CONSOLIDATED PERFORMANCE DATABOOK 2023

KONTOOR Wrangler Lee

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Kontoor Brands is committed to regularly reporting on our social and environmental impacts.

This document supplements the contents of our 2023 Sustainability Progress Report, which sets out our commitments and progress towards the continuous improvement of our sustainability practices, and our 2023 TCFD Report. This databook has not been prepared in accordance with the Global Reporting Standards (GRI), but we do include some GRI references where relevant. See our Sustainability Accounting Standards Board (SASB) Index 2023.

The data included in this document covers the year from January 1, 2023 to December 31, 2023. Historical data is provided where relevant. With the exception of our Scope 1 and Scope 2 GHG emissions, the data presented has not been subjected to third-party verification.

CLIMATE CHANGE

ENERGY CONSUMPTION

GRI 302-1 ENERGY CONSUMPTION WITHIN THE ORGANIZATION

	2020	2021	2022	2023
Electricity	400,500,242	377,748,534	395,834,376	345,141,462
Natural Gas	248,003,760	272,729,476	281,312,567	282,944,471
Renewable Power	174,823	-	131,360	11,240,856
Diesel	1,457,609	6,688,452	4,114,286	6,429,673
Propane	11,845	943,400	116,294	169,180
Liquified Petroleum Gas (LPG)	194,424	2,060,917	3,133,593	3,152,783
Petrol	-	-	14,454	759,558
Total Renewable Energy	**174,823**	-	**131,360**	**11,240,856**
Total Non-Renewable Energy	**650,167,880**	**660,170,778**	**684,525,571**	**638,597,128**
Grand Total[1] (MJ)	**650,342,703**	**660,170,778**	**684,656,931**	**649,837,984**

EMISSIONS FROM ENERGY CONSUMPTION

GRI 305-1 DIRECT (SCOPE 1) GHG EMISSIONS, GRI 305-2 ENERGY INDIRECT (SCOPE 2) GHG EMISSIONS

	2020	2021	2022	2023
Electricity	50,960	44,110	41,838	37,947
Natural Gas	12,485	13,730	15,861	14,244
Renewable Power	-	-	-	-
Diesel	103	471	288	449
Propane	1	56	7	10
LPG	11	121	200	185
Petrol	-	-	1	51
Refrigerant (438A, 404A, 410 and MO99)	-	857	-	1,348
Total[2] (MT CO_2e)[3]	**63,560**	**59,345**	**58,195**	**54,234**
Scope 1 (MT CO_2e)	**12,600**	**15,235**	**16,357**	**16,288[2]**
Scope 2 (MT CO_2e)	**50,960**	**44,110**	**41,838**	**37,947[2]**

[1] The total may not add up due to rounding.

[2] FY2023 Scope 1 & 2 GHG emissions have been verified by a third-party with a limited level of assurance.

[3] CO_2e or Carbon Dioxide equivalent is a metric measure used to compare the emissions from various greenhouse gases on the basis of their global-warming potential, by converting amounts of other gases to the equivalent amount of carbon dioxide with the same global warming potential.

INTENSITY METRICS, ENERGY AND GHG EMISSIONS

Year	Employees	Units produced	Annual Revenue ($M)	Energy (MJ)			Emission ($kgCO_2$)		
				Scope 1	Scope 2	Scope 1 & 2	Scope 1	Scope 2	Scope 1 & 2
2023	13,700	141,000,000	2,607	293,455,665	356,382,318	649,837,983	16,288,000	37,947,000	54,234,000
2022	14,400	175,000,000	2,631	288,691,194	395,965,736	684,656,930	16,357,000	41,838,000	58,195,000
2021	14,000	151,000,000	2,500	282,422,245	377,748,534	660,170,779	15,235,030	44,110,200	59,345,230
2020	14,000	120,000,000	2,100	249,667,638	400,675,065	650,342,703	12,600,157	50,960,221	63,560,378

ENERGY INTENSITY

GRI 302-3 ENERGY INTENSITY

	Energy intensity (MJ per employee)			Energy intensity (MJ per unit produced)			Energy Intensity (MJ/$M revenue)		
	Scope 1 MJ/Employee	Scope 2 MJ/Employee	Scope 1 & 2 MJ/Employee	Scope 1 MJ/Unit	Scope 2 MJ/Unit	Scope 1 & 2 MJ/Unit	Scope 1 MJ/$M	Scope 2 MJ/$M	Scope 1 & 2 MJ/$M
2023	21,420	26,013	47,433	2.1	2.5	4.6	112,565	136,702	249,267
2022	20,048	27,498	47,537	1.6	2.3	3.9	109,727	150,500	260,227
2021	20,173	26,982	47,155	1.9	2.5	4.4	112,969	151,099	264,068
2020	17,833	28,620	46,453	2.1	3.3	5.4	118,889	190,798	309,687

GHG EMISSIONS INTENSITY

GRI 305-4 GHG EMISSIONS INTENSITY

	Emission Intensity ($kgCO_2e$ per employee)			Emission Intensity ($kgCO_2e$ per unit produced)			Emission Intensity ($kgCO_2e$/$M revenue)		
	Scope 1 $kgCO_2e$/ Employee	Scope 2 $kgCO_2e$/ Employee	Scope 1 & 2 $kgCO_2e$/ Employee	Scope 1 $kgCO_2e$/Unit	Scope 2 $kgCO_2e$/Unit	Scope 1 & 2 $kgCO_2e$/Unit	Scope 1 $kgCO_2e$/$M	Scope 2 $kgCO_2e$/$M	Scope 1 & 2 $kgCO_2e$/$M
2023	1,189	2,770	3,959	0.1	0.3	0.4	6,248	14,556	20,803
2022	1,136	2,905	4,041	0.1	0.2	0.3	6,217	15,902	22,119
2021	1,088	3,151	4,239	0.1	0.3	0.4	6,094	17,644	23,738
2020	900	3,640	4,540	0.1	0.4	0.5	6,000	24,267	30,267

RAW MATERIAL SOURCING 2023

SASB RAW MATERIALS SOURCING CG-AA-440A.3, CG-AA-440A.4

Raw Materials Sourced for Our Products	Amount Consumed (MT)	Type[4]	Amount Certified (MT)	% of Total Consumption
Cotton	63,829	Conventional	15,734	21.23%
		Preferred US/African/Australian	43,366	58.51%
		Better Cotton Initiative	1,119	1.51%
		Regenerative	220	0.30%
		Organic	53	0.07%
		Recycled Cotton	3,337	4.50%
Synthetics	8,883	Conventional	6,199	8.35%
		Virgin Polyester	3,408	38.37%
		Virgin Polyamide	2,731	30.75%
		Recycled Synthetics	2,457	3.31%
		Recycled Polyester	2,441	27.48%
		Recycled Polyamide	14	0.16%
		Bio-based Synthetics	227	0.31%
Natural Fibers (excluding Cotton)	18			0.02%
Manmade Cellulose Fiber	533			0.72%
Animal Fiber (Wool)	5			0.01%
Elastane	851			1.15%
Total Consumed (MT)	**74,119**			
Total Consumption in Linear Yards	**123,728,032**			

PREFERRED MATERIAL VERSUS CONVENTIONAL SOURCING 2023[5]

	Consumption (MT)	% of Total Consumption
Total Preferred Materials	50,991	68.80%
Total Conventional Materials	23,128	31.20%

[4] Kontoor Brands does not directly purchase raw materials, but instead works with suppliers to select raw materials for use in our products by third-party manufacturers.

[5] Please refer to the methodological notes for the definition of Preferred Materials and other cotton types.

POLLUTION

CHEMISTRY 2023

	Number	Percentage
Total number of in-scope factories	133	-
Number of factories participated (i.e. factories have uploaded their chemical inventories to The Bhive®)	128	98%
Number of factories uploaded Higg FEM reports	125	95%
Number of factories uploaded wastewater reports	125	95%
Total number of chemicals from factory inventories	**6,125**	**-**
Overall chemical conformity	**5,059**	**83%**
Chemical conformity for Asia and EMEA factories	4,662	86%

WASTE DIVERTED FROM LANDFILL

	Diversion Rate %							
Name of Distribution Center	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**
El Paso	99%	99%	99%	98%	94%	93%	94%	94%
Hackleburg	97%	99%	99%	99%	90%	93%	96%	97%
Luray	99%	98%	99%	99%	98%	97%	96%	97%
Mexico City	-	-	-	-	-	98%	98%	99%
Mocksville	99%	98%	98%	99%	99%	96%	93%	96%
Seminole	100%	100%	100%	100%	99%	94%	95%	98%
Number of zero waste Distribution Centers (Zero waste defined as diversion rate of 95% or more)	5	5	5	5	3	3	4	5

WATER

HISTORIC WATER SAVINGS

	YEAR	LITERS SAVED
Internal Manufacturing	2008	232,134,000
	2009	299,243,000
	2010	336,725,000
	2011	404,471,000
	2012	257,239,000
	2013	761,090,000
	2014	784,537,000
	2015	619,260,000
	2016	966,234,000
	2017	956,506,000
	2018	1,027,633,000
	2019	931,882,000
	2020	576,548,000
	2021	477,012,000
	2022	700,579,000
Indigood®	2022	725,319,000
	Total	**10,056,412,000**

WATER SAVED TOWARDS GOAL

	YEAR	LITERS SAVED
Internal Manufacturing	2023	233,525,000
Indigood®	2023	897,690,000
	Total	**1,131,215,000**

Goal: Save 8 billion liters of freshwater from key suppliers in water stressed regions and through internal manufacturing processes between 2023 and 2030, compared to a 2018-2019 baseline.

OWN WORKFORCE

HEALTH AND SAFETY

GRI 403-9 WORK-RELATED INJURIES[6]

	Number (Rate)				
	2019	2020	2021	2022	2023
Fatalities resulting from work-related injury	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
High-consequence work-related injuries	34 (0.28)	25 (0.26)	28 (0.23)	31 (0.24)	24 (0.21)
Recordable work-related injuries	97 (0.80)	79 (0.82)	70 (0.58)	70 (0.55)	70 (0.62)
Main types of work-related injuries	1) Contusions 2) Strains 3) Lacerations	1) Contusions 2) Lacerations 3) Strains	1) Strains 2) Contusions 3) Lacerations	1) Lacerations 2) Contusions 3) Strains	1) Lacerations 2) Contusions 3) Strains
Total hours worked	23,998,051	19,490,931	23,964,583	25,454,545	22,448,475

GRI 403-10 WORK-RELATED ILL HEALTH[6]

	Number (Rate)				
	2019	2020	2021	2022	2023
Fatalities resulting from work-related ill health	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Recordable work-related ill health	0 (0)	1 (0.01)	0 (0)	0 (0)	0 (0)
Main types of work-related ill health	n/a	Covid-19	n/a	n/a	n/a

[6] These numbers cover all Kontoor Brands internal operations, including Internal Manufacturing, Distribution, Offices, Retail, and Support Centers. 95% of incidents occur in either Internal Manufacturing or at Distribution Centers.

PULSE SURVEY ENGAGEMENT 2023

Number of employees invited	3,733
Number of employees responded	2,991
Response rate	80%
Percentage of employees who responded who agree with the statement "Kontoor is an environmentally responsible organization"	80%

Scope: Global corporate and retail employees

WORKERS IN THE VALUE CHAIN

NUMBER OF SUPPLIERS

SASB ACTIVITY METRICS CG-AA-000.A

	2020	2021	2022	2023
Number of Tier 1 (T1) suppliers	474	674	837	778
Number of suppliers beyond T1	97	121	110	111
Total	**571**	**795**	**947**	**889**

AUDIT FINDINGS IDENTIFIED AS CRITICAL

GRI 308-2 NEGATIVE ENVIRONMENTAL IMPACTS IN THE SUPPLY CHAIN AND ACTIONS TAKEN
GRI 409-1 OPERATIONS AND SUPPLIERS AT SIGNIFICANT RISK FOR INCIDENTS OF FORCED OR COMPULSORY LABOR
GRI 414-2 NEGATIVE SOCIAL IMPACTS IN THE SUPPLY CHAIN AND ACTIONS TAKEN
SASB LABOUR CONDITIONS IN THE SUPPLY CHAIN CG-AA-430B.3

		% of Findings Identified as Critical			
	Global Compliance Principle	**2020**	**2021**	**2022**	**2023**
409-1	Child Labor	0.0%	0.0%	0.0%	0.1%
308-2	Environment	0.0%	0.1%	0.0%	0.0%
	Facility Security	0.0%	0.0%	0.0%	0.0%
409-1	Forced Labor	0.0%	0.0%	0.1%	0.0%
	Freedom of Association & Collective Bargaining	0.0%	0.0%	0.0%	0.0%
	Harassment or Abuse	0.0%	0.0%	0.0%	0.0%
	Health & Safety	0.5%	0.4%	0.5%	0.5%
	Hours of Work	0.0%	0.0%	0.0%	0.1%
	Informed Workplace	0.0%	0.0%	0.0%	0.0%
	Legal Compliance	0.2%	0.0%	0.1%	0.0%
	Monitoring and Compliance	0.3%	0.3%	0.2%	0.2%
	Non-Discrimination	0.0%	0.0%	0.0%	0.0%
	Subcontracting	0.1%	0.4%	0.2%	0.3%
	Wages & Benefits	0.9%	0.7%	0.9%	0.4%
	Women's Rights	0.0%	0.0%	0.0%	0.0%
	Worker Residence (Dormitory)	0.3%	0.1%	0.1%	0.1%
308-2 & 414-2	Total number of suppliers audited	458	570	671	686

AUDIT FINDINGS (ANY SEVERITY LEVEL)

Global Compliance Principle	2020 %	2021 %	2022 %	2023 %
Child Labor	0.4%	0.1%	0.3%	0.0%
Environment	3.5%	5.7%	5.1%	4.9%
Facility Security	2.1%	2.4%	3.3%	2.4%
Forced Labor	0.4%	0.4%	0.4%	0.3%
Freedom of Association & Collective Bargaining	1.0%	0.8%	1.3%	1.0%
Harassment or Abuse	0.6%	0.5%	0.7%	0.3%
Health & Safety	65.8%	68.3%	64.5%	68.5%
Hours of Work	7.4%	6.9%	8.0%	8.1%
Informed Workplace	1.0%	0.4%	0.6%	0.4%
Legal Compliance	3.2%	2.8%	2.9%	2.9%
Monitoring and Compliance	0.4%	0.4%	0.3%	0.1%
Non-Discrimination	0.3%	0.1%	0.2%	0.0%
Subcontracting	0.8%	0.7%	0.3%	0.7%
Wages & Benefits	11.3%	9.4%	10.8%	9.7%
Women's Rights	0.8%	0.6%	0.9%	0.2%
Worker Residence (Dormitory)	0.9%	0.6%	0.3%	0.4%
Total number of suppliers audited	458	570	671	686

SUPPLIERS SCREENED

GRI 308-1 NEW SUPPLIERS THAT WERE SCREENED USING ENVIRONMENTAL CRITERIA
GRI 414-1 NEW SUPPLIERS THAT WERE SCREENED USING SOCIAL CRITERIA

All new suppliers, excluding licensees, must agree to our Global Compliance Principles (see page 11 of our 2023 Sustainability Progress Report) and be audited by a Kontoor Brands team member before production can begin. In exceptional cases where they are unable to do so, they must demonstrate that they operate under guiding principles similar to ours, in both word and spirit.

SUPPLIERS ASSESSED FOR SOCIAL IMPACTS

GRI 414-2 NEGATIVE SOCIAL IMPACTS IN THE SUPPLY CHAIN AND ACTIONS TAKEN

	2021	2022	2023
Number of suppliers assessed for social impact[7]	570	671	686
Number of suppliers identified as having significant actual and potential negative social impacts[8]	24	18	34
Percentage of suppliers identified as having significant actual and potential negative social impacts with which improvements were agreed upon as a result of assessment[9]	88%	83%	82%
Percentage of suppliers identified as having significant actual and potential negative social impacts with which relationships were terminated as a result of assessment[10]	1%	0%	1%

[7] Includes facilities rejected during the initial audit that are not in our supply chain at the time of audit.

[8] Includes active and rejected factories during the follow-up audits. Initial audit factories rejected are not included.

[9] Facilities with critical issues not rejected are considered as agreeing to the improvement plan. Facilities with critical issues rejected during the audit are considered as not agreeing to the improvement plan. Facilities rejected during the initial audit are not included in the calculation.

[10] Facilities rejected during the initial audit are not included in this calculation.

SUPPLIER AUDITS

SASB LABOR CONDITIONS IN THE SUPPLY CHAIN CG-AA-430B.1

	2020	2021	2022	2023
Percentage of Tier 1 supplier facilities that have been audited	88% *(417 out of 474)*	76% *(514 out of 674)*	72% *(602 out of 837)*	75% *(585 out of 778)*
Percentage of supplier facilities beyond Tier 1 that have been audited	14% *(14 out of 97)*	46% *(56 out of 121)*	63% *(69 out of 110)*	91% *(101 out of 111)*

SASB LABOR CONDITIONS IN THE SUPPLY CHAIN CG-AA-430B.2

	2020	2021	2022	2023
Priority non-conformance rate[11]	8%	8%	5%	6%
Rate of corrective action of priority non-conformance[12]	94%	95%	93%	93%

[11] Calculated as the number with priority non-conformances identified in the supply chain, divided by the total number of facilities audited. Facilities rejected in the initial audit are excluded from this calculation.

[12] Determined by dividing the number of facilities that have addressed priority non-conformance (critical) issues by the total number of facilities that have priority non-conformance issues. Facilities rejected in the initial audit are excluded.

Assumption: If a facility is terminated before the re-audit due to a decision made by Kontoor's Sourcing Department, we will still consider the critical issues as having been remediated by the supplier.

GREATEST RISKS IN THE SUPPLY CHAIN

SASB LABOR CONDITIONS IN THE SUPPLY CHAIN CG-AA-430B.3

	2020	2021	2022	2023
Labor conditions issues	Ergonomic and puncture hazards are two of the most commonly reported health and safety-related risks at our facilities.	Three greatest labor issues are: – Forced labor – Gender-Based Violence and Harassment towards women – Child labor	Three greatest labor issues are: – Forced labor – Gender-Based Violence and Harassment towards women – Child labor	Three greatest labor issues are: – Forced labor – Health & Safety – Worker well-being
Environmental health and safety issues		Three greatest environmental health and safety issues are: – Water pollution – Hazardous chemicals used during production and discharge – Environmental degradation	Three greatest environmental health and safety issues are: – Water pollution – Hazardous chemicals used during production and discharge – Environmental degradation	Three greatest environmental health and safety issues are: – Water pollution – Hazardous chemicals used during production and discharge – Environmental degradation

SUPPLIERS AUDITED BY COUNTRY

GRI 414-2 NEGATIVE SOCIAL IMPACTS IN THE SUPPLY CHAIN AND ACTIONS TAKEN
GRI 308 NEGATIVE ENVIRONMENTAL IMPACTS IN THE SUPPLY CHAIN AND ACTIONS TAKEN

Number of Audits by Country[13]	2020	2021	2022	2023
Algeria	n/a	n/a	1	n/a
Argentina	7	9	8	15
Bangladesh	70	75	111	94
Brazil	15	20	13	19
Cambodia	2	2	4	3
Canada	n/a	1	1	n/a
China	140	175	192	226
Ecuador	1	1	1	n/a
Egypt	11	9	9	11
El Salvador	1	2	1	2
Ethiopia	1	n/a	n/a	n/a
Germany	n/a	1	1	2
Greece	n/a	n/a	1	n/a
Guatemala	n/a	6	10	10
Haiti	n/a	n/a	2	n/a
Honduras	n/a	1	2	1
India	39	58	68	80
Indonesia	7	7	2	7
Italy	6	6	2	3
Japan	1	7	11	14
Jordan	1	3	2	2
Kenya	6	3	3	7
Korea, Republic of (South Korea)	4	11	10	7
Lesotho	4	1	n/a	1
Madagascar	2	n/a	n/a	4
Malaysia	n/a	n/a	n/a	2
Mauritius	1	2	n/a	n/a
Mexico	28	18	32	25
Nicaragua	n/a	3	6	1
North Macedonia	3	1	2	1
Pakistan	26	31	43	32

[13] n/a denotes Kontoor did not source products from a supplier in that country during the particular year.

SUPPLIERS AUDITED BY COUNTRY

GRI 414-2 NEGATIVE SOCIAL IMPACTS IN THE SUPPLY CHAIN AND ACTIONS TAKEN
GRI 308 NEGATIVE ENVIRONMENTAL IMPACTS IN THE SUPPLY CHAIN AND ACTIONS TAKEN

Number of Audits by Country[13]	2020	2021	2022	2023
Paraguay	2	2	1	2
Peru	2	5	5	3
Philippines	1	7	9	10
Poland	n/a	2	1	1
Portugal	n/a	4	1	1
Spain	n/a	1	1	n/a
Sri Lanka	n/a	1	1	1
South Africa	1	n/a	n/a	n/a
Taiwan	2	4	1	3
Tanzania	n/a	1	n/a	1
Thailand	15	8	18	16
Tunisia	3	4	3	3
Turkey	16	36	42	39
United Arab Emirates	n/a	n/a	n/a	1
United States of America	11	12	15	5
Venezuela	3	n/a	4	n/a
Vietnam	27	30	31	31
Grand Total	**458**	**570**	**671**	**686**

PRODUCT

GLOBAL DESIGN STANDARDS[14]

	Styles Meeting at Least One Standard	Percentage
Wrangler - Sourced in 2023	2,733	76%
Lee - Sourced in 2023	3,137	87%

[14] Our Global Design Standards look at the entire lifecycle of a product to give designers and product developers a foundation for end-to-end improvement. While not mandatory, our teams work to meet at least one of the following standards: Preferred Materials, Low Impact Fabric or Low Impact Finishing. See page 16 of our 2023 Sustainability Progress Report for more information on each standard.

METHODOLOGICAL NOTE

FOR SCOPE 1 AND 2:

For GHG emissions Scope 1 and 2, we used the EPA Center of Corporate Climate Leadership "Emission Factors for Greenhouse Gas Inventories", last published January 30, 2023, available at www.epa.gov/climateleadership.

For Mexico we used an emission factor published online by the Mexican federal government and reported to SEMARNAT, the Mexico national environmental entity. For grid emission factors outside the US and Mexico, we used IGES Grid version 11.2, available at https://www.iges.or.jp/en/pub/list-grid-emission-factor/en or used 2020 Grid Electricity Emissions Factors v1.1, published June 2020 at www.carbonfootprint.com.

SUPPLIER DATA:

Our value chain is defined as follows: Tier 1 suppliers are garment manufacturers while Tier 2 suppliers are involved in textile production. Suppliers beyond Tier 1 may include textile production and raw material processing (e.g., yarn spinning). Unless otherwise noted, Tier 1 suppliers do not include our internal manufacturing facilities.

FOR FACTORY AUDIT DATA:

In 2023, we changed our methodology to better align with GRI and SASB calculation guidelines (GRI: 414-2b, 414-2d, 414-2e; SASB: CG-AA-430b.1, CG-AA-430b.2, and CG-AA-000.A). Due to this, the quantitative data in the relevant category changed. For example, GRI 414-2b (Number of suppliers identified as having significant actual and potential negative social impacts) changed from 50 to 24 for the year 2021 (52% change) and from 59 to 18 for the year 2022 (69% change). We have included footnotes in the data table where appropriate.

RAW MATERIALS SOURCED FOR OUR PRODUCTS - COTTON DEFINITIONS

Kontoor Brands does not purchase raw materials, but instead works with our suppliers to select raw materials for use in our products by third-party manufacturers.

- **Organic cotton:** Cotton certified to have been grown from non-genetically modified seeds, with minimal fertilizers and pesticides such as Global Organic Textile Standard (GOTS)-certified, Organic Cotton Standard (OCS)-certified cotton
- **Regenerative cotton:** Regenerative cotton uses farming practices that help to keep the land fertile, restore biodiversity and add carbon to the soil while aiming to secure the wealth of those who live on it
- **Recycled cotton:** Cotton from validated sources of post-industrial or post-consumer. Recycled cotton prevents additional textile waste and requires fewer resources than virgin cotton
- Preferred US/ African/ Australian cotton –
  - **US cotton:** US cotton producers follow responsible cotton practices which show continual improvements on environmental factors including land, water and energy
  - **African cotton (except Egypt and South Africa):** Cotton grown in selected regions of Africa that statistically use less fertilizers and pesticides compared to conventionally-grown cotton outside of Africa. Data is backed by ICAC World Cotton Data Book
  - **Australian cotton:** Australian cotton has 30+ years of data showing continual improvement on increased production on less land, more efficient water use and less impact on the environment