OR "cities" OR "urbanization" OR "suburban") AND TS=(sustainab* OR (global* AND (environm* OR health)))

Waste	E	TS=("waste management" OR "municipal solid waste" OR "msw" OR "organic waste" OR "waste reduction" OR "leachate treatment" OR "untreated wastewater" OR "household waste" OR ("source separation" AND "waste")) OR SO=("waste management" OR "waste management & research") OR TS=("sewage sludge" OR "waste" OR "sanitation" OR "manure" OR "sludge" OR "sewerage" OR "incineration" OR "hazardous waste" OR "toilets" OR "composting" OR "waste treatment ") AND TS=(sustainab* OR (global* AND (environm* OR health)))
Water	N	TS= ("wastewater" OR "water stress" OR "groundwater recharge" OR "water ecosystem*" OR "watershed management" OR "improving water" OR "improve water quality" OR "water recycling" OR "water access" OR "water footprint" OR "recycled water" OR "groundwater management" OR "water resources management" OR "water harvesting" OR "water-use efficiency" OR "water scarcity" OR "safe drinking water" OR (("sanitation" OR "water") AND ("management"))) OR SO=("water resources management") OR TS=("water quality" OR "water management" OR "desalination" OR "river" OR "waters" OR "lake*" OR "irrigation" OR "waste-water" OR "groundwater" OR "flooding" OR "runoff" OR "drinking-water" OR "water-resources" OR "fresh-water" OR "water use" OR "water supply") AND TS=(sustainab* OR (global* AND (environm* OR health)))
Gender Equality	S	TS=("gender *equalit*" OR "sexual violence" OR "women’s rights" OR "gender discrimination" OR "genital mutilation" OR "reproductive rights" OR "sexual exploitation*" OR "gender parity" OR "child marriage*" OR "genital cutting" OR "sexual discrimination" OR "forced marriage*" OR "violence against girls" OR "violence against women" OR ("empower*" NEAR/3 "women") OR ("gender" AND "domestic work")) OR TS=("women" OR "gender") AND TS=(sustainab* OR (global* AND (environm* OR health)))
Humanities	S	TS=("ecological grief") OR TS=("antropocen") OR TS=("climate denialism") OR TS=("humanities" OR "anthropology" OR "archaeology" OR "classics" OR "linguistics" OR "languages" OR "religion" OR "arts") AND TS=(sustainab* OR (global* AND (environm* OR health))) OR SU="Arts & Humanities" AND TS=(sustainab* OR (global* AND (environm* OR health)))
General (search terms of a more general nature to construct the complete area of sustainable development)	-	TS=("sustainable development" OR "environmental protection" OR "environmental impact" OR "environmental management" OR "Ica" OR "environmental performance" OR "life-cycle assessment" OR "environmental sustainability" OR "socio-ecological" OR "sustainab* assessment" OR "environmental stewardship" OR "sustainability science" OR (("global change" OR "global stability") AND ("sustainab*" OR "environm*")) OR (("sustainab*" AND ("partner*" OR "cooperation" OR "development assistance" OR "development agenda" OR "international support" OR "coordinated polic*" OR "trading system*" OR "wto" OR "world trade organization") AND ("government*" OR "private*" OR "public*" OR "societ*" OR "stakeholder*" OR "developing countr*"))) OR SO=("environmental science & technology" OR "journal of cleaner production" OR "sustainability" OR "journal of environmental management" OR "global change biology" OR "environmental management" OR "environmental research letters" OR "resources conservation and recycling" OR "global environmental change-human and policy dimensions" OR "journal of environmental planning and management" OR "current opinion in environmental sustainability" OR "international journal of sustainable development and world ecology" OR "environment development and sustainability") OR TS=("green" OR "monitor" OR "life cycle" OR "stewardship" OR "impact assessment" OR "integrated assessment" OR "management") AND TS=(sustainab* OR (global* AND (environm* OR health)))

(S=social, E=economic, N=ecological)

Contact: Håkan Carlsson, Gothenburg University Library, Hakan.Carlsson@ub.gu.se