ICAC COTTON DATA BOOK 2025

A Report by the
Chief Scientist, International Cotton Advisory Committee

ICAC COTTON DATABOOK 2025

Data Pertains to Cotton Harvested in 2024

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INTERNATIONAL COTTON ADVISORY COMMITTEE
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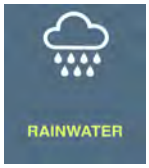

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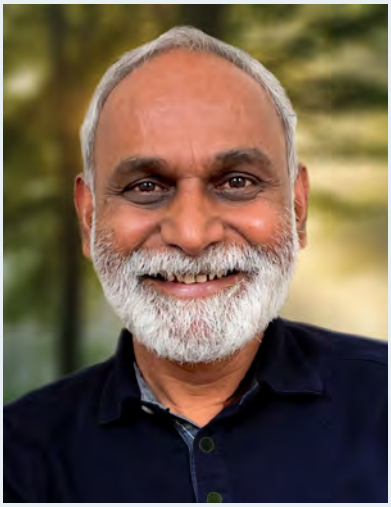
EDITORIAL



The Cotton Data Book presents a comprehensive, panoramic view of production practices and input use in 38 countries, collectively accounting for more than 99% of global cotton production. It spans the entire production chain -from pre-sowing and cultivation through harvest, ginning, and trade of cotton lint and its byproducts. To the best of my knowledge, this is the only publication worldwide that compiles such extensive detail on virtually every aspect of cotton production, including the full list of varieties grown and their fibre characteristics.

The book provides state- or provincial-level data pertaining to cotton harvested in 2024, on key inputs such as water, fertilizers, pesticides, manpower, and cost of cultivation, from which national and global averages are derived. These figures are sourced from ICAC coordinating agencies, member country delegates, public sector researchers, official statistical portals, published reports, and peer-reviewed studies -ensuring authenticity and reliability. Input usage data is typically drawn from official surveys conducted using standard sampling procedures.

Sustainability rests on three pillars: social, economic, and environmental. The Cotton Data Book addresses all three by covering manpower, production costs, and the major inputs -particularly water, fertilizers, and pesticides—that directly influence yields, environmental outcomes, and biodiversity. As the global cotton sector advances toward net-zero goals, reducing greenhouse gas emissions and increasing carbon sequestration, the availability of detailed, credible data on emission sources and sequestration potential in cotton systems becomes ever more vital. This publication offers that foundation, enabling researchers and policymakers to better identify production challenges and address sustainability issues.

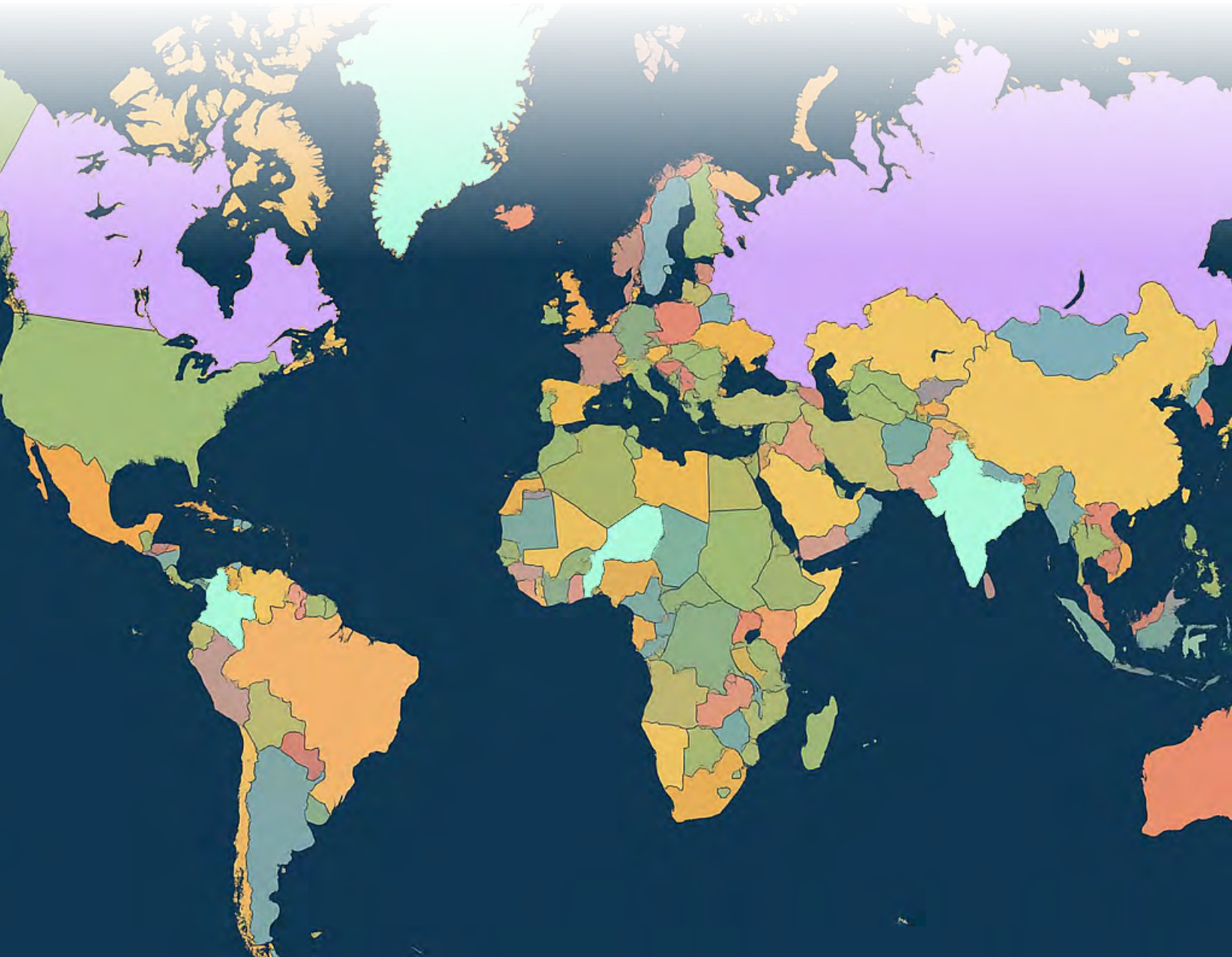
Spanning 870+ pages, the Cotton Data Book is the result of all year long sustained effort -gathering, validating, and presenting the most reliable data possible. It has truly been a labour of love. I am deeply grateful to the coordinating agencies, ICAC member delegates, and research colleagues whose consistent cooperation and expertise have made this work possible.

I assumed full responsibility for every stage of the process -collecting, collating, compiling, analyzing, organizing, designing, and publishing the data. Despite these best efforts, the scale of the work means there may still be occasional errors or omissions. I take full responsibility for any such inaccuracies and will address them in subsequent editions as they are identified.

The methods used to analyze data are generally straight forward and are well known. However, the methodology used for water calculations needs explanation. Therefore, the methodology for water data analysis is outlined in Annexure 8. Should you require further details, clarifications, or additional information, please feel free to contact me.

-***Keshav R Kranthi*** *Ph.D*
Chief Scientist
keshav@icac.org

COUNTRIES DATA



ARGENTINA

Data on the Cotton Sector

S.No	Map Location
1.	Santiago del Estero
2.	Chaco
3.	Santa Fe

Arable Area 39,200 '000 Hectares	**Cotton Area** 617,218 Hectares
Production 355,672 Tonnes	**Lint Yield** 576 Kg/Hectare
Consumption 163,293 Tonnes	**Lint Exports** 97,976 Tonnes
Farmers 1,467 Male	**Farmers** 980 Female

AREA, YIELD & PRODUCTION

REGION	AREA (Ha)	YIELD (Kg/Ha)	Production (Tonnes)
Catamarca	450	750	338
Chaco	180,905	422	76,410
Cordoba-Argentina	1,350	742	1,002
Corrientes	60	690	41
Formosa	2,500	480	1,200
Salta	21,080	720	15,178
San Luis	4,500	1,080	4,860
Santa Fe	180,500	510	92,055
Santiago Del Estero Secano	225,873	729	164,588
ARGENTINA	**617,218**	**576**	**355,672**

FERTILIZERS

	Nitrogen	Phosphorus	Potassium	NPK Total
Use in Cotton (Tonnes)	7.1	1.1	0.1	8.3
Applied in Cotton (Kg/Ha)	12	2	0	13
Cotton Footprint (g/Kg Lint)	20	3	0	23
Use in Agriculture (Tonnes)	1,801,458	946,249	83,118	2,830,825

PESTICIDES

	Fungicides	Herbicides	Insecticides	PGRs	Others	PESTICIDES
Use in Cotton (Tonnes)	1	346	418	17	37	819
Applied in Cotton (Kg/Ha)	0.0	0.6	0.7	0.0	0.1	1.3
Cotton Footprint (g/Kg Lint)	0.0	1.0	1.2	0.0	0.1	2.3
Use in Agriculture (Tonnes)	4,455	255,738	5,051	85	4,055	269,383

PESTICIDE APPLICATION (%)

Knap-Sack Sprayers	ULV Sprayers /Tractors	Drone /Aerial/Others
0	94	6

TILLAGE (%)

Disc-Plow	Chisel-Plow	Animal-Plow	No-Till	Minimum-Till	Conventional
35	65	0	65	0	35

COTTON SEEDS & STALKS

Cottonseed Oil & Cake (x1000 Tonnes)	Seed Production	Seed Crushed	Oil Production	Cake Production
	711	143	24	66
Cottonseed For Planting (%)	Fuzzy	Delinted	Chemical Treated	Untreated
	5	95	95	5
Use of Cotton Seeds (%)	Crushed for Oil	Cattle Feed	Used for Sowing	Wasted
	20	72	3	0
Cottonseed Planting and Source (%)	Manual Planting	Machine Planting	Local Source	Imported Source
	0	100	100	0
Ginning	Roller Gins No.	Saw Gins No.	Roller Ginning (%)	Saw Ginning (%)
	0	120	0	100
Use of Cotton Stalks (%)	Burnt in Fields	Used as Firewood	Ploughed Back	Stacked at Bunds
	0	0	100	0

MANDAYS / HECTARE (Total 14 per Hectare per Season)

Land Preparation	Sowing / Planting	Fertilizer Application	Irrigation Management	Thinning	Weeding
0	1	0	0	0	4
Hoeing	**Pesticide Application**	**Defoliator Application**	**Picking / Harvesting**	**Stalk Cutting & Removal**	**Transporting Unloading**
0	5	1	1	0	2

WEEDING & HARVESTING (%)

Manual Weeding	Machine Weeding	Herbicide Weeding	Manual Picking	Machine Harvesting
1	30	69	0	100

NUMBER OF RESEARCH AND EXTENSION STAFF

PUBLIC SECTOR				PRIVATE SECTOR	
Researchers (Male)	Researchers (Female)	Total Research-ers (including University)	Public Sector Extension Staff	Private Sector Research Staff	Private Sector extension Staff
25	14	39	55	0	5

COMPETING & ROTATION CROPS

REGION	COMPETING CROPS			ROTATION CROPS		
Chaco	Soybean			Sunflower	Soybean	Wheat
Santiago Del Estero	Soybean			Sorghum	Maize	Soybean
De Reigo	Soybean			Maize	Alfalfa	Vegetables

PLANTING GEOMETRY

GEOMETRY	SEED RATE (Kg/ha)	Spacing Between Rows (cm)	Spacing Between Plants (cm)	Number of Plants per Hectare
Geometry-1	16	76	10	131,579
Geometry-2	24	52	10	192,308
Geometry-3	32	38	10	263,158

INSECT PESTS & PATHOGENS: De Reigo

EARLY SEASON PESTS	MID-LATE PESTS	PATHOGENS
Anthonomus grandis	*Aphis gossypii*	*Rhizoctonia solani*
Horcias nobilellus & Thrips tabaci		*Ramularia areola*
Spodoptera frugiperda		*Alternaria macrospora*
Eutinobothrus brasiliensis		*Macrophomina phaseolina*

INSECT PESTS & PATHOGENS: Chaco

EARLY SEASON PESTS	MID-LATE PESTS	PATHOGENS
F. pauscispinosa & A. gossypii	*Anthonomus grandis*	*Rhizoctonia solani*
Spodoptera frungiperda & S. latifascia	*H. armigera & H. virescens*	*Pythium ultimum*
Spodoptera & Heliothis	*Horcias nobilellus*	*Cotton leafroll virus*
Eutinobothrus brasiliensis	*Pectinophora gossypiella*	*Fusarium oxysporum*
Agrotis & Pyrophorus spp.		*Xanthomonas malvacearum*

INSECT PESTS & PATHOGENS: Santiago Del Estero Secano

EARLY SEASON PESTS	MID-LATE PESTS	PATHOGENS
Aphis gossypii	*Anthonomus grandis*	*Rhizoctonia solani*
Thrips tabaci	*Horcias nobilellus*	*Pythium ultimum*
Eutinobothrus brasiliensis	*Spodoptera frugiperda*	*Alternaria macrospora*
Agrotis & Spodoptera spp.	*Dysdercus chaquensis*	*Ramularia areola*
Tetranychus urticae		*Macrophomina phaseolina*

INSECT PESTS & PATHOGENS: Argentina

EARLY SEASON PESTS	MID-LATE PESTS	PATHOGENS
Aphis gossypii	*Dysdercus spp.*	*Fusarium oxysporum*
Frankliniella spp.	*Anthonomus grandis*	*Xanthomonas citri pv.malva-cearum*
Anthonomus grandis	*Horcias nobilellus*	*Pythium aphanidermatum*
Plant bugs	*Spodoptera frugiperda*	*Alternaria macrospora*
Jadera spp.	*Dysdercus chaquensis*	*Colletotrichum capsici*

WEEDS: Chaco

NARROW LEAF WEEDS	BROAD LEAF WEEDS
Digitaria insularis	*Sphaeraicea bonariensis*
Chloris spp / Trichloris spp.	*Sorghum halepense*
Gomphrena perennis	*Amaranthus spp.*
Borreria spp.	*Sida spp.*
Ipomea	*Malvastrum coromandelianum*

WEEDS: De Reigo

NARROW LEAF WEEDS	BROAD LEAF WEEDS
Sorghum halepense	*Ipomea nil / Amaranthus spp.*
Chloris spp / Trichloris spp.	*Portulaca oleracea*
Cyanodon dactylon / Cyperus rotundus	*Chenopodium album*

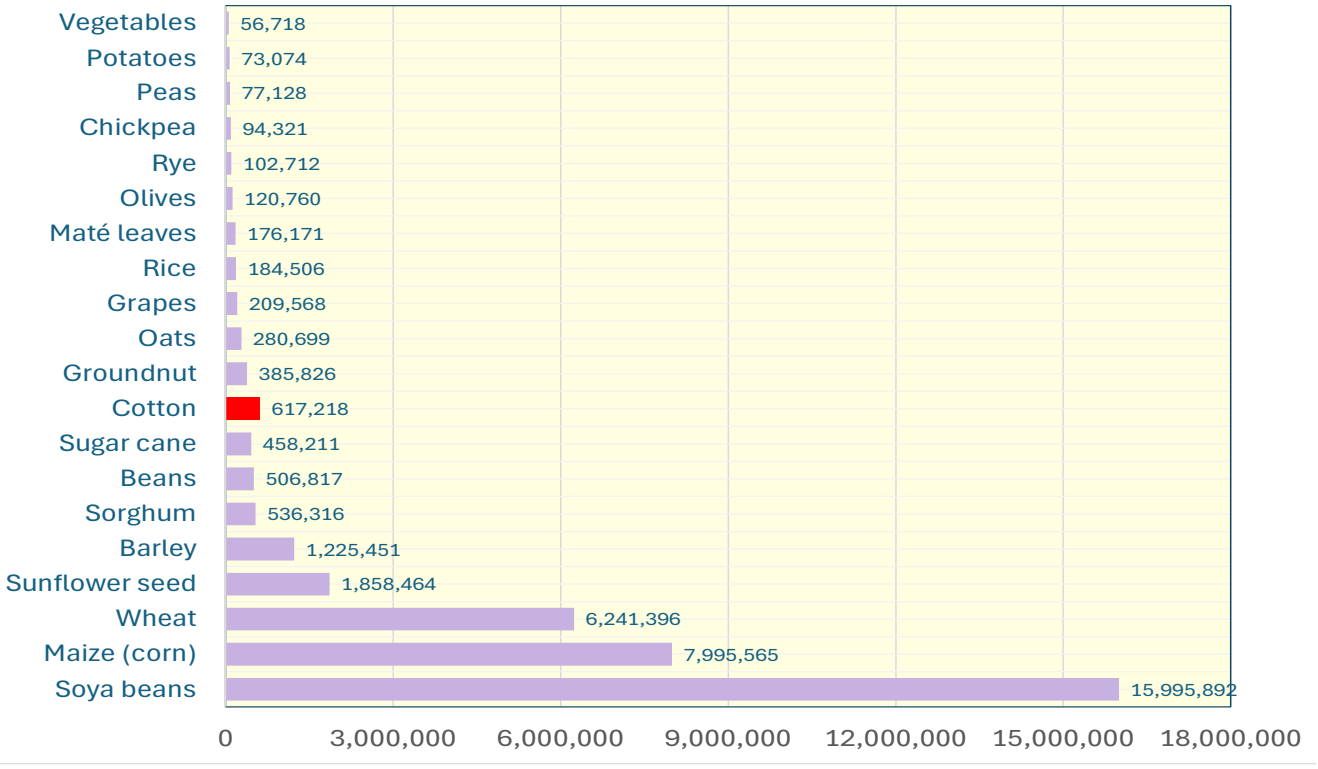
WEEDS: Santiago Del Estero Secano

NARROW LEAF WEEDS	BROAD LEAF WEEDS
Digitaria insularis / Borreria spp	*S Amaranthus spp. / Sorghum halepense*
Chloris spp / Trichloris spp.	*Sphaeraicea bonariensis / Sida spp.*
Gomphrena perennis / Ipomea	*Malvastrum coromandelianum*

WEEDS: Argentina

NARROW LEAF WEEDS	BROAD LEAF WEEDS
Cynodon dactylon / Cyperus rotundus	*Convolvulus arvensis / Cirsium arvense*
hloris spp / Trichloris spp.	*Sonchus arvensis / Solanum nigrum*
Digitaria insularis / Ipomea	*Amaranthus retroflexus*

AREA (Hectares) UNDER DIFFERENT CROPS



SOIL TEXTURE

REGION	Soil Texture Class	% Area
Catamarca	Loam	**0.1**
Chaco	Silty Clay Loam	**29.3**
Cordoba-Argentina	Clay Loam	**0.2**
Corrientes	Sandy Loam	**0.0**
Formosa	Loam	**0.4**
Salta	Sandy Clay Loam	**3.4**
San Luis	Sandy Loam	**0.7**
Santa Fe	Silty Clay Loam	**29.2**
Santiago Del Estero Secano	Loam	**36.6**

SOIL DATA (15-30 cm Depth): Chaco

LAYER NAME	Mean Value	Unit
Cation Exchange Capacity	**23.5**	cmol (c)/Kg
Coarse Fragments	**5**	$cm^3/100cm^3$
Clay Praticles	**37.7**	%
Total Nitrogen	**1.2**	g/kg
pH	**6.4**	pH
Sand Particles	**15.7**	%
Silt Particles	**46.6**	%
Soil Organic Carbon	**12.7**	g/kg

SOIL DATA (15-30 cm Depth): Santa Fe

LAYER NAME	Mean Value	Unit
Cation Exchange Capacity	**24.3**	cmol (c)/Kg
Coarse Fragments	**1.7**	$cm^3/100cm^3$
Clay Praticles	**33.6**	%
Total Nitrogen	**1.03**	g/kg
pH	**6.8**	pH
Sand Particles	**8.5**	%
Silt Particles	**57.9**	%
Soil Organic Carbon	**11.8**	g/kg

IRRIGATION METHODS AREA (%)

REGION	Flood / Spate		Furrow		Sprinkler / Pivot		Drip / Trickle	
	Ha	%	Ha	%	Ha	%	Ha	%
Catamarca	43	10	222	52	94	22	68	16
Chaco	1,085	15	5,065	70	724	10	362	5
Cordoba	68	5	810	60	338	25	135	10
Corrientes	2	24	5	66	1	8	0	2
Formosa	42	28	96	64	9	6	3	2
Salta	2,509	14	10,392	58	3,225	18	1,792	10
San Luis	225	5	1,890	42	1,530	34	855	19
Santa Fe	903	10	5,235	58	2,527	28	361	4
Santiago Del Estero	20,238	32	22,768	36	16,444	26	3,795	6
ARGENTINA	**25,114**	**24**	**46,484**	**45**	**24,891**	**24**	**7,371**	**7**

APPLIED IRRIGATION

REGION	Irrigated Area (Ha)	Irrigated Area (%)	Number of irrigations	Water Applied (mm/Ha)	Water Applied (M Litres)	Applied water Footprint (L/Kg lint)
Catamarca	428	95	3	223	954	2,825
Chaco	7,236	4	1	74	5,351	70
Cordoba	1,350	100	3	178	2,400	2,395
Corrientes	8	13	1	85	7	161
Formosa	150	6	2	135	203	169
Salta	17,918	85	0	0	0	0
San Luis	4,500	100	4	278	12,521	2,576
Santa Fe	9,025	5	1	52	4,664	51
Santiago Del Estero	63,244	28	3	229	144,572	878
ARGENTINA	**103,859**	**17**	**2**	**164**	**170,671**	**480**

COTTON CONSUMPTIVE WATER FOOTPRINT (Litres per Kg Lint Produced)

REGION	Green Water Footprint	Blue Water Footprint	Total Water Footprint
Catamarca	4,856	2,577	7,433
Chaco	11,811	0	11,811
Cordoba	4,839	2,135	6,974
Corrientes	8,033	0	8,033
Formosa	9,811	0	9,811
Salta	5,373	0	5,373
San Luis	3,662	2,035	5,697
Santa Fe	9,464	0	9,464
Santiago Del Estero	5,937	549	6,486
ARGENTINA	**8,066**	**290**	**8,356**

RAIN WATER

REGION	Total Annual Rainfall (mm)	Cotton Season Rainfall (mm)	Effective Rainfall (mm)	Rain Utilized by Cotton (Million litres)
Catamarca	458	371	364	1,639
Chaco	1,013	805	598	1,081,865
Cordoba	504	385	359	4,849
Corrientes	1,013	805	645	387
Formosa	1,028	818	607	15,181
Salta	1,027	1,009	648	136,518
San Luis	501	400	395	17,796
Santa Fe	719	714	548	989,920
Santiago Del Estero	439	439	433	977,135
ARGENTINA	**712**	**648**	**523**	**3,225,289**

COTTON CONSUMPTIVE EVAPOTRANSPIRATION (ET) (mm)

REGION	ET-green	ET-blue	ET-Total	Seasonal ETc
Catamarca	**364**	**203**	**568**	**595**
Chaco	**499**	**0**	**499**	**594**
Cordoba	**359**	**158**	**518**	**546**
Corrientes	**554**	**0**	**554**	**594**
Formosa	**471**	**0**	**471**	**592**
Salta	**387**	**0**	**387**	**387**
San Luis	**395**	**220**	**615**	**646**
Santa Fe	**483**	**0**	**483**	**528**
Santiago Del Estero	**433**	**143**	**576**	**647**
ARGENTINA	**465**	**54**	**519**	**649**

ARGENTINA REGIONS: COTTON SEASON DEGREE DAYS (DD-60°F)

Region	Seedling Stage	Squaring Stage	Peak Flowering	Boll Formation	Boll Opening	Harvest
Catamarca	422	485	573	540	537	247
Chaco	499	604	631	641	642	430
Cordoba-Argentina	369	433	503	464	461	189
Corrientes	492	596	624	631	630	429
Formosa	528	625	651	644	671	492
Salta	368	352	358	309	326	157
San Luis	366	448	548	514	468	189
Santa Fe	368	456	545	566	528	211
Santiago Del Estero	511	575	655	618	641	288

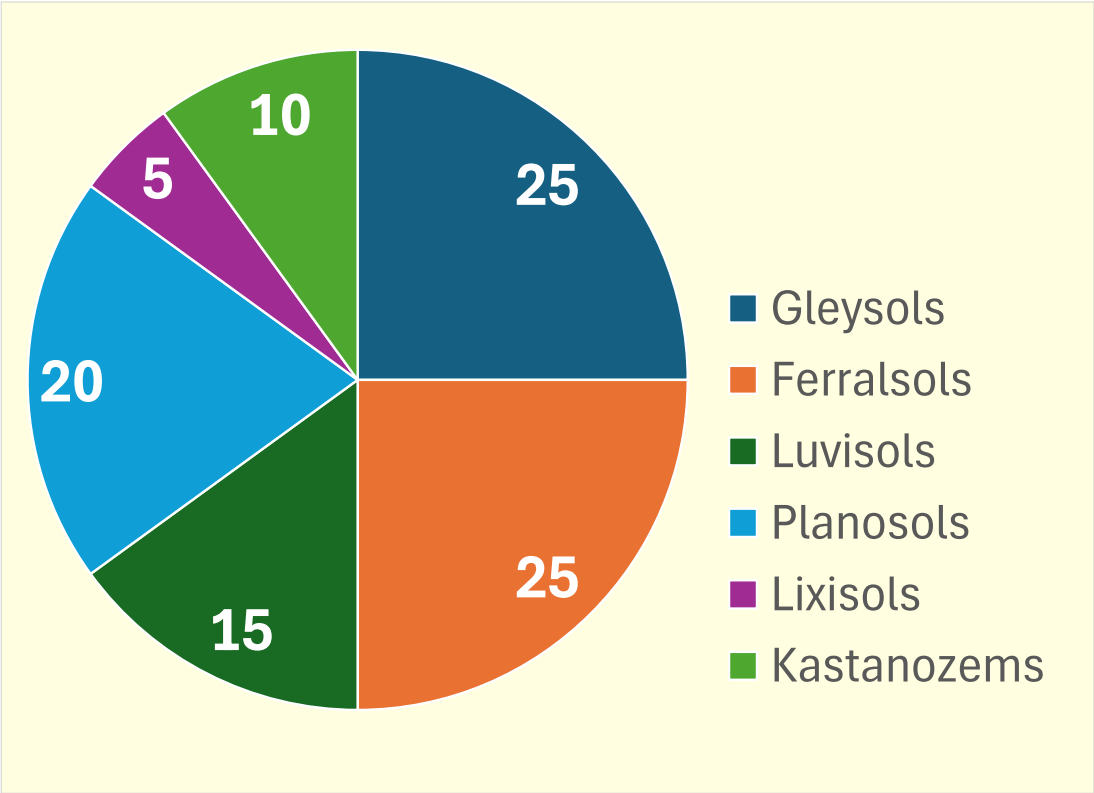
ARGENTINA REGIONS: RAINFALL DURING THE COTTON SEASON (mm)

Region	Seedling Stage	Squaring Stage	Peak Flowering	Boll Formation	Boll Opening	Harvest
Catamarca	26	95	41	80	69	28
Chaco	329	334	134	224	166	448
Cordoba-Argentina	57	100	77	248	95	80
Corrientes	265	356	125	224	168	439
Formosa	277	250	115	136	101	339
Salta	97	257	200	245	150	61
San Luis	70	66	131	169	55	37
Santa Fe	113	310	121	121	231	193
Santiago Del Estero	104	176	128	134	130	50

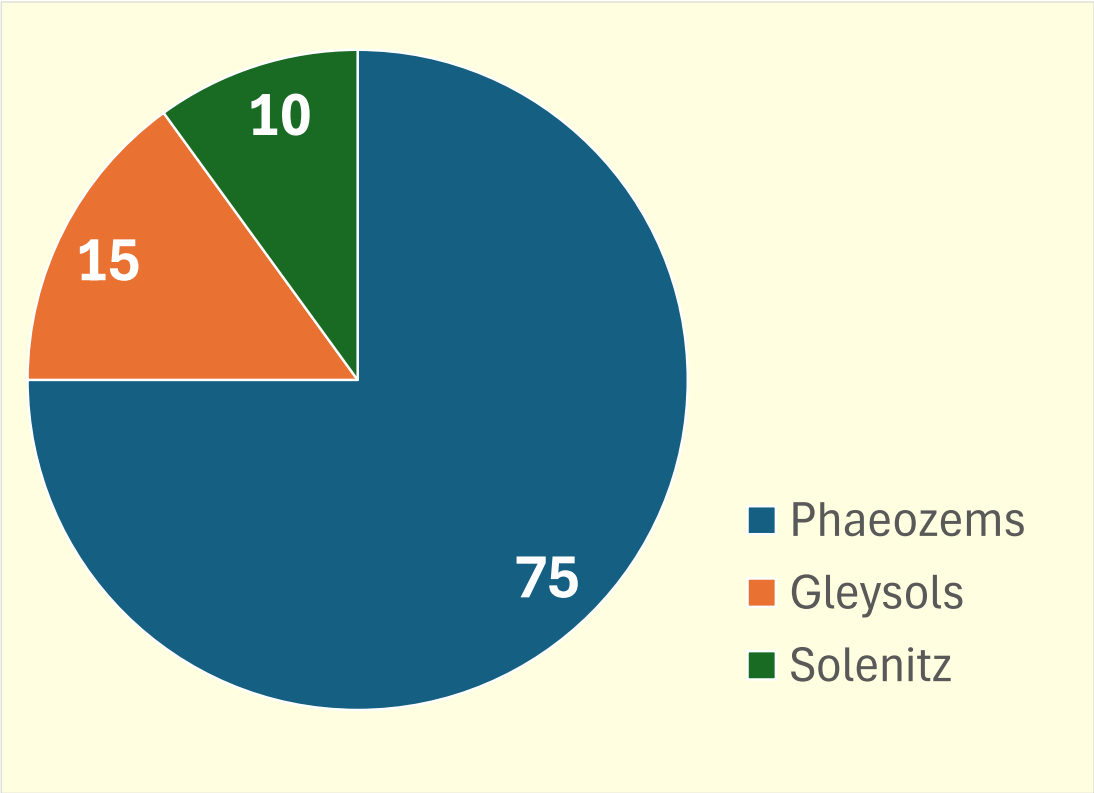
VARIETIES & FIBRE TRAITS

Name of the Variety	Release Year	% Area	Ginning %	Length UHML mm	Strength g/tex	Mic
Deltapine 1238 BGRR	2014	66.91	39	30.0	32.3	4.5
NUOPAL RR	2009	13.71	36	29.0	33.5	4.3
GUAZUNCHO 4 INTA BGRR	2019	7.95	38	28.6	31.5	4.4
GUARANI INTA BGRR	2019	5.10	39	27.2	30.9	4.5
PORA 3 INTA BGRR	2019	3.80	40	26.9	30.8	4.2
DP 402 BG/RR	2009	1.52	39	29.0	30.0	3.8
GUAZUNCHO 2000	2001	0.94	36	28.6	31.0	4.5
GUAZUNCHO 2 INTA	1989	0.06	37	29.0	31.9	4.1
PORA INTA	1982		38	28.8	30.7	4.2
Deltapine 404 BG	2003		40	29.5	32.0	4.0
CHACO 510 INTA	1982		38	29.1	32.2	4.5
Deltapine 447 BG	2004		42	30.5	34.0	3.8
CACIQUE INTA	1996		39	29.0	31.0	4.3
CHACO 530 INTA	2004		38	29.8	33.4	4.0
Deltapine 50	1993		39	28.9	30.1	4.2
GUAYCURU INTA	1982		39	28.8	31.0	4.2
DP 604 BG	2007		40	29.2	32.0	4.5
MATACO INTA	1982		38	28.2	30.0	4.6
ACALA 1517 D	1987		40	29.8	33.0	4.1
TOBA II INTA	1982		39	29.3	31.0	4.3
Deltapine 402 B	2004		36	29.4	32.0	4.2
Deltapine 428 B	2003		41	30.0	33.0	4.0
Deltapine 4049	2000		43	31.0	35.0	3.7
GUAZUNCHO 3 INTA	2004		37	29.8	33.2	4.1
REBA P 279	1982		39	28.5	30.0	4.3
PORAITE	2008		38	29.9	32.8	4.0

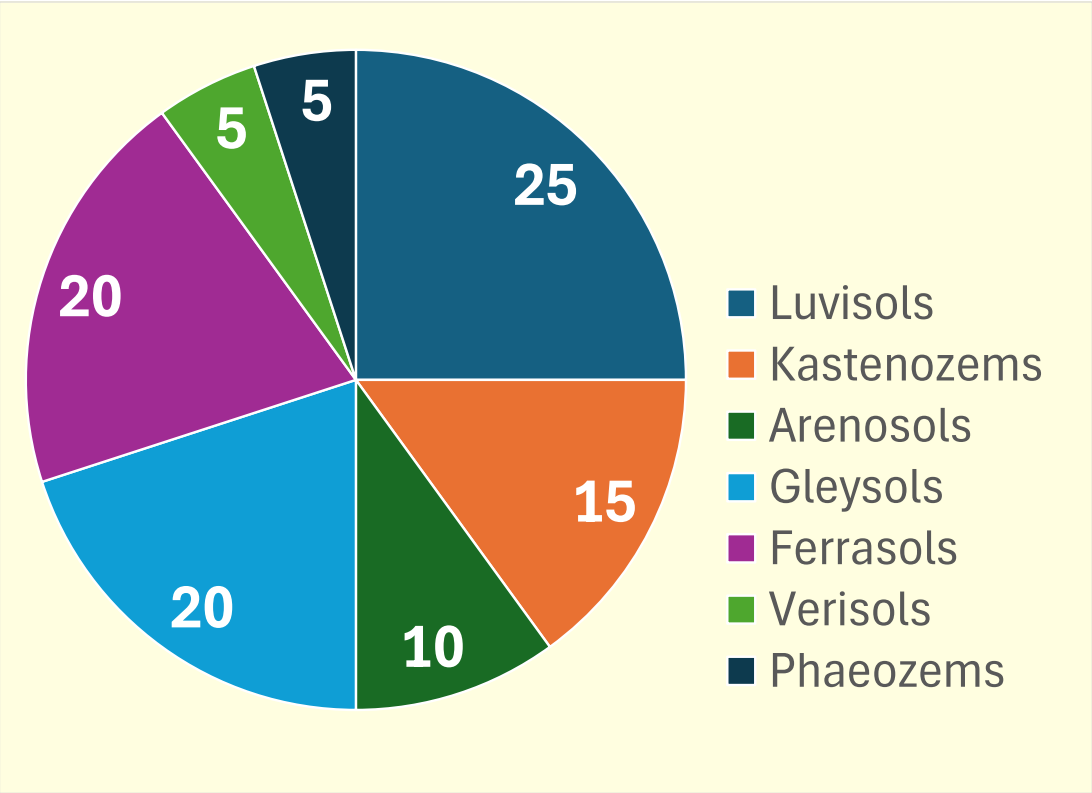
SOIL TYPES: CHACO



SOIL TYPES: SANTA FE



SOIL TYPES: CHACO



COST OF CULTIVATION: ARGENTINA

	Cost (US$/Hectare)	Cost (US$/Kg Lint)
Inputs		
Seed	142	0.25
Fertizer	2	0.00
Fungicide	0	0.00
Herbicide	125	0.22
Insecticide	164	0.28
Plant Growth Regulator	35	0.06
Other Pesticides	54	0.09
Manpower / Labour		
Land Preparation	49	0.08
Irrigation	10	0.02
Weeding	15	0.03
Harvesting	108	0.19
Labour	113	0.20
Machinery	112	0.19
Overheads	15	0.03
Ginning	110	0.19
Total Cost of Cultivation	**1054**	**1.83**
Market Value		
Lint Market Value	**1126**	1.96
Seed Market Value	**276**	0.24
NET RETURNS	**349**	

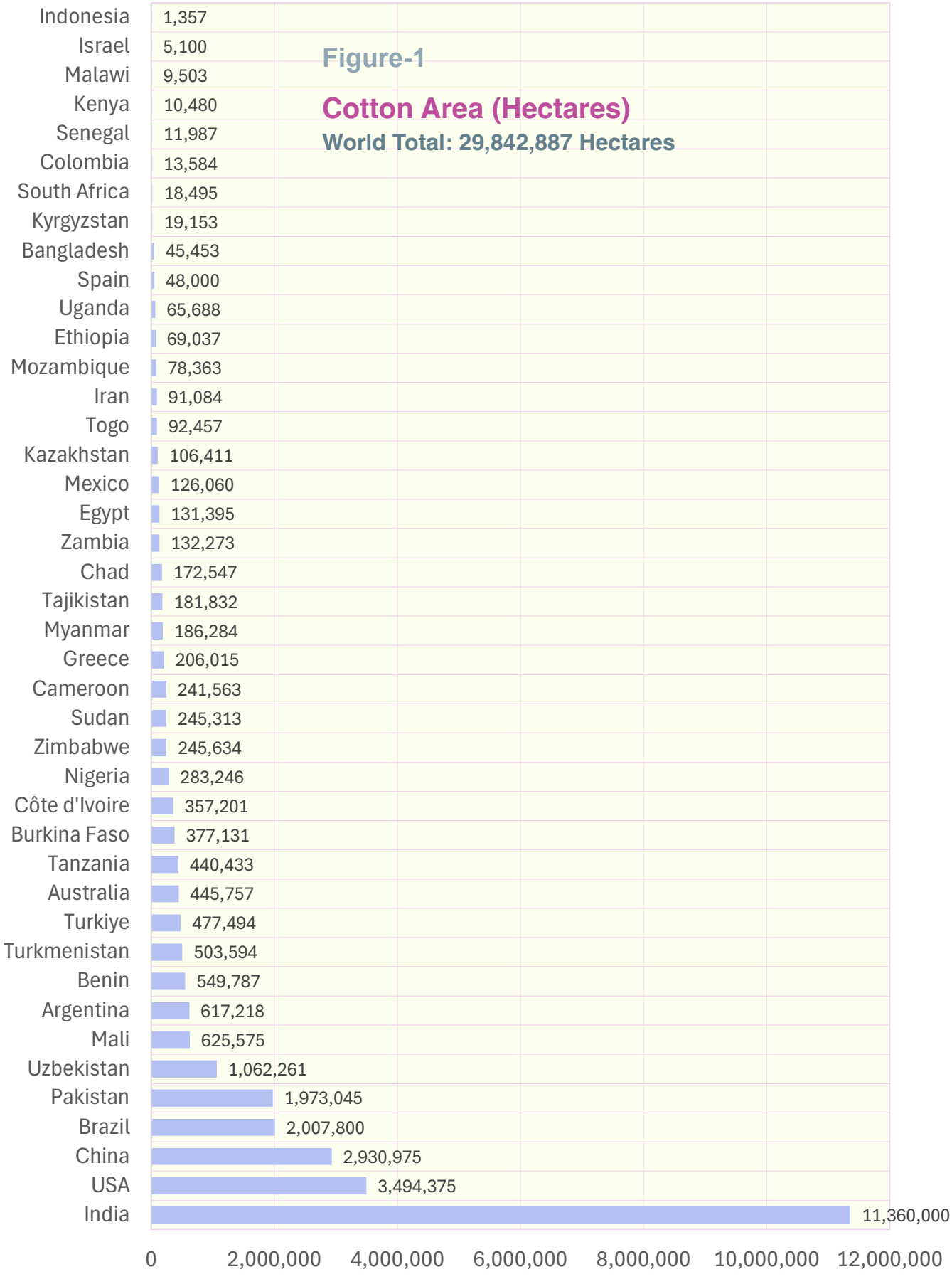
COTTON PRODUCTION

GLOBAL DATA

Figure-1

Cotton Area (Hectares)

World Total: 29,842,887 Hectares



DATA TRENDS

2001-2024

Figure-223 PRODUCTION COST (US$) per Kg seed-cotton Produced

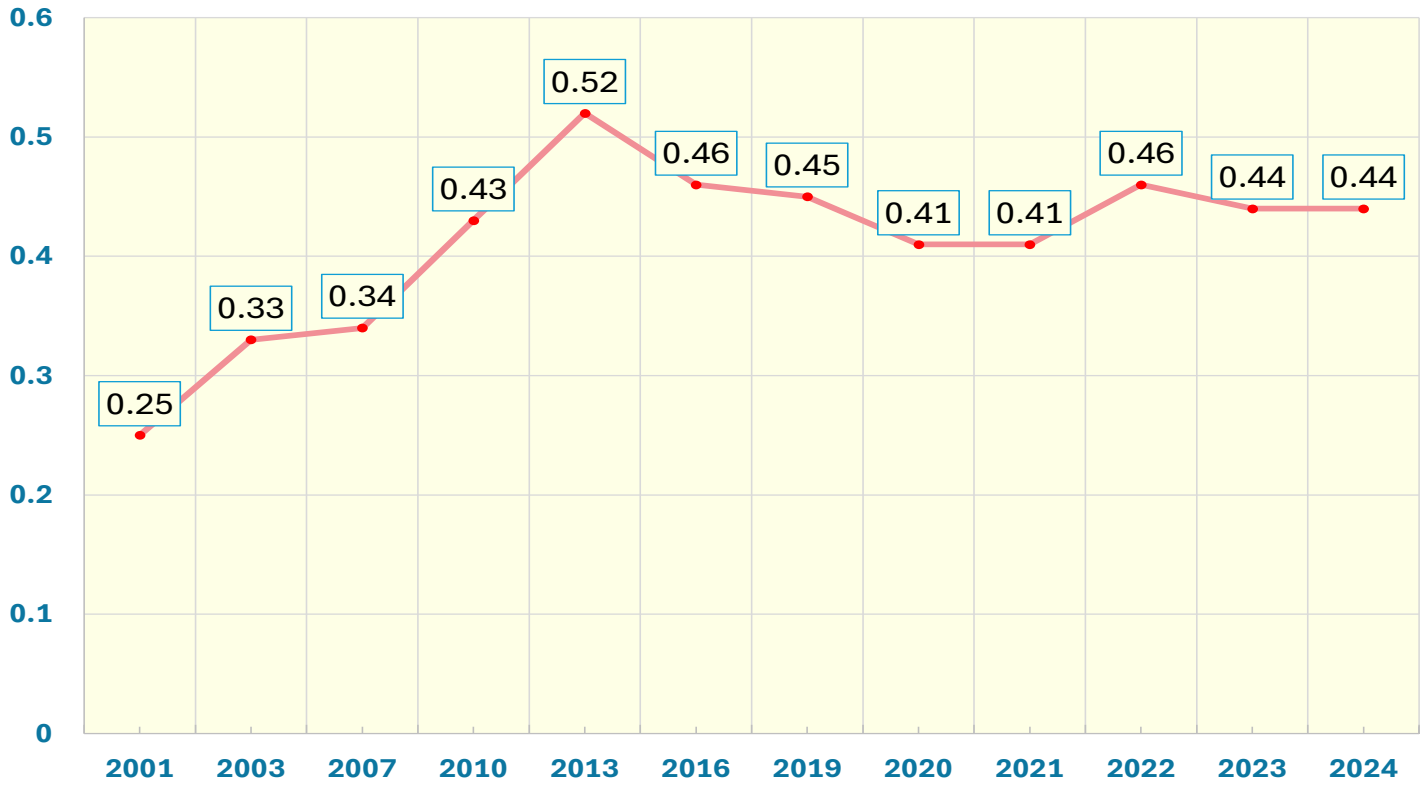
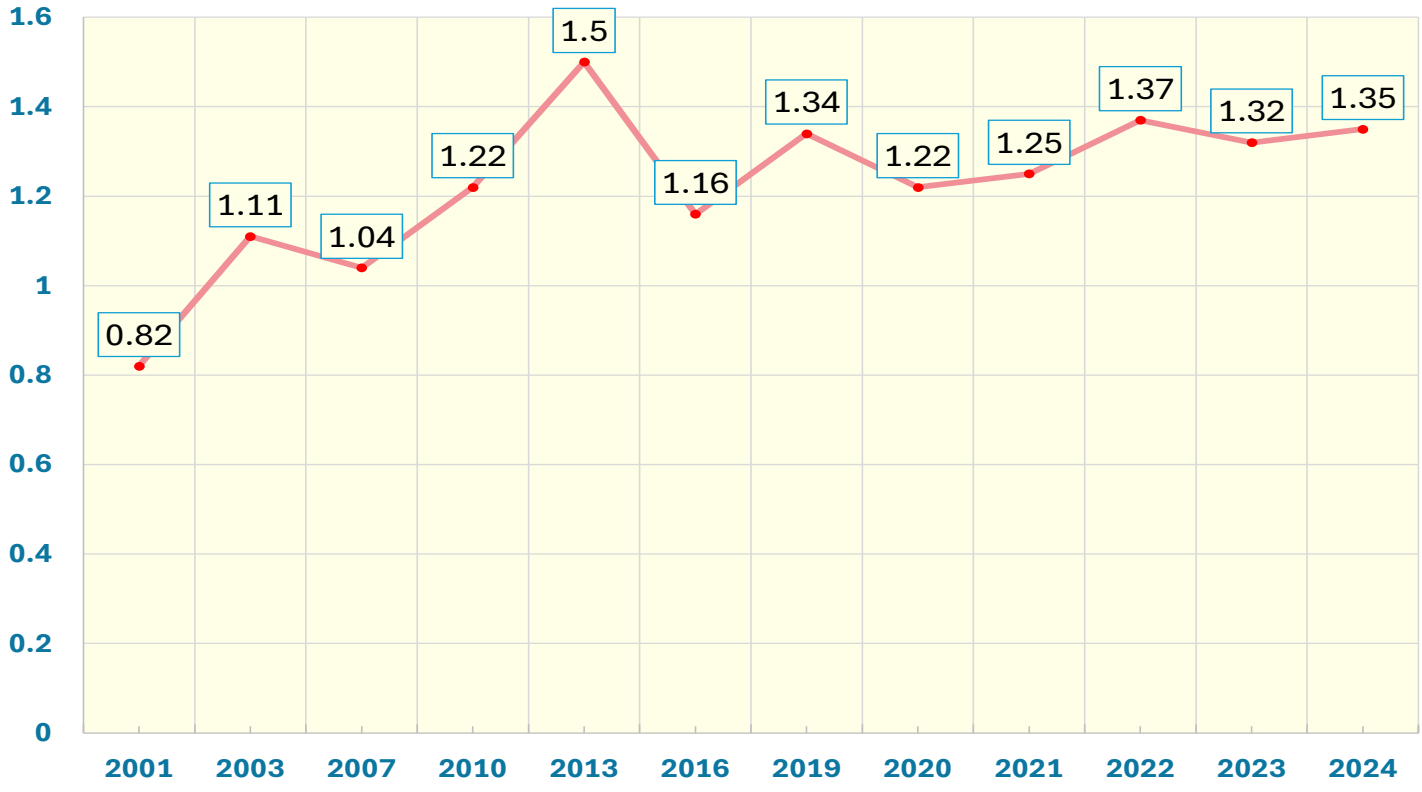


Figure-224 PRODUCTION COST (US$) per Kg Lint Produced



COTTON PRODUCTION

DATA TABLES

Table 1. COUNTRIES: AREA, PRODUCTION & YIELD

Country	Area (Hectares)	Lint Yield (Kg/Hectare)	Production (Tonnes)
Argentina	6	576	355,672
Australia	445,757	2,265	1,009,434
Bangladesh	45,453	735	33,387
Benin	549,787	503	276,661
Brazil	2,007,800	1,845	3,704,109
Burkina Faso	377,131	344	129,625
Cameroon	241,563	630	152,135
Chad	172,547	210	36,166
China	2,930,975	2,125	6,226,949
Colombia	13,584	988	13,422
Côte d'Ivoire	357,201	437	156,270
Egypt	131,395	707	92,949
Ethiopia	69,037	595	41,093
Greece	206,015	1,166	240,152
India	11,360,000	448	5,087,420
Indonesia	1,357	352	478
Iran	91,084	882	80,292
Israel	5,100	1,796	9,160
Kazakhstan	106,411	945	100,510
Kenya	10,480	136	1,428
Kyrgyzstan	19,153	1,089	20,858
Malawi	9,503	424	4,028
Mali	625,575	323	202,004
Mexico	126,060	1,541	194,275
Mozambique	78,363	248	19,431
Myanmar	186,284	649	120,965
Nigeria	283,246	132	37,520
Pakistan	1,973,045	734	1,448,369
Senegal	11,987	490	5,874
South Africa	18,495	976	18,042
Spain	48,000	885	42,480
Sudan	245,313	513	125,793
TAJIKISTAN	181,832	605	110,008
Tanzania	440,433	173	76,192
Togo	92,457	331	30,587
Turkiye	477,494	1,627	777,085
Turkmenistan	503,594	349	175,890
Uganda	65,688	368	24,191
USA	3,494,375	888	3,102,856
Uzbekistan	1,062,261	653	693,396
Zambia	132,273	83	10,965
Zimbabwe	245,634	198	48,583
World	**29,842,887**	**834**	**24,890,803**