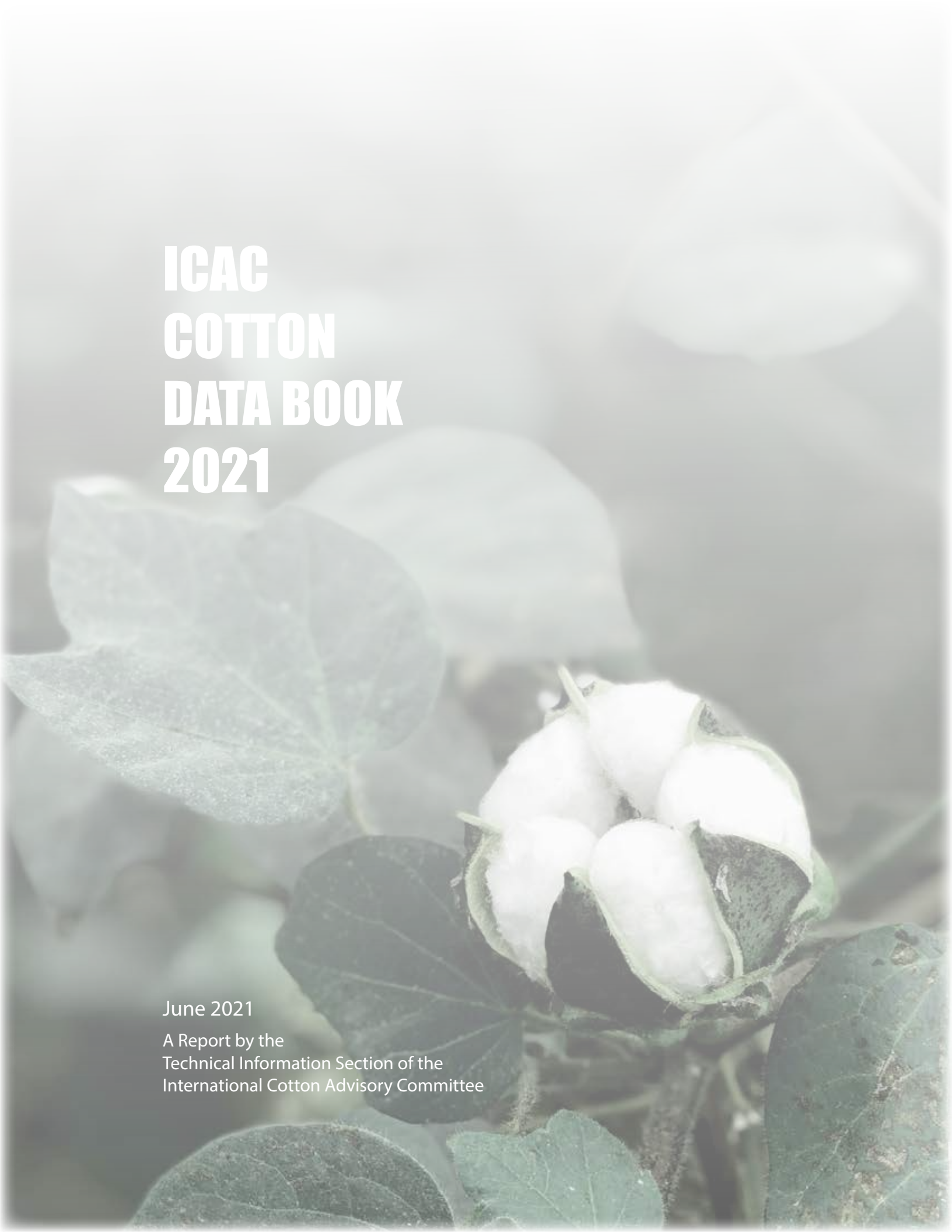


June 2021

ICAC COTTON DATA BOOK 2021



INTERNATIONAL COTTON ADVISORY COMMITTEE, Washington DC, USA

A close-up photograph of a cotton plant. In the foreground, a cotton boll is partially open, revealing its white, fluffy seeds. The boll is surrounded by green leaves, some of which are in sharp focus while others are blurred in the background. The overall lighting is soft and natural, highlighting the texture of the cotton and the veins on the leaves.

ICAC COTTON DATA BOOK 2021

June 2021

A Report by the
Technical Information Section of the
International Cotton Advisory Committee

@ International Cotton Advisory Committee, 2021



Price: US\$ 400 (pdf)
US\$ 500 (Hard copy)

Please send orders to
<publications@icac.org>
website: www.icac.org/

INTERNATIONAL COTTON ADVISORY COMMITTEE
1629 K Street NW, Suite 702, Washington DC, 20006 USA

CONTENTS

List of Production Data Figures

	Title	Page
Figure-1a,1b	Cotton growing regions / countries of the world	8-9
Figure-2	Cotton area '000 hectares	11
Figure-3	Cotton lint yield kg/ha	12
Figure-4	Cotton production '000 tonnes	13
Figure-5	Fertiliser cost per hectare (US\$)	14
Figure-6	Fertiliser cost per kg lint (US\$)	15
Figure-7	Ginning cost per hectare (US\$)	16
Figure-8	Ginning cost (US\$) per kg lint	17
Figure-9	Ginning % (out turn)	18
Figure-10	Insecticide cost per hectare (US\$)	19
Figure-11	Insecticide cost (US\$) per kg lint produced	20
Figure-12	Lint value per hectare (US\$)	21
Figure-13	Machine use cost per hectare (US\$)	22
Figure-14	Manpower cost per hectare (US\$)	23
Figure-15	Net returns on lint per hectare (US\$)	24
Figure-16	Net returns on seed-cotton per hectare (US\$)	25
Figure-17	Fertiliser cost as % of cultivation cost	26
Figure-18	Ginning cost as % of cultivation cost	27
Figure-19	Machinery cost as % of cultivation cost	28
Figure-20	Manpower cost as % of cultivation cost	29
Figure-21	Pesticide cost as % of cultivation cost	30
Figure-22	Seed cost as % of cultivation cost	31
Figure-23	Pesticide cost per hectare (US\$)	32
Figure-24	24a. Production cost (US\$) per kg lint & 24b. Production cost US cents per lb lint	33-34
Figure-25	25a. Production cost (US\$) per kg seed-cotton & 25b. US cents per lb seed-cotton	35-36
Figure-26	Seed cost per hectare (US\$)	37
Figure-27	Total cost of cultivation (US\$) per hectare	38
Figure-28	Weeding cost per hectare (US\$)	39
Figure-29	Weeding cost (US\$) per kg lint produced	40
Figure-30	Blue water (litres) used per kg lint produced	41
Figure-31	Green water ('000 litres) used per kg lint produced	42
Figure-32	Irrigation water (billion litres) used for cotton production	43
Figure-33	% rainfed area	44
Figure-34	Pesticide use active ingredients Kg/Ha	45
Figure-35	Nitrogen fertiliser use in cotton (Kg/Ha)	46
Figure-36	NPK fertiliser use in cotton (Kg/Ha)	47
Figure-37	Fuzzy seeds used for sowing (%)	48
Figure-38	Cotton Area Under Zero-Till (%)	49
Figure-39	Plant Population per Hectare	50
Figure-40	Man-days employed in cotton production per hectare per season	51
Figure-41	Cotton Seed Production '000 Metric Tonnes	52
Figure-42	Cotton-seed Oil Production '000 Metric Tonnes	53
Figure-43	Cotton-seed Crushed for Oil (%)	54

CONTENTS

Figure-44	Cotton-Seed Meal Production ('000 Tonnes)	55
Figure-45	Cotton area trend 1990-2020	56
Figure-46	Lint yield trend 1990-2020	57
Figure-47	Production trend 1990-2020	57
Figure-48	Fertiliser cost (US\$) per kg lint produced 2001-2020	58
Figure-49	Insecticide cost (US\$) per kg lint produced 2001-2020	58
Figure-50	Ginning cost (US\$) per kg lint produced 2007-2020	59
Figure-51	Weeding cost (US\$) per kg lint produced 2001-2020	59
Figure-52	Production cost (US\$) per kg seed-cotton produced 2001-2020	60
Figure-53	Production cost (US\$) per kg lint produced	60

List of Cotton Trade Data Figures

	Title	Page
Figures-54-55	World Cotton Fibre Exports & Top Cotton Fibre Exporting Countries(Billion US\$)	62
Figures-56-57	World Cotton Fibre Imports & Top Cotton Fibre Importing Countries (Billion US\$)	63
Figures-58-59	World Cotton Yarn Exports & Top Cotton Yarn Exporting Countries (Billion US\$)	64
Figures-60-61	World Cotton Yarn Imports & Top Cotton Yarn Importing Countries (Billion US\$)	65
Figure-62	World Cotton Textile & Apparel Exports (Billion US\$)	66
Figure-63	Textile & Apparel Exports by Country (Billion US\$) and Share of T&A in Total Exports	66
Figures-64-65	Top Textile Imports by Country & Top Textile Importing Countries (Billion US\$)	67
Figure-66	Cotton-Linter Exports (US\$)	68
Figure-67	Cotton-Linter Imports (US\$)	69
Figure-68	Cotton-Seed Exports (US\$)	70
Figure-69	Cotton-Seed Imports (US\$)	71
Figure-70	Cotton-Sowing-Seed Exports (US\$)	72
Figure-71	Cotton-Sowing-Seed Imports (US\$)	73
Figure-72	Combed & Carded Cotton Exports (US\$)	74
Figure-73	Combed & Carded Cotton Imports (US\$)	75
Figure-74	Cotton Crude Seed Oil Exports (US\$)	76
Figure-75	Cotton Crude Seed Oil Imports (US\$)	77
Figure-76	Cotton Seed Oil Exports (US\$)	78
Figure-77	Cotton Seed Oil Imports (US\$)	79
Figure-78	Cotton Mill-Waste Exports (US\$)	80
Figure-79	Cotton Mill-Waste Imports (US\$)	81

List of Production Data Tables

	Title	Page
Table-1	Number of farmers and farm unit area (ha)	83-84
Table-2	Research and extension staff	85
Table-3	Methods of seed processing (%) for sowing	86
Table-4	Planting methods & seed source	87
Table-5	Tillage methods (%)	88
Table-6	Seed rate, spacing & plant population/ha	89-90
Table-7	Fertiliser usage in cotton	91
Table-8	Pesticide spray methods (%)	92

CONTENTS

Table-9	Weeding & harvesting methods (%)	93
Table-10	Ginning methods	94
Table-11	Use of cotton seeds (%)	95
Table-12	Use of cotton stalk residues (%)	96
Table-13	Crop rotation with cotton	97-98
Table-14	Crops competing with cotton	99-100
Table-15	Irrigation methods & water footprint	101-104
Table-16	Rainwater (mm), etc & irrigation (mm)	105-108
Table-17	Input costs per hectare	109-110
Table-18	Input costs per kg seed-cotton & per kg lint	111-112
Table-19	Cost of cultivation (ha) & production (kg)	113-114
Table-20	Area, production & productivity in COVID times	115
Table-21	% Change in Area, production & productivity in COVID times	116
Table-22	Imports, Exports and Consumption in COVID times	117
Table-23	% Change in Imports, Exports and Consumption in COVID times	118
Table-24	Varieties across the world and their fibre traits	119-135

List of Production Data Charts

	Title	Page
Chart-1	Global distribution of major insect pests	136
Chart-2	Commonly used insecticides -across the world	137
Chart-3	Global distribution of major weeds	138
Chart-4	Global distribution of major diseases	139
Chart-5	Chart: Sowing & harvesting calendar & Table 21. Sowing & harvesting calendar	140-141

Data on Countries: Cotton Production & Trade

Country	Page	Country	Page	Country	Page	Country	Page
Argentina	143	Cote d'Ivoire	243	Mali	369	Togo	473
Australia	157	Egypt	263	Mexico	374	Turkey	482
Bangladesh	167	Ethiopia	252	Mozambique	393	Turkmenistan	496
Benin	175	Greece	271	Myanmar	402	Uganda	503
Brazil	181	India	283	Nigeria	409	USA	513
Burkina Faso	196	Indonesia	319	Pakistan	415	Uzbekistan	529
Cameroon	205	Iran	327	South Africa	429	Zambia	541
Chad	211	Kazakhstan	341	Spain	445	Zimbabwe	549
China	218	Kenya	351	Sudan	457		
Colombia	231	Malawi	362	Tanzania	462		

Annexures:

	Title	Page
Annexure-1	Scientific names of insects	558
Annexure-2	Scientific names of weeds	559
Annexure-3	Scientific names of pathogens	560
Annexure-4	Bale shape and size	561
Annexure-5	Global crop protection pesticide market 2017-2019	562
Annexure-6	Pesticide use ('000 Tonnes) in agriculture in cotton growing countries	563
Annexure-7	Global distribution of Bt cotton varieties and hybrids	564

PRODUCTION DATA

INTRODUCTION: This edition of the cotton data book has data on cotton production and cotton trade of 38 major cotton producing and consuming countries. Cotton production data include information from different cotton-growing provinces, states or regions of each of the countries. All the national average values presented in the data book are weighted means derived from the states, provinces and regions. The data book covers aspects related to number of farmers, area, production, productivity (yield), seed processing, tillage methods, planting methods, stalk usage, weeding practices, methods of harvesting and ginning, spray application methods, fertilizer usage, cropping systems, water footprint, cost of production, cost of cultivation etc. Government coordinating agencies and researchers kindly provided the data. A few countries publish their production data on web sites that was accessed as official source.

WATER: Data on irrigation water (Blue) and rainwater (Green) was collected from databases, web sites, research publications, researchers, farmers and officials. Irrigation data of USA was of 2018 and most countries of 2019 or 2020 but the calculations of water footprint were based on production of 2020. Therefore, the data has limitations and must be considered only as indicative.

- **Irrigation water footprint** (Litres per Kg lint produced) = Total irrigation water provided / Total lint produced (Kg).
- **Rainwater footprint** (Litres per Kg lint produced) = Total effective rainfall received / Total lint produced (Kg).
- **Effective rainfall** was calculated from the total seasonal rainfall based on the soil type of the region and ranged from 60 to 75% of the seasonal rainfall.
- **Crop Evapotranspiration (ETc)** was calculated from meteorological data by means of the FAO Penman-Monteith equation.

FERTILISERS: Data on fertiliser usage either as total quantities used in cotton or per hectare of NPK was provided by officials and researchers. The table on fertilisers is based on calculations derived from the data provided by the above sources.

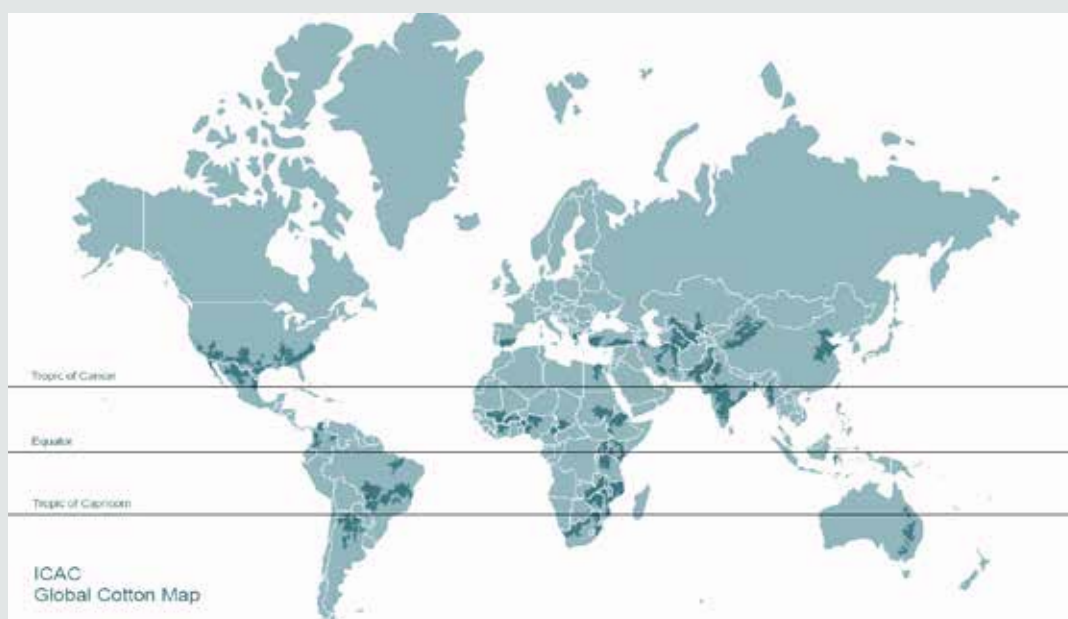
COST OF CULTIVATION & PRODUCTION: Cost of cultivation data was provided by officials and researchers. Data of Australia, USA and India were drawn from official websites. All values were converted from local currencies to US\$ based on the prevalent conversion rates of 2020.

Production cost of Kg lint = (Cost of cultivation + ginning cost - seed value) / Lint produced (Kg)

Production cost of Kg seed cotton = (Cost of cultivation) / Seed-cotton produced (Kg)

Keshav Kranthi
Chief Scientist, ICAC

Figure 1a. **COTTON GROWING REGIONS OF THE WORLD**



TRADE DATA

INTRODUCTION: In order to provide a larger scope of information and data analysis to inform member governments of the current situation in the world textile and apparel market, the ICAC Secretariat has included information about fibre, yarn, textile, and apparel trade statistics in this second issue of the annual ICAC COTTON DATA BOOK 2021. Data is provided in the form of graphs for major cotton producing, consuming, and trading countries over the period 2001 through 2018. The selection of the sampling period was based on data availability. The ICAC Secretariat has also included information about the composition of textile and apparel industry, employment and production of sustainable and organic cotton by country. The ICAC Secretariat hopes that all these data points provide insights that enhance countries' ability to make decisions that will benefit their industries and help to identify new markets. We also hope that this report will be the primary source of information for all those who want to know more about the global cotton sector.

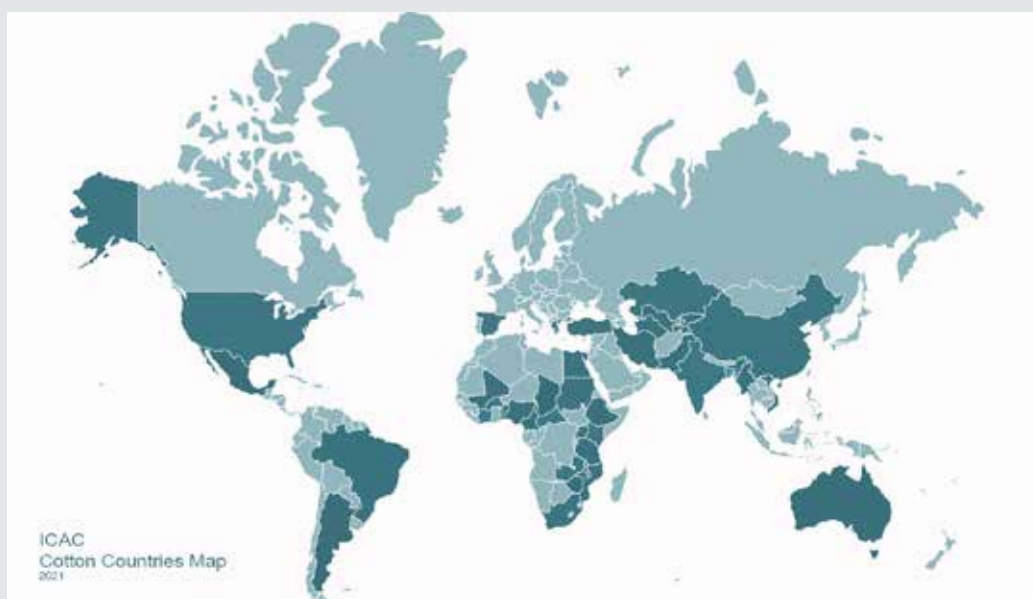
DATA SOURCE: The main data source of our statistics come from a questionnaire-based survey of the main cotton producing, consuming and trading countries conducted by the ICAC Secretariat, as well as public sector institutions and the ITMF. Most of the trade data come from the Trade Map, International Trade Centre and data reported by Trade Data Monitor, TDM. For the most part, trade statistics are provided in both quantity and value terms. However, for some years, blanks were left when data was unavailable. Gross domestic product per capita by country was taken from the International Monetary Fund-IMF. The ICAC Secretariat conducted a survey across the cotton identity programs or initiatives to update data on the cotton produced under these initiatives.

DATA UNITS: Data for cotton lint and yarn trade is given in metric tonnes (thousand or million) and in US\$ dollar on calendar year basis (January-December). Statistical data also provides trade flows of cotton lint and cotton yarn by origin and destination. Textiles and Apparel trade statistics are provided in current US\$ dollars only. Import and export data are not necessarily reconcilable at the world level due to timing issues, estimation errors or lack of data for some countries. The average price of traded fibre and yarn was calculated as the ratio of value to volume of traded fibre and yarn, both for imports and exports (US\$/Kg). Cotton consumption by country is provided in marketing year (August-July). Gross Domestic Product-GDP per capita is expressed in current prices in international dollars per capita.

Trade data is broken down into different categories based on the Harmonized System (HS) Code: cotton fibre (HS code 5201), cotton yarn (HS codes 5204-5207), woven cotton fabrics (HS codes 5208-5212), knitted cotton fabrics (HS codes 6001.21, 6001.91, 6003.20, 6005.21, 6005.22, 6005.23, 6005.24, 6006.21, 6006.22, 6006.23, 6006.24), and textile and apparel products (HS codes 50-63).

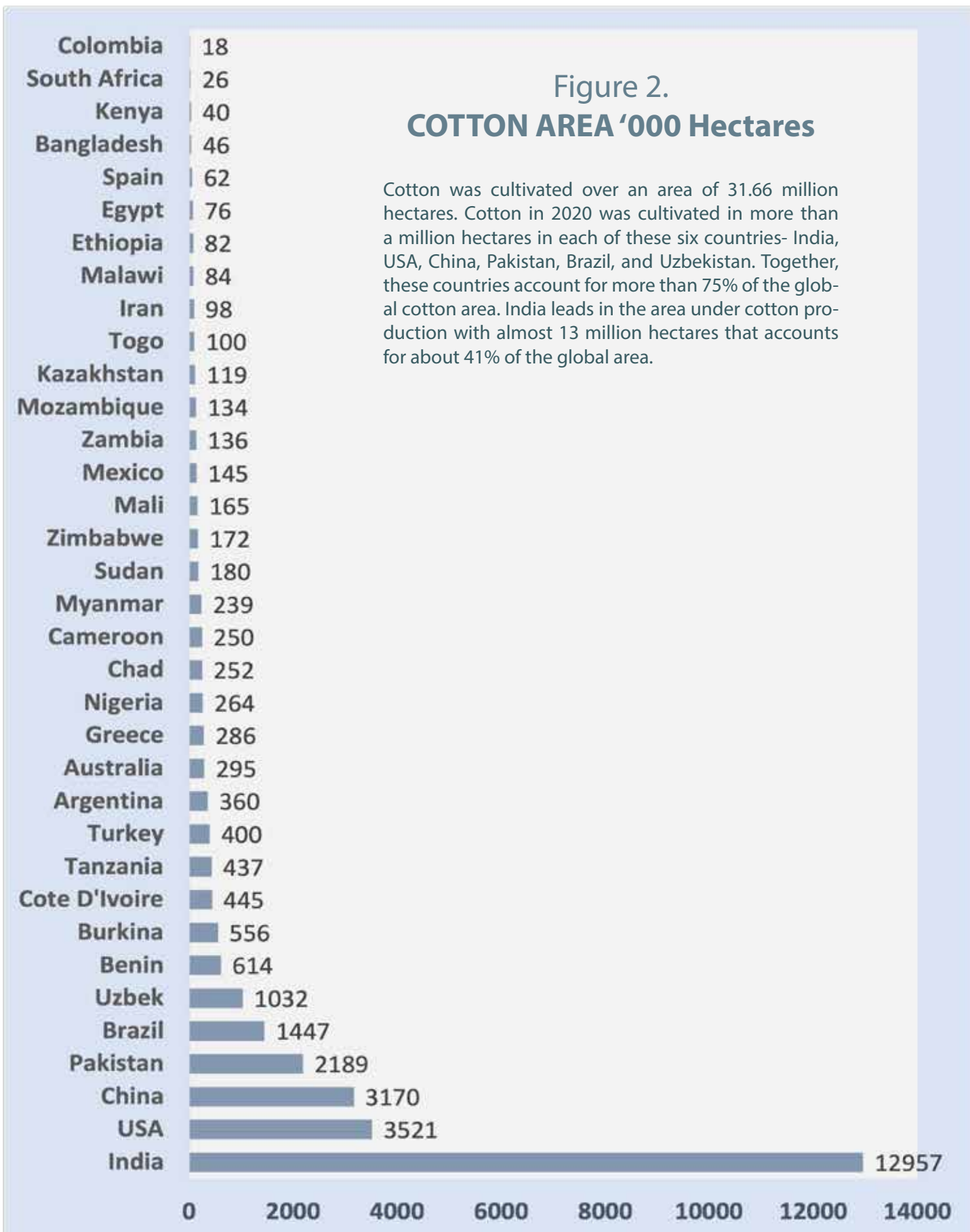
Lorena Ruiz
Economist ICAC

Figure 1b. **COTTON GROWING COUNTRIES OF THE WORLD**



GRAPHS





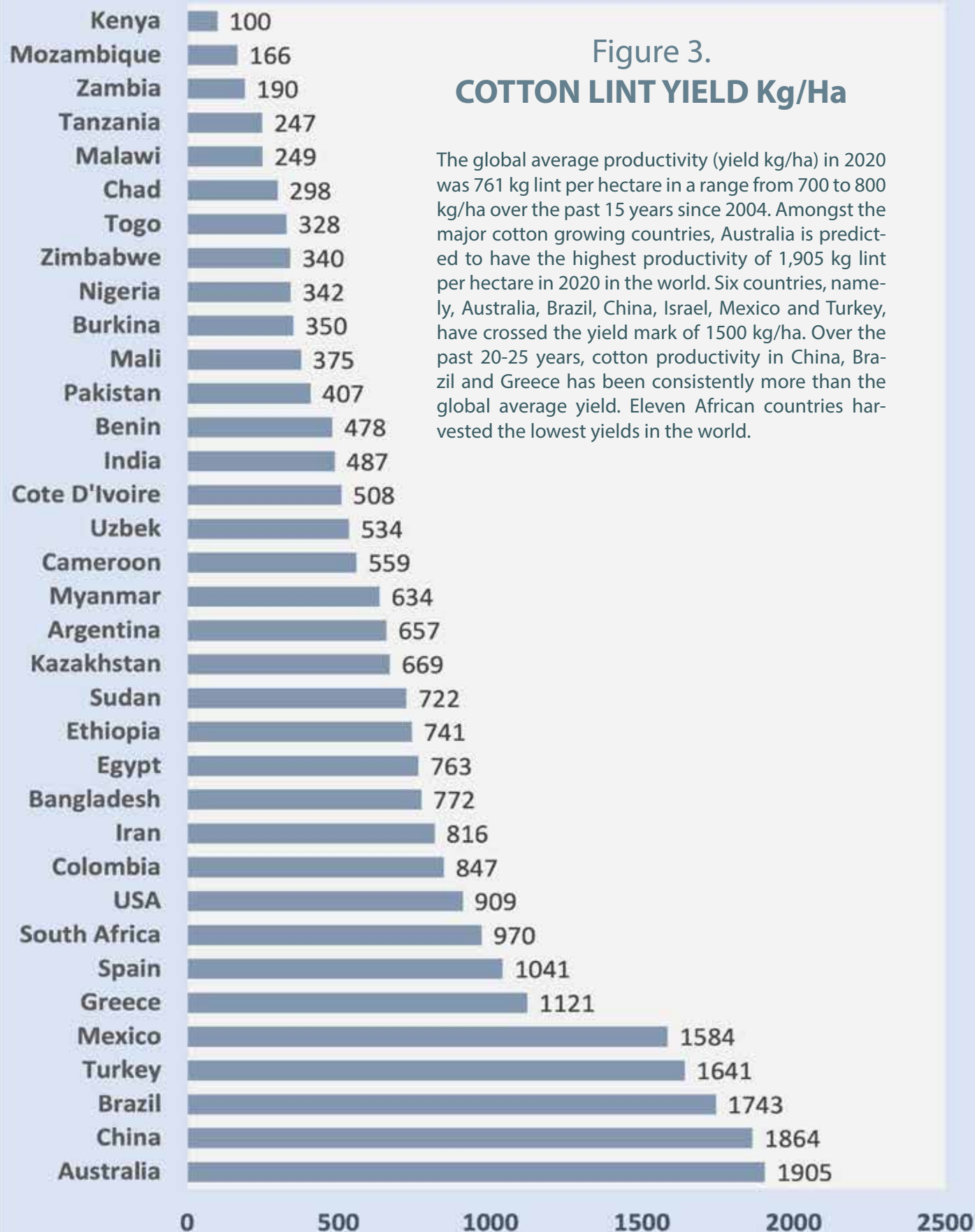


Figure 4.
COTTON PRODUCTION
'000 Tonnes

Global production is forecast to reach 24.1 million tonnes in 2020. India, China, USA and Brazil lead in cotton production producing more than 2 million tonnes each. Together, the four countries account for 21.1 million hectares and produce 17.9 million tonnes, which in percentage accounts for 66.6 percent of the global area under cotton and 74.4 percent of global production.

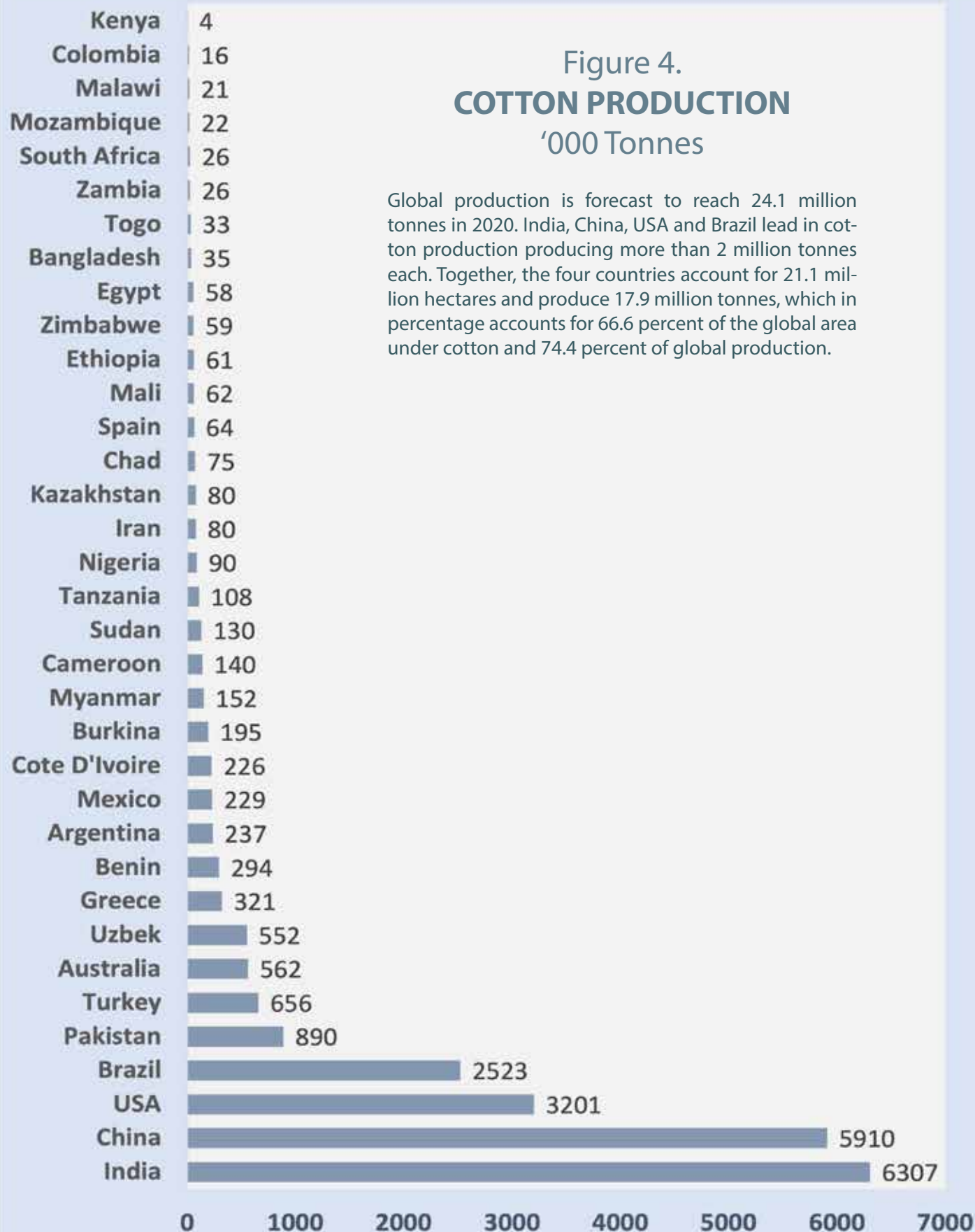
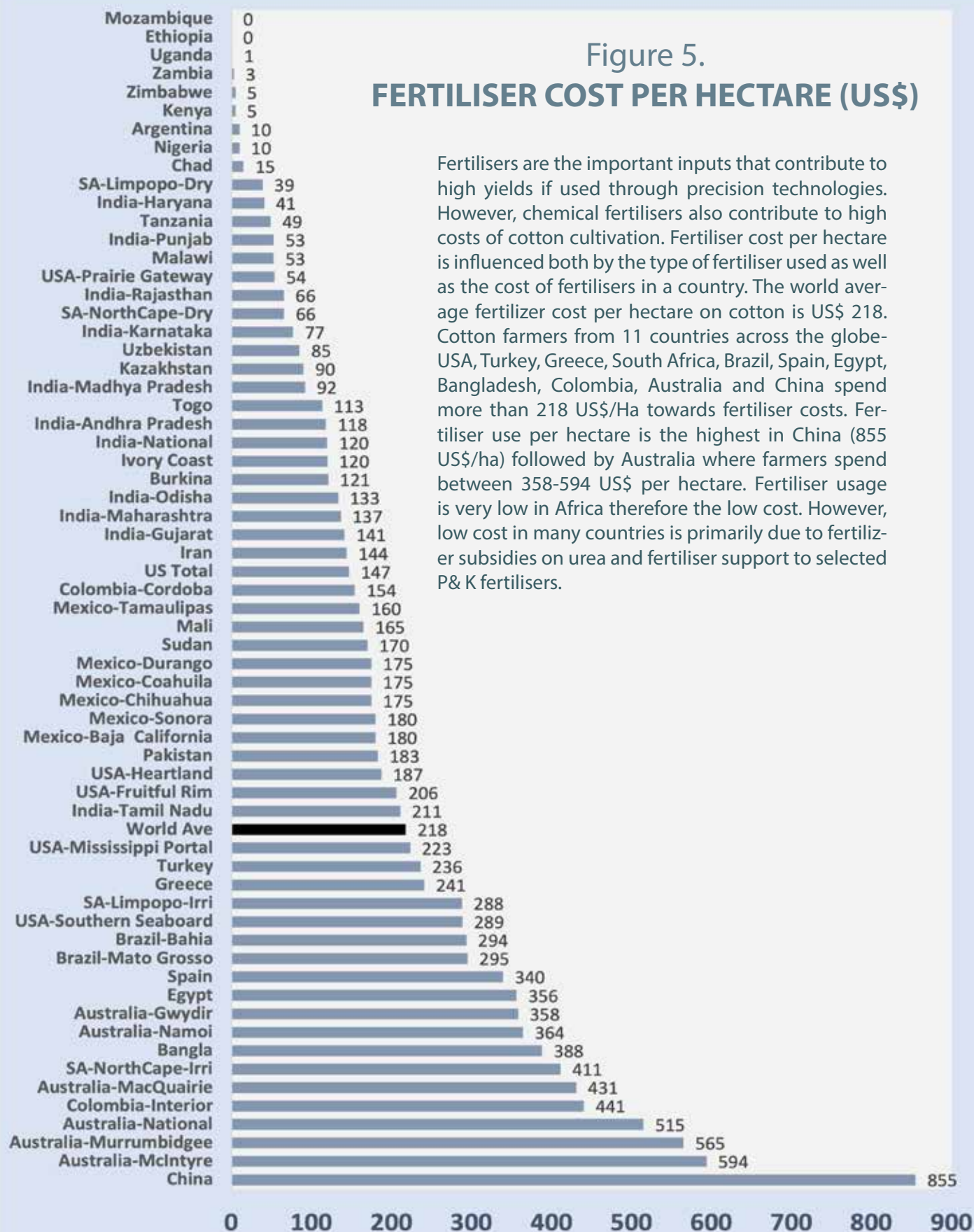


Figure 5.
FERTILISER COST PER HECTARE (US\$)



Fertilisers are the important inputs that contribute to high yields if used through precision technologies. However, chemical fertilisers also contribute to high costs of cotton cultivation. Fertiliser cost per hectare is influenced both by the type of fertiliser used as well as the cost of fertilisers in a country. The world average fertilizer cost per hectare on cotton is US\$ 218. Cotton farmers from 11 countries across the globe-USA, Turkey, Greece, South Africa, Brazil, Spain, Egypt, Bangladesh, Colombia, Australia and China spend more than 218 US\$/Ha towards fertiliser costs. Fertiliser use per hectare is the highest in China (855 US\$/ha) followed by Australia where farmers spend between 358-594 US\$ per hectare. Fertiliser usage is very low in Africa therefore the low cost. However, low cost in many countries is primarily due to fertilizer subsidies on urea and fertiliser support to selected P& K fertilisers.

Figure 6.
**FERTILISER COST
PER Kg LINT (US\$)**

The cost of fertilizer towards producing one kilogram of lint ranged from less than ten cents (US\$ 0.01) to 46 cents (US\$ 0.46). Fertilizer use efficiency (costs/Kg of lint) is dependent on the cost and amount of fertilizer used in a country, on cotton, in addition to the yields and ginning outturn. Farmers on an average, across the globe, spent 27 cents (0.27 US\$) to produce a kilogram of lint. The fertiliser costs incurred to produce a Kg lint were higher than the world average in parts of India, USA-Southern Seaboard, Colombia-cordoba, Spain, Bangladesh, Burkina Faso, Mali, Togo, Egypt and China.

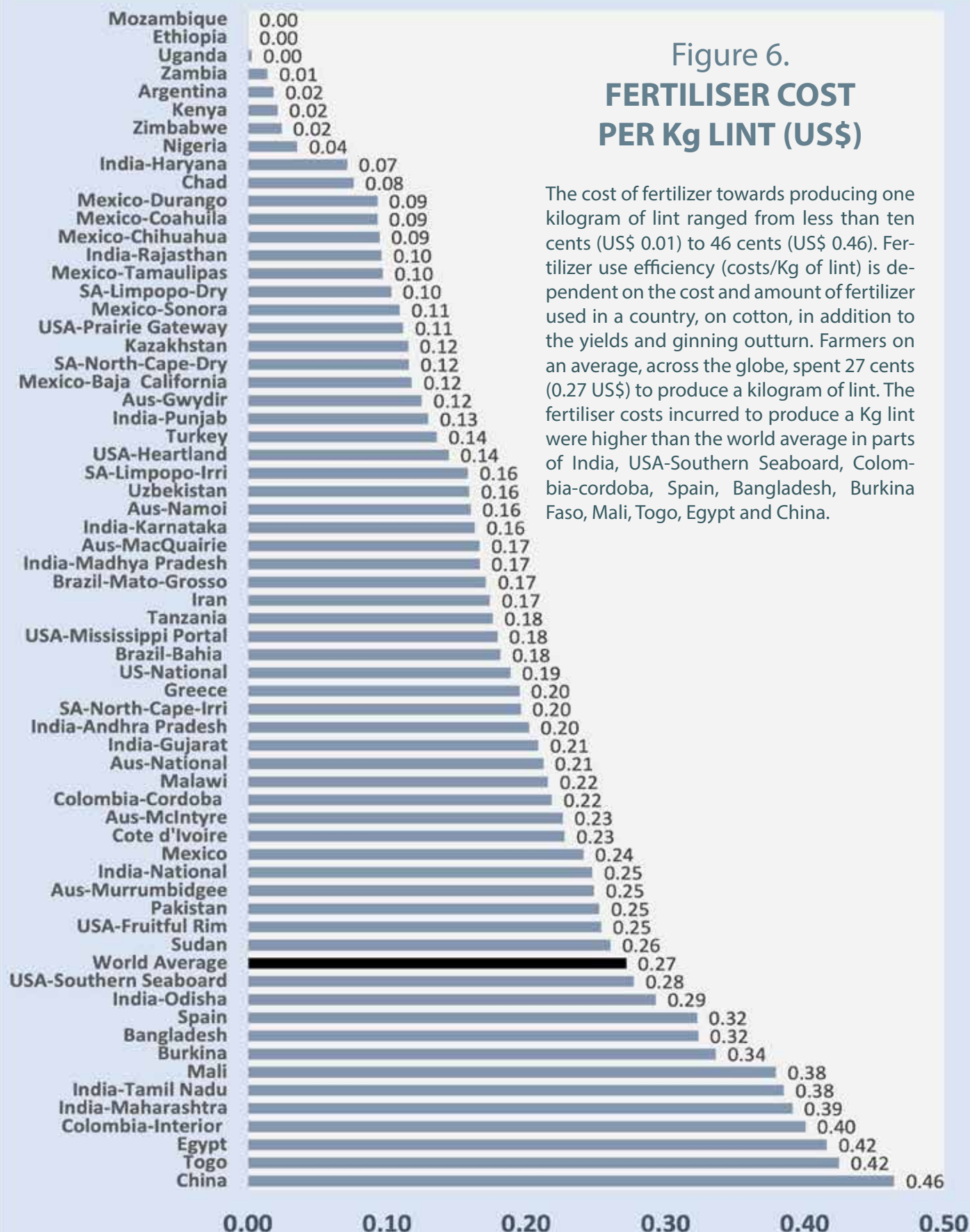
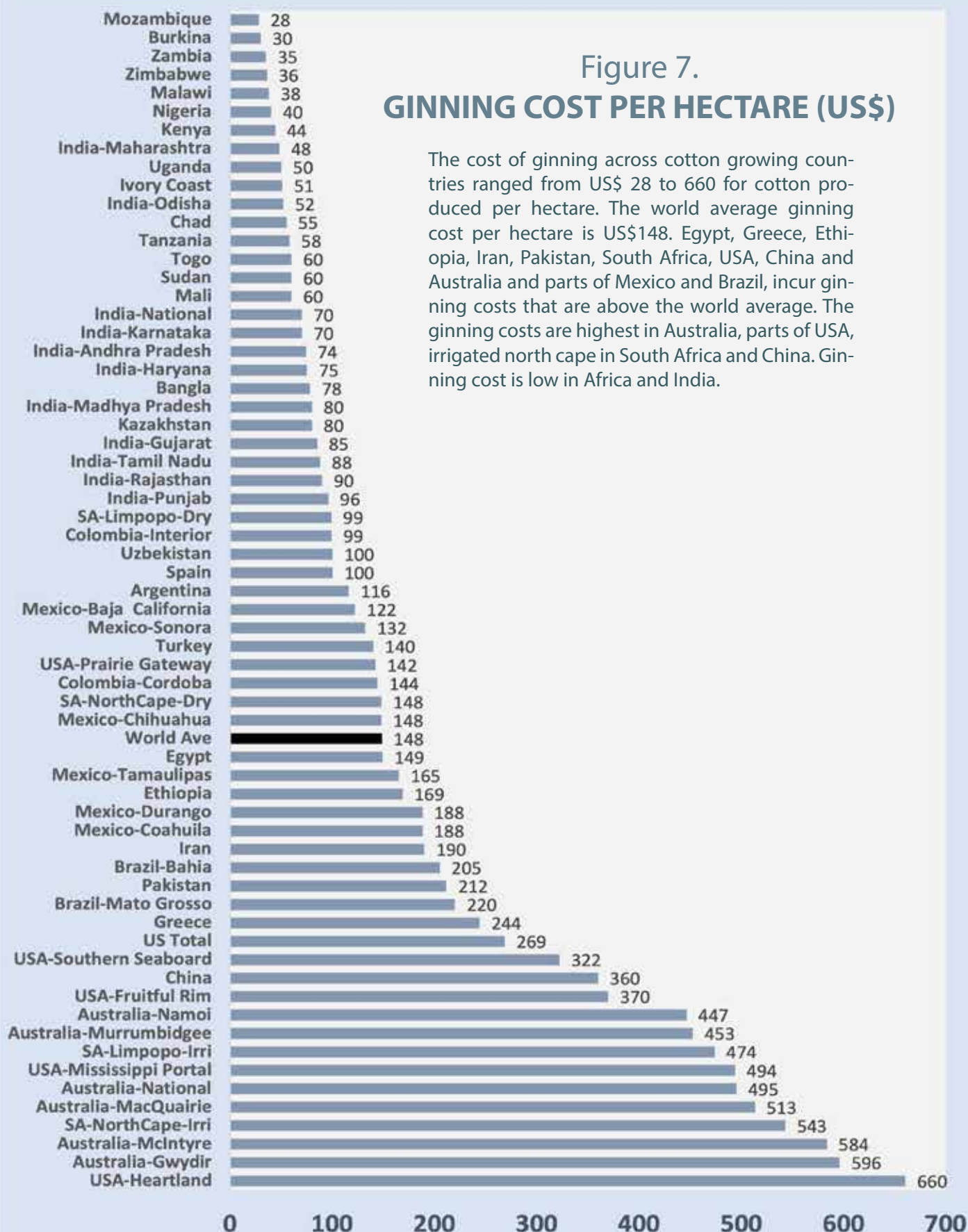


Figure 7.
GINNING COST PER HECTARE (US\$)

The cost of ginning across cotton growing countries ranged from US\$ 28 to 660 for cotton produced per hectare. The world average ginning cost per hectare is US\$148. Egypt, Greece, Ethiopia, Iran, Pakistan, South Africa, USA, China and Australia and parts of Mexico and Brazil, incur ginning costs that are above the world average. The ginning costs are highest in Australia, parts of USA, irrigated north cape in South Africa and China. Ginning cost is low in Africa and India.



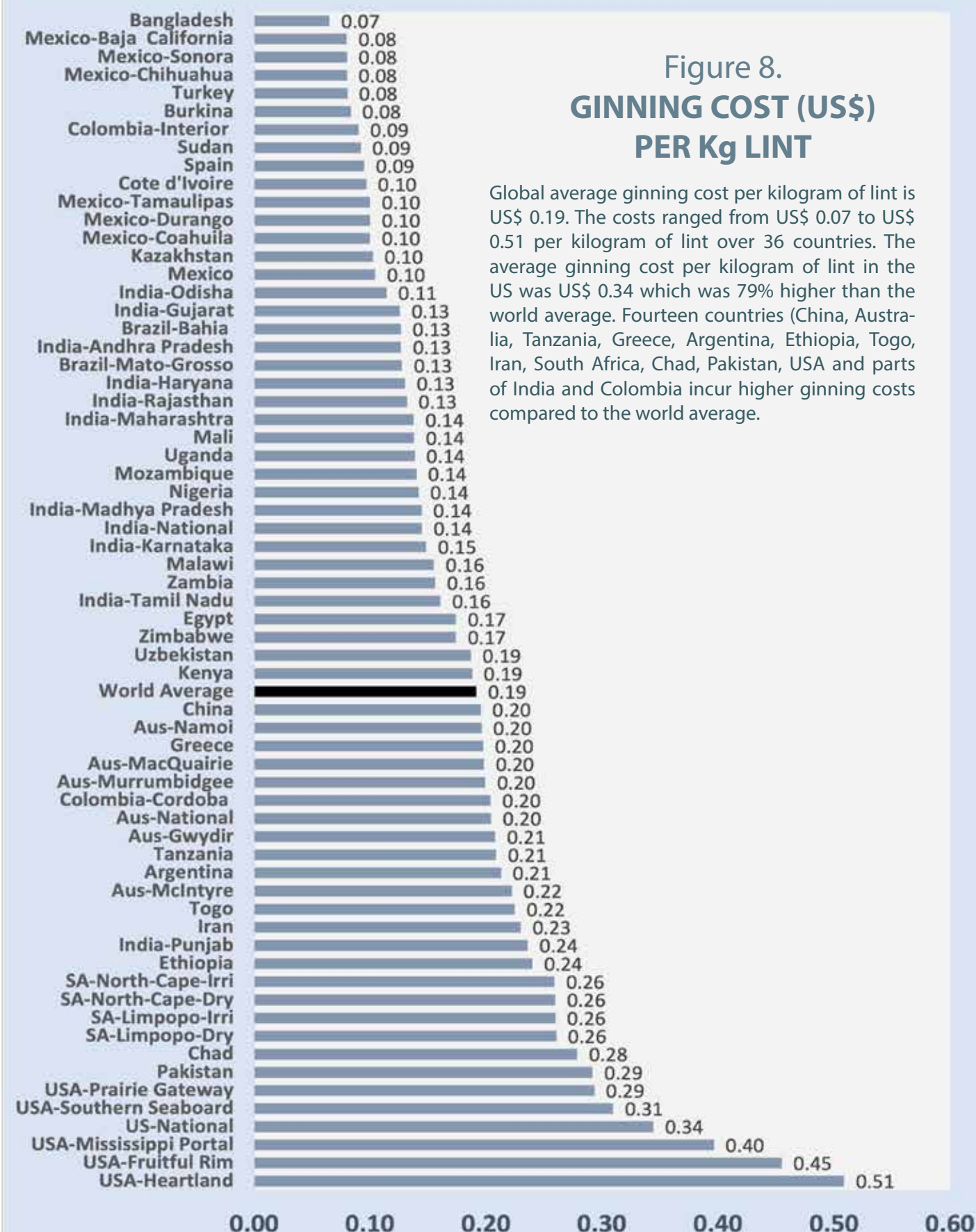


Figure 9. GINNING % (OUT TURN)

Ginning outturn percentage is the lint proportional recovery of lint from seed cotton after ginning expressed as percentage by weight. Abbreviated as GOT, it ranges from 30-43.5% across the globe. Higher GOT results in higher amount of lint from seed-cotton and therefore leads to higher yields. Fifteen countries recorded a GOT of 40 and above. The countries with high GOT are Mali, Mexico, China, Mozambique, Burkina Faso, Brazil, Bangladesh, Australia, Malawi, Kenya, Zimbabwe, Togo, Uganda, Chad and Ivory Coast. Some African cotton varieties are reputed for their high ginning outturn.

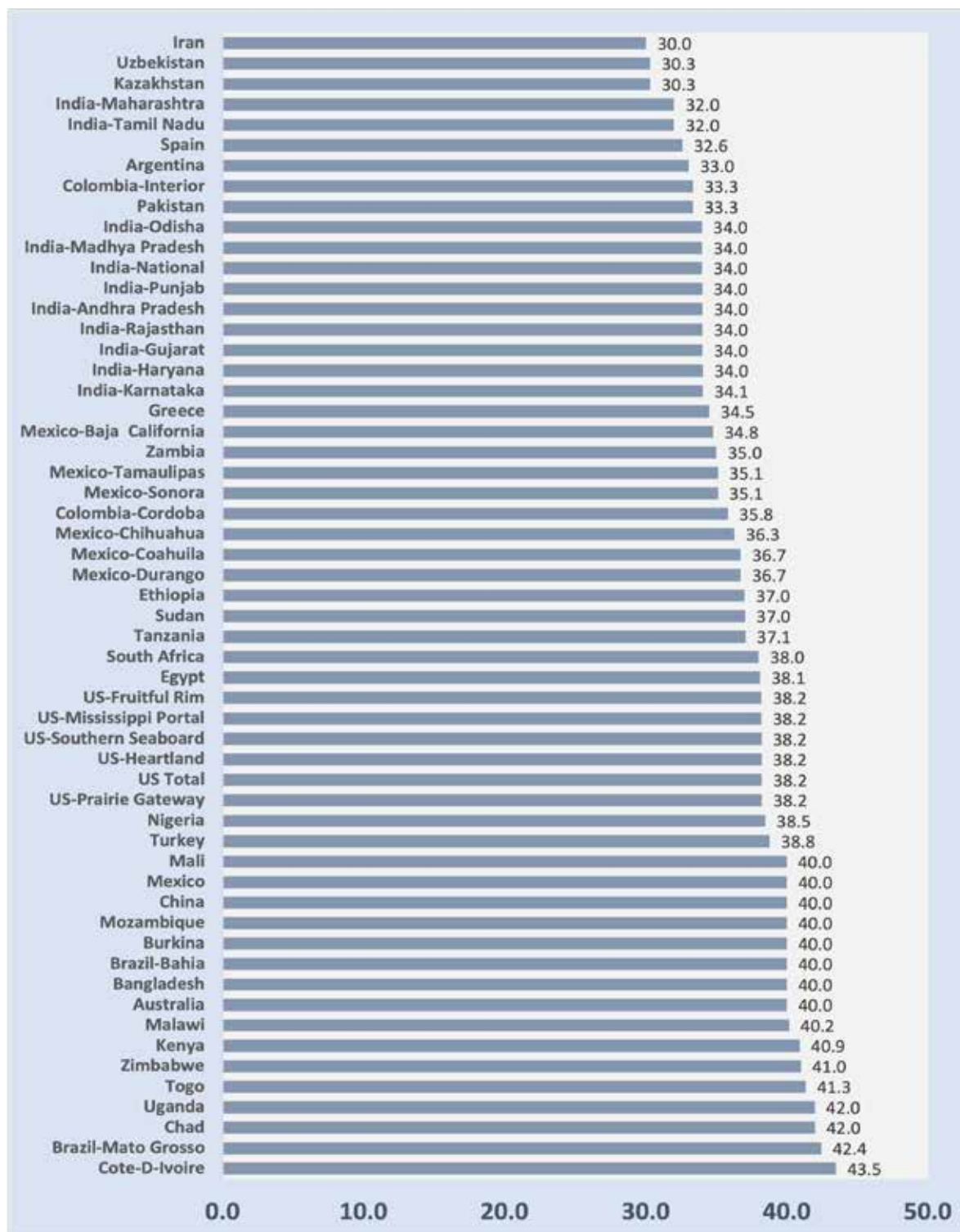


Figure 10.
**INSECTICIDE COST
PER HECTARE (US\$)**

In developed countries, chemical insecticides have become an integral input for cotton cultivation. The world incurs an average insecticide cost of US\$ 94 per hectare of cotton. This value depends on the type, dose, cost, and frequency of application of the insecticides. Some countries, like Brazil, incur about 3.5 times higher than the world average of insecticide cost per hectare. Uzbekistan on the other hand, reported negligible cost on insecticides. The value of insecticide costs in the three dominant cotton producing countries of the world are US\$ 58, US\$ 52 and US\$ 250 per hectare, in India, USA and China, respectively. It is interesting to note that many African countries do not cultivate Bt cotton. Yet, insecticide costs per hectare is less than half the world average as in Zambia, Malawi, Mozambique, Tanzania, Togo, Uganda, Chad, Burkina Faso, Ivory Coast and Mali.

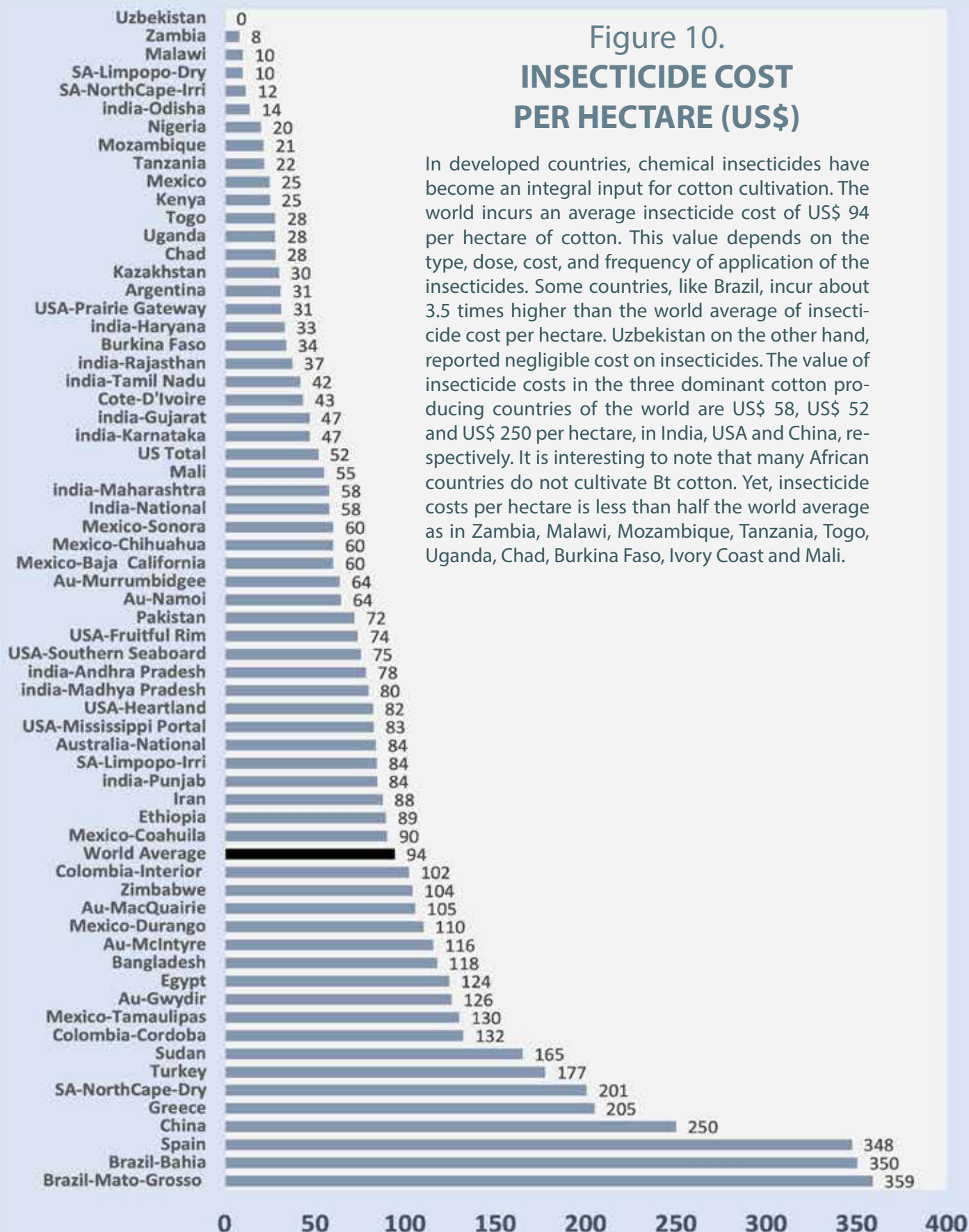
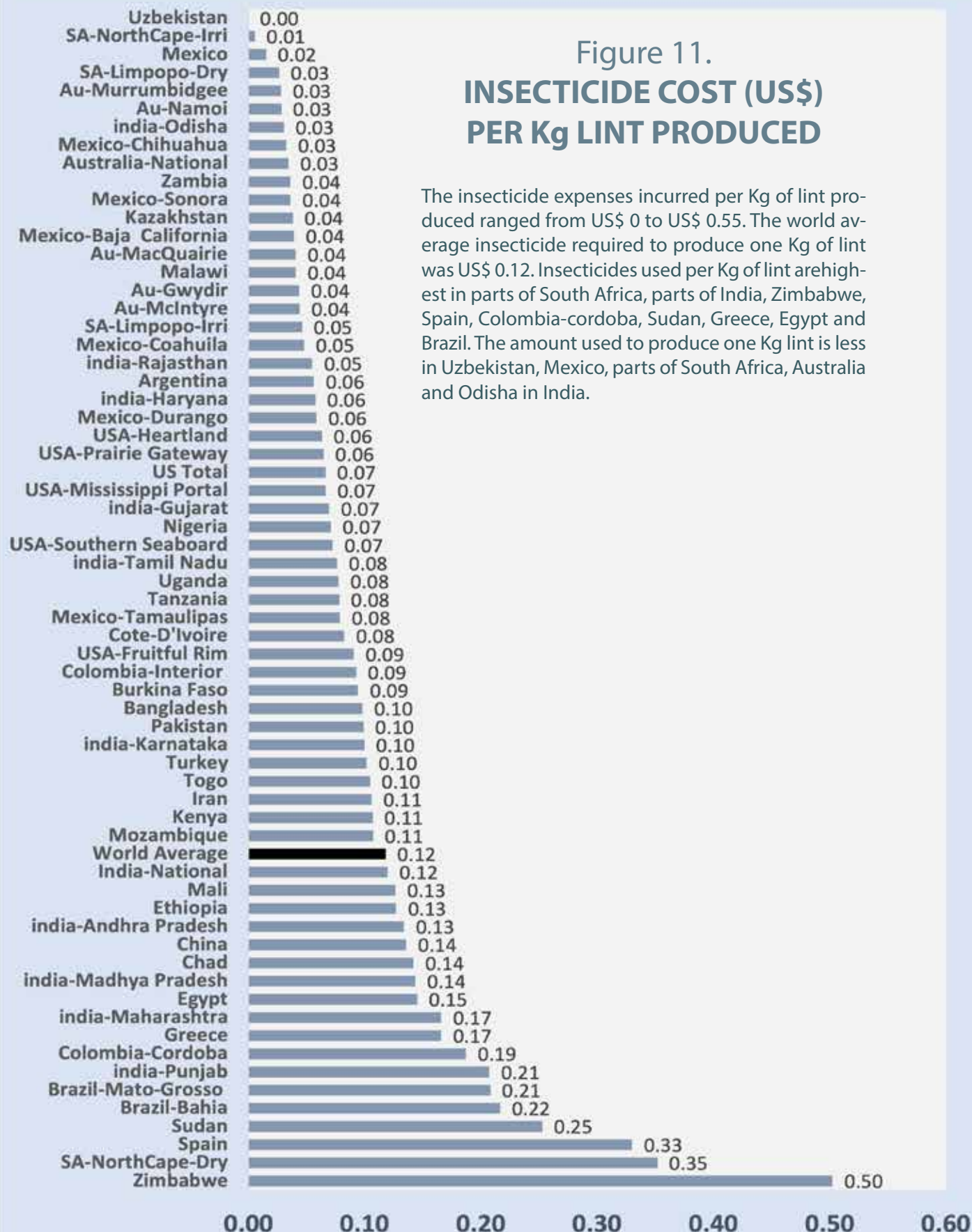


Figure 11.
**INSECTICIDE COST (US\$)
PER Kg LINT PRODUCED**

The insecticide expenses incurred per Kg of lint produced ranged from US\$ 0 to US\$ 0.55. The world average insecticide required to produce one Kg of lint was US\$ 0.12. Insecticides used per Kg of lint are highest in parts of South Africa, parts of India, Zimbabwe, Spain, Colombia-cordoba, Sudan, Greece, Egypt and Brazil. The amount used to produce one Kg lint is less in Uzbekistan, Mexico, parts of South Africa, Australia and Odisha in India.



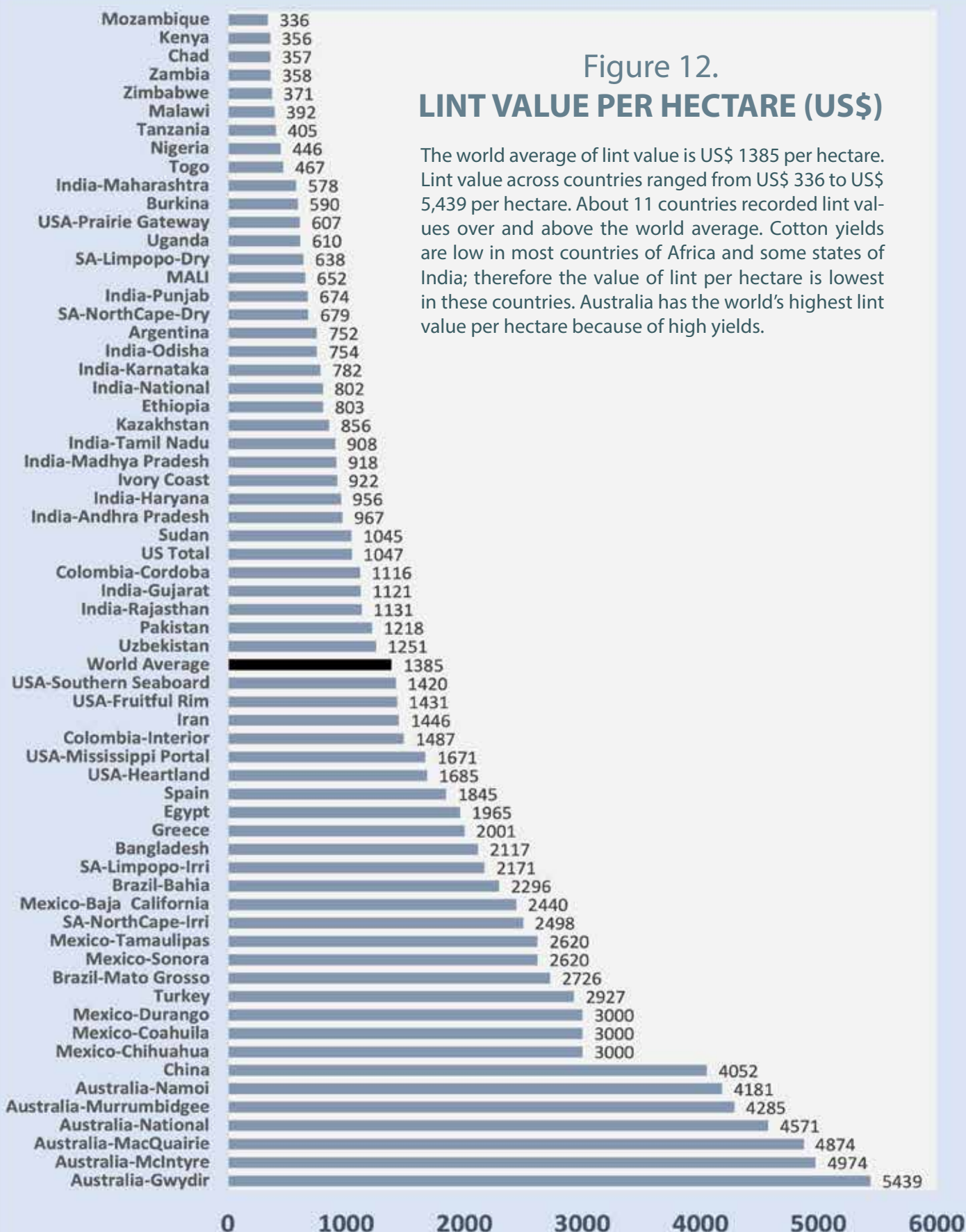
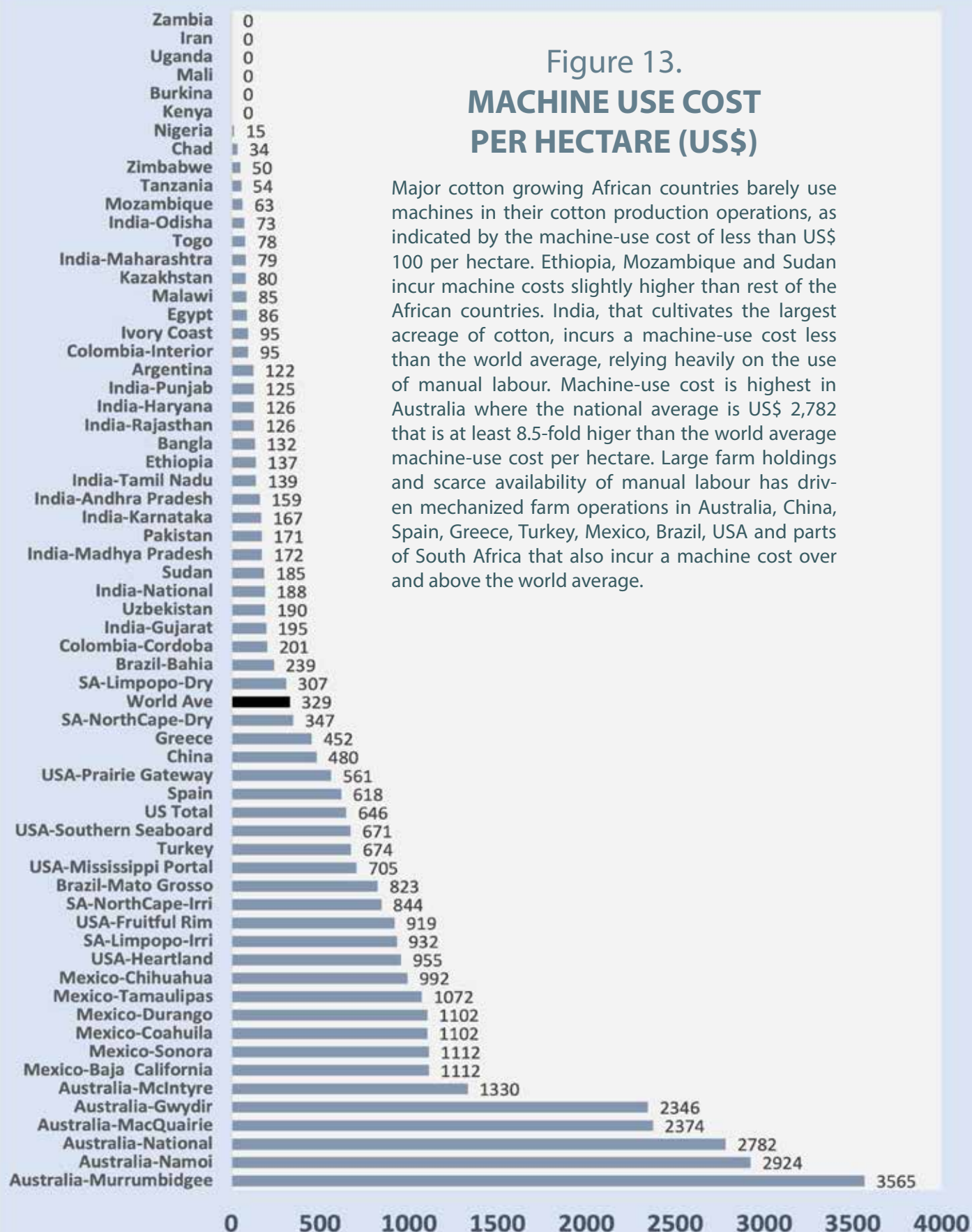


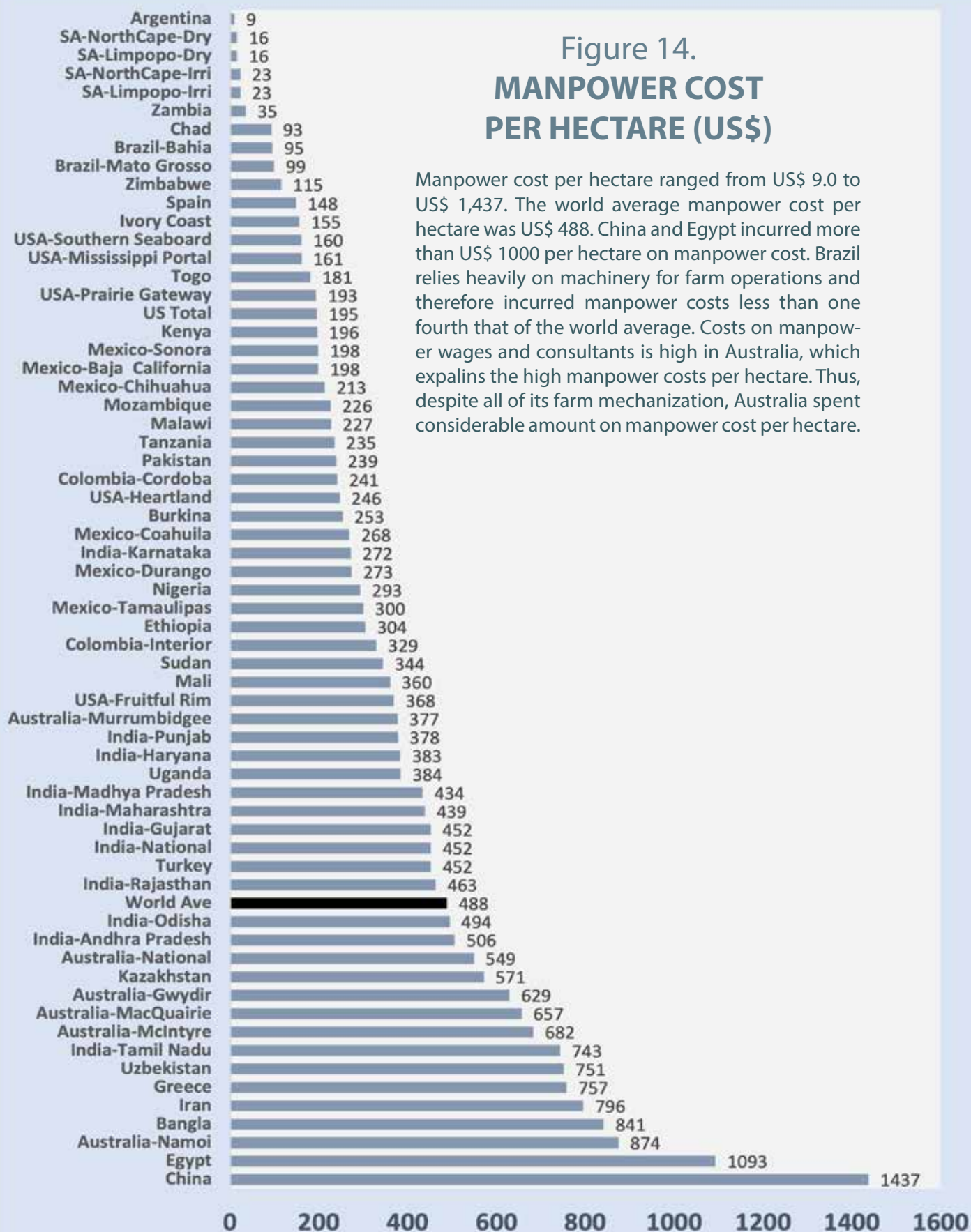
Figure 13.
**MACHINE USE COST
PER HECTARE (US\$)**



Major cotton growing African countries barely use machines in their cotton production operations, as indicated by the machine-use cost of less than US\$ 100 per hectare. Ethiopia, Mozambique and Sudan incur machine costs slightly higher than rest of the African countries. India, that cultivates the largest acreage of cotton, incurs a machine-use cost less than the world average, relying heavily on the use of manual labour. Machine-use cost is highest in Australia where the national average is US\$ 2,782 that is at least 8.5-fold higher than the world average machine-use cost per hectare. Large farm holdings and scarce availability of manual labour has driven mechanized farm operations in Australia, China, Spain, Greece, Turkey, Mexico, Brazil, USA and parts of South Africa that also incur a machine cost over and above the world average.

Figure 14.
**MANPOWER COST
PER HECTARE (US\$)**

Manpower cost per hectare ranged from US\$ 9.0 to US\$ 1,437. The world average manpower cost per hectare was US\$ 488. China and Egypt incurred more than US\$ 1000 per hectare on manpower cost. Brazil relies heavily on machinery for farm operations and therefore incurred manpower costs less than one fourth that of the world average. Costs on manpower wages and consultants is high in Australia, which explains the high manpower costs per hectare. Thus, despite all of its farm mechanization, Australia spent considerable amount on manpower cost per hectare.



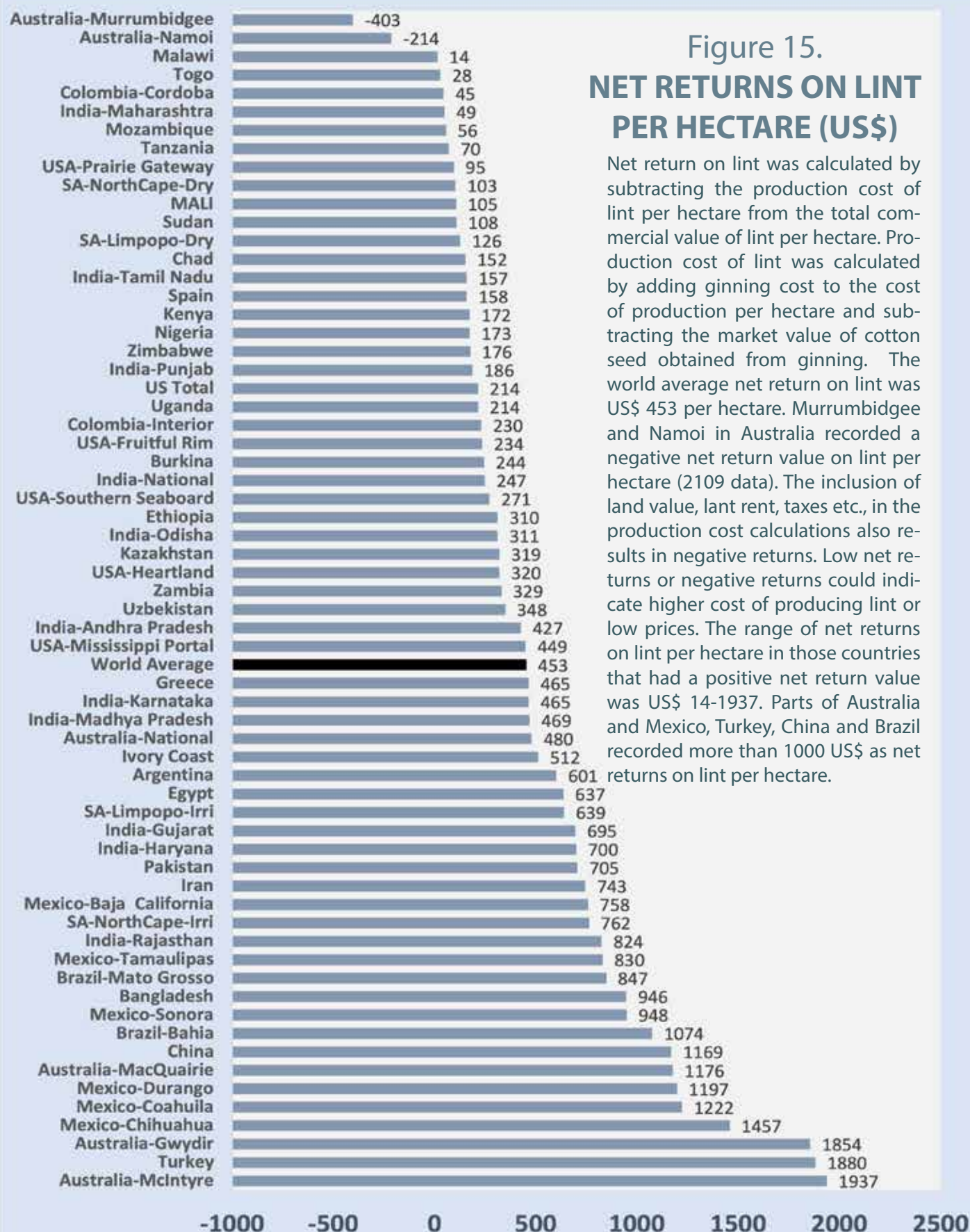


Figure 16.
**NET RETURNS ON
SEED-COTTON
PER HECTARE (US\$)**

Increasing cost of cultivation, low yields and/or decreasing market price of seed cotton, could result in negative net returns on seed cotton per hectare. Negative net returns for seed cotton per hectare was recorded in four African countries. Positive net return values on seed cotton per hectare ranged up to US\$ 2521. Countries such as USA, Australia, Turkey, China, Brazil, Pakistan, Mexico and South Africa demonstrated positive net returns that were more than 6 times the world average.

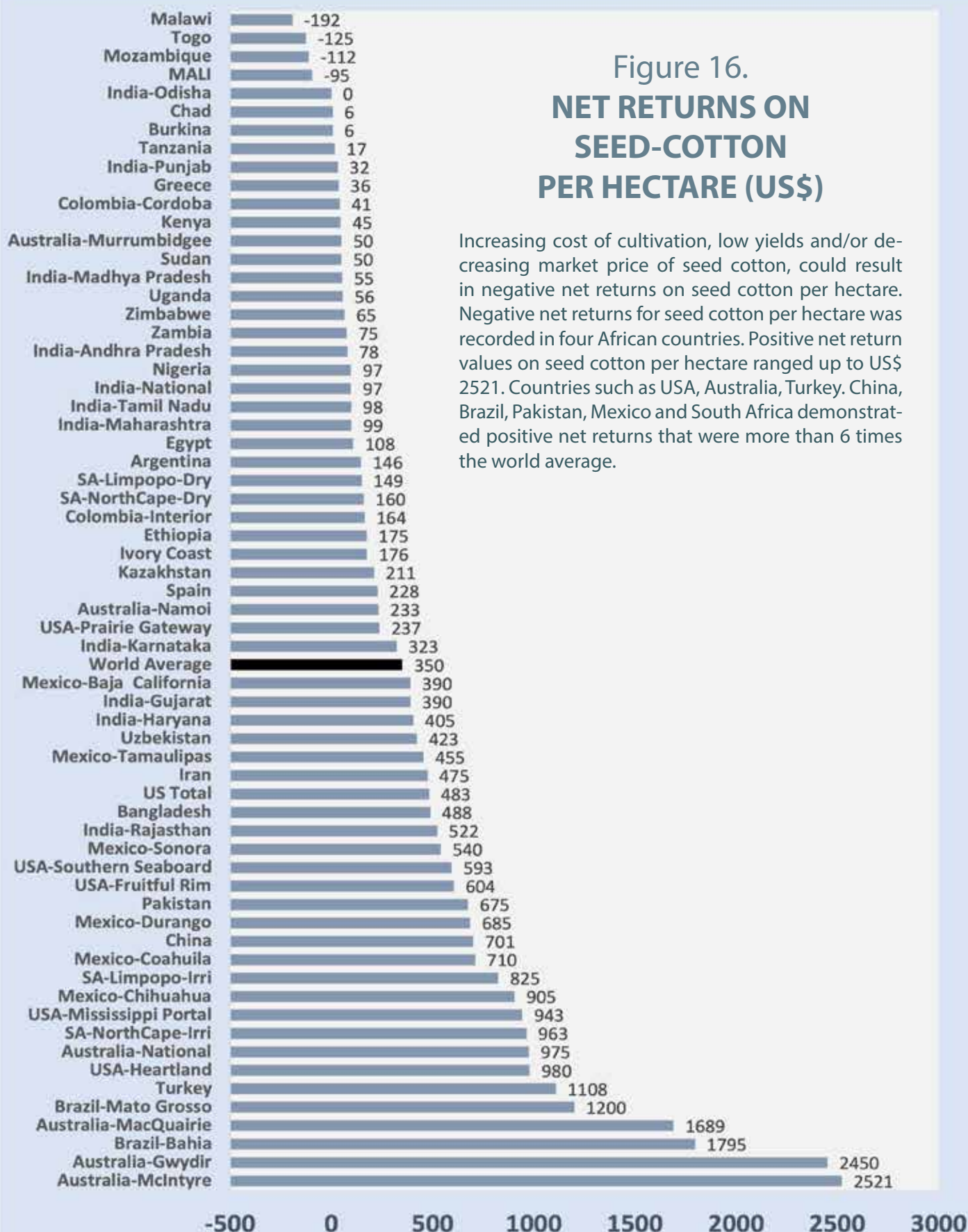
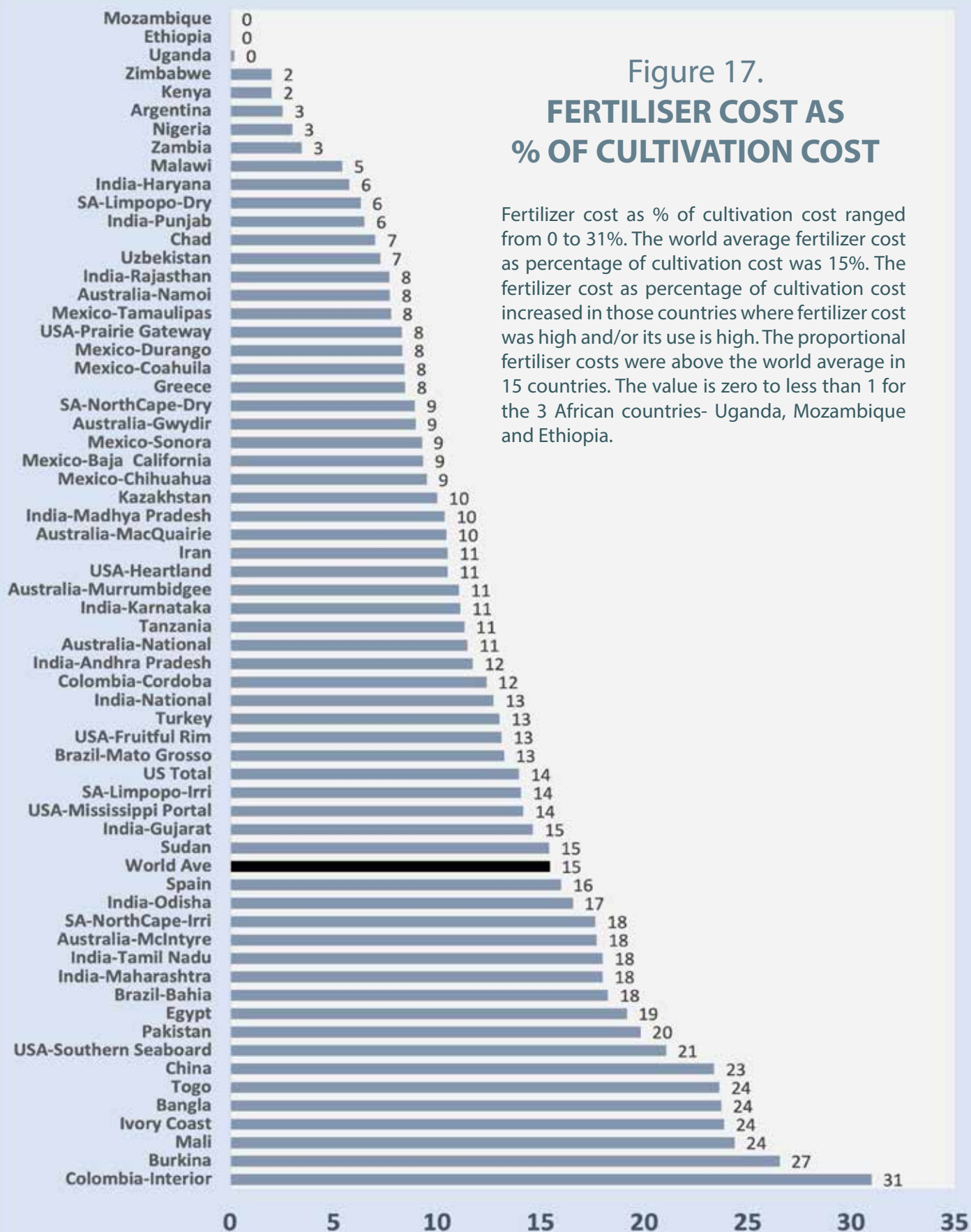


Figure 17.
**FERTILISER COST AS
% OF CULTIVATION COST**

Fertilizer cost as % of cultivation cost ranged from 0 to 31%. The world average fertilizer cost as percentage of cultivation cost was 15%. The fertilizer cost as percentage of cultivation cost increased in those countries where fertilizer cost was high and/or its use is high. The proportional fertiliser costs were above the world average in 15 countries. The value is zero to less than 1 for the 3 African countries- Uganda, Mozambique and Ethiopia.



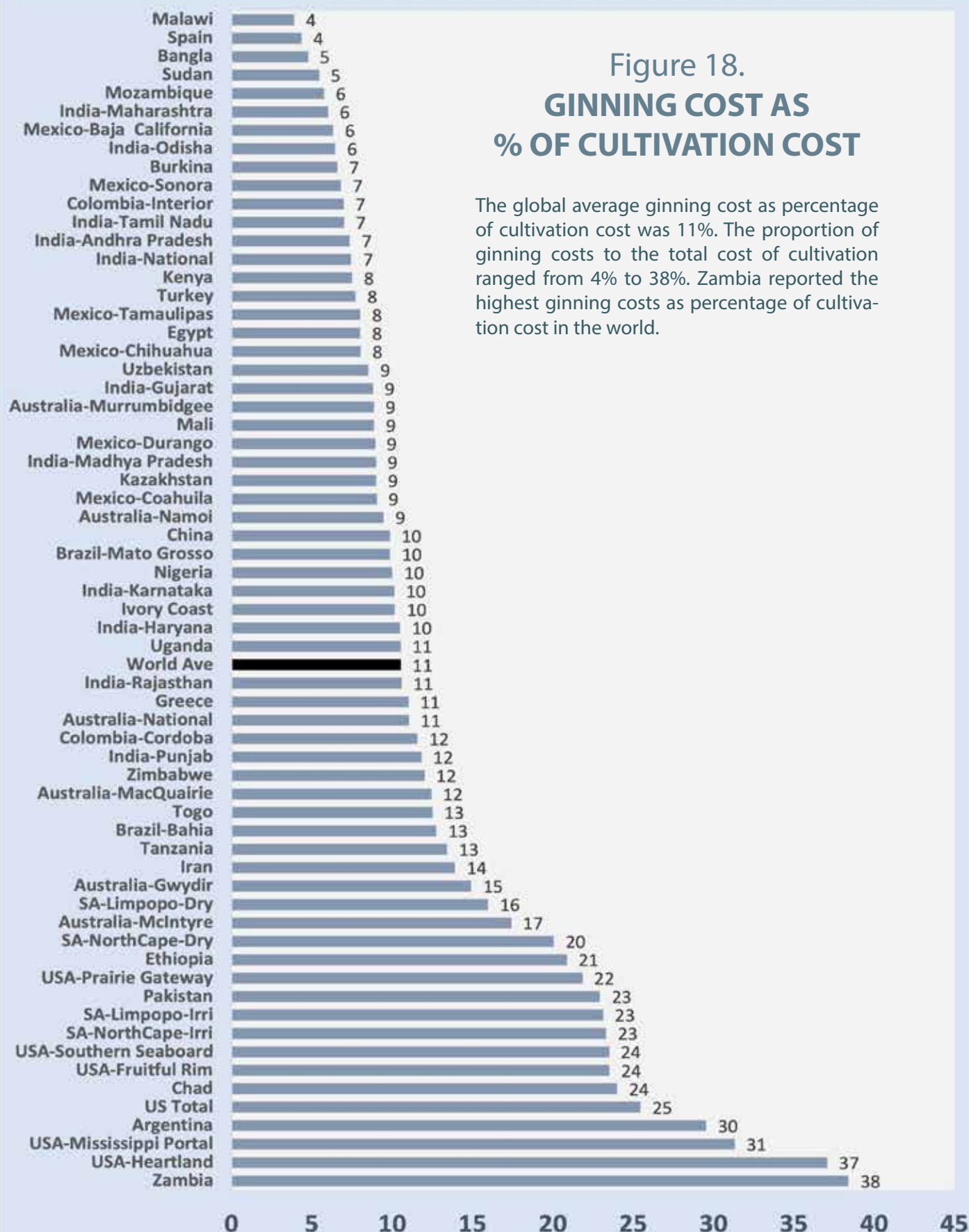


Figure 19.

MACHINERY COST AS % OF CULTIVATION COST

The world average of machinery cost as percentage of cultivation cost was 23%. The proportion of machinery costs ranged from 0 to 86%. Australia, USA and Mexico reported the highest proportion of machinery costs as percentage of total cost of cultivation. Zambia, Uganda, Mali, Iran, Kenya and Burkina Faso are the 6 countries where machinery costs are not incurred. Amongst African countries, machinery costs as percentage of cultivation costs is the highest in Mozambique.

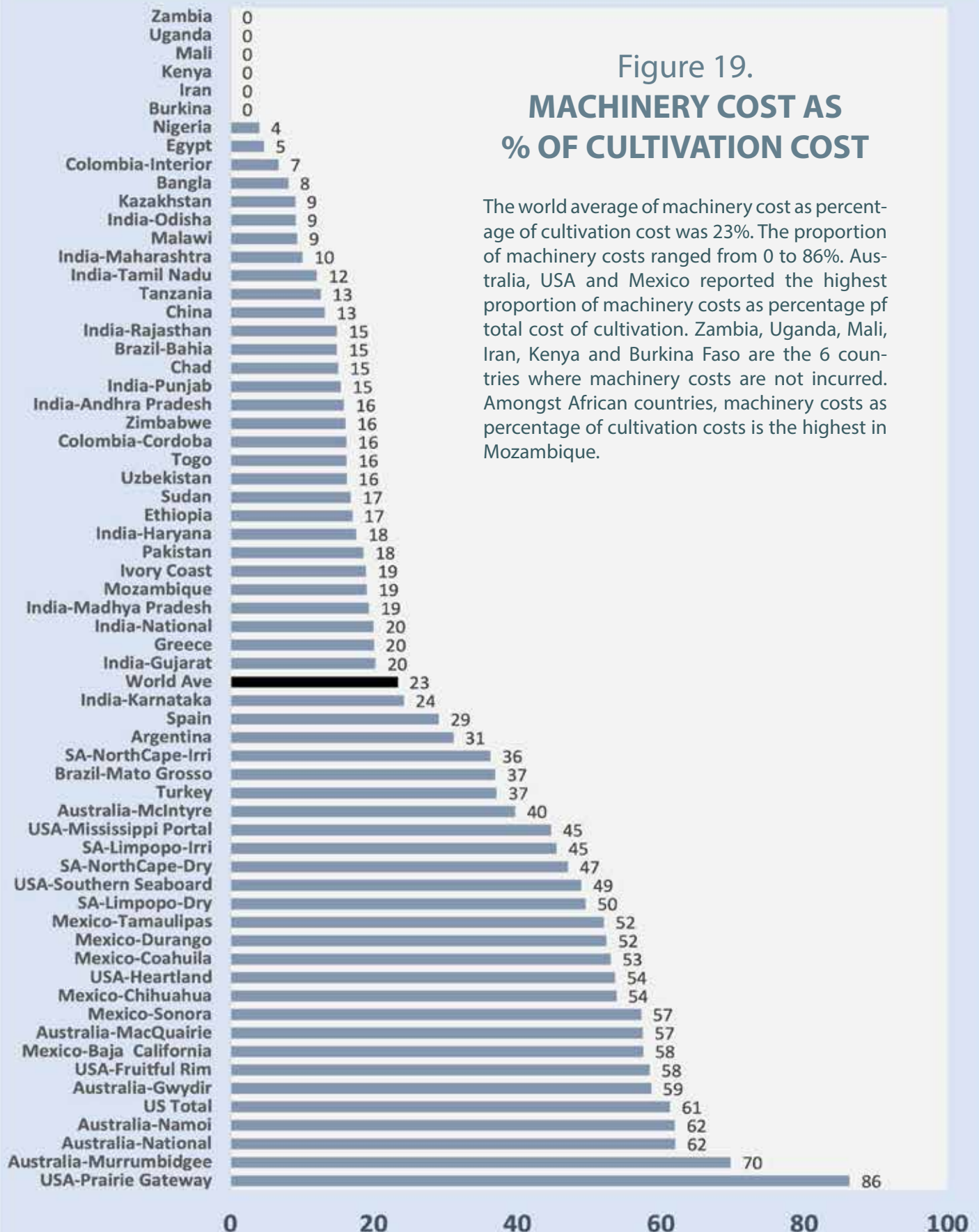
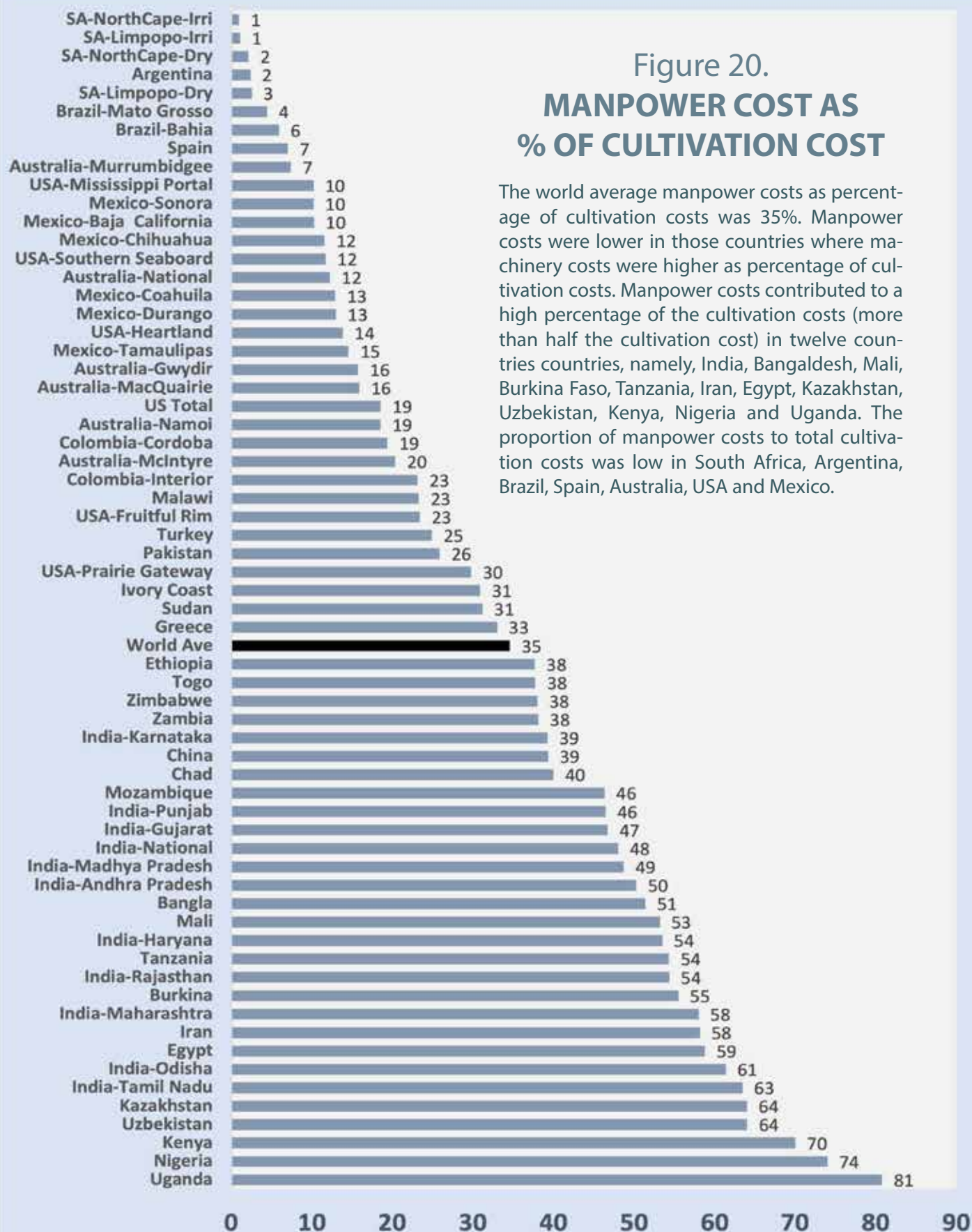


Figure 20.

MANPOWER COST AS % OF CULTIVATION COST

The world average manpower costs as percentage of cultivation costs was 35%. Manpower costs were lower in those countries where machinery costs were higher as percentage of cultivation costs. Manpower costs contributed to a high percentage of the cultivation costs (more than half the cultivation cost) in twelve countries, namely, India, Bangladesh, Mali, Burkina Faso, Tanzania, Iran, Egypt, Kazakhstan, Uzbekistan, Kenya, Nigeria and Uganda. The proportion of manpower costs to total cultivation costs was low in South Africa, Argentina, Brazil, Spain, Australia, USA and Mexico.



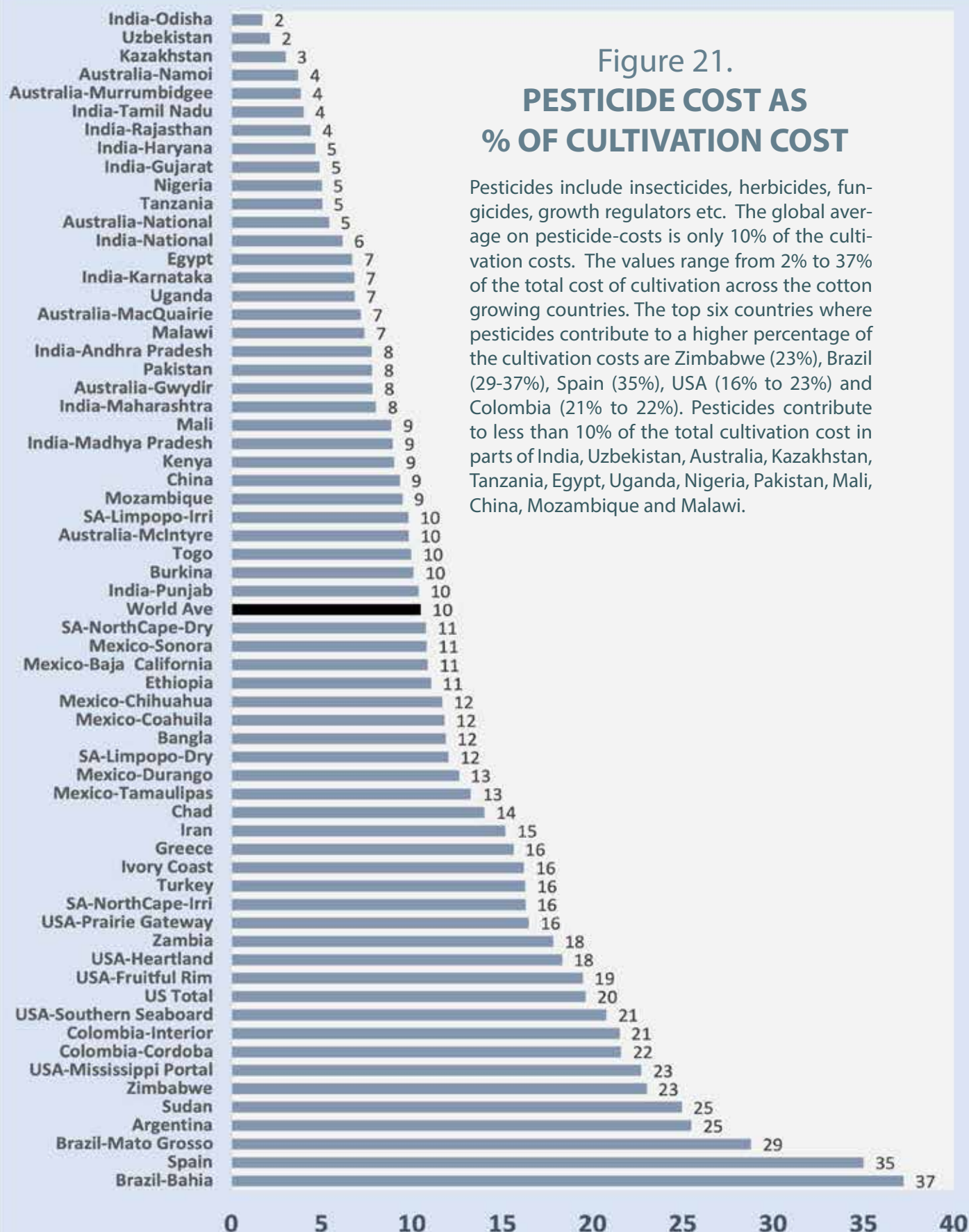


Figure 22.
**SEED COST AS % OF
CULTIVATION COST**

The global average seed costs account for only 6% of the total cultivation cost. While seed costs range from 0 to 19% of cultivation costs across cotton growing countries, the proportion is low in Togo, Mozambique, Ivory Coast, Bangladesh, Chad, Malawi, Turkey and African countries that predominantly use farm saved seeds.

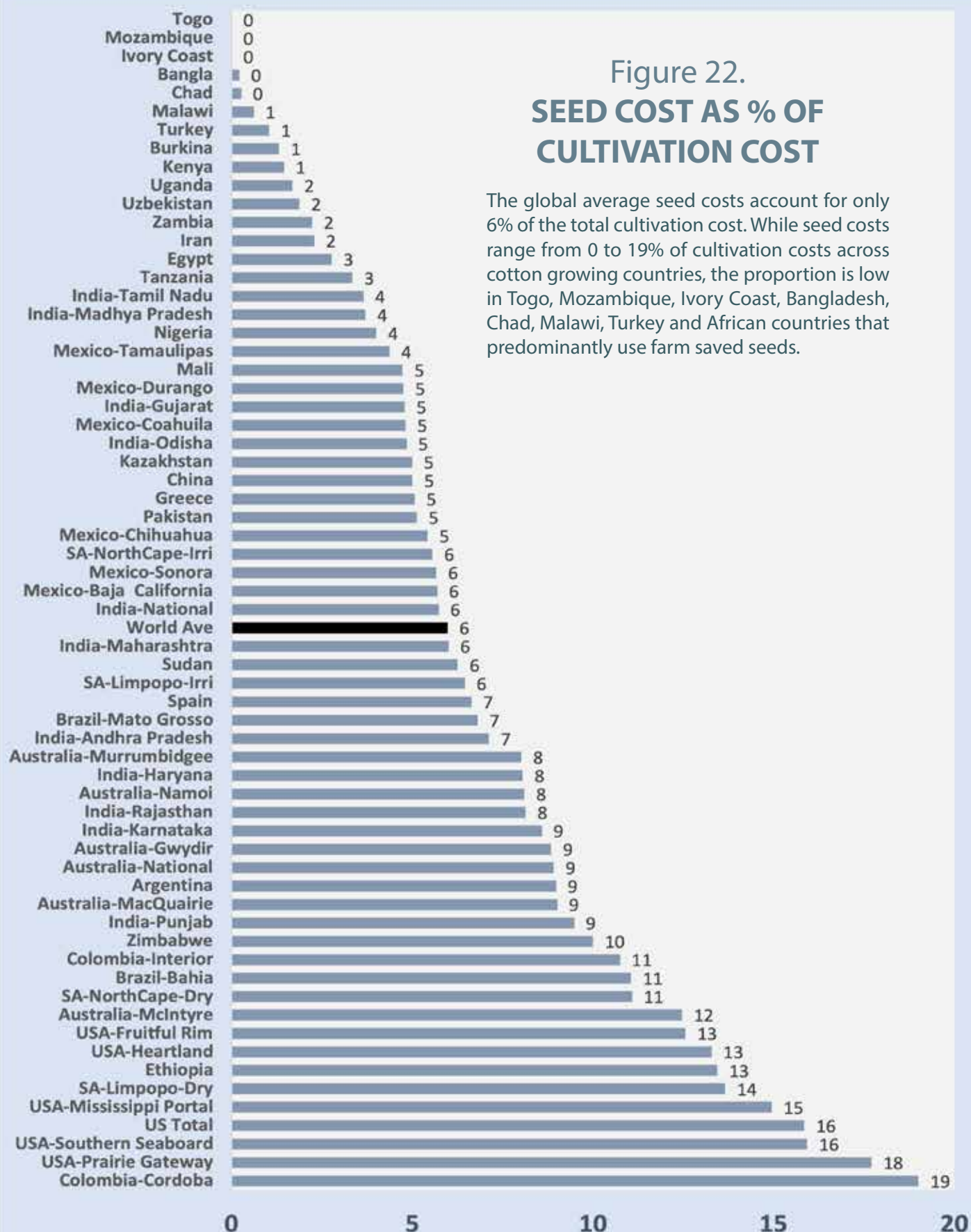


Figure 23.
**PESTICIDE COST
PER HECTARE (US\$)**

Pesticide costs per hectare range from US\$ 14 to US\$ 742 with a global average of US\$ 148 per hectare. The top five countries with the highest pesticide costs per hectare are Spain, Brazil, Greece, parts of South Africa and USA. Pesticide costs of the 3 top cotton growing countries, India, China and USA are US\$ 58, US\$ 341 and US\$ 207 per hectare respectively. Most countries in Africa use less than US\$ 100 on pesticides per hectare.

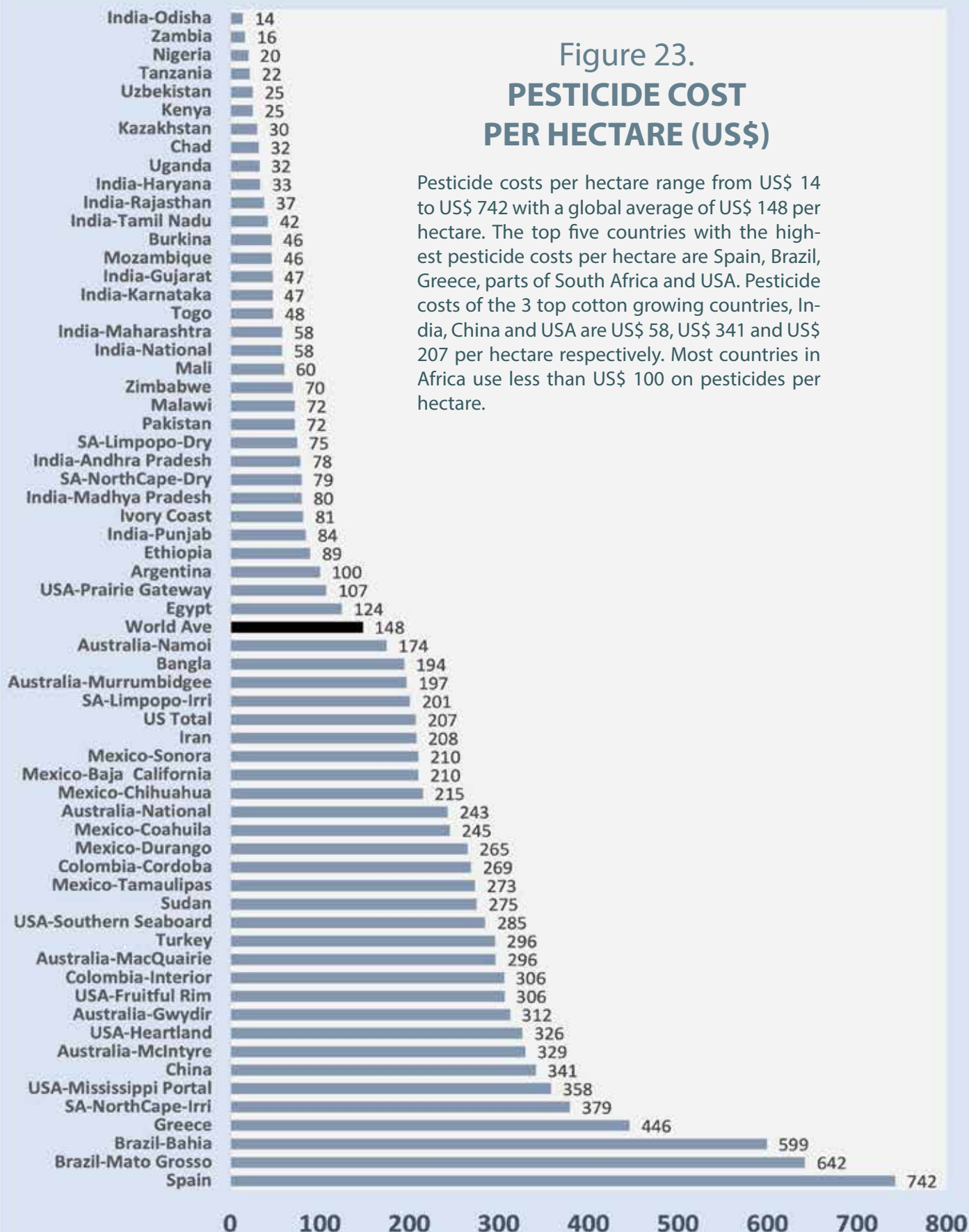


Figure 24a.
**PRODUCTION COST
(US\$) PER Kg LINT**

The world average production cost per Kg of lint was US\$ 1.16 in 2019-2020. Zambia, Argentina and Turkey incur a production cost of 13, 28 and 60 cents to produce a Kg of lint. In contrast Colombia-cordoba, Malawi, Egypt, China, Spain, Togo, Uzbekistan and parts of Australia spent more than US\$ 1.5 for every kilogram of lint produced.

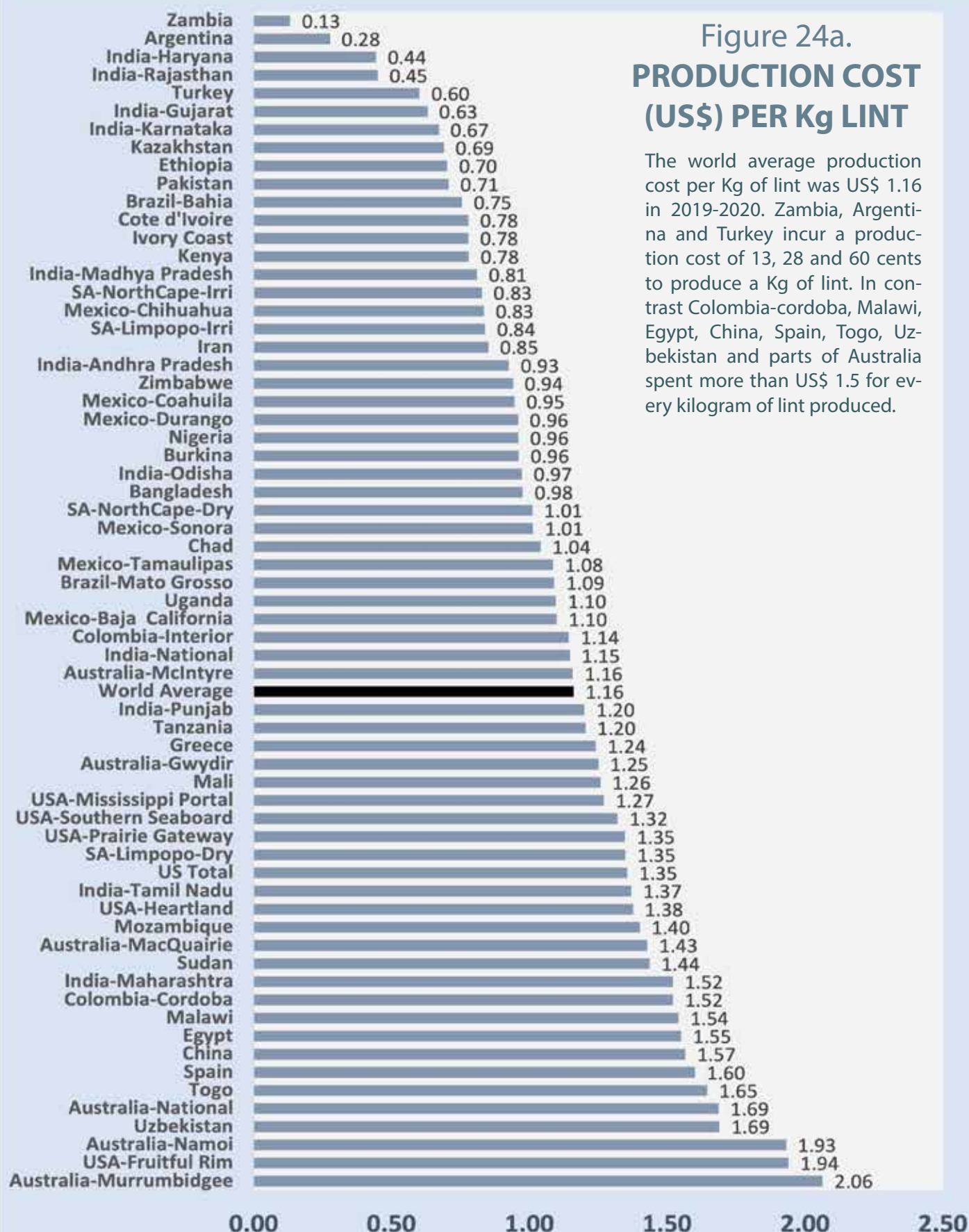


Figure 24b.
**PRODUCTION COST
(US\$) PER lb LINT**

The world average production cost per lb of lint was 53 cents. Zambia, Argentina and Turkey incur a production cost of 6, 13 and 27 cents to produce a lb of lint. In contrast Murrumbidgee in Australia incurred a production cost of 85 cents per lb of lint produced.

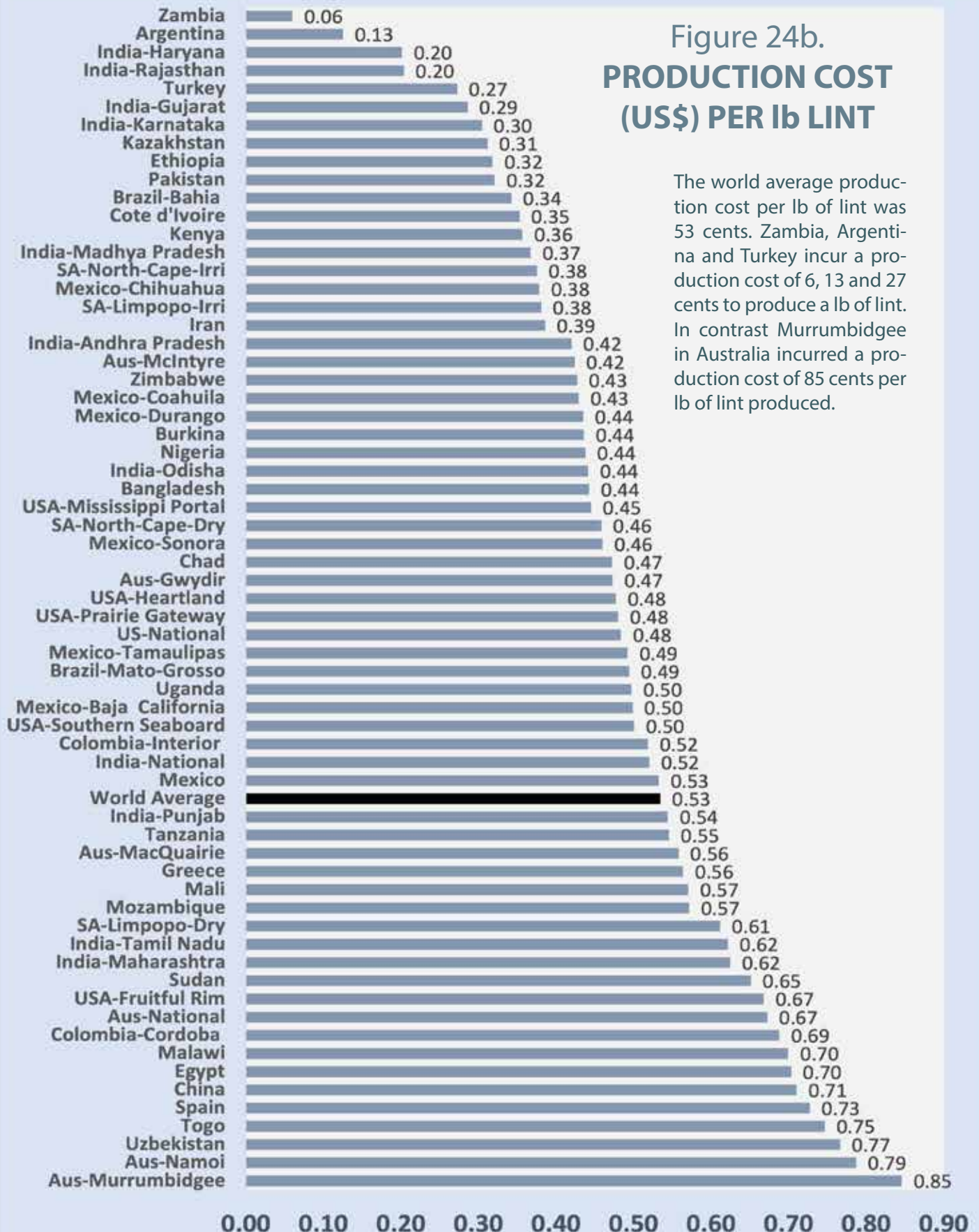


Figure 25a.

PRODUCTION COST (US\$) PER Kg SEED-COTTON

Production costs on seed cotton vary 9-fold across the globe from US\$ 0.09 to US\$ 0.82 per Kg of seed cotton at a global average of US\$ 0.55. Production costs are lowest in Zambia, Argentina, Kazakhstan, South Africa, Pakistan, parts of USA, Mexico, Ethiopia and parts of Brazil. The production cost per Kg of seed cotton is the highest in parts of India, Australia, Egypt, Malawi and China.

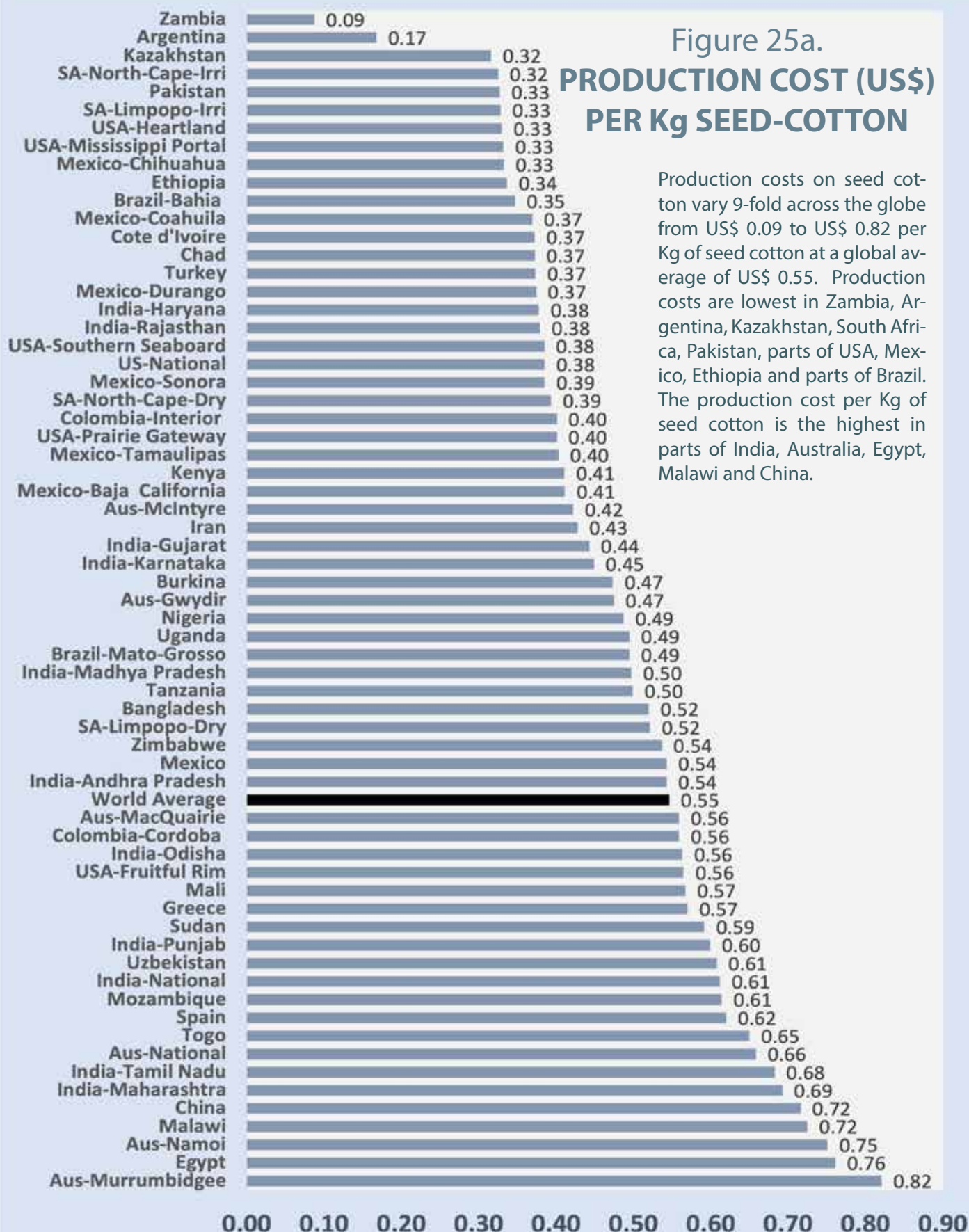


Figure 25b.
PRODUCTION COST
US\$ PER lb
SEED-COTTON

Production costs on seed cotton vary 9-fold across the globe from US cents 4 to 37 cents per lb of seed cotton at a global average of 25 cents. Production costs are lowest in Zambia and Argentina. The production cost per Kg of seed cotton is the highest in parts of India, Australia, Egypt, Malawi and China.

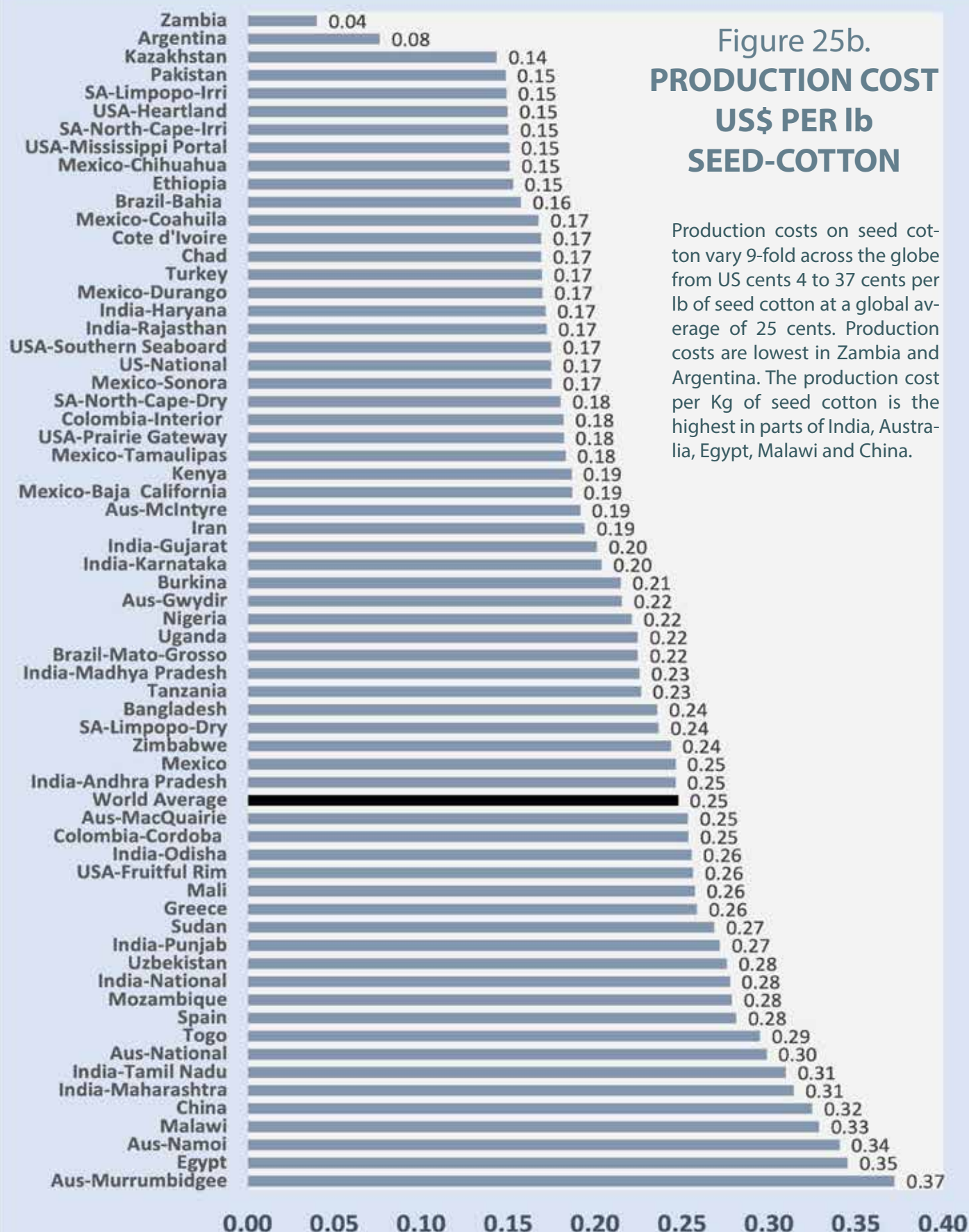
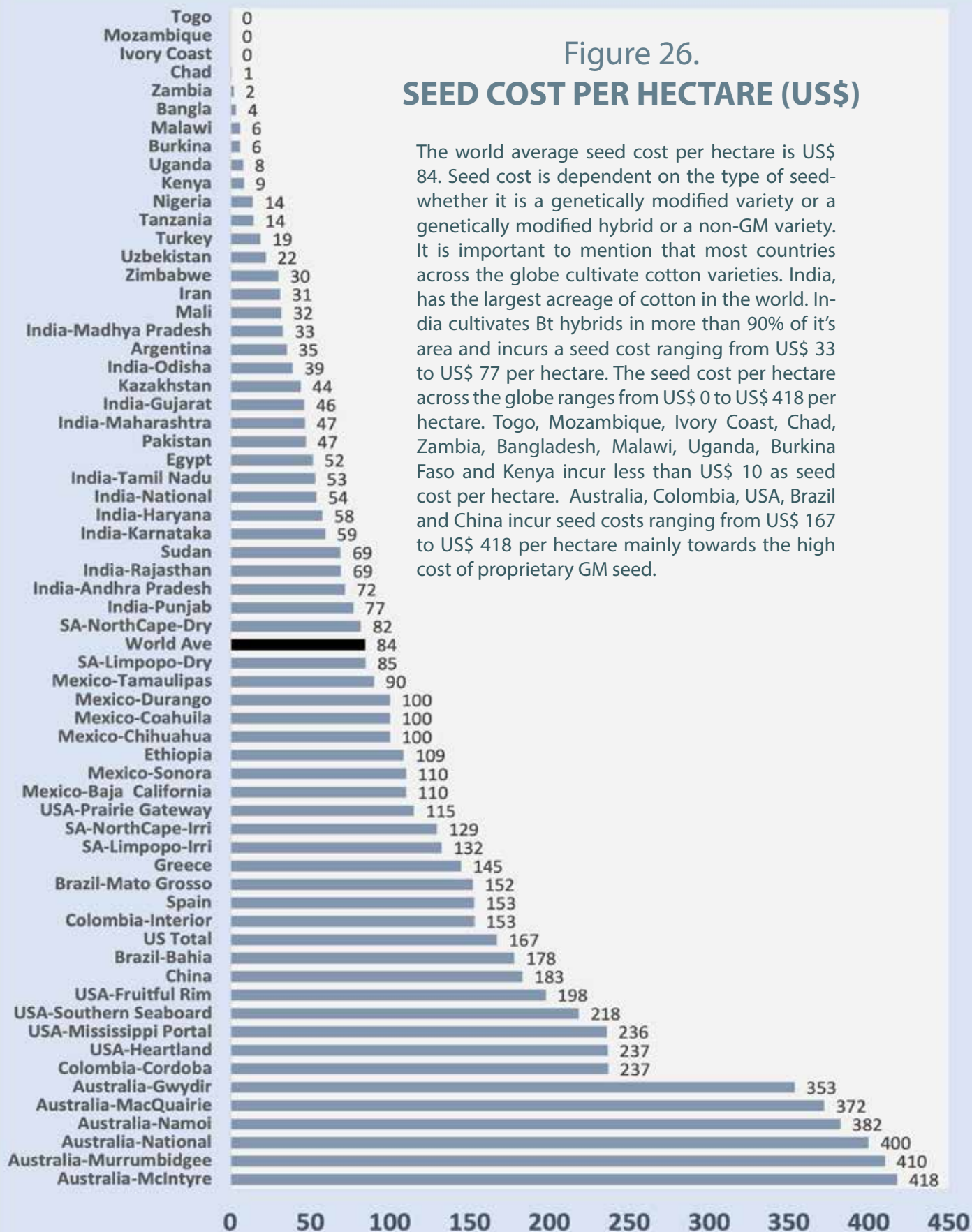


Figure 26.
SEED COST PER HECTARE (US\$)

The world average seed cost per hectare is US\$ 84. Seed cost is dependent on the type of seed—whether it is a genetically modified variety or a genetically modified hybrid or a non-GM variety. It is important to mention that most countries across the globe cultivate cotton varieties. India, has the largest acreage of cotton in the world. India cultivates Bt hybrids in more than 90% of its area and incurs a seed cost ranging from US\$ 33 to US\$ 77 per hectare. The seed cost per hectare across the globe ranges from US\$ 0 to US\$ 418 per hectare. Togo, Mozambique, Ivory Coast, Chad, Zambia, Bangladesh, Malawi, Uganda, Burkina Faso and Kenya incur less than US\$ 10 as seed cost per hectare. Australia, Colombia, USA, Brazil and China incur seed costs ranging from US\$ 167 to US\$ 418 per hectare mainly towards the high cost of proprietary GM seed.



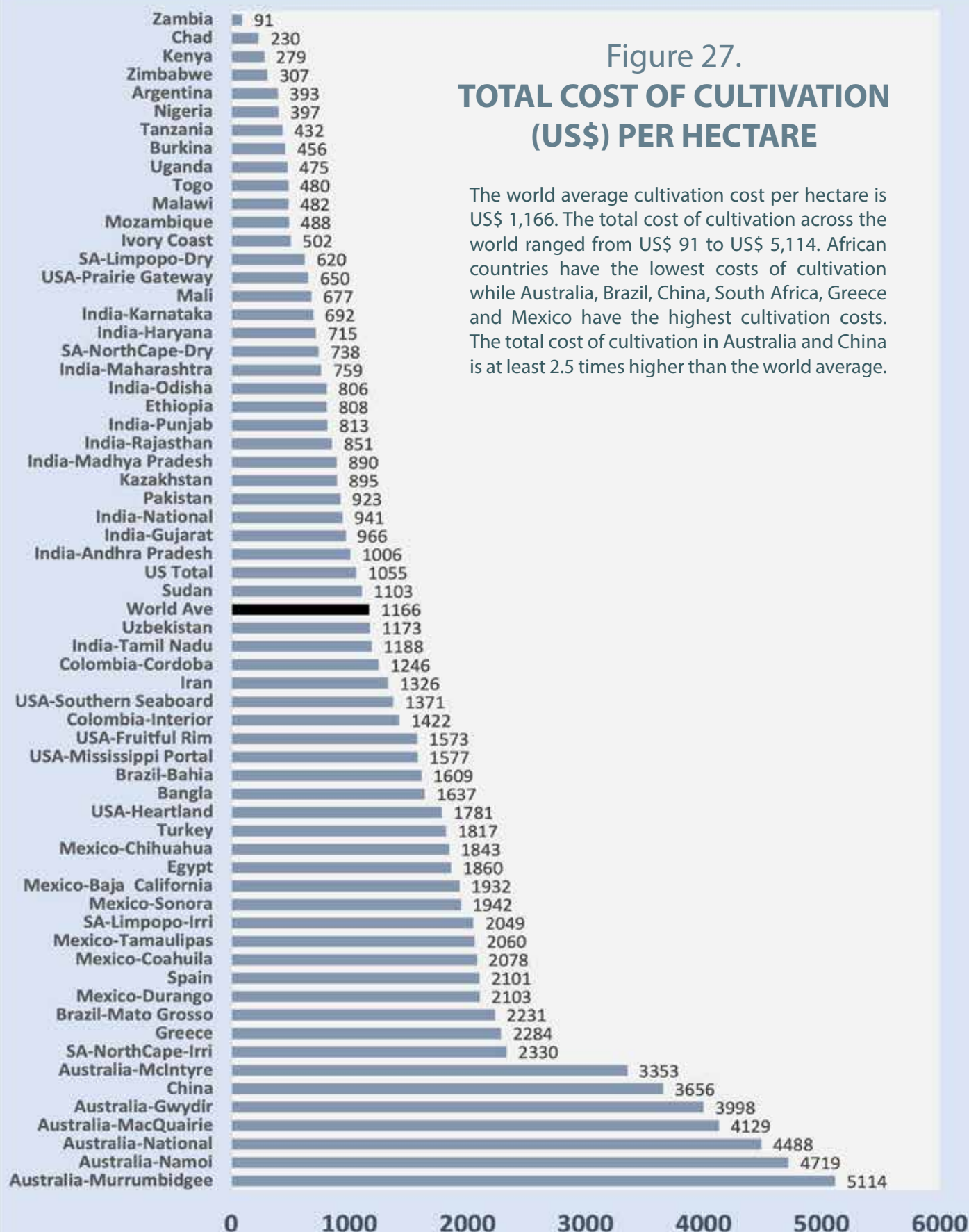


Figure 28.
**WEEDING COST
PER HECTARE (US\$)**

The global average cost per hectare on weeding is US\$ 90. Weeding costs across the globe, range from US\$ 13 to US\$ 382 per hectare. Spain did not report any specific costs incurred on herbicides or weeding. These costs are influenced by the type of weeding (hand/herbicide) and the labour costs that are incurred on weeding. Weeding costs per hectare are the highest in Bangladesh, followed by Greece, Mexico, Sudan, parts of India, China, and Mali. Weeding costs are less than US\$ 20 in Spain, Zambia, Pakistan, and Chad.

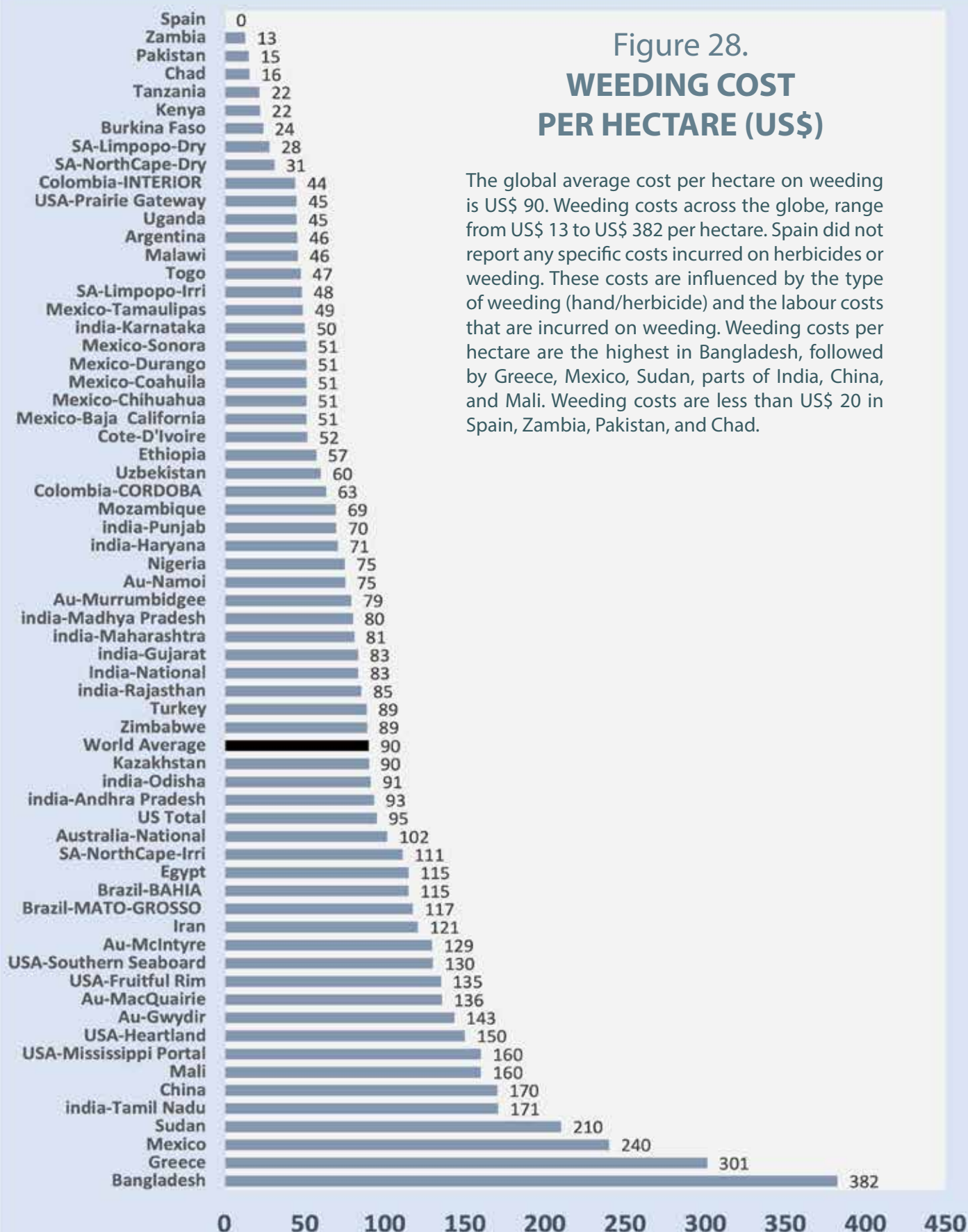


Figure 29.
**WEEDING COST (US\$)
PER Kg LINT PRODUCED**

Costs on weeding incurred varied across the world from US\$ 0.02 to US\$ 0.43 per Kg lint produced. The world average weeding costs are US\$ 0.11 per Kg of lint produced. Bangladesh, Zimbabwe, Mali, Mozambique and Sudan incur the highest weeding costs per Kg of lint produced while Spain, Pakistan, Mexico, Colombia and parts of Australia and South Africa incur the least in terms of weeding costs (US\$) per Kg of lint produced.

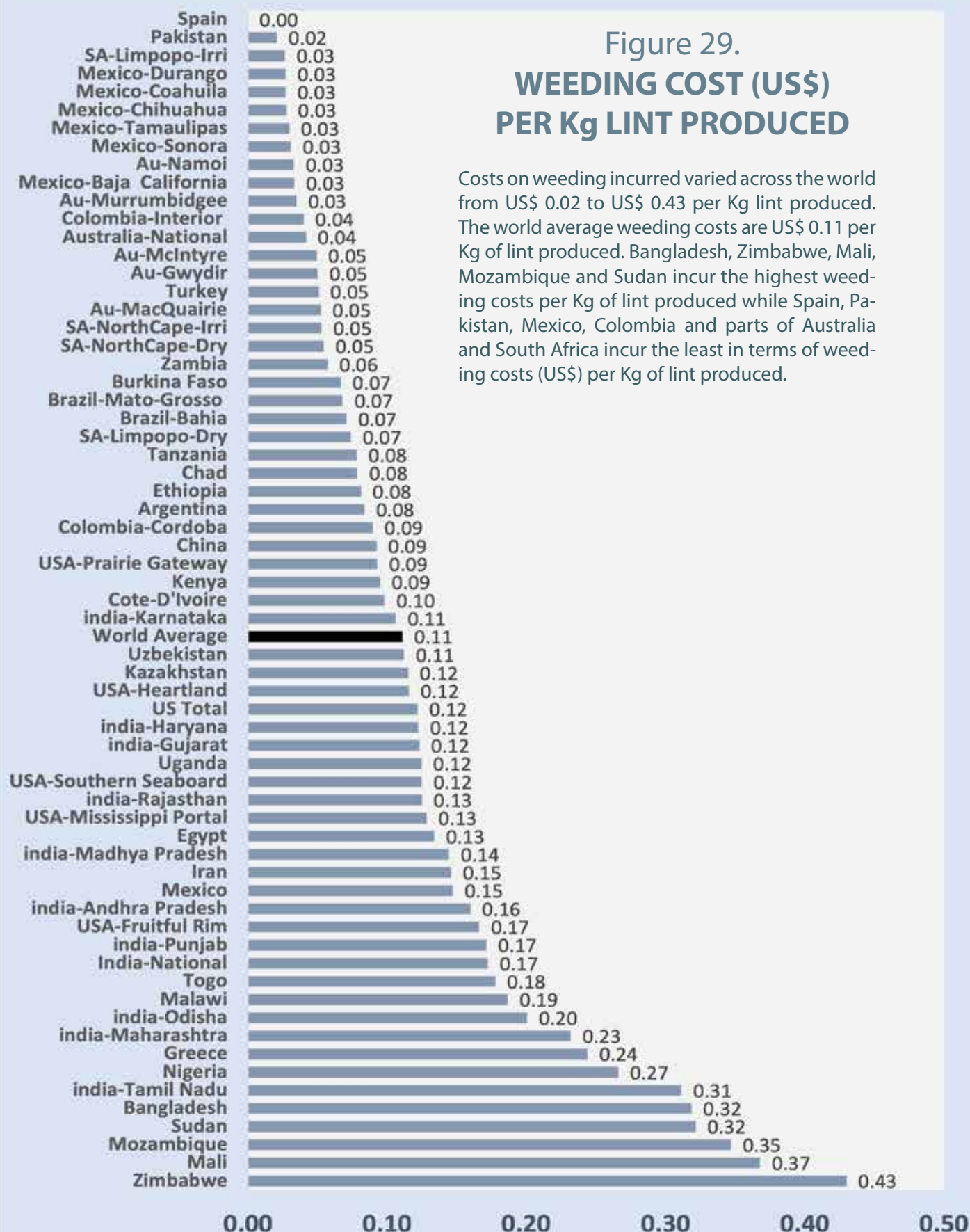


Figure 30.
**BLUE WATER (Litres) FOOTPRINT
PER Kg LINT PRODUCED**

Irrigation water is referred as blue water. This graph shows the additional amount of irrigation water used in the production of one Kg lint. At least fifteen African cotton growing countries do not use irrigation water to cultivate cotton hence the blue water used to produce 1Kg of lint is zero. Twenty countries use blue water ranging from 17 litres (as in Brazil) to 13,696 (as in Turkmenistan) to produce 1Kg of lint. Variability in the use of irrigation water to produce 1Kg of lint was 805-fold across the globe. The world average blue water used to produce a kilogram of lint was 1931 litres. The top four cotton growing countries- India, China, USA and Brazil use 1237, 1552, 1380 and 17 litres of blue water respectively to cultivate a kilogram of cotton lint.

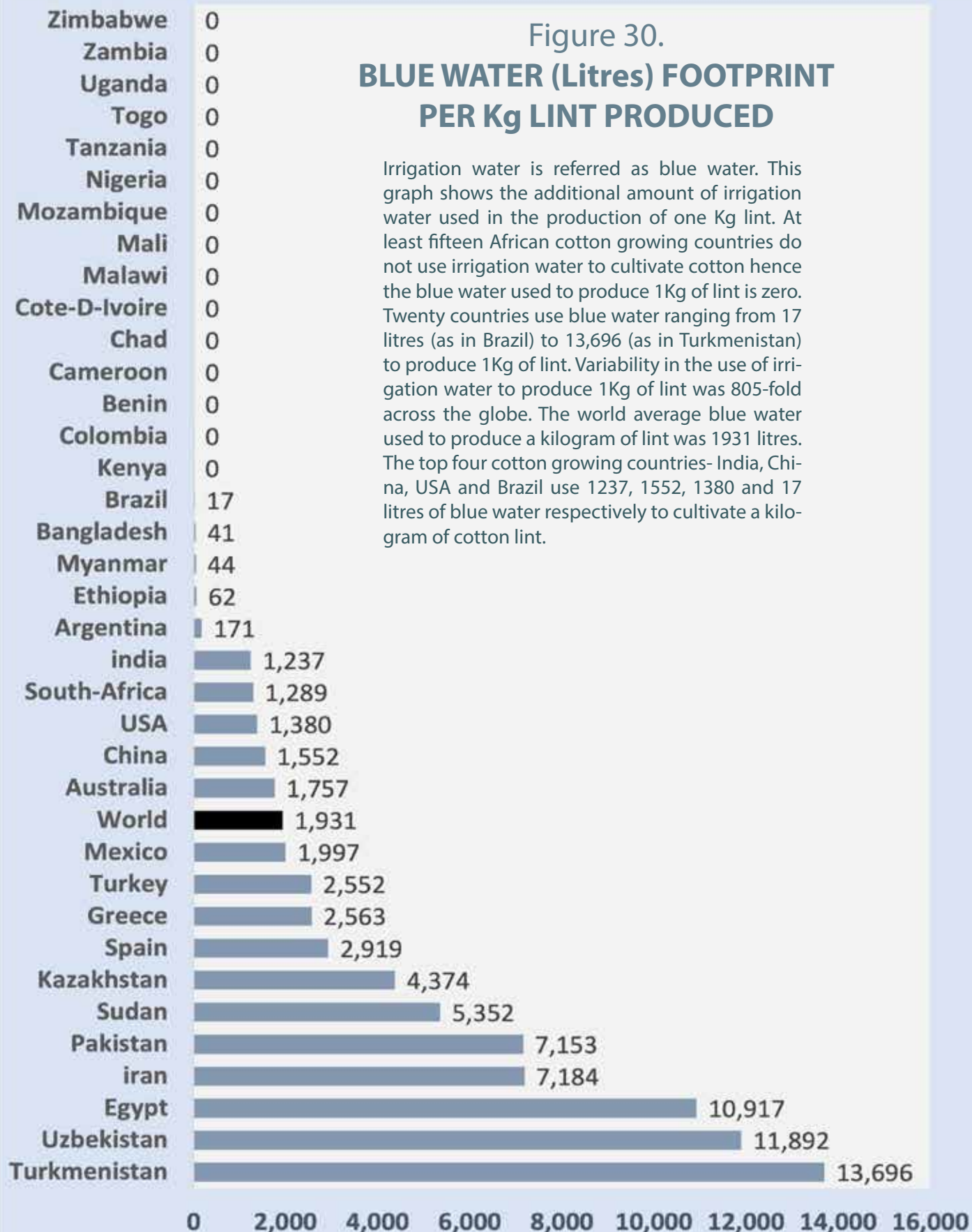


Figure 31.
**GREEN WATER ('000 Litres) FOOTPRINT
PER Kg LINT PRODUCED**

Effective rainfall was calculated based on soil types. the total amount of effective rainfall used for cotton production is shown here as green water ('000 litres) per Kg lint produced. Low yields invariably result in a high green water footprint in rainfed countries with high precipitation rates. The world average green water, to produce a kilogram of lint is 6003 litres. The green water footprint in majority of the cotton growing countries in Africa is about 10,000 to 42,300 litres of rainwater per Kg lint produced. Ironically excessive rainfall depresses yields due to waterlogging in poor drained fields. In contrast, countries with low rainfall such as Egypt, China, Australia, Iran and Mexico use less than 2,000 litres of green water for every kilogram of lint produced.

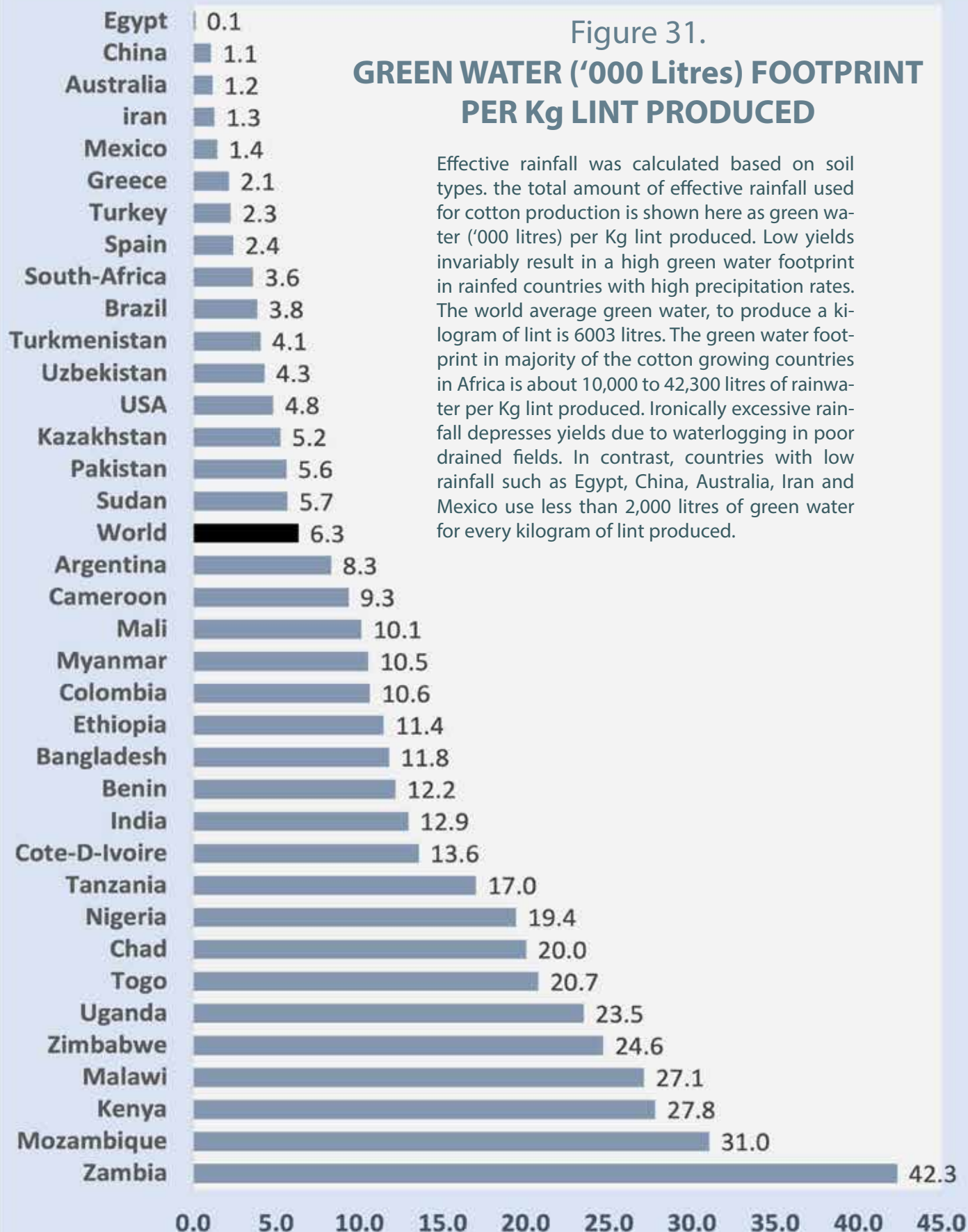


Figure 32.
**IRRIGATION WATER (Billion Litres)
USED FOR COTTON PRODUCTION**

About 95% of cotton in Africa is rainfed. Majority of the African countries depend solely on rainfall for cotton production. The total amount of irrigation water (in billion litres written as Mm³) used on cotton is 4,940 Mm³ in USA; 6,564 Mm³ in Uzbekistan, 7,774 Mm³ in India, 9,170 Mm³ in China and 10,422 Mm³ in Pakistan. Australia, that is often stricken by drought uses 986 Mm³ of water for irrigation. An estimated 48,338 trillion litres of irrigation water were used for cotton production in 2018-2019.

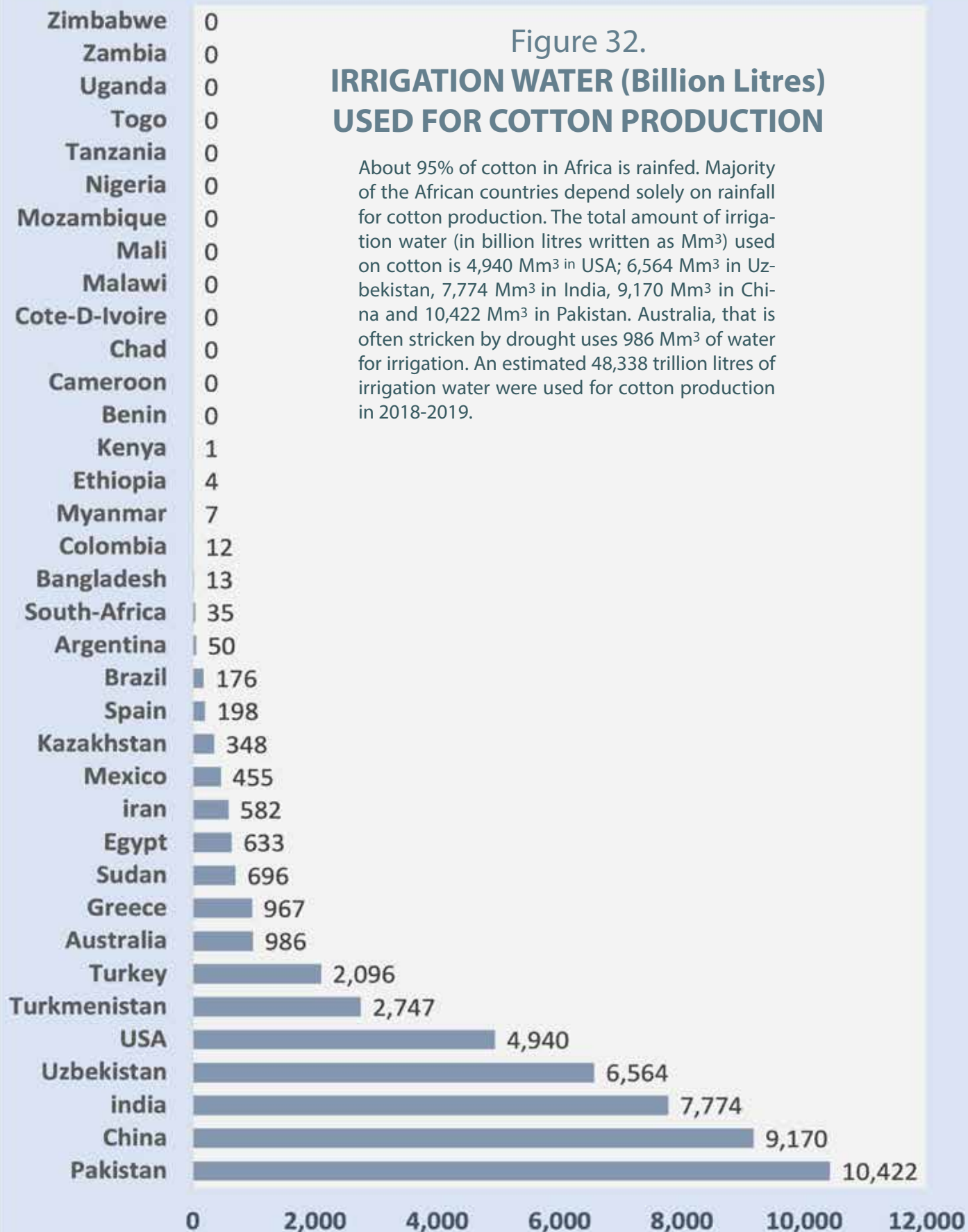


Figure 33.
% RAINFED AREA

On an average 52% of cotton area in the world is rainfed. At least thirteen African cotton growing countries are entirely rainfed and cotton cultivation is fully dependent on green water. In contrast, Uzbekistan, Pakistan, Mexico, Kazakhstan and Egypt cultivate cotton entirely under irrigation. The top four countries have varied levels of rainfed areas with India at 65%, USA 63%, China 2.0% and Brazil at 87%. Australia that has the highest productivity produces cotton under rainfed condition in 20% of its area.

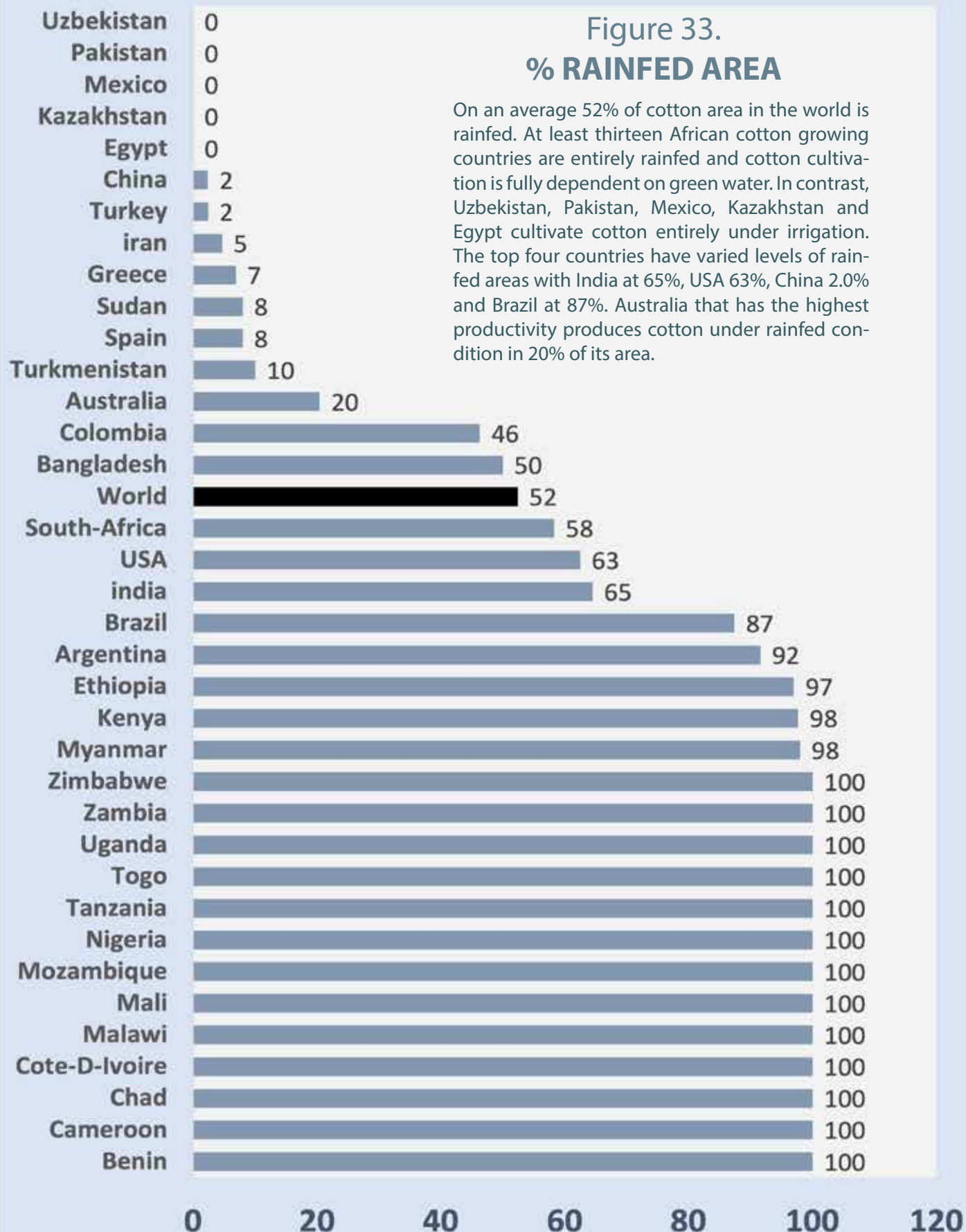




Figure 35. Nitrogen fertiliser use in cotton (Kg/Ha)

The world average nitrogen use is 132 Kg per hectare. Amongst all the nutrients, nitrogen is the most important nutrient for cotton growth and productivity. However, amongst all nutrients, nitrogen contributes the most directly to global warming by emitting nitrous oxide (NO₂) and ammonia (NH₃). At least seven countries, namely, Australia, Egypt, Uzbekistan, Pakistan, China, India and Brazil apply nitrogen quantities higher than the global average. Nitrogen application is lowest across Africa. Very few African countries have domestic fertilizer manufacturing plants. The retail price of fertilisers in Africa is at least 3-6 times higher compared to many developing countries. Thus, there is very less economic incentive for the use of fertilisers in Africa.

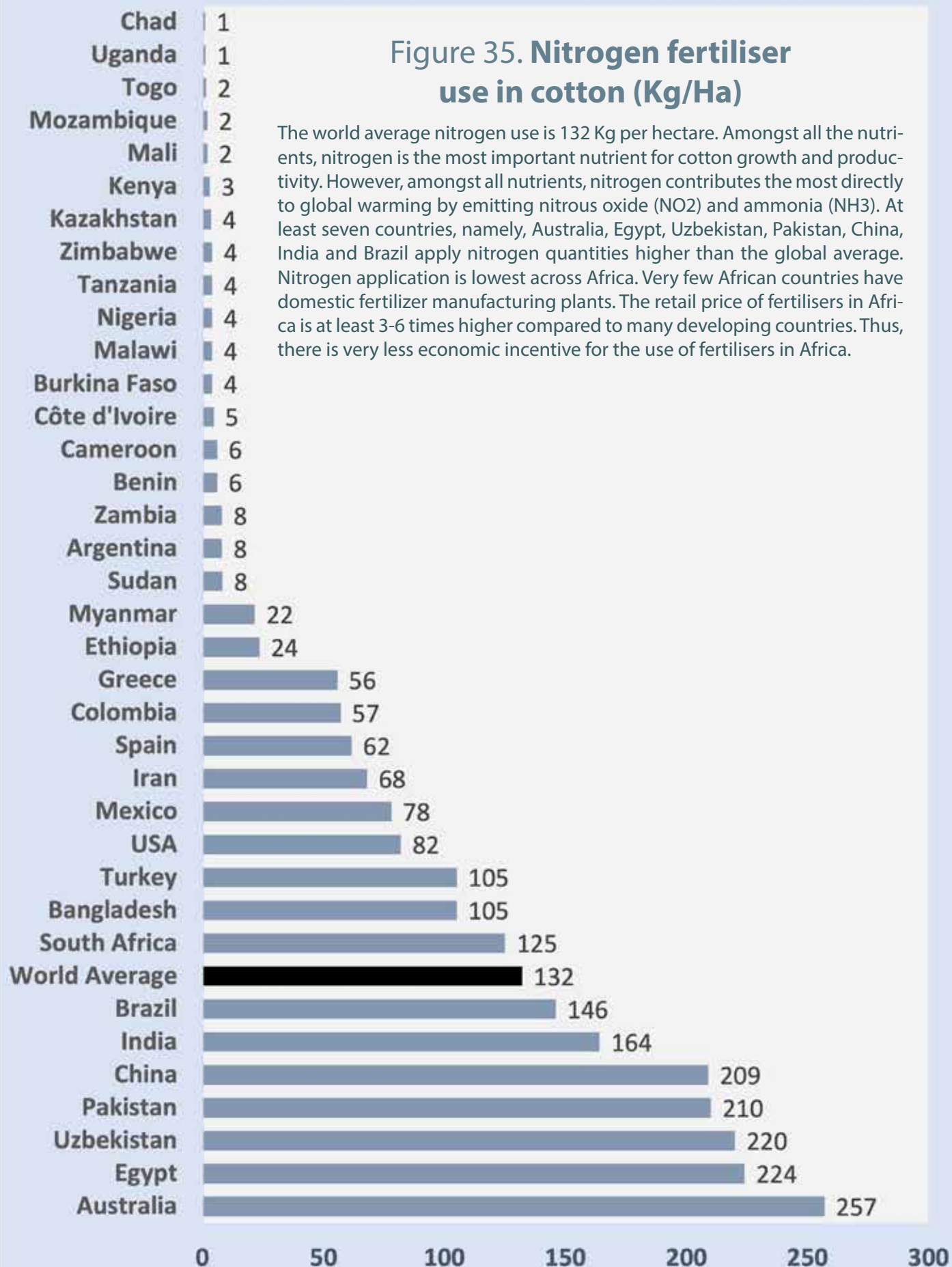


Figure 36. NPK fertiliser use in cotton (Kg/Ha)

The world average use of nitrogen + phosphorus + potassium (NPK) is 219 Kg per hectare. NPK are the major nutrients for cotton growth and productivity. The usage of phosphorus and potassium fertilizers could lead to eutrophication but does not result in serious greenhouse gas emissions. At least eight countries, namely, Australia, Egypt, Uzbekistan, South Africa, Pakistan, China, India and Brazil apply NPK quantities higher than the global average. NPK application is lowest across Africa. Chemical fertilisers are very expensive in Africa compared to many other countries of the world. The use of NPK is therefore lowest in Africa.

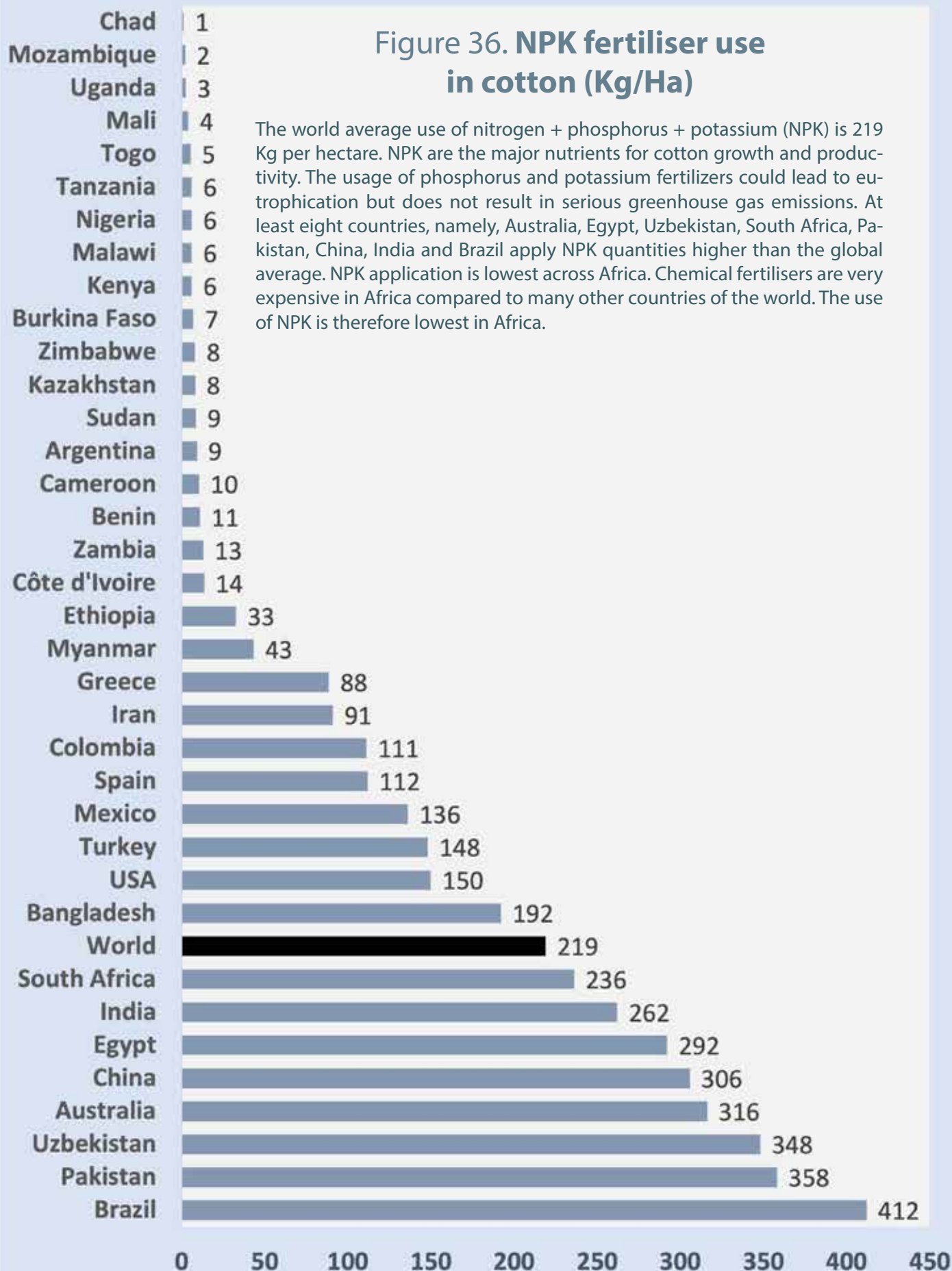


Figure 37. Fuzzy seeds used for sowing (%)

At least six African countries use 100% fuzzy seeds for sowing. More than 50% of the area is sown with fuzzy seeds in at least eight countries, namely, Pakistan, Iran, Nigeria, Tanzania, Bangladesh, Malawi, Uzbekistan and Kenya. Amongst the African countries, Zimbabwe, Uganda, Sudan, South Africa and Ethiopia reported 98-100% de-linted seeds for sowing.

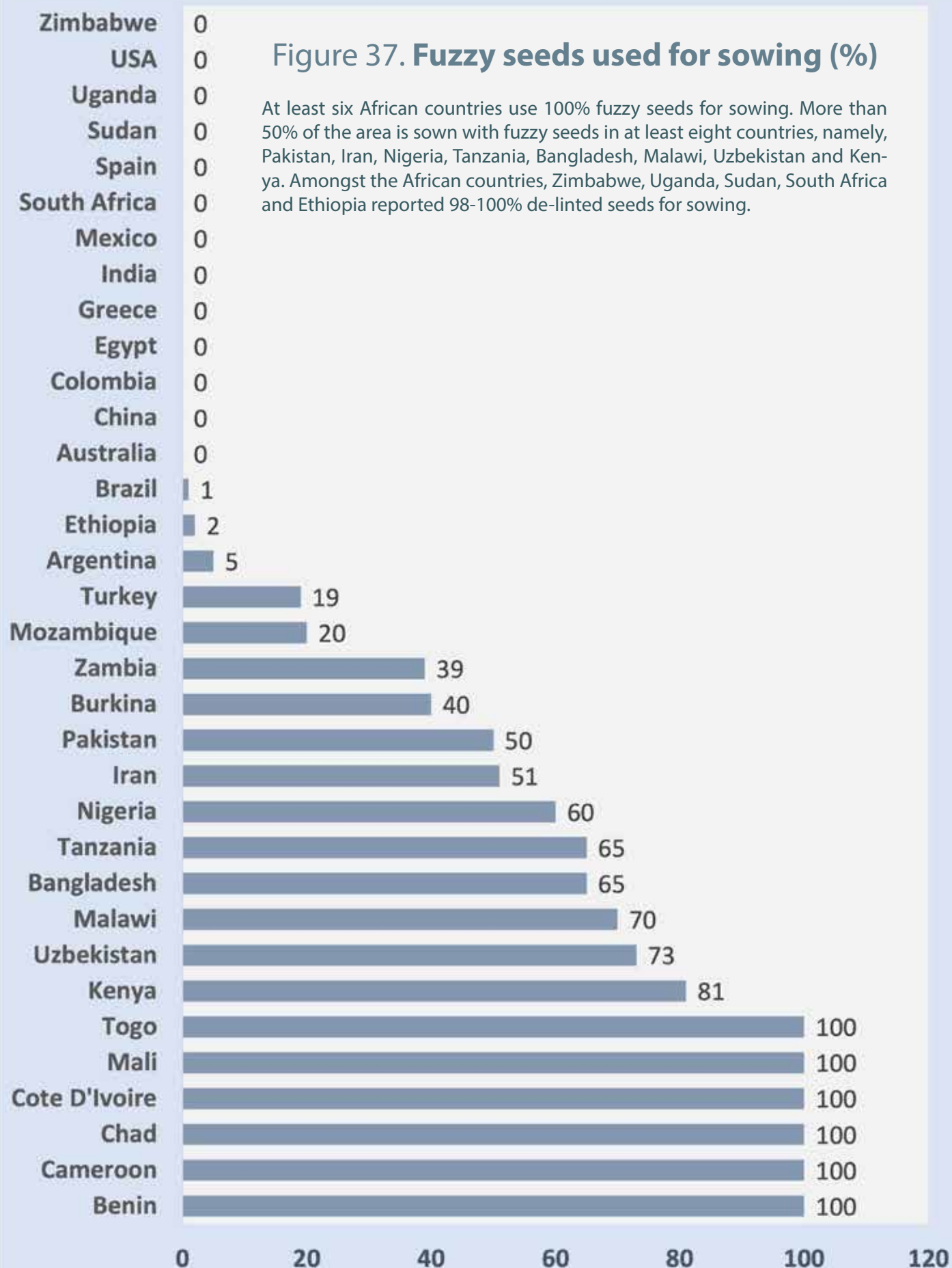


Figure 38. Cotton Area Under Zero-Till (%)

Brazil, Australia, Argentina, Cameroon and Ethiopia reported more than 60% of the cotton acreage to be under zero tillage. Togo, United States and Spain reported 43-45% of their cotton area under zero tillage. Uzbekistan, Turkmenistan, Sudan, Pakistan, Mexico, Greece and Turkey reported almost complete conventional tillage in cotton cultivation.

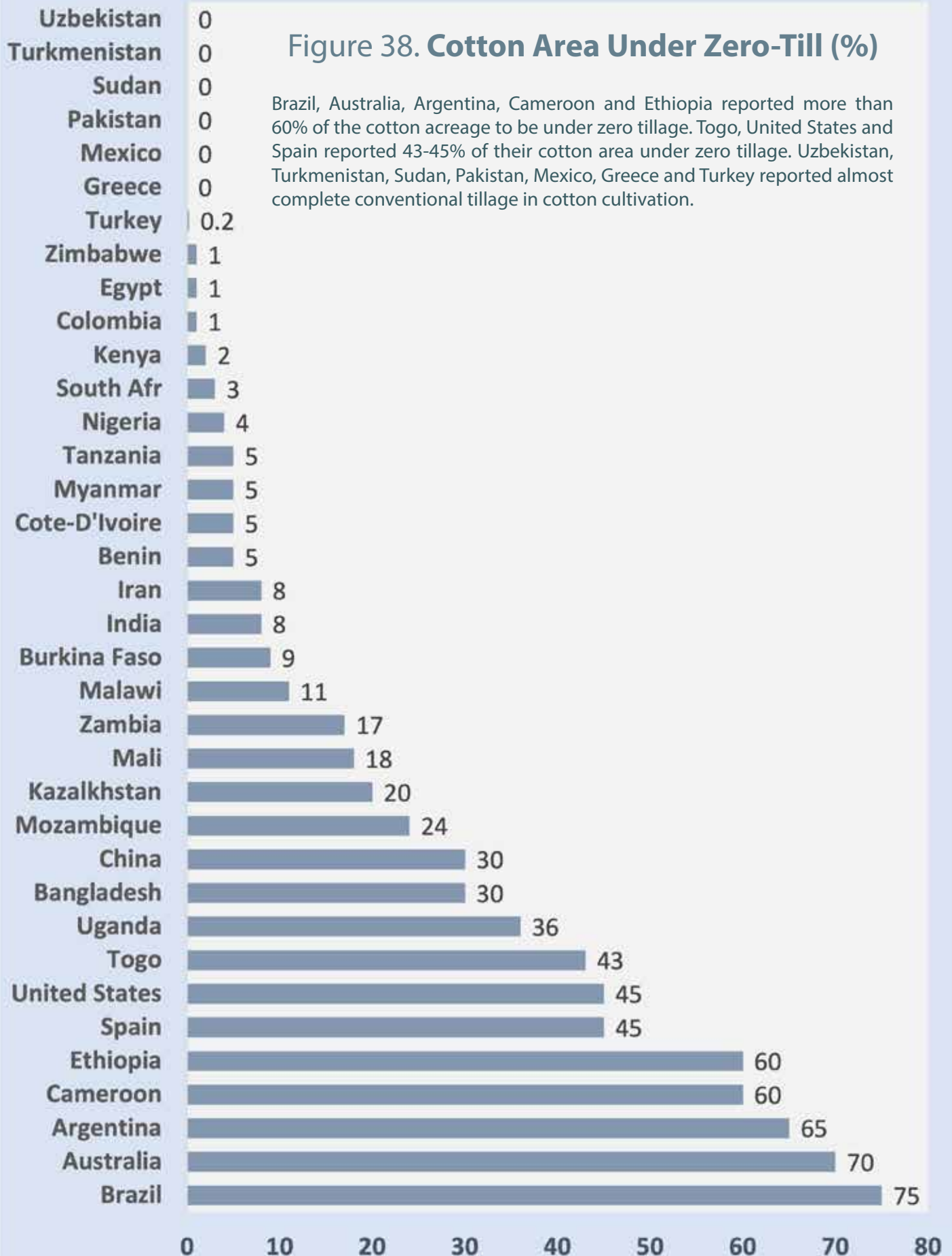


Figure 39. Plant Population per Hectare

Plant population is lowest in Africa, India, Bangladesh and Pakistan. While row to row distance is 80 to 100cm across the world, low plant population is mainly due to the wide spacing of plants within a row. The plant population is high at more than 95,000 plants per hectare in Argentina, Australia, Brazil, Colombia, China, Greece, Mexico, Spain, South Africa, Turkey, Uzbekistan and United States. Almost all the countries that follow a high density of 8-12 plants per metre within the row follow machine harvesting (except China). These countries harvest 700 to 2400 Kg lint per hectare. All countries with a wide spacing between plants in a row have low national average yields of less than 600 kg per hectare.

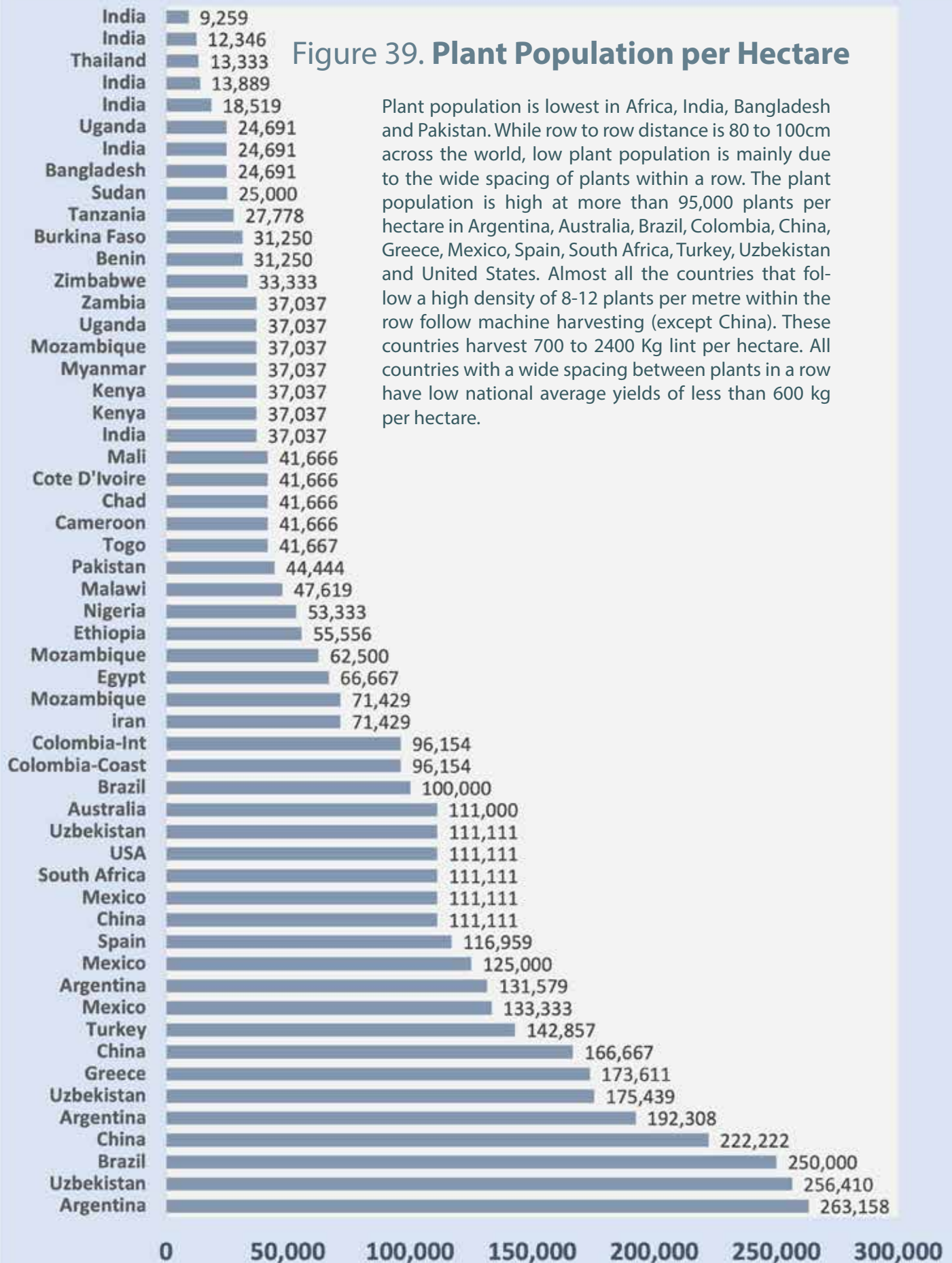


Figure 40. Man-days employed in cotton production per hectare per season

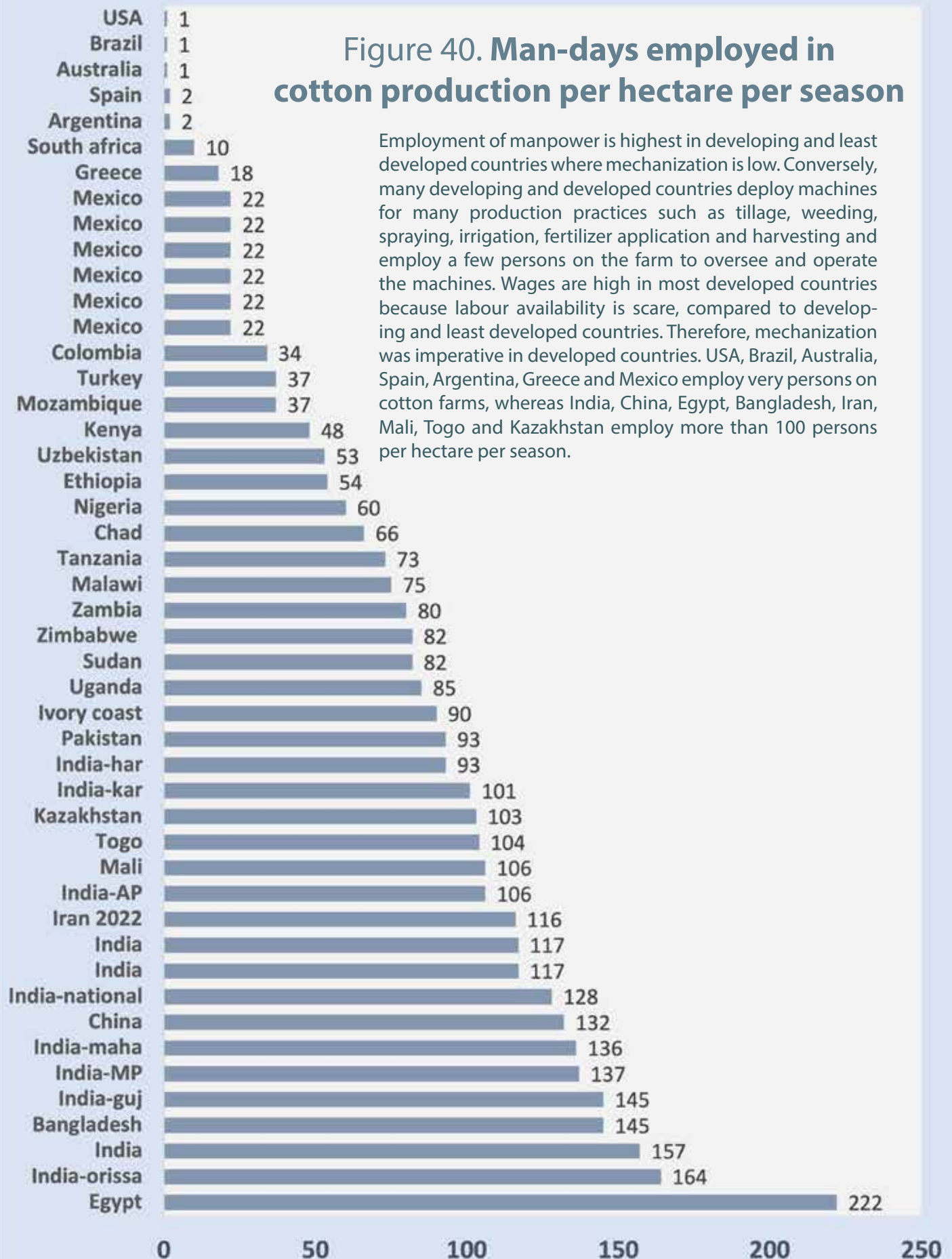


Figure 41. Cotton Seed Production
'000 Metric Tonnes

A total of 43.67 million tonnes of cotton seeds were produced in 2020. The average oil extraction efficiency across the globe was 11.59%. India and China together account for 52.87% of the global cotton seed production. United States, Brazil, Pakistan, Uzbekistan, Australia and Turkey together account for 34.76% of the global cotton seed production.



Figure 42. **Cotton-seed Oil Production**
‘000 Metric Tonnes

Five million metric tonnes of cotton-seed oil were produced in 2020. Seven countries, namely, India, China, Brazil, Pakistan, USA, Uzbekistan and Turkey accounted for 86.55% of the global cotton-seed oil production.

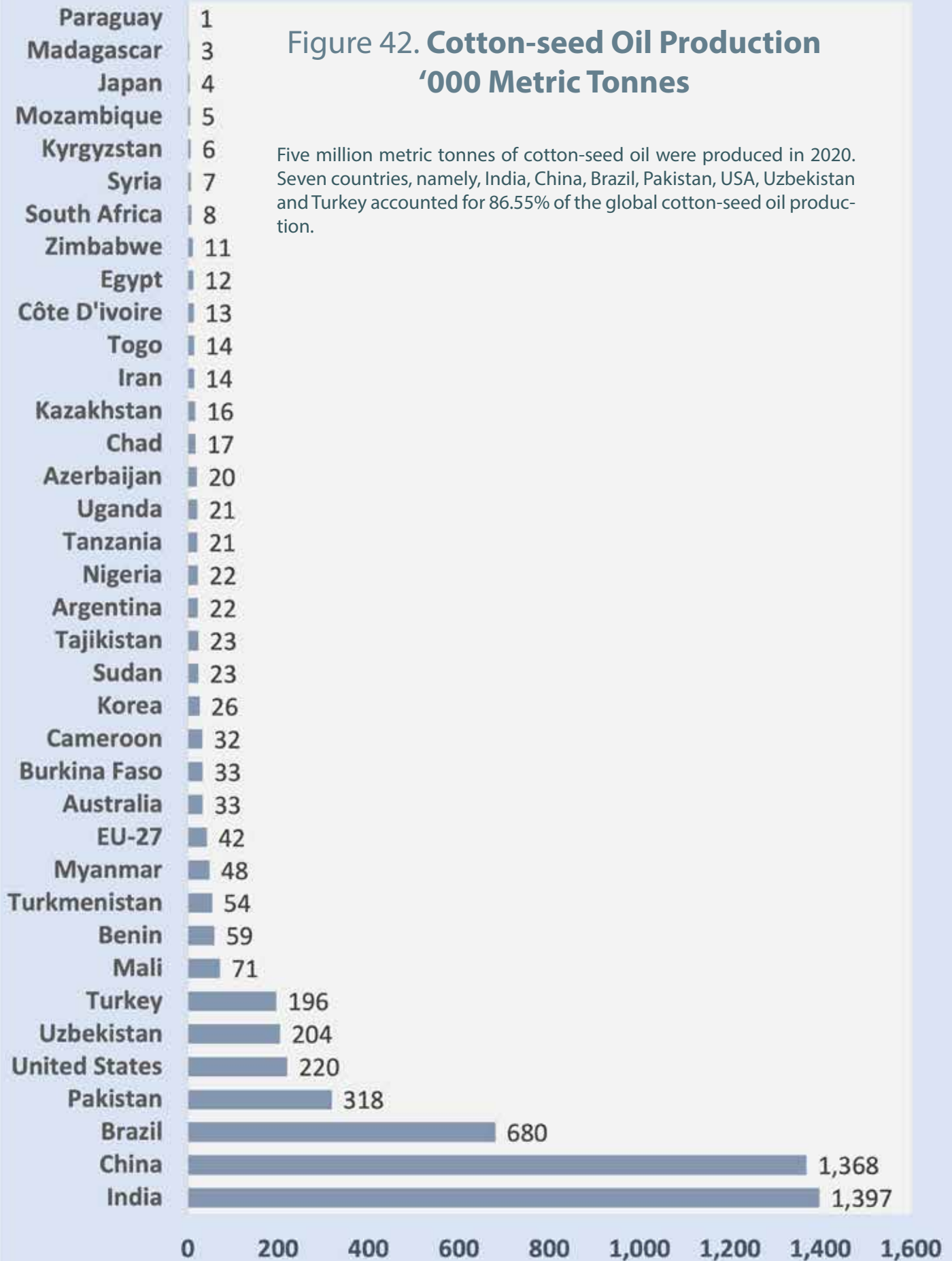


Figure 43. **Cotton-seed Crushed for Oil (%)**

Cotton seed oil is a valuable commercial commodity. Majority of the cotton growing countries crush cotton seeds to extract oil at a variable average extraction efficiency of 10 to 18% with a global average extraction efficiency of 11.59%. A few countries use most of the cotton seeds directly as cattle feed. Cotton seed meal is exported by many countries. A few countries also waste cotton seeds due to the lack of infrastructure required for seed processing.

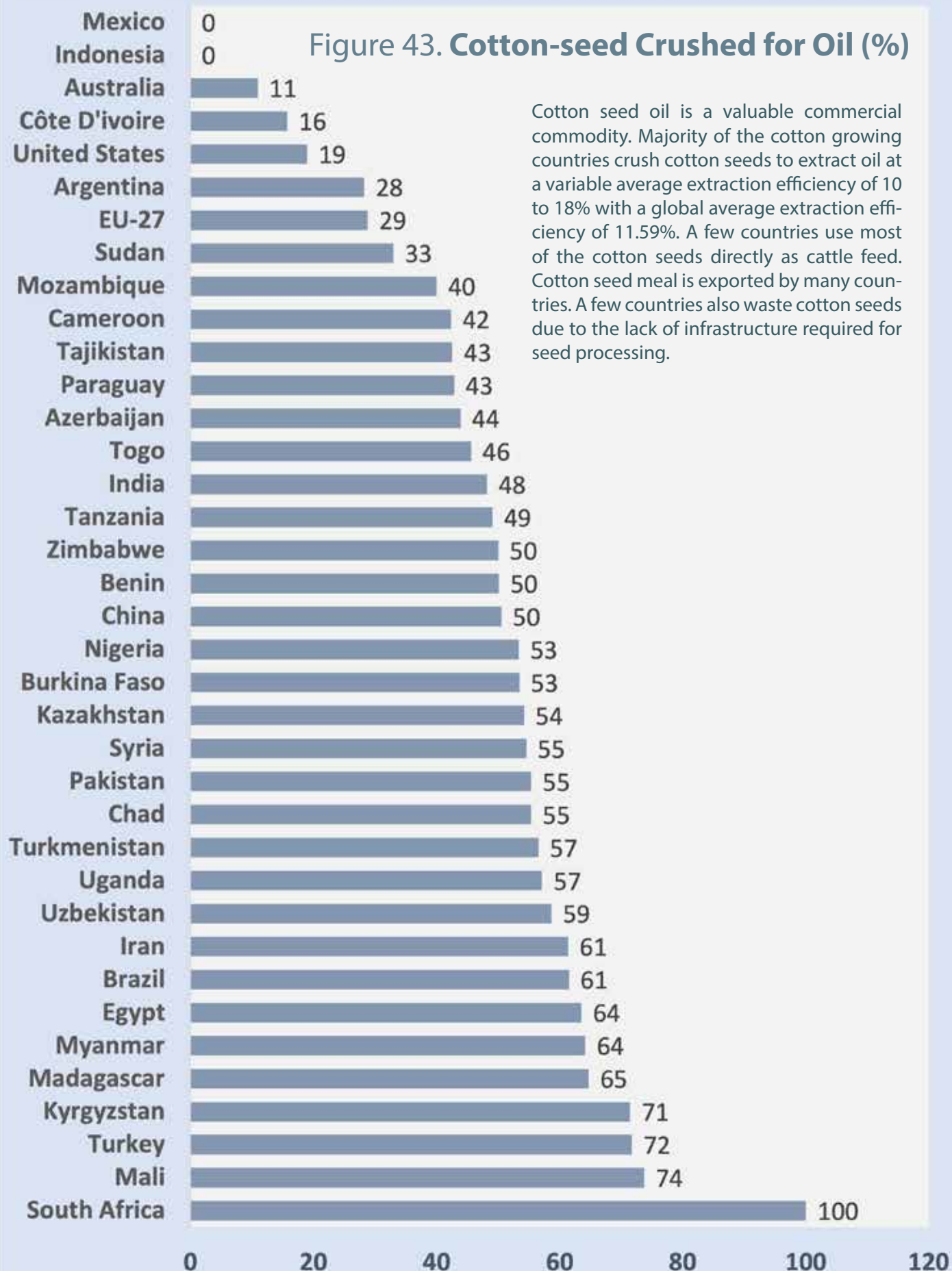
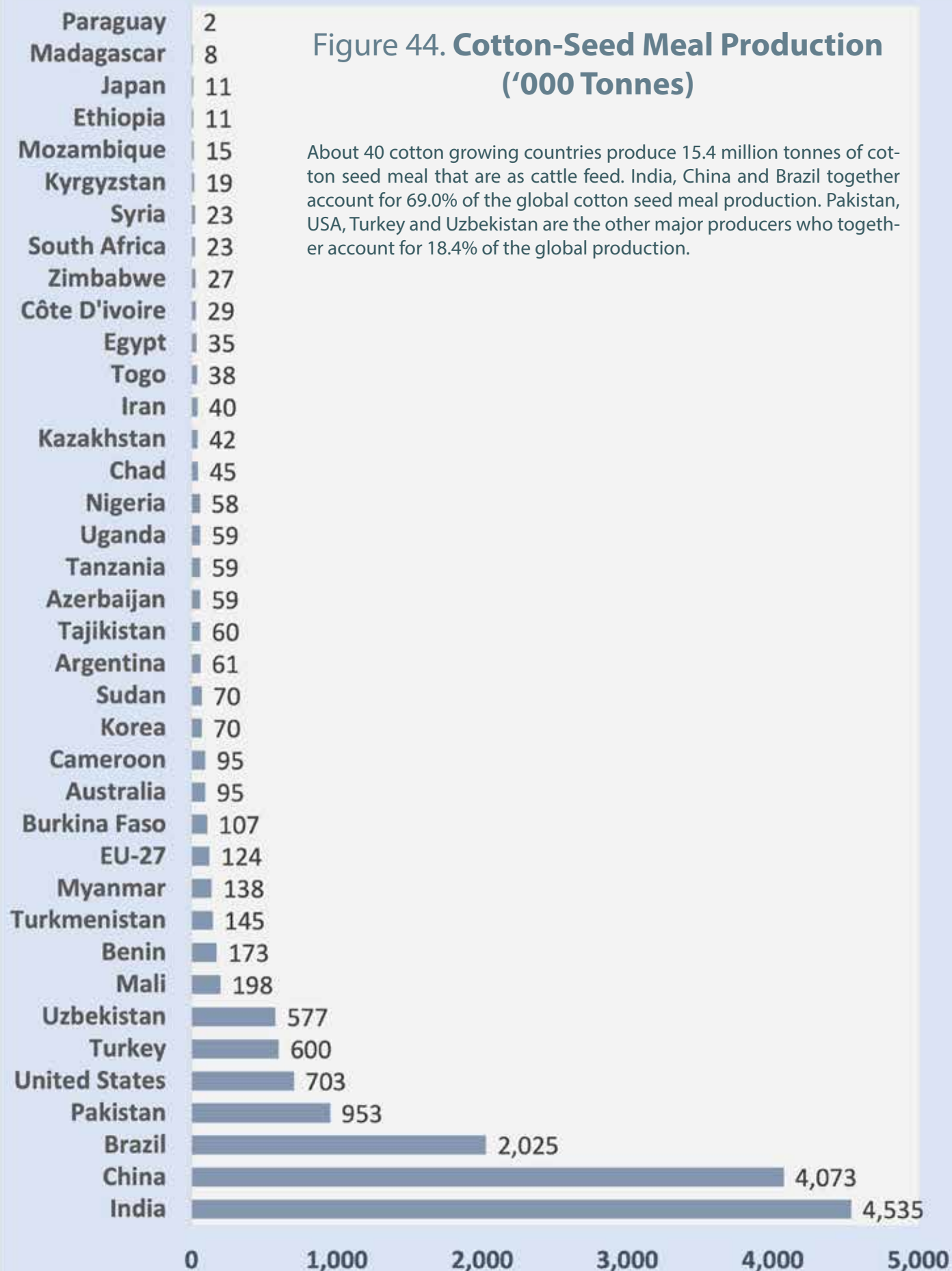
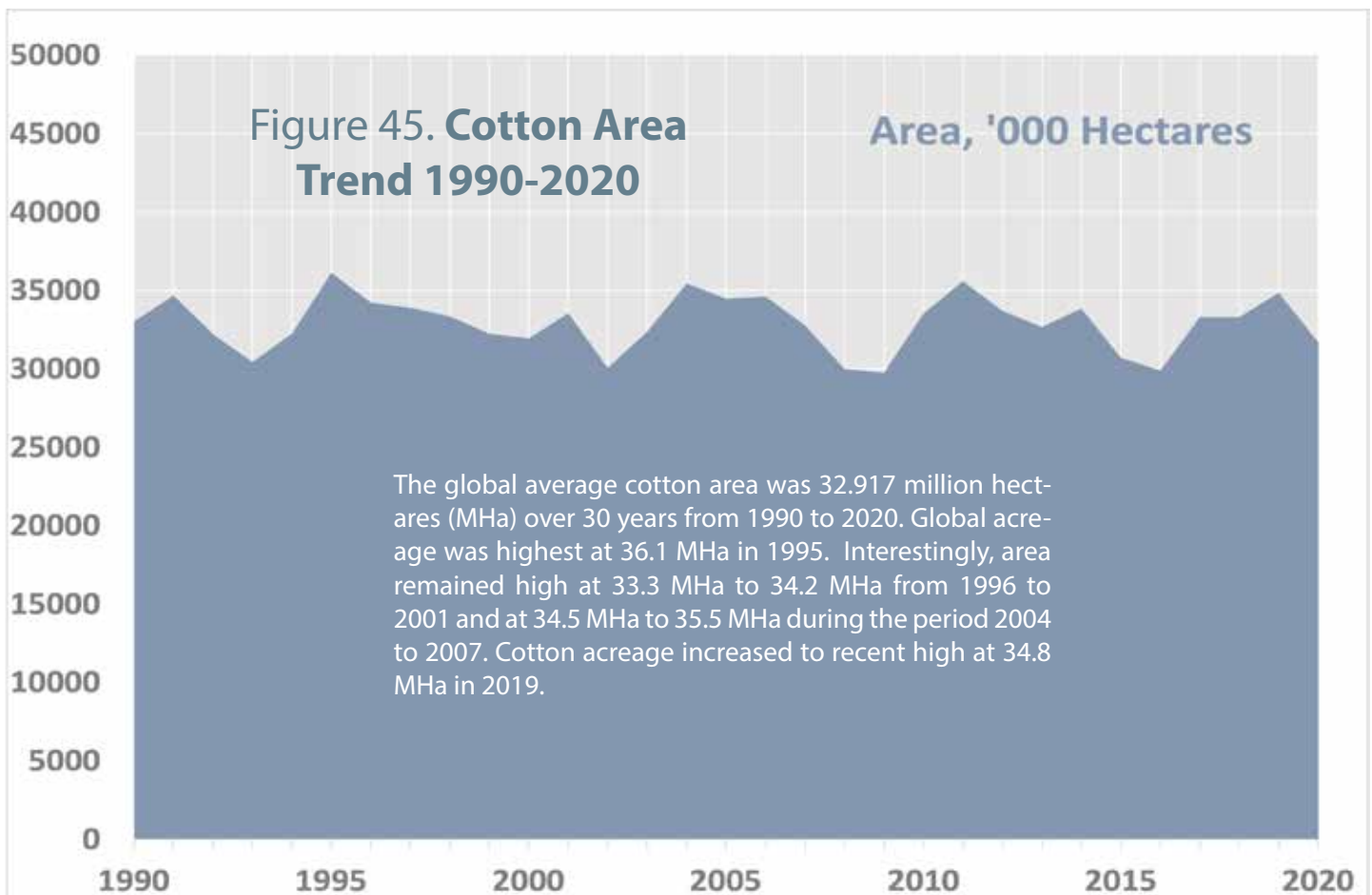


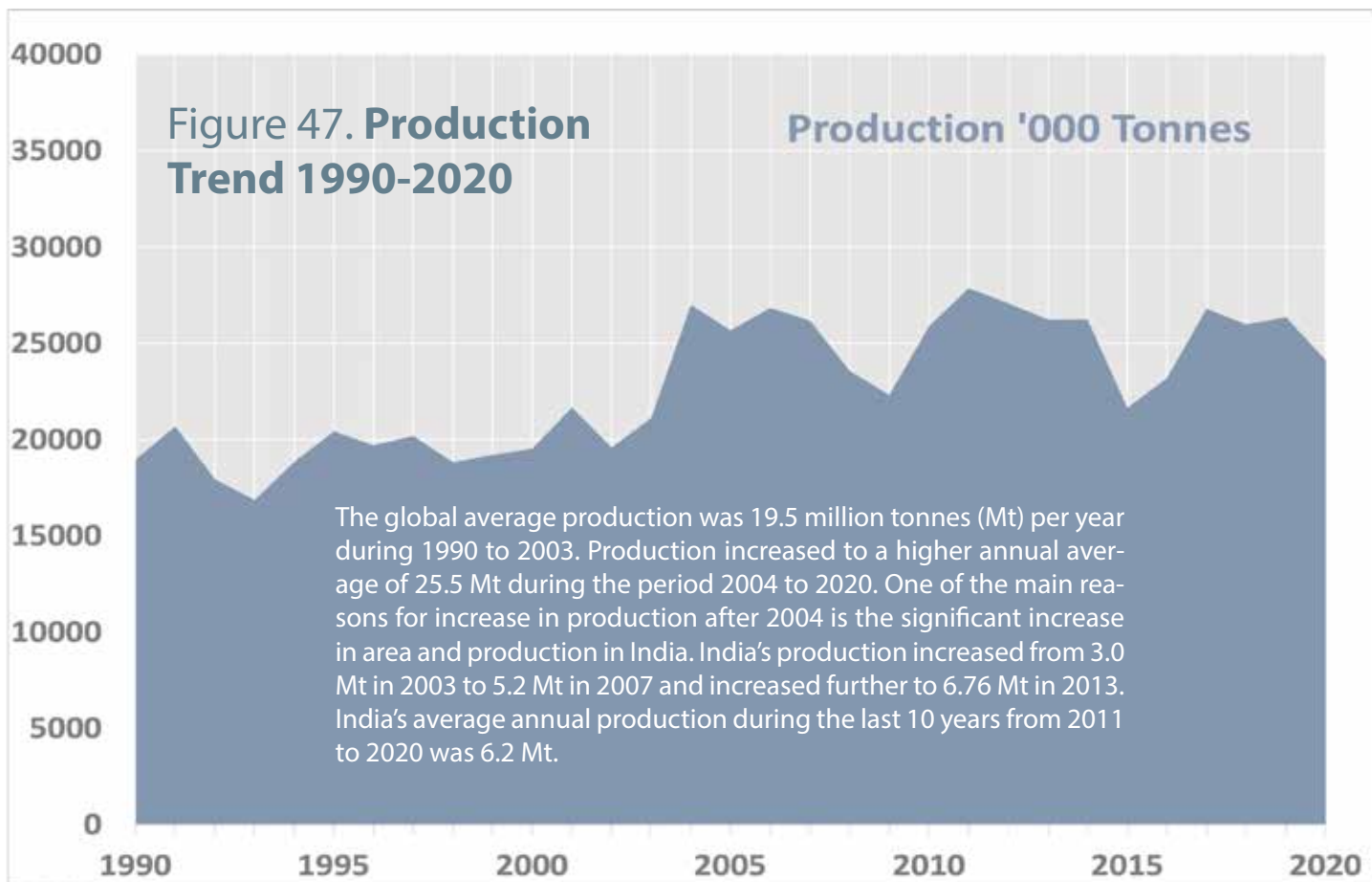
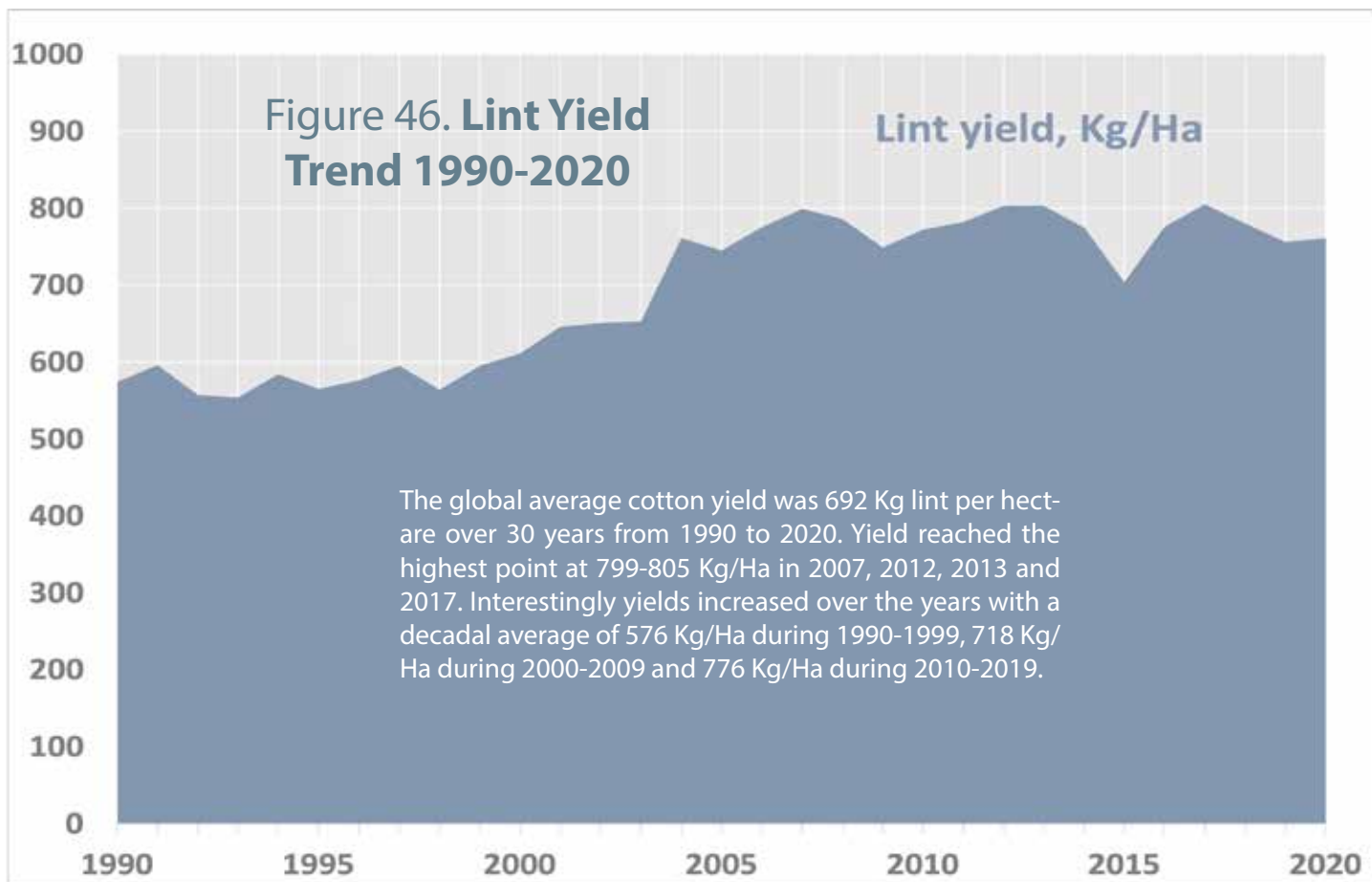
Figure 44. **Cotton-Seed Meal Production**
(’000 Tonnes)

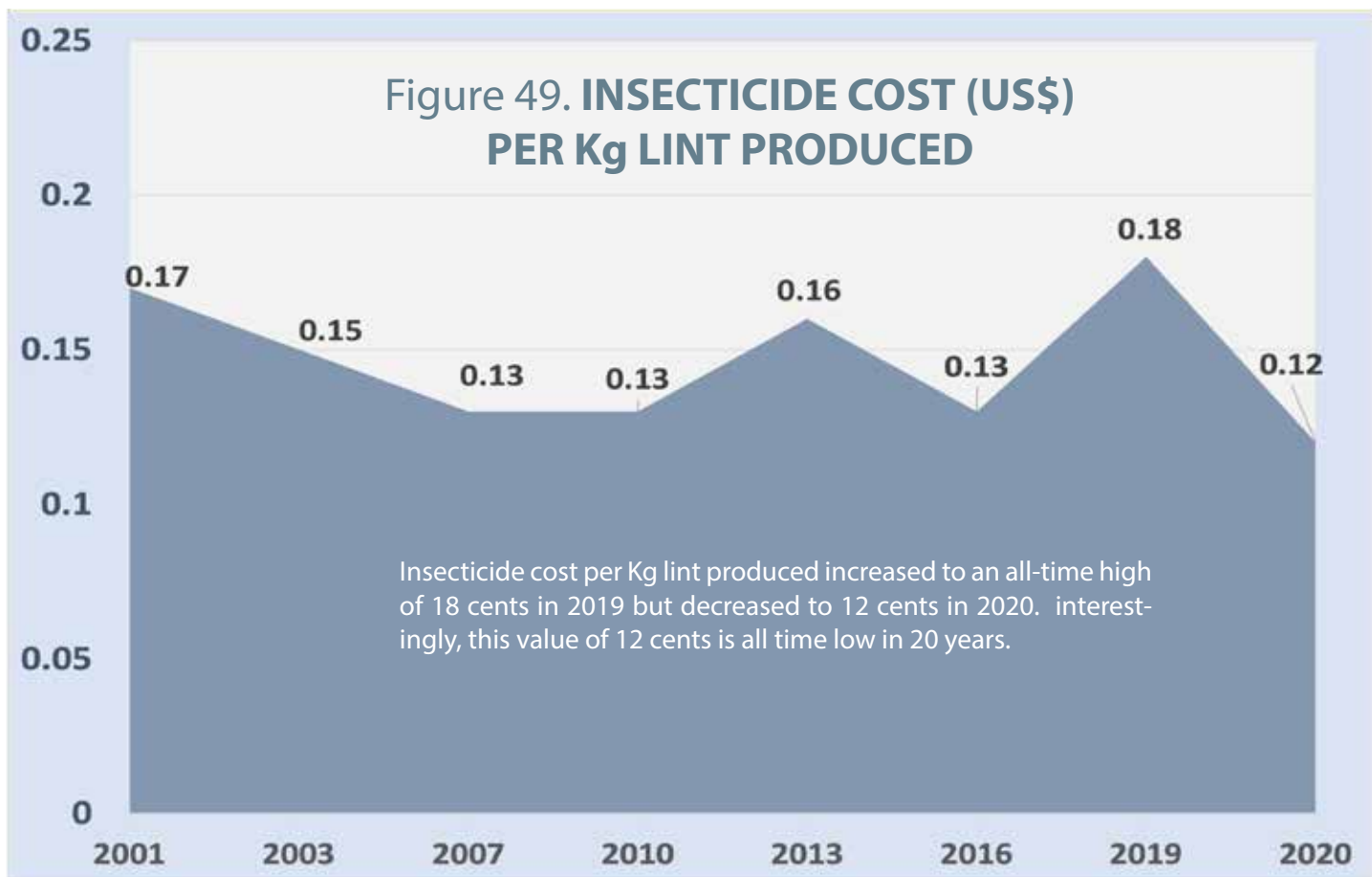
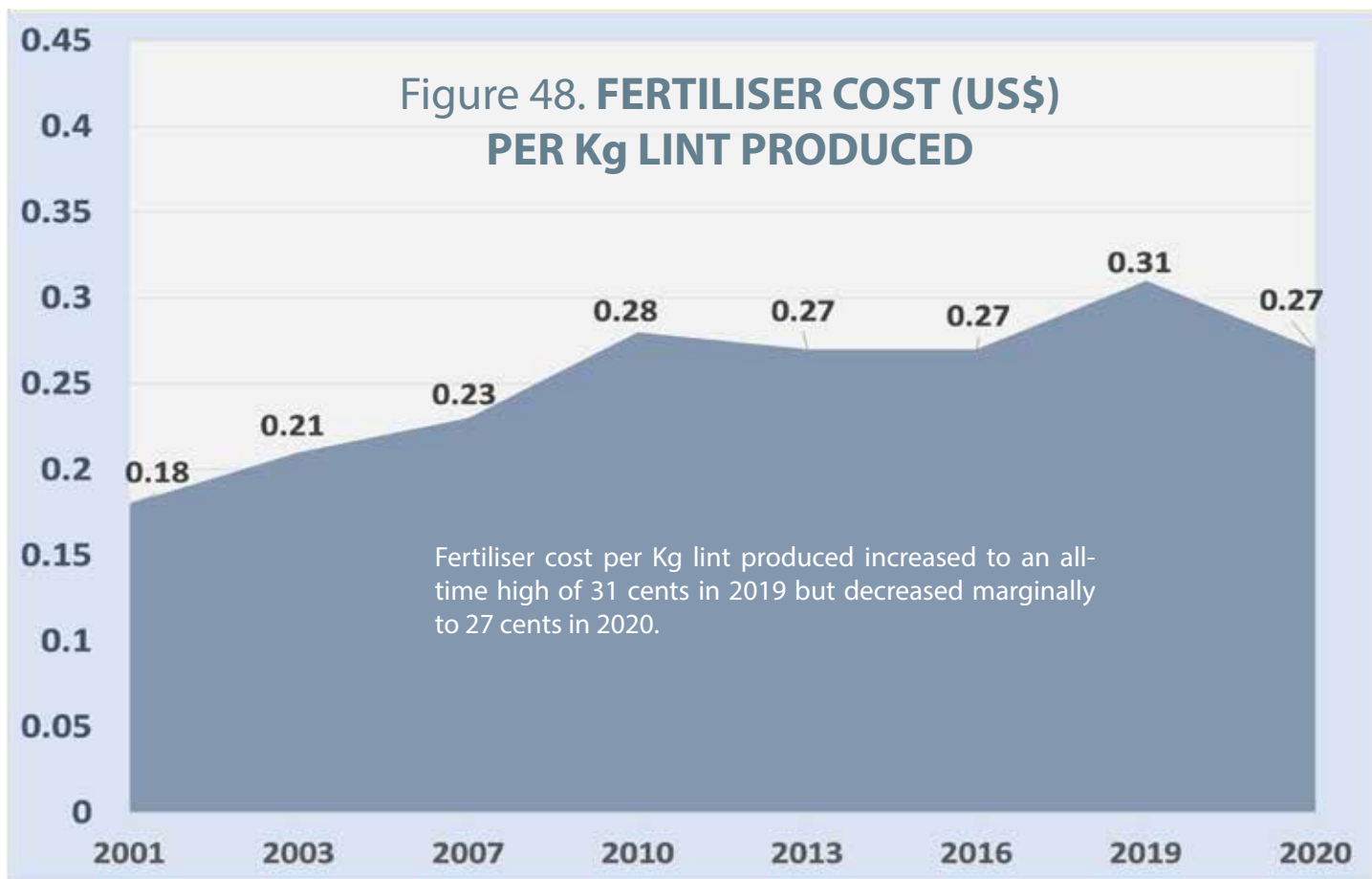
About 40 cotton growing countries produce 15.4 million tonnes of cotton seed meal that are as cattle feed. India, China and Brazil together account for 69.0% of the global cotton seed meal production. Pakistan, USA, Turkey and Uzbekistan are the other major producers who together account for 18.4% of the global production.

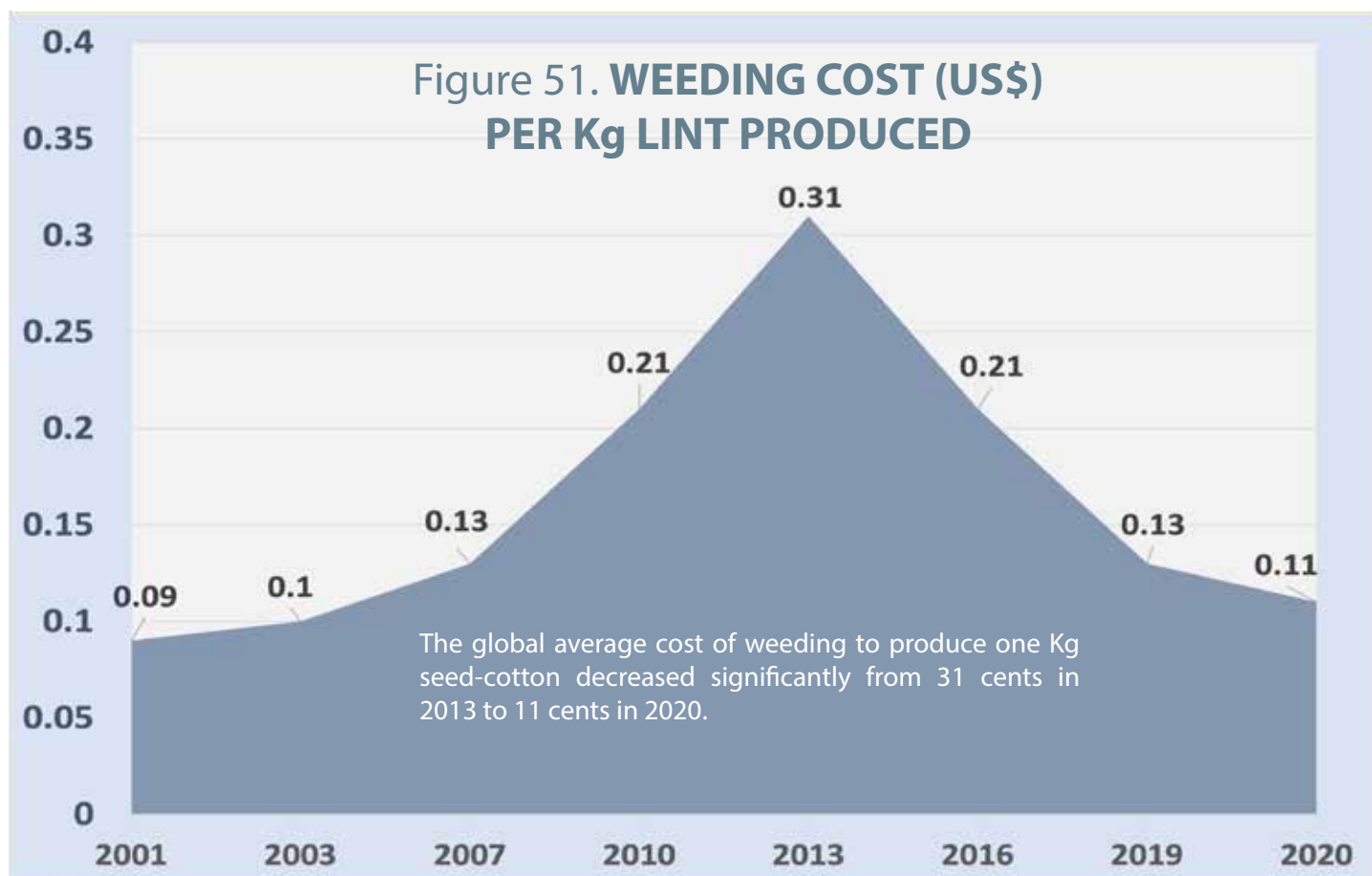
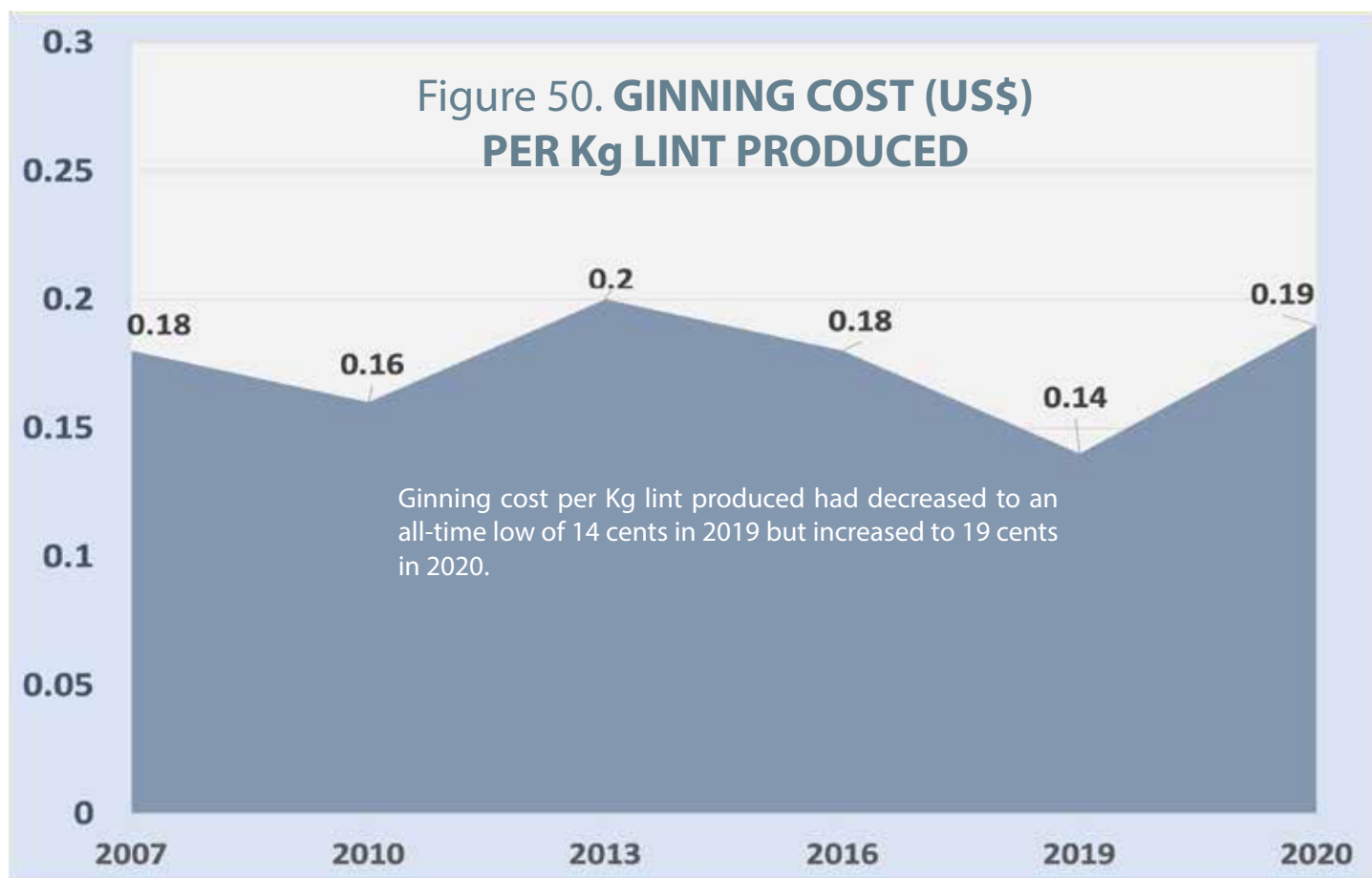


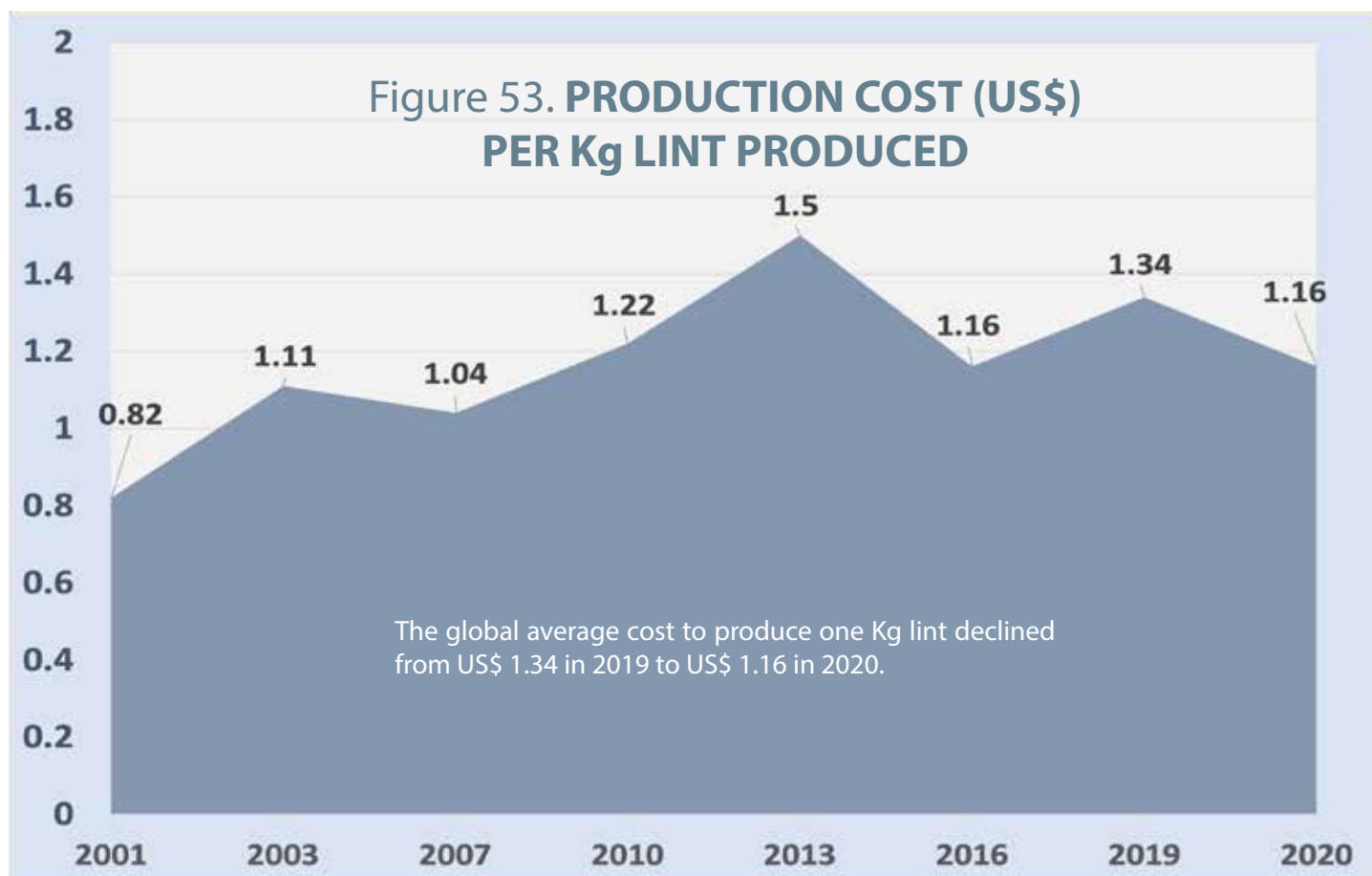
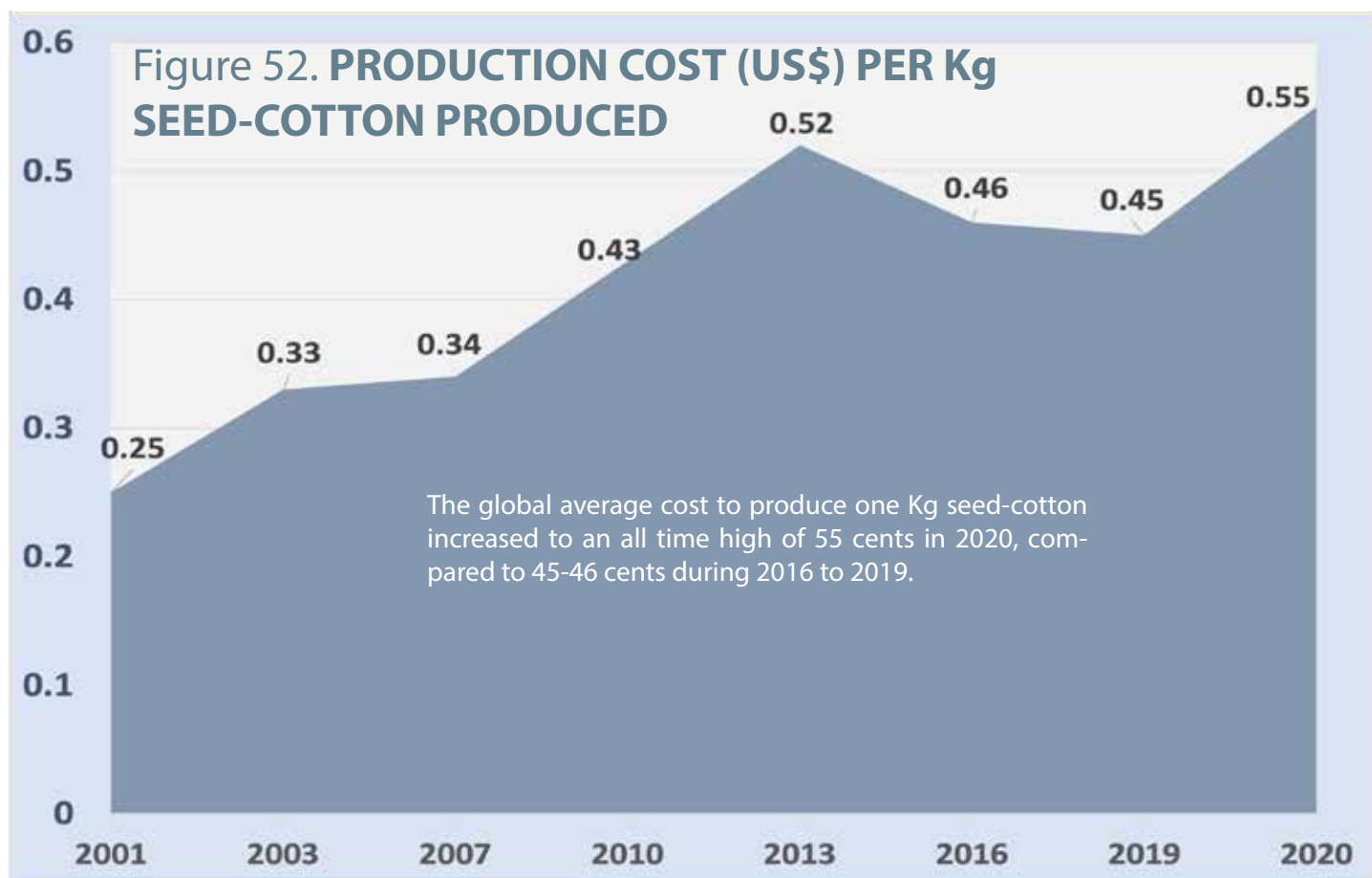
DATA TRENDS









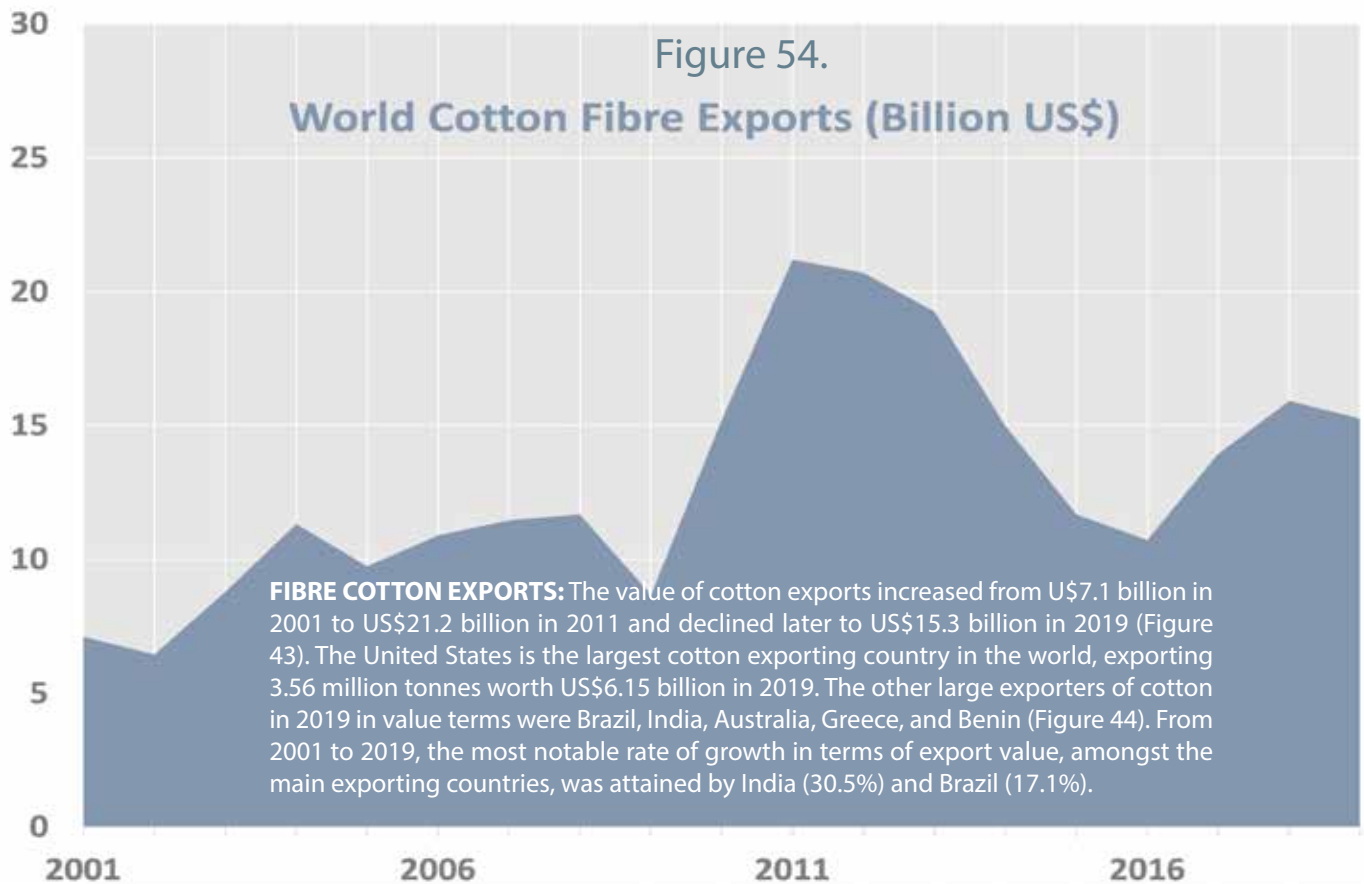


A close-up photograph of a cotton plant. In the foreground, a cotton boll is partially open, revealing its white, fluffy seeds. The boll is surrounded by green leaves, some of which are in sharp focus while others are blurred in the background. The overall lighting is soft and natural.

TRADE DATA

Figure 54.

World Cotton Fibre Exports (Billion US\$)



FIBRE COTTON EXPORTS: The value of cotton exports increased from US\$7.1 billion in 2001 to US\$21.2 billion in 2011 and declined later to US\$15.3 billion in 2019 (Figure 43). The United States is the largest cotton exporting country in the world, exporting 3.56 million tonnes worth US\$6.15 billion in 2019. The other large exporters of cotton in 2019 in value terms were Brazil, India, Australia, Greece, and Benin (Figure 44). From 2001 to 2019, the most notable rate of growth in terms of export value, amongst the main exporting countries, was attained by India (30.5%) and Brazil (17.1%).

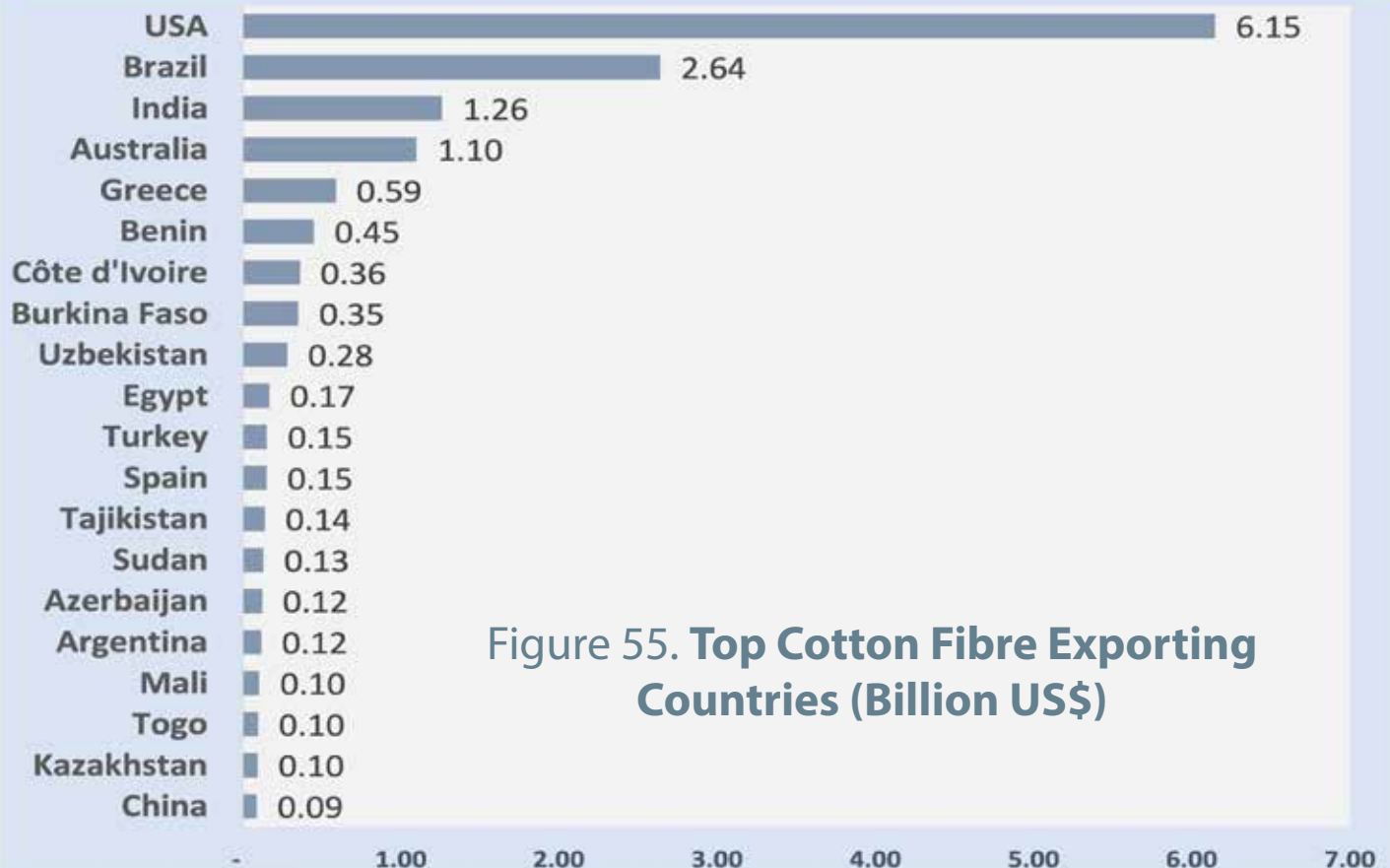


Figure 55. Top Cotton Fibre Exporting Countries (Billion US\$)

Figure 56.

World Cotton Fibre Imports (Billion US\$)

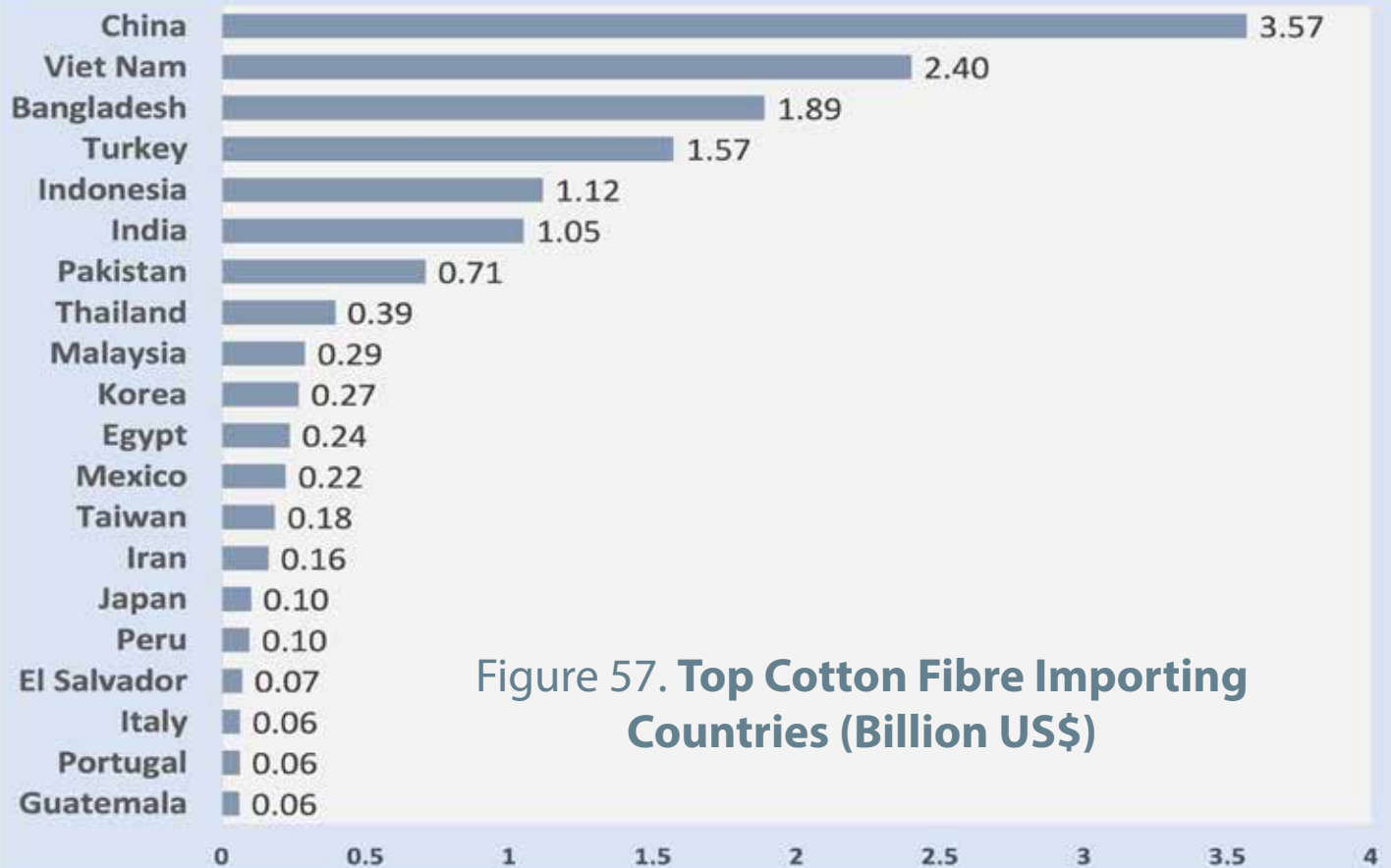
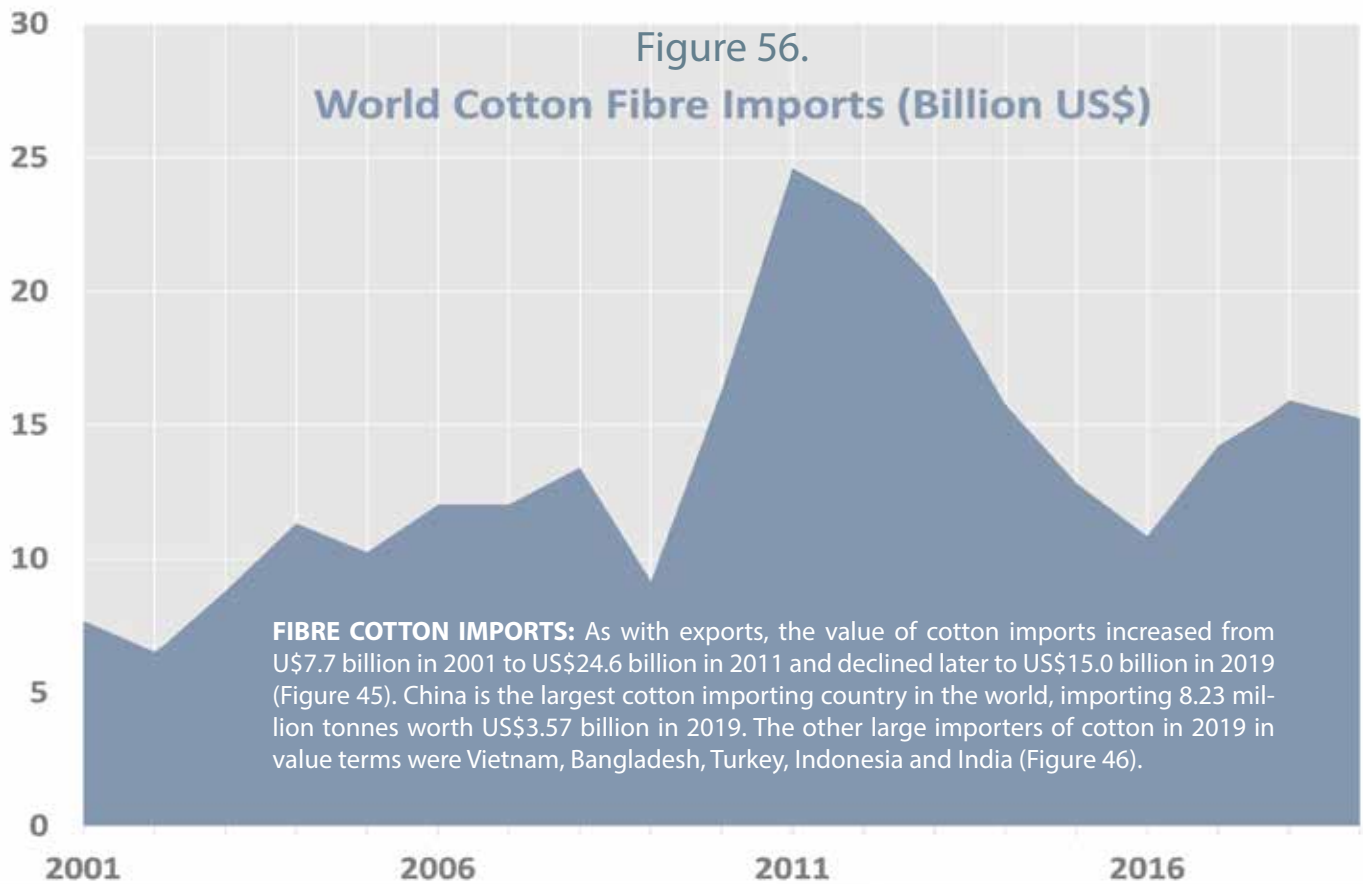


Figure 57. Top Cotton Fibre Importing Countries (Billion US\$)

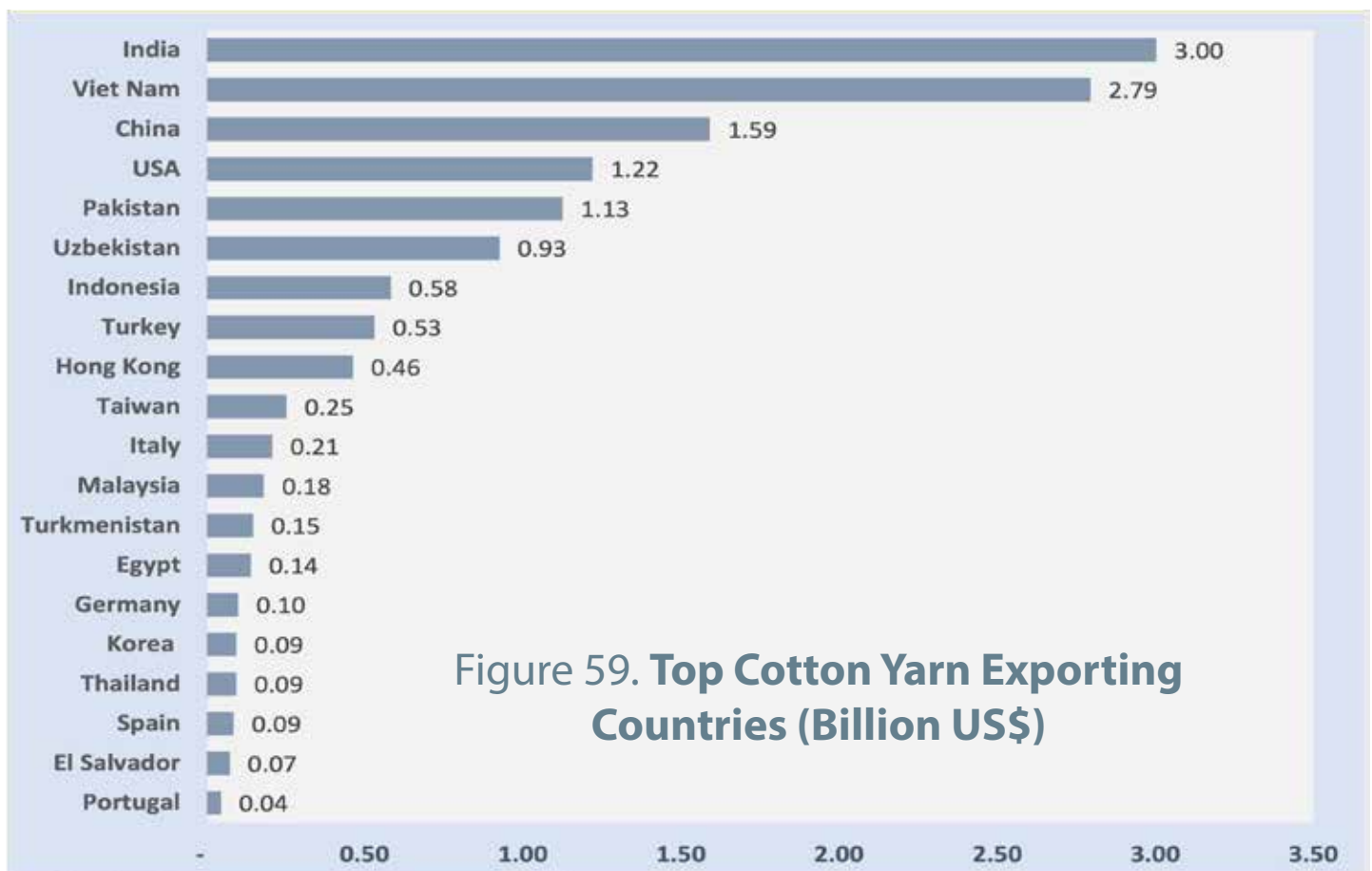
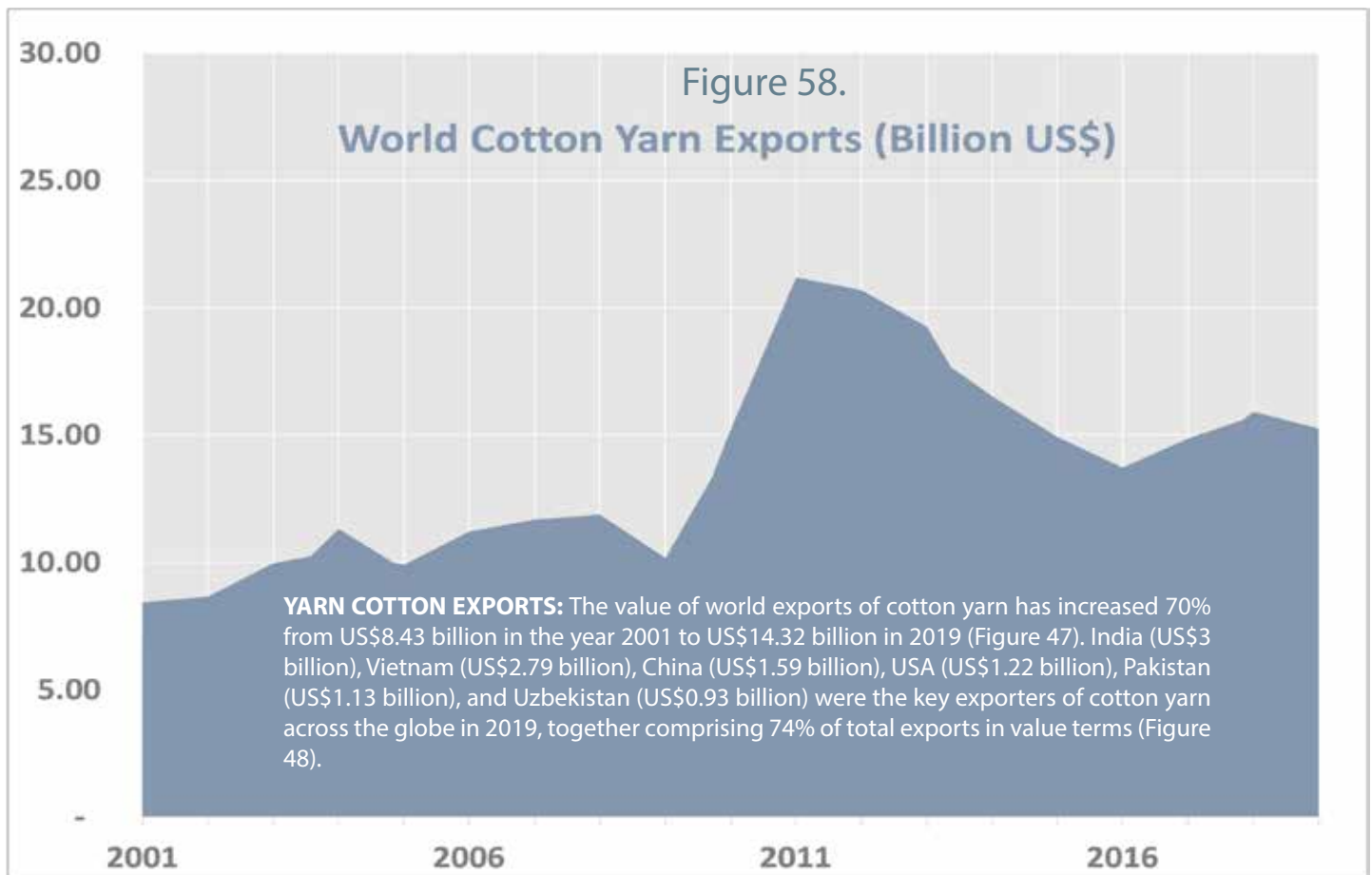


Figure 60.

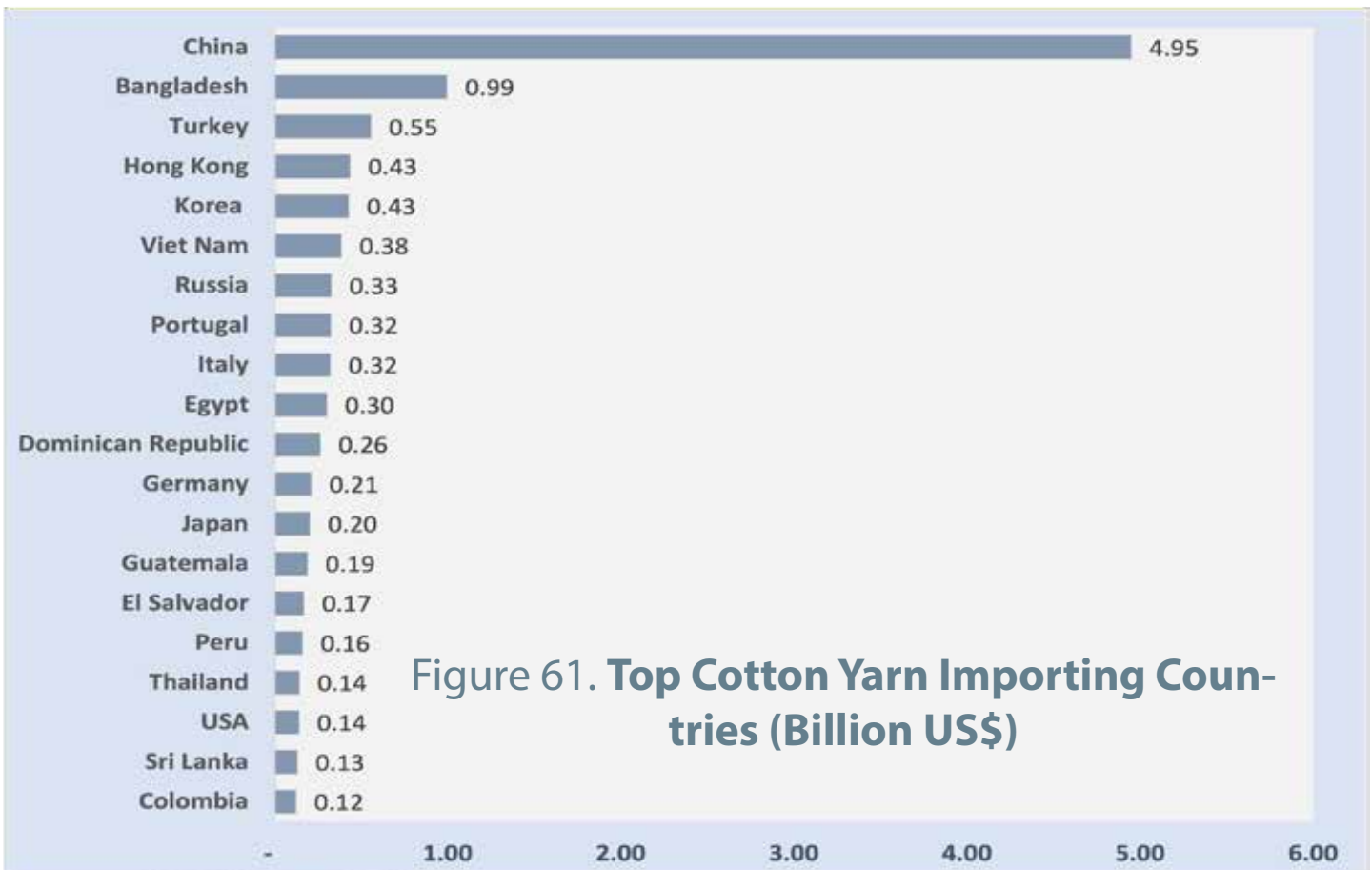
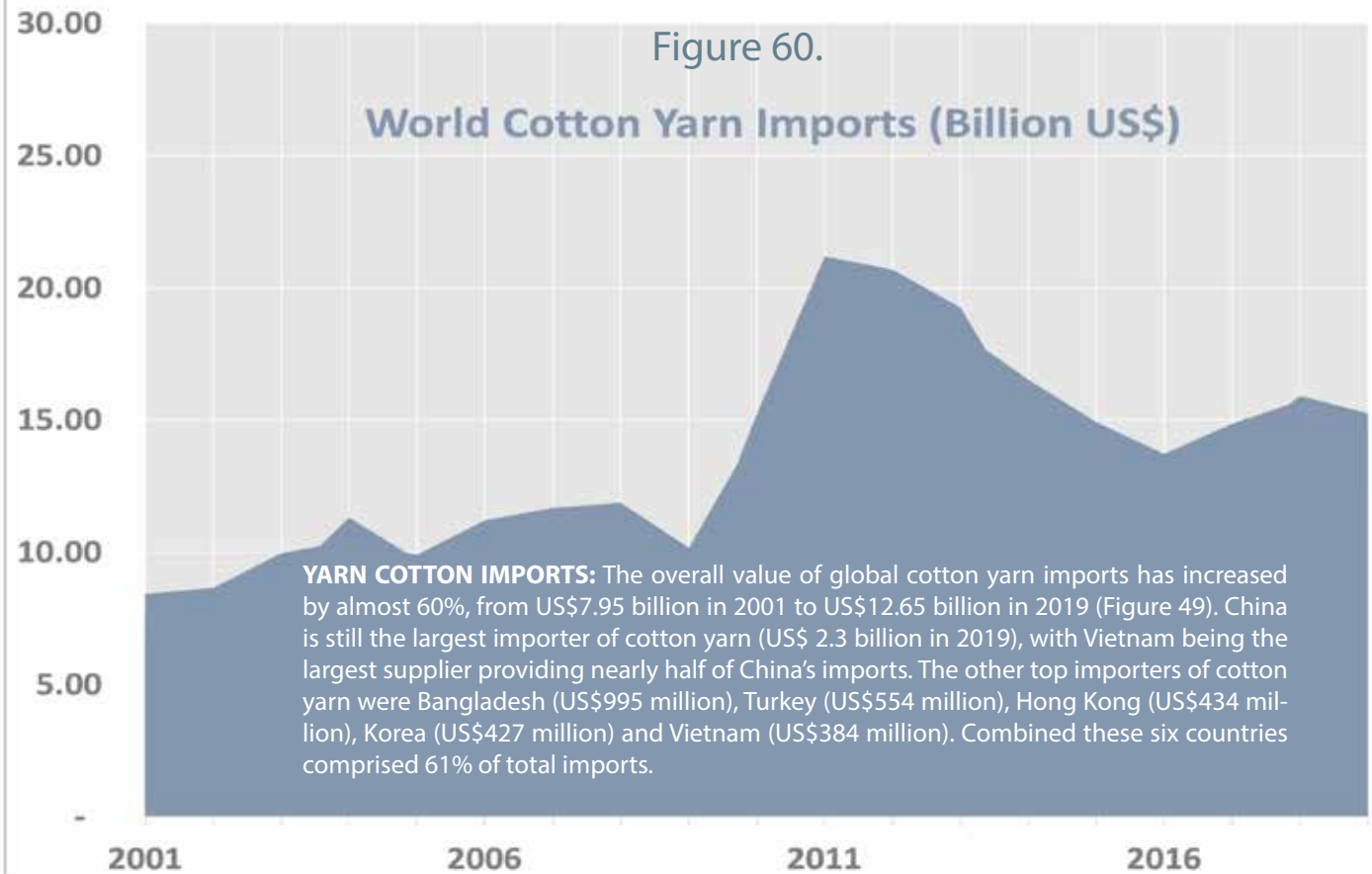
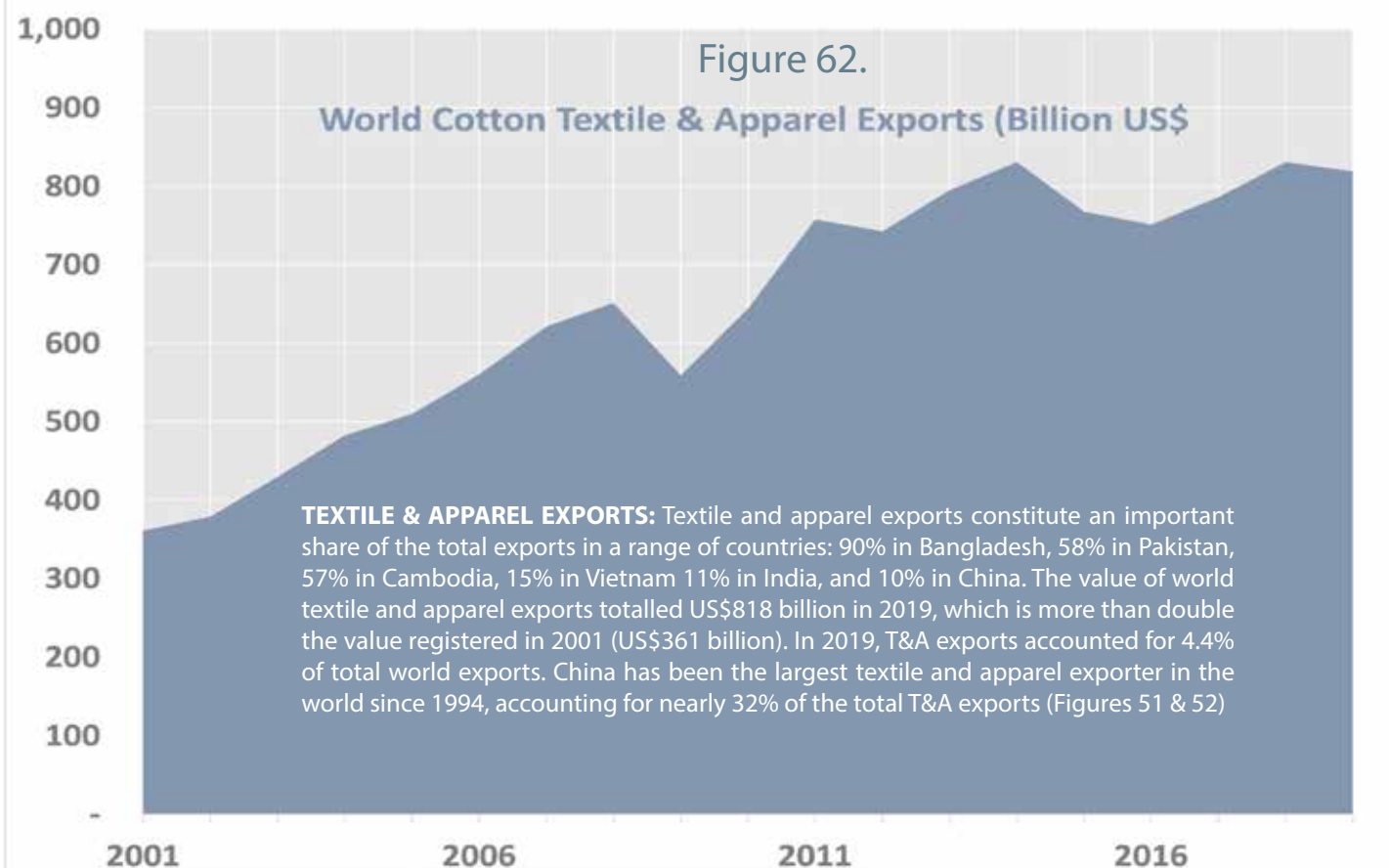


Figure 61. Top Cotton Yarn Importing Countries (Billion US\$)



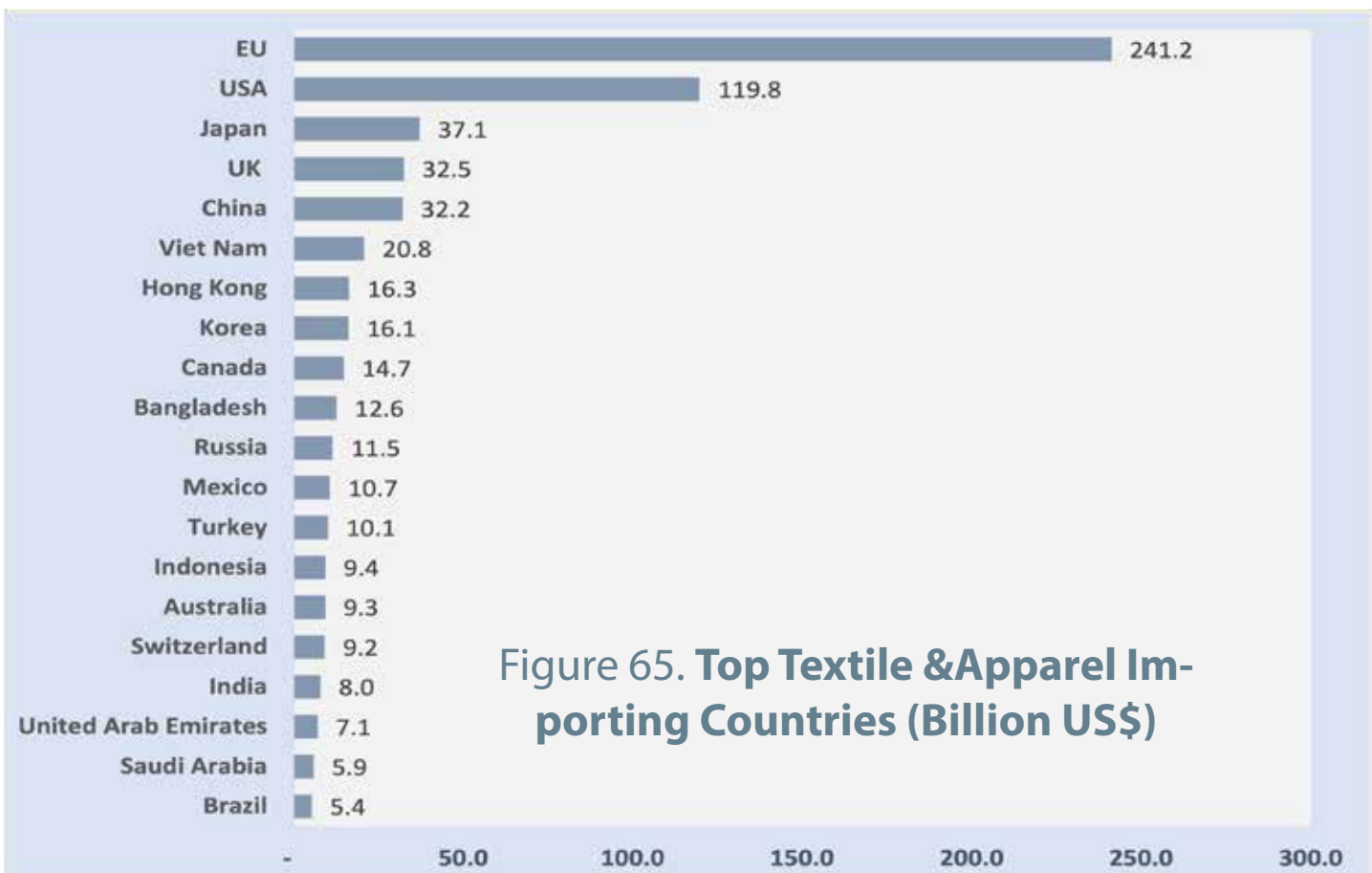
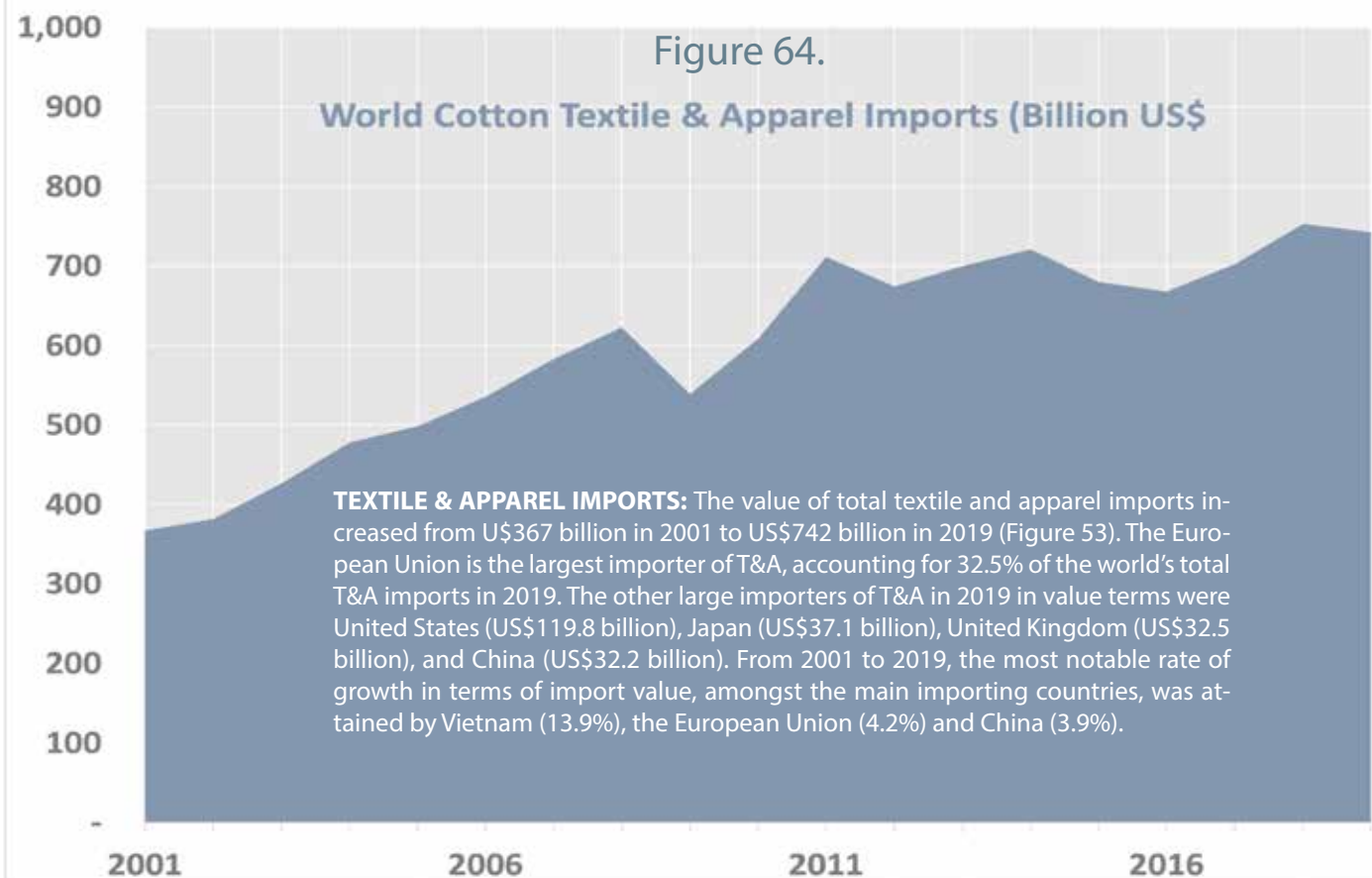


Figure 66. Cotton-Linter Exports ('000 US\$)

The global linters export market was US\$ 86.8 million. South Africa exported linters worth US\$ 36.5 million with the world's largest market share of 42%. The top five countries, namely, South Africa, Zambia, India, USA and Brazil together earned US\$ 73.7 million from linter exports and accounted for 85% of the global market share.

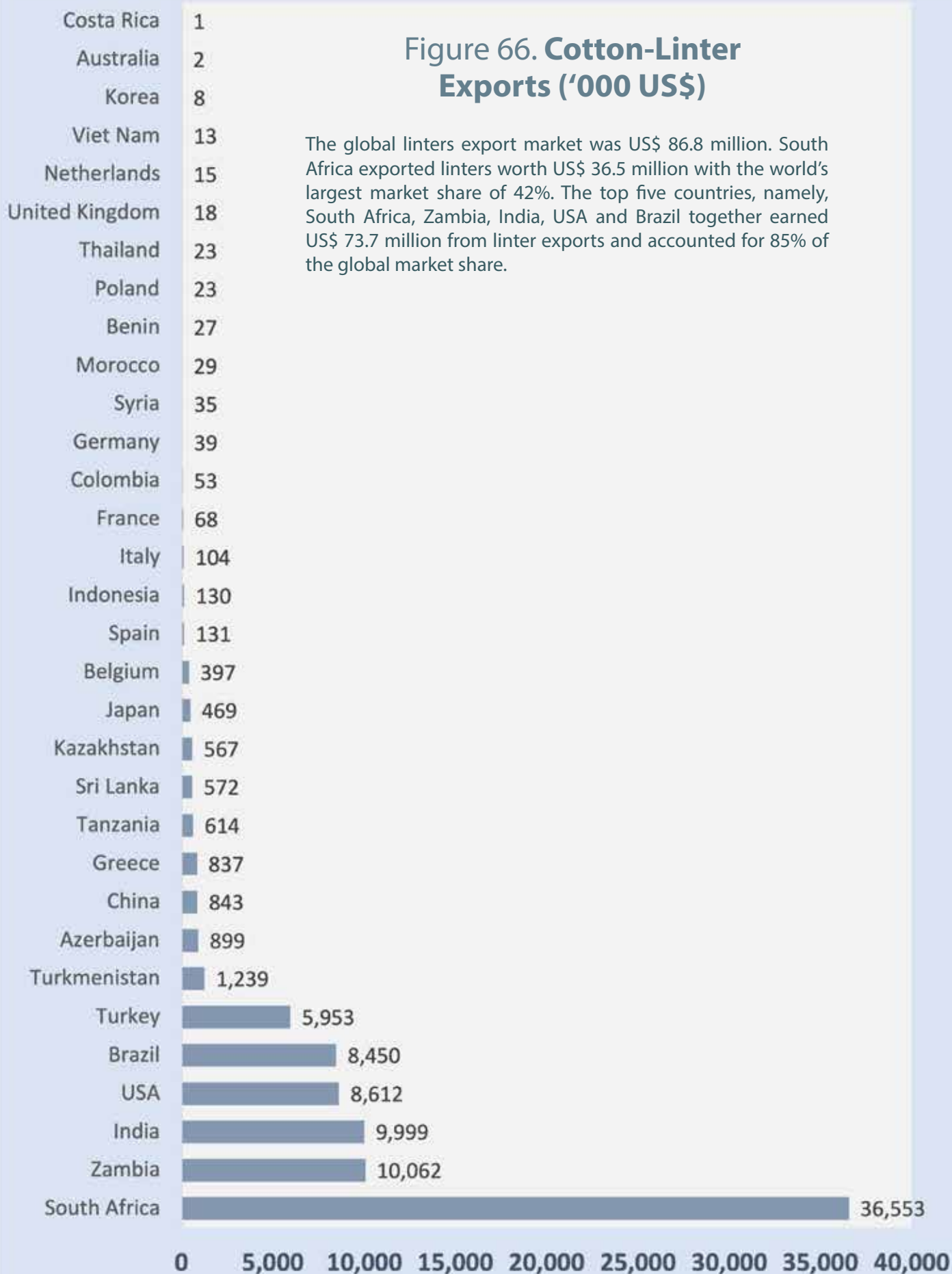


Figure 67. Cotton-Linter Imports ('000 US\$)

The total value of global linter import is US\$ 70.7 million. In 2020, China imported 36% of the globally traded linters worth 25.14 million. The top five countries, China, Japan, Bangladesh, Spain and Mauritius imported 85% of global total linters valued at US\$ 60.25 million.



Figure 68. Cotton-Seed Exports ('000 US\$)

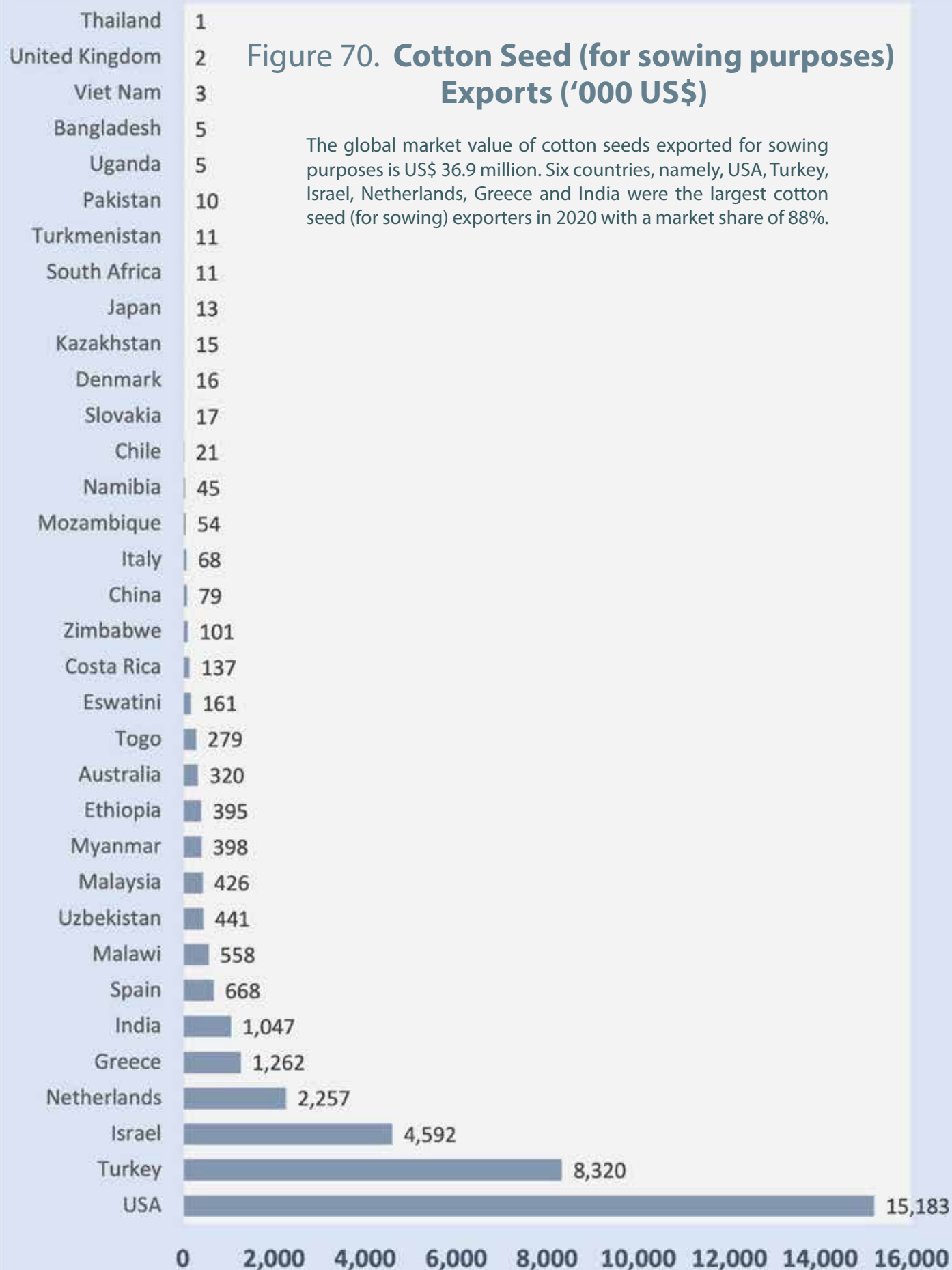
The global seed export market was US\$ 184.6 million. This market deals with cotton seeds used for purposes other than sowing. United States of America and Greece exported cotton seeds worth US\$ 149.5 million and are the world's largest cotton seed exporters with a market share of 81%. Ethiopia and Brazil are the other two major cotton seed exporters with a 10% market share.



Figure 69. Cotton-Seed Imports ('000 US\$)

The global cotton seed imports business was worth US\$ 194.6 million. The top five countries, namely, Italy, Korea, Saudi Arabia, Japan and Mexico accounted for 85% of the total cotton seed import market. The top five countries imported cotton seeds worth US\$ 164 million.





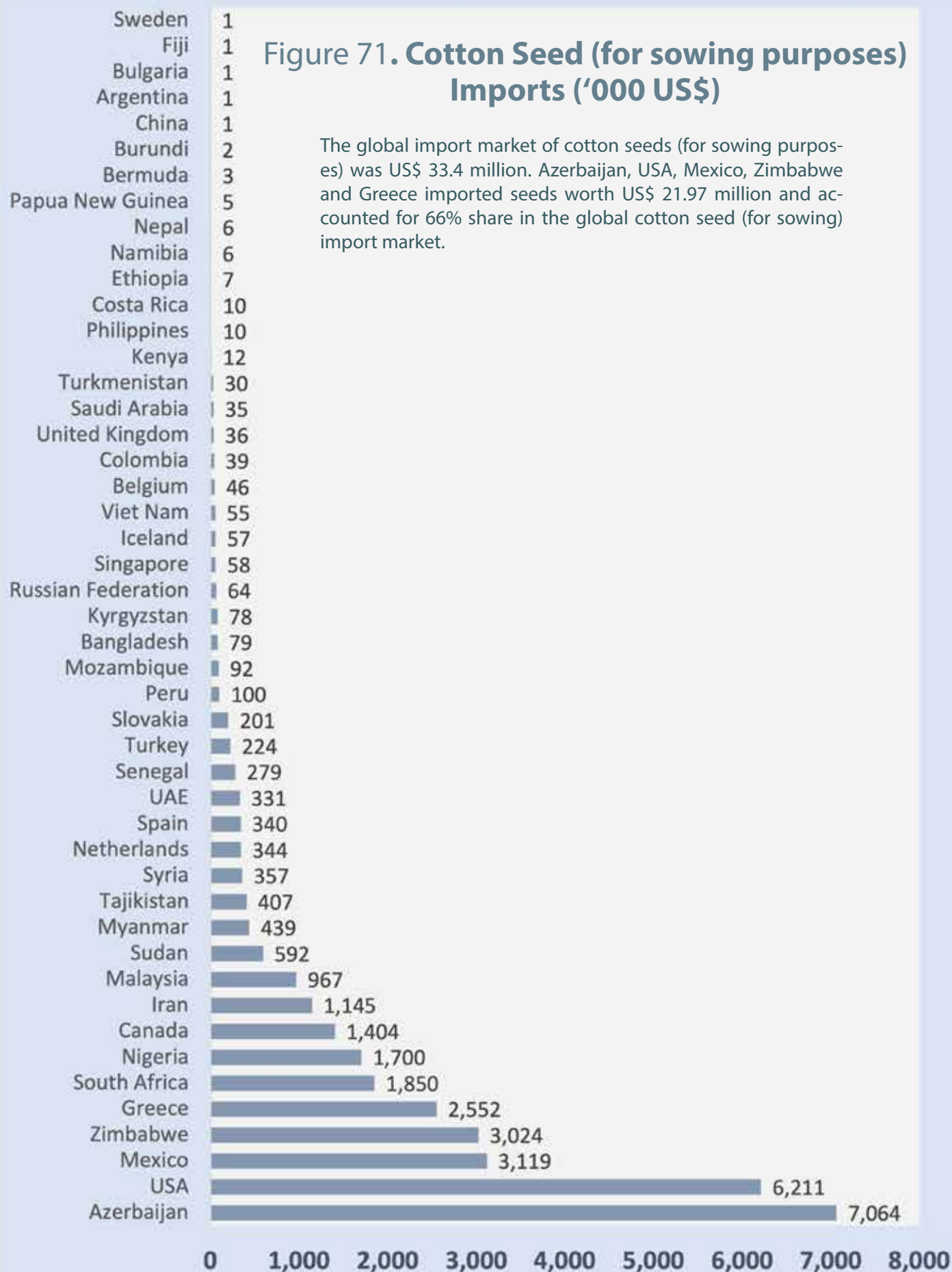


Figure 72. Combed & Carded Cotton Exports ('000 US\$)

The global value of carded and combed cotton exports was US\$ 190.2 million. The top five exporting countries USA, Uganda, Indonesia, India and Mexico commanded a share of 60% in the export market. USA exported carded and combed cotton worth US\$ 40.9 million in 2020.

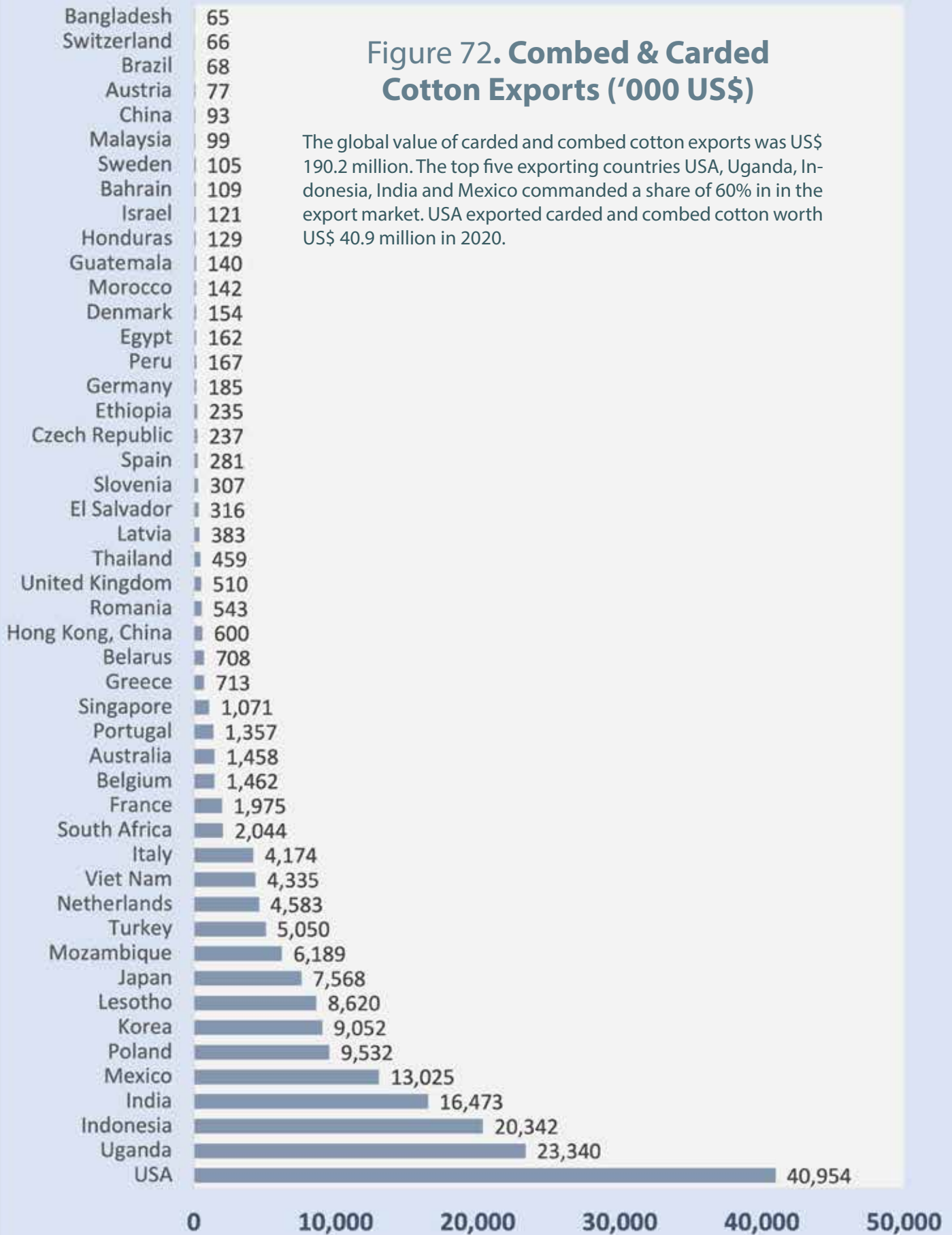


Figure 73. Combed & Carded Cotton Imports ('000 US\$)

The global value of carded and combed cotton exports was US\$ 213.5 million. Vietnam, France, Taiwan, Poland, Spain, UK, Russian federation, South Africa, Bangladesh and Japan imported 70% of the globally traded carded and combed cotton. These top ten countries accounted for 70% of the total global imports of carded and combed cotton.

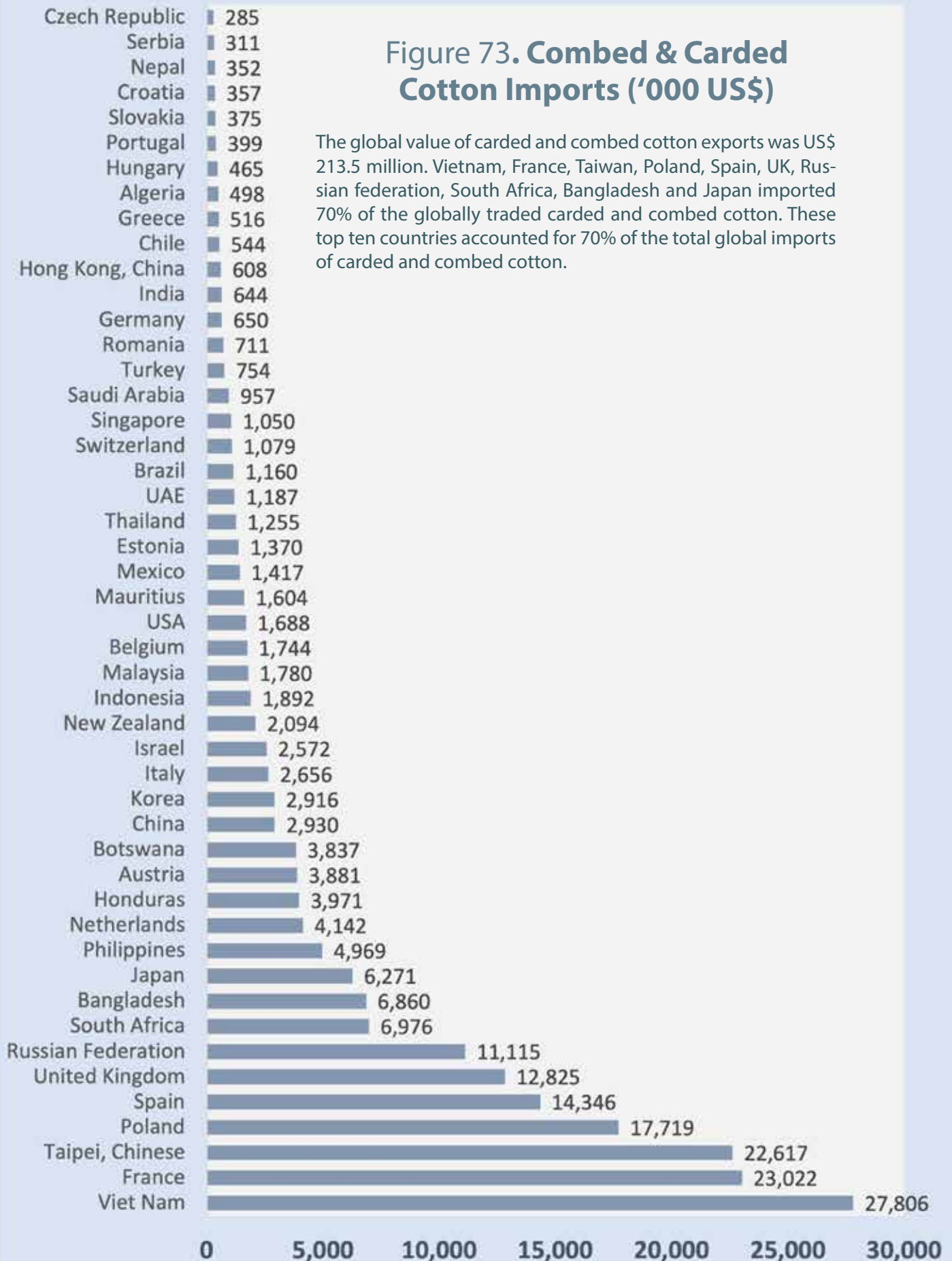


Figure 74. Cotton Crude Seed Oil Exports ('000 US\$)

The total globally traded crude cotton seed oil export business was worth US\$ 13.8 million in 2020. Crude cotton seed was exported by about a dozen countries. The top five countries Uzbekistan, Azerbaijan, USA, Benin and South Africa accounted for 95% of the globally exported crude cotton seed oil.

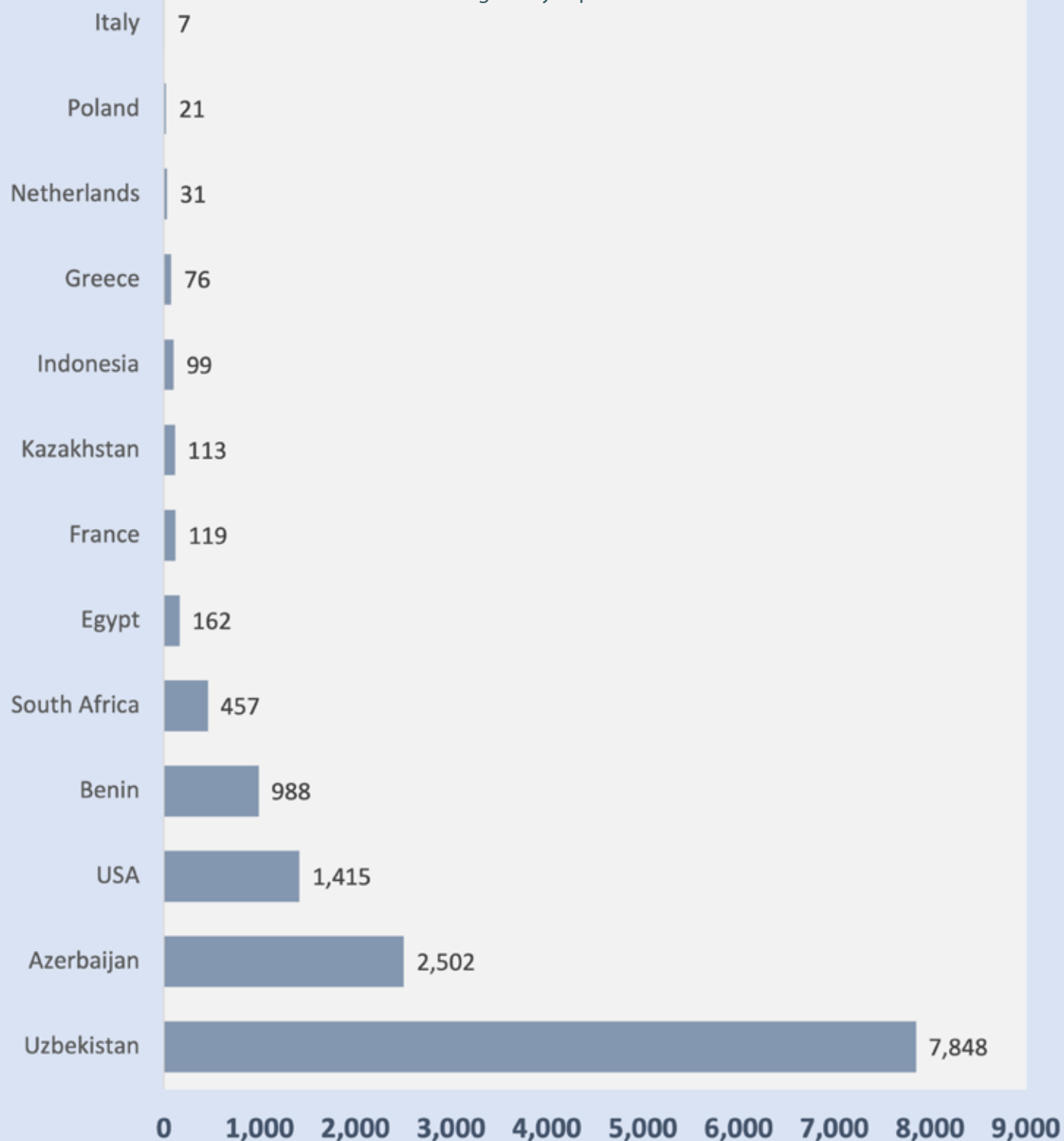


Figure 75. Cotton Crude Seed Oil Imports ('000 US\$)

The import market of crude cotton seed oil was worth US\$ 19.4 million. Central Asian countries were the main crude cotton seed oil importers. The top five importers, namely, Tajikistan, Kyrgyzstan, Afghanistan, Turkey and Nigeria import 90% of the global crude cotton seed oil traded in 2020.

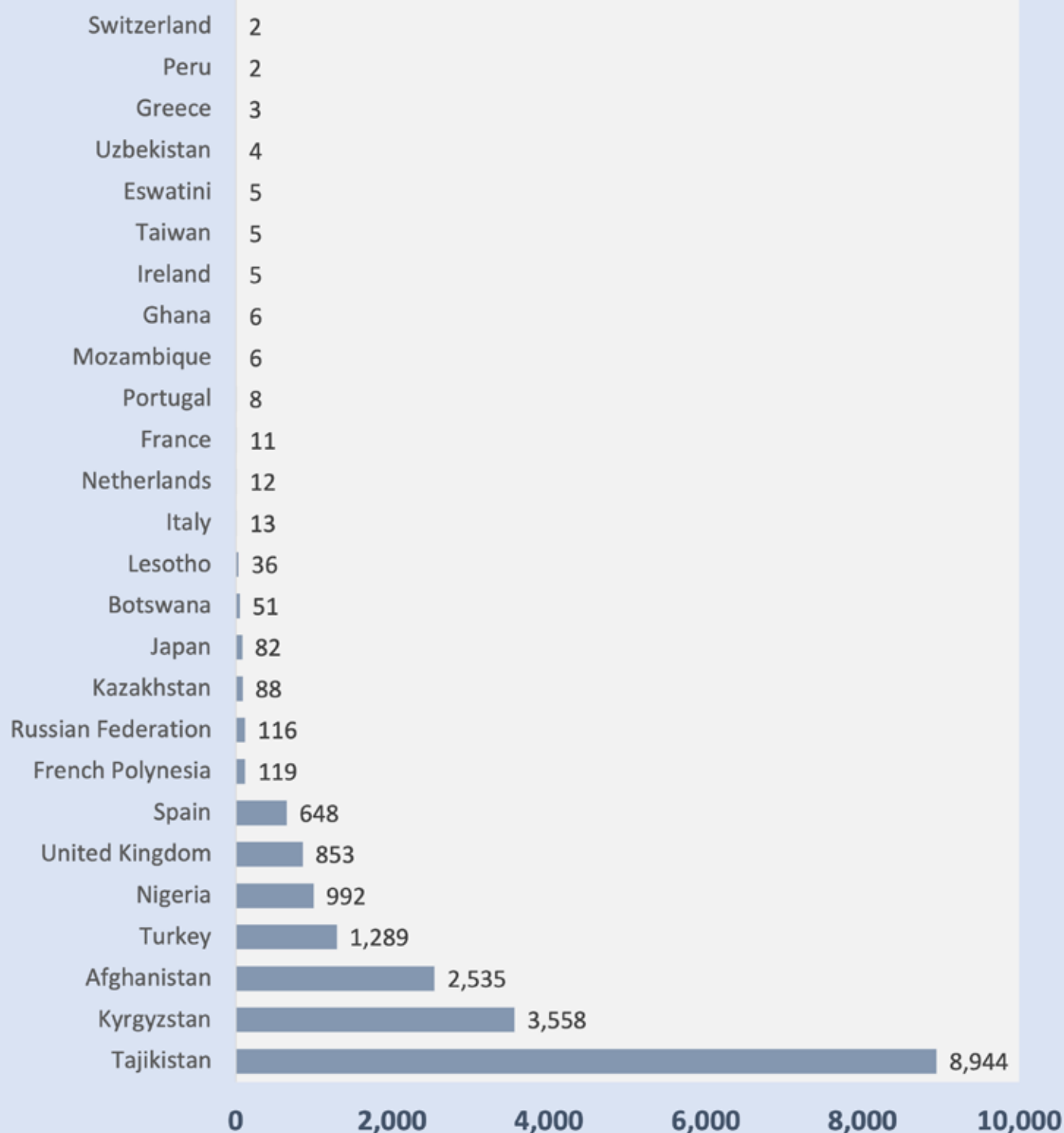


Figure 76. Cotton Seed Oil Exports ('000 US\$)

The global cotton seed oil exports were worth US\$ 96.4 million. Interestingly, the top ten countries that exported 92% of the globally traded cotton seed oil are geographically distributed all over the globe. The top ten cotton seed oil exporting countries were USA, Kazakhstan, Malaysia, Uzbekistan, South Africa, Turkey, Brazil, Zambia, China and Benin.



Figure 77. Cotton Seed Oil Imports (US\$)

The cotton seed oil import market was worth US\$ 111.6 million. Australia imported US\$ 28.47 million worth of cotton seed oil and is the world's largest cotton oil importer. The top five countries, namely, Australia, Ethiopia, Malaysia, Tajikistan and Mexico imported cotton seed oil worth US\$ 70.8 million with a share of 63% in the import market.



Figure 78. Cotton Mill-Waste Exports ('000 US\$)

India was the world's largest cotton mill waste exporter with a market share of 21% in the total global export market worth US\$ 398.7 million. India, Pakistan, Turkey, Germany and Belgium together exported cotton mill waste valued at US\$ 253.2 million and accounted for 66% share in the global export market of cotton mill waste.

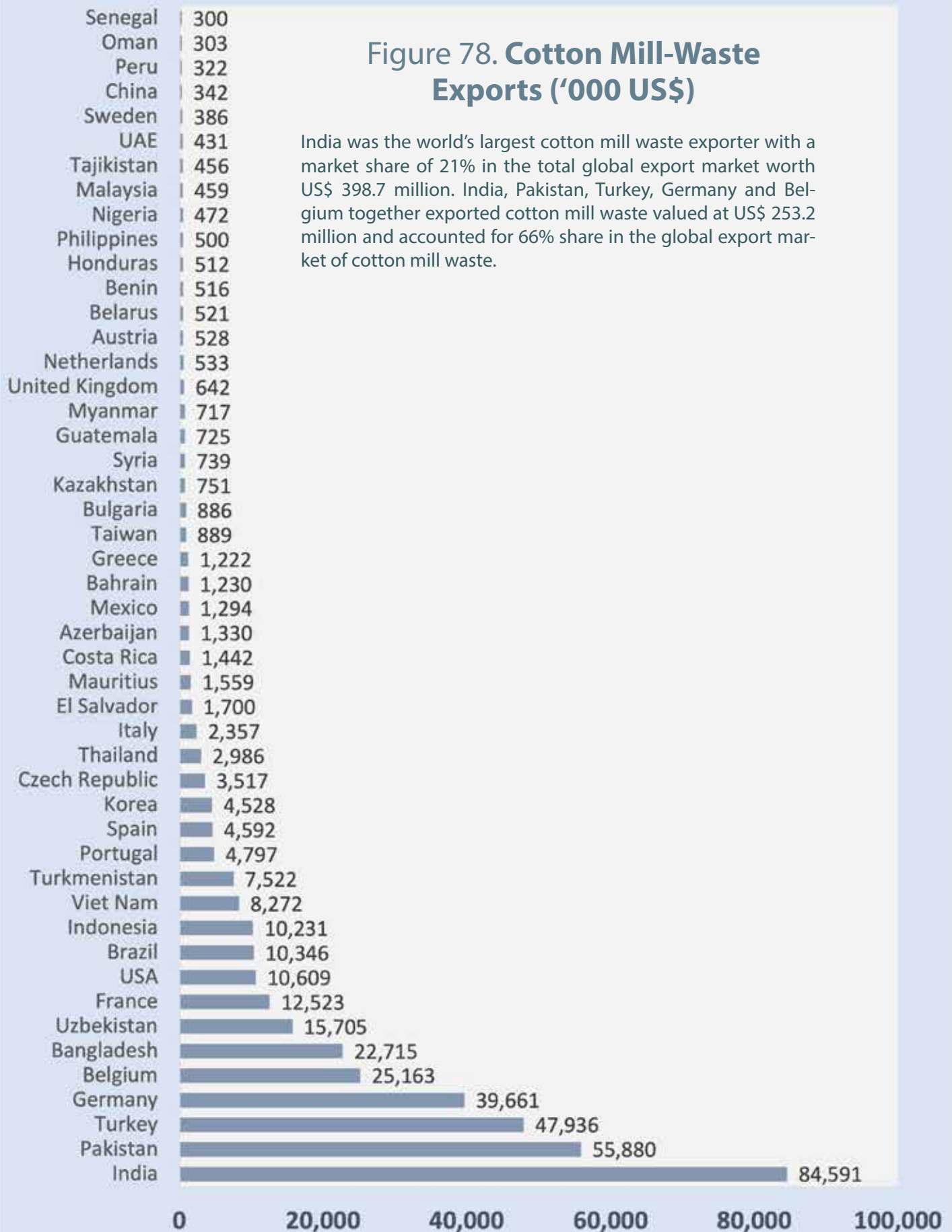
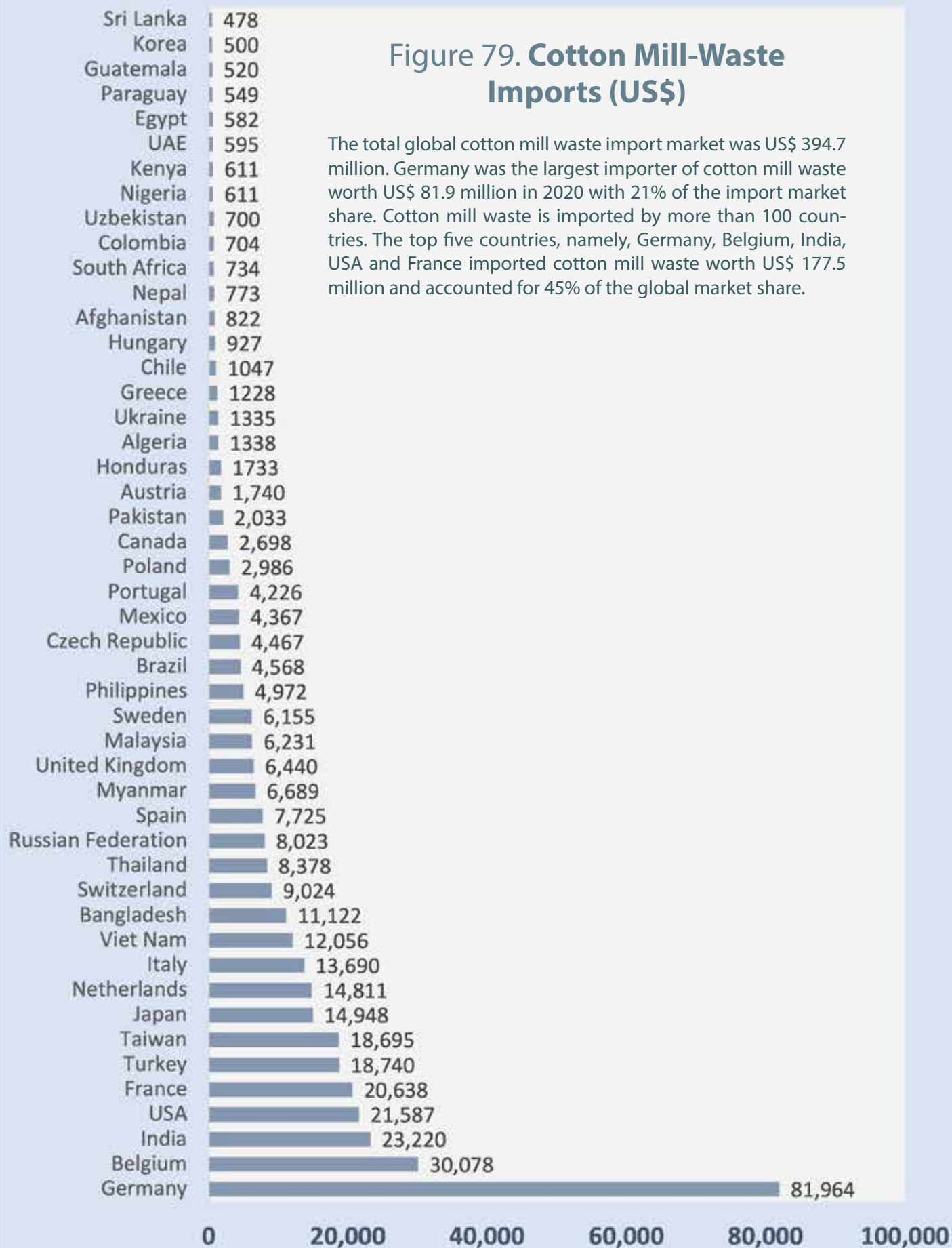


Figure 79. Cotton Mill-Waste Imports (US\$)

The total global cotton mill waste import market was US\$ 394.7 million. Germany was the largest importer of cotton mill waste worth US\$ 81.9 million in 2020 with 21% of the import market share. Cotton mill waste is imported by more than 100 countries. The top five countries, namely, Germany, Belgium, India, USA and France imported cotton mill waste worth US\$ 177.5 million and accounted for 45% of the global market share.



A close-up photograph of a cotton plant. In the foreground, a cluster of white cotton bolls is visible, partially encased in green, pointed bracts. The background is filled with out-of-focus green leaves and more cotton bolls, creating a soft, natural setting.

PRODUCTION DATA TABLES

Table 1. NUMBER OF FARMERS AND FARM UNIT AREA (Ha)

	Area (Hectares)	Male Farmers	Female Farmers	Total Farmers	Ave land holding (Ha)
Argentina	449,403	4,400	440	4,840	92.9
Australia	295,000	1,155	345	1,500	196.7
Bangladesh	44,430	53,000	35,000	88,000	0.5
Benin	614,297	190,657	23,408	214,065	2.9
Brazil	1,665,600	2,651.00	612	3,263	510.5
Burkina Faso	556,344	313,625	11,375	325,000	1.7
Cameroon	250,000	220,600	29,400	250,000	1.0
Chad	247,019	238944	9,100	248,044	1.0
China	3,170,000	2,118,511	3,681,489	5,800,000	0.5
Colombia	9,322	496	113	609	15.3
Cote-D'Ivoire	408,448	117,766	2,270	120,036	3.4
Egypt	76,000	67,129	25,819	92,948	0.8
Ethiopia	56,137	48,627	750	49,377	1.1
Greece	291,323	25,256	23,025	48,281	6.0
India	13,341,000	6,157,385	4,104,922	10,262,307	1.3
Indonesia	2,100	600	400	1,000	2.1
Iran	98,000	32,951	0	32,951	3.0
Israel	4,210	40	40	80	52.6
Kazakhstan	110,000	31,745	10,000	41,745	2.6
Kenya	23,782	18,745	9293	28,038	0.8
Kyrgyzstan	18,250	700	69	769	23.7
Malawi	34,200	21,000	14000	35,000	1.0
Mali	164,833	161,655	1,100	162,755	1.0
Mexico	143,957	6,676	788	7,464	19.3
Mozambique	132,871	110,776	39,689	150,465	0.9
Myanmar	239,090	190,424	47,606	238,030	1.0
Nigeria	264,000	270,000	30,000	300,000	0.9

Table 1. NUMBER OF FARMERS AND FARM UNIT AREA (Ha)

	Area (Hectares)	Male Farmers	Female Farmers	Total Farmers	Ave land holding (Ha)
Pakistan	2,513,000	1,440,900	59,100	1,500,000	1.7
Paraguay	10,800	10,000	2,000	12,000	0.9
South Africa	27,675	1,176	1,501	2,677	10.3
Spain	65,230	3,112	1,689	4,801	13.6
Sudan	180,000	180,000	20,000	200,000	0.9
Tanzania	436,590	394,021	224,393	618,414	0.7
Togo	180,588	138,580	14,072	152,652	1.2
Turkey	477,868	70,201	21,000	91,201	5.2
Turkmenistan	545,000	120,662	0	120,662	4.5
Uganda	90,000	73,900	73,200	147,100	0.6
USA*	3,521,000	6,806	1,297	8,103	434.5
Uzbekistan	1,033,629	86,260	6,144	92,404	11.2
Vietnam	980	3,000	1,000	4,000	0.2
Zambia	135,795	283,944	40,631	324,575	0.4
Zimbabwe	172,469	216,074	141,014	357,088	0.5
WORLD TOTAL	31,622,372	13,434,150	8,708,094	22,142,244	1.43

Table 2. RESEARCH AND EXTENSION STAFF

COUNTRY	AGENCY	RESEARCH STAFF				EXTENSION STAFF	
		Research Institute		Incl. Uni			
		Male	Female	Public*	Private	Public	Private
Argentina				30		55	5
Bangladesh				9	0	399	0
Benin	NARIB	15	2	17			430
Burkina	INERA	12		24	6		
Cameroon	IRAD	7	1	10	2		
Cen. Afr. Republic	ICRA	9	1	13	5		
Chad	ITRAD	5	2				
Colombia				10	1	15	41
Cote D'Ivoire	CNRA	8		8			
Egypt				112		1300	20
Ethiopia				16	3	544	
Ghana	CSIR	4		4			
Greece				10	10		
India				145	100	2000	200
Iran				80	20	55	0
Kenya				10	6	2068	200
Malawi	MARS	4	3	12		1558	356
Mali	IER	10	2	16			
Mozambique	IIAM	4		8		77	373
Pakistan				150	50	2000	1000
Senegal	ISRA	8	3	11	2		
South Africa	ARC	7	1	8	3		
Sudan				35	15	230	120
Tanzania	UARI	10	8	18	1		
Tanzania	IARI	5	1		1		
Tanzania				29		1165	
Thailand				1		1	
Togo	ITRA	9		13			
Turkey				150	50	200	100
Uganda	NaSARRI	12	3	15	5	200	446
Zambia	CDT	1	1	7	0	5	296
Zimbabwe	CRI	6	2				

*Total staff number includes University research staff.



Table 3. SEED PROCESSING (%) FOR SOWING

	Fuzzy	Delinted	Chemical treated	Untreated
Argentina	5	95	95	5
Australia	0	100	100	0
Bangladesh	65	35	40	60
Benin	100	0	100	0
Brazil	1	99	99	1
Burkina	40	60	100	0
Cameroon	100	0	100	0
Chad	100	0	100	0
China	0	100	100	0
Colombia	0	100	100	0
Cote D'Ivoire	100	0	50	50
Egypt	0	100	0	100
Ethiopia	2	98	90	10
Greece	0	100	100	0
India	0	100	100	0
Iran	51	49	54	46
Kenya	81	19	100	0
Malawi	70	30	30	70
Mexico	0	100	100	0
Mali	100	0	100	0
Mozambique	20	6	11	89
Nigeria	60	40	40	60
Pakistan	50	50	72	28
South Africa	0	100	100	0
Spain	0	100	100	0
Sudan	0	100	100	0
Tanzania	65	35	100	0
Togo	100	0	98	2
Turkey	19	80	18	81
Uganda	0	100	100	0
Uzbekistan	73	27	73	27
USA	0	100	100	0
Zambia	39	3	100	0
Zimbabwe	0	100	100	0



Table 4. PLANTING METHODS & SEED SOURCE

	PLANTING METHOD		SEED SOURCE	
	Manual (%)	Machine (%)	Local (%)	imported (%)
Argentina	0	100	100	0
Australia	0	100	100	0
Bangladesh	100	0	100	0
Benin	100	0	100	0
Brazil	1	100	100	0
Burkina	100	0	100	0
Cameroon	100	0	100	0
Chad	100	0	5	95
China	40	60	100	0
Colombia	2	98	1	99
Cote D'Ivoire	100	0	100	0
Egypt	98	2	100	0
Ethiopia	100	0	100	0
Greece	0	100	95	5
India	100	0	100	0
Iran	15	85	79	21
Kenya	100	0	81	19
Malawi	99	1	88	12
Mexico	0	100	0	100
Mali	100	0	100	0
Mozambique	100	0	93	7
Nigeria	70	30	80	20
Pakistan	100	0	100	0
South Africa	1	99	100	0
Spain	0	100	100	0
Sudan	45	55	80	20
Tanzania	99	1	100	0
Togo	100	0	100	0
Turkey	1	99	73	27
Uganda	100	0	100	0
Uzbekistan	0	100	100	0
USA	0	100	100	0
Zambia	100	0	100	0
Zimbabwe	99	1	100	0

Table 5. TILLAGE METHODS (%)

	Zero till (%)	Disc-tillage (%)	Chisel-plow (%)	Conventional Tillage (%)
Argentina	65	35	65	35
Australia	70	30	70	30
Bangladesh	30	70	30	70
Benin	5	20	80	95
Burkina Faso	9	18	81	91
Brazil	75	25	75	25
Cameroon	60	40	60	40
China	30	70	30	70
Colombia	1	81	18	34
Cote-D'Ivoire	5	95	5	95
Ethiopia	60	62	18	40
Egypt	1	100	0	100
Greece	0	100	0	100
India	8	92	8	92
Iran	8	92	8	92
Kazakhstan	20	90	10	80
Kenya	2	66	34	98
Malawi	11	89	11	89
Mali	18	30	10	81
Mexico	0	100	0	100
Mozambique	24	100	0	76
Myanmar	5	100	0	95
Nigeria	4	60	5	96
Pakistan	0	90	10	100
South Afr	3	36	64	97
Spain	45	55	45	55
Sudan	0	100	0	100
Tanzania	5	95	5	95
Togo	43	14	27	57
Turkey	0.2	31	39.8	100
Turkmenistan	0	100	0	100
Uganda	36	8	57	66
United States	45	35	65	55
Uzbekistan	0	100	0	100
Zambia	17	10	3	83
Zimbabwe	1	99	1	99



Table 6. SEED RATE, SPACING & PLANT POPULATION/Ha

	SEED RATE	PLANTING GEOMETRY Spacing (cm)		PLANT POPULATION per Hectare
	Kg/ha	Between rows	Between plants in a row	Plants/hectare
Argentina	16	76	10	131,579
	24	52	10	192,308
	32	38	10	263,158
Australia	12	90	10	111,000
Bangladesh	15	90	45	24,691
Benin	20	80	40	31,250
Brazil	25	40	10	250,000
	12	100	10	100,000
Burkina Faso	20	80	40	31,250
Cameroon	30	80	30	41,666
Chad	39	80	30	41,666
China	30	45	10	222,222
	22	60	10	166,667
	15	90	10	111,111
Colombia-Coast	12	80	13	96,154
Colombia-Int	12	80	13	96,154
Cote D'Ivoire	30	80	30	41,666
Egypt	50	60	25	66,667
Ethiopia	15	90	20	55,556
Greece	25	96	6	173,611
India	5	90	30	37,037
	4	90	45	24,691
	3	90	60	18,519
	2	90	90	12,346
	2	120	60	13,889
	1.5	120	90	9,259
iran	25	70	20	71,429
Kenya	12.5	90	60	37,037
	15	90	30	37,037
Mali	20	80	30	41,666

Table 6. SEED RATE, SPACING & PLANT POPULATION/Ha

	SEED RATE	PLANTING GEOMETRY Spacing (cm)		PLANT POPULATION per Hectare
	Kg/ha	Between rows	Between plants in a row	Plants/hectare
Malawi	25	70	30	47,619
Mexico	14	80	10	125,000
	15	75	10	133,333
	10	90	10	111,111
Myanmar	15	90	30	37,037
Mozambique	25	90	30	37,037
	25	80	20	62,500
	40	70	20	71,429
Nigeria	7	75	25	53,333
Pakistan	15	75	30	44,444
South Africa	15	90	10	111,111
Spain	25	90	9.5	116,959
Sudan	2.5	80	50	25,000
Tanzania	25	90	40	27,778
Thailand	12.5	150	50	13,333
Togo	47.5	80	30	41,667
Turkey	25	70	10	142,857
Uganda	8	90	30	37,037
	6	90	45	24,691
USA	12	90	10	111,111
Uzbekistan	50	60	6.5	256,410
	40	76	7.5	175,439
	35	90	10	111,111
Zambia	15	90	30	37,037
Zimbabwe	25	100	30	33,333

Table 7. FERTILISER USAGE IN COTTON

	FERTILISER USE (’000 Tonnes)				FERTILISERS APPLIED Kg/Hectare				FERTILISERS EFFICIENCY g/Kg LINT PRODUCED			
	N	P2O5	K2O	N+P+K	N	P2O5	K2O	N+P+K	N	P2O5	K2O	N+P+K
Argentina	2.9	0.3	0.1	3.3	8.0	0.9	0.3	9.2	12.2	1.4	0.5	14.0
Australia	75.8	11.2	6.2	93.2	257.0	38.0	21.0	316.0	134.9	19.9	11.0	165.9
Bangladesh	4.8	2.5	1.5	8.8	105.0	55.0	32.0	192.0	136.0	71.2	41.4	248.7
Benin	3.7	1.8	1.2	6.8	6.0	3.0	2.0	11.0	12.5	6.3	4.2	23.0
Brazil	211.3	222.9	162.1	596.2	146.0	154.0	112.0	412.0	83.7	88.3	64.2	236.3
Burkina Faso	2.2	1.1	0.6	3.9	4.0	2.0	1.0	7.0	11.4	5.7	2.9	20.0
Cameroon	1.5	0.3	0.8	2.6	6.0	1.2	3.2	10.4	10.7	2.2	5.6	18.5
Chad	0.3	0.0	0.0	0.3	1.0	0.0	0.1	1.1	3.4	0.1	0.3	3.8
China	661.3	196.5	111.0	968.8	208.6	62.0	35.0	305.6	111.9	33.3	18.8	163.9
Colombia	1.1	0.4	0.6	2.0	57.1	19.9	34.1	111.1	67.5	23.4	40.2	131.2
Côte d'Ivoire	2.1	1.5	2.5	6.0	4.6	3.3	5.6	13.5	9.1	6.6	10.9	26.6
Egypt	17.0	3.9	1.2	22.2	224.0	52.0	16.0	292.0	293.6	68.2	21.0	382.8
Ethiopia	1.9	0.8	0.0	2.7	23.5	9.2	0.1	32.7	31.7	12.4	0.1	44.2
Greece	15.9	5.3	4.1	25.3	55.7	18.4	14.3	88.4	49.7	16.4	12.7	78.8
India	2125	777	492	3395	164.0	60.0	38.0	262.0	336.9	123.3	78.1	538.2
Iran	6.7	1.5	0.8	8.9	68.0	15.0	8.0	91.0	83.3	18.4	9.8	111.5
Kazakhstan	0.4	0.5	0.1	1.0	3.5	4.1	0.6	8.2	5.2	6.1	0.9	12.3
Kenya	0.1	0.1	0.0	0.2	3.0	2.0	1.0	6.0	30.0	20.0	10.0	60.0
Malawi	0.3	0.2	0.0	0.5	4.0	2.0	0.0	6.0	16.1	8.0	0.0	24.1
Mali	0.3	0.2	0.2	0.7	2.0	1.0	1.0	4.0	5.3	2.7	2.7	10.7
Mexico	11.3	5.8	2.6	19.7	78.0	40.0	18.0	136.0	49.2	25.3	11.4	85.9
Mozambique	0.3	0.0	0.0	0.3	2.0	0.0	0.0	2.0	12.1	0.0	0.0	12.1
Myanmar	5.2	2.8	2.4	10.4	21.6	11.7	10.2	43.4	34.0	18.5	16.0	68.5
Nigeria	1.1	0.5	0.0	1.6	4.0	2.0	0.0	6.0	11.7	5.9	0.0	17.6
Pakistan	459.6	175.1	148.8	783.6	210.0	80.0	68.0	358.0	516.5	196.7	167.2	880.4
South Africa	3.5	1.0	2.1	6.4	125.0	35.0	76.0	236.0	123.0	23.3	69.7	216.0
Spain	3.8	1.6	1.5	6.9	61.6	25.4	24.7	111.8	59.2	24.4	23.8	107.4
Sudan	1.5	0.0	0.0	1.5	8.2	0.2	0.2	8.6	11.3	0.3	0.2	11.8
Tanzania	1.7	0.9	0.0	2.6	4.0	2.0	0.0	6.0	16.2	8.1	0.0	24.3
Togo	0.2	0.0	0.4	0.5	1.5	0.1	3.8	5.4	4.6	0.4	11.5	16.6
Turkey	42.0	15.2	2.0	59.2	105.0	38.0	5.0	148.0	64.0	23.2	3.0	90.2
Uganda	0.1	0.1	0.1	0.2	1.2	0.7	0.6	2.5	3.3	1.8	1.6	6.8
USA	288.3	101.0	138.2	527.5	81.9	28.7	39.2	149.8	90.1	31.6	43.2	164.8
Uzbekistan	227.0	90.8	41.3	359.1	220.0	88.0	40.0	348.0	411.7	164.7	74.8	651.2
Zambia	1.1	0.5	0.1	1.8	8.0	4.0	1.0	13.0	42.2	21.1	5.3	68.5
Zimbabwe	0.7	0.3	0.3	1.4	4.0	2.0	2.0	8.0	11.8	5.9	5.9	23.5
World	4,179	1,624	1,123	6,926	132	51	35	219	173	67	47	287



Table 8. PESTICIDE SPRAY METHODS (%)

	Knap sack sprayers	Ultra-low volume sprayers	Others
Argentina	0	100	0
Australia	0	100	0
Bangladesh	100	0	0
Benin	100	0	0
Brazil	0	100	0
Burkina Faso	40	60	0
Chad	0	100	0
Colombia	45	2	53
Cote D'Ivoire	80	20	0
Egypt	0	100	0
Ethiopia	7	90	3
Greece	0	100	0
India	98	2	0
Iran	95	0	5
Kenya	88	3	9
Malawi	80	10	10
Mexico	2	7	91
Mozambique	8	85	7
Nigeria	70	10	20
Pakistan	100	0	0
South Africa	1	99	0
Sudan	5	0	95
Spain	0	100	0
Tanzania	99	1	0
Togo	10	90	0
Turkey	21	11	68
Uganda	98	2	1
Zambia	99	0	1
Zimbabwe	99	1	0
Turkey	12	60	28
Uganda	99	0	0,01
USA	0	0	100
Uzbekistan	0	100	0
Zambia	100	0	65
Zimbabwe	100	0	5



Table 9. WEEDING & HARVESTING METHODS (%)

	WEEDING METHODS (%)			HARVESTING METHODS (%)	
	Hand-weeding	Machine	Herbicides	Hand-picked	Machine picked
Argentina	0	60	40	0	100
Australia	0	5	100	0	100
Bangladesh	100	0	31	100	0
Benin	10	0	90	100	0
Brazil	0	50	50	0	100
Burkina	60	0	40	100	0
Cameroon	60	0	40	100	0
China	80	20	80	30	70
Chad	99	0	1	100	0
Colombia	0	11	89	52	48
Cote D'Ivoire	40	0	60	100	0
Egypt	90	5	5	100	0
Ethiopia	99	0	1	100	0
Greece	0	100	100	2	98
India	79	21	19	100	0
Iran	9	54	38	96	4
Kenya	99	0	1	100	0
Malawi	78	0	22	100	0
Mali	60	0	40	100	0
Mexico	1	2	97	1	99
Mozambique	100	0	2	100	0
Nigeria	50	10	40	75	25
Pakistan	26	76	100	100	0
South Africa	3	0	97	6	94
Sudan	20	0	80	95	5
Spain	0	100	100	0	100
Tanzania	98	2	0	100	0
Thailand	98	0	2	100	0
Togo	94	2	4	100	0
Turkey	12	60	28	9	91
Uganda	99	0	0,01	100	0
USA	0	0	100	0	100
Uzbekistan	0	100	0	90	10
Zambia	100	0	65	100	0
Zimbabwe	100	0	5	100	0

Table 10. GINNING METHODS

	SAW GINS	% SAW GINNED	ROLLER GINS	% ROLLER GINNED
Argentina	120	100	0	0
Australia	35	99	2	1
Bangladesh	11	40	37	60
Benin	19	100	0	0
Brazil	271	100	0	0
Bulgaria	1	100	0	0
Burkina Faso	19	0	0	0
Cameroon	9	100	0	0
Chad	7	100	0	0
Colombia	7	75	7	25
Cote d'Ivoire	14	100	0	0
Egypt	0	0	39	100
Ethiopia	17	80	7	20
Greece	60	100	0	0
India	177	5	4,100	95
Iran	226	100	0	0
Israel	0	0	2	100
Kazakhstan	0	100	0	0
Kenya	0	0	9	100
Kyrgyzstan	1	100	0	0
Malawi	3	55	4	45
Mali	17	100	0	0
Mexico	63	90	3	10
Mozambique	31	100	0	0
Myanmar	0	0	0	100
Nigeria	15	70	20	30
Pakistan	1,291	99	5	1
Paraguay	15	100	0	0
South Africa	5	100	0	0
Spain	2	14	4	86
Tanzania	29	60	61	40
Thailand	4	0	0	0
Togo	6	100	0	0
Turkey	83	6	3,586	94
Uganda	1	2	28	98
USA	600	95	20	5
Vietnam	5	100	0	0
Zambia	8	80	6	20
Zimbabwe	20	90	2	10
WORLD	3,192		7,942	



Table 11. USE OF COTTON SEEDS (%)

	Crushed for Oil	Cattle Feed	Used for Sowing	Wasted
Argentina	28	67	5	0
Australia	11	79	10	0
Azerbaijan	44	46	10	0
Bangladesh	85	0	10	5
Benin	50	40	10	0
Brazil	61	30	5	4
Burkina Faso	53	25	10	12
Cameroon	42	43	15	0
Chad	55	41	4	0
China	50	40	10	0
Colombia	23	73	4	0
Côte D'Ivoire	16	72	12	0
Egypt	64	6	30	0
Ethiopia	99	0	1	0
Greece	20	78	2	0
India	48	50	1	1
Iran	61	12	22	5
Kazakhstan	54	41	5	0
Kenya	42	15	40	3
Kyrgyzstan	71	26	3	0
Malawi	84	1	10	5
Mali	74	21	5	0
Mexico	0	100	0	0
Mozambique	40	9	26	25
Myanmar	64	36	0	0
Nigeria	53	35	6	6
Pakistan	55	41	4	0
South Africa	100	0	0	0
Sudan	33	50	10	7
Tajikistan	43	42	15	0
Tanzania	49	37	4	10
Togo	46	30	15	9
Turkey	72	10	10	8
Uganda	57	30	3	10
USA	19	81	0	0
Uzbekistan	59	33	8	0
Zambia	70	4	15	10
Zimbabwe	50	24	15	10



Table 12. USE OF COTTON STALK RESIDUES (%)

	Burnt in fields	Used as firewood	Ploughed back	Stacked near bunds
Argentina	0	0	100	0
Australia	0	0	100	0
Bangladesh	0	100	0	0
Benin	64	1	5	30
Brazil	0	0	100	0
Burkina Faso	80	10	0	10
Cameroon	90	10	0	0
Chad	80	10	10	0
China	0	10	90	0
Colombia	1	0	99	0
Cote-D'Ivoire	80	20	0	0
Egypt	0	0	40	60
Ethiopia	0	20	81	0
Greece	0	0	100	0
India	10	40	2	48
Iran	0	0	100	0
Kazakhstan	5	0	60	35
Kenya	29	39	19	13
Malawi	75	10	5	10
Mali	80	10	0	10
Mexico	0	0	100	0
Mozambique	100	0	0	0
Myanmar	55	25	5	15
Nigeria	60	20	15	5
Pakistan	0	86	12	2
South Africa	0	0	100	0
Spain	0	0	100	0
Sudan	25	65	0	10
Tanzania	80	15	0	5
Togo	55	15	5	25
Turkey	0	35	63	2
Uganda	43	37	9	9
USA	0	0	100	0
Uzbekistan	0	0	35	65
Zambia	90	3	1	6
Zimbabwe	95	5	0	0



Table 13. CROP ROTATION WITH COTTON

Country	Region	Rotation Crops			
Argentina	Chaco	Sunflower	Soybean	Wheat	
Argentina	Del Estero Secano	Sorghum	Corn	Soybean	Wheat
Argentina	De Reigo	Corn	Alfalfa	Vegetables	Wheat
Australia	NSW & Queensland	Wheat	Sorghum		
Bangladesh	G. arboreum	Rice	Sesame		
Bangladesh	G. hirsutum	Sesame	Mungbean	Wheat	Jute
Brazil	Semiarid	Sorghum	Corn	Cowpea	
Brazil	Cerrado	Soybean	Corn	Millet	
Burkina Faso	National	Sorghum	Corn		
Cameroon	National	Sorghum	Corn	Peanut	Soybean
Chad	National	Peanut	Cereals	Oilseeds	
China	Yellow River Region	Wheat			
China	Yangtze Region	Wheat	Rapeseed		
Colombia	Cordoba	Corn	Cowpea		
Colombia	Interior	Rice	Corn		
Cote D'Ivoire	National	Peanut	Rice	Sorghum	Corn
Egypt	National	Wheat	Beans	Sugar beet	Alfalfa
Ethiopia	National	Sesame	Sorghum	Corn	
Greece	National	Wheat	Legumes	Grains	
India	North	Wheat			
India	Andhra+Telangana	Corn	Chillies	Soybean	
India	Karnataka	Chickpea	Corn	Wheat	
India	Tamil Nadu	Turmeric	Sugarcane	Rice	
India	Maharashtra+MP	Sorghum	Soybean		
India	Gujarat	Soybean	Peanut	Castor	
India	Orissa	Soybean	Corn	Urid bean	Sorghum
Iran	Ardebil	Wheat	Soybean		
Iran	East & Central	Barley	Sugar Beet	Corn	Wheat
Iran	Fars	Wheat	Corn		
Iran	Mazandran/Goles-tan	Wheat	Canola	Barley	

Table 13. CROP ROTATION WITH COTTON

Country	Region	Rotation Crops			
Kazakhstan	National	Chickpea	Alfalfa	Soybean	
Kenya	Eastern	Corn	Greengran		
Kenya	Western	Sorghum	beans	Millet	Cassava
Mali	National	Cereals			
Mozambique	National	Corn	Beans		
Myanmar	National	Pigeonpea	Wheat	Greengram	Rice
Nigeria	North-west/North-east	Maize	Cowpea	Peanut	Corn
Pakistan	Punjab	Wheat	Sugarcane	Rice	
Pakistan	Sindh	Wheat	Sugarcane	Rice	
Paraguay	East and West	Corn	Chia		
South Africa	Loskop (Irrigated)	Wheat	Peas		
Spain	Andalucia	Corn	Sunflower	Wheat	
Sudan	National	Sorghum	Peanuts		
Tanzania	Eastern	Pigeonpea	Corn	Sunflower	Beans
Tanzania	Western	Cassava	Corn	Sunflower	Pigeonpea
Togo	National	Yam	Cowpea	Corn	
Turkey	Aegean	Wheat	Clover	Corn	
Turkey	Adana	Wheat	Clover	Corn	Vetch
Turkey	Gap Region (Sanli-urfa)	Cotton	Wheat	Lentil	
Uganda	National	Corn	Sorghum	Legumes	Millet
USA	Delta	Soybean	Corn		
USA	Southeast	Soybean	Corn	Peanuts	
USA	West	Alfalfa	Corn	Tree crops	
USA	Southwest	Wheat	Corn	Sorghum	
Uzbekistan	National	Wheat			
Vietnam	National	Corn	Soybean	Peanuts	
Zambia	Region 1	Corn	Cowpea	Peanuts	
Zimbabwe	National	Corn	Peanuts		



Table 14. CROPS COMPETING WITH COTTON

Country	Region	Competing Crops			
Argentina	Chaco	Sorghum	Sunflower	Soybean	
Argentina	Del Estero Secano	Sorghum	Corn	Soybean	
Argentina	De Reigo	Corn	Alfalfa	Vegetables	
Australia	NSW & Queensland	Wheat	Sorghum		
Bangladesh	G. arboreum	Rice	Sesame		
Bangladesh	G. hirsutum	Sesame	Mungbean	Wheat	
Brazil	Semiarid	Sorghum	Corn	Cowpea	
Brazil	Cerrado	Soybean	Corn	Millet	
Burkina Faso	National	Sorghum	Corn		
Cameroon	National	Sorghum	Corn	Peanut	
Chad	National	Peanut	Cereals	Oilseeds	
China	Yellow River Region	Wheat			
China	Yangtze Region	Wheat	Rapeseed		
Colombia	Cordoba	Corn	Cowpea		
Colombia	Interior	Rice	Corn		
Cote D'Ivoire	National	Peanut	Rice	Sorghum	
Egypt	National	Wheat	Beans	Sugar beet	
Ethiopia	National	Sesame	Sorghum	Corn	
Greece	National	Wheat	Legumes	Grains	
India	North	Wheat			
India	AP+Telangana	Corn	Chillies	Soybean	
India	Karnataka	Chickpea	Corn	Wheat	
India	Tamil Nadu	Turmeric	Sugarcane	Rice	
India	Maharashtra+MP	Sorghum	Soybean		
India	Gujarat	Soybean	Peanut	Castor	
India	Orissa	Soybean	Corn	Urid bean	
Iran	Ardebil	Wheat	Soybean		
Iran	East & Central	Barley	Sugar Beet	Corn	Wheat
Iran	Fars	Wheat	Corn		
Iran	Mazandran/Goles-tan	Wheat	Canola	Barley	

Table 14. CROPS COMPETING WITH COTTON

Country	Region	Competing Crops			
Kazakhstan	National	Chickpea	Alfalfa	soybean	
Kenya	Eastern	Corn	Greengran		
Kenya	Western	Sorghum	Beans	Millets	Cassava
Mali	National	Cereals			
Mozambique	National	Corn	Beans		
Myanmar	National	Pigeonpea	Wheat	Greengram	Rice
Nigeria	National	Maize	Cowpea	Peanut	Corn
Pakistan	Punjab	Wheat	Sugarcane	Rice	
Pakistan	Sindh	Wheat	Sugarcane	Rice	
Paraguay	East and West	Corn	Chia		
South Africa	Loskpop (Irrigated)	Wheat	Peas		
Spain	Andalucia	Corn	Sunflower	Wheat	
Sudan	National	Sorghum	Peanuts		
Tanzania	Eastern	Pigeonpea	Corn	Sunflower	Beans
Tanzania	Western	Cassava	Corn	Sunflower	Pigeonpea
Togo	National	Yam	Cowpea	Corn	
Turkey	Aegean	Wheat	Clover	Corn	
Turkey	Adana	Wheat	Clover	Corn	Vetch
Turkey	Gap Regi	Cotton	Wheat	Lentil	
Uganda	National	Corn	Sorghum	Legumes	Millets
USA	Delta	Soybean	Corn		
USA	Southeast	Soybean	Corn	Peanuts	
USA	West	Alfalfa	Corn		
USA	Southwest	Wheat	Corn	Sorghum	
Uzbekistan	National	Wheat			
Vietnam	National	Corn	Soybean	Peanuts	
Zambia	Region 1	Corn	Cowpea	Peanuts	
Zimbabwe	National	Corn	Peanuts		



Table 15. IRRIGATION METHODS & WATER FOOTPRINT

Country	Region/Province/State	Flood	Furrow	Sprinker	Drip	Billion litres	Irrigation Water L/Kg Lint	Rain Water L/ Kg Lint
Argentina	Santiago del Estero	83	0	12	5	39	231	5,544
	Chaco	83	0	12	5	8	88	11,861
	Santa-Fe	83	0	12	5	3	208	16,517
	National	83	0	12	5	50	171	8,285
Australia	NSW	1	69	21	8	564	1,566	1,406
	Queensland	2	70	19	8	422	2,098	1,041
	National	1	80	17	1	986	1,757	1,163
Bangladesh	Jessore	0	100	0	0	0	0	5,964
	Rangapur	0	100	0	0	1	145	11,332
	National	0	100	0	0	1	41	11,768
Benin	National	0	0	0	0	0	0	12,160
Brazil	Bahia	0	0	50	50	41	69	3,293
	Goiás	0	0	100	0	2	30	7,075
	Mato-Grosso	0	0	100	0	7	3	3,642
	National	0	0	80	20	50	17	3,842
Cameroon	Cameroon	0	0	0	0	0	0	9,341
Chad	National	0	0	0	0	0	0	20,008
China	Hebei	20	80	0	0	391	1,872	2,676
	Shandong	14	86	0	0	226	1,237	4,545
	Hubei	47	12	12	29	205	1,905	7,166
	Xinjiang	6	8	12	74	8,006	1,551	727
	Others	14	68	6	12	341	1,365	0
	National	9	20	10	60	9,170	1,552	1,071
Colombia	Cordoba	0	100	0	0	12	984	9,660
	interior	100	0	0	0	0	0	13,184
	National	100	0	0	0	12	760	13,223
Cote-D-Ivoire	National	0	0	0	0	0	0	13,553
Egypt	National	26	50	11	13	633	10,917	0
Ethiopia	National	0	96	4	0	4	62	11,442
Greece	Thessaly	0	10	60	30	298	2,654	1,892
	Macedonia	0	8	65	17	280	3,734	2,989
	Thraki	0	12	70	18	260	2,992	2,054
	National	0	10	65	22	838	2,563	1,961



Table 15. IRRIGATION METHODS & WATER FOOTPRINT

Country	Region/Province/State	Flood	Furrow	Sprinkler	Drip	Billion litres	Irrigation Water L/Kg Lint	Rain Water L/ Kg Lint
india	Andhra Pradesh	15	75	3	7	73	240	13,806
	Gujarat	10	85	0	5	1,466	953	9,281
	Haryana	80	14	0	6	2,769	6,511	6,922
	Karnataka	10	80	0	10	154	451	13,313
	Madhya Pradesh	34	55	0	11	193	551	12,523
	Maharashtra	25	65	0	10	68	47	20,222
	Odisha	0	100	0	0	0	0	23,308
	Punjab	90	4	0	6	1,760	8,633	7,023
	Rajasthan	88	7	0	5	1,139	2,482	3,411
	Tamilnadu	80	18	0	3	45	530	11,678
	Telangana	52	40	0	8	87	85	15,213
	National	36	56	0	8	7,755	1,237	12,955
iran	East & Central	35	58	3	4	360	9,730	2,061
	Fars	36	55	3	6	137	8,047	627
	Golestan & Mazandran	59	15	3	3	46	3,528	1,321
	Ardebil	67	22	3	8	39	2,800	1,500
	National	49	38	3	5	582	7,184	1,279
Kazakhstan	National	0	94	5	1	348	4,374	0
Kenya	Coastal	0	0	0	0	0	0	0
	Eastern	0	100	0	0	1	522	0
	Western	0	0	0	0	0	0	26,994
	Others-Rift Valley	0	0	0	0	0	0	0
	National	0	100	0	0	1	116	0
Malawi	Malawi	0	0	0	0	0	0	27,092
Mali	National	0	0	0	0	0	0	10,100
Mexico	Chihuahua	0	95	0	5	288	1,708	0
	Baja California	0	100	0	0	90	3,393	0
	Coahuila	95	0	2	3	20	2,178	0
	Tamaulipas	0	98	0	2	32	2,278	0
	Durango	96	0	0	4	6	3,736	0



Table 15. IRRIGATION METHODS & WATER FOOTPRINT

Country	Region/Province/State	Flood	Furrow	Sprinker	Drip	Billion litres	Irrigation Water L/Kg Lint	Rain Water L/ Kg Lint
	Sonora	0	98	0	2	19	2,407	0
	National	6	93	0	0	455	1,997	1,444
Mozambique	National	6	90	0	4	0	0	31,022
Myanmar	National	0	100	0	0	7	44	10,517
Nigeria	National	0	0	0	0	0	0	19,408
Pakistan	Punjab	25	75	0	0	7,766	8,968	8,135
	Sindh	15	85	0	0	2,397	4,212	1,743
	Others	60	40	0	0	259	11,745	0
	National	23	77	0	0	10,422	7,153	5,600
South-Africa	Limpopo	0	0	100	0	15	1,404	4,813
	North Cape	4	0	96	0	3	3,198	3,507
	North West	0	0	100	0	1	337	0
	KwaZulu-Natal	0	0	100	0	1	1,646	0
	Mpumalanga	0	100	0	0	0	0	0
	Free State	0	100	0	0	1	1,736	0
	National	0	9	91	0	35	1,289	3,605
Spain	National	0	0	0	100	198	2,919	2,416
Sudan	National	3	76	13	8	696	5,352	5,661
Tanzania	Geita	0	0	0	0	0	0	22,211
	Simiyu	0	0	0	0	0	0	19,455
	National	0	0	0	0	0	23,032	0
Togo	National	0	0	0	0	0	0	20,738
Turkey	Aegean	35	45	4	16	376	2,088	2,020
	Cukurova	0	85	1	14	367	2,073	2,471
	Turkey-Gap	0	70	22	8	1,335	2,967	1,860
	National	6	69	14	11	2,078	2,552	2,513
Turkmenistan	National	0	100	0	0	2,747	13,696	4,056
Uganda	National	0	0	0	0	0	0	23,466
USA	Alabama	0	11	89	0	29	182	6,880
	Arizona	0	95	5	0	698	10,153	503
	Arkansas	0	89	11	0	516	1,856	3,875
	California	0	92	0	8	728	5,246	1,889
	Georgia	0	0	100	0	313	653	4,772
	Kansas	0	0	100	0	45	656	6,168
	Louisiana	0	0	100	0	15	198	6,138



Table 15. IRRIGATION METHODS & WATER FOOTPRINT

Country	Region/Province/State	Flood	Furrow	Sprinker	Drip	Billion litres	Irrigation Water L/Kg Lint	Rain Water L/ Kg Lint
USA	Mississippi	0	61	39	0	110	429	4,613
	Missouri	0	91	9	0	137	922	4,186
	New Mexico	0	50	50	0	65	3,310	1,298
	North Carolina	0	0	100	0	6	49	5,070
	Oklahoma	0	43	57	0	141	963	5,489
	South Carolina	0	0	100	0	23	342	6,157
	Tennessee	0	0	100	0	7	51	4,663
	Texas	0	17	83	0	1,968	1,633	5,277
	Virginia	0	0	100	0	0	3	6,908
	National	0	37	60	3	4,772	1,380	6,051
Uzbekistan	Kashkadar	97	0	0	3	938	13,164	3,339
	Bukhara	96	0	0	4	627	10,609	1,823
	Syrdarya	97	0	0	3	432	11,929	3,283
	Syrkhandar	97	0	0	3	530	12,155	2,975
	Ferghana	96	2	0	2	496	11,141	2,029
	Dzhizak	90	3	0	7	515	13,199	2,960
	Karakalpak	99	0	0	1	537	15,384	4,304
	Khorezm	98	0	0	2	513	11,173	3,244
	Andizhan	98	0	0	2	486	10,845	3,898
	Tashkent	99	0	0	1	423	10,360	5,180
	Samarkhand	91	0	0	9	465	12,118	6,502
	Namangam	98	0	0	2	391	10,903	3,717
	Navoi	94	0	0	6	212	12,008	3,510
	National	96	0	0	3	6,564	11,892	4,284
Zambia	Eastern	0	0	0	0	0	0	58,121
	Central	0	0	0	0	0	0	29,110
	Southern	0	0	0	0	0	0	0
	National	0	0	0	0	0	0	0
Zimbabwe	Mashonaland	0	0	0	0	0	0	27,547
	Midlands	0	0	0	0	0	0	19,107
	Others	0	0	0	0	0	0	0
	National	0	0	0	0	0	0	24,638
WORLD		24.82	47.09	15.14	12.9	48.3	1931	6320



Table 16. RAINWATER (mm), ETc & IRRIGATION (mm)

Country	Region/Province/State	%Rain-fed	Total Rainfall (mm)	Effective Rainfall (mm)	Crop Eva-po Tran-spiration ETc	Number of irriga-tions	Irriga-tion/Ha (mm)
Argentina	Santiago del Estero	67	860	476	775	2	60
	Chaco	95	1,517	604	724	3	90
	Santa-Fe	95	1,213	596	732	5	150
	National	82	1,183	544	748	4	96
Australia	NSW	13	464	281	790	6	360
	Queensland	32	674	182	720	9	540
	National	20	307	221	740	7	420
Bangladesh	essore	100	1,244	664	642	3	90
	Rangapur	70	2,498	1,406	622	2	60
	National	50	1,657	909	635	2	60
Benin	National	100	1,039	581	528	0	0
Brazil	Bahia	84	1,040	626	724	2	80
	Goias	94	3,003	1,198	742	2	80
	Mato-Grosso	100	963	656	790	4	120
	National	87	1,678	692	741	4	84
Cameroon	Cameroon	100	750	521	620	0	0
Chad	National	100	980	596	680	0	0
China	Hebei	14	482	295	694	6	240
	Shandong	12	848	582	690	6	180
	Hubei	12	1,305	596	596	6	180
	Xinjiang	0	261	150	720	8	320
	Others	8				6	180
	National	2	349	200	711	7	296
Colombia	Cordoba	30	2,743	825	638	4	120
	interior	100	2,016	1,084	620	6	180
	National	46	2343	1120	684	6	120
Cote-D-Ivoire	National	100	1,348	689	590	0	0
Egypt	National	0	95	0	980	8	833
Ethiopia	National	97	1,228	836	720	4	150
Greece	Thessaly	8	418	236	710	6	360
	Macedonia	8	510	257	724	5	350
	Thraki	7	480	229	690	6	360
	National	7	474	220		6	357

Table 16. RAINWATER (mm), ETc & IRRIGATION (mm)

Country	Region/Province/State	%Rain-fed	Total Rainfall (mm)	Effective Rainfall (mm)	Crop Eva-po Tran-spiration ETc	Number of irriga-tions	Irriga-tion/Ha (mm)
india	Andhra Pradesh	69	1,200	806	560	2	45
	Gujarat	28	980	628	728	2	90
	Haryana	4	625	399	710	6	390
	Karnataka	67	980	628	720	2	65
	Madhya Pradesh	48	1,062	681	680	2	58
	Maharashtra	97	1,100	706	700	2	60
	Odisha	100	1,650	1,061	698	0	0
	Punjab	2	449	286	790	6	360
	Rajasthan (incl. central)	3	367	233	784	5	175
	Tamilnadu	68	998	640	620	3	90
	Telangana	91	1,020	654	680	1	41
	National	65	975	627		2	169
iran	East & Central	0	404	170	710	12	800
	Fars	0	534	59	720	10	760
	Golestan & Mazan-dran	22	738	82	695	4	280
	Ardebil	0	477	150	720	4	280
	National	5	374	106	820	8	623
Kazakhstan	National	0				6	292
Kenya	Coastal	100				0	0
	Eastern	90				4	120
	Western	100	1,058	653	580	0	0
	Others-Rift Valley	100				0	0
	National	98				4	120
Malawi	Malawi	100	1,181	664	620	0	0
Mali	National	100	678	379	614	0	0
Mexico	Chihuahua	0				4	280
	Baja California	0				6	492
	Coahuila	0				4	240
	Tamaulipas	0				2	360
	Durango	0				4	680
	Sonora	0				6	420
	National	0	340	229	840	5	316
Mozambique	National	100	1,320	829	690	0	0
Myanmar	National	98	1,071	667	584	2	140



Table 16. RAINWATER (mm), ETc & IRRIGATION (mm)

Country	Region/Province/ State	%Rain-fed	Total Rainfall (mm)	Effective Rainfall (mm)	Crop Eva- po Tran- spiration ETc	Number of irriga- tions	Irriga- tion/Ha (mm)
Nigeria	National	100	996	664	610	0	0
Pakistan	Punjab	0	550	379	780	12	418
	Sindh	0	250	161	680	11	390
	Others	0				12	680
	National	0	475	325	755	13	415
South-Africa	Limpopo	53	887	484	566	6	300
	North Cape	0	540	329	566	6	300
	North West	90			566	6	300
	KwaZulu-Natal	47			566	6	300
	Mpumalanga	100			566	0	0
	Others - Free State	53			566	6	300
	National	58		350	566	6	300
Spain	National	8	565	251	780	4-5	330
Sudan	National	8	750	409	640	8	420
Tanzania	Geita	100	650	386	694	0	0
	Simiyu	100	980	581	690	0	0
	National	100	780	569		0	0
Togo	National	100	1,168	679	660	0	0
Turkey	Aegean	0	648	409	890	5	423
	Cukurova	0	726	459	956	6	385
	Gap	4	459	289	840	7	480
	National	2	650	428		6	449
Turkmenistan	National	10	240	149	840	8	560
Uganda	National	100	1,320	838	524	0	0
USA	Alabama	89	1,501	609		5	152
	Arizona	5	201	66		12	1401
	Arkansas	20	1,225	512		8	305
	California	1	451	348		12	975
	Georgia	64	1,166	474		6	183
	Kansas	73	926	541		7	213
	Louisiana	82	1,541	678		4	122
	Mississippi	66	1,375	557		5	152
	Missouri	35	1,257	536		6	183
	New Mexico	18	247	137		9	427
	North Carolina	97	997	431		4	122

Table 16. RAINWATER (mm), ETc & IRRIGATION (mm)

Country	Region/Province/ State	%Rain-fed	Total Rainfall (mm)	Effective Rainfall (mm)	Crop Eva- po Tran- spiration ETc	Number of irriga- tions	Irriga- tion/Ha (mm)
USA	Oklahoma	79	788	432		8	366
	South Carolina	86	1,193	553		7	213
	Tennessee	93	1,411	557		3	91
	Texas	63	868	405		8	335
	Virginia	100	980	597		2	61
	National	63	770	574		7	361
Uzbekistan	Kashkadar	0	285	175		3	690
	Bukhara	0	157	110		3	640
	Syrdarya	0	265	164		3	596
	Syrkhandar	0	324	175		3	715
	Ferghana	0	165	110		3	604
	Dzhizak	0	280	148		3	660
	Karakalpak	0	290	174		3	622
	Khorezm	0	280	180		3	620
	Andizhan	0	384	220		3	612
	Tashkent	0	415	290		3	580
	Samarkhand	0	550	330		3	615
	Namangam	0	348	210		3	616
	Navoi	0	310	190		3	650
	National	0	315	229	887	3	635
Zambia	Eastern	100	1,450	896	650	0	0
	Central	100	1,225	731	650	0	0
	Southern	100				0	0
	National	100				0	0
Zimbabwe	Mashonaland	100	1,063	581	700	0	0
	Midlands	100	600	401	700	0	0
	Masvingo	100				0	0
	Mashonaland-West	100				0	0
	Mashonaland-East	100				0	0
	Manicaland	100				0	0
	Others	100				0	0
	National	100				0	0
World		52.4		501			321.6



Table 17. INPUT COSTS PER HECTARE

	Seeds	Fertiliz- ers	Pesti- cides	Manpow- er	Machin- ery	Ginning costs	Others	Total
Argentina	35	10	100	9	122	116	77	393
Australia-Gwydir	353	358	312	629	2346	596	381	4594
Australia-MacQuairie	372	431	296	657	2374	513	419	4642
Australia-McIntyre	418	594	329	682	1330	584	553	3937
Australia-Murrumbidgee	410	565	197	377	3565	453	286	5567
Australia-Namoi	382	364	174	874	2924	447	595	5166
Australia-National	400	515	243	549	2782	495	402	4983
Bangla	4	388	194	841	132	78	59	1637
Brazil-Bahia	178	294	599	95	239	205	160	1609
Brazil-Mato Grosso	152	295	642	99	823	220	1894	2231
Burkina	6	121	46	253	0	30	0	456
Chad	1	15	32	93	34	55	0	230
China	183	855	341	1437	480	360	1860	3656
Colombia-Cordoba	237	154	269	241	201	144	138	1246
Colombia-Interior	153	441	306	329	95	99	262	1422
Egypt	52	356	124	1093	86	149	0	1860
Ethiopia	109	0	89	304	137	169	857	808
Greece	145	241	446	757	452	244	723	2284
India-Andhra Pradesh	72	118	78	506	159	74	403	1006
India-Gujarat	46	141	47	452	195	85	367	966
India-Haryana	58	41	33	383	126	75	393	715
India-Karnataka	59	77	47	272	167	70	253	692
India-Madhya Pradesh	33	92	80	434	172	80	329	890
India-Maharashtra	47	137	58	439	79.3	48	293	808
India-National	54	120	58	452	188	70	345	941
India-Odisha	39	133	14	494	73	52	266	806
India-Punjab	77	53	84	378	125	96	548	813
India-Rajasthan	69	66	37	463	126	90	325	851
India-Tamil Nadu	53	211	42	925	139	88	446	1457
Iran	31	144	208	796	0	190	450	1368
Ivory Coast	0	120	81	155	95	51	0	502
Kazakhstan	44	90	30	571	80	80	140	895

Table 17. INPUT COSTS PER HECTARE

	Seeds	Fertiliz- ers	Pesti- cides	Manpow- er	Machin- ery	Ginning costs	Others	Total
Kenya	9	5	25	196	0	44	0	279
Malawi	6	53	72	227	85	38	60	482
Mali	32	165	60	360	0	60	0	677
Mexico-Baja California	110	180	210	198	1112	122	210	1932
Mexico-Chihuahua	100	175	215	213	992	148	180	1843
Mexico-Coahuila	100	175	245	268	1102	188	200	2078
Mexico-Durango	100	175	265	273	1102	188	200	2103
Mexico-Sonora	110	180	210	198	1112	132	210	1942
Mexico-Tamaulipas	90	160	273	300	1072	165	180	2060
Mozambique	0	0	46	226	63	28	0	363
Nigeria	14	10	20	293	14	40	86	391
Pakistan	47	183	72	239	171	212	344	923
SA-Limpopo-Dry	85	39	75	16	307	99	81	620
SA-Limpopo-Irri	132	288	201	23	932	474	271	2049
SA-NorthCape-Dry	82	66	79	16	347	148	75	738
SA-NorthCape-Irri	129	411	379	23	844	543	266	2330
Spain	153	340	742	148	618	100	859	2101
Sudan	69	170	275	344	185	60	0	1103
Tanzania	14	49	22	235	54	58	38	432
Togo	0	113	48	181	78	60	17	480
Turkey	19	236	296	452	674	140	53	1817
Uganda	8	1	32	384	0	50	0	475
US Total	167	147	207	195	*646	269	70	1,055
USA-Fruitful Rim	198	206	306	368	919	370	125	1,573
USA-Heartland	237	187	326	246	955	660	125	1,781
USA-Mississippi Portal	236	223	358	161	705	494	105	1,577
USA-Prairie Gateway	115	54	107	193	561	142	39	650
USA-Southern Seaboard	218	289	285	160	671	322	97	1,371
Uzbekistan	22	85	25	751	190	100	0	1173
Zambia	2	3	16	35	0	35	0	91
Zimbabwe	30	5	70	115	50	36	0	307
World Ave	84	214	147	471	320	151	476	1317

*Overhead values: not included in calculations, instead 'others' values have been considered for US calculations



Table 18. INPUT COSTS PER Kg SEED-COTTON & PER Kg LINT

	Cost per Hectare (US\$)				Cost per Kg Seed-Cotton Produced (US\$)				Cost per Kg Lint Produced (US\$)			
	Insec-ticide	Weed-ing	Gin-nig	Fertil-izer	Insec-ticide	Weed-ing	Gin-nig	Fertil-izer	Insec-ticide	Weed-ing	Gin-nig	Fertil-izer
Argentina	31	46	116	10	0.02	0.03	0.07	0.01	0.06	0.08	0.21	0.02
Au-Gwydir	126	143	596	358	0.02	0.02	0.08	0.05	0.04	0.05	0.21	0.12
Au-MacQuairie	105	136	513	431	0.02	0.02	0.08	0.07	0.04	0.05	0.20	0.17
Au-McIntyre	116	129	584	594	0.02	0.02	0.09	0.09	0.04	0.05	0.22	0.23
Au-Murrumbidgee	64	79	453	565	0.01	0.01	0.08	0.10	0.03	0.03	0.20	0.25
Au-Namoi	64	75	447	364	0.01	0.01	0.08	0.06	0.03	0.03	0.20	0.16
Australia-National	84	102	495	515	0.01	0.02	0.08	0.08	0.03	0.04	0.20	0.21
Bangladesh	118	382	78	388	0.04	0.13	0.03	0.13	0.10	0.32	0.07	0.32
Brazil-BAHIA	350	115	205	294	0.09	0.03	0.05	0.07	0.22	0.07	0.13	0.18
Brazil-MATO-GROSSO	359	117	220	295	0.09	0.03	0.05	0.07	0.21	0.07	0.13	0.17
Burkina Faso	34	24	30	121	0.04	0.03	0.03	0.13	0.09	0.07	0.08	0.34
Chad	28	16	55	72	0.06	0.03	0.12	0.15	0.14	0.08	0.28	0.36
China	250	170	360	855	0.05	0.04	0.08	0.19	0.14	0.09	0.20	0.46
Colombia-CORDOBA	132	63	144	154	0.07	0.03	0.07	0.08	0.19	0.09	0.20	0.22
Colombia-INTERIOR	102	44	99	441	0.03	0.01	0.03	0.13	0.09	0.04	0.09	0.40
Egypt	124	115	149	356	0.06	0.05	0.07	0.16	0.15	0.13	0.17	0.42
Ethiopia	89	57	169	0	0.05	0.03	0.09	0.00	0.13	0.08	0.24	0.00
Greece	205	301	85	241	0.06	0.08	0.07	0.07	0.17	0.24	0.19	0.20
india-Andhra Pradesh	78	93	74	118	0.05	0.05	0.04	0.07	0.13	0.16	0.13	0.20
india-Gujarat	47	83	85	141	0.02	0.04	0.04	0.07	0.07	0.12	0.13	0.21
india-Haryana	33	71	75	41	0.02	0.04	0.04	0.02	0.06	0.12	0.13	0.07
india-Karnataka	47	50	70	77	0.03	0.04	0.05	0.06	0.10	0.11	0.15	0.16
india-Madhya Pradesh	80	80	80	92	0.05	0.05	0.05	0.06	0.14	0.14	0.14	0.17
india-Maharashtra	58	81	48	137	0.06	0.08	0.05	0.13	0.17	0.23	0.14	0.39
India-National	58	83	70	120	0.04	0.06	0.05	0.08	0.12	0.17	0.14	0.25
india-Odisha	14	91	52	133	0.01	0.07	0.04	0.10	0.03	0.20	0.11	0.29
india-Punjab	84	70	96	53	0.07	0.06	0.08	0.04	0.21	0.17	0.24	0.13
india-Rajasthan	37	85	90	66	0.02	0.04	0.04	0.03	0.05	0.13	0.13	0.10
india-Tamil Nadu	42	171	88	211	0.03	0.11	0.05	0.13	0.08	0.31	0.16	0.38
Iran	88	121	190	144	0.03	0.04	0.07	0.05	0.11	0.15	0.23	0.17
Ivory Coast	43	52	51	120	0.04	0.04	0.04	0.10	0.08	0.10	0.10	0.23
Kazakhstan	30	60	80	90	0.01	0.02	0.03	0.03	0.04	0.08	0.10	0.11

Table 18. INPUT COSTS PER Kg SEED-COTTON & PER Kg LINT

	Cost per Hectare (US\$)				Cost per Kg Seed-Cotton Produced (US\$)				Cost per Kg Lint Produced (US\$)			
	Insec-ticide	Weed-ing	Gin-ning	Fertil-izer	Insec-ticide	Weed-ing	Gin-ning	Fertil-izer	Insec-ticide	Weed-ing	Gin-ning	Fertil-izer
Kenya	25	22	44	5	004	0.04	0.08	0.01	0.1	0.09	0.19	0.02
Malawi	10	46	38	53	0.02	0.07	0.06	0.09	0.04	0.19	0.16	0.22
Mali	55	160	60	165	0.05	0.15	0.06	0.15	0.13	0.37	0.14	0.38
Mexico	25	240	170	393	0.01	0.06	0.04	0.10	0.02	0.15	0.10	0.24
Mexico-Baja California	60	51	122	180	0.01	0.01	0.03	0.04	0.04	0.03	0.08	0.12
Mexico-Chihuahua	60	51	148	175	0.01	0.01	0.03	0.03	0.03	0.03	0.08	0.09
Mexico-Coahuila	90	51	188	175	0.02	0.01	0.04	0.03	0.05	0.03	0.10	0.09
Mexico-Durango	110	51	188	175	0.02	0.01	0.04	0.03	0.06	0.03	0.10	0.09
Mexico-Sonora	60	51	132	180	0.01	0.01	0.03	0.04	0.04	0.03	0.08	0.11
Mexico-Tamaulipas	130	49	165	160	0.03	0.01	0.04	0.03	0.08	0.03	0.10	0.10
MOZAMBIQUE	21	69	28	0	0.04	0.14	0.06	0.00	0.11	0.35	0.14	0.00
Nigeria	20	75	40	10	0.03	0.10	0.05	0.01	0.07	0.26	0.14	0.03
Pakistan	72	15	212	183	0.03	0.01	0.10	0.08	0.10	0.02	0.29	0.25
SA-Limpopo-Dry	10	28	99	39	0.01	0.03	0.10	0.04	0.03	0.07	0.26	0.10
SA-Limpopo-Irri	84	48	474	288	0.02	0.01	0.10	0.06	0.05	0.03	0.26	0.16
SA-NorthCape-Irri	201	111	543	411	0.04	0.02	0.10	0.07	0.10	0.05	0.26	0.20
SA-NorthCape-Dry	12	31	148	66	0.01	0.02	0.10	0.04	0.02	0.05	0.26	0.12
Spain	348	0	100	340	0.11	0.00	0.03	0.11	0.33	0.00	0.09	0.32
Sudan	165	210	60	170	0.09	0.12	0.03	0.10	0.25	0.32	0.09	0.26
Tanzania	22	22	58	49	0.03	0.03	0.08	0.07	0.08	0.08	0.21	0.18
Togo	28	47	60	113	0.04	0.07	0.09	0.18	0.10	0.18	0.22	0.42
Turkey	177	89	140	236	0.04	0.02	0.03	0.05	0.10	0.05	0.08	0.14
Uganda	28	45	50	1	0.03	0.05	0.06	0.00	0.08	0.12	0.14	0.00
US Total	52	95	269	147	0.03	0.05	0.13	0.07	0.07	0.12	0.34	0.19
USA-Fruitful Rim	74	135	370	206	0.03	0.06	0.17	0.10	0.09	0.17	0.45	0.25
USA-Heartland	82	150	660	187	0.02	0.04	0.19	0.06	0.06	0.12	0.51	0.14
USA-Mississippi Portal	83	160	494	223	0.03	0.05	0.15	0.07	0.07	0.13	0.40	0.18
USA-Prairie Gateway	31	45	142	54	0.02	0.04	0.11	0.04	0.06	0.09	0.29	0.11
USA-South Seaboard	75	130	322	289	0.03	0.05	0.12	0.11	0.07	0.12	0.31	0.28
Uzbekistan	0	60	100	85	0.00	0.03	0.06	0.05	0.00	0.11	0.19	0.16
Zambia	8	13	35	3	0.01	0.02	0.05	0.00	0.04	0.06	0.16	0.01
Zimbabwe	50	44	36	5	0.10	0.09	0.07	0.01	0.24	0.21	0.17	0.02
World Average	93	87	149	215	0.04	0.05	0.07	0.09	0.11	0.13	0.19	0.25



Table 19. COST OF CULTIVATION (Ha) & PRODUCTION (Kg)

	Cultivation Cost (US\$)/Hectare		Market Value (US\$)/Hectare			Net Returns (US\$)/Hectare		Production Cost (US\$)/Kg	
	Seed-Cotton	*Lint	Seed-Cotton	Lint	Seed	Seed-Cotton	*Lint	Seed-Cotton	*Lint
Argentina	277	393	423	752	242	146	601	0.17	0.28
Australia-Gwydir	3998	4595	6449	5439	1010	2450	1854	0.56	1.25
Australia-MacQuairie	4129	4643	5819	4874	944	1689	1176	0.64	1.43
Australia-McIntyre	3353	3937	5874	4974	900	2521	1937	0.51	1.16
Australia-Murrumbidgee	5114	5567	5164	4285	878	50	-403	0.90	2.06
Australia-Namoi	4719	5166	4952	4181	771	233	-214	0.83	1.93
Australia-National	4488	4984	5464	4571	892	975	480	0.74	1.69
Bangladesh	1559	1637	2047	2117	466	488	946	0.52	0.98
Brazil-Bahia	1404	1609	3200	2296	387	1795	1074	0.35	0.75
Brazil-Mato Grosso	2011	2231	3211	2726	352	1200	847	0.49	1.09
Burkina	426	456	432	590	110	6	244	0.47	0.96
Chad	175	230	181	357	25	6	152	0.37	1.04
China	3296	3656	3997	4052	773	701	1169	0.72	1.57
Colombia-Cordoba	1102	1246	1143	1116	175	41	45	0.56	1.52
Colombia-Interior	1323	1422	1487	1487	165	164	230	0.40	1.14
Egypt	1711	1860	1819	1965	532	108	637	0.76	1.55
Ethiopia	639	808	814	803	315	175	310	0.34	0.70
Greece	2040	2285	2076	2001	749	36	465	0.57	1.24
India-Andhra Pradesh	932	1006	1010	967	466	78	427	0.54	0.93
India-Gujarat	881	966	1271	1121	540	390	695	0.44	0.63
India-Haryana	640	715	1045	956	459	405	700	0.38	0.44
India-Karnataka	622	692	945	782	376	323	465	0.45	0.67
India-Madhya Pradesh	810	890	865	918	442	55	469	0.50	0.81
India-Maharashtra	760	808	859	578	279	99	49	0.74	1.52
India-National	871	941	968	802	386	97	247	0.61	1.15
India-Odisha	754	806	753	754	363	0	311	0.56	0.97
India-Punjab	717	813	749	674	325	32	186	0.60	1.20
India-Rajasthan	761	851	1283	1131	544	522	824	0.38	0.45
India-Tamil Nadu	1100	1188	1198	908	437	98	157	0.68	1.37
Iran	1178	1368	1653	1446	665	475	743	0.43	0.85
Ivory Coast	451	502	627	922	92	176	512	0.37	0.78
Kazakhstan	815	895	1026	856	358	211	319	0.32	0.69

Table 19. COST OF CULTIVATION (Ha) & PRODUCTION (Kg)

	Cultivation Cost (US\$)/Hectare		Market Value (US\$)/Hectare			Net Returns (US\$)/Hectare		Production Cost (US\$)/Kg	
	Seed-Cotton	*Lint	Seed-Cotton	Lint	Seed	Seed-Cotton	*Lint	Seed-Cotton	*Lint
Kenya	235	279	279	356	95	45	172	0.41	0.78
Malawi	442	480	250	392	102	-192	14	0.72	1.54
MALI	617	677	522	652	130	-95	105	0.57	1.26
Mexico-Baja California	1810	1932	2200	2440	250	390	758	0.41	1.10
Mexico-Chihuahua	1695	1843	2600	3000	300	905	1457	0.33	0.83
Mexico-Coahuila	1890	2078	2600	3000	300	710	1222	0.37	0.95
Mexico-Durango	1915	2103	2600	3000	300	685	1197	0.37	0.96
Mexico-Sonora	1810	1942	2350	2620	270	540	948	0.39	1.01
Mexico-Tamaulipas	1895	2060	2350	2620	270	455	830	0.40	1.08
Mozambique	335	363	223	336	83	-112	56	0.67	1.40
Nigeria	357	397	454	446	125	97	173	0.49	0.96
Pakistan	711	923	1386	1218	410	675	705	0.33	0.71
SA-Limpopo-Dry	521	620	670	638	108	149	126	0.52	1.35
SA-Limpopo-Irri	1575	2049	2400	2171	518	825	639	0.33	0.84
SA-NorthCape-Dry	590	738	750	679	162	160	103	0.39	1.01
SA-NorthCape-Irri	1787	2330	2750	2498	594	963	762	0.32	0.83
Spain	2001	2101	2229	1845	414	228	158	0.62	1.60
Sudan	1043	1103	1093	1045	166	50	108	0.59	1.44
Tanzania	374	432	391	405	98	17	70	0.50	1.20
Togo	420	480	295	467	41	-125	28	0.65	1.65
Turkey	1677	1817	2785	2927	770	1108	1880	0.37	0.60
Uganda	425	475	482	610	80	56	214	0.49	1.10
US Total	786	1,055	1,269	1,047	222	483	214	0.38	1.07
USA-Fruitful Rim	1,203	1,573	1,807	1,431	376	604	234	0.56	1.47
USA-Heartland	1,121	1,781	2,100	1,685	416	980	320	0.33	1.05
USA-Mississippi Portal	1,083	1,577	2,026	1,671	355	943	449	0.33	0.98
USA-Prairie Gateway	508	650	745	607	138	237	95	0.40	1.06
USA-Southern Seaboard	1,049	1,371	1,642	1,420	222	593	271	0.38	1.10
Uzbekistan	1073	1173	1496	1251	270	423	348	0.61	1.69
Zambia	56	91	131	358	62	75	329	0.09	0.13
Zimbabwe	271	307	336	371	112	65	176	0.54	0.94
World Average	1166	1317	1516	1385	385	350	453	0.55	1.16



Table 20. Cotton Area, Yield & Production in COVID times

	Area ('000 Hectares)				Yield (Kg/Hectare)				Production ('000 Tonnes)			
	2018	2019	2020	2021	2018	2019	2020	2021	2018	2019	2020	2021
Argentina	333	455	360	360	773	736	657	661	257	335	237	238
Australia	343	60	295	380	1,414	2,245	1,905	2,011	485	134	562	764
Bangladesh	45	46	46	46	768	772	772	776	35	35	35	36
Benin	656	666	614	620	449	467	516	521	295	311	317	323
Brazil	1,618	1,666	1,379	1,275	1,717	1,802	1,771	1,771	2,779	3,002	2,442	2,259
Burkina	646	579	556	663	283	333	356	398	183	193	198	264
Cameroon	250	250	250	253	530	560	560	616	132	140	140	156
Chad	60	248	252	252	117	298	298	358	7	74	75	90
China	3,367	3,300	3,170	3,107	1,794	1,758	1,864	1,844	6,040	5,800	5,910	5,730
Colombia	15	21	18	18	870	847	847	855	13	17	16	16
Cote d'Ivoire	392	408	445	460	514	516	483	522	202	211	215	240
Egypt	141	100	76	84	882	726	763	833	124	73	58	70
Ethiopia	78	82	82	83	737	741	741	745	57	60	61	62
Greece	277	291	286	272	1,001	1,219	1,121	1,121	277	355	321	305
India	12,614	13,373	13,477	13,477	449	464	454	490	5,661	6,205	6,120	6,609
Iran	71	71	98	98	710	711	816	820	50	50	80	80
Kazakhstan	109	131	126	126	634	634	634	638	69	83	80	80
Kenya	13	40	40	42	149	100	100	101	2	4	4	4
Malawi	86	85	84	86	248	249	249	250	21	21	21	22
Mali	698	738	165	824	395	404	375	413	276	299	62	340
Mexico	245	223	145	145	1,692	1,650	1,584	1,592	414	368	229	231
Mozambique	140	135	134	138	151	165	166	166	21	22	22	23
Myanmar	239	239	239	241	634	634	634	634	152	152	152	153
Nigeria	250	130	264	272	205	342	342	343	51	44	90	93
Pakistan	2,373	2,527	2,189	2,079	704	522	407	407	1,670	1,320	890	846
South Africa	39	28	16	16	1,126	970	1,006	1,011	44	27	16	17
Spain	65	66	62	63	1,002	1,061	1,041	1,046	65	70	64	66
Sudan	180	180	180	180	578	722	722	730	104	130	130	131
Tajikistan	191	196	196	202	535	538	565	540	102	106	111	109
Tanzania	420	441	622	641	193	247	214	220	81	109	133	141
Togo	180	181	100	100	313	265	328	329	56	48	33	33
Turkey	518	478	400	400	1,885	1,705	1,641	1,641	977	815	656	656
Turkmenistan	545	545	556	573	519	519	519	522	283	283	289	299
Uganda	81	89	101	104	430	416	426	428	35	37	43	45
USA	4,043	4,700	3,349	3,897	989	923	950	950	3,999	4,336	3,181	3,701
Uzbekistan	1,071	1,034	1,034	945	594	513	994	994	637	531	1,028	940
Zambia	140	137	136	140	190	190	190	192	27	26	26	27
Zimbabwe	197	174	240	247	228	230	230	232	45	40	55	57
World	33,162	34,563	32,195	33,325	783	756	756	765	25,961	26,145	24,325	25,481



Table 21. % Change in Cotton Area, Yield & Production in COVID times

	Area			Yield			Production		
	2019	2020	2021	2019	2020	2021	2019	2020	2021
Argentina	36.6	-20.8	0.0	-4.8	-10.8	0.6	30.1	-29.4	0.6
Australia	-82.6	394.1	28.8	58.7	-15.1	5.5	-72.4	319.4	35.9
Bangladesh	2.0	0.0	0.0	0.5	0.0	0.5	2.5	0.0	0.5
Benin	1.4	-7.7	1.0	4.0	10.5	1.0	5.4	2.0	2.0
Brazil	2.9	-17.2	-7.5	4.9	-1.7	0.0	8.0	-18.6	-7.5
Burkina	-10.5	-3.9	19.2	17.6	7.0	11.6	5.3	2.9	32.9
Cameroon	0.0	0.0	1.0	5.7	0.0	10.0	5.7	0.0	11.1
Chad	313.3	1.5	0.0	155.8	0.0	20.0	957.1	1.5	20.0
China	-2.0	-3.9	-2.0	-2.0	6.1	-1.1	-4.0	1.9	-3.0
Colombia	35.7	-10.0	0.0	-2.7	0.0	1.0	32.0	-10.0	1.0
Cote d'Ivoire	4.1	8.9	3.4	0.5	-6.4	8.0	4.6	2.0	11.6
Egypt	-28.9	-24.3	10.7	-17.7	5.1	9.2	-41.5	-20.5	20.9
Ethiopia	5.0	1.0	1.0	0.5	0.0	0.5	5.5	1.0	1.5
Greece	5.2	-1.8	-5.0	21.7	-8.0	0.0	28.1	-9.7	-5.0
India	6.0	0.8	0.0	3.4	-2.1	8.0	9.6	-1.4	8.0
Iran	0.0	38.3	0.0	0.1	14.9	0.5	0.1	58.9	0.5
Kazakhstan	20.4	-4.1	0.0	0.0	0.0	0.5	20.4	-4.1	0.5
Kenya	197.8	0.0	5.0	-32.8	0.0	0.5	100.0	0.0	5.5
Malawi	-2.0	-1.0	3.0	0.5	0.0	0.5	-1.5	-1.0	3.5
Mali	5.7	-77.7	400.0	2.4	-7.2	10.1	8.3	-79.3	450.3
Mexico	-8.9	-35.1	0.5	-2.5	-4.0	0.5	-11.2	-37.7	1.0
Mozambique	-3.6	-1.0	3.0	9.3	0.0	0.5	5.4	-1.0	3.5
Myanmar	0.0	0.0	1.0	0.0	0.0	0.1	0.0	0.0	1.1
Nigeria	-48.0	103.1	3.0	67.0	0.0	0.5	-13.2	103.1	3.5
Pakistan	6.5	-13.4	-5.0	-25.8	-22.2	0.0	-21.0	-32.6	-5.0
South Africa	-28.6	-42.7	3.0	-13.9	3.6	0.5	-38.5	-40.6	3.5
Spain	1.5	-6.6	3.0	5.9	-1.9	0.5	7.5	-8.4	3.5
Sudan	0.0	0.0	0.0	25.0	0.0	1.0	25.0	0.0	1.0
Tajikistan	3.0	0.0	3.0	0.5	5.0	-4.3	3.5	5.0	-1.4
Tanzania	5.0	41.1	3.0	28.2	-13.5	3.0	34.6	22.0	6.1
Togo	0.5	-44.6	0.0	-15.5	23.9	0.5	-15.1	-31.4	0.5
Turkey	-7.7	-16.3	0.0	-9.6	-3.8	0.0	-16.5	-19.5	0.0
Turkmenistan	0.0	2.0	3.0	0.0	0.0	0.5	0.0	2.0	3.5
Uganda	9.9	13.5	3.0	-3.2	2.4	0.5	6.4	16.2	3.5
USA	16.3	-28.7	16.4	-6.7	3.0	0.0	8.4	-26.6	16.3
Uzbekistan	-3.5	0.0	-8.6	-13.6	93.6	0.0	-16.6	93.6	-8.6
Zambia	-2.0	-1.0	3.0	0.1	0.0	1.0	-1.9	-1.0	4.0
Zimbabwe	-11.7	37.5	3.0	0.6	0.0	1.0	-11.1	37.6	4.0
World	4.2	-6.9	3.5	-3.4	-0.1	1.2	0.7	-7.0	4.8



Table 22. Raw Cotton Imports, Consumption & Exports in COVID times

	Imports ('000 Tonnes)				Consumption ('000 Tonnes)				Exports ('000 Tonnes)			
	2018	2019	2020	2021	2018	2019	2020	2021	2018	2019	2020	2021
Argentina	1	1	1	1	167	134	135	135	118	85	102	102
Australia	0	0	0	0	3	2	2	2	791	295	230	588
Bangladesh	1,544	1,500	1,617	1,624	1,579	1,500	1,635	1,660	0	0	0	0
Benin	0	0	0	0	1	1	1	1	292	224	357	370
Brazil	4	1	1	1	730	610	610	622	1,310	1,946	2,002	2,138
Burkina	0	0	0	0	3	3	3	3	200	154	258	231
Cameroon	0	0	0	0	2	2	2	2	125	115	164	147
Chad	0	0	0	0	0	0	0	0	7	49	62	83
China	2,100	1,554	2,400	2,450	8,250	7,250	8,100	8,200	38	50	30	30
Colombia	18	14	11	11	30	27	27	27	0	0	0	0
Cote d'Ivoire	0	0	0	0	2	2	2	3	195	140	246	277
Egypt	105	81	139	89	143	107	105	103	86	67	92	56
Ethiopia	6	3	3	1	52	54	55	56	7	7	7	7
Greece	7	7	7	7	16	16	16	16	295	319	325	300
India	392	496	187	187	5,400	4,453	5,151	5,409	765	696	1,190	1,188
Iran	71	48	70	70	116	98	150	150	0	0	0	0
Kazakhstan	1	1	1	1	13	13	13	13	85	65	68	68
Kenya	3	3	3	3	4	4	8	8	0	0	0	0
Malawi	0	0	0	0	3	3	3	3	9	14	23	19
Mali	0	0	0	0	2	2	2	2	300	229	154	283
Mexico	183	129	128	171	440	440	297	303	113	144	100	100
Mozambique	0	0	0	0	1	1	1	1	20	18	27	22
Myanmar	49	8	17	27	192	163	163	165	9	7	16	16
Nigeria	1	1	1	1	28	25	30	30	29	23	36	64
Pakistan	600	890	1,272	1,316	2,360	1,984	2,152	2,152	16	9	9	9
South Africa	15	8	8	8	19	13	13	13	31	35	23	12
Spain	2	2	2	2	3	3	3	3	70	69	63	68
Sudan	0	0	0	0	18	18	18	18	86	79	104	127
Tajikistan	0	0	0	0	15	15	15	15	85	82	96	96
Tanzania	0	0	0	0	44	45	45	45	43	41	65	96
Togo	0	0	0	0	0	0	0	0	47	38	56	33
Turkey	786	1,017	1,012	1,051	1,555	1,477	1,580	1,620	155	98	88	87
Turkmenistan	0	0	0	0	141	141	143	144	127	149	121	155
Uganda	0	0	0	0	2	4	4	4	33	23	39	40
USA	1	1	1	1	628	468	501	545	3,365	3,381	3,414	2,931
Uzbekistan	0	0	0	0	583	724	796	836	159	100	12	14
Zambia	0	0	0	0	2	2	2	2	34	20	26	26
Zimbabwe	0	0	0	0	3	3	3	3	39	28	52	54
World	9,221	8,683	9,838	10,014	25,887	22,751	24,814	25,330	9,299	9,029	9,838	10,014



Table 23. % Change in Cotton Imports, Consumption & Exports in COVID times

	Imports			Consumption			Exports		
	2019	2020	2021	2019	2020	2021	2019	2020	2021
Argentina	0.0	0.0	0.0	-20.0	0.5	0.5	-28.5	21.2	0.0
Australia				-50.0	0.0	0.0	-62.7	-22.0	155.7
Bangladesh	-2.9	7.8	0.4	-5.0	9.0	1.5			
Benin				-30.0	0.0	0.0	-23.3	59.4	3.5
Brazil	-72.1	0.0	0.0	-16.4	0.0	2.0	48.5	2.9	6.8
Burkina				0.0	0.0	0.0	-22.9	66.9	-10.3
Cameroon				0.0	0.0	0.0	-7.7	43.0	-10.8
Chad				-23.1	0.0	0.0	610.1	26.4	34.3
China	-26.0	54.5	2.1	-12.1	11.7	1.2	31.6	-40.0	0.0
Colombia	-25.0	-17.4	-1.4	-10.0	0.0	0.0			
Cote d'Ivoire				0.0	0.0	50.0	-28.5	76.2	12.5
Egypt	-22.9	71.0	-35.9	-25.3	-2.0	-2.0	-22.5	37.2	-38.8
Ethiopia	-36.8	0.0	-82.9	4.0	1.0	1.0	0.0	0.0	0.0
Greece	-2.1	0.0	0.0	-0.5	0.0	0.0	8.3	1.7	-7.6
India	26.7	-62.3	0.0	-17.5	15.7	5.0	-9.0	71.0	-0.2
Iran	-32.2	46.4	0.0	-15.0	52.8	0.0			
Kazakhstan	0.0	0.0	0.0	0.0	0.0	0.0	-23.5	4.0	0.0
Kenya	0.0	0.0	-6.0	0.0	100.0	0.5	0.0	-100.0	
Malawi				0.0	0.0	0.0	51.7	64.6	-17.6
Mali				0.0	0.0	0.0	-23.6	-32.6	82.9
Mexico	-29.6	-0.6	34.1	0.0	-32.5	2.0	26.7	-30.4	0.0
Mozambique				8.3	0.0	0.0	-9.8	50.0	-20.2
Myanmar	-84.6	128.7	57.4	-15.0	0.0	1.0	-22.7	125.4	0.0
Nigeria	0.0	0.0	0.0	-10.0	20.0	0.0	-19.3	53.5	80.3
Pakistan	48.3	42.9	3.5	-15.9	8.5	0.0	-39.7	0.0	0.0
South Africa	-43.8	0.0	0.0	-32.8	0.0	0.0	14.0	-35.0	-48.2
Spain	3.0	0.0	0.0	-17.6	0.0	0.0	-0.9	-8.9	7.9
Sudan				0.5	0.0	0.0	-8.2	31.9	22.3
Tajikistan				0.0	0.0	0.0	-4.1	17.6	0.0
Tanzania				3.0	0.0	0.0	-4.1	58.6	47.7
Togo							-19.5	46.7	-41.1
Turkey	29.5	-0.5	3.8	-5.0	7.0	2.5	-37.0	-10.0	-1.0
Turkmenistan				0.0	1.0	1.0	16.9	-18.9	27.9
Uganda				117.6	16.2	0.0	-30.3	66.0	3.9
USA	0.0	0.0	0.0	-25.5	7.1	8.8	0.5	1.0	-14.2
Uzbekistan				24.2	10.0	5.0	-37.1	-88.1	14.4
Zambia				0.0	0.0	0.0	-41.1	30.2	0.3
Zimbabwe				0.0	0.0	0.0	-27.7	83.3	3.0
World	-5.8	13.3	1.8	-12.1	9.1	2.1	-2.9	9.0	1.8



Table 24. VARIETIES ACROSS THE WORLD AND THEIR FIBRE TRAITS

	Name of the Variety	Release Year	% Area	Ginning %	Length UHML mm	Strength g/tex	Mic
Argentina	Nuopal RR	2009	70	36	27	30	4
	DP 1238 BGRR	2013	25	39	29	30	4.9
	Guazuncho 2000 RR	2001	2	39	29	30	3.8
	DP402 BGRR	2011	1	36	30.3	29.9	4.5
	Pora 3 INTA BGRR	2019	0.6	40	29.4	33.2	4.5
	Guarani INTA BGRR	2019	0.6	38.7	29.4	32.2	4.9
	Guazuncho 4 INTA BGRR	2019	0.6	37.8	30	33.4	4.6
Australia	Sicot 714B3F	2016	18	42	30.5	30	4.4
	Sicot 746B3F	2016	40	45	30.7	30	4.5
	Sicot 748B3F	2016	35	44	31.2	31	4.5
	Sicot 754B3F			43	31.5	31	4.5
	Sicot 707B3F			42	30.2	30	4.6
	Sicot 606B3F*			43	30.2	31.9	4
	Sicot 711RRF			43	30.2	30	4.4
	Sicot 812RRF			41	31.2	31	4.3
	Sicot 620			45	32	31.1	4.1
	Siokra 250			41	33	32.6	4.2
Bangladesh	HILL COTTON						
	HC-1	2000	10	41	16	77 PSI	6.5
	HC-2	2002	5	41	18	77 PSI	6.3
	HC-3	2015	5	46	18	78 PSI	6.4
	VARIETIES IN DHAKA, JASHORE, RANGPUR AND CHITTAGONG REGION (PLAIN AREAS)						
	CB-9	2000	1	36	28	30.1	4.6
	CB-12	2010	9	40	29	30.5	4
	CB-13	2013	5	42	29.5	29	3.8
	CB-14	2013	10	39	30.5	30.4	3.9
	CB-15	2016	10	40.7	29.5	40	5.2
	HSC-4 (Hybrid)	2009	30	40	30.5	29.5	4.3
	CB Hybrid-1	2015	5	42	30.56	86.25Psi	4-4.5
	CB-16	2017	2	42	30.56	86.25Psi	4.4
	CB-17	2018	4	40-42	28.19	84-85Psi	4.1
	CB-18	2019	4	41	31	84.87Psi	4.35
Benin	ANG 956	2015	62	39	31	34	4.4
	OKP 768	2015	28	40	30	31	4.2
	KET 782	2015	10	40	30	31	4.3



	Name of the Variety	Release Year	% Area	Ginning %	Length UHML mm	Strength g/tex	Mic
Brazil	MATO-GROSSO						
	FM 944 GL	2016	19.94	40 - 42	30	31.8	3.9
	TMG 81 WS	2013	19.1	45.5	29	30	4.6
	TMG 44 B2RF	2018	15.35	43.1	30.3	31.1	3.99
	FM 954 GLT	2016	8.61	43.3	31.8	30.3	4.3
	TMG 47 B2RF	2019	8.2	43.5	31.81	29.03	3.93
	FM 983 GLT	2016	5.4	40 - 41	30.2	30.9	4
	BAHIA						
	FM 975 WS	2017	13.5	41	29.3	29.96	4
	TMG 81 WS	2013	13.1	43	29	30.8	4.27
	DP 1536 B2RF	2013	12.7	39 - 41	29.58	31.5	4.4
	FM 983 GLT	2016	6.8	40 - 41	30.2	30.2	4
	TMG 42 WS	2014	6.1	42.9	30.1	30.7	4.01
	TMG 47 B2RF	2019	5.8	43.5	31.81	29.03	3.93
	GOIAS						
	TMG 44 B2RF	2018	29.8	43.1	30.3	31.1	3.99
	IMA 5801 B2RF	2019	21.2	37 - 39	29.89	30.87	4.3
	FM 906 GLT	2017	18.7	41	28.5	29.7	3.9
	FM 944 GL	2016	5	40 - 42	30	31.8	3.9
	IMA 8405 GLT	2016	3.5	40 - 41	29 - 31	29 - 30	3.9 - 4.3
	FM 954 GLT	2016	2	43.3	31.8	30.3	4.3
Burkina	FK 37	2000	94		29.3	30.7	4.1
	FK 64	2014	4		30.4	30.3	4
	STAM 59A	1997	2		28.1	29.1	4.2
Cameroon	IRMA L457	2008	67	44.7	28.6	30.3	3.8
	IRMA L484	2007	33	41.5	29.9	30.5	3.8
	IRMA Q302	2012	< 1	44.2	30.5	31.3	3.7
Chad	Varieties in West Region						
	IRMA Q302	2019	33	42	30.5	29.5	3.8
	A51	1991	11	41.5	28.2	21.4	3.8
	Varieties in Central Region						
	IRMA Q302	2019	18	42	30.5	29.5	3.8
	Varieties in East 1 Region						
	IRMA Q302	2019	22	42	30.5	29.5	3.8
	Varieties in East 2 Region						
	IRMA Q302	2019	12	42	30.5	29.5	3.8
	STAMF	1983	5	41.7	28.9	21.5	3.9



	Name of the Variety	Release Year	% Area	Ginning %	Length UHML mm	Strength g/tex	Mic
China	Xinjiang						
	Xinluzhong 36, 37, 42, 47, 54			36-38	28-30	26-30	3.8-4.5
	Xinhai 21, 24, 35, 36			37-39	27-30	27-30	3.8-4.5
	Xinluzao 36, 37, 41, 48, 50, 57			35-39	27-30	27-30	3.8-4.5
	Yellow River						
	CRI 50	2007	15		29.5	27.9	4.4
	Yangtze River						
	CRI 63	2007	10		30	29.1	4.8
Colombia	Varieties in Interior						
	FM1830 GLT	2019	50		1 5/32	33	4.6
	FM2334 GLT	2019	30		1 5/32	33	4.6
	ST 6182 GLT	2019	10		1 5/32	33	4.6
	FM9250 GL(REF)	2019	10		1 5/32	33	4.6
	Varieties in Coastal						
	FM 1830 GLT		66		30.162	33	4.6
	FM 2334 GLT		28.4		30.162	33	4.6
	FM 2322 GLT		1.9		29.368	34	4.5
	FM 9250 GL		0.4		31.75	34	4.4
	LCER 0044		0.2		30.162	31	4.3
	SINIANA M-137		3.1		29,368	29	4.2
Cote d'Ivoire	Y 331 BLT	2014	65	44	29		
	Y 331 C	2013	5	43	28		
	GOUASSOU Fus 1	2018	10	45	29		
	SICAMA Vir 1	2018	10	43	28.5		
Egypt	Varieties in kafr El-Sheikh						
	Giza 96	2017	1	38	35.6	44.3	4.2
	Giza 94	2016	32	39	33.3	42.3	4.2
	Varieties in Beheria		0	0			
	Giza 86	1998	12	39	32.5	43	4.3
	Varieties in Dakahlia		0	0			
	Giza 94	2016	19	39	33.3	42.3	4.2
	Varieties in Sharkia		0	0			
	Giza 94	2016	17	39	33.3	42.3	4.2
	Varieties in Gharbia		0	0			
	Giza 86	1998	0	39	32.5	43	4.3
	Giza 94	2016	4	39	32.8	41.3	4.3
	Varieties in Fayyoun		0	0			
	Giza 95	2015	5	40	29.3	36.5	4.3



	Name of the Variety	Release Year	% Area	Ginning %	Length UHML mm	Strength g/tex	Mic
Egypt	Varieties in Others		0	0			
	Giza 92	2010	4	38	34	47.3	3.7
Ethiopia	Dp-90	1996	95	37	28.8	27.15	4.55
	Acla SJ-2	1993	1	36	27.5	27	4.5
	Claudia	2017	1	46	29.5	29.6	4.6
	werer -50	2018	0.5	38.9	28.5	27.5	4.3
	Woyito	2018	0.5	38	28.5	27.2	4.5
Greece	Varieties in Thessaly						
	CELIA	2000	23		28.0-29.0	29-30	4.0-4.3
	HERSI	2009	14		26.5-30.0	30-31	4.1-4.2
	ST 402	2008	10		28.5-29.0	28-30	4.4-4.7
	ELPIDA		9				
	Varieties in Makedonia		0				
	ST 402	2008	32		28.5-29.0	28-30	4.4-4.7
	ST 318	2008	11		28.0-29.0	28.5-30	4.3-4.5
	ELPIDA		11				
	DP 332	2010	3		28.0-29.0	29-30	4.3-4.5
	Varieties in Thraki		0				
	ST 402	2008	24		28.5-29.0	28-30	4.4-4.7
	ST 474	2003	7		27.0-28.0	29-30	4.7-4.9
	ST 318	2008	6		28.0-29.0	28.5-30	4.3-4.5
	ELPIDA		5				
	Varieties in Others		0				
	ST 402	2008	35		28.5-29.0	28-30	4.4-4.7
	ELPIDA		21				
	LIDER		6				
	PHY 983		4				
	ST 318	2008	4		28.0-29.0	28.5-30	4.3-4.5
India	PUNJAB						
	RCH773 BGII	2012	40	35-36	26-27.5	29-30	4.5
	RCH776 BGII	2012	30	34-35.5	27-28	28-30	4.4
	RCH650 BGII	2010	5	35-36	28-29	29-31	4.5
	RCH653 BGII	2010	2	35-36.5	27-28	29-30	4.5
	SAKTHI9 BGII	2010	0.9	34-35	28-29	30-31	4.3
	MRCH 7365BG-II	2009		35-36.5	27-28	29-30	4.5
	Bio 2510-2BG-II	2008		33-35	28-30	21-22	4.2-4.5
	SP 7172BG-II	2017		33-36	28-30	21-22	4.2-4.5



	Name of the Variety	Release Year	% Area	Ginning %	Length UHML mm	Strength g/tex	Mic
India	PUNJAB						
	SWCH-4755BG-II	2010		33-37	28-31	27-29	4.2-4.6
	Bioseed 6488 BG2	2006		33-35	28-30	21-22	4.2-4.5
	Bioseed 6588 BG2	2008		33-36	28-30	21-22	4.2-4.5
	SWCH-4744BG-II	2010		33-38	27-29	27-30	4.2-4.7
	Ankur3028BG-II	2009		33-40	27-29	27-32	4.2-4.9
	ACH 155 BG2	2010		35	29-30	29-31	4.3
	NCS495BG-II	2012		34.5	32.5	29.1	3.25
India	HARYANA						
	RCH773 BGII	2014	25	35-36	26-27.5	29-30	4.5
	RCH776 BGII	2012	30	34-35.5	27-28	28-30	4.4
	RCH650 BGII	2010	7	35-36	28-29	29-31	4.5
	RCH653 BGII	2010	2	35-36.5	27-28	29-30	4.5
	Bioseed 6488 BG2	2006		33-35	28-30	21-22	4.2-4.5
	Bioseed 6588 BG2	2008		33-36	28-30	21-22	4.2-4.5
	SP7172BG-II			33-37	28-31	27-29	4.2-4.6
	SWCH-4744BG-II	2010		33-38	27-29	27-30	4.2-4.7
	Ankur3028BG-II	2009		33-40	27-29	27-32	4.2-4.9
	NCS495BG-II	2012		34.5	32.5	29.1	3.25
India	RAJASTHAN						
	RCH773 BGII	2014	5	35-36	26-27.5	29-30	4.5
	RCH776 BGII	2012	20	34-35.5	27-28	28-30	4.4
	RCH650 BGII	2010	8	35-36	28-29	29-31	4.5
	RCH653 BGII	2010	2	35-36.5	27-28	29-30	4.5
	RCH314 BGII	2009	25	35-36	26-27.5	29-30	4.5
	RCH569 BGII	2008	15	35-36	29-31.5	30-31	4.2
	SP7172BG-II			31.7	28.9	28.5	3.8
	SWCH4755BG-II	2010		34.3	30.9	28.8	3.7
	NCS495BG-II	2012		34.5	32.5	29.1	3.25
	MRCH7365BG-II	2009		33.4	30.2	28.7	3.45
	ACH 155 BG2	2010		35	29-30	29-31	4.3
India	GUJARAT						
	RCH659 BGII	2010	10	34-35	28-31	29-30	4.3
	RCH779 BGII	2012	0.2	35-36	28-29	28-29	4.2
	RCH578 BGII	2008	6	34-35	28-29	29-30	4.5
	RCH530 BGII	2009	2	34-35	28-29	29-30	4.5



	Name of the Variety	Release Year	% Area	Ginning %	Length UHML mm	Strength g/tex	Mic
India	GUJARAT						
	RCH386 BGII	2010	2	34-35	28-30	29-30	4.2
	RCH2 BGII	2007	2	35-36	29-30	27-28	4.3
	Mallika BG2	2008		35-36	>32.5	28-29	3-3.9
	Jaadoo BG2	2009		35	30-32	28-29	4.3
	ATM BG2	2010		35	30-32	28-29	4.2
	Ajeet-155 BG2	2010		35	30-32	28-29	4.5
	G.Cot.Hy.8 BG II	2012	0.01	35.4	28.8	27-28	4.2
	G.Cot.Hy.10 BG II	2015	0.07	33.8	28.8	27-29	4.3
	G.Cot.Hy.12 BG II	2015	0.01	33.4	28.8	27-30	4.5
	GTHH 49 BG II	2014	0.03	36.3	28.7	27-31	4.4
India	MADHYA PRADESH						
	RCH659 BGII	2010	40	34-35	28-30	29-30	4.3
	RCH779 BGII	2014	0.2	35-36	28-29	28-29	4.2
	RCH578 BGII	2008	5	34-35	28-29	29-30	4.5
	RCH530 BGII	2009	3	34-35	28-29	29-30	4.5
	RCH386 BGII	2010	7	34-35	28-30	29-30	4.2
	RCH2 BGII	2007	1	35-36	29-30	27-28	4.3
	RCHB625BGII	2010	1	30-31	37-38	34-36	3.5
	RCHB708BGII	2014	1	29-30	36-37	34-35	4
	Ajeet-155 BG2	2007		35	30-32	29-30	4.0-4.5
	Mallika BG2	2008		36	30-32	28-29	4.0-4.5
	ACH 155 BG2	2010		36-37	29-30	29-30	4.3
	Suraj	2008		34	30-32	27-28	4
	Gold Cot (NCS 909)	2009		34-35	28-30	29-30	4.3
	Super Cot (PCH 115)	2009		33-34	28-31	29-30	4.2
	Money Maker	2010		34-35	28-30	28-29	4.4
	Moksha (KCH- 15 K 39)	2009		34-35	28-29	29-30	4.3
India	MAHARASHTRA						
	RCH659 BGII	2010	16	34-35	28-30	29-30	4.3
	RCH779 BGII	2012	4	35-36	28-29	28-29	4.2
	RCH578 BGII	2008	7	34-35	28-29	29-30	4.5
	RCH530 BGII	2009	2	34-35	28-29	29-30	4.5
	RCH386 BGII	2010	5	34-35	28-30	29-30	4.2
	RCH2 BGII	2007	1	35-36	29-30	27-28	4.3
	RCH608 BGII	2009	0.2	37-38	28-29	28-29	4.3
	Suraj	2008		34	30-32	27-28	4



	Name of the Variety	Release Year	% Area	Ginning %	Length UHML mm	Strength g/tex	Mic
India	MAHARASHTRA						
	AKH 081	1984		34	25	24	4.2
	NH 615	2007		35	27.8	20.6	3.5
	AKA 07	2007		40	22	20	4.8
	Ajeet-155 BG2	2007		35	30-32	28-29	4.0-4.5
	Mallika (NCS 207 BG II)	2008		36	30-32	29-30	4.0-4.5
	Surpass First Class (SP 7149)	2011		34-35	28-30	29-30	4.2
	Jaadoo BG2	2009		34-35	28-29	29	4.5
	Money Maker	2010		34	28-29	29-30	4.2
	ATM (KCH-311)	2010		34-35	28-30	29-30	4.3
	Ankur 3028	2009		35	29-30	27-28	4.3
	Bindass (7213-2 BG II)	2010		33-34	28-29	28-29	4
	Vittal (GBCH 8888)	2012		34	29-30	28	4.2
India	TELANGANA						
	RCH659 BGII	2010	17	35-36	29-31.5	29-30	4.3
	RCH386 BGII	2014	10	35-36	28-30	29-30	4.3
	RCH530 BGII	2007	7	35-37	28-29	29-30	4.5
	RCH668 BGII	2011	5	36-37	28-30	28-29	4.5
	RCH578 BGII	2011	7	35-36	28-30	29-30	4.5
	MRC 7017 plus BG II	2012		34-35	28-29	29-30	4.2
	SADANAND (KSCH-232 BG II)	2015		35-36	28-30	28-29	4.3
	AJEET -155 BG-II	2007		34-35	28-29	29-30	4.2
	DHANDEV MRC-7373-BG-II	2009		33-35	28-30	28-29	4.4
	BHAKTI BG-II (NCS 245)	2012		35-36	27-32	25-28	4-4.9
	FIRST CLASS BG-II (SP 7149 BGII)	2011		33-35	28-29	29-30	4.5
	Yuva BG2	2010		34	30-32	21-23	4.0-4.5
	Aarvinda (Desi)	1998		35	22	20	5.5
	Jaadoo BG2	2009		34-35	30-32	21-23	4.0-4.5
India	ANDHRA PRADESH						
	RCH659 BGII	2010	17	35-36	29-31.5	29-30	4.3
	RCH668 BGII	2011	3	36-37	28-30	28-29	4.5
	RCH578 BGII	2011	4	35-36	28-30	29-30	4.5
	RCH530 BGII	2007	2	35-37	28-29	29-30	4.5
	RCH386 BGII	2014	4	35-36	28-30	29-30	4.3
	Jaadoo BG2	2009		34-35	30-32	21-23	4.0-4.5
	ATM (KCH 311 BG II)	2010		34-35	28-30	29-30	4.3
	Money Maker	2010		34	28-29	29-30	4.2
	KSCH-232 BG II	2014		35-36	28-30	28-29	4.3



	Name of the Variety	Release Year	% Area	Ginning %	Length UHML mm	Strength g/tex	Mic
India	ANDHRA PRADESH						
	US Agri 7067 (SWCH 4749)	2017		32-33	31-33	31	4
	Khiladi (KCHB 3355 BG II)	2015		35-37	28-29	29-30	4.5
	SUPERCOT (PCH-115 BGII)	2007		33-34	28-31	29-30	4.2
	Zabardast (NCS 2123 BG II)	2012		35-36	28-30	29-30	4.5
	Tadaka (KSCH-207)	2010		35-37	28-29	29-30	4.5
India	KARNATAKA						
	RCH659 BGII	2010	4	35-36	29-31.5	29-30	4.3
	RCH668 BGII	2011	0.5	36-37	28-30	28-29	4.5
	RCH578 BGII	2011	0.5	35-36	28-30	29-30	4.5
	RCH530 BGII	2007	0.5	35-37	28-29	29-30	4.5
	RCH386 BGII	2014	1	35-36	28-30	29-30	4.3
	RCHB625BGII	2012	1	30-31	37-38	35-37	3.5
	RCHB708BGII	2012	1	29-30	36-37	34-35	3.5
	Yuva	2010	13	32-33	29-31	29.5	4
	US7067	2017	9	32-33	31-33	31	4
	Jadoo	2011	8	36.9	30-31.5	30	5.3
	Puli (H*B)	2011	9.5	34-35	32-34	32.5	3.5
	MRC7383	2013	5.5	34-35	31-32	23	4.2
	DHB 1071	2014		33	35-36	26-28	3.2-3.5
	DHH 263	2012		38-39	29-30	22-23	4.0-4.5
	DHB 915	2010		33.7	34	27	3.4
	ARBH-813	2010		36-37	27-28	21-22	4.0-4.5
	Sahana	2000		38	24.3	19	4.1
	DHH 11	2000		38-39	29.2	19.5	4
	DHH 543	2004		37-38	26-29	20.5	4.2
	DHB 105	2000		34	32.6	23	2.9
	Money Maker (KCH-100 BG II)	2010		34	28-29	29-30	4.2
	KAVERI (KCH-111 BG-II)	2009		36	30-31	29-30	5.3
	MRC-7383 BG-II	2009		35	30	29-30	4.4
	FIRST CLASS BG-II	2011		34-35	28-30	29-30	4.3
	AJEET -111-2	2012		34	29	29	4.2
	DHANDEV MRC-7373-BG-II	2009		33-35	29-30	29-30	4.3
	ATM BG-II (KAVERI)	2010		34-35	28-30	29-30	4.3
	AJEET -155 BG-II	2007		34-35	28-29	29-30	4.2
	BINDASS BG-II (7213-2)	2010		33	30	30	4.2
	Minerva (SP 911-B2 BG II)	2012		36	32	32	3.6
	MRC 7918 BG II	2008		35-36	28-30	25-28	3.5



	Name of the Variety	Release Year	% Area	Ginning %	Length UHML mm	Strength g/tex	Mic
India	TAMILNADU						
	RCH659 BGII	2010	40	35-36	29-31.5	29-30	4.3
	RCH668 BGII	2011	3	36-37	28-30	28-29	4.5
	RCH578 BGII	2011	5	35-36	28-30	29-30	4.5
	RCH530 BGII	2007	3	35-37	28-29	29-30	4.5
	RCH386 BGII	2014	8	35-36	28-30	29-30	4.3
	Jaadoo BG2	2009			30-32	21-23	4.0-4.5
	BHAKTI BG-II (NCS 245)	2012		35-36	27-32	25-28	4-4.9
	Bioseed 6188-II HB	2011	4	34-35	32-34	32.5	3.5
	Bahubali (MRC 7918)	2008		35-36	28-30	25-28	3.5
	Subari	1993	5	34	32.5	22.6	3.8
	MCU 5	1968	2	34	34	23	3.5
	MCU 7	1972	1	34	26	21.5	3.9
	SVPR 2	2000	2	33.5	26.5	21.3	4.2
	SVPR 4	2009	1	34	28	22	4
	Suraj	1992	5	36	34	24	3.6
	Anjali	1982	1	38	28	21	3.4
	LRA 5166	1982	4	33	26	21	3.8
	ATM (KCH 311 BG II)	2010		34-35	28-30	29-30	4.3
	Money Maker	2010		34	28-29	29-30	4.2
India	ORISSA						
	RCH659 BGII	2010	15	35-36	29-31.5	29-30	4.3
	RCH668 BGII	2011	4	36-37	28-30	28-29	4.5
	RCH578 BGII	2011	3	34-35	28-30	29-30	4.5
	RCH530 BGII	2007	3	34-35	28-29	29-30	4.5
	RCH386 BGII	2014	4	35-36	28-30	29-30	4.3
	JK-Durga	2010		35	32.1	23.4	4.5
	Atal	2009		36	33.6	23.2	4.2
	Dhanno	2009		36	32.4	23.8	4.5
	Gabbar	2007		35	32.6	23.1	4.6
	Sri Tulasi	2009		36	33.3	24.1	4.6
	Bunny	2005		35	32.4	23.9	4.5
Iran	Varieties in East and Central						
	Golestan		25	30	29	30	4.3-4.6
	Sajedi		7	31	27	28	4.5-4.7
	Armaghan		5	30	29	30	4.7
	Varamin		20	31	30	32	4.5-4.7
	Khordad		5	30	28-30	30-31	4.5-4.8



	Name of the Variety	Release Year	% Area	Ginning %	Length UHML mm	Strength g/tex	Mic
Iran	Varieties in East and Central						
	May		5	31	31	33	4.6
	Maxa		3	32			
	Lider		3	32			
	Varieties in Fars						
	Golestan		70	30	28	29	4.7
	Sajedi		6	31			
	Armaghan		6	30			
	Karisma		3	32	29	30	4
	Maxa		5	32	29	31	4.2
	Lider		5	32			
	Varieties in Golestan and Mazandran						
	Golestan		55	30	29-30	30-31	4.6
	Latif		3	31	30	32	4.5-4.8
	May		25	31	30-31	30-31	4.3
	Lodos		1	32	31-32	32-33	4
	Varieties in Ardebil						
	Sajedi		4	31	29	30	4.3
	Varamin		3	31	29	28	4.6
	May		55	31	30	31-33	4.5-4.8
	AGN112-115		3	32			
Kazakhstan	M-4005	2006	20	36.8	32.6	25-29	4.7
	M-4007	2009	30	37.5	33	25-29	4.7
	M-4011	2010	35	37.8	33.1	25-29	4.7
	PA 3044			38.2	32.6	25-29	4.7
	Bereke-07			37.6	33	25-29	4.7
	Myrzashol			38.5	33.3	25-29	4.6
Kenya	Varieties/Hybrids in Coastal						
	C567	2019	22	36	25-35	26-31	3.7-4.7
	C570	2019	40	36	25-35	26-31	3.7-4.7
	C571	2019	28	36	25-35	26-31	3.7-4.7
	HART 89M	1989	10	34	25-35	28-30	3.7-4.7
	Varieties in Eastern						
	HART 89M	1989	100	34	25-35	28-30	3.7-4.7
	Varieties in Western						
	KSA 81M	1981	80	34	25-35	28-30	3.7-4.7
	C567	2019	8	36	25-35	26-31	3.7-4.7
	C570	2019	6	36	25-35	26-31	3.7-4.7



	Name of the Variety	Release Year	% Area	Ginning %	Length UHML mm	Strength g/tex	Mic
Kenya	Varieties in Western						
	C571	2019	6	36	25-35	26-31	3.7-4.7
	Varieties/Hybrids in Others-Rift Valley						
	KSA 81M	1981	38%	34			
	C-567	2019		36	25-35	26-31	3.7-4.7
	C-570	2019	62%	36	25-35	26-31	3.7-4.7
	C-571	2019		36	25-35	26-31	3.7-4.7
Malawi	MAKOKA 2000	2000	10	~30	~34	28-33	
	RASAM 34		5	~30	~32	28-33	
	IRM		5	~30	~34	28-33	
	CHUREZA		35	~30	~35	28-33	
	MAHYCO HYBRIDS	2018	15	~28	~27	28-33	
	QM-301	2004	25	~30	~32	28-33	
Mali	Stam 59A	1996	50	43.8	29.1	28.2	4.1
	Stam 279A	2003	11	43.4	28.5	26.6	4.3
	NTA 90-5	1996	20	43.5	30.7	29	4.1
	NTA 93-15	2004	11	44.9	29.9	26.9	3.8
	G 440	2004	8	42.7	28.2	26.8	4.3
Mexico	Chihuahua						
	DP 1555			44	30.2	31.2	4.5
	DP 1219			36	29.2	30.3	4.1
	DP 1441 RF			38.4	26.5	30.4	3.9
	DP 1845			44	1.21	30.5	4.5
	Baja California						
	DP 1555			44	30.2	31.2	4.5
	DP 1219			36	29.2	30.3	4.1
	DP 1441 RF			38.4	26.5	30.4	3.9
	DP 1845			44	1.21	30.5	4.5
	Coahuila						
	DP 0912 B2RF			39.5	28.5	29.4	4.9
	FM 1740			35	27.8	28.5	4.5
	DP 1321			39.7	29.2	31.2	4.8
	Tamaulipas						
	DP 1219 BR2			36	29.2	30.3	4.1
	Durango						
	DP 0912 B2RF			39.5	28.5	29.4	4.9
	DP 1441 RF			38.4	26.5	30.4	3.9



	Name of the Variety	Release Year	% Area	Ginning %	Length UHML mm	Strength g/tex	Mic
Mexico	Durango						
	Sonora						
	DP 1219			36	28.5	28.8	4.1
	DP 1359			32	30.2	32.4	4
	DP 1441 RF			38.4	26.5	30.4	3.9
	DP 1555			44	30.2	31.2	4.5
	DP 1845			44	1.21	30.5	4.5
	DP 1822			43	1.18	33.2	4.7
Mozambique	ALBAR SZ 9314	1999	2.00	41.57	28.60	26-29	3.5-4.0
	Chureza	1994	5.00	40	28.60	26-28	3.5-4.0
	CA-324	1994	93.00	41.60	28.60	33.00	3.5-4.0
Myanmar	Ngwe Chi 6	2010	44	38	28	8.2 lb/mg	4.8
	Ngwe Chi 9	2016	12	37	30	8.2 lb/mg	4.9
	SD-8	2016	14	39	29	8.2 lb/mg	4.7
	Wargyi		14	33	20	7.0 lb/mg	7
	Mahlaing		8.4	35-41	21-26	6.0 lb/mg	6.5
	Tadaka (KSCH-207)	2010		35-37	28-29	29-30	4.5
Nigeria	Samcot-8	1977	20		23.3		3.8-4.0
	Samcot-9	1989	15		23.3		3.8-4.0
	Samcot-10	1989	15		23.3		3.8-4.0
	Samcot-11	2003	10		24.3		3.4-4.0
	Samcot-12	2003	13		24.5		3.7-4.0
	Samcot-13	2003	11		25.5		3.7-4.0
Pakistan	Varieties in Punjab						
	NS-121	2010		41.9	26.2	106	5.1
	MNH-886	2013		41	28.2	99.5	5
	IUB-13	2015		42	28.8	93	4.7
	IR-3701	2010		43.6	25.9	95.6	5.7
	FH-142	2013		40.1	28.3	101.4	4.8
	FH-Lalazar	2015		42	28.9	98.6	4.8
	CIM-620	2016		40.2	28.9	93	4.6
	CIM-663	-		40	31.8	27.2	4.5
	Bt.Cyto-179	2017		40.2	28.2	107.6	4.2
	Bt.CIM-343	-		42	32.1	27.1	4.8
	BS-15						
	ALI AKBAR-703	2010		37.3	28.5	104.6	5
	ALI AKBAR-802	2010		37.6	28.3	105.5	5.3



	Name of the Variety	Release Year	% Area	Ginning %	Length UHML mm	Strength g/tex	Mic
Pakistan	Varieties in Punjab						
	AGC-777	2015		40.2	29.2	95.7	4.8
	AGC-555	2013		40.7	27.8	102.8	4.7
	Bt.CIM-632	2018		42.2	28.8	100.6	4.5
	CIM-610,	2018		40.2	28.8	101.9	4.3
	Varieties in Sindh						
	CRIS-129	2014		38.7	28.5	98.5	4.4
	CRIS-510	2017		39.2	29.2	95.9	4.6
	CRIS-533	2017		40.7	28.8	90.5	4.5
	CRIS-585	2020		39.6	28.6	31.2	4.4
	CRIS-543	2020		40.5	28.3	30.1	4.6
	CRIS-613	2020		41.6	28.8	28.7	4.7
	SINDH 1	2010		35.2	27.8	97	4.4
	MAL MAL	2010		36.2	30	97	4.6
	BAKHTAWAR	2017		38	29	98	4.3
	MEHRAN	2017		39	31	98	4.6
	KOONJ	2017		40	29	96	4.1
	SAMI	2020		38.6	29.5	98	4.8
	NUSRAT	2020		38	29	98	4.8
	NIA UFAQ	2010		38	28.5	97	4.7
	NIA NOORI	2014		38	28	97	4.3
South Africa	Varieties in LIMPOPO						
	Candia BGRF		20.5	37%	29-30	27.9	3.9
	DP 1240 BG2RF		43.33	37.5	29-30	28	4.3
	DP 1531 BG2RF		12.98	37.5	28-29	27.6	4
	DP 1541 BG2RF		20.07	37.5	28-29	27.9	4.2
	PM 3225 BG2RF		1.78	38	27.2	27.8	3.8
	Delta 18 RF		Refugia	37.5	27-29	27.1	40
	Varieties in North Cape						
	Candia BGRF		91.8	38	29-30	29	4
	Delta 18 RF		Refugia	37.5	27-29	27.1	40
	North West						
	Candia BGRF		100	39	29-30	28.2	3.7
	KwaZulu Natal						
	PM3225		100	36	27.2	30.6	4
Spain	JUNCAL	2004	15.67	43.5			
	DP396	2007	12.11				
	AZAHAR	2005	10.77				



	Name of the Variety	Release Year	% Area	Ginning %	Length UHML mm	Strength g/tex	Mic
Spain	ELPIDA		8.25				
	CARLA		7.4				
	ELSA	2009	6.88				
	ST402	2008	5.65				
	CELIA	2001	4.06	39.8	30.9	28.5	4.3
	ALBARIZA	2006	3.88				
	DP332	2009	2.98	43	28.5		4.7
	SOLERA	2014	2.48				
	DP419	2004	1.95				
	Antes PG FLASH		1.8				
	DP377	2010	1.68				
	KENDRA	2016	1.33				
	HELENA	2005	1.17				
	INTERCOTT 701	2013	1.16				
	FIONA		1.12				
	ARMONIA		1.09				
	DP401	2007	1.06				
	OTHERS		8.57				
Sudan	Acala	1967		38	28	29	4.2
	Barakat-90	1990		33	35	37	4
	Abdin	2006		35	31.4	30.1	4.6
	Hamid	2005		37	29.7	29.4	4.9
	Hindi-1 (Hybrid)	2015		35	28.3	30.2	4.4
	Hindi 2 (hybrid)	2015		35	29.1	29.8	4.6
	Seeni 1	2012		36	27.9	27.9	4.5
	Seeni 2	2014		36	27.1	27	4.9
Tanzania	UKM 08	2008	100%	42.3	32.385	30.2	4.03
Togo	STAM 129 A	1999-20	99%	41%	28.9	30.2	4.5
	STAM 190	2017-18	1%	43%	28.9	30.5	4.1
Turkey	Varieties in Aegean						
	Gloria	2010	40	41-43		33-35	3.9-4.2
	Lima		15	44-46		32-36	4.3-4.8
	May 455		15	44-46		32-35	4.4-4.8
	May 498	2015	15	42-43		30-32	4.6-4.8
	Lidya	2012	8	40-42		32-38	4.0-4.8
	Claudia	2010	7	44-46		32-34	3.9-4.3
	Varieties in Cukurova						
	Carisma	2013	35	42-44		30-32	4.4-4.9



	Name of the Variety	Release Year	% Area	Ginning %	Length UHML mm	Strength g/tex	Mic
Turkey	Varieties in Cukurova						
	DP-332	2011	30	44-46		35-39	4.3-4.8
	Lima		15	44-46		32-36	4.3-4.8
	BA-119	2002	10	41-43		31-33	4.4-4.6
	SG-125	1999	5	42-43		32-34	4.3-4.8
	Flash	2008	3	40-42		31-35	4.6-4.9
	Gloria	2010	2	41-43		33-35	3.9-4.2
	Varieties in GAP						
	Candia	2008	20	44-46		33-35	4.0-4.3
	Fiona		20	44-46		33-35	4.0-4.5
	ST 468	2006	20	44-45		34-36	4.2-4.4
	Lima		20	44-46		32-36	4.3-4.8
	BA-440	2015	10	42-44		31-33	4.6-4.9
	DP-332	2011	10	44-46		35-39	4.3-4.8
Turkmenistan	Yoloten-7		44		27	90.0 Psi	4.3
	S-2606		12		27	90.0 Psi	4.3
	S-4727		11		27	90.0 Psi	4.3
	133		10		27	90.0 Psi	4.3
	Serdar		7		27	90.0 Psi	4.3
	Dashoguz-120		6		27	90.0 Psi	4.3
	Yoloten-14		3		32.5	110.0 Psi	3.3-4.0
	9871		2				3.3-4.0
Uganda	BPA2015A	2015		41	28 - 30	29 - 33	3,7 - 4,6
	SZ9314	1993		42	28 - 31	29 - 33	3,7 - 4,6
	CRIMS1	1998		42	28 - 30	29 - 33	3,7 - 4,6
	QM301	2010		42	28 - 30	29 - 33	3,7 - 4,6
USA	DP 1646 B2XF		21.35	43	31	30.3	4.2
	NG 5711 B3XF		6.62	39.8	29	29.5	4.8
	PHY 400 W3FE		5.07	44	29.7	31.4	4.2
	NG 4936 B3XF		4.8	39.4	27.9	30	4.1
	PHY 350 W3FE		4.26	41	30.1	30.3	5
	NG 4545 B2XF		3.15	39.5	27.7	29.4	4.1
	NG 3406 B2XF		2.08	38.3	29.2	28.8	2.8
	DP 1845 B3XF		1.96	40.6	30.7	30.5	4.5
	NG 3930 B3XF		1.82	42.4	29.8	30.2	4.3
	NG 3500 XF		1.76	36.3	28.7	30.7	4
	ST 5600 B2XF		1.72	42.9	29.5	30.3	4.5



	Name of the Variety	Release Year	% Area	Ginning %	Length UHML mm	Strength g/tex	Mic
USA	DP 1820 B3XF		1.64	44	30.6	31.9	4.6
	DP 1840 B3XF		1.58	43.3	30	30.2	4
	DP 1948 B3XF		1.58	41.4	30.9	33.3	3.8
	PHY 444 WRF		1.51	42	32.5	31	3.9
	DP 1549 B2XF		1.5	36.7	27.9	27.6	3.1
	ST 5707 B2XF		1.47	41.7	30.2	29	4.5
	DP 1725 B2XF		1.45	45	29.3	30.4	4.9
	DP 1518 B2XF		1.35	42	29.8	28.2	4.5
	PHY 480 W3FE		0.6	41	28.8	29.7	4.4
Uzbekistan	Sultan		18.58		28.2	31.7	4.7
	Bukhara-102		12.24		28.7	30.4	4.5
	Namangan-77		6.09		32.2	31.1	4.6
	An-Boyovut-2		5.55		28.2	30.4	4.7
	Andijan-35		5.3		28.2	32.1	4.8
	Omad-27		2.06		29	33.1	4.5
	C-4727		3.79				
	Porloq-1		1.03		29	32.1	4.6
	Porloq-4		2.39				
	Andijan-36		2.55				
	Khorezm-150		3.72		28.7	34.2	4.7
	Khorezm-127		2.71		28.7	34.3	4.8
	Boshqakhramon		0.9				
	Andijan-37		0.45				
	Chimbay-5018		0.4				
	C-8286		1.62		28.4	35.1	4.8
	C-8290		3.03				
	Namangan-34		0.5				
	Bukhara-6		9		31.2	31.5	4.6
	Bukhara-8		6.65		30.2	31.5	4.6
	Bukhara-10(Sardor)		2.44		28.7	31.2	4.5
	C-6524		7.3		28.4	32.4	4.7
	Kelajak		0.18				
	C-8294		0.43				
	UzPITI-201		0.16				
	UzPITI-202		0.01				
	UzPITI-103		0.17				
	Surkhan-14		0.5				



	Name of the Variety	Release Year	% Area	Ginning %	Length UHML mm	Strength g/tex	Mic
Uzbekistan	Surkhan-16		0.16				
	Termez-102		0.03				
	Gulistan		0.06				
Zambia	Chureza	1987	56	40.7	28.9	24.3	4.3
	CDT II	2005	26	42.4	29.5	24.8	4.2
	CDT V	2010	18	45.6	30.1	24.3	4.1
Zimbabwe	SZ 9314	1992	100	41	29	31.2	4.1

Chart 1. GLOBAL DISTRIBUTION OF MAJOR INSECT PESTS

	<i>Aphis gossypii</i>	Thrips	<i>Tetranychus</i> spp.	Whitefly	Jassids	<i>Dysdercus</i> spp.	<i>Diparopsis</i> spp.	<i>Heliothine</i> spp.	<i>Pectinophora gossypiella</i>	<i>Earias</i> spp.	<i>Spodoptera</i> spp.
Argentina											
Australia											
Bangladesh											
Brazil											
Bulgaria											
Burkina Faso											
Cameroon											
Chad											
China											
Colombia											
Cote d'Ivoire											
Egypt											
Ethiopia											
Greece											
India											
Iran											
Israel											
Kazakhstan											
Kenya											
Kyrgyzstan											
Mali											
Mozambique											
Pakistan											
Myanmar											
Nigeria											
Paraguay											
South Africa											
Spain											
Sudan											
Tanzania											
Thailand											
Togo											
Turkey											
Uganda											
Uzbekistan											
United States											
Vietnam											
Zambia											
Zimbabwe											

Chart 2. COMMONLY USED INSECTICIDES -ACROSS THE WORLD

	Emamectin benzoate	Cypermethrin	Beta-Cyhalothrin	Deltamethrin	Chlorpyrifos	Profenofos	Acephate	Dimethoate	Triazophos	Monocrotophos	Imidacloprid	Acetamiprid	Thiamethoxam	Indoxacarb	Spirotetramat	Abamectin	Diafenthiuron	Fipronil	Endosulfan	Carbaryl
Argentina																				
Australia																				
Bangladesh																				
Bangladesh																				
Brazil																				
Burkina Faso																				
Cameroon																				
Chad																				
Colombia																				
Cote d'Ivoire																				
Ethiopia																				
Greece																				
Kazakhstan																				
India																				
Iran																				
Kenya																				
Mali																				
Myanmar																				
Nigeria																				
Pakistan																				
Paraguay																				
South Africa																				
Spain																				
Sudan																				
Tanzania																				
Togo																				
Turkey																				
Vietnam																				
Uganda																				
Zambia																				
Zimbabwe																				

Chart 3. GLOBAL DISTRIBUTION OF MAJOR WEEDS

	Narrow leaf weeds					Broad leaf weeds		
	<i>Cyperus rotundus</i>	<i>Digitaria</i> spp.	<i>Cyanodon dactylon</i>	<i>Eleusine indica</i>	<i>Sorghum halepense</i>	<i>Amaranthus</i> spp.	<i>Ipomoea</i> spp.	<i>Commelina</i> spp.
Argentina								
Australia								
Bangladesh								
Brazil								
Burkina Faso								
Bulgaria								
Cameroon								
Chad								
China								
Colombia								
Cote D'Ivoire								
Egypt								
Ethiopia								
Greece								
India								
Iran								
Israel								
Kazakhstan								
Kenya								
Kyrgystan								
Mali								
Mozambique								
Myanmar								
Nigeria								
Pakistan								
Paraguay								
South Africa								
Spain								
Sudan								
Tanzania								
Togo								
Turkey								
Uganda								
USA								
Zambia								
Zimbabwe								

Chart 4. GLOBAL DISTRIBUTION OF MAJOR DISEASES

	<i>Fusarium</i> wilt	<i>Verticillium</i> wilt	Bacterial blight	<i>Rhizoctonia</i> spp.	Damping off	CLCuD	Areola mildew	Boll rot	Root rot	<i>Alternaria</i> spp.	<i>Pythium</i> spp.
Argentina											
Australia											
Bangladesh											
Brazil											
Bulgaria											
Burkina Faso											
Chad											
China											
Colombia											
Cote D'Ivoire											
Egypt											
Ethiopia											
India											
Iran											
Kazakhstan											
Kenya											
Kyrgyzstan											
Myanmar											
Nigeria											
Pakistan											
South Africa											
Spain											
Sudan											
Tanzania											
Togo											
Turkey											
Uganda											
USA											
Vietnam											
Zimbabwe											

Chart 5. SOWING CROP GROWTH & HARVESTING CALENDAR

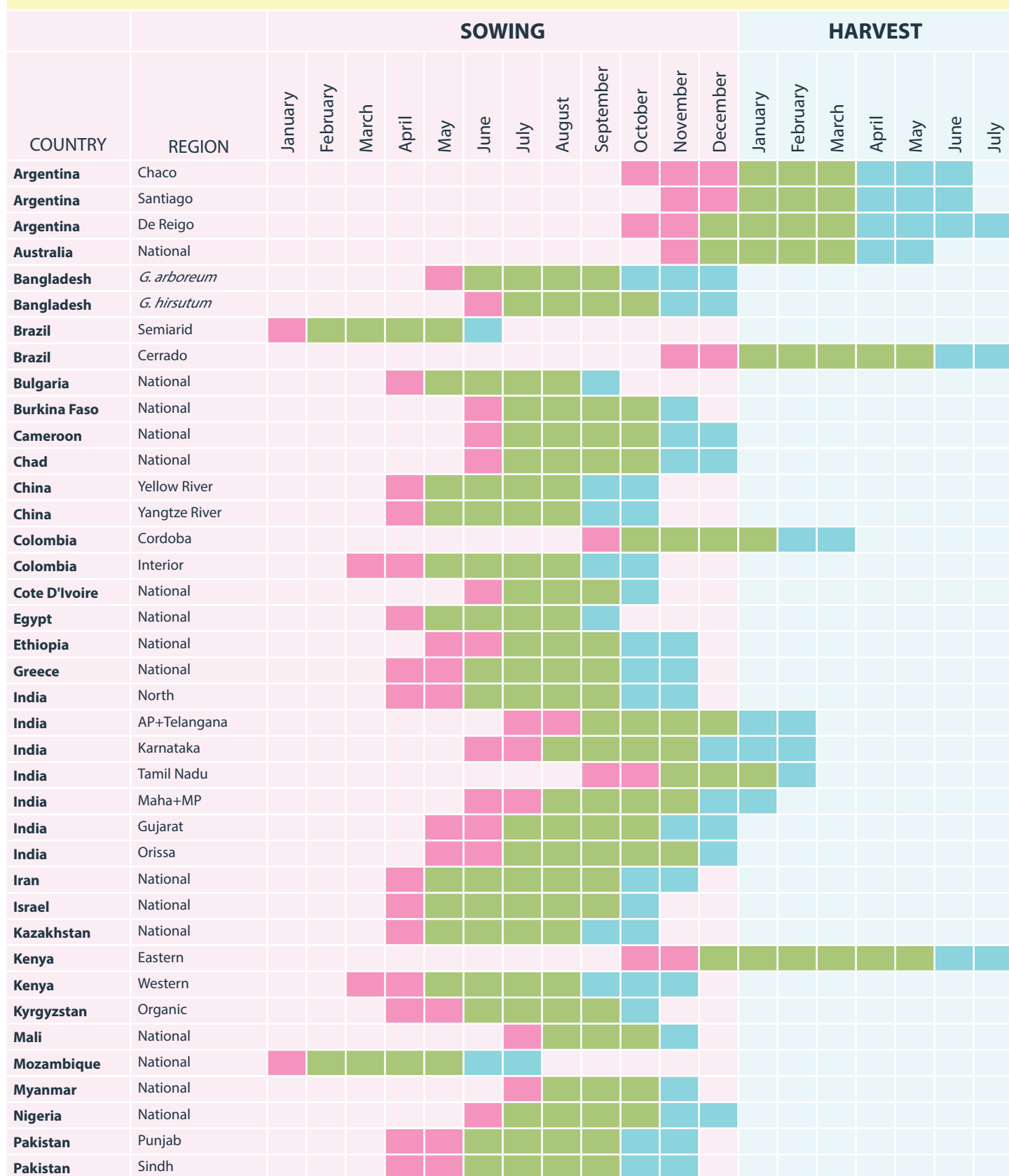


Chart 5. SOWING CROP GROWTH & HARVESTING CALENDAR

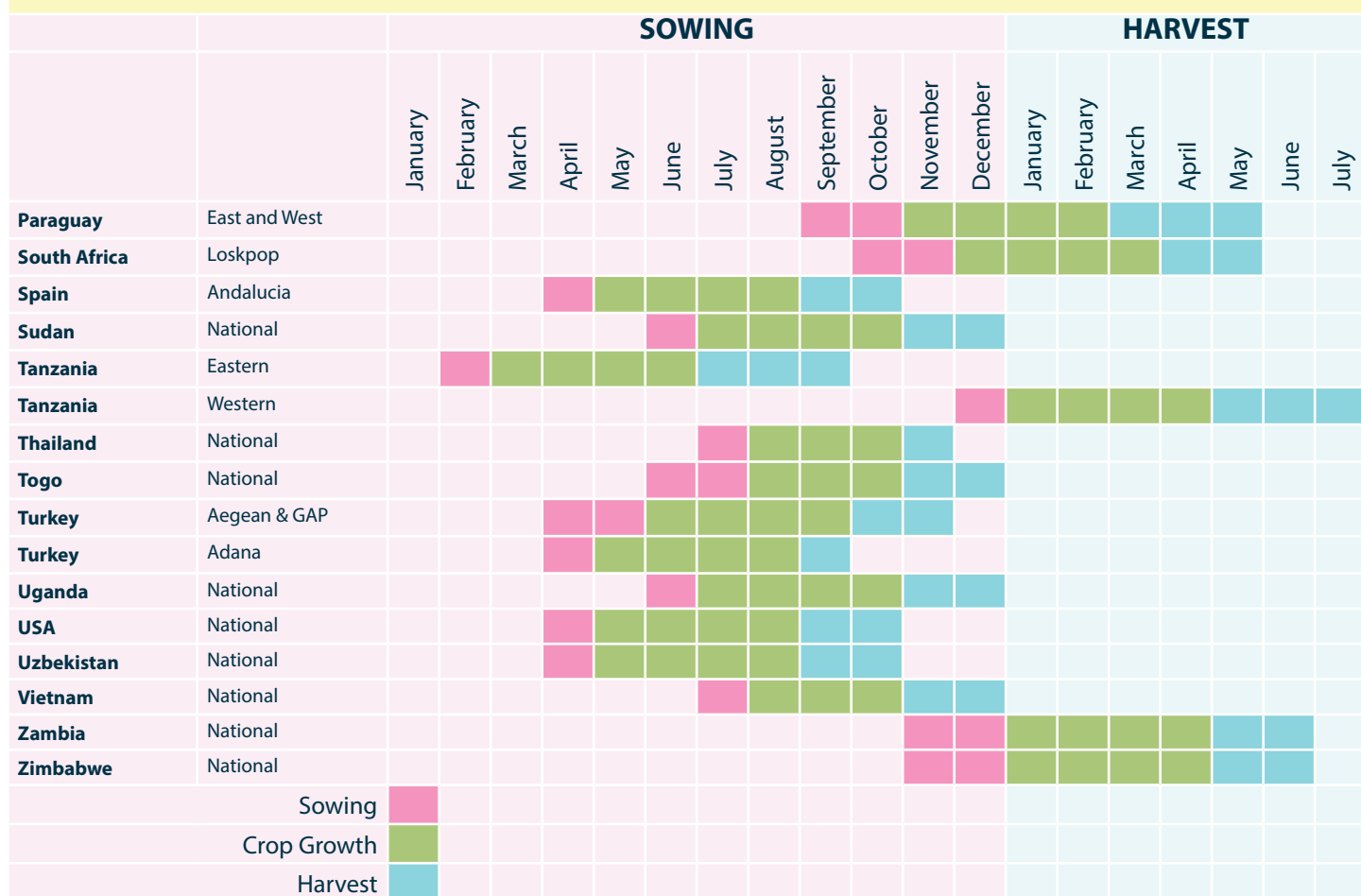
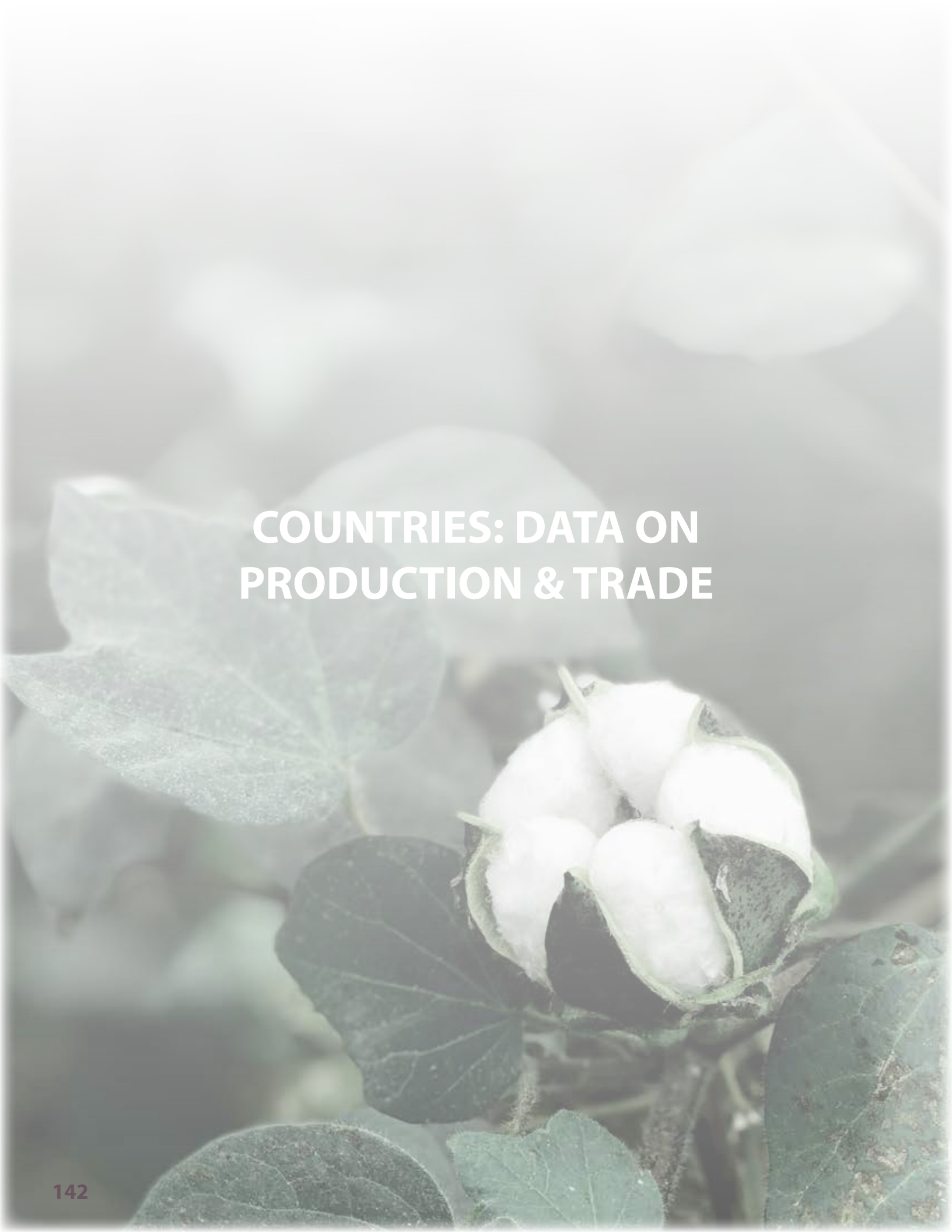


Table 21. SOWING & HARVESTING CALENDAR

COUNTRY	SOWING	PICKING	COUNTRY	SOWING	PICKING	COUNTRY	SOWING	PICKING
Argentina-Chaco	Oct-Dec	Apr-June	Greece	April-May	Oct-Nov	Nigeria	June	Nov-Dec
Argen-Santiago	Nov-Dec	Apr-June	India-North	April-May	Oct-Nov	Pakistan-Punjab	April-May	Oct-Nov
Argentina-De-Reigo	Oct-Nov	Apr-July	India-Central	June-July	Nov-Jan	Pakistan-Sindh	Mar-June	Oct-Dec
Australia	Nov-Dec	Apr-May	India-South	July-Sept	Dec-Feb	Paraguay	Sept-Oct	Mar-May
Bangla-Desi	May	Oct-Dec	Iran	April	Oct-Nov	South Africa	Oct-Nov	April-May
Bangla-Hirsutum	June-July	Nov-Dec	Israel	April	October	Spain	April-May	Sept-Oct
Brazil-Semi-Arid	January	June	Kazakhstan	April	Sept-Oct	Sudan	June-July	Nov-Dec
Brazil-Cerrado	Nov-Dec	June-July	Kenya-Eastern	Oct-Nov	July-Aug	Tanzania-East	February	July-Sept
Bulgaria	April	September	Kenya-Western	Mar-April	Sept-Nov	Tanzania=West	December	May-july
Burkina Faso	June	Oct-Nov	Kysrgystan	April-May	October	Thailand	July	November
Cameroon	June-July	Oct-Dec	Mali	July	November	Togo	June-July	Nov-Dec
Chad	June	Oct-Dec	Mex-Baja-California	Mar-April	Nov-Dec	Turkey-Aegean-GAP	April-May	Oct-Nov
China-Yellow River	April	Sept-Oct	Mexico-Chihuahua	April-May	Oct-Dec	Turkey-Adana	April	September
China-Others	April	Sept-Oct	Mexico-Coahuila	Mar-April	Aug-Oct	Uganda	June-July	Nov-Dec
Colombia	Sept	Feb-Mar	Mexico-Durango	Mar-April	Aug-Oct	USA	April-May	Sept-Oct
Colombia	Mar-April	Aug-Sept	Mexico-Sonora	May	Nov-Dec	Uzbekistan	April	Sept-Oct
Cote D'Ivoire	June-July	October	Mex-Tamaulipas	Feb-Mar	July-Aug	Vietnam	July	Nov-Dec
Egypt	April	September	Mozambique	January	May-June	Zambia	Nov-Dec	May-June
Ethiopia	May-June	Oct-Nov	Myanmar	August	November	Zimbabwe	Nov-Dec	May-June

A close-up photograph of a cotton plant. In the foreground, several green cotton bolls are open, revealing the white, fluffy cotton fibers inside. The bolls are attached to a dark green stem with several large, serrated green leaves. The background is a soft-focus field of more cotton plants, with many more white bolls visible, creating a sense of a large-scale cotton harvest.

COUNTRIES: DATA ON PRODUCTION & TRADE

ARGENTINA

Data on the Cotton Sector



Basic Data 2020



Arable Area
39,200
'000 Hectares

Cotton Area
449
'000 Hectares

Production
295
'000 Tonnes

Lint Yield
657
Kg/Hectare

Consumption
135
'000 Tonnes

Lint Exports
102
'000 Tonnes

Farmers
4400
Male

Farmers
440
Female

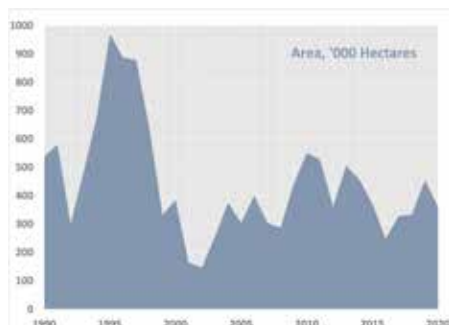
PRODUCTION 2020

		Area '000 Ha	Yield Kg/Ha	Production '000 Tonnes
1	Santiago Del Estero	196	859	168
2	Chaco	185	509	94
3	Santa-Fe	45	361	16
	National	449	657	295

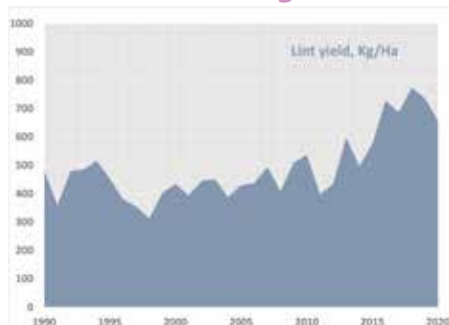


PRODUCTION

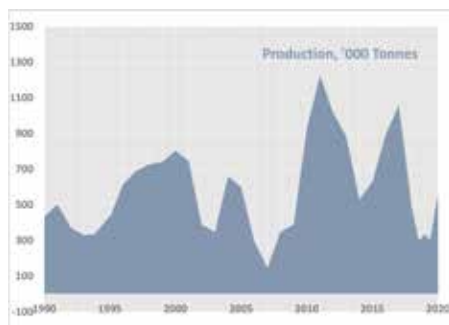
Cotton Area '000 Hectares



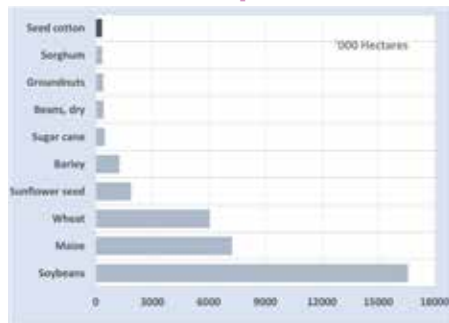
Lint Yield Kg/Ha



Production '000 Tonnes

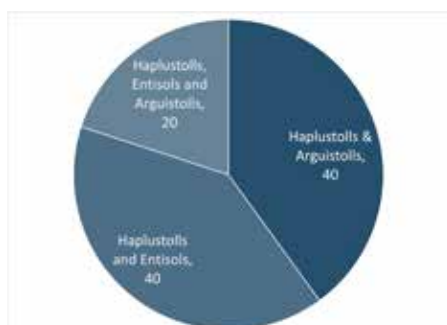


Area of Crops '000 Ha

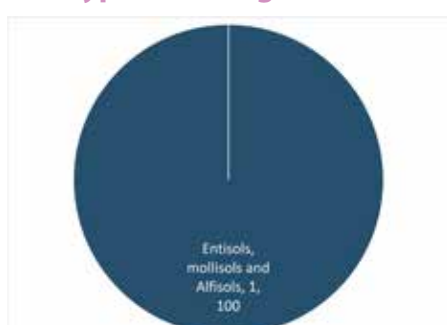


SOILS

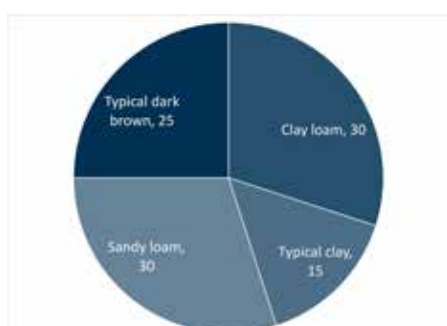
Soil Types -De-Reigo



Soil Types -Santiago-Del-Estero



Soil Types -Chaco



FERTILISERS

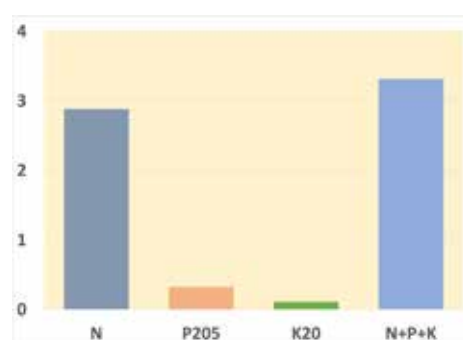
Fertiliser (NPK) use Kg/Hectare



Fertiliser (NPK) use per Kg Lint



Fertiliser (NPK) use '000 Tons



ROTATION CROPS

Chaco	Del Estero Secano	De Reigo
Sunflower	Sorghum	Corn
Soybean	Corn	Alfalfa
Wheat	Soybean	Vegetables
	Wheat	Wheat

COMPETING CROPS

Chaco	Del Estero Secano	De Reigo
Sorghum	Sorghum	Corn
Sunflower	Corn	Alfalfa
Soybean	Soybean	Vegetables



VARIETIES AND FIBRE TRAITS

	Release Year	% Area	Ginning %	Length UHML mm	Strength g/tex	Mic
Nuopal RR	2009	70	36	27	30	4
DP 1238 BGRR	2013	25	39	29	30	4.9
Guazuncho 2000 RR	2001	2	39	29	30	3.8
DP402 BGRR	2011	1	36	30.3	29.9	4.5
Pora 3 INTA BGRR	2019	0.6	40	29.4	33.2	4.5
Guarani INTA BGRR	2019	0.6	38.7	29.4	32.2	4.9
Guazuncho 4 INTA BGRR	2019	0.6	37.8	30	33.4	4.6

WATER

Rainwater & Irrigation water (mm)

Santiago del Es-tero	860	476	2	60
Chaco	1,517	604	3	90
Santa-Fe	1,213	596	5	150
National	1,183	544	4	96
	Total Rainfall	Effective Rainfall	No. of Irrigations	Irrigation Water/Ha

Methods of Irrigation (% Area)

Santiago del Es-tero	83	0	12	5
Chaco	83	0	12	5
Santa-Fe	83	0	12	5
National	83	0	12	5
	Flood	Furrow	Sprinkler	Drip

Rainfed Area (%) & Water Used /Kg Lint

Santiago del Es-tero	67	39	231	5,544
Chaco	95	8	88	11,861
Santa-Fe	95	3	208	16,517
National	82	50	171	8,285
	Rainfed % Area	Irrigation Billion L	Irrigation L/Kg Lint	Rainwater L/Kg Lint

SEEDS & PLANTING

Seeds Used for Sowing (%)

5	95	95	5
Fuzzy Seeds	Delinted	Chemical Treated	Untreated

Planting Method (%)

Seed Source (%)

0	100	100	0
Manual	Machine	Local	Imported

Use of Cotton Seeds (% Use)

40	55	5	0
Crushed for Oil	Direct Cattle-Feed	Used for Sowing	wasted

Seed Rate, Spacing & Plant Population/Ha

16	76	10	131,579
24	52	10	192,308
32	38	10	263,158
Seed Rate Kg/Ha	Between Rows cm	Within Row cm	Plant Population/ Ha



TILLAGE, STALKS-USE WEEDING & HARVESTING

Tillage Methods (% Area)

65	35	65	35
Zero Tillage	Disc Plough	Chisel Plough	Conventional Tillage

Use of Cotton stalks (% Use)

0	0	100	0
Burnt in Fields	Used as Firewood	Ploughed Back	Stacked on Bunds

Weeding Method (%)

60	40
Machine	Herbicide

Harvesting Method (%)

0	100
Hand Picked	Machine Picked

WEATHER 2019-2020

DD60 Fahrenheit Heat Units= Average daily temperature -60°F. The light green box denotes months of the cotton season. The blue bars are monthly averages of heat units and precipitation (rainfall in mm)

Heat Units (DD60) -Santa-Fe



Rainfall (mm) -Santa-Fe



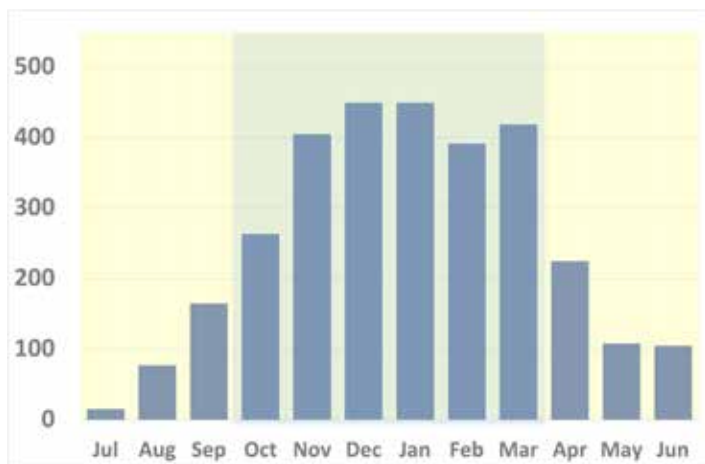
STRUCTURE OF COTTON RESEARCH

INTA (National Institute of Agricultural Technology) is a public institute well distributed in the Argentina. INTA plays an important role in cotton research and development, with experimental stations in the main cotton producer's provinces. CONICET (National Council of Science and Technology), Public and Private Universities, State and Nation Governments, Public Services Departments for Primary Sector and Industry (INTI, SENASA, INASE, others), Associations for the promotion of cotton production (APPA, AAPA) and Private Sectors (Ginners, Textiles, Designers and rest of the chain) are also part of the Argentinean cotton research and development network system.



WEATHER 2019-2020

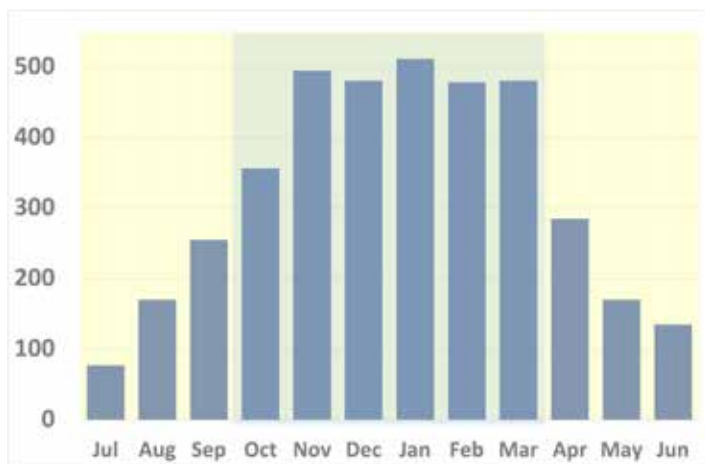
Heat Units (DD₆₀) -Chaco



Rainfall (mm) -Chaco



Heat Units (DD₆₀) -Formosa



Rainfall (mm) -Formosa



Heat Units (DD₆₀) -Santiago Del Estero



Rainfall (mm) -Santiago Del Estero



INSECT PESTS, PATHOGENS, WEEDS & PESTICIDES

INSECT PESTS / INSECTICIDES
CHACO
EARLY-SEASON
<i>F. paucispinosa</i> & <i>A. gossypii</i>
<i>Spodoptera</i> & <i>Heliothis</i>
<i>Eutinobothrus brasiliensis</i>
<i>Agrotis</i> & <i>Pyrophorus</i> spp.
<i>Tetranychus urticae</i>
MID-SEASON
<i>Anthonomus grandis</i>
<i>H. armigera</i> & <i>H. virescens</i>
<i>Horcias nobilellus</i>
<i>Pectinophora gossypiella</i>
<i>Spodoptera frugiperda</i> & <i>S. latifascia</i>
INSECTICIDES
Imidacloprid
Thiamethoxam
Mercaptothion
Methamidofos
Cypermethrin

DISEASES / PATHOGENS
<i>Rhizoctonia solani</i>
<i>Pythium ultimum</i>
Cotton leafroll virus
<i>Fusarium oxysporum</i>
<i>Xanthomonas malvacearum</i>
CHEMICAL CONTROL
Carbendazim (50%)+ flutriafol (8.4%)
Azoxystrobin (20%)+cyproconazole (8%)

WEEDS / HERBICIDES
NARROW-LEAF WEEDS
<i>Digitaria insularis</i>
<i>Chloris</i> spp. / <i>Trichloris</i> spp.
<i>Gomphrena perennis</i>
<i>Borreria</i> spp.
<i>Ipomea</i>
BROAD-LEAF WEEDS
<i>Sphaeraicea bonariensis</i>
<i>Sorghum halepense</i>
<i>Amaranthus</i> spp.
<i>Sida</i> spp.
<i>Malvastrum coromandelianum</i>
HERBICIDES
Diuron
Acetoclor
Glyphosate
Clethodim/Haloxypop

INSECT PESTS / INSECTICIDES
DE REIGO
EARLY-SEASON
<i>Anthonomus grandis</i>
<i>Horcias nobilellus</i>
<i>Thrips tabaci</i>
<i>Spodoptera frugiperda</i>
<i>Eutinobothrus brasiliensis</i>
MID-SEASON
<i>Aphis gossypii</i>
INSECTICIDES
Malathion
Cypermethrin
Thiamethoxam+Karate

DISEASES / PATHOGENS
DISEASES / PATHOGENS
<i>Rhizoctonia solani</i>
<i>Ramularia areola</i>
<i>Alternaria macrospora</i>
Boll rot
CHEMICAL CONTROL
Carboxym (20%)+Thiram (20%)
Triadimenol
Metaxyl 10-15 cc

WEEDS / HERBICIDES
NARROW-LEAF WEEDS
<i>Sorghum halepense</i>
<i>Chloris</i> spp. / <i>Trichloris</i> spp.
<i>Cyanodon dactylon</i>
<i>Cyperus rotundus</i>
<i>Ipomea</i>
BROAD-LEAF WEEDS
<i>Ipomea nil</i>
<i>Portulaca oleracea</i>
<i>Chenopodium album</i>
<i>Amaranthus</i> spp.
<i>Malvastrum coromandelianum</i>
HERBICIDES
Glyphosate
Graminicides
Envoke

INSECT PESTS / INSECTICIDES
SANTIAGO DEL ESTERO
EARLY-SEASON
<i>Aphis gossypii</i>
<i>Thrips tabaci</i>
<i>Eutinobothrus brasiliensis</i>
<i>Agrotis</i> & <i>Spodoptera</i> spp.
<i>Tetranychus urticae</i>
MID-SEASON
<i>Anthonomus grandis</i>
<i>Horcias nobilellus</i>
<i>Spodoptera frugiperda</i>
<i>Dysdercus chaquensis</i>
INSECTICIDES
Imidacloprid
Thiamethoxam
Mercaptothion
Cypermethrin
Chlorpyrifos
Thiamethoxam+Karate

DISEASES / PATHOGENS
DISEASES / PATHOGENS
<i>Rhizoctonia solani</i>
<i>Pythium ultimum</i>
<i>Alternaria macrospora</i>
<i>Ramularia areola</i>
Bud rot
CHEMICAL CONTROL
Carbendazim (50%)+ flutriafol (8.4%)
Azoxystrobin (20%)+cyproconazole (8%)

WEEDS / HERBICIDES
NARROW-LEAF WEEDS
<i>Digitaria insularis</i>
<i>Chloris</i> spp. / <i>Trichloris</i> spp.
<i>Gomphrena perennis</i>
<i>Borreria</i> spp.
<i>Ipomea</i>
BROAD-LEAF WEEDS
<i>Sorghum halepense</i>
<i>Sphaeraicea bonariensis</i>
<i>Malvastrum coromandelianum</i>
<i>Sida</i> spp.
<i>Amaranthus</i> spp.
HERBICIDES
Diuron
Acetoclor
Glyphosate
Clethodim/Haloxypop



COST OF CULTIVATION US\$/Hectare

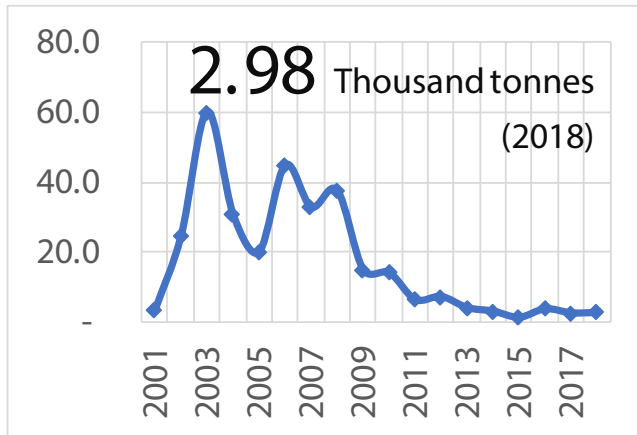
INPUTS	Quantity (Kg/Ha)	Operations per season	Total cost /Ha
Non-GM seeds			
Biotech/GM seeds	27	1	35.3
NPK+Other	20	1	10.0
Insecticides	1.5	5	30.8
Herbicides	3.5	5	44.9
Fungicides			0.0
Growth regulators	0.3	3	5.1
Defoliants	1	1	19.2
Manure			0.0
Others (please specify)			0.0
MANPOWER / LABOUR	Wages per person	Persons per operation	Total cost per hectare
Land preparation /tillage etc.,	0.32	2	0.6
Sowing	0.32	2	0.6
Fertiliser / manure application	0.19	2	0.4
Irrigation			0.0
Thinning			0.0
Weeding	0.32	2	0.6
Hoeing			0.0
Pesticide application	0.32	2	0.6
Defoliator application	0.32	2	0.6
Picking / harvesting	1.60	2	3.2
Stalk cutting & removal			0.0
Transportation /unloading etc.,	1.28	2	2.6
Ginning cost per 100 Kg	116.00	1	116.0
Others (please specify)			0.0
MACHINERY /ANIMALS etc.	Cost per Operation	Number of Operations	Total cost per hectare
Tractors	14.1	4	56.4
Implements & tools	10.0	4	40.0
Electric / Diesel pumps etc.,	0.0		0.0
Electricity / Diesel etc.,	0.0		0.0
Harvesting machines	25.6	1	25.6
Hoeing / Tillage machinery etc.,	0.0		0.0
Bullocks /Buffaloes	0.0		0.0
Land rent	76.9	1	76.9
MARKET VALUE	Yield Kg/per hectare	Market value per 100 Kg	Value per hectare
Seed cotton	1650	0.256	423.1
Ginning % (output)	33		
Lint (fibre)	545	1.38	752.1
Seed	1100	0.22	242.0
COST OF CULTIVATION			277
NET RETURNS (SEED-COTTON)			146
NET RETURNS (SEED + LINT)			601

TRADE DATA

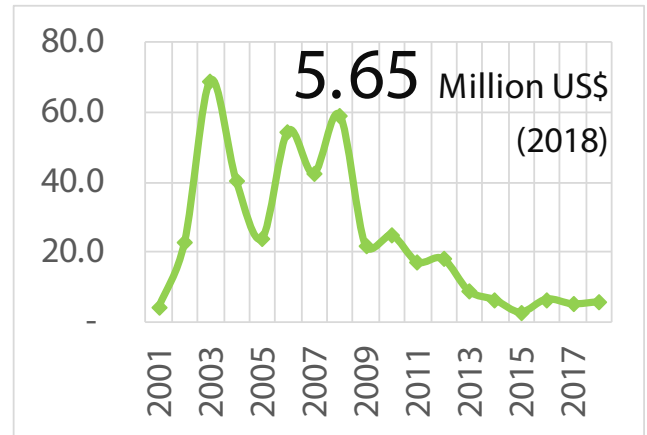


COTTON FIBRE IMPORT DATA

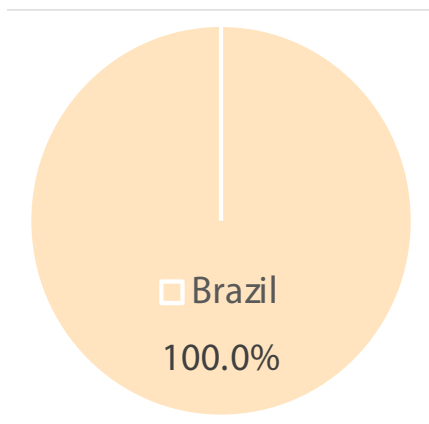
Quantity



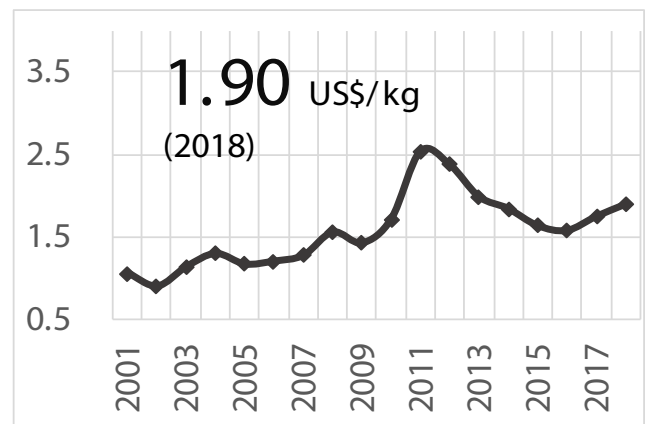
Value



Market Share by Country



Average Price: US\$/Kg

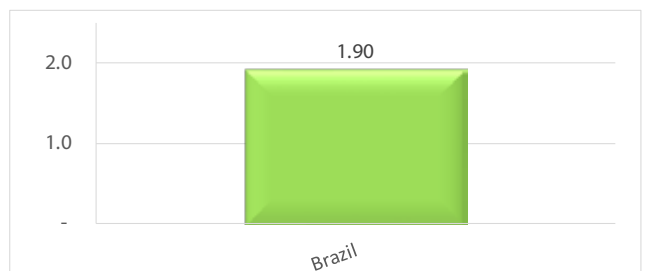


Brazil



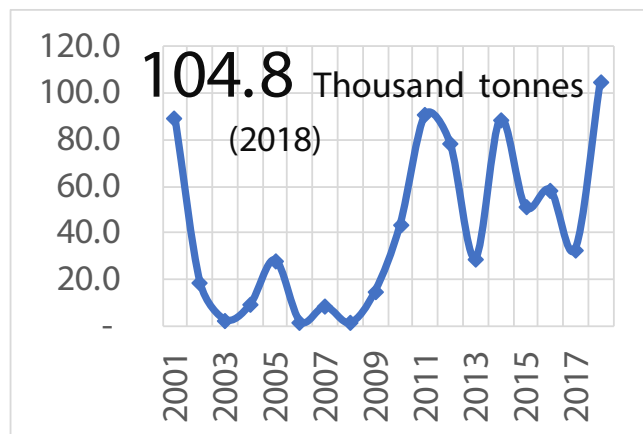
Tonnes

Average Price by Country 2018: US\$/Kg

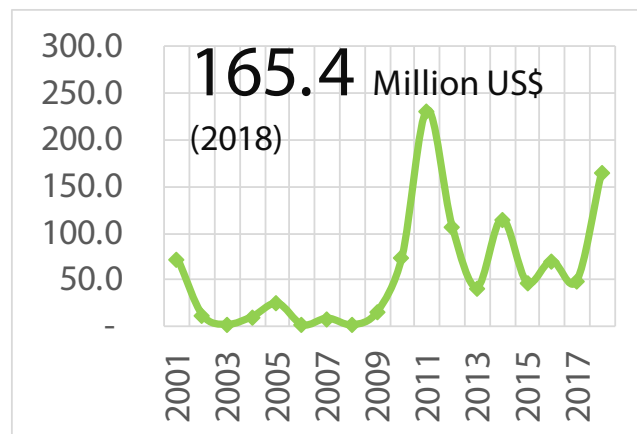


COTTON FIBRE EXPORT DATA

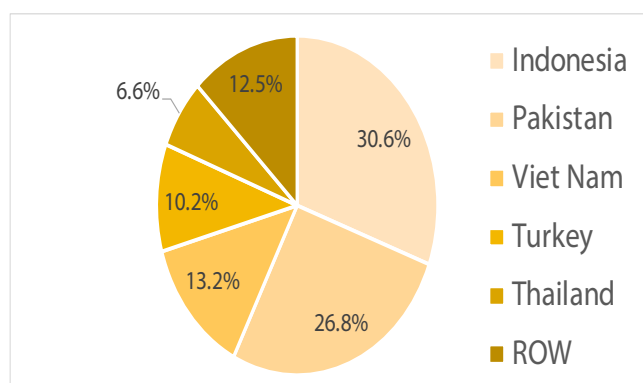
Quantity



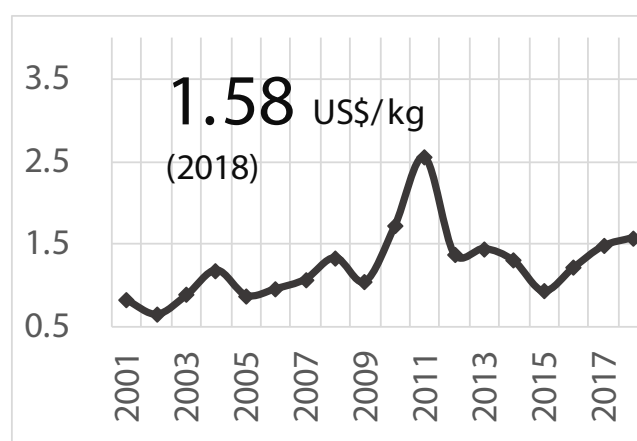
Value



Market Share by Country

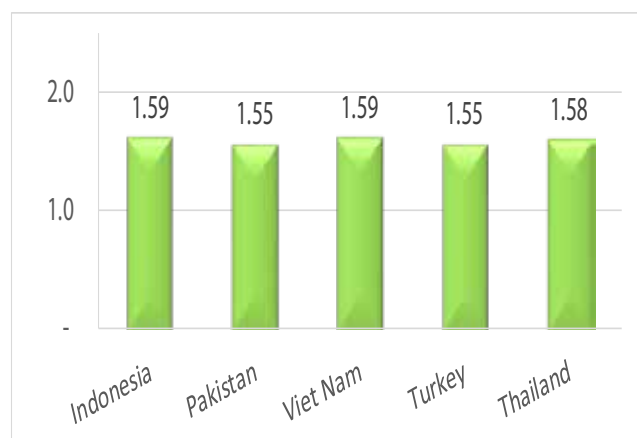


Average Price: US\$/Kg



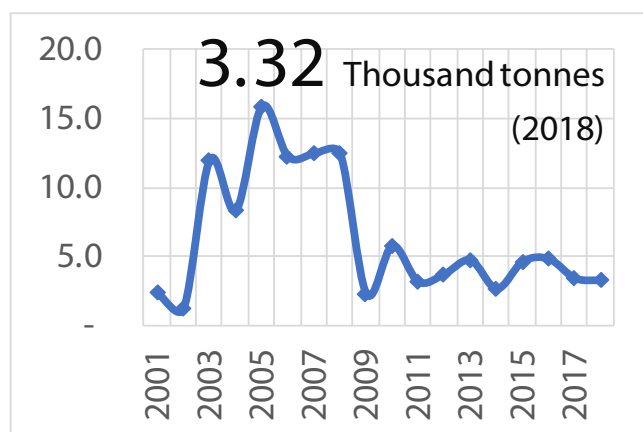
Indonesia	32,121
Pakistan	28,115
Viet Nam	13,794
Turkey	10,727
Thailand	6,912
ROW	13,153
Tonnes	

Average Price by Country 2018: US\$/Kg

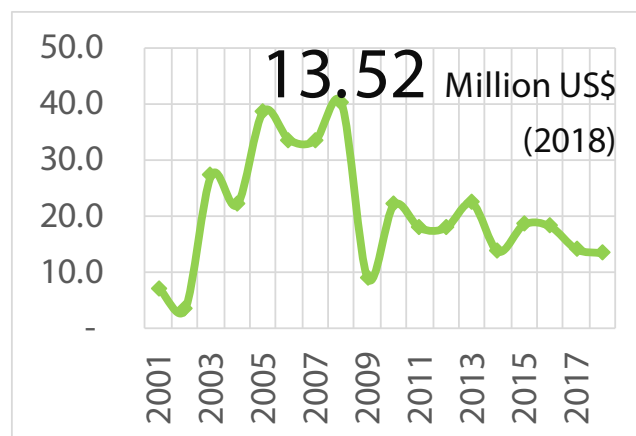


COTTON YARN IMPORT DATA

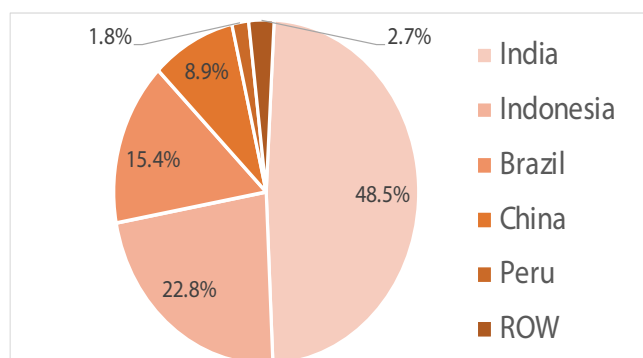
Quantity



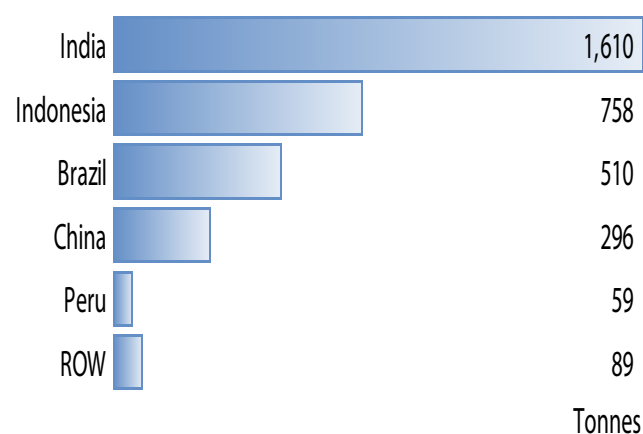
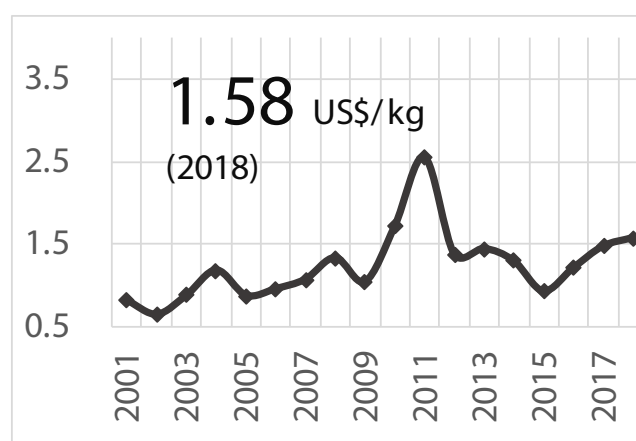
Value



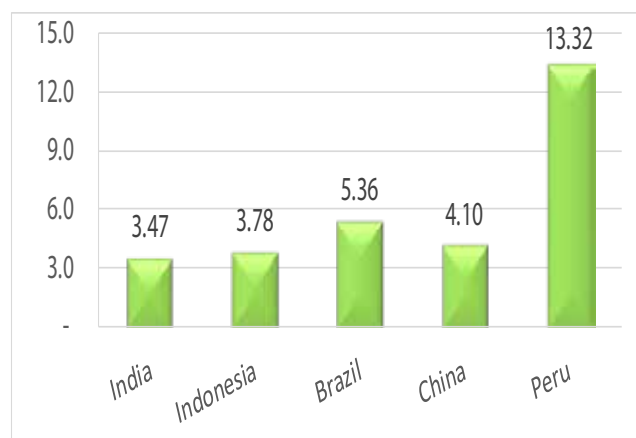
Market Share by Country



Average Price: US\$/Kg

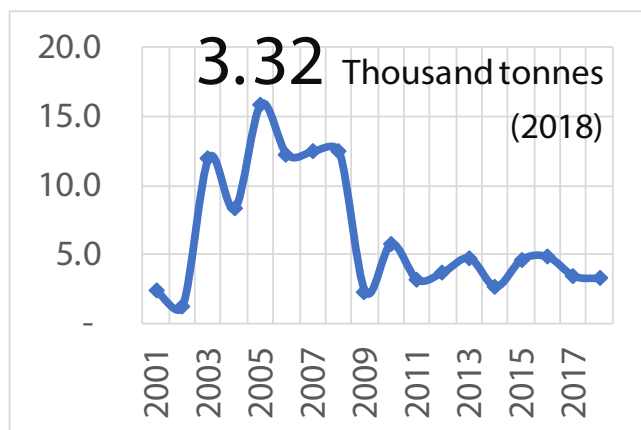


Average Price by Country 2018: US\$/Kg

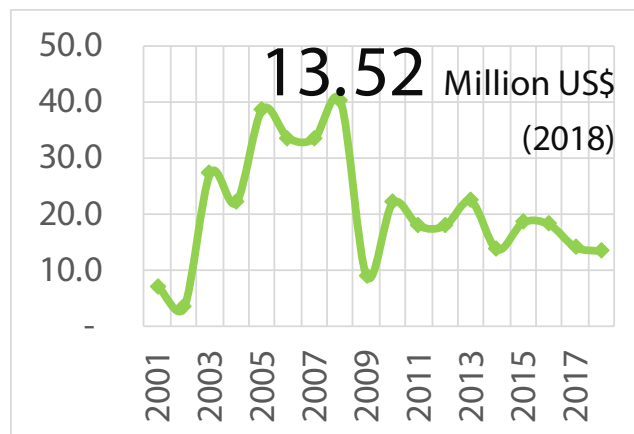


COTTON YARN EXPORT DATA

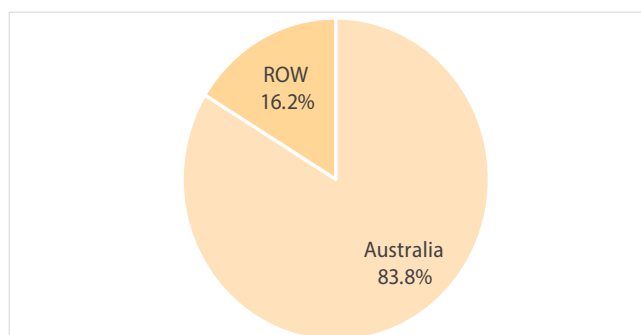
Quantity



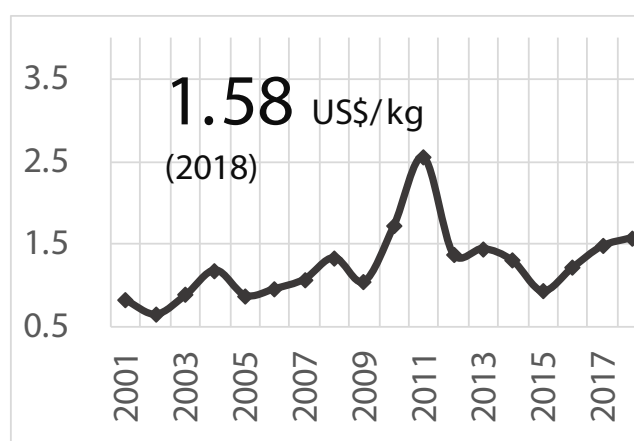
Value



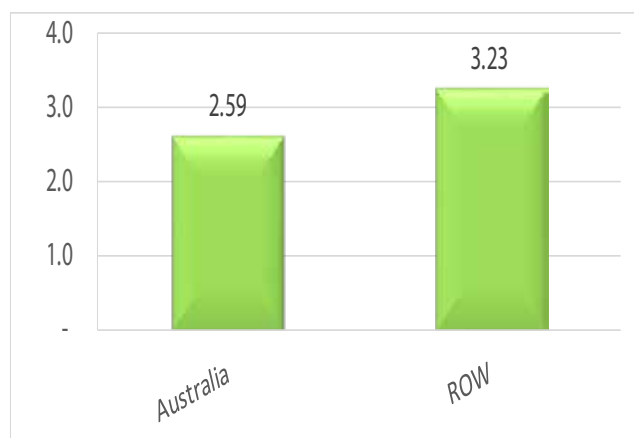
Market Share by Country



Average Price: US\$/Kg

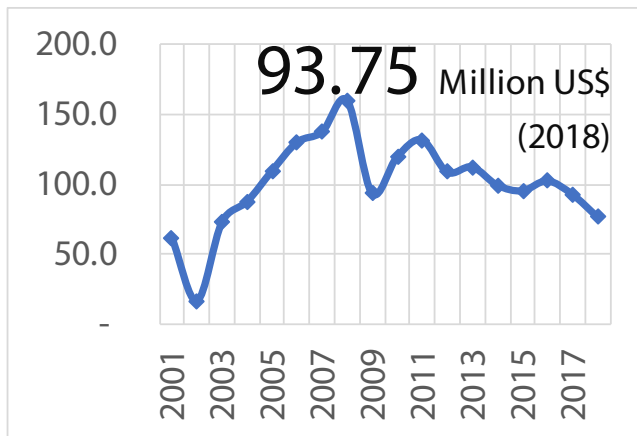


Average Price by Country 2018: US\$/Kg

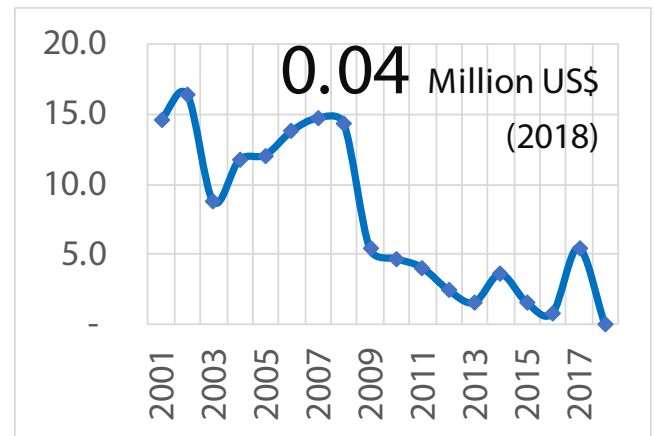


COTTON FABRIC TRADE DATA

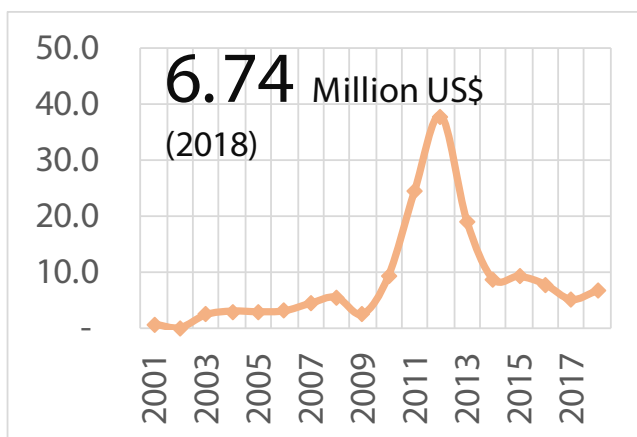
Woven Cotton Fabric Imports



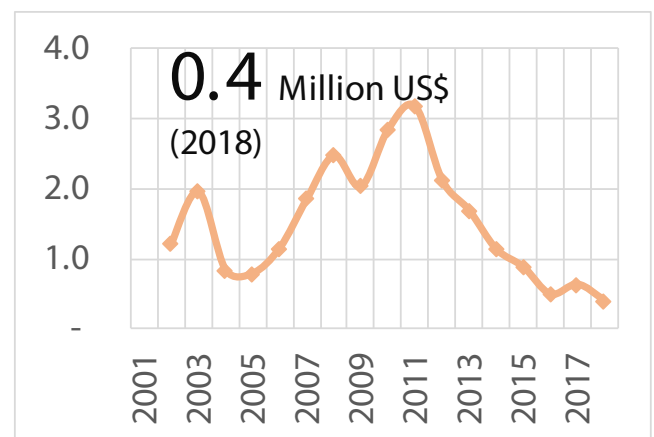
Woven Cotton Fabric Exports



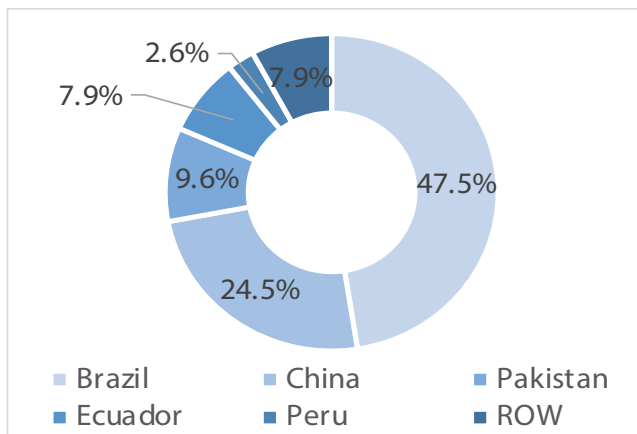
Knitted Cotton Fabric Imports



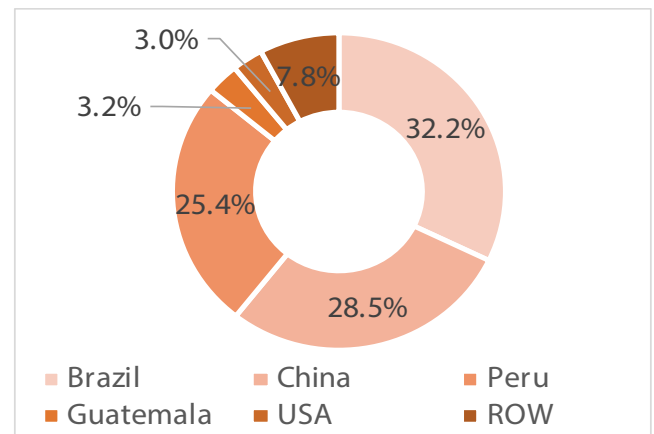
Knitted Cotton Fabric Exports



Market Share Imports by Country - 2018 Woven Cotton Fabric

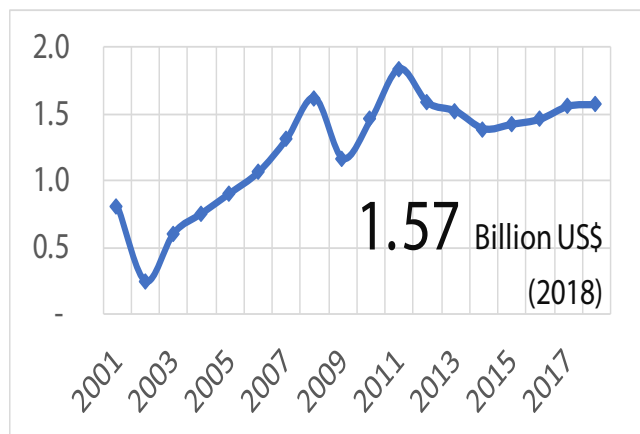


Market Share Imports by Country - 2018 Knitted Cotton Fabric

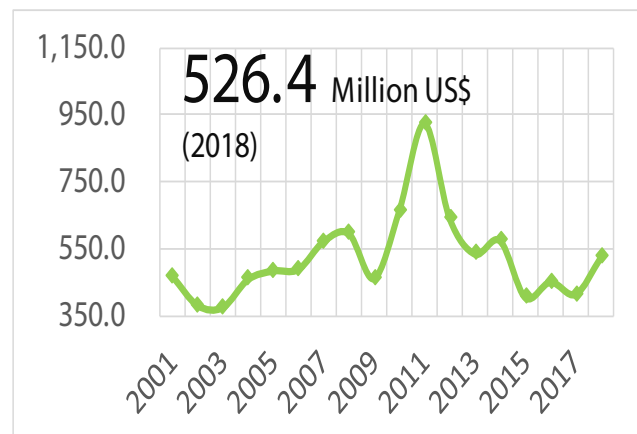


TEXTILE & APPAREL TRADE DATA

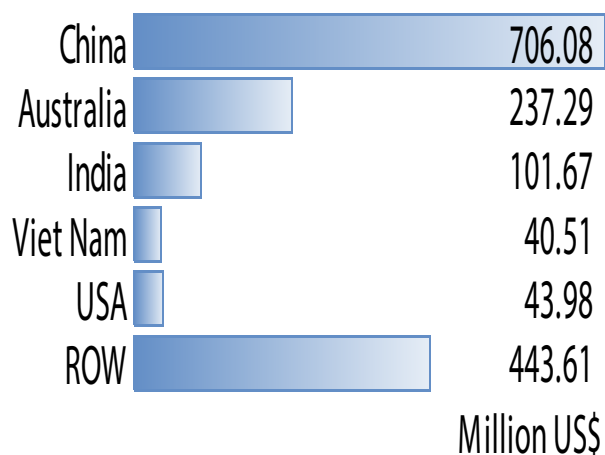
Imports



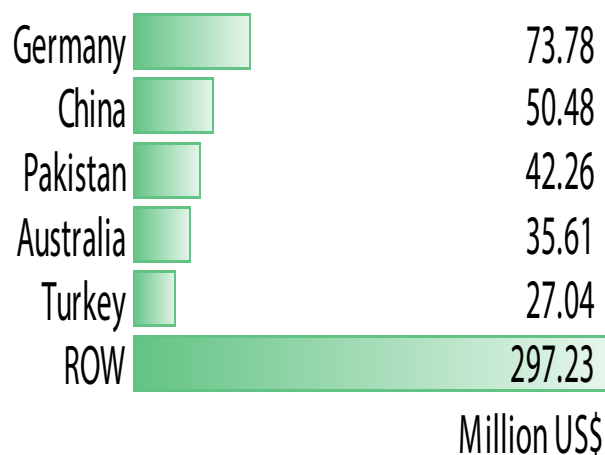
Exports



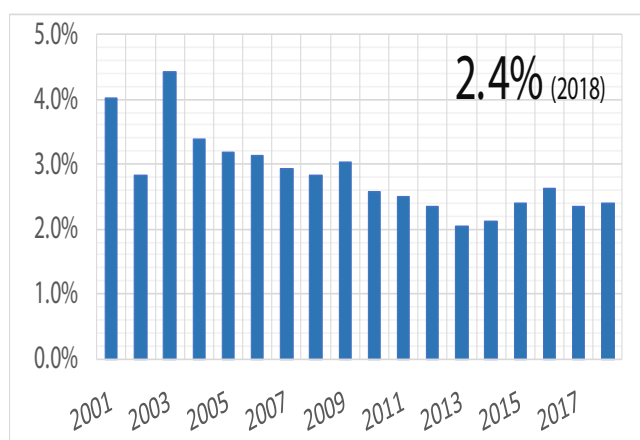
Imports by Country - 2018



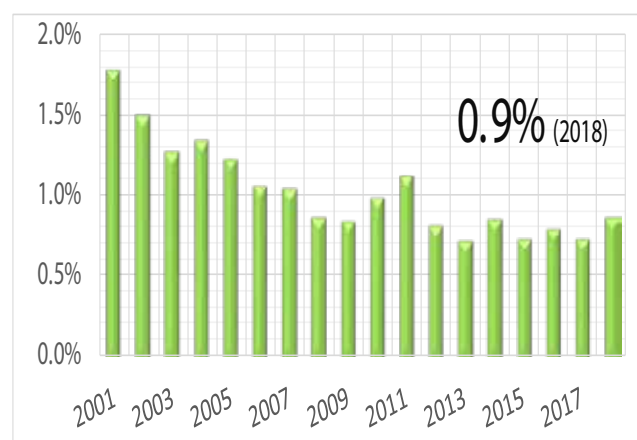
Exports by Country - 2018



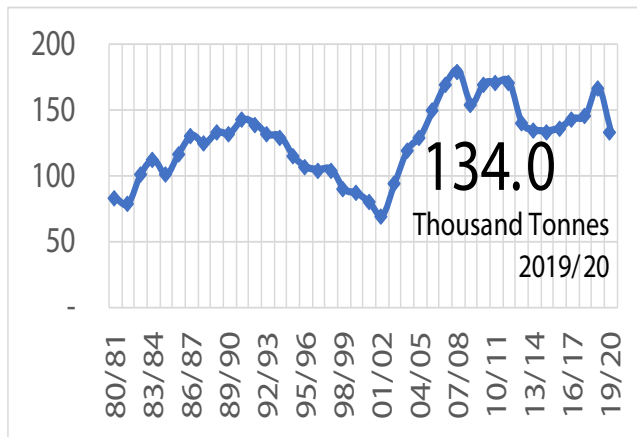
T&A Imports Share in Overall Imports



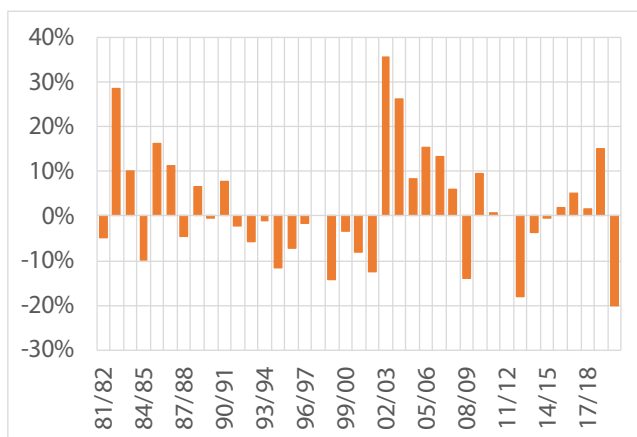
T&A Exports Share in Overall Exports



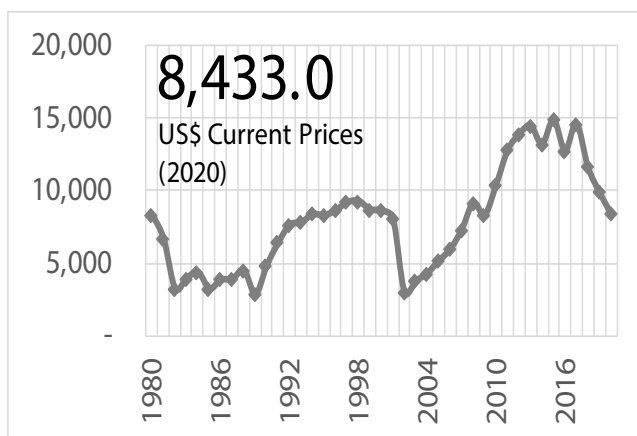
Cotton Mill Use



Cotton Mill Use - Annual Variation %



GDP per capita



Employment

114,881

Textile & Apparel Sector

Spinning Machinery

1,800

Air-Jet Spindles

60,000

Open End

1,200,000

Short-Staple Spindles

Weaving Machinery

17,500

Shuttle Looms

6,500

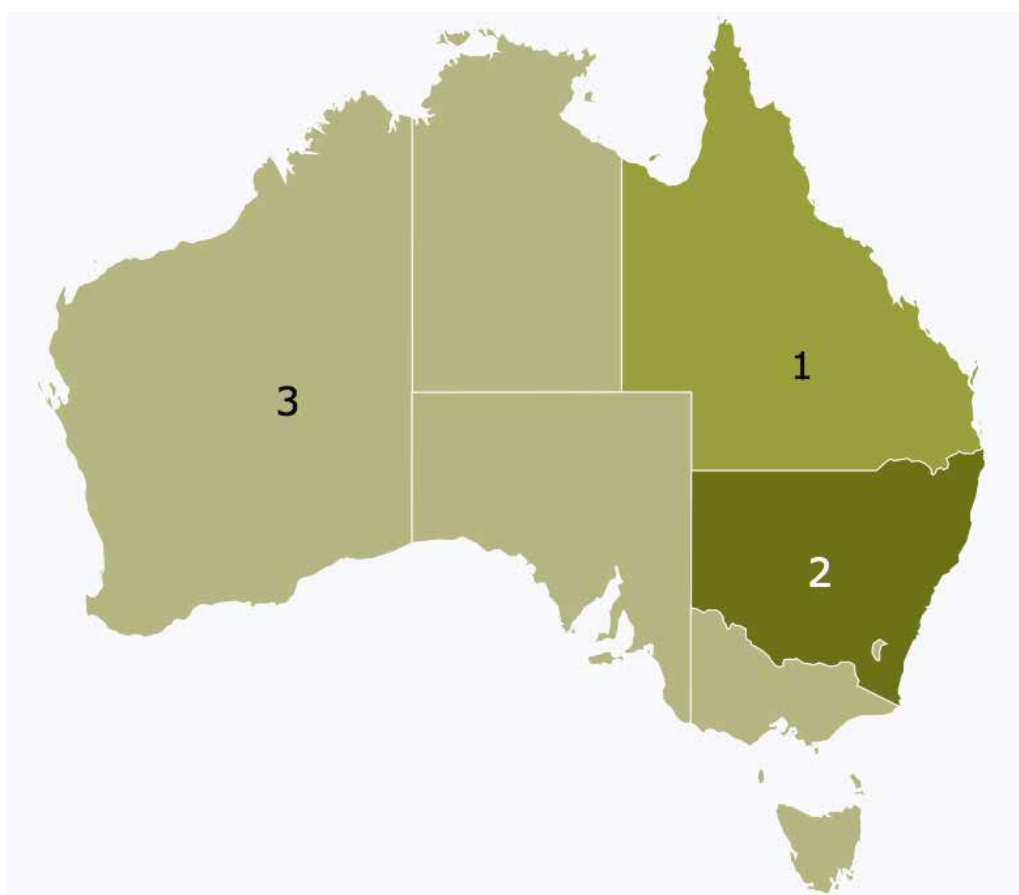
Shuttle-less Looms

Organic Cotton Produced in 2018/19

11 tonnes



Basic Data 2020



Arable Area

30,974

'000 Hectares

Cotton Area

295

'000 Hectares

Production

561

'000 Tonnes

Lint Yield

1,902

Kg/Hectare

PRODUCTION 2020

		Area '000 Ha	Yield Kg/Ha	Production '000 Tonnes
1	NSW	180	2000	360
2	Queensland	115	1750	201
National		295	1902	561

Consumption

2

'000 Tonnes

Lint Exports

260

'000 Tonnes

Farmers

1155

Male

Farmers

345

Female



VARIETIES AND FIBRE TRAITS

	Release Year	% Area	Ginning %	Length UHML mm	Strength g/tex	Mic
Sicot 714B3F	2016	18	42	30.5	30	4.4
Sicot 746B3F	2016	40	45	30.7	30	4.5
Sicot 748B3F	2016	35	44	31.2	31	4.5
Sicot 754B3F			43	31.5	31	4.5
Sicot 707B3F			42	30.2	30	4.6
Sicot 606B3F*			43	30.2	31.9	4
Sicot 711RRF			43	30.2	30	4.4
Sicot 812RRF			41	31.2	31	4.3
Sicot 620			45	32.0	31.1	4.1
Siokra 250			41	33.0	32.6	4.2

TILLAGE, STALKS-USE WEEDING & HARVESTING

Weeding Method (%)		Harvesting Method (%)	
5	100	0	100
Machine	Herbicide	Hand Picked	Machine Picked

Tillage Methods (% Area)

70	30	70	30
Zero Tillage	Disc Plough	Chisel Plough	Conventional Tillage

Use of Cotton stalks (% Use)

0	0	100	0
Burnt in Fields	Used as Firewood	Ploughed Back	Stacked on Bunds

SEEDS & PLANTING

Seeds Used for Sowing (%)

0	100	100	0
Fuzzy Seeds	Delinted	Chemical Treated	Untreated

Planting Method (%)

Seed Source (%)

0	100	100	0
Manual	Machine	Local	Imported

Use of Cotton Seeds (% Use)

90	0	10	0
Crushed for Oil	Direct Cattle-Feed	Used for Sowing	wasted

Seed Rate, Spacing & Plant Population/Ha

12	90	10	111,000
Seed Rate Kg/Ha	Between Rows cm	Within Row cm	Plant Population/ Ha

WATER

Rainwater & Irrigation water (mm)

NSW	464	281	6	360
Queensland	674	182	9	540
National	307	221	7	420
	Total Rainfall	Effective Rainfall	No. of Irrigations	Irrigation Water/Ha

Methods of Irrigation (% Area)

NSW	1	69	21	8
Queensland	2	70	19	8
National	1	80	17	1
	Flood	Furrow	Sprinkler	Drip

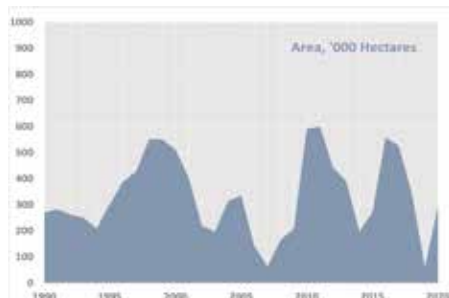
Rainfed Area (%) & Water Used /Kg Lint

NSW	13	564	1,566	1,406
Queensland	32	422	2,098	1,041
National	20	986	1,758	1,163
	Rainfed % Area	Irrigation Billion L	Irrigation L/Kg Lint	Rainwater L/Kg Lint

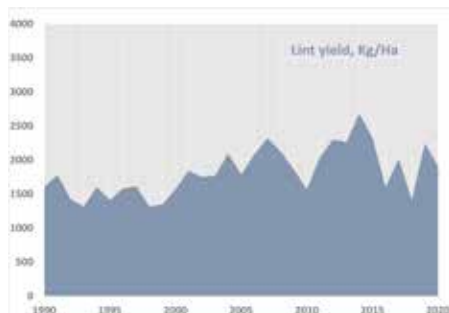


PRODUCTION

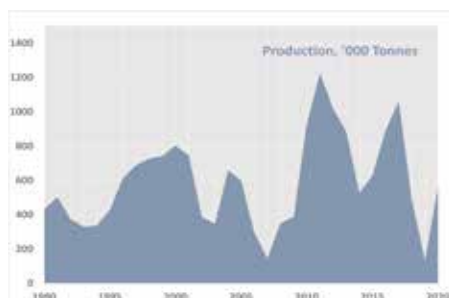
Cotton Area '000 Hectares



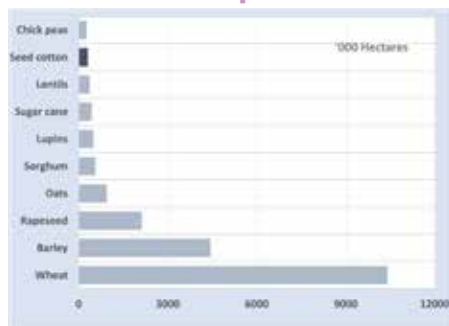
Lint Yield Kg/Ha



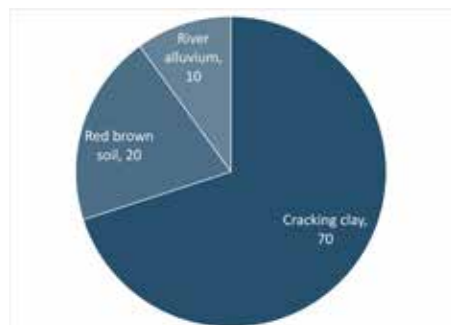
Production '000 Tonnes



Area of Crops '000 Ha



SOIL TYPES



COMPETING CROPS

NSW & Queensland	NSW & Queensland
Wheat	Wheat
Sorghum	Sorghum

ROTATION CROPS

INSECT PESTS & INSECTICIDES

INSECT PESTS / INSECTICIDES

EARLY-SEASON

Helicoverpa punctigera
Helicoverpa armigera
Creontiades dilutus
Thrips imagines
Aphis gossypii

MID-SEASON

H. armigera / punctigera
Creontiades dilutus
Aphis gossypii
Tetranychus urticae
Bemisia tabaci

INSECTICIDES

Clothiaidin
 Dimethoate (Rogor)
 Fipronil (Regent)
 Indoxacarb (Steward)
 Paraffinic oil (Canopy)
 Pyriproxyfen (Admiral)
 Diafenthiuron (Pegasus)
 Emamectin benzoate (Affirm)
 Abamectin (Abamectin)
 Deltamethrin (Pyrethroids)

WEEDS & HERBICIDES

WEEDS / HERBICIDES

NARROW-LEAF WEEDS

Echinochloa colona
Urochloa panicoides
Chloris virgata
Chloris truncate
Cyperus spp.

BROAD-LEAF WEEDS

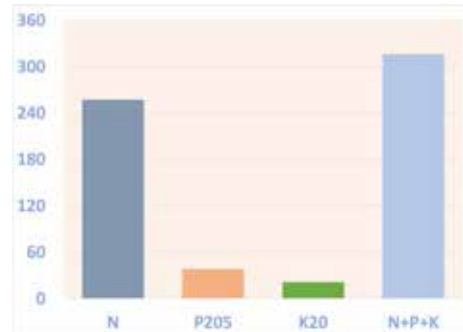
Conyza spp.
Sonchus oleraceus
Hibiscus trionum
Ipomea spp.

HERBICIDES

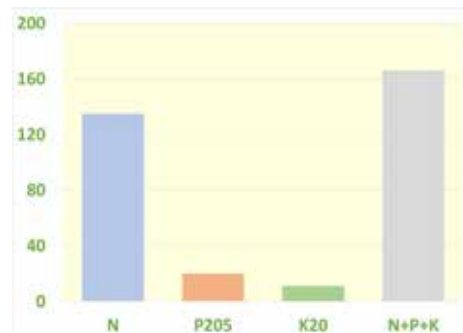
Roundup, Diuron & Pendimethalin
 Fluom.+Prometryn

FERTILISERS

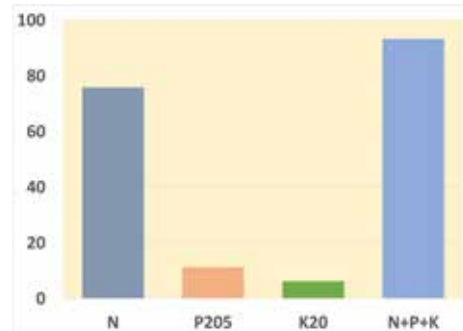
Fertiliser (NPK) use Kg/Hectare



Fertiliser (NPK) use per Kg Lint



Fertiliser (NPK) use '000 Tons



DISEASES & FUNGICIDES

DISEASES / PATHOGENS

DISEASES / PATHOGENS

Black root rot
Pythium & Rhizoctonia spp.
Fusarium wilt
Verticillium wilt

CHEMICAL CONTROL

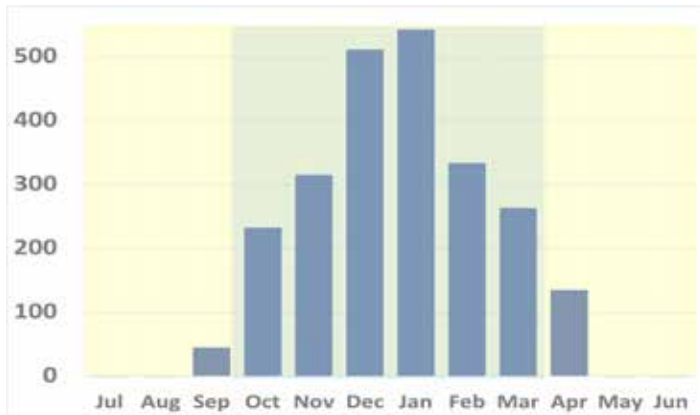
Azoxystrobin+Metalaxyl+Dynasty
 Dynasty + Bion
 Dynasty + Cruiser

STRUCTURE OF COTTON RESEARCH

Cotton Research and Development Corporation, Narrabri, NSW plays an important role in cotton research. The Australian cotton research system is a network of professional disciplines, public institutions, non-profit organisations and private companies bound by legislation and commercial relationships. The agencies involved in the cotton research system include the Cotton Research and Development Corporation (CRDC), Cotton Australia, Cotton Seed Distributors, CSIRO, the Australian Government's Department of Agriculture and Water Resources, the Queensland Government's Department of Agriculture and Fisheries, the NSW Department of Primary Industries and universities (including Australian National University, Deakin University, Griffith University, Macquarie University, University of Southern Queensland, Queensland University of Technology, University of Melbourne, University of New England, University of New South Wales, University of Queensland, University of Southern Queensland, University of Sydney, University of Technology, Sydney and the University of Western Sydney).

WEATHER 2019-2020

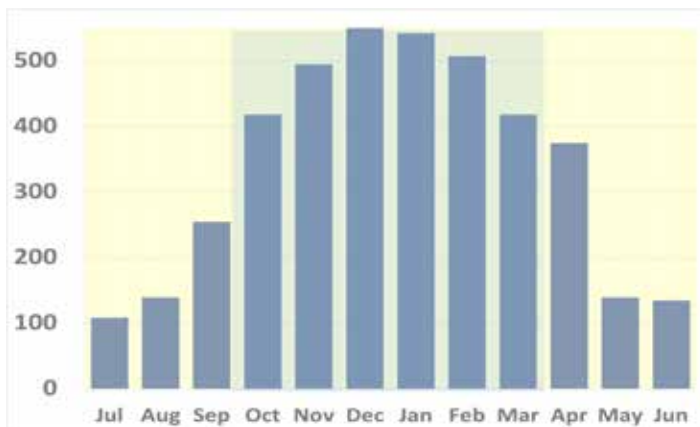
Heat Units (DD60) -New South Wales



Rainfall (mm) -New South Wales



Heat Units (DD60) -Queensland



Rainfall (mm) -Queensland



Heat Units (DD60) -Western Australia



Rainfall (mm) -Western Australia



COST OF CULTIVATION US\$/Hectare

INPUTS	National	Gwydir	McIntyre	MacQuairie	Namoi	Murrumbidgee
Biotech/GM seeds	400	353	418	372	382	410
NPK+Other	515	358	594	431	364	565
Insecticides	84	126	116	105	64	64
Herbicides	102	143	129	136	75	79
Growth regulators	9	5	14	5	2	12
Defoliant	48	39	71	50	33	42
MANPOWER / LABOUR						
Land preparation /tillage etc.,	336	149	240	550	901	195
Irrigation	988	309	73	1023	649	1516
Pesticide application	116	136	85	88	122	132
Defoliator application	0	0	0	0	0	0
Picking / harvesting	222	206	170	139	153	290
Stalk cutting & removal	131	113	14	40	47	236
Transportation /unloading etc.,	67	96	22	47	25	91
Ginning cost per 100 Kg	495	596	584	513	447	453
Others (please specify)	502	573	596	626	830	340
MACHINERY /ANIMALS etc.						
Tractors	72	60	47	37	82	97
Pumps and earthworks	147	425	259	68	239	78
Electricity	62	167	20	18	237	47
Fuel /Oil / Diesel etc.,	368	378	316	240	339	445
Harvesting machines	0	0	0	0	0	0
Other farm overheads	273	305	84	124	131	439
Consultants	47	56	86	31	44	36
Depreciation	308	276	419	329	515	208
Insurance	63	67	95	58	51	51
Others (Taxes)	31	37	40	32	29	27
MARKET VALUE						
Seed cotton Value/Ha	5464	6449	5874	5819	4952	5164
Ginning % (output)	39	39	39	39	39	39
Lint yields Value/Ha	4571	5439	4974	4874	4181	4285
Seed value \$/Ha	892	1010	900	944	771	878
Lint yields Kg/Ha	2427	2867	2626	2590	2277	2272
Seed Kg/Ha	3761	4444	4071	4015	3529	3522
Cost of Cultivation /Ha	5385	4975	4490	5062	5761	5853
Net Returns	78	1474	1384	757	-809	-689

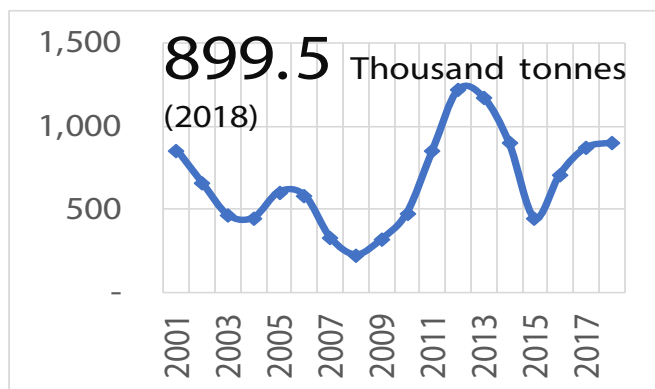


TRADE DATA

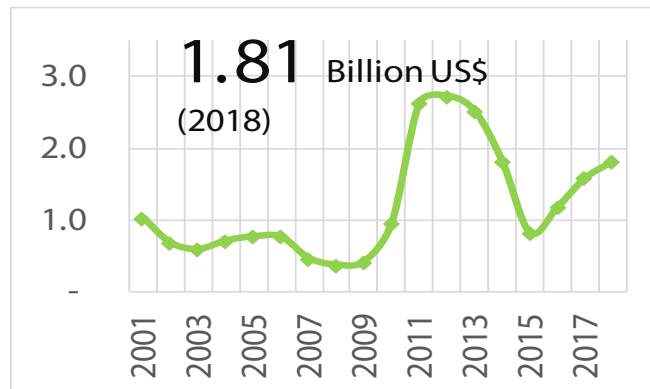


COTTON FIBRE EXPORTS DATA

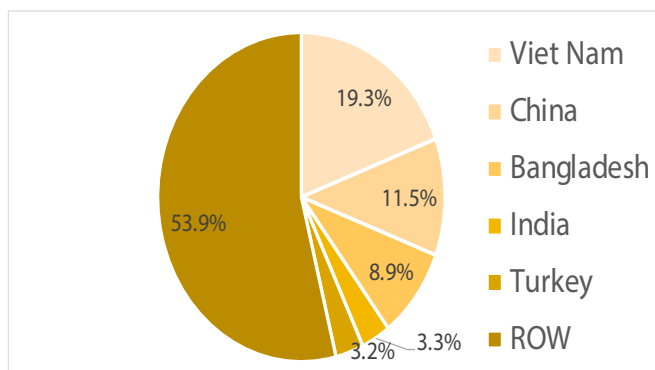
Quantity



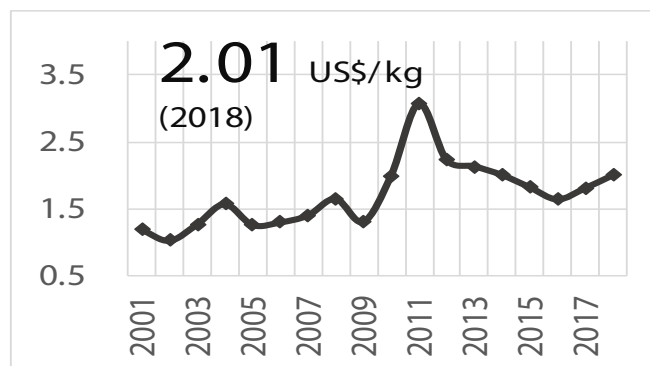
Value



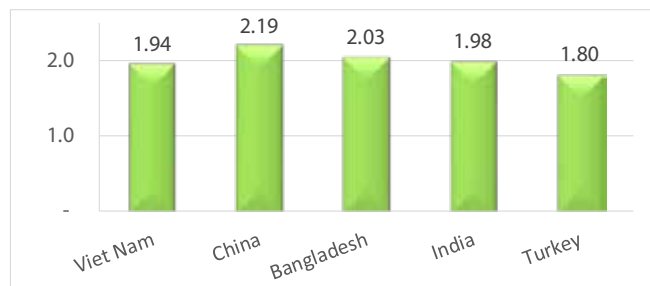
Market Share by Country



Average Price: US\$/Kg



Average Price by Country 2018: US\$/Kg

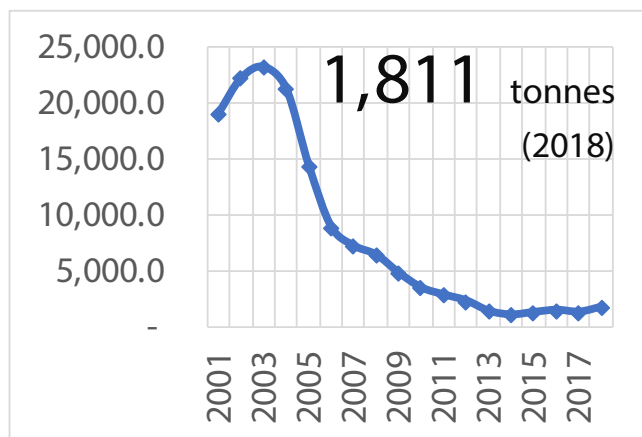


Viet Nam	173,163
China	103,309
Bangladesh	80,339
India	29,620
Turkey	28,405
ROW	484,693
Tonnes	

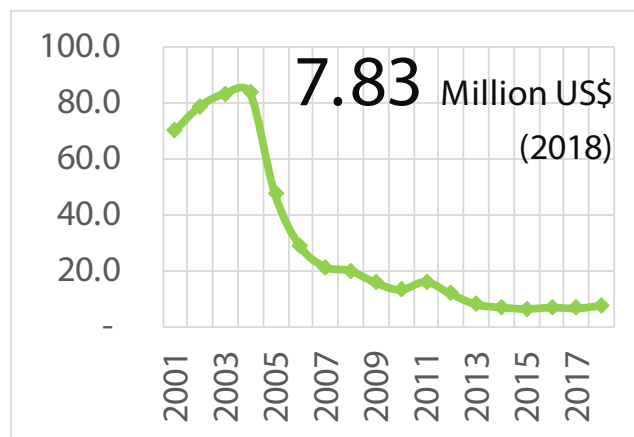


COTTON YARN IMPORT DATA

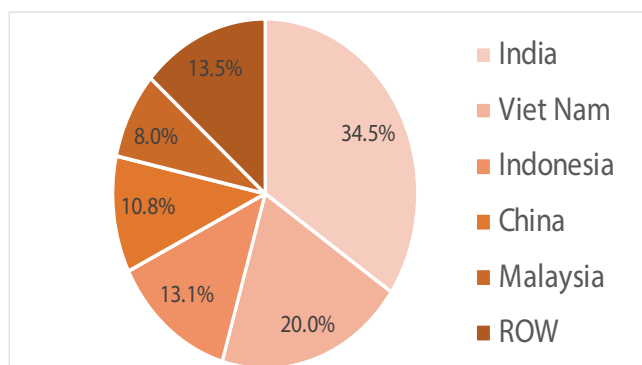
Quantity



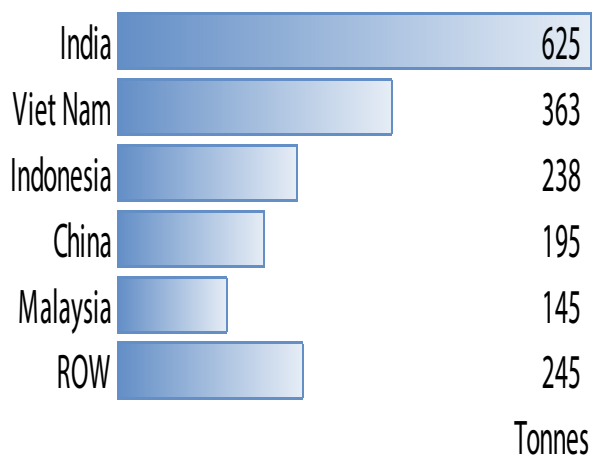
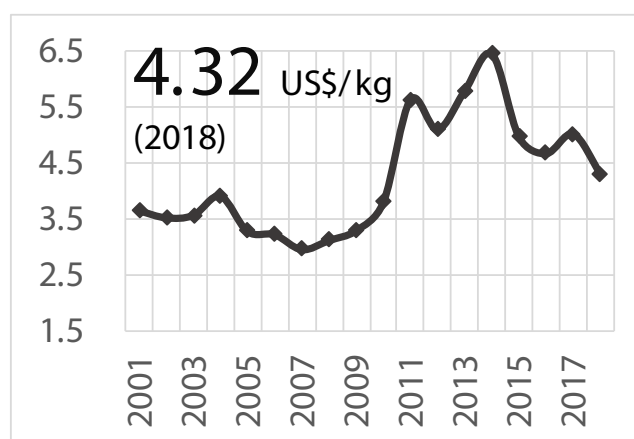
Value



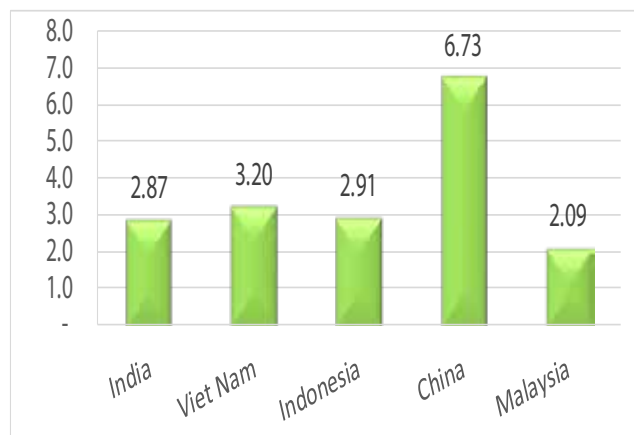
Market Share by Country



Average Price: US\$/Kg

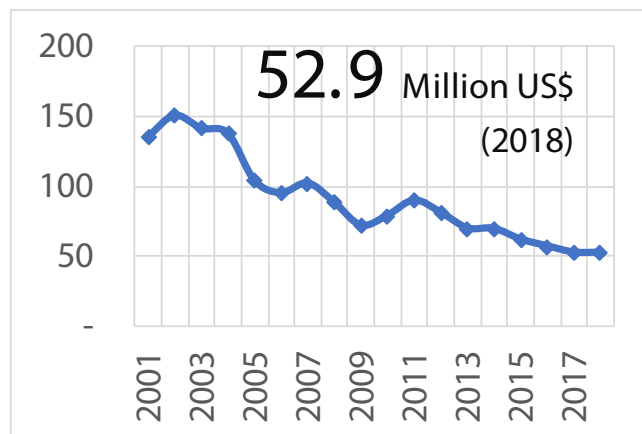


Average Price by Country 2018: US\$/Kg

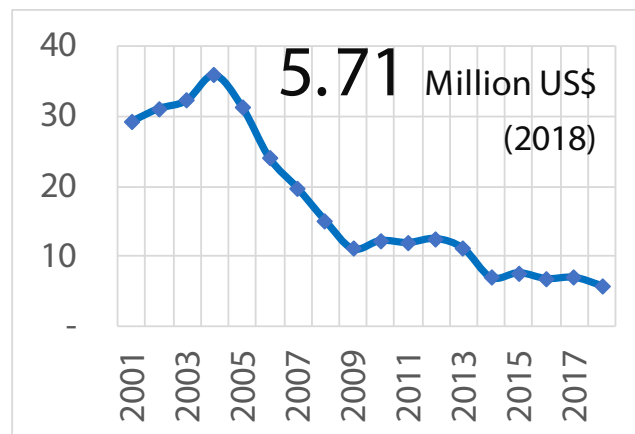


COTTON FABRIC TRADE DATA

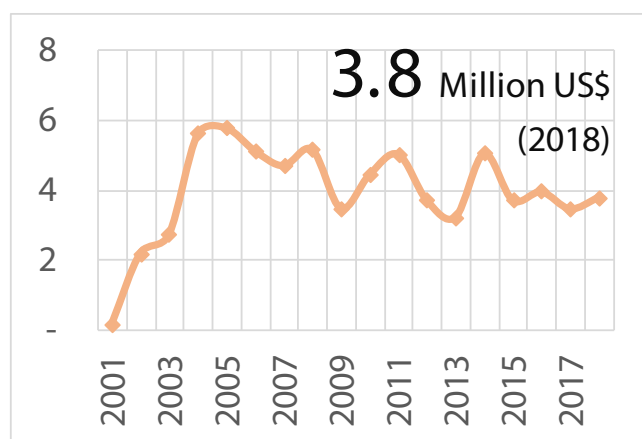
Woven Cotton Fabric Imports



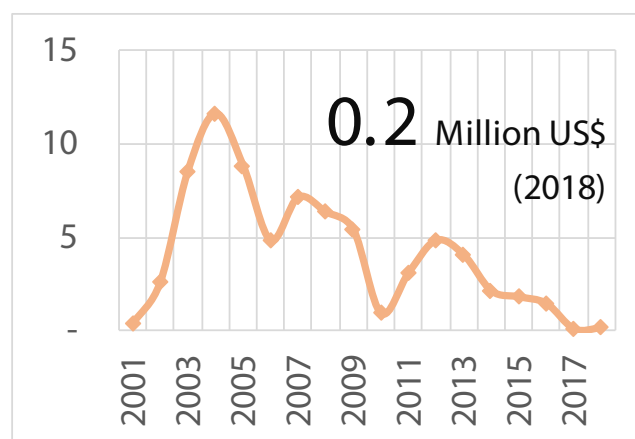
Woven Cotton Fabric Exports



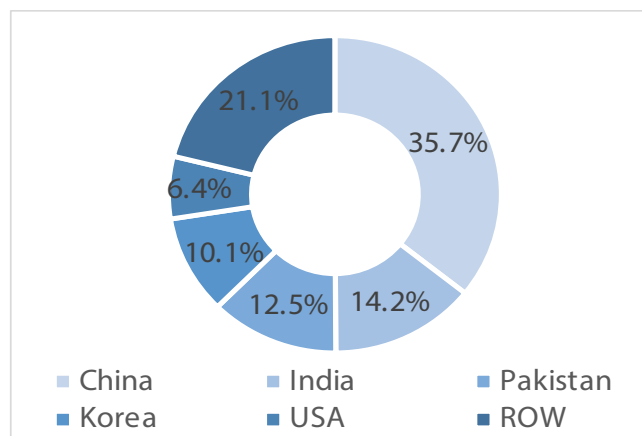
Knitted Cotton Fabric Imports



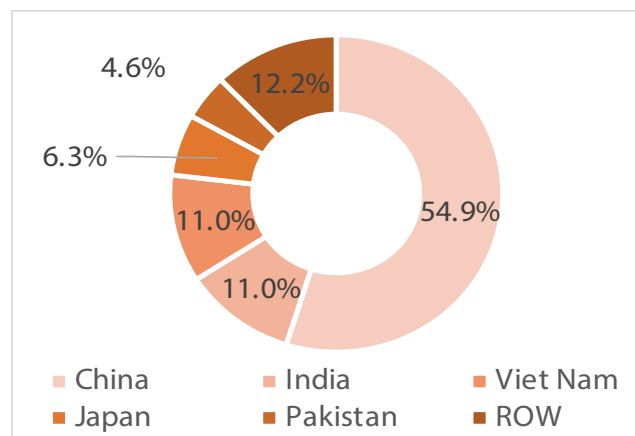
Knitted Cotton Fabric Exports



Market Share Imports by Country - 2018 Woven Cotton Fabric

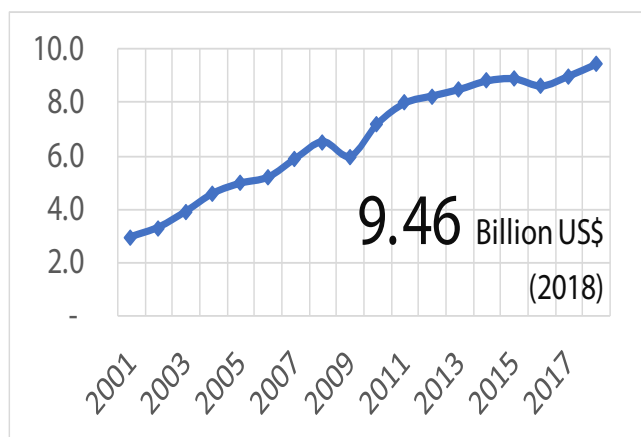


Market Share Imports by Country - 2018 Knitted Cotton Fabric

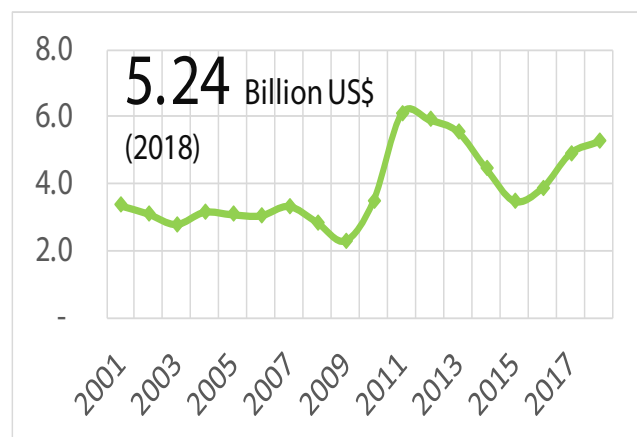


TEXTILE & APPAREL TRADE DATA

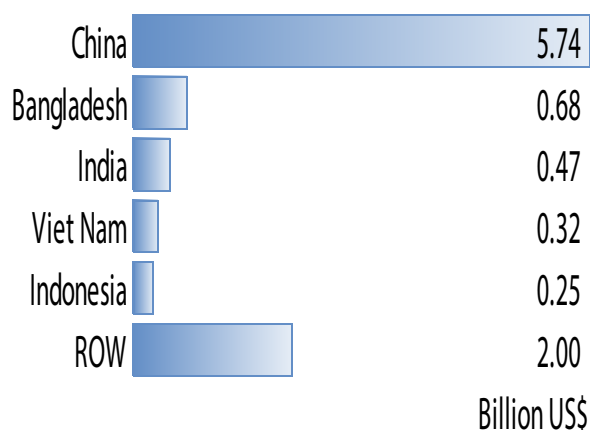
Imports



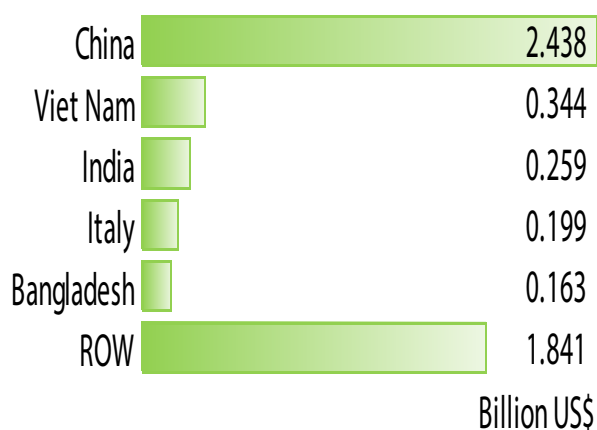
Exports



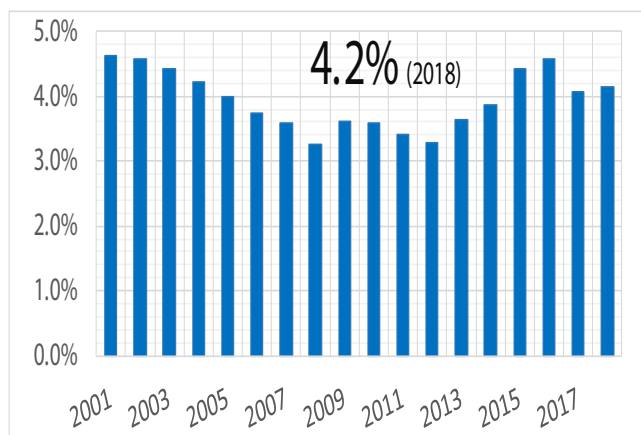
Imports by Country - 2018



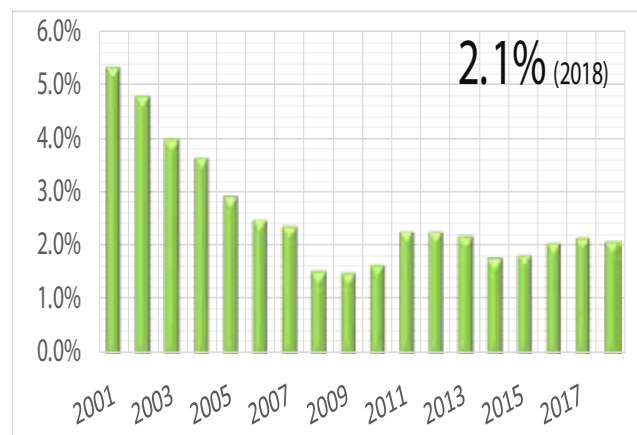
Exports by Country - 2018



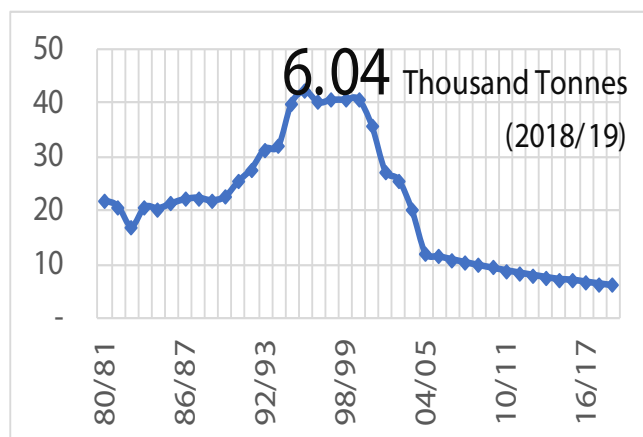
T&A Imports Share in Overall Imports



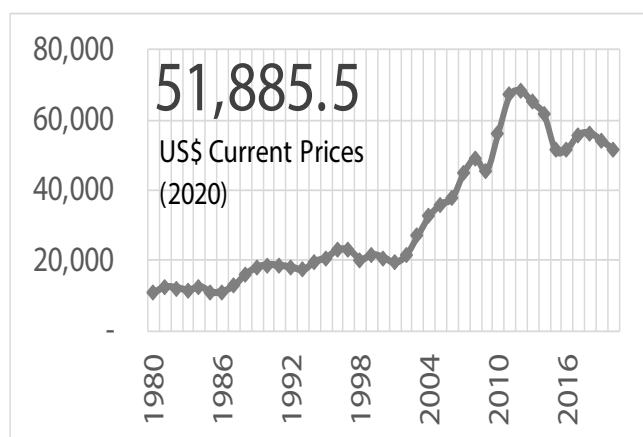
T&A Exports Share in Overall Exports



Cotton Mill Use



GDP per capita



Spinning Machinery

3,300

Air-Jet Spindles

3,000

Open-End

1,800

Short-Staple Spindles

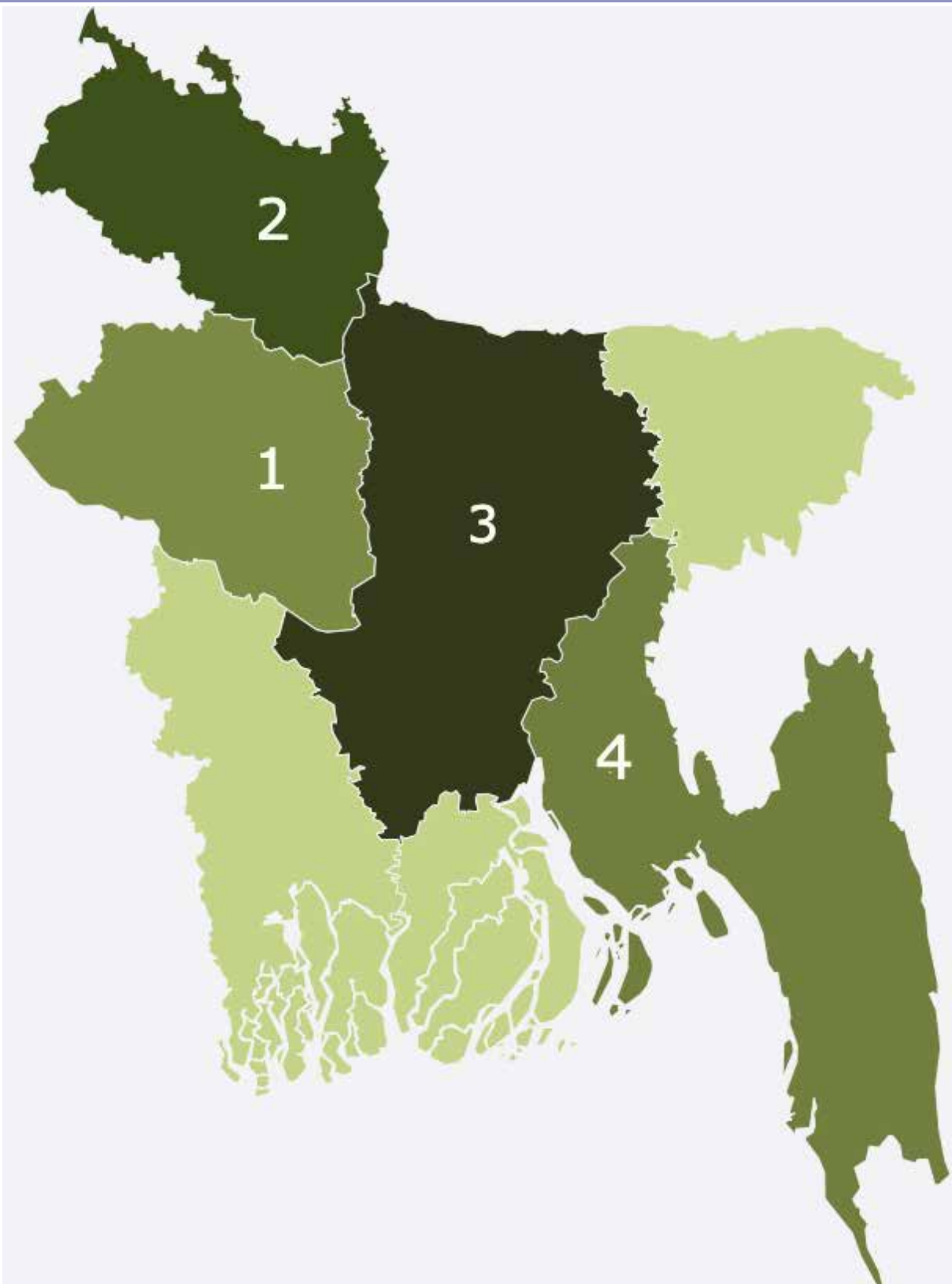
Weaving Machinery

850

Shuttle-less Looms

Better Cotton Produced
in 2018/19

92,000 tonnes



Arable Area 7,772 '000 Hectares	Cotton Area 44 '000 Hectares	Farmers 53,000 Male	Farmers 35,000 Female
Production 34 '000 Tonnes	Lint Yield 772 Kg/Hectare	Consumption 1,401 '000 Tonnes	Lint Exports 0 '000 Tonnes

NUMBER OF FARMERS

	Men	Women
Hill Cotton	4,000	31,000
Jessore	30,000	2,000
Rangapur	14,000	1,000
Others	5,000	1,000
Total	53,000	35,000

PRODUCTION 2020

		Area '000 Ha	Yield Kg/Ha	Production '000 Tonnes
1	Jessore	16	1113	18
2	Rangapur	8	1241	10
	National	44	772	34

VARIETIES AND FIBRE TRAITS

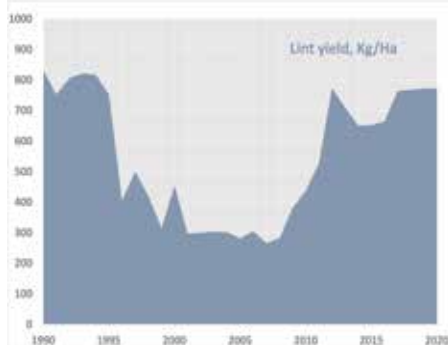
	Release Year	% Area	Ginning %	Length UHML mm	Strength g/tex	Mic
HILL COTTON						
HC-1	2000	10	41	16	77 PSI	6.5
HC-2	2002	5	41	18	77 PSI	6.3
HC-3	2015	5	46	18	78 PSI	6.4
VARIETIES IN DHAKA, JASHORE, RANGPUR AND CHITTAGONG REGION (PLAIN AREAS)						
CB-9	2000	1	36	28	30.1	4.6
CB-12	2010	9	40	29	30.5	4
CB-13	2013	5	42	29.5	29	3.8
CB-14	2013	10	39	30.5	30.4	3.9
CB-15	2016	10	40.7	29.5	40	5.2
HSC-4 (Hybrid)	2009	30	40	30.5	29.5	4.3
CB Hybrid-1	2015	5	42	30.56	86.25PSI	4-4.5
CB-16	2017	2	42	30.56	86.25PSI	4.4
CB-17	2018	4	40-42	28.19	84-85PSI	4.1
CB-18	2019	4	41	31	84.87PSI	4.35

PRODUCTION

Cotton Area '000 Hectares



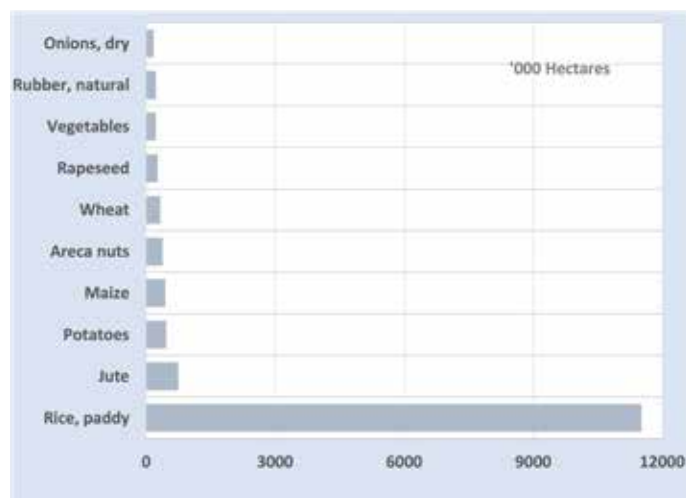
Lint Yield Kg/Ha



Production '000 Tonnes

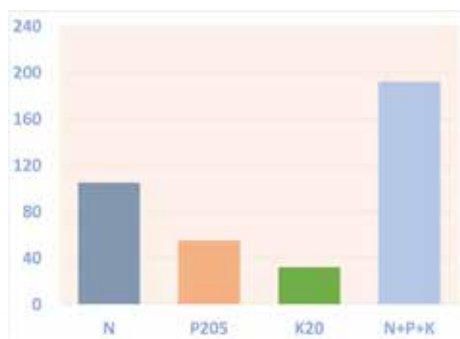


Area of Crops '000 Ha

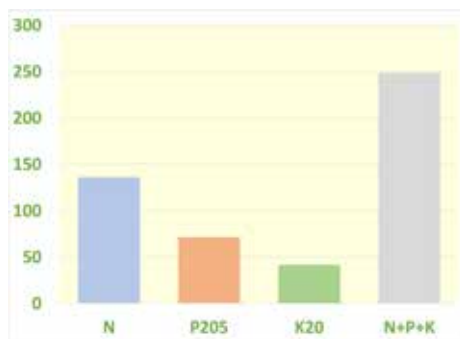


FERTILISERS

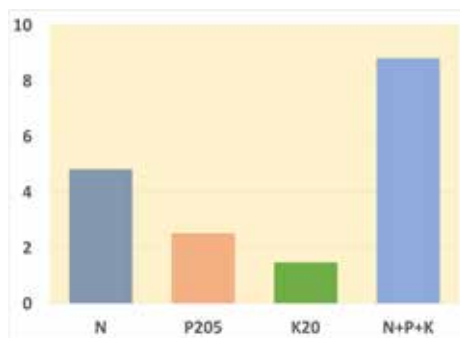
Fertiliser (NPK) use Kg/Hectare



Fertiliser (NPK) use per Kg Lint



Fertiliser (NPK) use '000 Tons



COMPETING CROPS

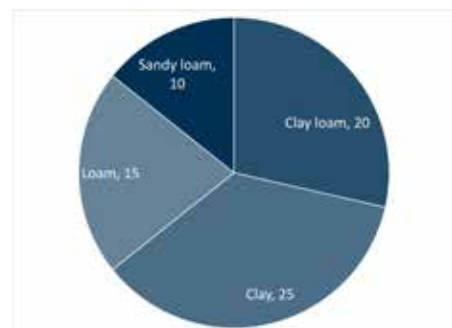
<i>G. arboreum</i>	<i>G. hirsutum</i>
Rice	Sesame
Sesame	Mungbean
	Wheat

ROTATION CROPS

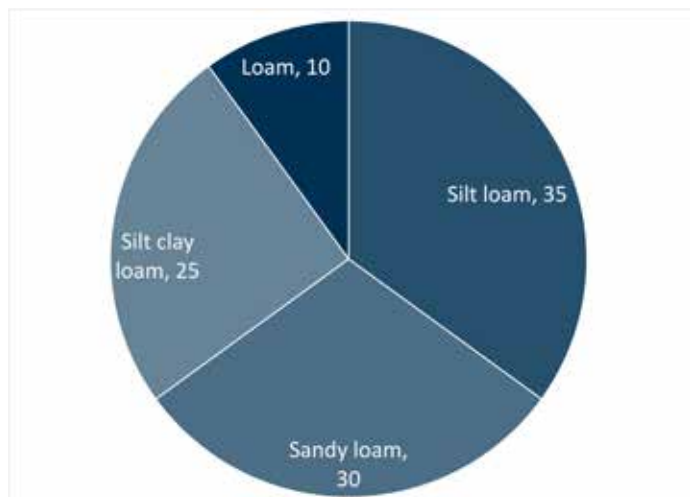
<i>G. arboreum</i>	<i>G. hirsutum</i>
Rice	Sesame
Sesame	Mungbean
Jute	Wheat

SOILS

Soil Types - *G. arboreum*



Soil Types - *G. hirsutum*



COTTON RESEARCH



The Cotton Development Board (CDB), Dhaka is responsible for research on various aspects of cotton production. The Board is under the Ministry of Agriculture. The responsibility of cotton research was transferred from the Bangladesh Agricultural Research Institute (BARI) to the CDB in 1991. The main activities of the CDB are research, extension, seed production, training, marketing and ginning and any other R&D activities important for cotton production. The Cotton Development Board has research programs in five disciplines, plant breeding, agronomy, soil science, entomology and plant pathology. The Board has five cotton research centres/farms/stations at Sreepur, Gazipur; Sadarpur, Dinajpur; Jagadishpur, Jessore; Mahigonj, Rangpur and Balaghata, Bandarban with three Hill-cotton research sub-stations at Raicha, Bandarban; Kakohali, Rangamati and Matiranga, Khagrachari. The total manpower of these five farms is 60 including 33 researchers.

AGRICULTURAL RES INSITUTE



Tillage Methods (% Area)

3	36	64	97
Zero Tillage	Disc Plough	Chisel Plough	Conventional Tillage

Use of Cotton stalks (% Use)

0	100	0	0
Burnt in Fields	Used as Firewood	Ploughed Back	Stacked on Bunds

Weeding Method (%)

Harvesting (%)

Hill Cotton	100	60	100	0
Jessore	100	25	100	0
Rangapur	100	6	100	0
National	100	31	100	0
	Hand	Herbicide	Hand	Machine

WATER

Rainwater & Irrigation water (mm)

Jessore	1,244	664	3	90
Rangapur	2,498	1,406	2	60
National	1,657	909	2	60
	Total Rainfall	Effective Rainfall	No. of Irrigations	Irrigation Water/Ha

Methods of Irrigation (% Area)

Jessore	0	100	0	0
Rangapur	0	100	0	0
National	0	100	0	0
	Flood	Furrow	Sprinkler	Drip

Rainfed Area (%) & Water Used /Kg Lint

Jessore	100	0	0	5,964
Rangapur	70	1	145	11,332
National	50	1	389	11,768
	Rainfed % Area	Irrigation Billion L	Irrigation L/Kg Lint	Rainwater L/Kg Lint

SEEDS & PLANTING

Seeds Used for Sowing (%)

65	35	40	60
Fuzzy Seeds	Delinted	Chemical Treated	Untreated

Planting Method (%)

Seed Source (%)

100	0	100	0
Manual	Machine	Local	Imported

Use of Cotton Seeds (% Use)

85	0	10	5
Crushed for Oil	Direct Cattle-Feed	Used for Sowing	wasted

Seed Rate, Spacing & Plant Population/Ha

15	90	45	24,691
Seed Rate Kg/Ha	Between Rows cm	Within Row cm	Plant Population/ Ha



INSECTS, PATHOGENS & WEEDS

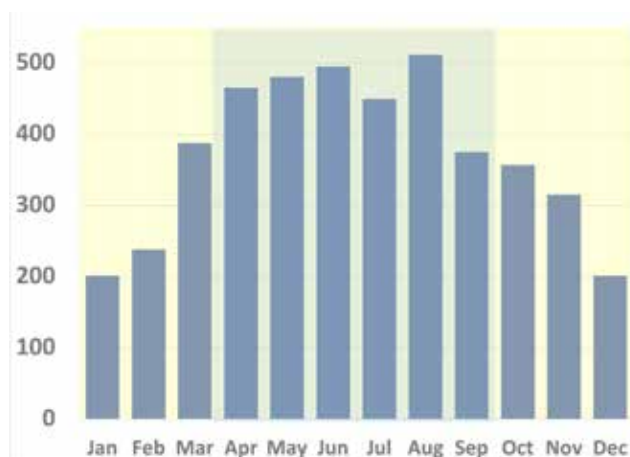
INSECT PESTS / INSECTICIDES	
<i>G. arboreum</i>	
EARLY-SEASON	
<i>Aphis gossypii</i>	
<i>Amrasca biguttula</i>	
<i>Earias vittella</i>	
MID-SEASON	
<i>Dysdercus cingulatus</i>	
<i>Earias vittella</i>	
<i>Sylepta derogata</i>	
<i>Bemisia tabaci</i>	
<i>Tetranychus lintearius</i>	
INSECTICIDES	
Acetamiprid 20%	
Acephate 75%	
Cartap 50 SP	
Chlorpyrifos	
Thiamethoxam 25 WG	
Quinalphos 25 EC	
Cypermethrin 10 EC	
Emamectin Benzoate 5SG	
DISEASES / PATHOGENS	
<i>G. arboreum</i>	
DISEASES / PATHOGENS	
<i>Fusarium oxysporum</i>	
<i>Diplodia gossypina</i>	
<i>Cercospora spp.</i>	
<i>Rhizoctonia solani</i>	
CHEMICAL CONTROL	
Vitavax-200	
Tilt	
Dithane M-45	

INSECT PESTS / INSECTICIDES	
<i>G. hirsutum</i>	
EARLY-SEASON	
<i>Aphis gossypii</i>	
<i>Amrasca biguttula</i>	
<i>Earias vittella</i>	
MID-SEASON	
<i>Earias vittella</i>	
<i>Helicoverpa armigera</i>	
<i>Spodoptera litura</i>	
<i>Bemisia tabaci</i>	
<i>Amrasca biguttula</i>	
INSECTICIDES	
Acetamiprid 20%	
Acephate 75%	
Cartap 50 SP	
Chlorpyrifos	
Thiamethoxam 25 WG	
Quinalphos 25 EC	
Cypermethrin 10 EC	
Emamectin Benzoate 5SG	
DISEASES / PATHOGENS	
<i>G. hirsutum</i>	
DISEASE / PATHOGEN	
DISEASES / PATHOGENS	
Boll rot	
Fusarium wilt	
Seedling disease	
Root rot	
CHEMICAL CONTROL	
Dithane M-45	
Tilt	
Vitavax-200	

WEEDS / HERBICIDES	
<i>G. arboreum</i>	
NARROW-LEAF WEEDS	
<i>Saccharum spontaneum</i>	
<i>Cyperus rotundus</i>	
<i>Eleusine indica</i>	
<i>Chrysopogon aciculatus</i>	
<i>Imperata cylindrica</i>	
BROAD-LEAF WEEDS	
<i>Mimosa pudica</i>	
<i>Mikania cordata</i>	
<i>Convolvulus arvensis</i>	
<i>Lantana camara</i>	
<i>Opuntia spp.</i>	
HERBICIDES	
Glyphosate	
WEEDS / HERBICIDES	
<i>G. hirsutum</i>	
NARROW-LEAF WEEDS	
<i>Cyperus rotundus</i>	
<i>Cynodon dactylon</i>	
<i>Eleusine indica</i>	
<i>Digitaria sanguinalis</i>	
<i>Cyanotis axillaris</i>	
BROAD-LEAF WEEDS	
<i>Ageratum conyzoides</i>	
<i>Panicum repens</i>	
<i>Amaranthus spinosus</i>	
<i>Amaranthus viridis</i>	
<i>Euphorbia hirta</i>	
HERBICIDES	
Glyphosate	
Pendimethalin	

WEATHER 2019-2020

Heat Units (DD60) -Rangapur



Rainfall (mm) -Rangapur



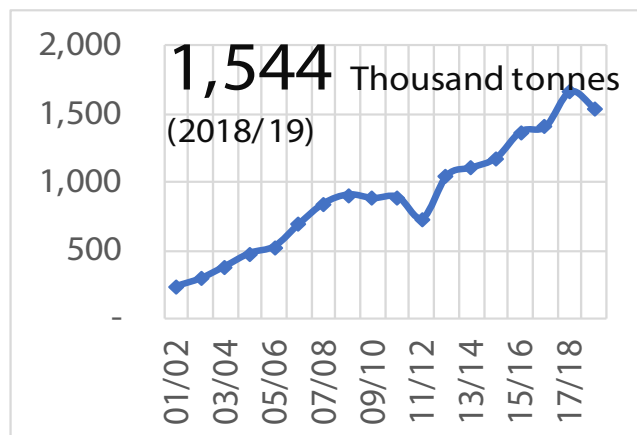
COST OF CULTIVATION US\$/Hectare

INPUTS	Quantity (Kg/Ha)	Operations per season	Total cost /Ha
Non-GM seeds	15kg		3.5
Biotech/GM seeds	600 gm		0.0
NPK+Other	261kg	3 split	352.9
Insecticides	1.75L	4 split	117.6
Herbicides	6L	1split	29.4
Fungicides / antibiotics etc.,	0.5L	1 split	11.8
Growth regulators	2,5L	3 split	35.3
Defoliants			0.0
Manure	1000 kg	1 split	35.3
Others (please specify)			0.0
MANPOWER / LABOUR	Wages per person	Persons per operation	Total cost per hectare
Land preparation /tillage etc.,	5.9	5	29.4
Sowing	5.9	15	88.2
Fertiliser / manure application	5.9	12	70.6
Irrigation	5.9	4	23.5
Thinning	5.9	4	23.5
Weeding	5.9	60	352.9
Hoeing			0.0
Pesticide application	5.9	6	35.3
Defoliator application			0.0
Picking / harvesting	5.9	30	176.5
Stalk cutting & removal	5.9	5	29.4
Transportation /unloading etc.,	5.9	2	11.8
Ginning cost per 100 Kg		2	78.0
Others (please specify)			0.0
MACHINERY /ANIMALS etc.	Cost per Operation	Number of Operations	Total cost per hectare
Tractors	29.4	1	29.4
Implements & tools	2.4	1	2.4
Electric / Diesel pumps etc.,	35.3	2	70.6
Electricity / Diesel etc.,	5.9	5	29.4
Harvesting machines	0.0		0.0
Hoeing / Tillage machinery etc.,	0.0		0.0
Bullocks /Buffaloes	0.0		0.0
Land rent	58.8	1	58.8
Land Tax			0.0
Others (please specify)			0.0
MARKET VALUE	Yield Kg/Ha	Market value /100 Kg	Value per hectare
Seed cotton	3000	0.68	2047.1
Ginning % (output)	40	0.00	0.0
Lint (fibre)	1200	1.76	2116.8
Seed	1800	0.26	465.9
COST OF CULTIVATION			1559
NET RETURNS (SEED-COTTON)			488
NET RETURNS (SEED + LINT)			946

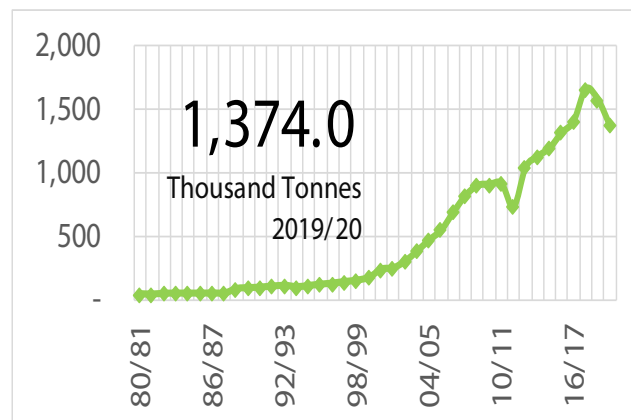


DATA ON COTTON SECTOR

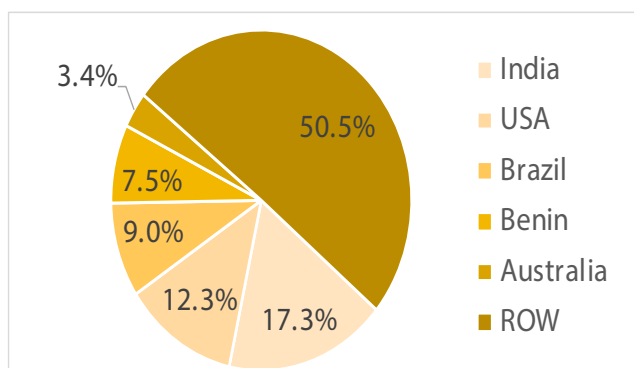
Cotton Fibre Import Data



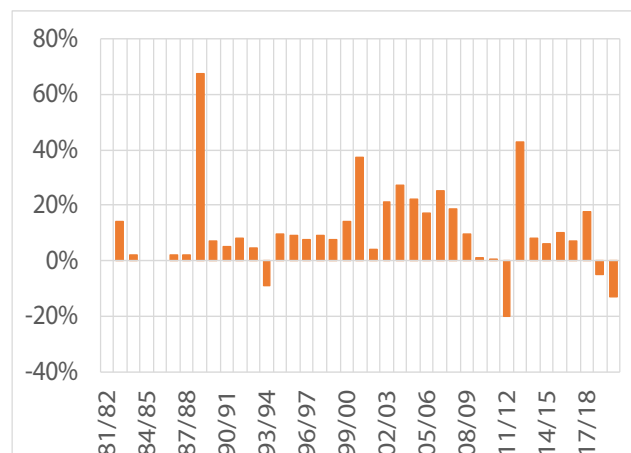
Cotton Mill Use



Cotton Fibre Import - by Country



Cotton Mill Use - Annual Variation %



Cotton Import - Rank

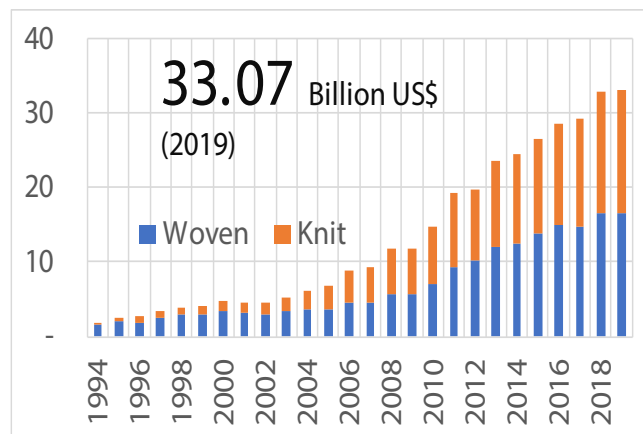
N° 3

Cotton Mill Use - Rank

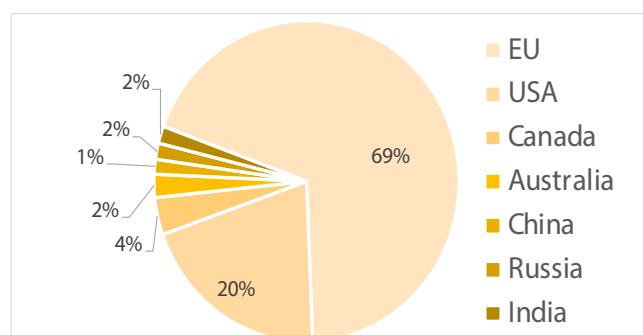
N° 6

COMPOSITION OF THE TEXTILE & APPAREL INDUSTRY

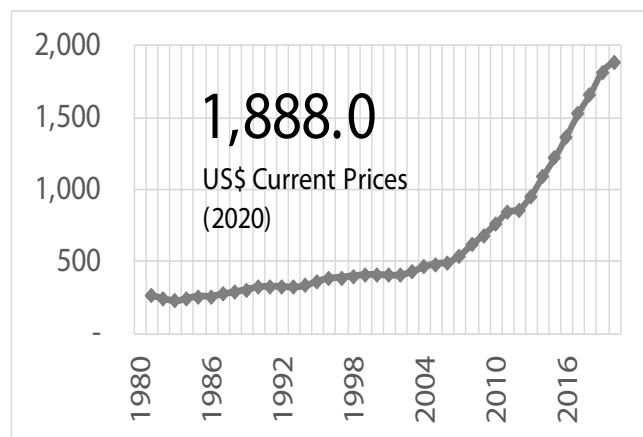
Apparel Exports - Value



Apparel Exports - By Country 2019



GDP per capita



Spinning Machinery

20,000 Air-Jet Spindles

275,000 Open-End

13,500,000 Short-Staple Spindles

Weaving Machinery

17,610 Shuttle Looms

40,050 Shuttle-less Looms

Yarn Production Million Tonnes

2.5

Cotton

0.4

Chemical

No. Mills

433

No. Garment
Factories

4,621

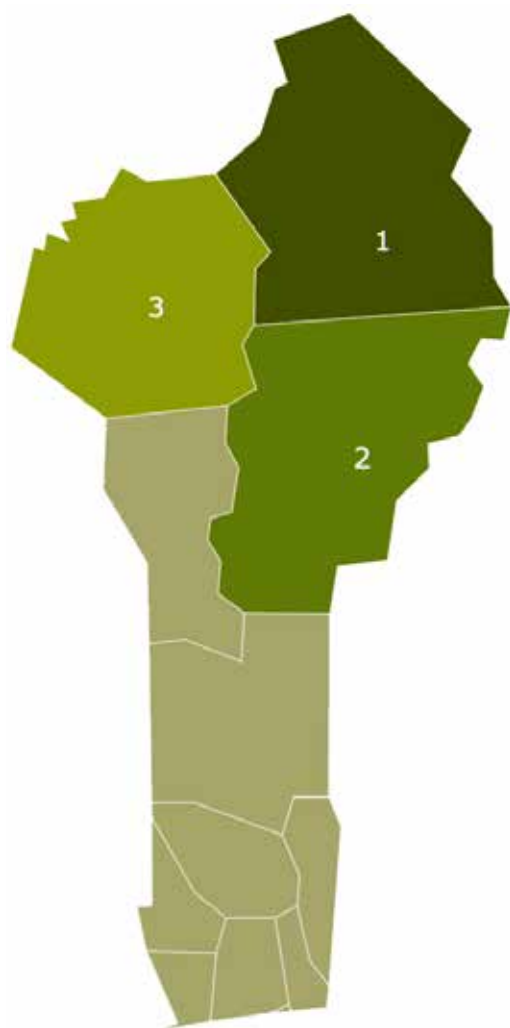
Employment

4,500,000
RMG Sector





Basic Data 2020



Cotton Area '000 Hectares

Production

294

'000 Tonnes

Lint Yield

478

Kg/Hectare

Consumption

1

'000 Tonnes

Lint Exports

304

'000 Tonnes

Farmers

190,657

Male

Farmers

23,408

Female

Arable Area

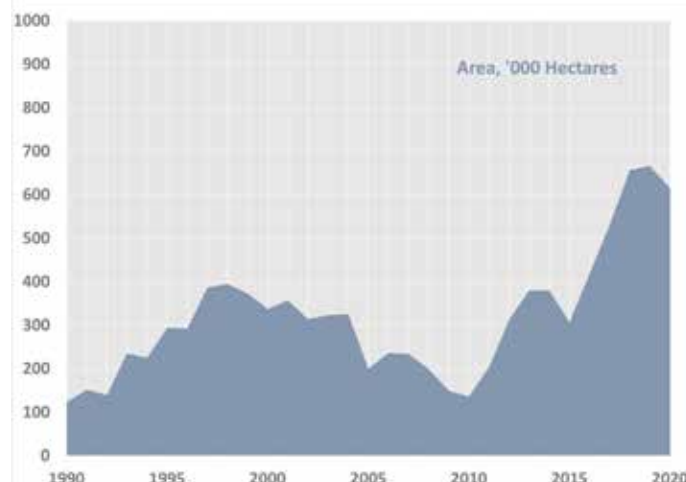
2,800

'000 Hectares

Cotton Area

614

'000 Hectares



PRODUCTION 2020

		Area '000 Ha	Yield Kg/Ha	Production '000 Tonnes
1	Alibori	368264	462	170
2	Borgou	42900	479	21
3	Atakora	169800	484	82
4	Others	33333	617	21
National		614	478	294



VARIETIES AND FIBRE TRAITS

	Release Year	% Area	Ginning %	Length UHML mm	Strength g/tex	Mic
ANG 956	2015	62	39	31	34	4.4
OKP 768	2015	28	40	30	31	4.2
KET 782	2015	10	40	30	31	4.3

TILLAGE, STALKS-USE WEEDING & HARVESTING

Tillage Methods (% Area)

5	20	80	95
Zero Tillage	Disc Plough	Chisel Plough	Conventional Tillage

Use of Cotton stalks (% Use)

64	1	5	30
Burnt in Fields	Used as Firewood	Ploughed Back	Stacked on Bunds

Weeding Method (%)

10	90
Hand	Herbicide

Harvesting Method (%)

100	0
Hand Picked	Machine Picked

SEEDS & PLANTING

Seeds Used for Sowing (%)

100	0	100	0
Fuzzy Seeds	Delinted	Chemical Treated	Untreated

Planting Method (%)

100	0	100	0
Manual	Machine	Local	Imported

Seed Source (%)

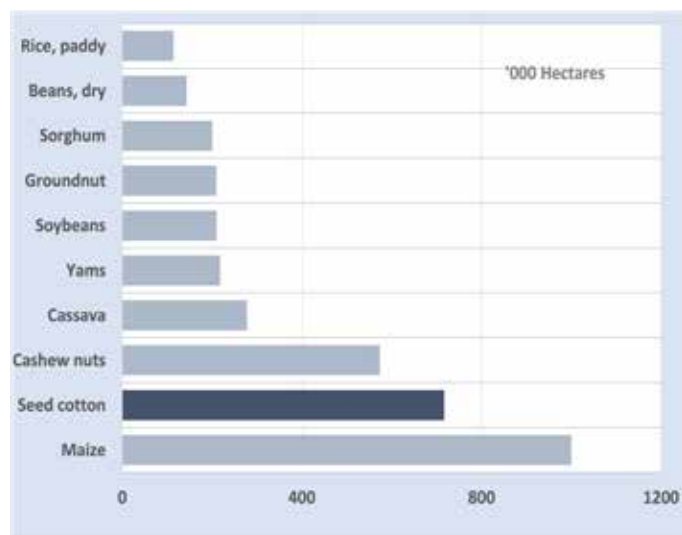
Use of Cotton Seeds (% Use)

80	10	10	0
Crushed for Oil	Direct Cattle-Feed	Used for Sowing	wasted

Seed Rate, Spacing & Plant Population/Ha

20	80	40	31,250
Seed Rate Kg/Ha	Between Rows cm	Within Row cm	Plant Population/ Ha

Area of Crops '000 Ha



WATER

Rainwater & Irrigation water (mm)

1,039	581	0	0
Total Rainfall	Effective Rainfall	No. of Irrigations	Irrigation Water/Ha

Methods of Irrigation (% Area)

0	0	0	0
Flood	Furrow	Sprinkler	Drip

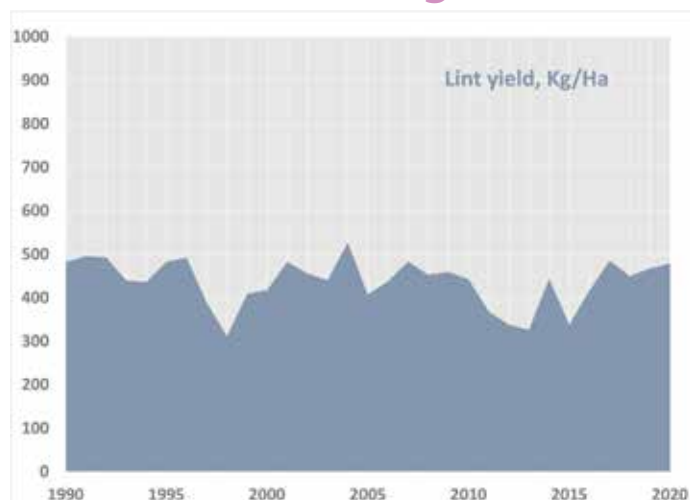
Rainfed Area (%) & Water Used /Kg Lint

100	0	0	12,160
Rainfed % Area	Irrigation Billion L	Irrigation L/Kg Lint	Rainwater L/Kg Lint

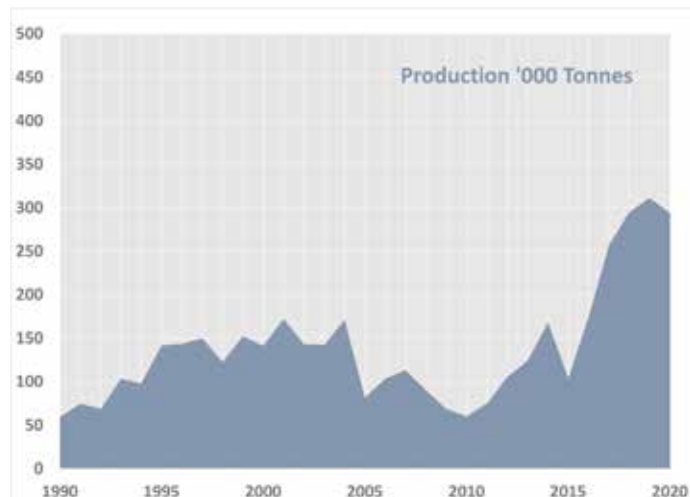


PRODUCTION

Lint Yield Kg/Ha

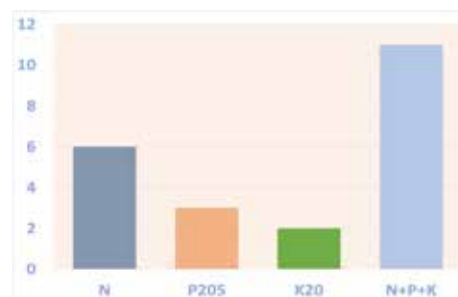


Production '000 Tonnes

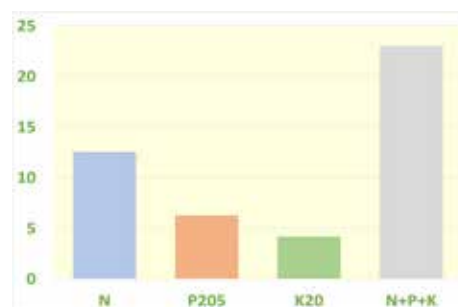


FERTILISERS

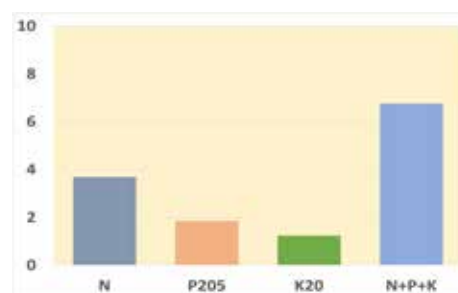
Fertiliser (NPK) use Kg/Hectare



Fertiliser (NPK) use per Kg Lint



Fertiliser (NPK) use '000 Tons



WEATHER 2019-2020

Heat Units (DD₆₀) -Alibori



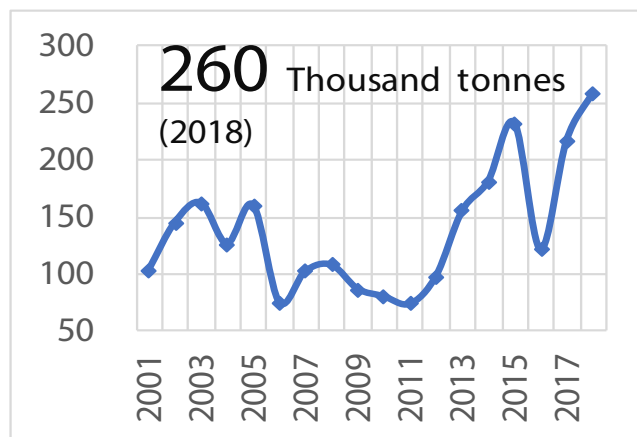
Rainfall (mm) -Alibori



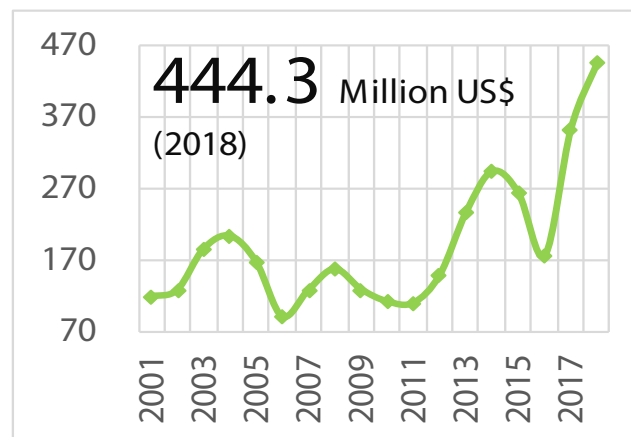


COTTON FIBRE EXPORT DATA

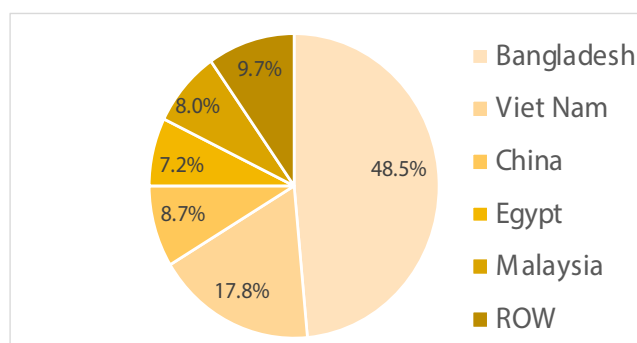
Quantity



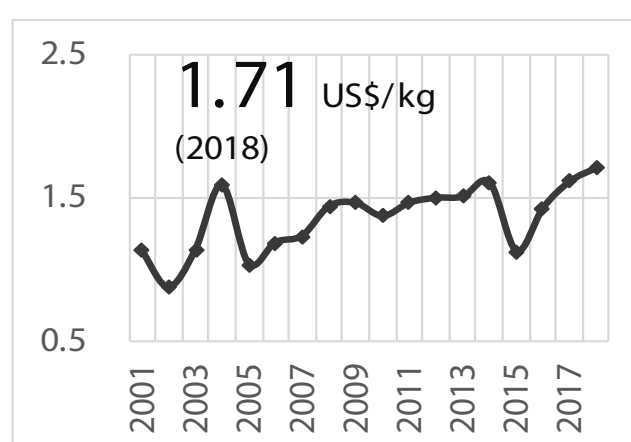
Value



Market Share by Country - 2018

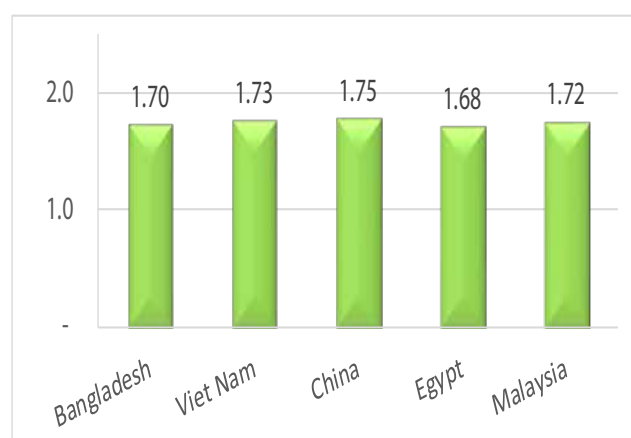


Average Price: US\$/Kg



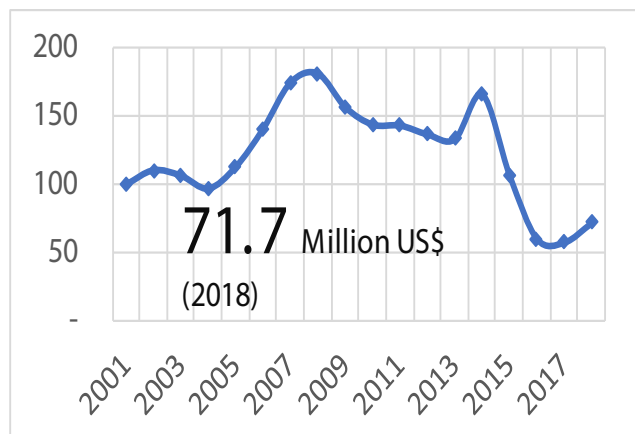
Bangladesh	125,986
Viet Nam	46,215
China	22,468
Egypt	18,790
Malaysia	20,853
ROW	25,265
Tonnes	

Average Price by Country 2018: US\$/Kg

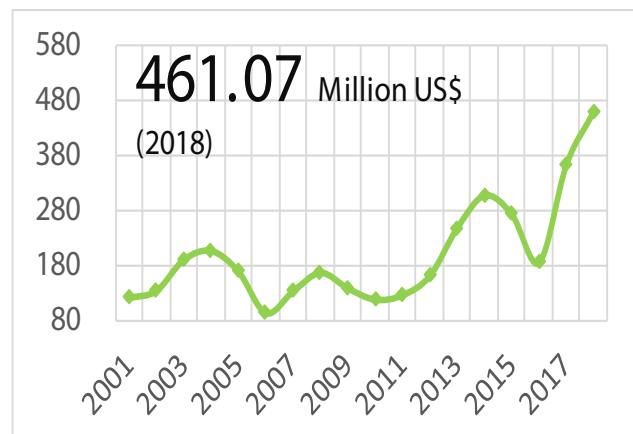


TEXTILE & APPAREL TRADE DATA

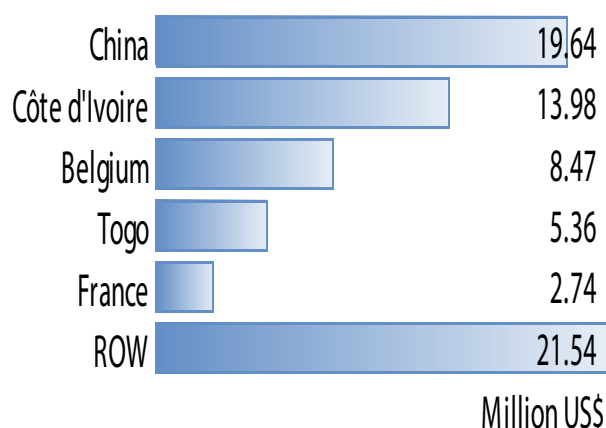
Imports



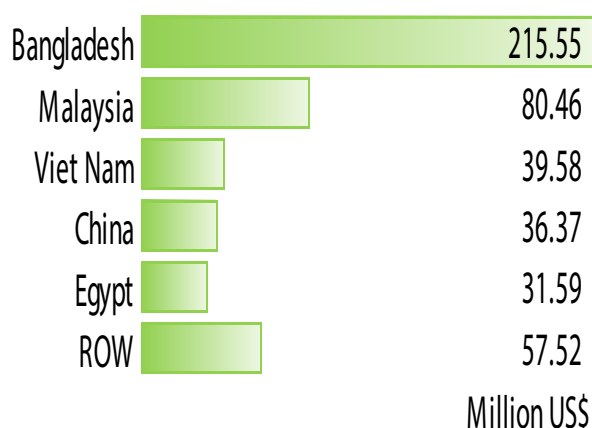
Exports



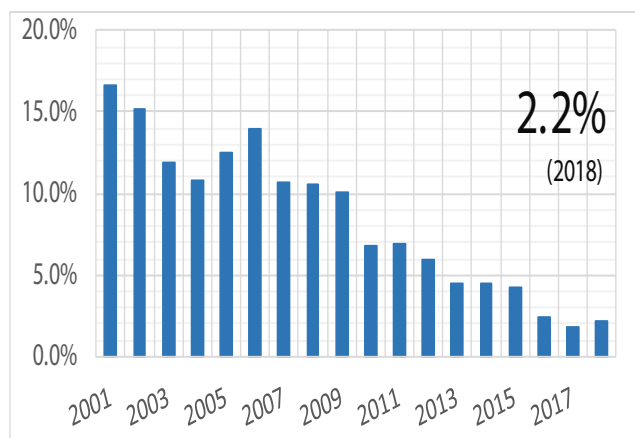
Imports by Country - 2018



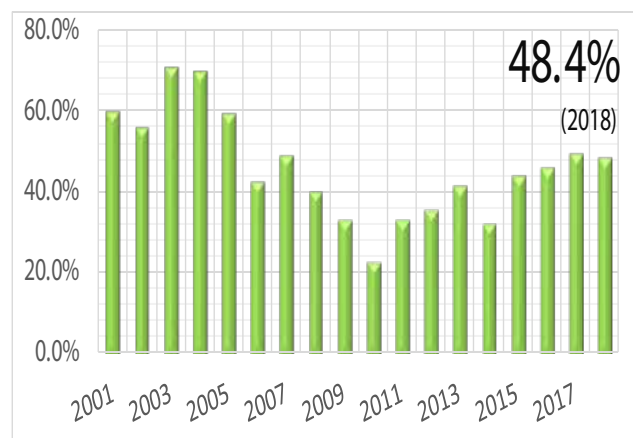
Exports by Country - 2018



T&A Imports/Total Imports

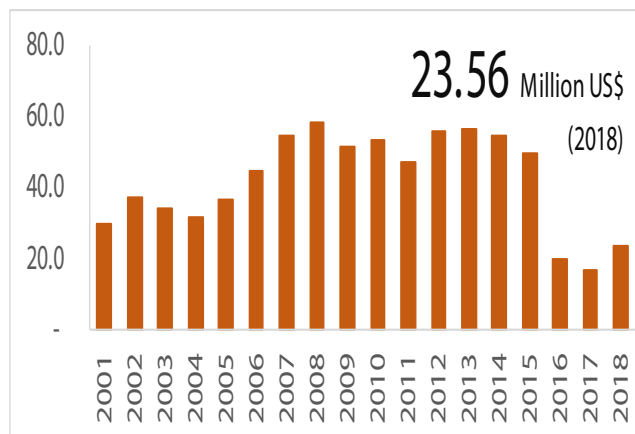


T&A Exports/Total Exports



COMPOSITION OF THE TEXTILE & APPAREL INDUSTRY

Imports - Worn Clothing & Articles



Spinning Machinery

40,000

Short-Staple Spindles

6,000

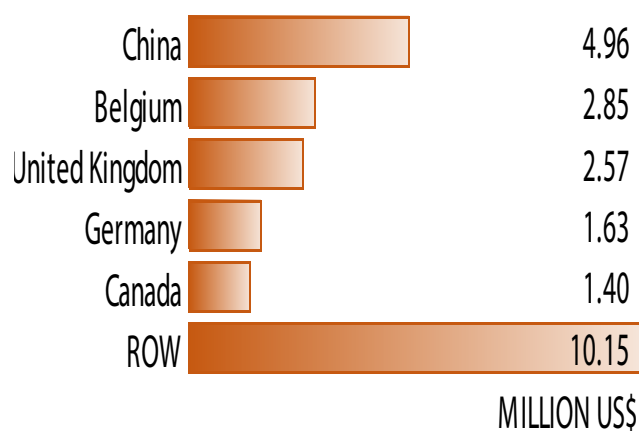
Open-End

Weaving Machinery

2,000

Shuttle Looms

Imports by Country



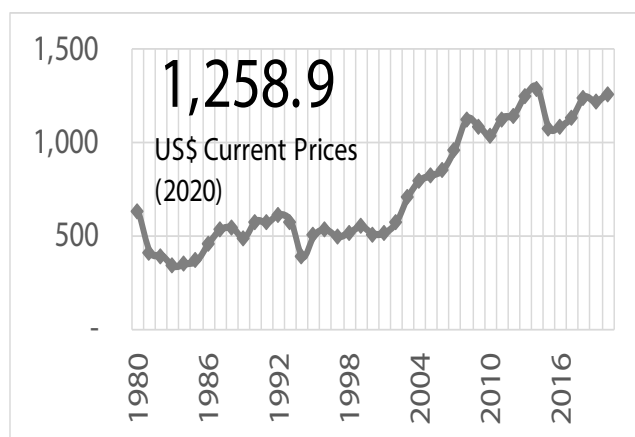
Better Cotton+CmiA Produced in
2018/19

14,388 Tonnes

Organic Cotton Produced in
2018/19

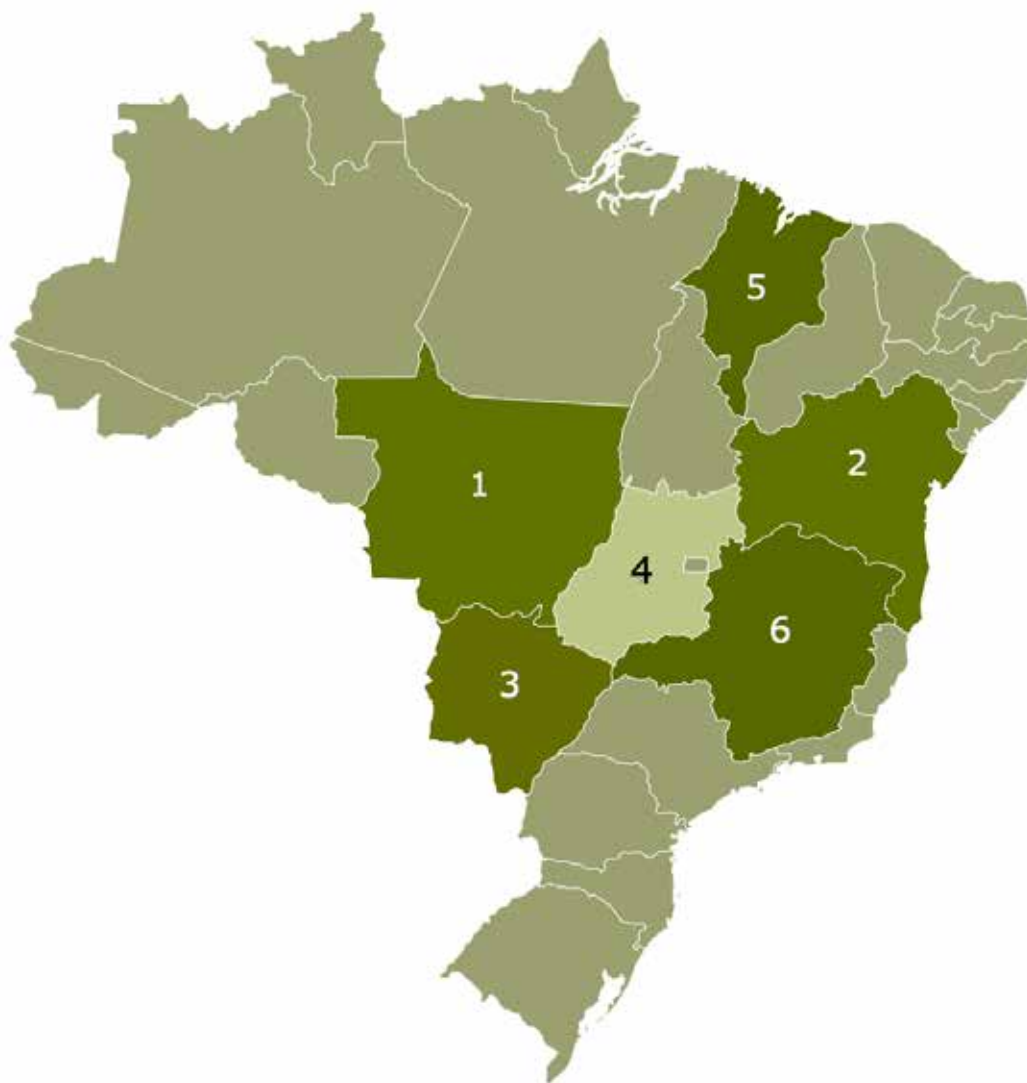
998 tonnes

GDP per capita





Basic Data 2020



Arable Area

55,762

'000 Hectares

Cotton Area

1,665

'000 Hectares

Consumption

610

'000 Tonnes

Lint Exports

1,742

'000 Tonnes

Production

3,000

'000 Tonnes

Lint Yield

1,802

Kg/Hectare

Farmers

2,651.00

Male

Farmers

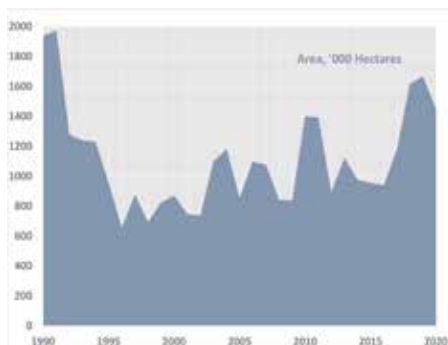
612

Female

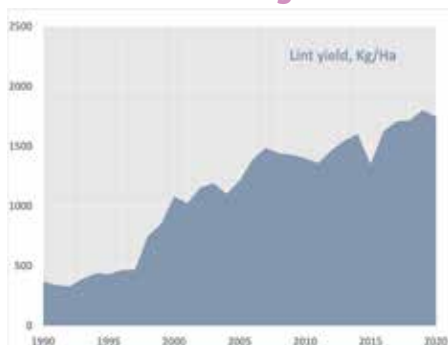


PRODUCTION

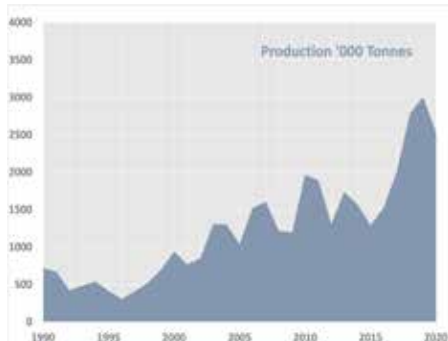
Cotton Area '000 Hectares



Lint Yield Kg/Ha

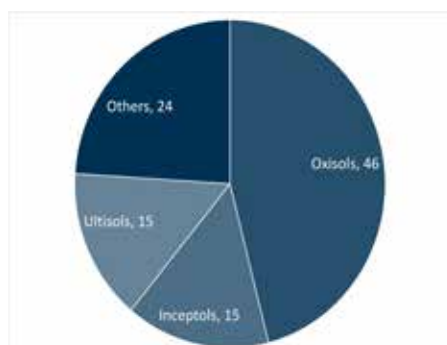


Production '000 Tonnes

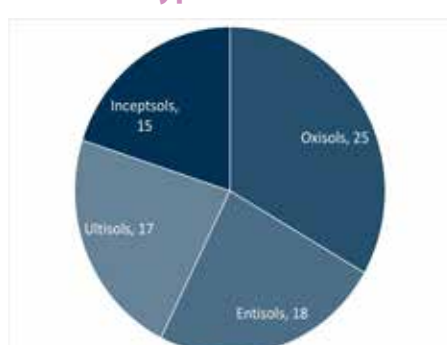


SOILS

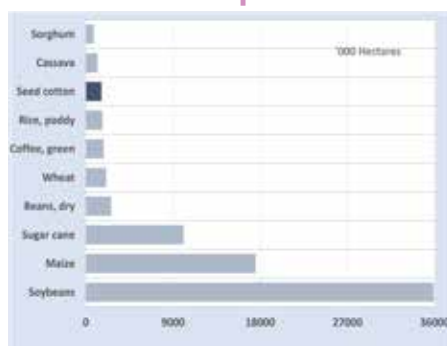
Soil Types -Cerrado



Soil Types -Semi Arid

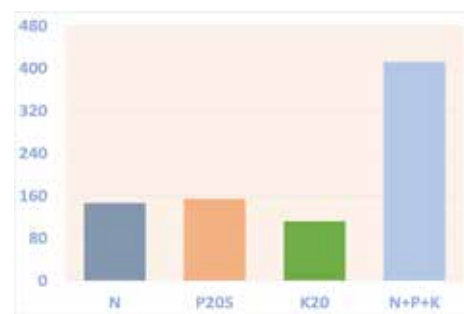


Area of Crops '000 Ha



FERTILISERS

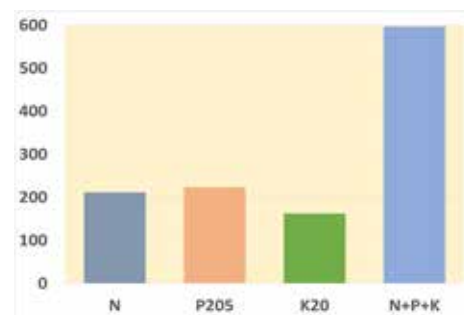
Fertiliser (NPK) use Kg/Hectare



Fertiliser (NPK) use per Kg Lint



Fertiliser (NPK) use '000 Tons



PRODUCTION 2020

	Area '000 Ha	Yield Kg/Ha	Production '000 Tonnes
1 Bahia	313	1902	595
2 Goias	36	1693	60
3 Mato-Grosso	1166	1800	2099
National	1665	1802	3000

NUMBER OF FARMERS

	Men	Women
Mato Grosso	204	47
Bahia	1232	284
Goias	24	6
Others	1395	275
Total	2651	612



VARIETIES AND FIBRE TRAITS

	Release Year	% Area	Ginning %	Length UHML mm	Strength g/tex	Mic
MATO-GROSSO						
FM 944 GL	2016	19.94	40 - 42	30	31.8	3.90
TMG 81 WS	2013	19.10	45.5	29.0	30.0	4.6
TMG 44 B2RF	2018	15.35	43.1	30.3	31.1	3.99
FM 954 GLT	2016	8.61	43.3	31.8	30.3	4.3
TMG 47 B2RF	2019	8.2	43.5	31.81	29.03	3.93
FM 983 GLT	2016	5.4	40 - 41	30.2	30.9	4.0
BAHIA						
FM 975 WS	2017	13.5	41	29.3	29.96	4.0
TMG 81 WS	2013	13.1	43	29.00	30.80	4.27
DP 1536 B2RF	2013	12.7	39 - 41	29.58	31.50	4.4
FM 983 GLT	2016	6.8	40 - 41	30.2	30.2	4.0
TMG 42 WS	2014	6.1	42.9	30.1	30.7	4.01
TMG 47 B2RF	2019	5.8	43.5	31.81	29.03	3.93
GOIAS						
TMG 44 B2RF	2018	29.8	43.1	30.3	31.1	3.99
IMA 5801 B2RF	2019	21.2	37 - 39	29.89	30.87	4.3
FM 906 GLT	2017	18.7	41	28.5	29.70	3.9
FM 944 GL	2016	5.0	40 - 42	30	31.8	3.90
IMA 8405 GLT	2016	3.5	40 - 41	29.8 - 31.1	29.2 - 30.5	3.9 - 4.3
FM 954 GLT	2016	2.0	43.3	31.8	30.3	4.3

TILLAGE, STALKS-USE, WEEDING & HARVESTING

Tillage Methods (% Area)

Mato-Grosso	70	30	70	30
Bahia	80	20	80	20
Goias	60	40	60	40
Others	80	20	80	20
National	75	25	75	25
	Zero Tillage	Disc Plough	Chisel Plough	Conventional Tillage

Use of Cotton stalks (% Use)

0	0	100	0
Burnt in Fields	Used as Firewood	Ploughed Back	Stacked on Bunds

Weeding Method (%)

50	50	0	100
Machine	Herbicide	Hand Picked	Machine Picked

Harvesting Method (%)



WATER

Rainwater & Irrigation water (mm)

Bahia	1,040	626	2	80
Goias	3,003	1,198	2	80
Ma-to-Grosso	963	656	4	120
National	1,678	692	4	84
	Total Rainfall	Effective Rainfall	No. of Irrigations	Irrigation Water/Ha

Methods of Irrigation (% Area)

Bahia	0	0	50	50
Goias	0	0	100	0
Ma-to-Grosso	0	0	100	0
National	0	0	80	20
	Flood	Furrow	Sprinkler	Drip

Rainfed Area (%) & Water Used /Kg Lint

Bahia	84	41	69	3,293
Goias	94	2	30	7,075
Ma-to-Grosso	100	7	3	3,642
National	87	50	59	3,842
	Rainfed % Area	Irrigation Billion L	Irrigation L/Kg Lint	Rainwater L/Kg Lint

SEEDS & PLANTING

Seeds Used for Sowing (%)

1	99	99	1
Fuzzy Seeds	Delinted	Chemical Treated	Untreated

Planting Method (%)

0	100	100	0
Manual	Machine	Local	Imported

Seed Source (%)

Use of Cotton Seeds (% Use)

29	62	5	4
Crushed for Oil	Direct Cattle-Feed	Used for Sowing	wasted

Seed Rate, Spacing & Plant Population/Ha

25	40	10	250,000
12	100	10	100,000
Seed Rate Kg/Ha	Between Rows cm	Within Row cm	Plant Population/ Ha

WEATHER 2019-2020

DD60 Fahrenheit Heat Units= Average daily temperature -60°F. The light green box denotes months of the cotton season. The blue bars are monthly averages of heat units and precipitation (rainfall in mm)

Heat Units (DD60) -Bahia



Rainfall (mm) -Bahia



INSECTS, PATHOGENS & WEEDS

INSECT PESTS / INSECTICIDES
SEMI ARID
EARLY-SEASON
<i>Aphis gossypii</i>
<i>Bemisia tabaci</i> , <i>B. argentifolii</i>
<i>Alabama argillacea</i>
MID-SEASON
<i>Alabama argillacea</i>
<i>Pectinophora gossypiella</i>
<i>Anthonomus grandis</i>
INSECTICIDES
Malathion
Methyl parathion
Deltamethrin

DISEASES / PATHOGENS
SEMI ARID
DISEASE / PATHOGEN
<i>Ramularia areola</i>
<i>Rhizoctonia solani</i>
<i>Fusarium oxysporum vas infectum</i>
<i>Sclerotinia sclerotiorum</i>
CHEMICAL CONTROL
Difenoconazol
Fluxapiroxade/Piraclostrobina
Mertin

INSECT PESTS / INSECTICIDES
CERRADO
EARLY-SEASON
<i>Helicoverpa armigera</i>
<i>Aphis gossypii</i>
<i>T. tabaci</i> , <i>F. schultzei</i>
<i>B. tabaci</i> , <i>B. argentifolii</i>
<i>S. castanea</i> , <i>Atarsocoris brachiariae</i>
MID-SEASON
<i>Helicoverpa armigera</i>
<i>P. latus</i> , <i>T. urticae</i> , <i>T. ludeni</i>
<i>Alabama argillacea</i>
<i>Pectinophora gossypiella</i>
<i>Anthonomus grandis</i>
INSECTICIDES
Mospilan
Marshal
Polo
Pirate
Avaunt

DISEASES / PATHOGENS
CERRADO
DISEASE / PATHOGEN
<i>Ramularia areola</i>
<i>Rhizoctonia solani</i>
<i>Fusarium oxysporum vas infectum</i>
<i>Sclerotinia sclerotiorum</i>
CHEMICAL CONTROL
Azoxystrobin+Cyproconazole
Azoxystrobin
Triadimenol

WEEDS / HERBICIDES
SEMI ARID
NARROW-LEAF WEEDS
<i>Cenchrus echinatus</i>
<i>Eleusine indica</i>
<i>Brachiaria plantaginea</i>
BROAD-LEAF WEEDS
<i>Acanthospermum hispidum</i>
<i>Sida spp.</i>
<i>Galinsoga parviflora</i>
<i>Bidens pilosa</i>
HERBICIDES
Cletodim
Gliphosate
Carfentrazone
2,4-D

WEEDS / HERBICIDES
CERRADO
NARROW-LEAF WEEDS
<i>Cenchrus echinatus</i>
<i>Digitaria horizontalis</i>
<i>Brachiaria plantaginea</i>
<i>Sida rhombifolia</i>
<i>Ageratum conyzoides</i>
BROAD-LEAF WEEDS
<i>Bidens pilosa</i>
<i>Ipomea grandiflora</i>
<i>Conyza bonariensis</i>
<i>Commelina benghalensis</i>
HERBICIDES
Trifloxissulfuron-sodico
Clomazone, Glyphosate
Pyriathiobac sodium

STRUCTURE OF COTTON RESEARCH

The Brazilian Agricultural Research Corporation - EMBRAPA (Empresa Brasileira de Pesquisa Agropecuária) is a public institution with 9,767 employees located in 46 research and service units. It also develops scientific cooperation programs - LABEX in North America, Europe and Asia, as well as technical cooperation in Africa and South America. The Research team consists of 2,424 researchers, 84% with PhD or post-doctorate in universities in Brazil and abroad. Under the guidance of the Directorate of Research and Development, it operates in a network with institutions of the National System of Agricultural Research - SNPA and with researchers from various parts of the world. EMBRAPA Cotton (Embrapa Algodão), located in Campina Grande, Paraíba, is one of the main research units and employs 216 people, of whom 61 are researchers and at least 40 of them are full-time. The main source of funding is the Government of Brazil. The other resources are research contracts with foundations and private institutions and / or private companies. Mato Grosso Institute of Cotton – IMAmt (Instituto Matogrossense do Algodão) conducts research primarily on cotton.

COMPETING CROPS

Semiarid	Cerrado
Sorghum	Soybean
Corn	Corn
Cowpea	Millet

ROTATION CROPS

Semiarid	Cerrado
Sorghum	Soybean
Corn	Corn
Cowpea	Millet



WEATHER 2019-2020

DD60 Fahrenheit Heat Units= Average daily temperature -60°F. The light green box denotes months of the cotton season. The blue bars are monthly averages of heat units and precipitation (rainfall in mm)

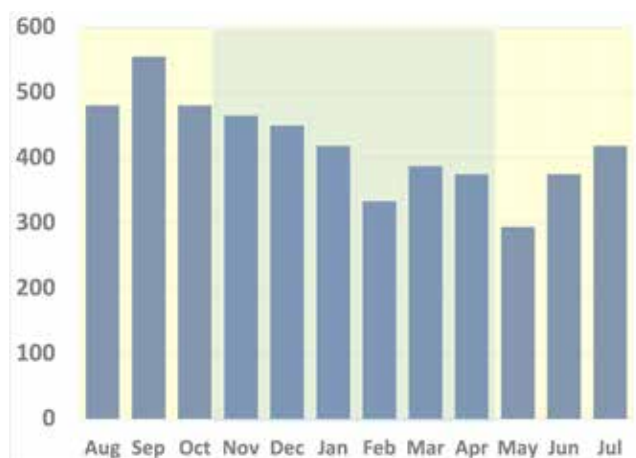
Heat Units (DD₆₀) -Goias



Rainfall (mm) -Goias



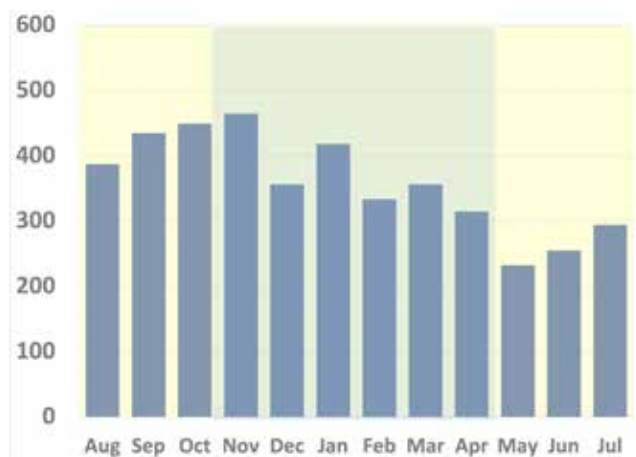
Heat Units (DD₆₀) -Mato-Grosso



Rainfall (mm) -Mato-Grosso



Heat Units (DD₆₀) -Mato-Grosso-Do-Sul



Rainfall (mm) -Mato-Grosso-Do-Sul



MATO-GROSSO: COST OF CULTIVATION US\$/Hectare

INPUTS	Quantity (Kg/Ha)	Operations per season	Total cost /Ha
Non-GM seeds	4	1	10.7
Biotech/GM seeds	20	1	141.2
NPK+Other	1,254.0	1 (NPK 04-30-16 + FTE)	295.1
Insecticides	2.2 kg + 15.2 liters	2 to 4 to 10	359.0
Herbicides	8.4 liters	1	117.4
Fungicides / antibiotics etc.,	8.2 liters	2 to 4	85.9
Growth regulators	1.6 liter + 2.0 liters	1	49.8
Defoliants	400 ml	1	1.4
Manure			
(Limestone + Agricultural plaster)	1.2 tonne	Prorated 3 years	28.3
MANPOWER / LABOUR	Wages per person	Persons per operation	Total cost per hectare
Land preparation /tillage etc.,	1.62	0.2 (workday - WD) + 0.2 WD	0.6
Sowing	1.62	0.02 WD + 0.20 WD	0.4
Fertiliser / manure application	1.62	1.60 WD + 0.30 WD	3.1
Irrigation			
Thinning			
Weeding			
Hoeing	1.62	0.30 WD	0.5
Pesticide application	1.62	1.60 WD	2.6
Defoliator application			
Picking / harvesting	1.62	0.30 WD	0.5
Stalk cutting & removal	1.62	0.50 WD	0.8
Transportation /unloading etc.,	1.62	8.92 WD	14.4
Ginning cost per 100 Kg	1.62	3.12 WD	220.0
Others (please specify)			76.0
MACHINERY /ANIMALS etc.	Cost per Operation	Number of Operations	Total cost per hectare
Tractors	Various	6	522.57
Implements & tools	Various	2	120.87
Electric / Diesel pumps etc.,			
Electricity / Diesel etc.,			
Harvesting machines		1	600.0
Hoeing / Tillage machinery etc.,			
Bullocks /Buffaloes			
Land rent	14	109.53	1533.4
Land Tax	%	1,5% (R\$14.329,65)	214.9
Others (please specify)	34	2.0 machine/hour	145.6
MARKET VALUE	Yield Kg/Ha	Market value /100 Kg	Value per hectare
Seed cotton	4065	0.79	3211
Ginning % (output)	42.4	0.00	
Lint (fibre)	1725	1.58	2726
Seed	2340	0.15	351.7
COST OF CULTIVATION			2011
NET RETURNS (SEED-COTTON)			1200
NET RETURNS (SEED + LINT)			847

BAHIA: COST OF CULTIVATION US\$/Hectare

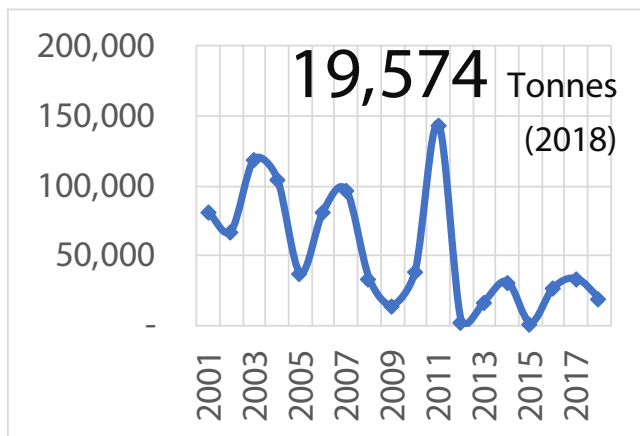
INPUTS	Quantity (Kg/Ha)	Operations per season	Total cost /Ha
Non-GM seeds			
Biotech/GM seeds	20	1	177.81
NPK+Other	1,620.0	1	293.56
Insecticides	2.2 kg + 15.2 liters	2 to 4 to 10	350.48
Herbicides	8.4 liters	1	114.66
Fungicides / antibiotics etc.,	8.2 liters	2 to 4	83.90
Growth regulators	1.6 liter + 2.0 liters	1	48.62
Defoliants	400 ml	1	1.32
Manure			
Others (please specify)			
MANPOWER / LABOUR	Wages per person	Persons per operation	Total cost per hectare
Land preparation /tillage etc.,	6.84	0.2 (workday - WD) + 0.2 WD	0.49
Sowing	6.84	0.02 WD + 0.20 WD	0.27
Fertiliser / manure application	6.84	1.60 WD + 0.30 WD	2.17
Irrigation			
Thinning			
Weeding			
Hoeing	6.84	0.30 WD	0.37
Pesticide application	6.84	1.60 WD	1.95
Defoliator application			
Picking / harvesting	6.84	0.30 WD	0.37
Stalk cutting & removal	6.84	0.50 WD	0.61
Transportation /unloading etc.,	6.84	5,44 WD	6.64
Ginning cost per 100 Kg	6.84	3.12 WD	205.00
Others (please specify)			82.10
MACHINERY /ANIMALS etc.	Cost per Operation	Number of Operations	Total cost per hectare
Tractors			98.99
Implements & tools			
Electric / Diesel pumps etc.,			
Electricity / Diesel etc.,			
Harvesting machines			
Hoeing / Tillage machinery etc.,			
Bullocks /Buffaloes			
Land rent			131.98
Land Tax			27.98
Others (please specify)	60	2.0 machine/hour	
MARKET VALUE	Yield Kg/Ha	Market value /100 Kg	Value per hectare
Seed cotton	4050	0.78	3200
Ginning % (output)	40	0.00	
Lint (fibre)	1620	1.42	2296.10
Seed	2227.5	0.17	387.22
COST OF CULTIVATION			1404
NET RETURNS (SEED-COTTON)			1795
NET RETURNS (SEED + LINT)			1074

TRADE DATA

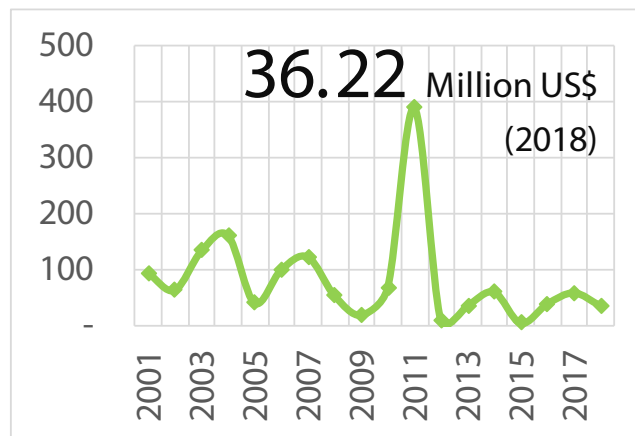


COTTON FIBRE IMPORT DATA

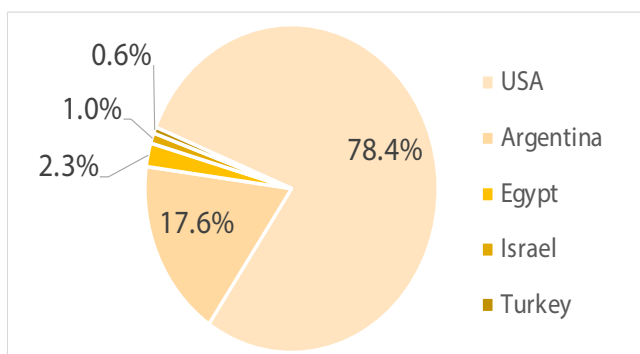
Quantity



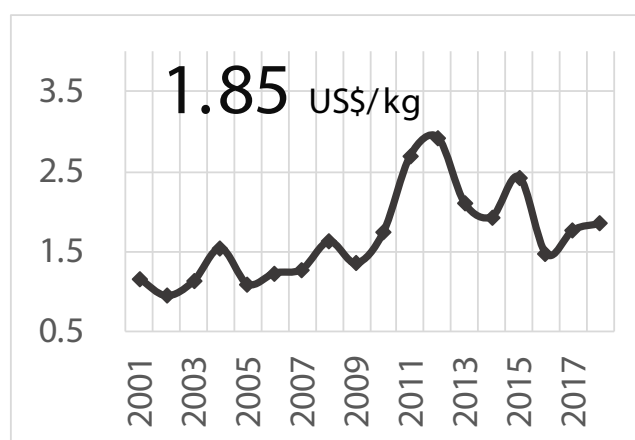
Value



Market Share by Country



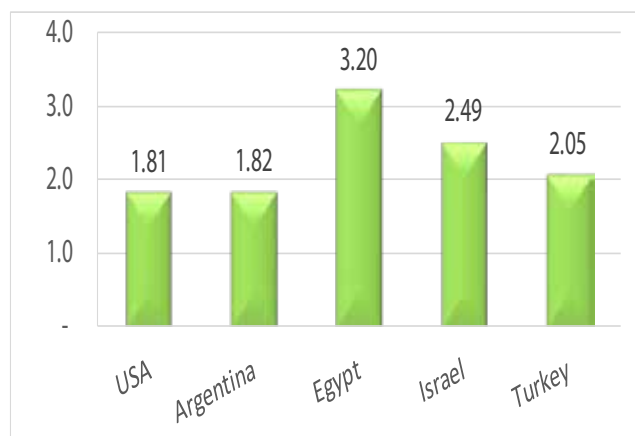
Average Price: US\$/Kg



USA	15,350
Argentina	3,447
Egypt	456
Israel	201
Turkey	119
ROW	1

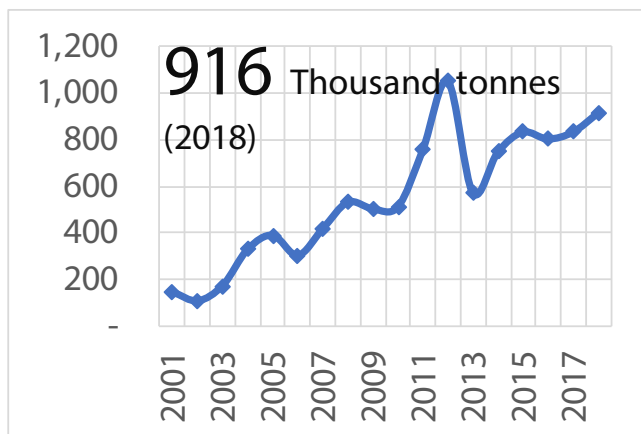
Tonnes

Average Price by Country 2018: US\$/Kg

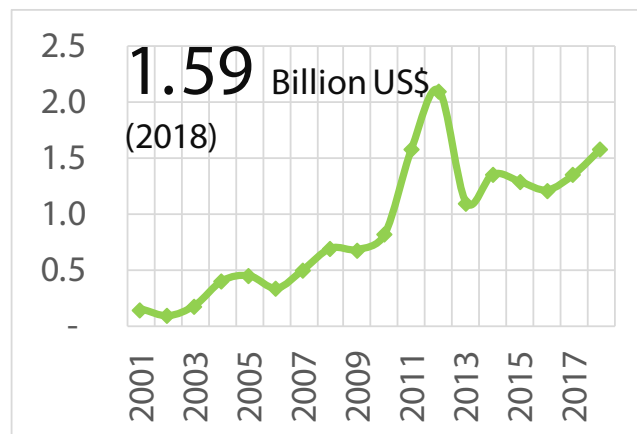


COTTON FIBRE EXPORT DATA

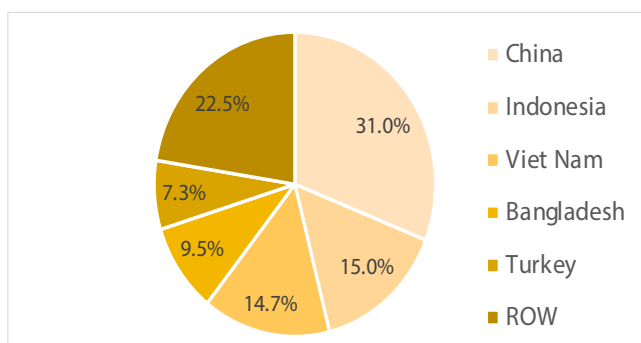
Quantity



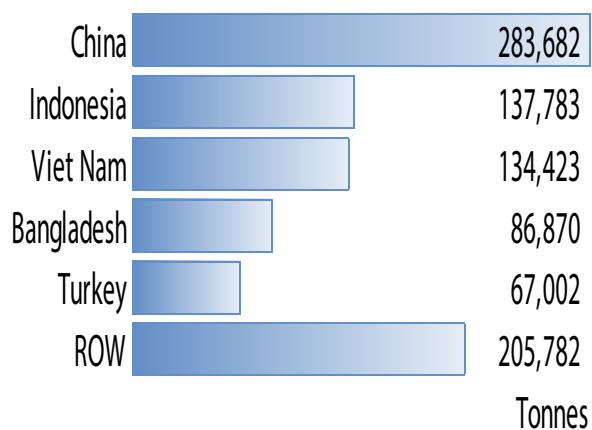
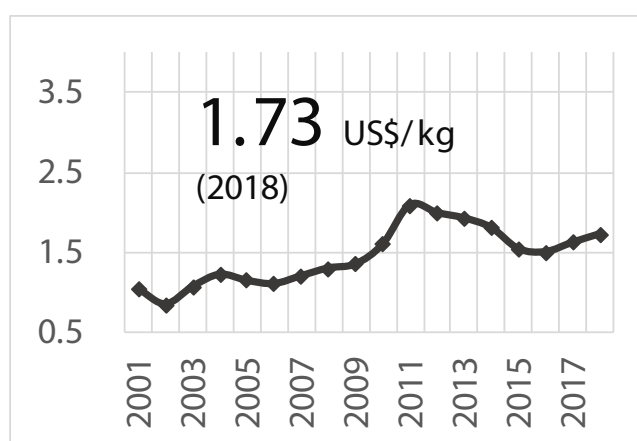
Value



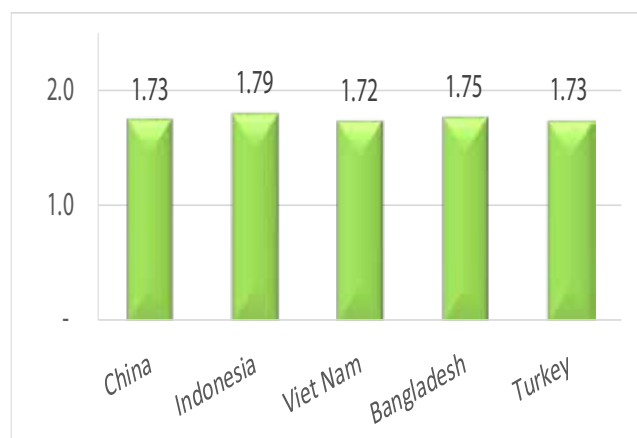
Market Share by Country



Average Price: US\$/Kg

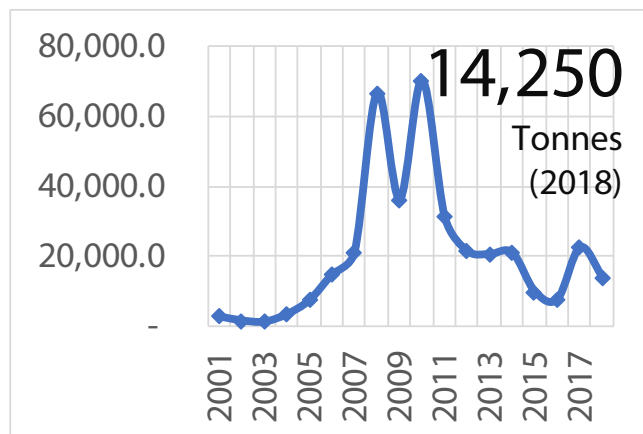


Average Price by Country 2018: US\$/Kg

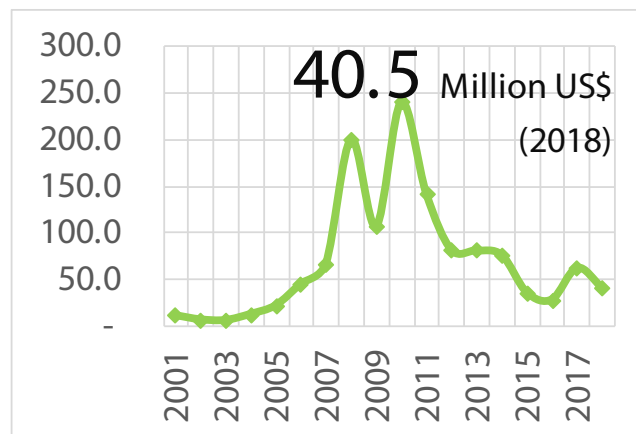


COTTON YARN IMPORT DATA

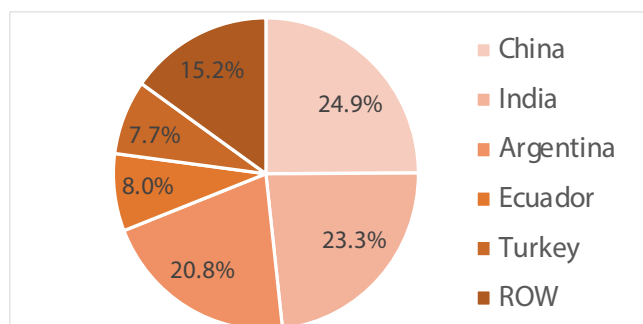
Quantity



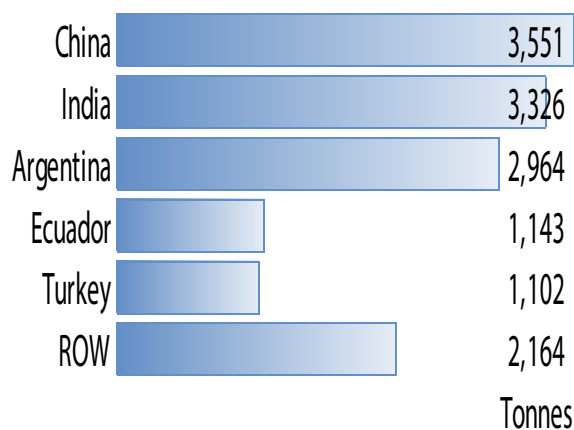
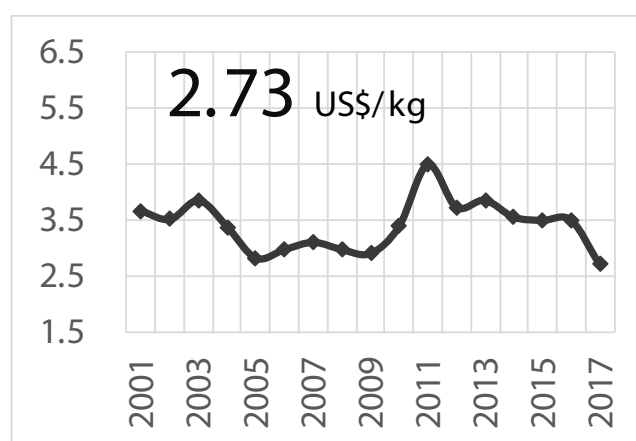
Value



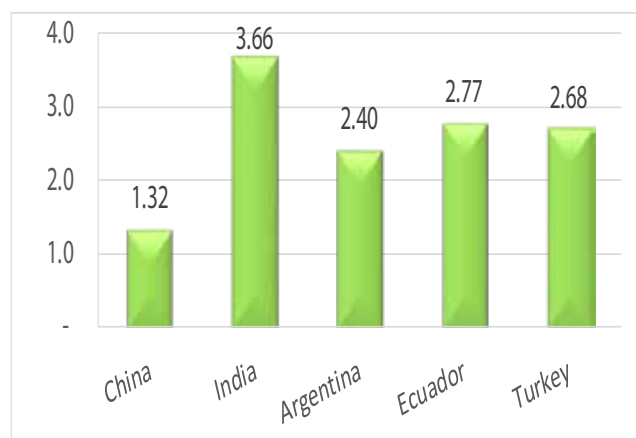
Market Share by Country



Average Price: US\$/Kg

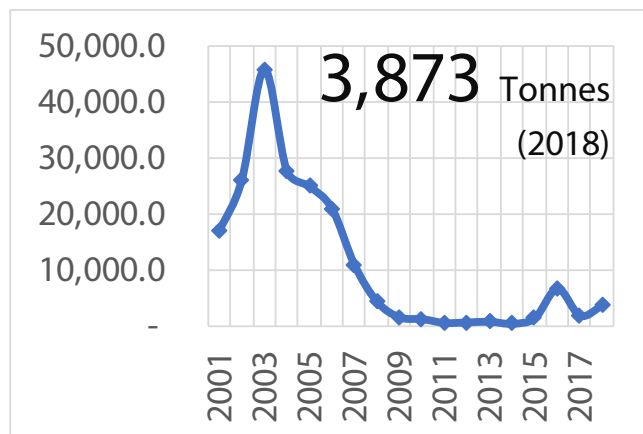


Average Price by Country 2018: US\$/Kg

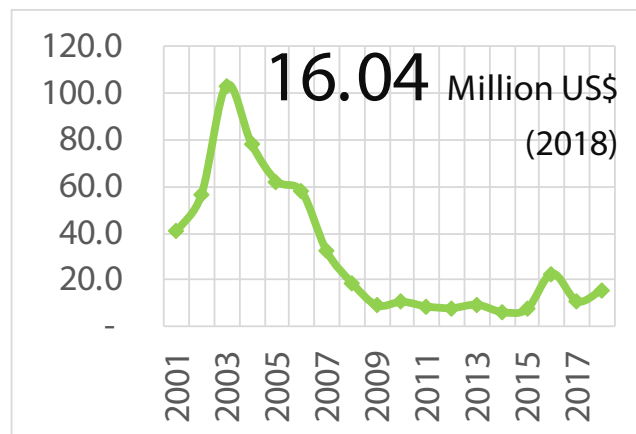


COTTON YARN EXPORT DATA

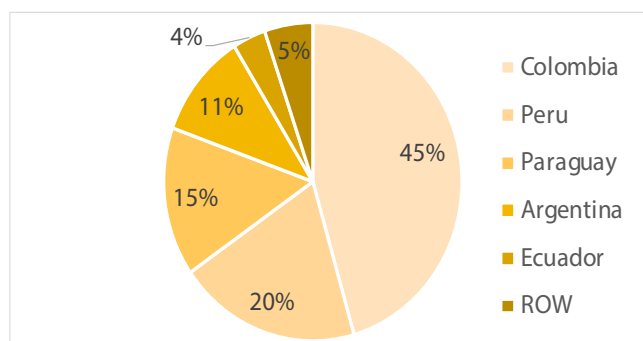
Quantity



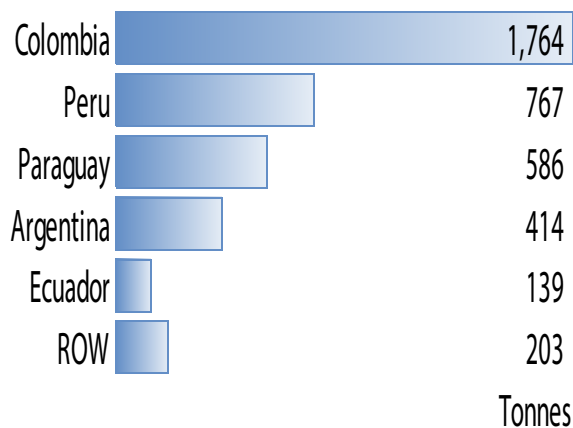
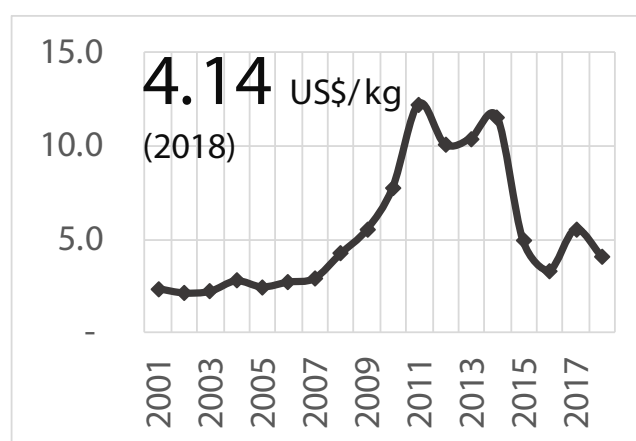
Value



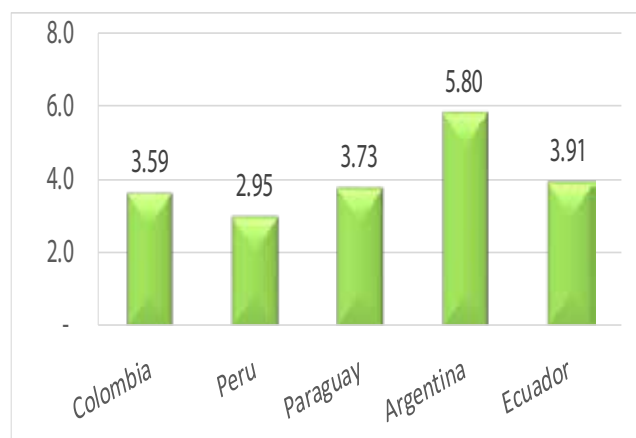
Market Share by Country



Average Price: US\$/Kg

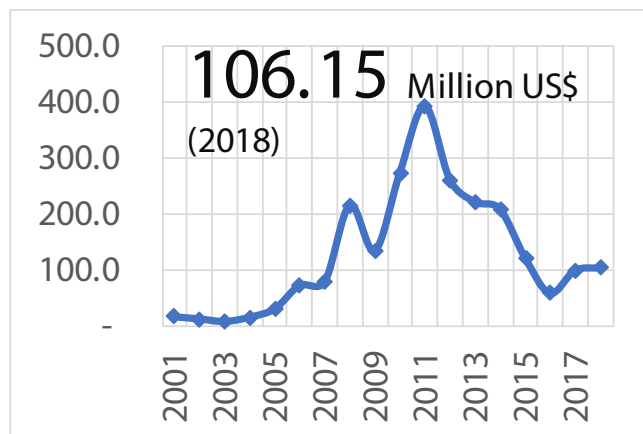


Average Price by Country 2018: US\$/Kg

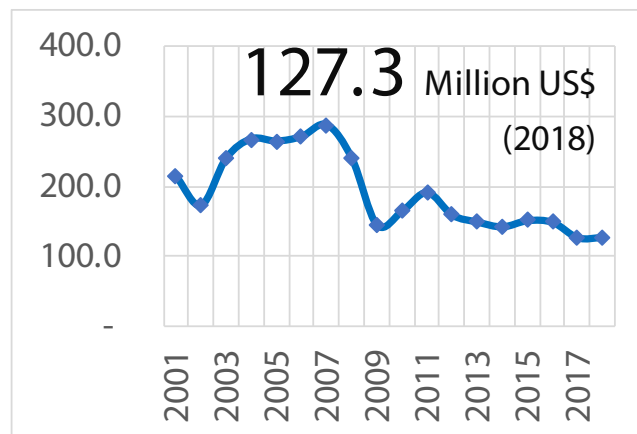


COTTON FABRIC TRADE DATA

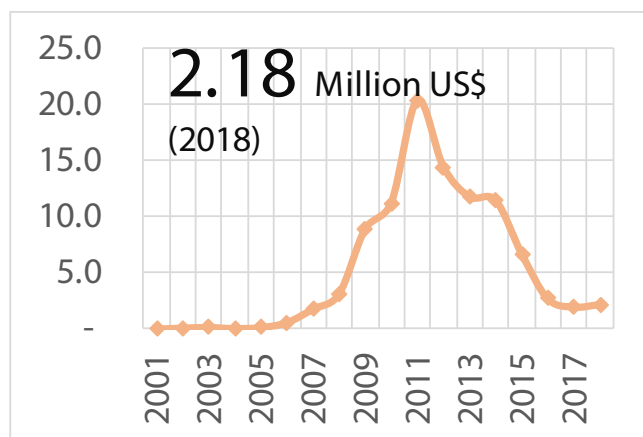
Woven Cotton Fabric Imports



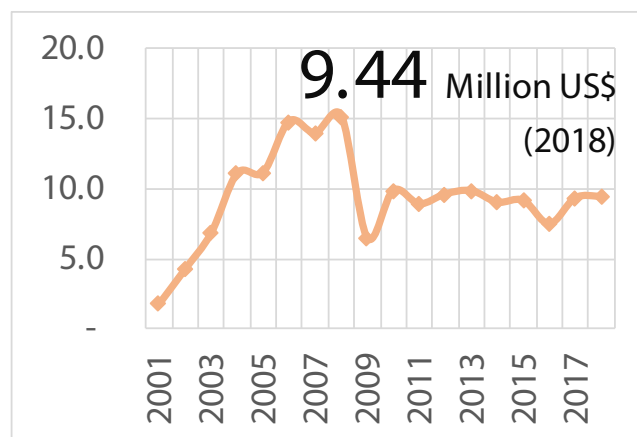
Woven Cotton Fabric Exports



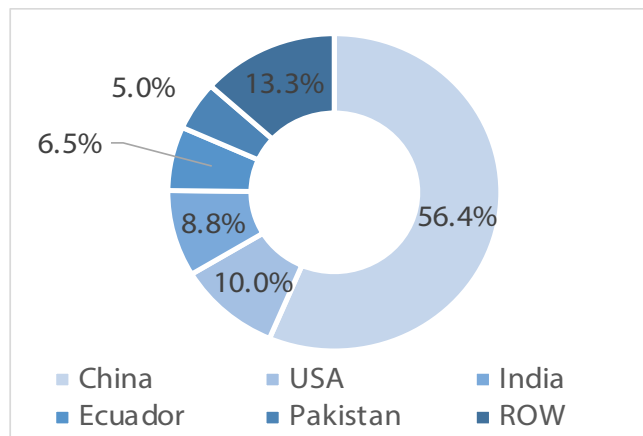
Knitted Cotton Fabric Imports



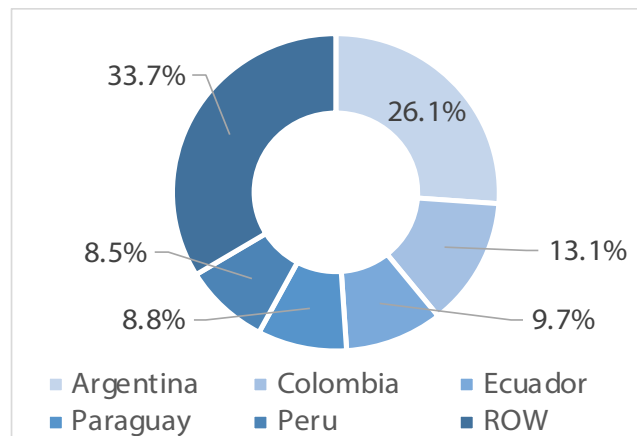
Knitted Cotton Fabric Exports



Market Share Imports by Country - 2018 Woven Cotton Fabric

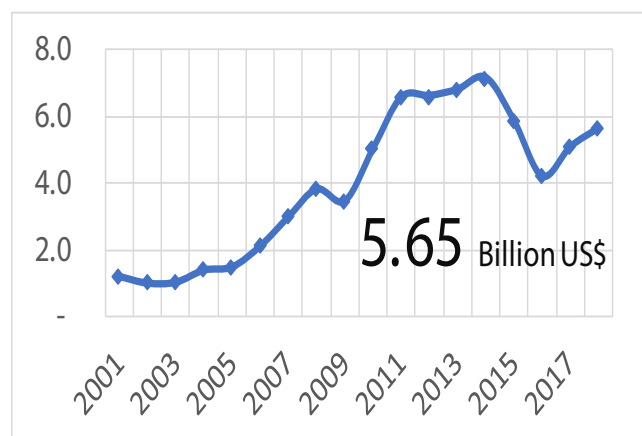


Market Share Exports by Country - 2018 Woven Cotton Fabric

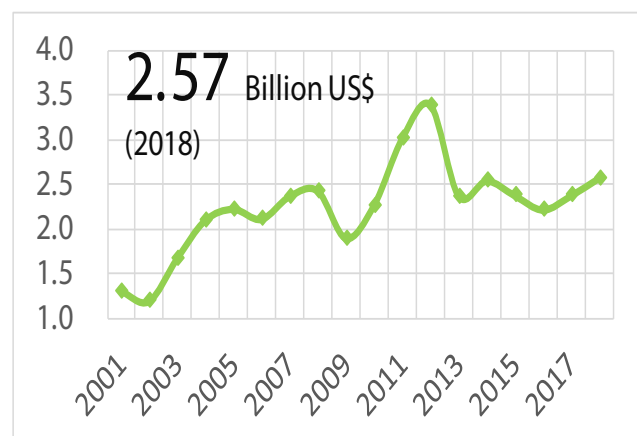


TEXTILE & APPAREL TRADE DATA

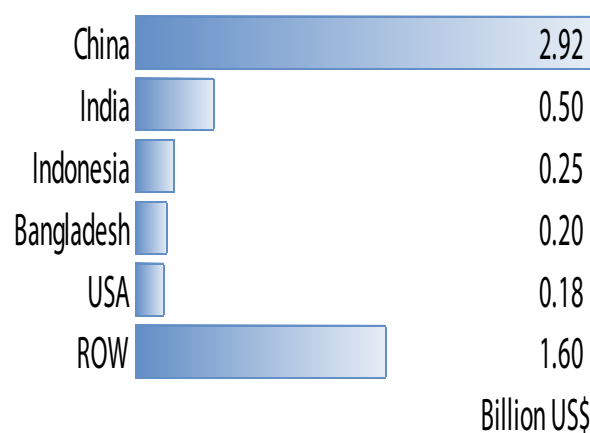
Imports



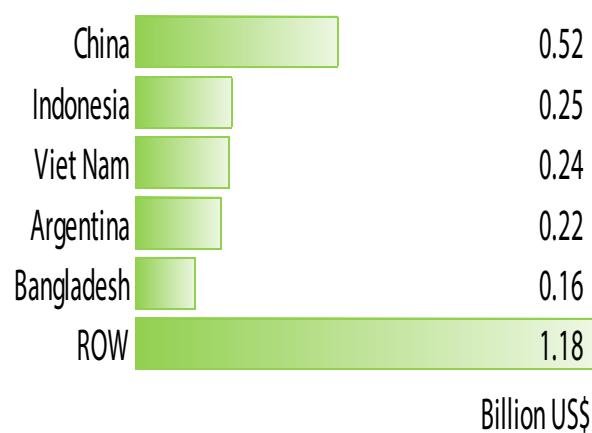
Exports



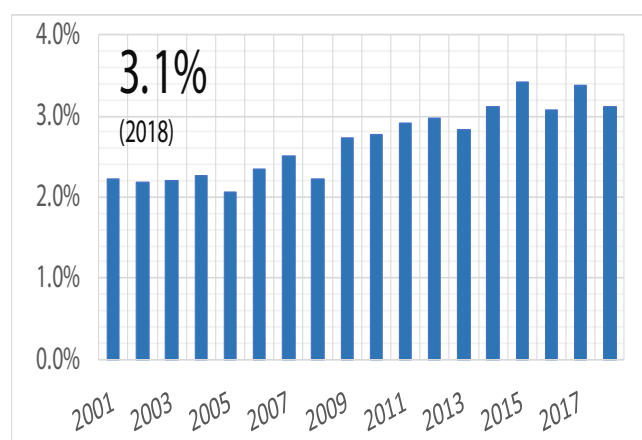
Imports by Country - 2018



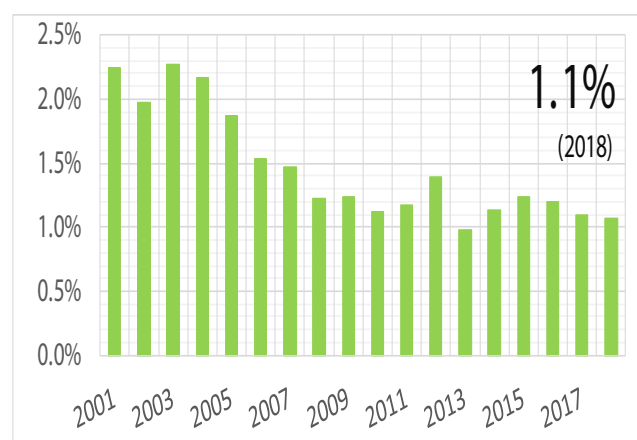
Exports by Country - 2018



T&A Imports Share in Overall Import

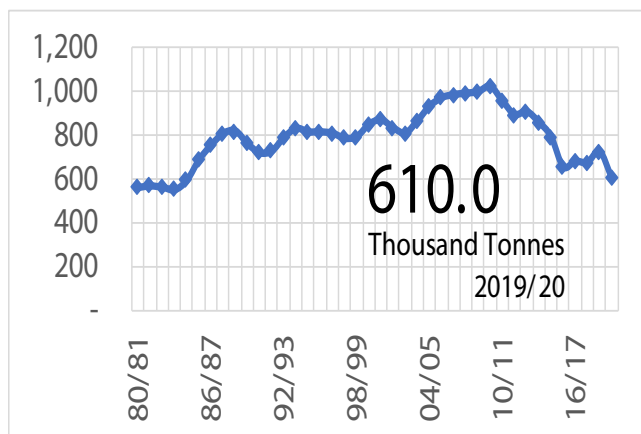


T&A Exports Share in Overall Exports

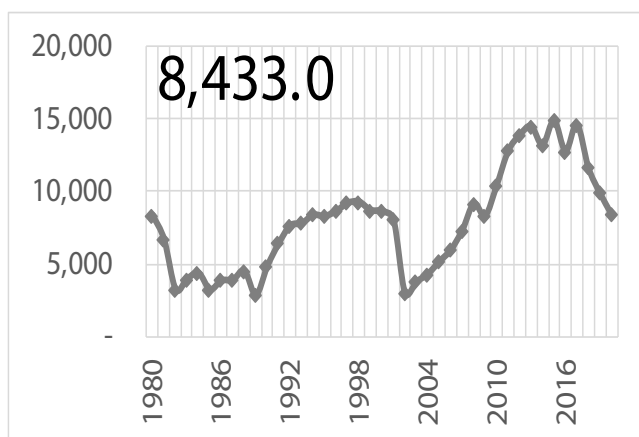


COMPOSITION OF THE TEXTILE & APPAREL INDUSTRY

Cotton Mill Use



GDP per capita



Employment

67,739 **81,268**
Spinning Weaving
1,060,272
Garment Sector

Spinning Machinery

11,000 **397,000**
Air-Jet Spindles Open-End
4,300,000
Short-Staple Spindles

Weaving Machinery

20,900 **39,500**
Shuttle Looms Shuttle-less

Production (Million)

1.05 Tonnes **11,000** Tonnes
Cotton Yarn Chemical Yarn
1.77 Tonnes **5,940** Pieces
Fabrics Apparel
910.9 Pieces
Home Textiles

Organic Cotton Produced in 2018/19

97 tonnes

Better Cotton+ABR Produced in 2018/19

2.03 million tonnes

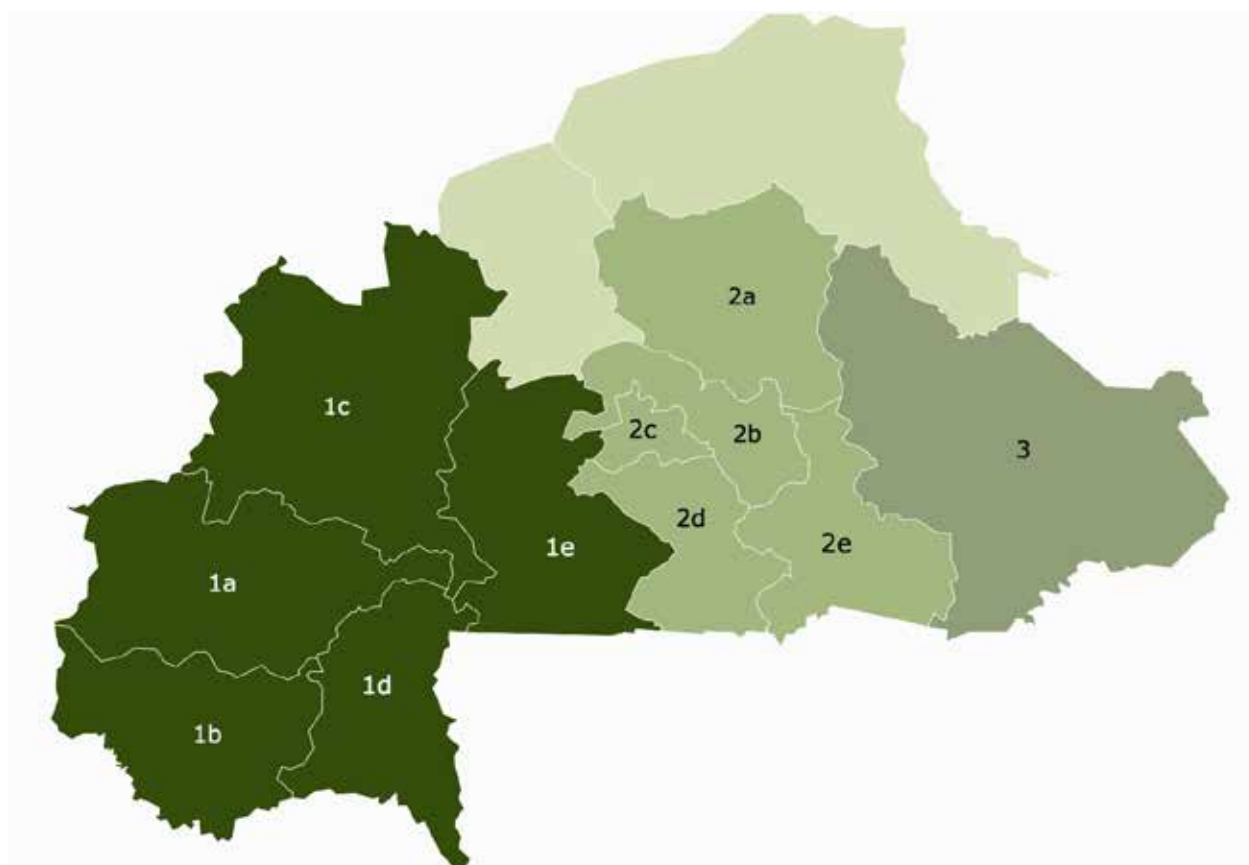
No. Garment Factories 22,912

No. Spinning Mills 322





Basic Data 2020



Arable Area

6,000

'000 Hectares

Cotton Area

556

'000 Hectares

Production

195

'000 Tonnes

Lint Yield

350

Kg/Hectare

PRODUCTION 2020

		Area '000 Ha	Yield Kg/Ha	Production '000 Tonnes
1	Bobo-Dioulasso	470	362	170
2	Ougadougou	63	300	19
3	Fada n'Gourma	23	354	8
	National	556	350	195

Consumption

3

'000 Tonnes

Lint Exports

256

'000 Tonnes

Farmers

313,625

Male

Farmers

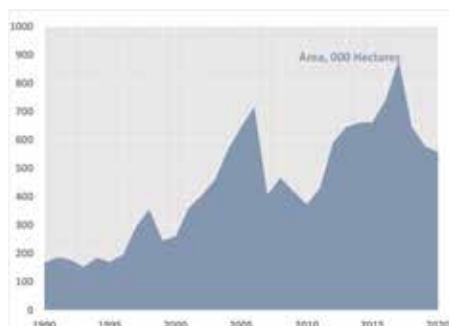
11,375

Female

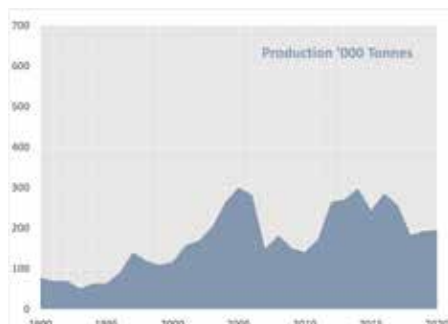


PRODUCTION

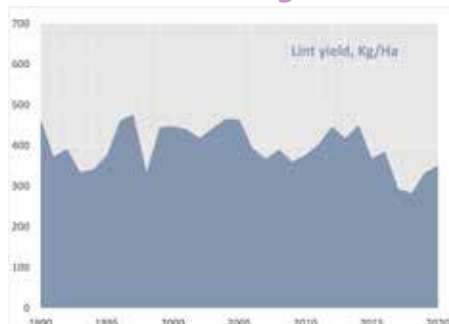
Cotton Area '000 Hectares



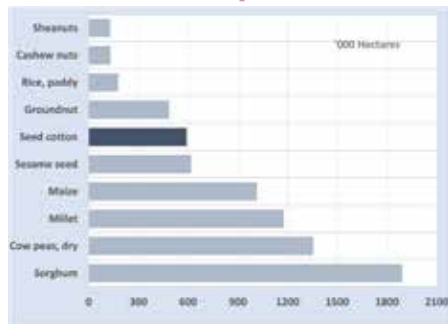
Production '000 Tonnes



Lint Yield Kg/Ha

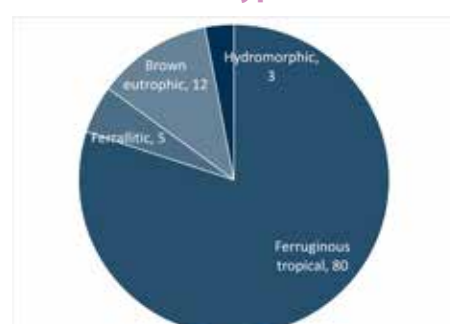


Area of Crops '000 Ha



SOILS

Soil Types



COMPETING CROPS

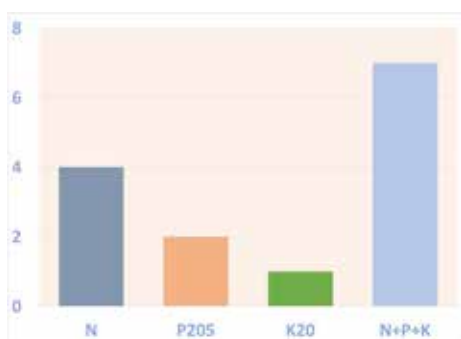
National
Sorghum
Corn

ROTATION CROPS

National
Sorghum
Corn

FERTILISERS

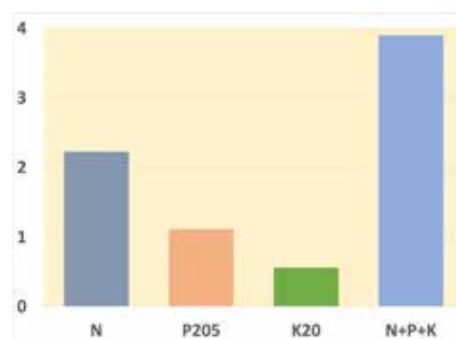
Fertiliser (NPK) use Kg/Hectare



Fertiliser (NPK) use per Kg Lint



Fertiliser (NPK) use '000 Tons



WATER

Rainwater & Irrigation water (mm)

880	620	0	0
Total Rainfall	Effective Rainfall	No. of Irrigations	Irrigation Water/Ha

Methods of Irrigation (% Area)

0	0	0	0
Flood	Furrow	Sprinkler	Drip

Rainfed Area (%) & Water Used /Kg Lint

100	0	0	17,714
Rainfed % Area	Irrigation Billion L	Irrigation L/Kg Lint	Rainwater L/Kg Lint

TILLAGE, STALKS-USE WEEDING & HARVESTING

Tillage Methods (% Area)

9	18	81	91
Zero Tillage	Disc Plough	Chisel Plough	Conventional Tillage

Use of Cotton stalks (% Use)

80	10	0	10
Burnt in Fields	Used as Firewood	Ploughed Back	Stacked on Bunds

Weeding Method (%)

60	40
Hand	Herbicide

Harvesting Method (%)

100	0
Hand Picked	Machine Picked

VARIETIES AND FIBRE TRAITS

	Release Year	% Area	Ginning %	Length UHML mm	Strength g/tex	Mic
FK 37	2000	94		29.3	30.7	4.1
FK 64	2014	4		30.4	30.3	4
STAM 59A	1997	2		28.1	29.1	4.2

SEEDS & PLANTING

Seeds Used for Sowing (%)

40	60	100	0
Fuzzy Seeds	Delinted	Chemical Treated	Untreated

Use of Cotton Seeds (% Use)

75	15	10	0
Crushed for Oil	Direct Cattle-Feed	Used for Sowing	wasted

Planting Method (%)

100	0	100	0
Manual	Machine	Local	Imported

Seed Source (%)

Seed Rate, Spacing & Plant Population/Ha

20	80	40	31,250
Seed Rate Kg/Ha	Between Rows cm	Within Row cm	Plant Population/ Ha

INSECTS, PATHOGENS & WEEDS

WEEDS / HERBICIDES
NARROW-LEAF WEEDS
<i>Brachiaria lata</i>
<i>Dactyloctenium aegyptium</i>
<i>Digitaria horizontalis</i>
<i>Eleusine indica</i>
<i>Rottboellia exaltata</i>
BROAD-LEAF WEEDS
<i>Celosia argentea</i>
<i>Corchorus tridens</i>
<i>Mitracarpus villosus</i>
<i>Stachytarpheta angustifolia</i>
<i>Vernonia galamensis</i>
HERBICIDES
Diuron 80 WG, Glyphosate
Haloxyp-methyl
Fluazifop butyl

INSECT PESTS / INSECTICIDES
EARLY-SEASON
<i>Aphis gossypii</i>
<i>Earias spp.</i>
MID-SEASON
<i>Lepidopteran larvae</i>
<i>Dysdercus volkeri</i>
<i>Bemisia tabaci</i>
<i>Jacobiella facialis</i>
<i>Haritalodes derogata</i>
INSECTICIDES
Fanga 500 EC
EMA 19.2 EC
Indoxacarb
lambdacal+Pyrinexquick
Pyrinex
Conquest 176 EC

FASO-COTTON
EARLY-SEASON
<i>Sylepta derogata</i>
<i>Aphis gossypii</i>
MID-SEASON
<i>Helicoverpa armigera</i>
<i>Diparopsis watersi</i>
<i>Earias spp.</i>
<i>Spodoptera littoralis</i>
<i>Dysdercus spp.</i>
INSECTICIDES
Emamectin benzoate
Capt 96
Lambdacal+Pyrinexquick
Indoxacarb

DISEASES / PATHOGENS
DISEASE / PATHOGEN
<i>Viral, Bacterial blight & Fusarium</i>
CHEMICAL CONTROL
Imidacloprid, Thiamethoxam
Mercaptothion

STRUCTURE OF RESEARCH

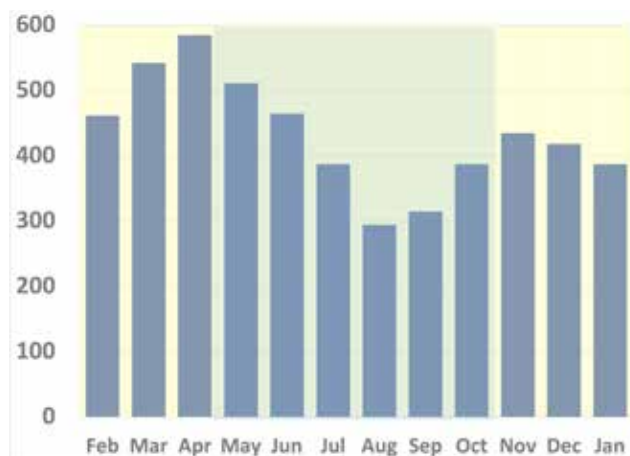
Environmental and Agricultural Research Institute - Institut de l'Environnement et de Recherches Agricoles (INERA) conducts research on cotton. INERA functions under the CNRST (Centre National de Recherches Scientifiques et Technologiques). It focuses on all aspects of agricultural research including cotton. University of Ouagadougou - Université de Ouagadougou (UO) is a public sector university. Research on cotton is mainly conducted through thesis dissertation. Polytechnique University of Bobo Dioulasso – Université Polytechnique de Bobo Dioulasso (UPB) also conducts research in agricultural sciences including some aspects of cotton.



WEATHER 2019-2020

DD60 Fahrenheit Heat Units= Average daily temperature -60°F. The light green box denotes months of the cotton season. The blue bars are monthly averages of heat units and precipitation (rainfall in mm)

Heat Units (DD₆₀) -Bobo-Dioulasso



Rainfall (mm) -Bobo-Dioulasso



Heat Units (DD₆₀) -Fada n'Gourma



Rainfall (mm) -Fada n'Gourma



Heat Units (DD₆₀) -Ougadougou



Rainfall (mm) -Ougadougou



COST OF CULTIVATION US\$/Hectare

INPUTS	Quantity (Kg/Ha)	Operations per season	Total cost /Ha
Non-GM seeds			6
Biotech/GM seeds			
NPK+Other			121
Insecticides			34
Herbicides			12
Fungicides / antibiotics etc.,			
Growth regulators			
Defoliant			
Manure			
MANPOWER / LABOUR	Wages per person	Persons per operation	Total cost per hectare
Land preparation /tillage etc.,			55
Sowing			14
Fertiliser / manure application			6
Irrigation			
Thinning			12
Weeding			12
Hoeing			52
Pesticide application			12
Defoliator application			
Picking / harvesting			50
Stalk cutting & removal			12
Transportation/unloading etc.,			28
Ginning cost per 100 Kg			30
Others (please specify)			
MACHINERY /ANIMALS etc.	Cost per Operation	Number of Operations	Total cost per hectare
Tractors			
Implements & tools			
Electric / Diesel pumps etc.,			
Electricity / Diesel etc.,			
Harvesting machines			
Tillage machinery etc.,			
Bullocks /Buffaloes			
MARKET VALUE	Yield Kg/Ha	Market value /100 Kg	Value per hectare
Seed cotton	900	0.48	432
Ginning % (output)	40		
Lint (fibre)	360	1.64	590
Seed	510	0.22	110
COST OF CULTIVATION			426
NET RETURNS (SEED-COTTON)			6
NET RETURNS (SEED + LINT)			244

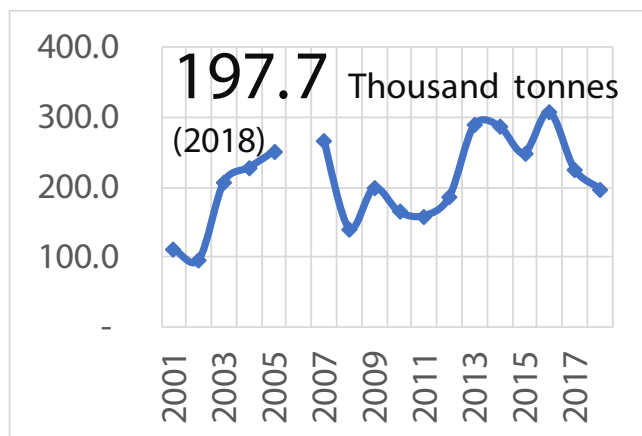


TRADE DATA

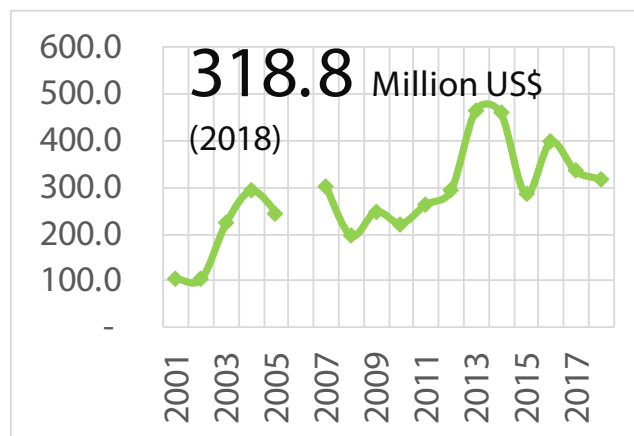


COTTON FIBRE EXPORT DATA

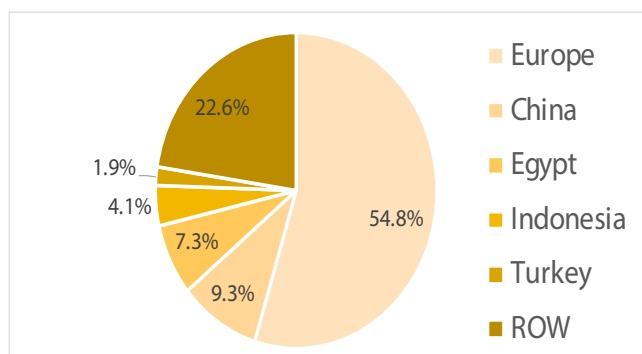
Quantity



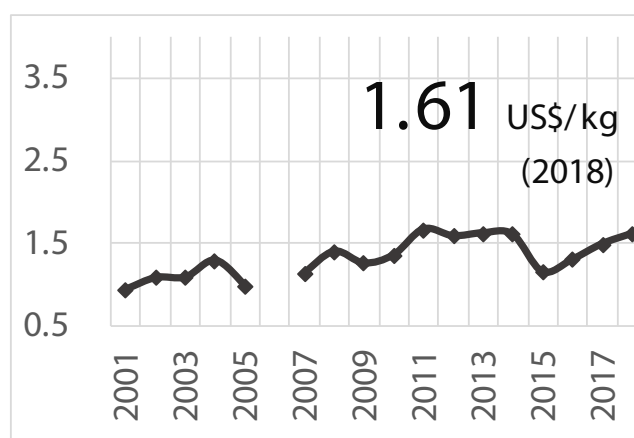
Value



Market Share by Country

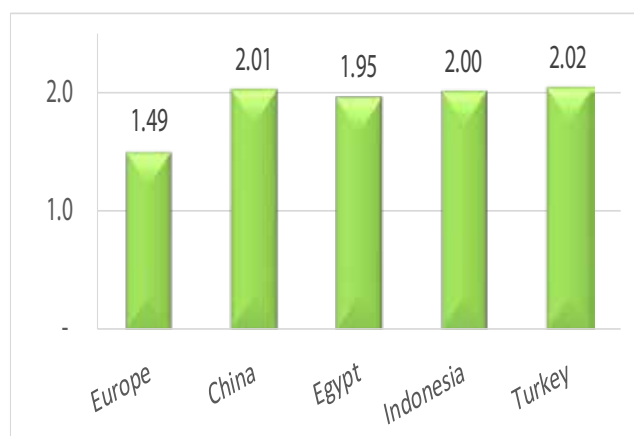


Average Price: US\$/Kg



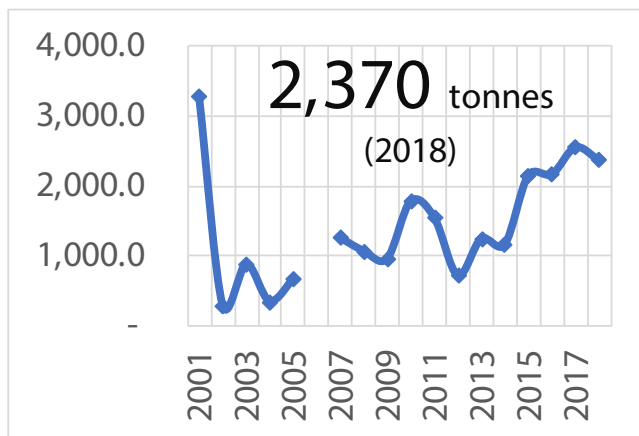
Europe	108,276
China	18,383
Egypt	14,494
Indonesia	8,140
Turkey	3,739
ROW	44,655
Tonnes	

Average Price by Country 2018: US\$/Kg

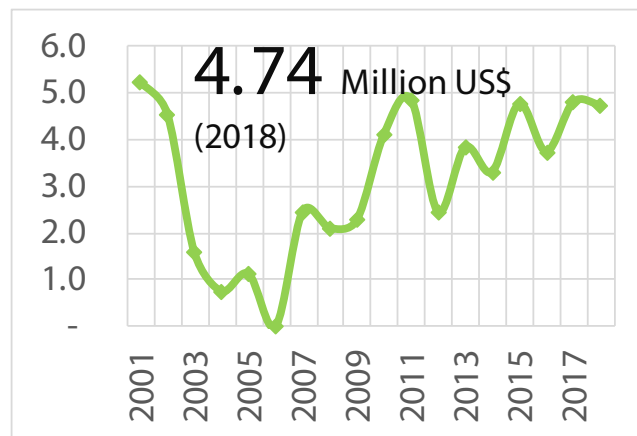


COTTON YARN EXPORTS

Quantity

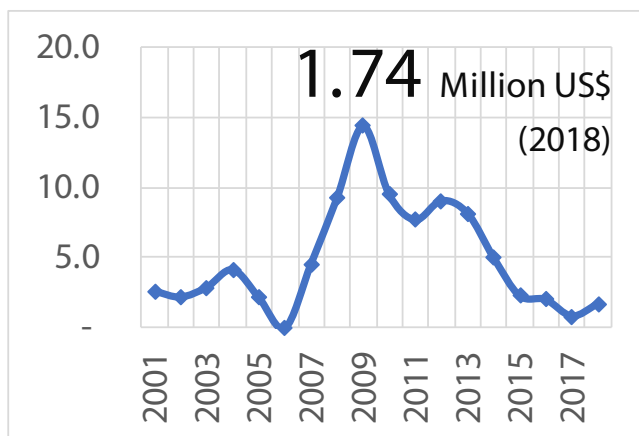


Value

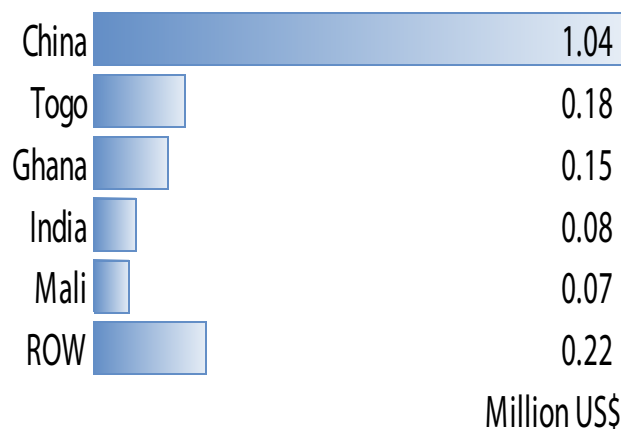
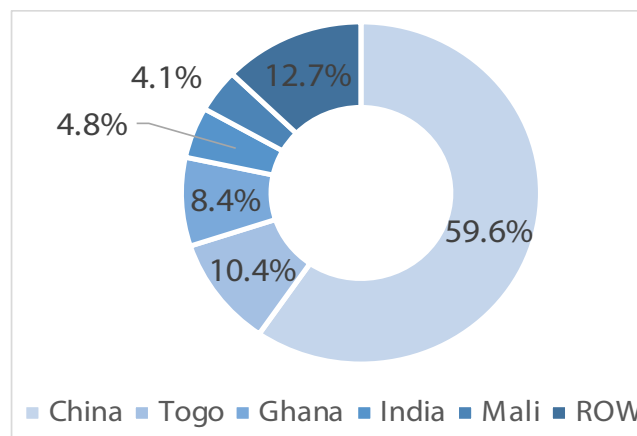


WOVEN COTTON FABRIC IMPORTS

Value

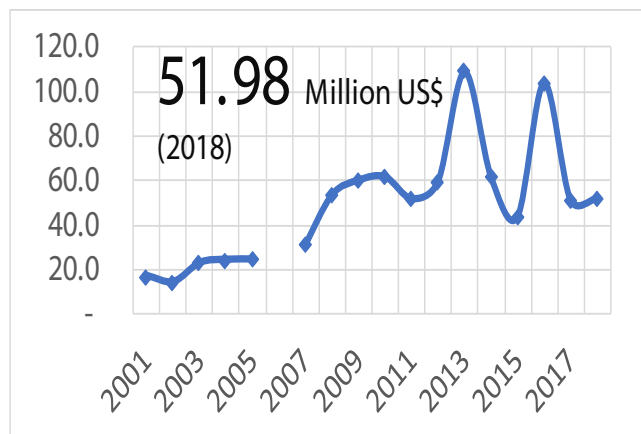


Market Share by Country

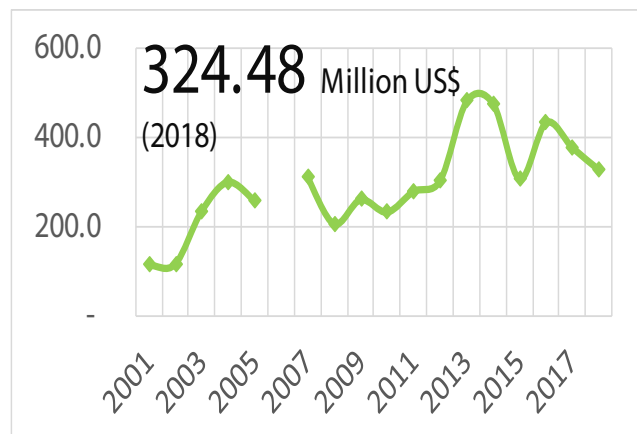


TEXTILE & APPAREL TRADE DATA

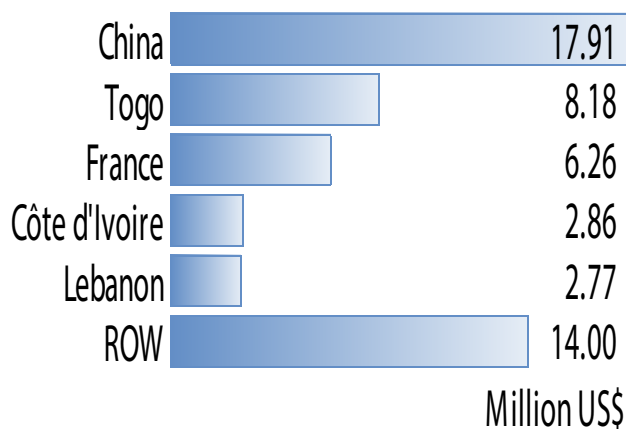
Imports



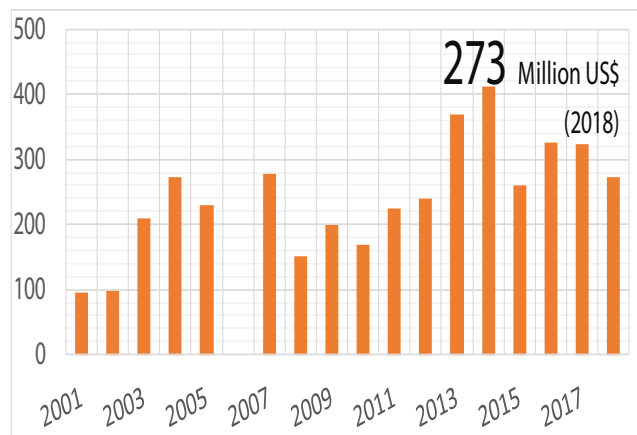
Exports



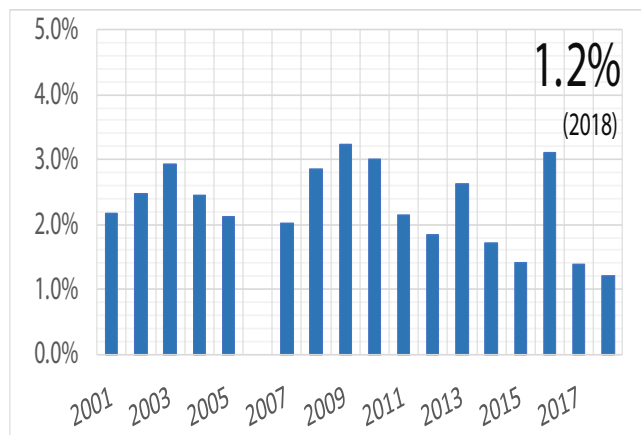
Imports by Country - 2018



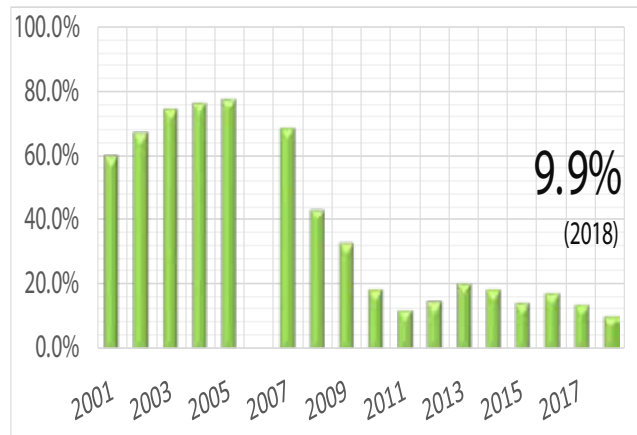
T&A Trade Balance



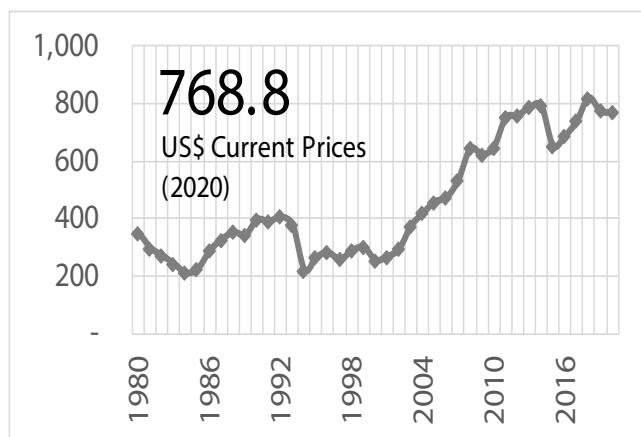
T&A Imports Share in Overall Imports



T&A Exports Share in Overall Exports



GDP per capita



Spinning Machinery

7,000

Short-Staple Spindles

Organic Cotton Produced in 2018/19

453 tonnes

Better Cotton Produced in
2018/19

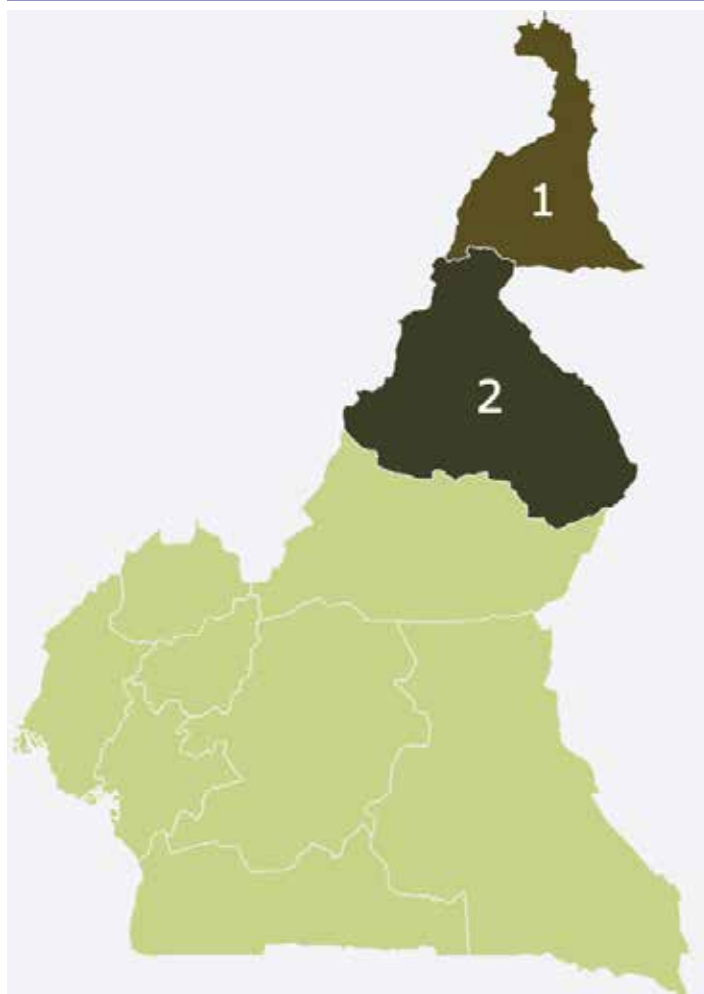
184,191 tonnes

CAMEROON

Data on the Cotton Sector



Basic Data 2020



Production

140

'000 Tonnes

Lint Yield

558

Kg/Hectare

Consumption

2

'000 Tonnes

Lint Exports

148

'000 Tonnes

Farmers

220,600

Male

Farmers

29,400

Female

COMPETING CROPS

ROTATION CROPS

National

Sorghum

Corn

Peanut

National

Sorghum

Corn

Peanut

Soybean

PRODUCTION 2020

		Area '000 Ha	Yield Kg/Ha	Production '000 Tonnes
1	Far north	93	575	53
2	North	67	561	38
3	Others	90	544	49
	National	250	558	140

Arable Area

6,200

'000 Hectares

Cotton Area

250

'000 Hectares



VARIETIES AND FIBRE TRAITS

	Release Year	% Area	Ginning %	Length UHML mm	Strength g/tex	Mic
IRMA L457	2008	67	44.7	28.6	30.3	3.8
IRMA L484	2007	33	41.5	29.9	30.5	3.8
IRMA Q302	2012	< 1	44.2	30.5	31.3	3.7

INSECTS, PATHOGENS & WEEDS

INSECT PESTS / INSECTICIDES

EARLY-SEASON

Aphis gossypii, *Bemisia tabaci* & Beetles

MID-SEASON

Helicoverpa armigera, *Diparopsis watersii*
Earias insulana, *Sylepta derogata* & Whiteflies

INSECTICIDES

Cypermethrin, Triazophos, Emamectin,
Indoxacarb, Rynaxypyr & Acetamiprid

WEEDS / HERBICIDES

NARROW-LEAF WEEDS

Digitaria horizontalis, *Cyperus esculentus*
Rottboellia cochinchinensis, *Pennisetum pedicellatum*
Digitaria sanguinalis

BROAD-LEAF WEEDS

Commelina benghalensis, *Tridax procumbens*
Ipomea eriocarpa, *Acanthospermum hispidum*

HERBICIDES

Glyphosate, Diuron, Metolachlor+Promethrin

SEEDS & PLANTING

Seeds Used for Sowing (%)

100	0	100	0
Fuzzy Seeds	Delinted	Chemical Treated	Untreated

Planting Method (%)

100	0	100	0
Manual	Machine	Local	Imported

Seed Source (%)

Use of Cotton Seeds (% Use)

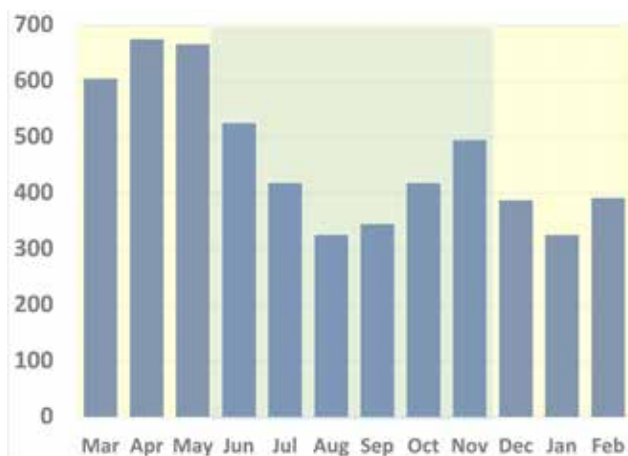
70	15	15	0
Crushed for Oil	Direct Cattle-Feed	Used for Sowing	wasted

Seed Rate, Spacing & Plant Population/Ha

30	80	30	41,666
Seed Rate Kg/Ha	Between Rows cm	Within Row cm	Plant Population/ Ha

WEATHER 2019-2020

Heat Units (DD₆₀) -Far North

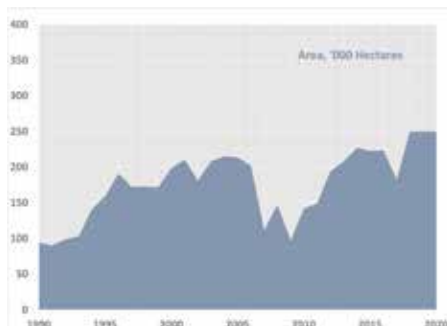


Rainfall (mm) -Far-North

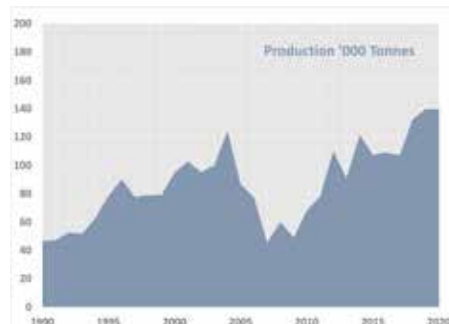


PRODUCTION

Cotton Area '000 Hectares

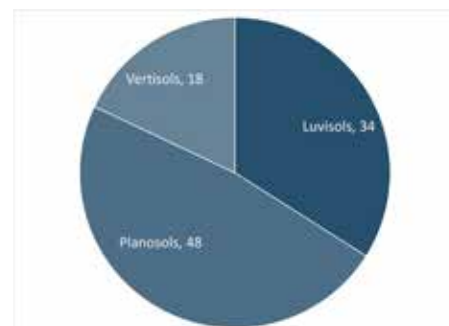


Production '000 Tonnes

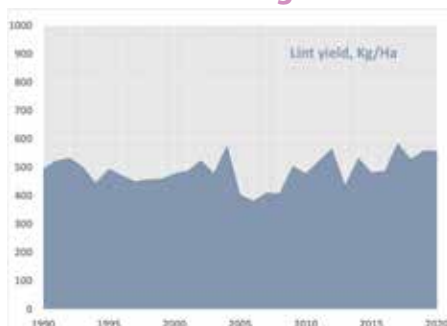


SOILS

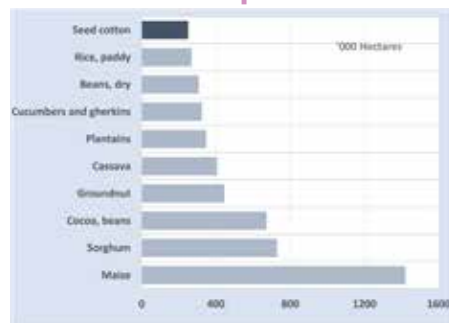
Soil Types



Lint Yield Kg/Ha

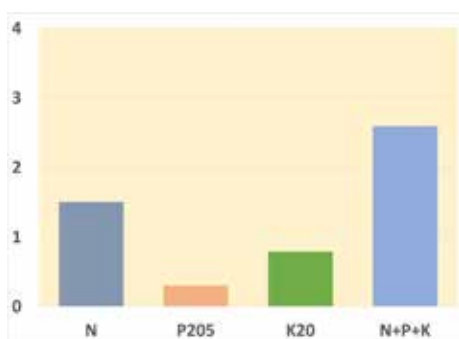


Area of Crops '000 Ha

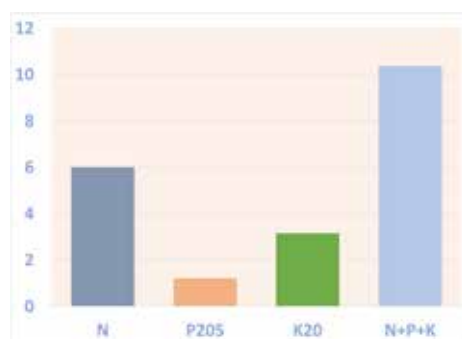


FERTILISERS

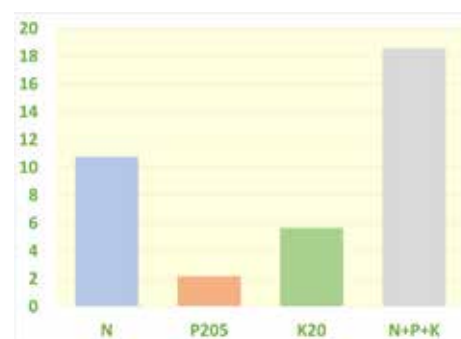
Fertiliser (NPK) use Kg/Hectare



Fertiliser (NPK) use per Kg Lint



Fertiliser (NPK) use '000 Tons



WATER

Rainwater & Irrigation water (mm)

750	521	0	0
Total Rainfall	Effective Rainfall	No. of Irrigations	Irrigation Water/Ha

Methods of Irrigation (% Area)

0	0	0	0
Flood	Furrow	Sprinkler	Drip

Rainfed Area (%) & Water Used /Kg Lint

100	0	0	9,341
Rainfed % Area	Irrigation Billion L	Irrigation L/Kg Lint	Rainwater L/Kg Lint

TILLAGE, STALKS-USE WEEDING & HARVESTING

Tillage Methods (% Area)

60	40	60	40
Zero Tillage	Disc Plough	Chisel Plough	Conventional Tillage

Use of Cotton stalks (% Use)

90	10	0	0
Burnt in Fields	Used as Firewood	Ploughed Back	Stacked on Bunds

Weeding Method (%)

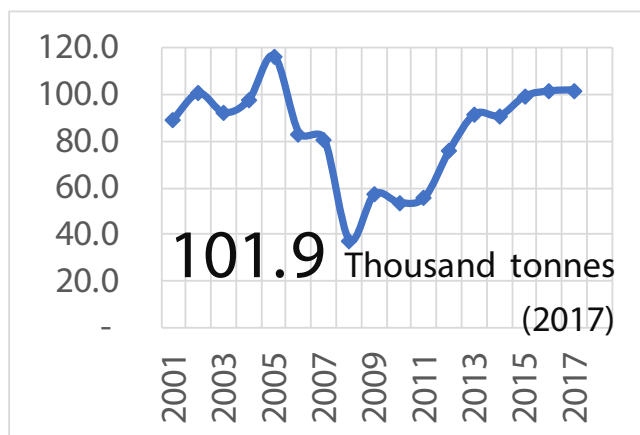
60	40	100	0
Hand	Herbicide	Hand Picked	Machine Picked

Harvesting Method (%)

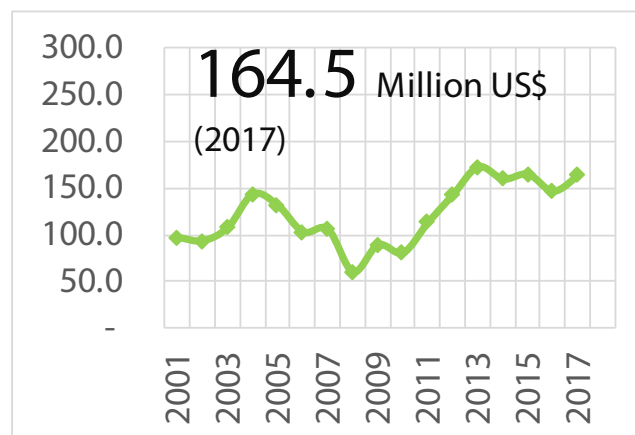


COTTON FIBRE EXPORT DATA

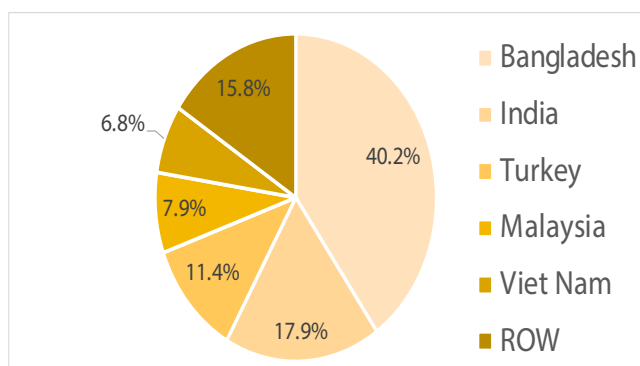
Quantity



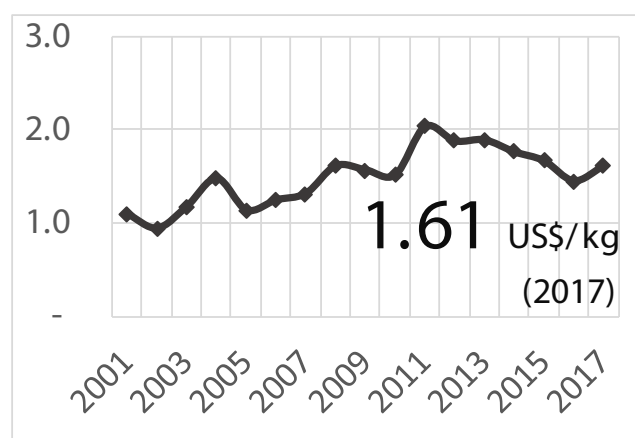
Value



Market share by Country 2017

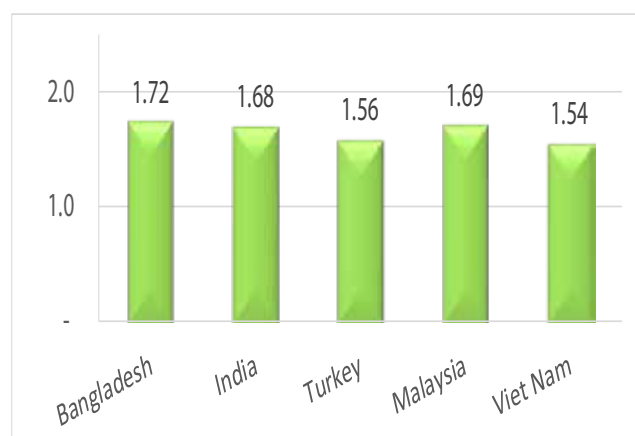


Average Price: US\$/Kg



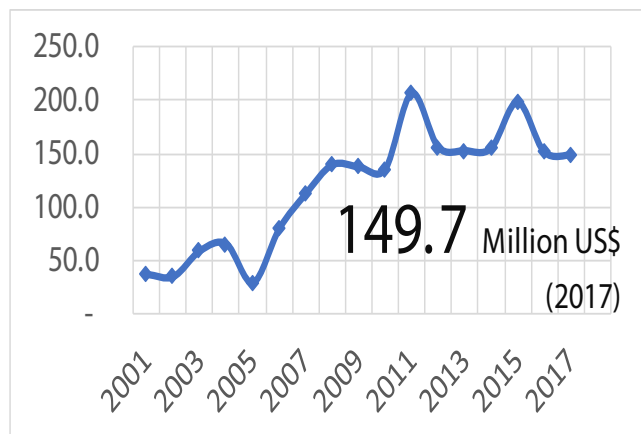
Bangladesh	40,986
India	18,287
Turkey	11,581
Malaysia	8,082
Viet Nam	6,906
ROW	16,051
Tonnes	

Average Price by Country 2017: US\$/Kg

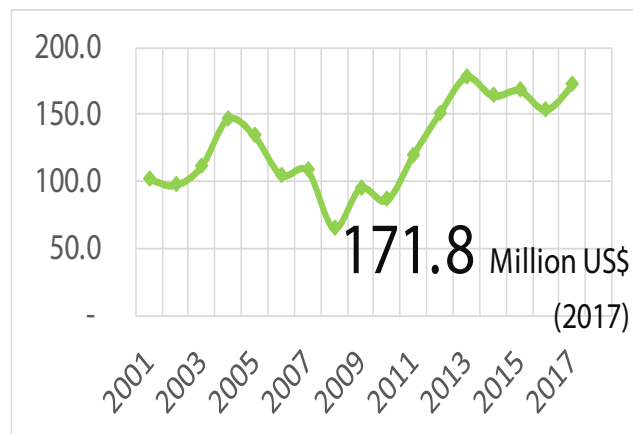


TEXTILE & APPAREL TRADE DATA

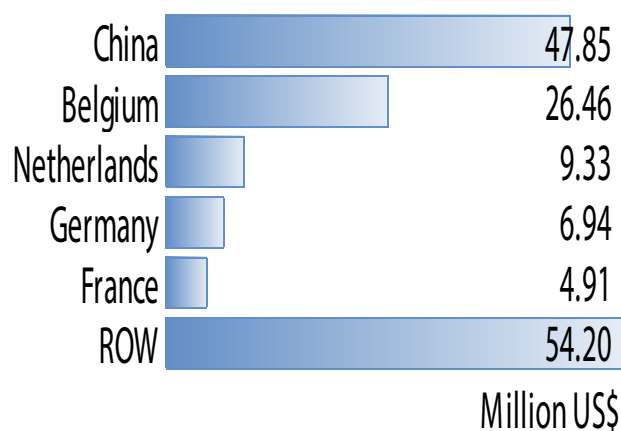
Imports



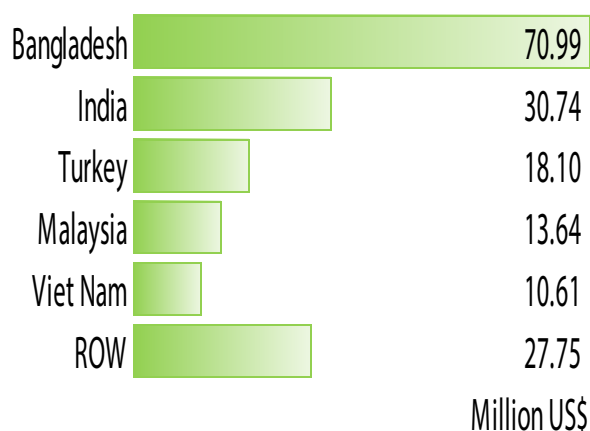
Exports



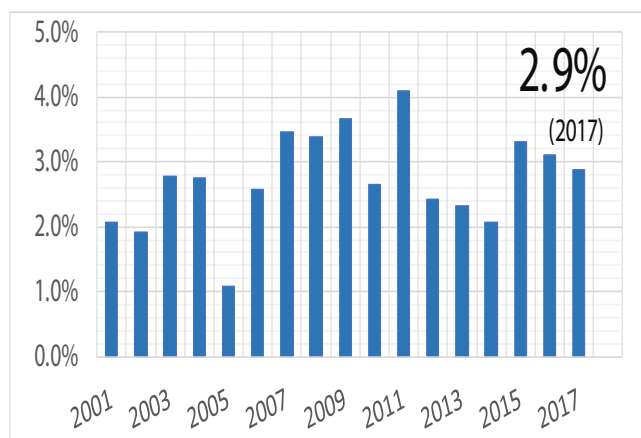
Imports by Country - 2017



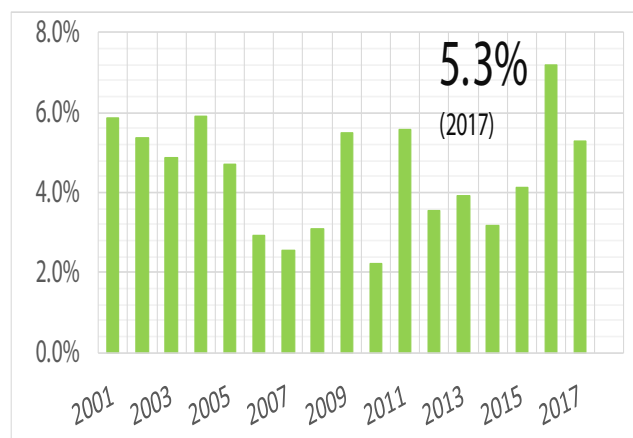
Exports by Country - 2017



T&A Imports Share in Overall Imports

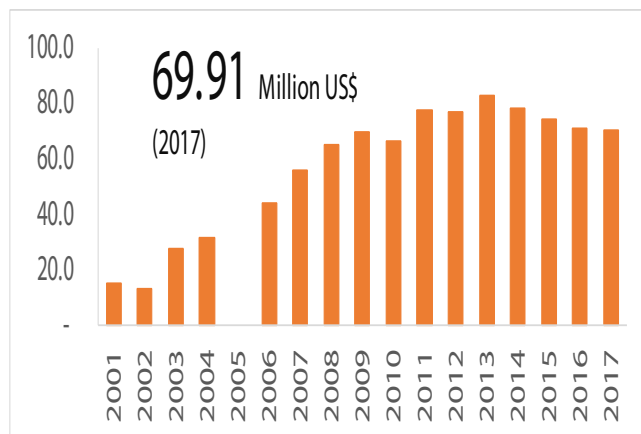


T&A Exports Share in Overall Exports

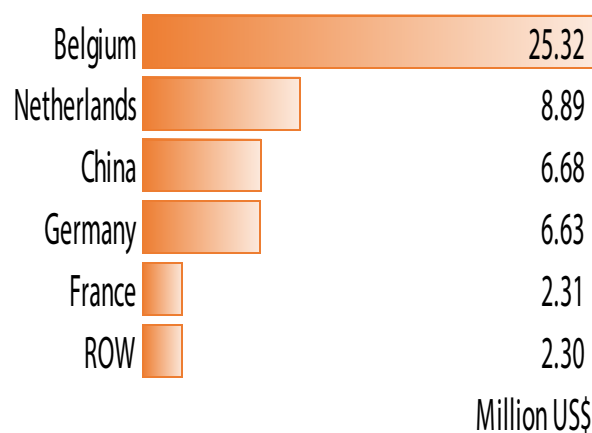


COMPOSITION OF THE TEXTILE & APPAREL INDUSTRY

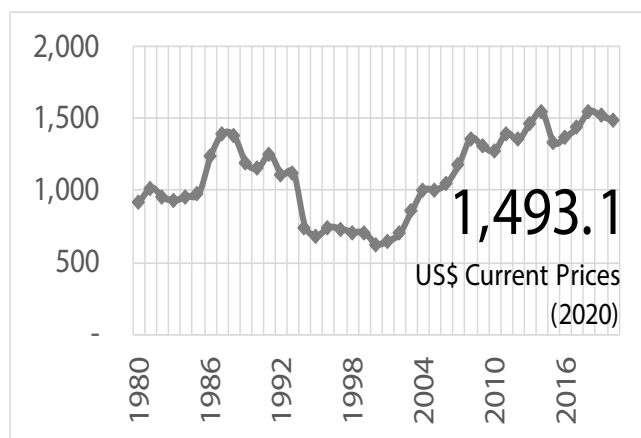
Imports - Worn Clothing & Articles



Imports by Country - 2017



GDP per capita



Spinning Machinery

35,000 Short-Staple Spindles

2,000 Open-End,

Weaving Machinery

1,000 Shuttle Looms

200 Shuttle-less Looms

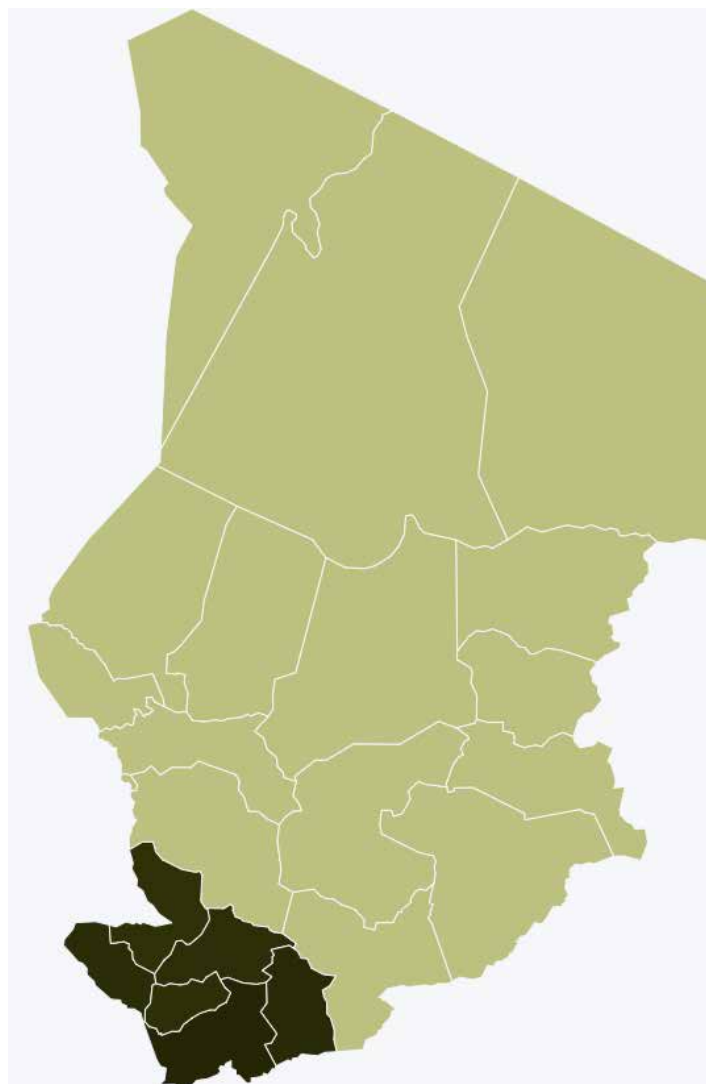
Better Cotton Produced in
2018/19

132,990 tonnes





Basic Data 2020



Consumption

0

'000 Tonnes

Lint Exports

62

'000 Tonnes

Farmers

238,944

Male

Farmers

9,100

Female

Arable Area

5,200

'000 Hectares

Cotton Area

247

'000 Hectares

Production

74

'000 Tonnes

Lint Yield

298

Kg/Hectare

PRODUCTION 2020

	Area '000 Ha	Yield Kg/Ha	Production '000 Tonnes
National	247	298	74

NUMBER OF FARMERS

	Men	Women
West	99,407	3,785
Central	45,360	1,727
East 1	49,942	1,902
East 2	44,235	1,684
Total	238,944	9,100

VARIETIES AND FIBRE TRAITS

	Release Year	% Area	Ginning %	Length UHML mm	Strength g/tex	Mic
Varieties in West Region						
IRMA Q302	2019	33	42	30.5	29.5	3.8
A51	1991	11	41.5	28.2	21.4	3.8
Varieties in Central Region						
IRMA Q302	2019	18	42	30.5	29.5	3.8
Varieties in East 1 Region						
IRMA Q302	2019	22	42	30.5	29.5	3.8
Varieties in East 2 Region						
IRMA Q302	2019	12	42	30.5	29.5	3.8
STAMF	1983	5	41.7	28.9	21.5	3.9

WATER

Rainwater & Irrigation water (mm)

980	596	0	0
Total Rainfall	Effective Rainfall	No. of Irrigations	Irrigation Water/Ha

Methods of Irrigation (% Area)

0	0	0	0
Flood	Furrow	Sprinkler	Drip

Rainfed Area (%) & Water Used /Kg Lint

100	0	0	20,008
Rainfed % Area	Irrigation Billion L	Irrigation L/Kg Lint	Rainwater L/Kg Lint

COTTON RESEARCH

CotonTchad SN (Société Cotonnière du Tchad - Société Nouvelle), Mondou plays an important role in cotton research. Cotton research in Chad is the responsibility of the Chadian Institute for Agricultural Research for Development-ITRAD (l'Institut Tchadien de Recherche Agronomique pour le Développement). It is financed by the state under the Ministry of Agriculture. The CotonTchad SN which finances cotton research and the work is coordinated with ITRAD by the Directorate of Cotton Production of CotonTchad SN. ITRAD has a partnership agreement with Cotontchad SN to exchange information and results in consideration of the annual financial support paid by the CotonTchad SN.

SEEDS & PLANTING

Use of Cotton Seeds (% Use)

West	93	0	7	0
Central	97	0	3	0
East-1	98	0	2	0
East-2	98	0	2	0
National	97	0	4	0
	Crushed for Oil	Cattle Feed	Used for Sowing	wasted

Seeds Used for Sowing (%)

100	0	100	0
Fuzzy Seeds	Delinted	Chemical Treated	Untreated

Planting Method (%)

100	0	5	95
Manual	Machine	Local	Imported

Seed Source (%)

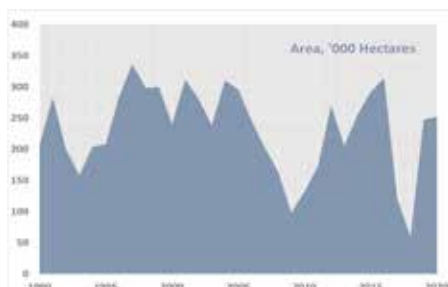
Seed Rate, Spacing & Plant Population/Ha

39	80	30	41,666
Seed Rate Kg/Ha	Between Rows cm	Within Row cm	Plant Population/ Ha

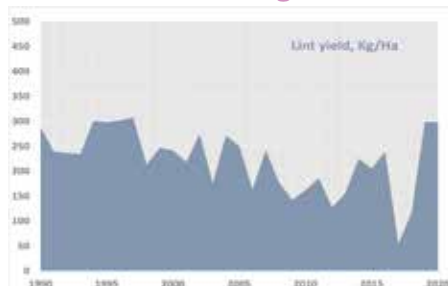


PRODUCTION

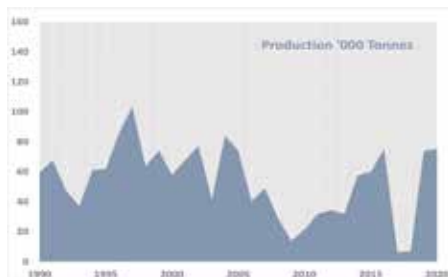
Cotton Area '000 Hectares



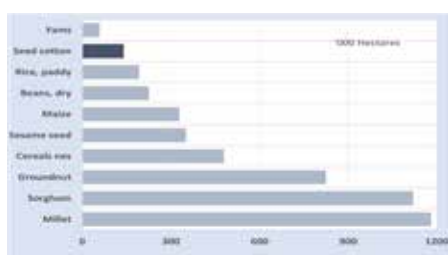
Lint Yield Kg/Ha



Production '000 Tonnes



Area of Crops '000 Ha



INSECTS, PATHOGENS & WEEDS

INSECT PESTS / INSECTICIDES

NATIONAL
EARLY-SEASON
<i>Helicoverpa armigera</i>
<i>Diparopsis watersii</i>
<i>Earias spp.</i>
MID-SEASON
<i>Sylepta derogata</i>
<i>Spodoptera littoralis</i>
<i>Anomis flava</i>
<i>Dysdercus volkeri</i>
<i>Aphis gossypii</i>
INSECTICIDES
Cypermal P 720 EC
Emamectin benzoate
Conquest

DISEASES / PATHOGENS
NATIONAL
DISEASES / PATHOGENS
<i>Damping off</i>
<i>Bacteriosis</i>
<i>Fusarium wilt</i>
<i>Phyllody</i>
CHEMICAL CONTROL
Imida+Thiram

WEEDS / HERBICIDES
NARROW-LEAF WEEDS
<i>Brachiaria lata</i>
<i>Cyperus rotundus</i>
<i>Imperata spp.</i>
<i>Digitaria horizontalis</i>
<i>Rottboellia exaltata</i>
BROAD-LEAF WEEDS
<i>Commelina spp.</i>
HERBICIDES
None

FERTILISERS

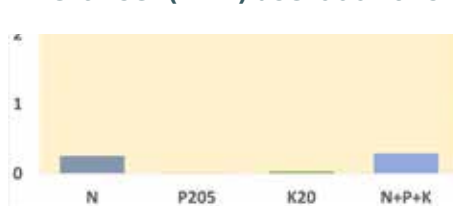
Fertiliser (NPK) use Kg/Hectare



Fertiliser (NPK) use per Kg Lint



Fertiliser (NPK) use '000 Tons



COMPETING CROPS

National
Peanut
Cereals
Oilseeds

ROTATION CROPS

National
Peanut
Cereals
Oilseeds

TILLAGE, STALKS-USE, WEEDING & HARVESTING

Tillage Methods (% Area)

West	5	25	5	95
Central	3	27	8	92
East-1	3	27	7	93
East-2	2	18	4	96
National	5	24	6	95
	Zero Tillage	Disc Plough	Chisel Plough	Conventional Tillage

Use of Cotton stalks (% Use)

80	10	10	0
Burnt in Fields	Used as Firewood	Ploughed Back	Stacked on Bunds

Weeding Method (%)

99	1	100	0
Hand	Herbicide	Hand Picked	Machine Picked

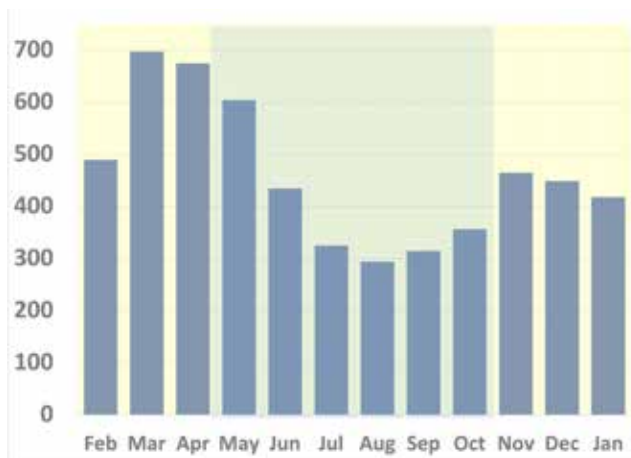
Harvesting Method (%)

COST OF CULTIVATION US\$/Hectare

INPUTS	Quantity (Kg/Ha)	Operations per season	Total cost /Ha
Non-GM seeds	39	1	0.8
Biotech/GM seeds	0	0	0.0
NPK+Other	100	1	71.7
Insecticides	2	6	28.0
Herbicides	0	0	0.0
Fungicides	0	0	0.0
Growth regulators	1	1	3.7
Defoliants	0	0	0.0
Manure	0	0	0.0
Others (please specify)	0	0	0.0
MANPOWER / LABOUR	Wages per person	Persons per operation	Total cost per hectare
Land preparation /tillage etc.,	1.72	12	20.7
Sowing	1.29	8	10.3
Fertiliser / manure application	1.29	4	5.2
Irrigation	0.00	0	0.0
Thinning	1.29	4	5.2
Weeding	1.29	12	15.5
Hoeing	0.00		0.0
Pesticide application	1.29	6	7.8
Defoliator application	0.00		0.0
Picking / harvesting	1.29	15	19.4
Stalk cutting & removal	0.00	0	0.0
Transportation /unloading etc.,	1.72	5	8.6
Ginning cost per 100 Kg	55.00	1	55.0
Others (please specify)	0	0	0.0
MACHINERY /ANIMALS etc.	Cost per Operation	Number of Operations	Total cost per hectare
Tractors	68.96	1	
Implements & tools			
Electric / Diesel pumps etc.,			
Electricity / Diesel etc.,			
Harvesting machines			
Hoeing / Tillage machinery etc.,			0.0
Bullocks /Buffaloes	2	1	34.5
Land rent			
MARKET VALUE	Yield Kg/per hectare	Market value per 100 Kg	Value per hectare
Seed cotton	470	0.38	180.7
Ginning % (output)		0.00	0.0
Lint (fibre)	197.4	1.81	357.4
Seed	258.5	0.09	24.5
COST OF CULTIVATION			231
NET RETURNS (SEED-COTTON)			-51
NET RETURNS (SEED + LINT)			96

WEATHER 2019-2020

Heat Units (DD60) -Logone Occidental



Rainfall (mm) -Logone Occidental

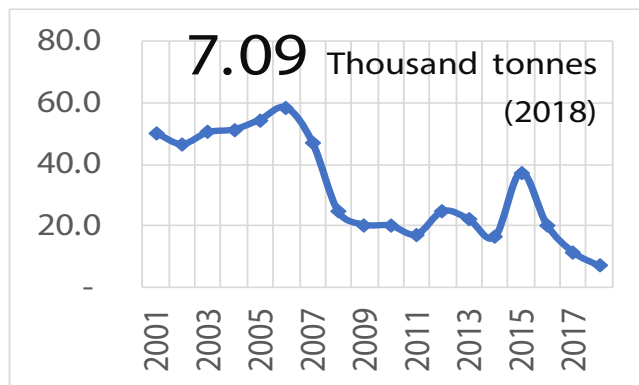


TRADE DATA

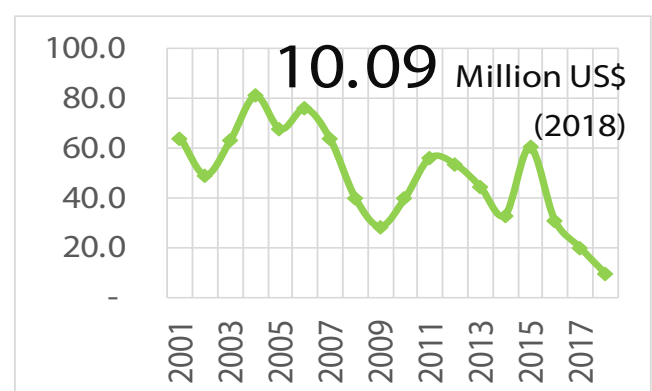


COTTON FIBRE EXPORT DATA

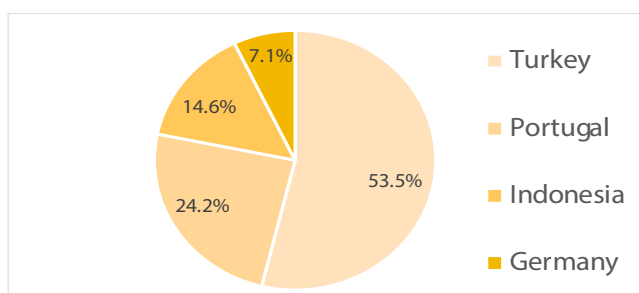
Quantity



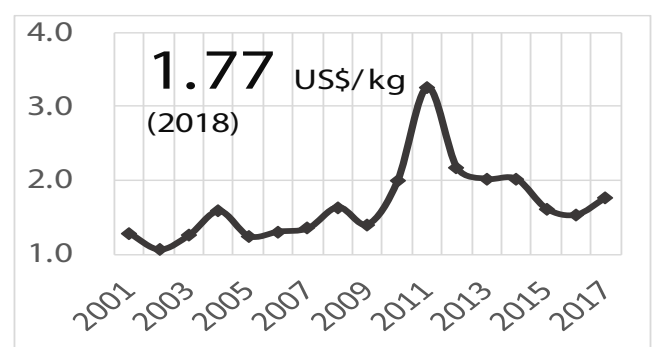
Value



Market Share by Country

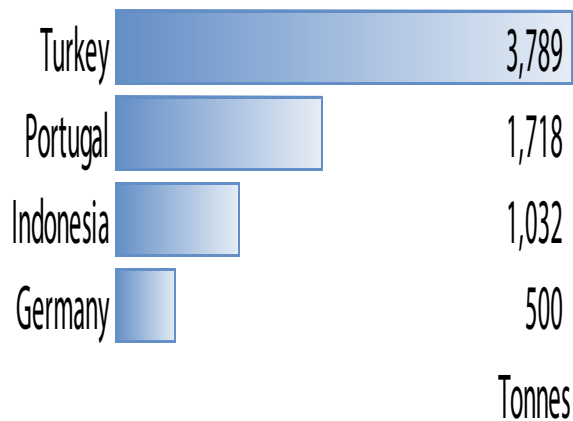


Average Price: US\$/Kg

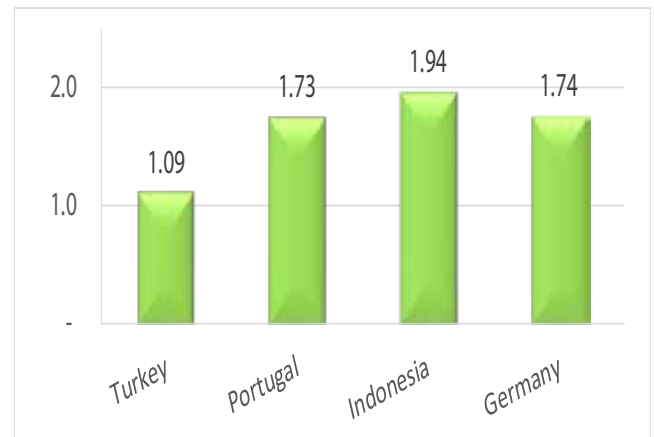


COTTON FIBRE EXPORT DATA

Market Share by Country

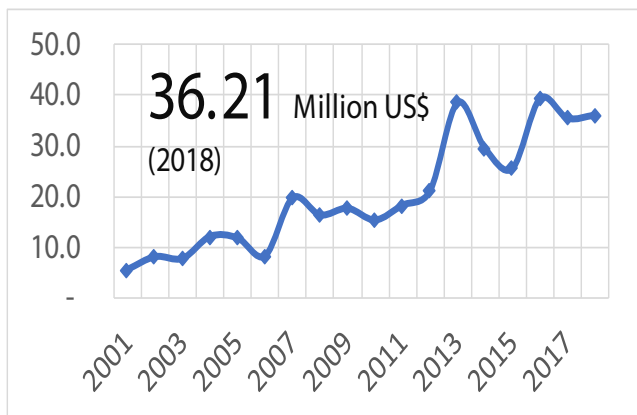


Average Price by Country 2018: US\$/Kg

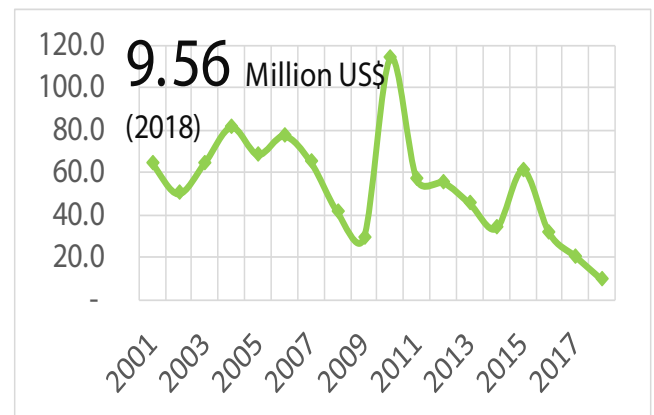


TEXTILE & APPAREL TRADE DATA

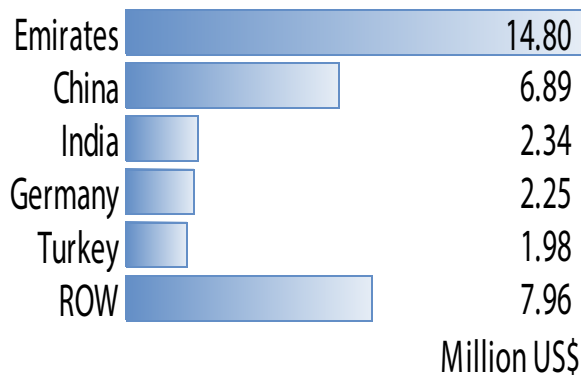
Imports



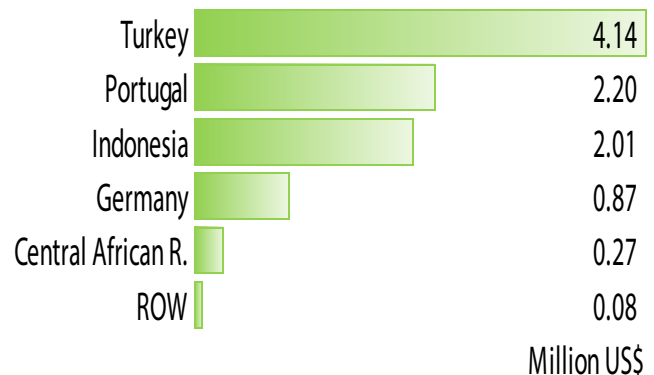
Exports



Imports by Country - 2018

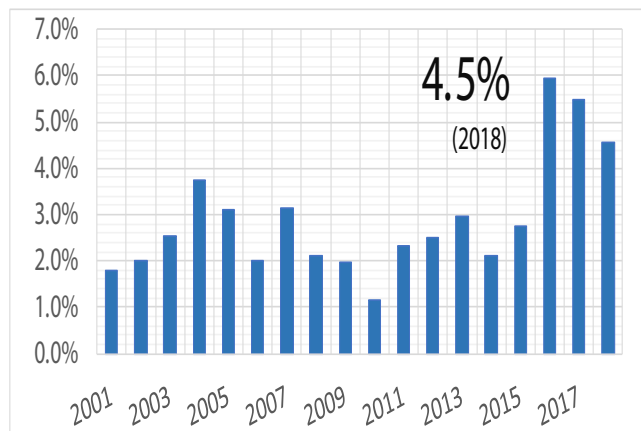


Exports by Country - 2018

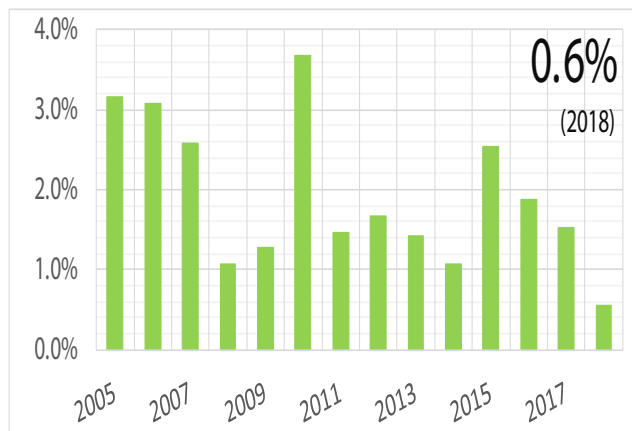


TEXTILE & APPAREL TRADE DATA

T&A Imports Share in Overall Imports

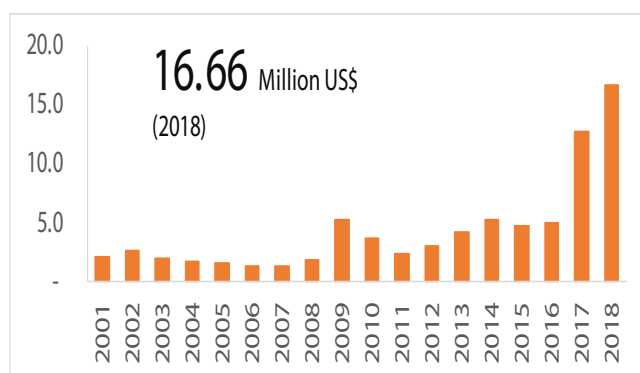


T&A Exports Share in Overall Exports

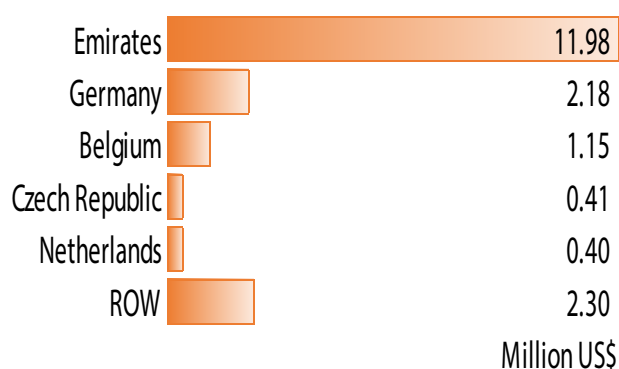


COMPOSITION OF THE TEXTILE & APPAREL INDUSTRY

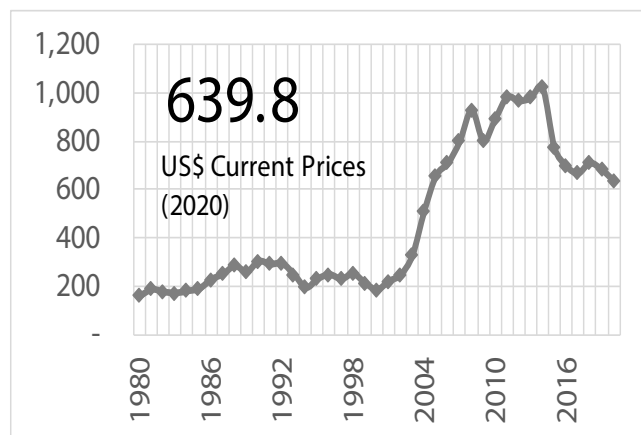
Imports - Worn Clothing & Articles



Imports by Country - 2018



GDP per capita



Spinning Machinery

18,000

Short-Staple Spindles

Weaving Machinery

250

Shuttle Looms

40

Shuttle-less Looms





Basic Data 2020



Arable Area

119,488

'000 Hectares

Cotton Area

3,170

'000 Hectares

Production

5,910

'000 Tonnes

Lint Yield

1,865

Kg/Hectare

PRODUCTION 2020

	Area '000 Ha	Yield Kg/Ha	Production '000 Tonnes
1 Xinjiang	2502	2063	5161
2 Shandong	143	1281	183
3 Hubei	130	832	108
4 Hebei	189	1103	209
5 Others	206	1213	250
National	3170	1865	5910

Consumption

8100

'000 Tonnes

Lint Exports

30

'000 Tonnes

Farmers

2,118,511

Male

Farmers

3,681,489

Female



VARIETIES AND FIBRE TRAITS

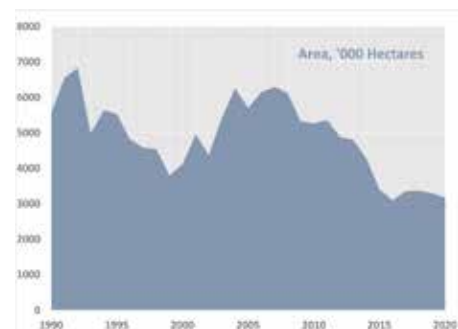
	Release Year	% Area	Ginning %	Length UHML mm	Strength g/tex	Mic
Xinjiang						
Xinluzhong 36, 37, 42, 47, 54			36-38	28-30	26-30	3.8-4.5
Xinhai 21, 24, 35, 36			37-39	27-30	27-30	3.8-4.5
Xinluzao 36, 37, 41, 48, 50, 57.			35-39	27-30	27-30	3.8-4.5
Yellow River						
CRI 50	2007	15		29.5	27.9	4.4
Yangtze River						
CRI 63	2007	10		30	29.1	4.8

Tillage Methods (% Area)

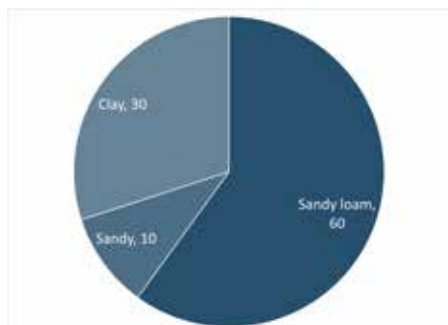
Xinjiang	25	75	25	75
Yellow River	45	55	45	55
Yangtze	55	45	55	45
National	30	70	30	70
	Zero Tillage	Disc Plough	Chisel Plough	Conventional Tillage

PRODUCTION

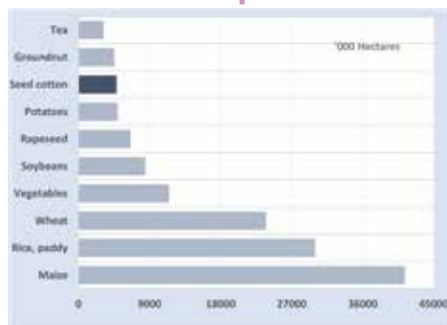
Cotton Area '000 Hectares



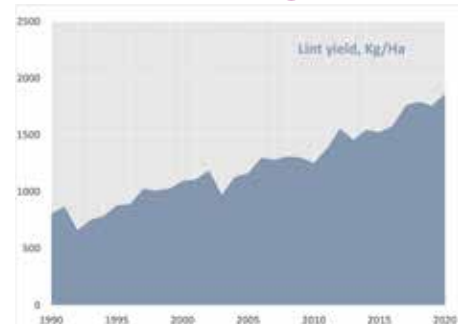
Soil Types



Area of Crops '000 Ha



Lint Yield Kg/Ha



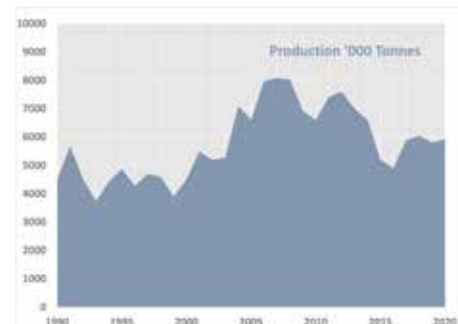
COMPETING CROPS

Yellow River Region	Yangtze Region
Wheat	Wheat
	Rapeseed

ROTATION CROPS

Yellow River Region	Yangtze Region
Wheat	Wheat
	Rapeseed

Production '000 Tonnes



STALKS, WEEDING & HARVESTING

Use of Cotton stalks (% Use)

0	10	90	0
Burnt in Fields	Used as Firewood	Ploughed Back	Stacked on Bunds

Weeding Method (%)

Harvesting Method (%)

80	80	30	70
Hand	Herbicide	Hand Picked	Machine Picked

SEEDS & PLANTING

Seeds Used for Sowing (%)

0	100	100	0
Fuzzy Seeds	Delinted	Chemical Treated	Untreated

Planting Method (%)

Seed Source (%)

40	60	100	0
Manual	Machine	Local	Imported

Use of Cotton Seeds (% Use)

90	0	10	0
Crushed for Oil	Direct Cattle-Feed	Used for Sowing	wasted

Seed Rate, Spacing & Plant Population/Ha

30	45	10	222,222
22	60	10	166,667
15	90	10	111,111
Seed Rate Kg/Ha	Between Rows cm	Within Row cm	Plant Population/ Ha

WATER

Rainwater & Irrigation water (mm)

Hebei	482	295	6	240
Shan-dong	848	582	6	180
Hubei	1,305	596	6	180
Xinjiang	261	150	8	320
Others			6	180
National	349	200	7	296
	Total Rainfall	Effective Rainfall	No. of Irrigations	Irrigation Water/Ha

Methods of Irrigation (% Area)

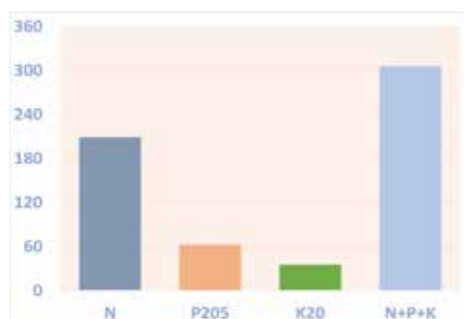
Hebei	20	80	0	0
Shan-dong	14	86	0	0
Hubei	47	12	12	29
Xinjiang	6	8	12	74
Others	14	68	6	12
National	9	20	10	60
	Flood	Furrow	Sprinkler	Drip

Rainfed Area (%) & Water Used /Kg Lint

Hebei	14	391	1,872	2,676
Shan-dong	12	226	1,237	4,545
Hubei	12	205	1,905	7,166
Xinjiang	0	8,006	1,551	727
Others	8	341	1,365	0
National	2	9,170	1,551	1,071
	Rainfed % Area	Irrigation Billion L	Irrigation L/Kg Lint	Rainwater L/Kg Lint

FERTILISERS

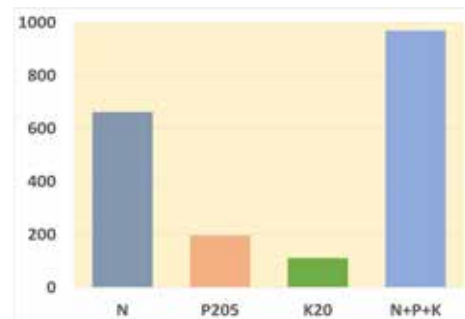
Fertiliser (NPK) use Kg/Hectare



Fertiliser (NPK) use per Kg Lint

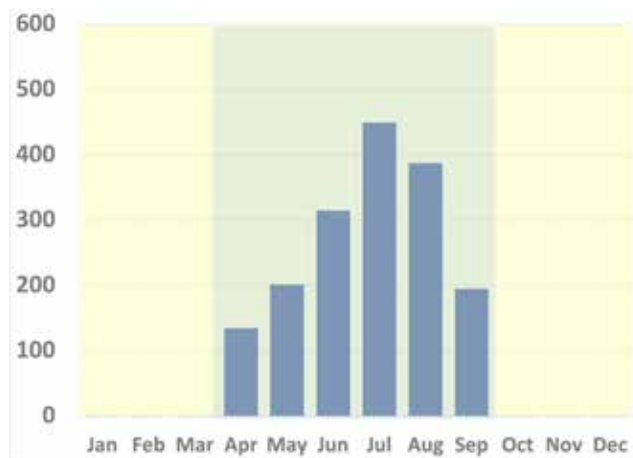


Fertiliser (NPK) use '000 Tons



WEATHER 2019-2020

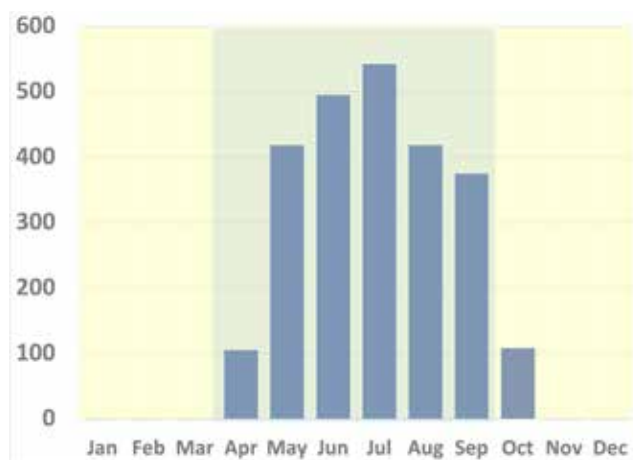
Heat Units (DD₆₀) -Xinjiang



Rainfall (mm) -Xinjiang



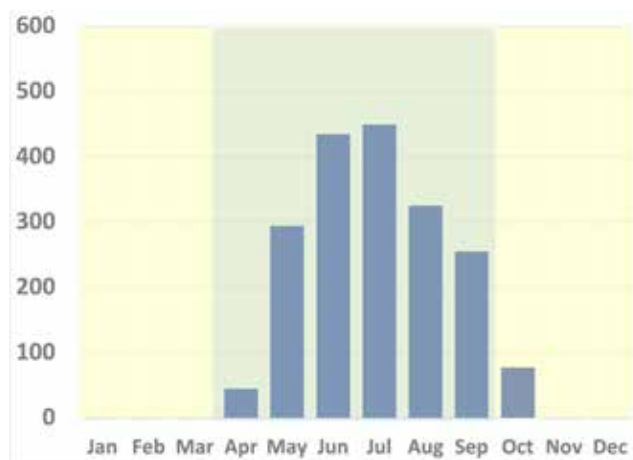
Heat Units (DD₆₀) -Hebei



Rainfall (mm) -Hebei



Heat Units (DD₆₀) -Shandong

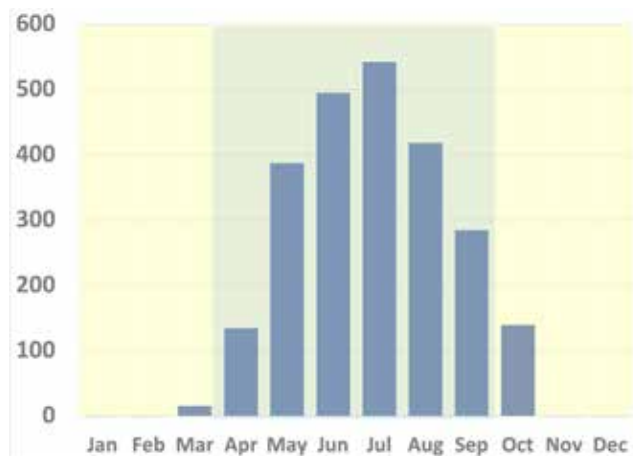


Rainfall (mm) -Shandong



WEATHER 2019-2020

Heat Units (DD₆₀) -Henan



Rainfall (mm) -Henan



INSECTS, PATHOGENS & WEEDS

INSECT PESTS / INSECTICIDES
NATIONAL
EARLY-SEASON
<i>Helicoverpa armigera</i>
<i>Aphis gossypii</i>
MID-SEASON
<i>Helicoverpa armigera</i>
<i>Adelphocoris taeniophorus</i>
<i>Aphis gossypii</i>
<i>Tetranychus cinnabarinus</i>
INSECTICIDES
Fenval+Endo 25%

DISEASES / PATHOGENS
NATIONAL
DISEASES / PATHOGENS
<i>Verticillium wilt</i>
<i>Fusarium wilt</i>
<i>Stem-blight</i>
HERBICIDES
Trifluralin
Clethodim 12%EC

WEEDS / HERBICIDES
NATIONAL
NARROW-LEAF WEEDS
<i>Digitaria sanguinalis</i>
<i>Bearded sprangletop</i>
<i>Cyperus rotundus</i>
<i>Eleusine indica</i>
<i>Setaria viridis</i>
BROAD-LEAF WEEDS
<i>Abutilon theophrasti</i>
<i>Redroot amaranth</i>
<i>Acalypha australis</i>

STRUCTURE OF COTTON RESEARCH

The cotton research system is comprised of national research institutes, provincial research institutes and universities. National research institutes and universities are mainly engaged in fundamental research. However, provincial research institutes are mostly engaged in research on applied techniques. The national research institutes mainly include the Institute of Cotton Research of the Chinese Academy of Agricultural Sciences (CAAS) and Biotechnology Research Institute of CAAS. Universities include China Agricultural University, Huzhong Agricultural University and Nanjing Agricultural University. Provincial research institutes mainly include the Cotton Research Centre of Shandong Academy of Agricultural Sciences, Shandong Cotton Research Centre of the Shandong Province Academy of Agricultural Sciences, Institute of Cash Crop Research of the Hubei Province Academy of Agricultural Sciences and Cash Crops Research Institute of the Xinjiang Academy of Agricultural Sciences. The Ministry of Agriculture and Rural Affairs of China established a long-term and stable large-scale project called China Cotton Research System in 2007 to carry out scientific research on cotton science and technology. Institute of Cotton Research, Anyang,

Henan also focuses mainly on cotton research.

RESEARCH ORGANOGRAM



COST OF CULTIVATION US\$/Hectare

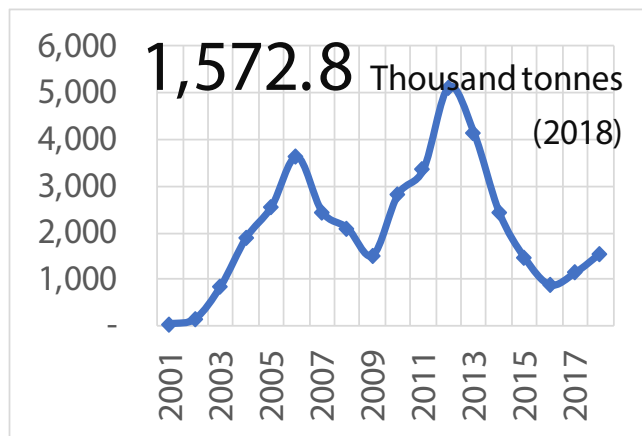
INPUTS	Quantity (Kg/Ha)	Operations per season	Total cost /Ha
Non-GM seeds			
Biotech/GM seeds	15	1	183
NPK+Other		3	755
Insecticides		3	250
Herbicides		1	40
Fungicides			24
Growth regulators		2	13
Defoliants			14
Manure	2 Tons	1	100
Others (please specify)			
MANPOWER / LABOUR	Wages per person	Persons per operation	Total cost per hectare
Land preparation /tillage etc.,	10.85	9	97.632
Sowing	10.85	6	65.088
Fertiliser / manure application	10.85	14	157.296
Irrigation	10.85	14	157.296
Thinning	10.85	6	65.088
Weeding	10.85	12	130.176
Hoeing	10.85	12	130.176
Pesticide application	10.85	7	81.36
Defoliator application	10.85	1	16.272
Picking / harvesting	10.85	45	488.16
Stalk cutting & removal	10.85	4	49
Transportation /unloading etc.,			
Ginning cost per 100 Kg			360
Others (please specify)	0.0	0	0.0
MACHINERY /ANIMALS etc.	Cost per Operation	Number of Operations	Total cost per hectare
Tractors	190	1	190
Implements & tools	10	10	100
Electric / Diesel pumps etc.,	15	8	120
Electricity / Diesel etc.,			
Harvesting machines	250	1	
Hoeing / Tillage machinery etc.,	70	1	70
Bullocks /Buffaloes			
Land rent			1500
MARKET VALUE	Yield Kg/per hectare	Market value per 100 Kg	Value per hectare
Seed cotton	4605	0.868	3997.14
Ginning % (output)	40		0
Lint (fibre)	1842	2.2	4052.4
Seed	2760	0.28	772.8
COST OF CULTIVATION			3296
NET RETURNS (SEED-COTTON)			701
NET RETURNS (SEED + LINT)			1169

TRADE DATA

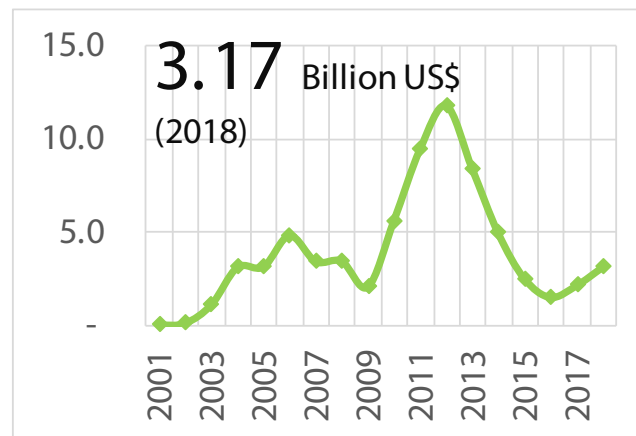


COTTON FIBRE IMPORT DATA

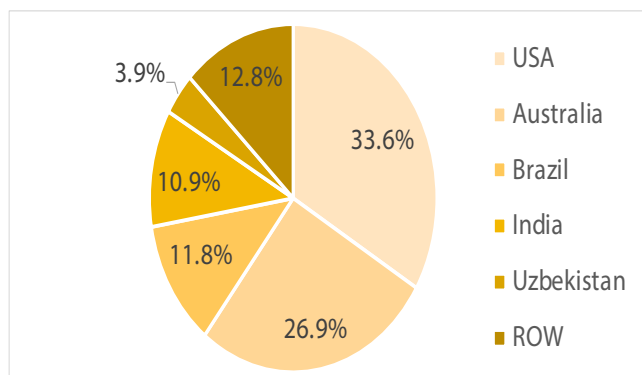
Quantity



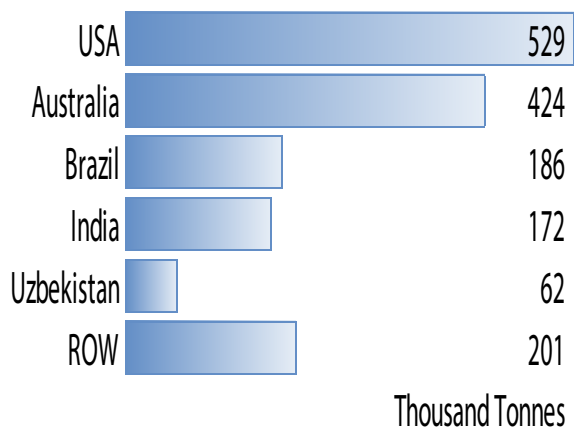
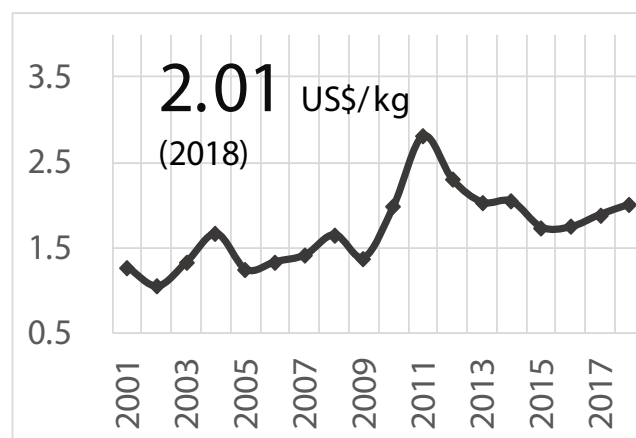
Value



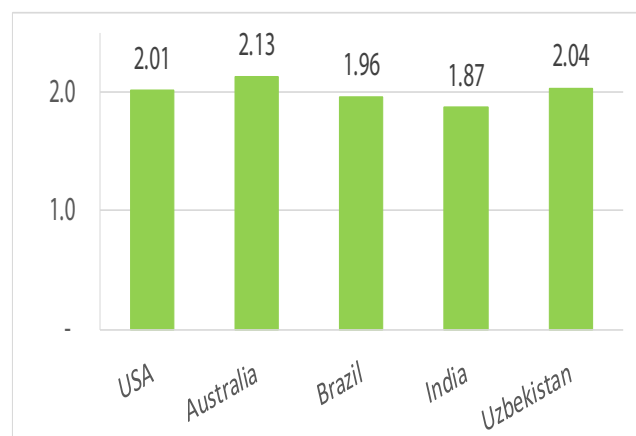
Market Share by Country



Average Price: US\$/Kg

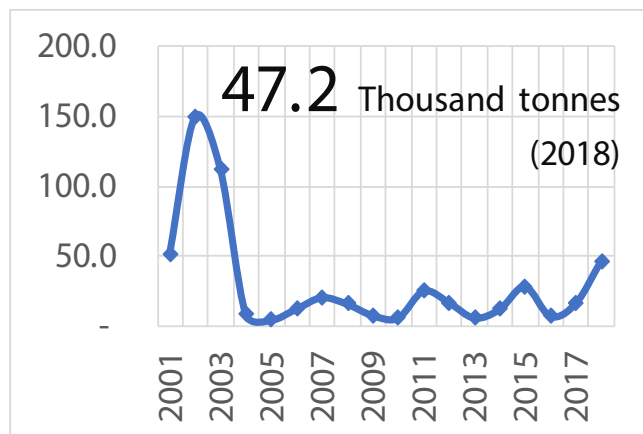


Average Price by Country 2018: US\$/Kg

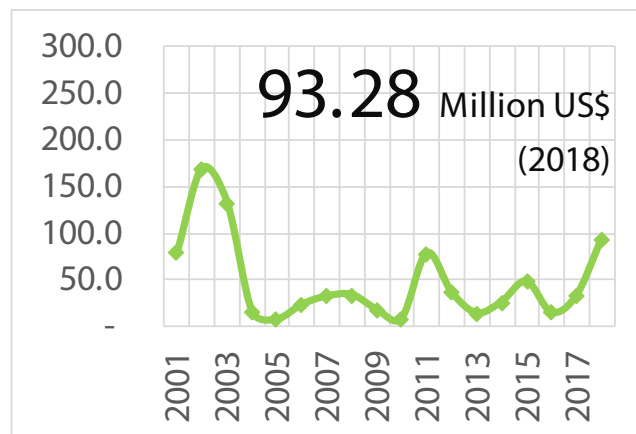


COTTON FIBRE EXPORT DATA

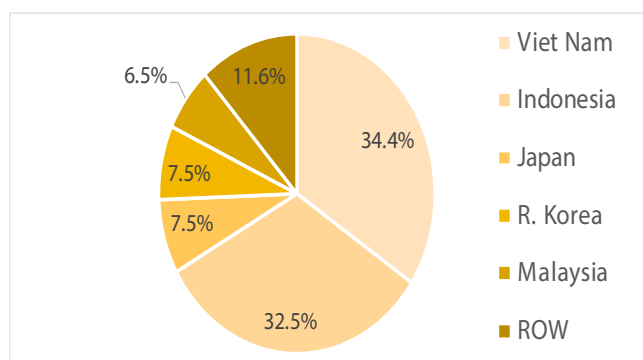
Quantity



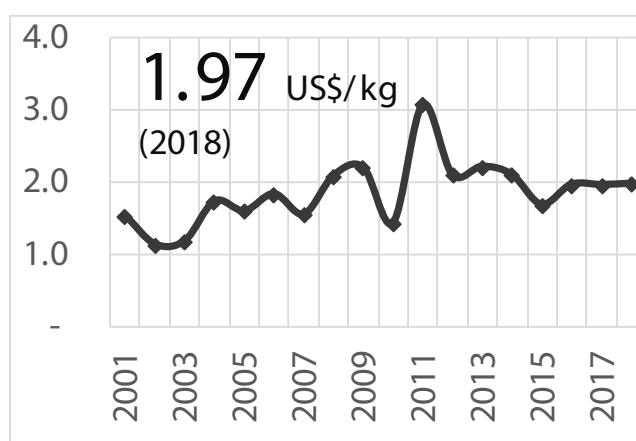
Value



Market Share by Country

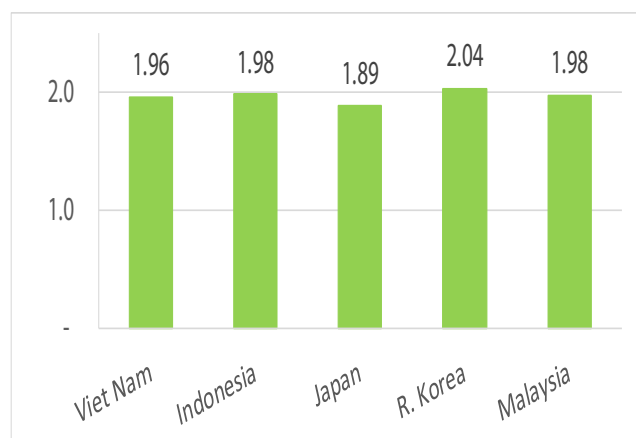


Average Price: US\$/Kg



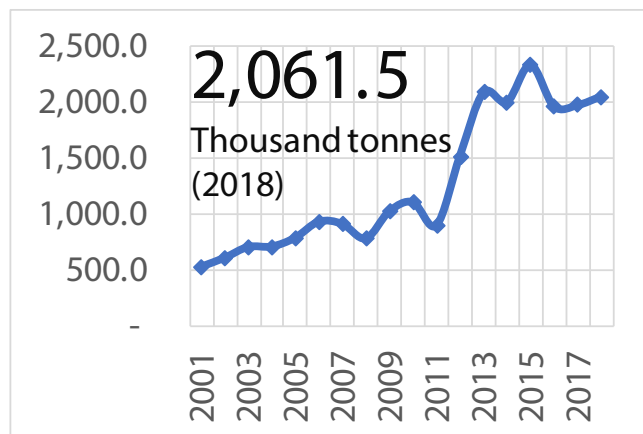
Viet Nam	16,249
Indonesia	15,348
Japan	3,553
R. Korea	3,546
Malaysia	3,053
ROW	5,495
Tonnes	

Average Price by Country 2018: US\$/Kg

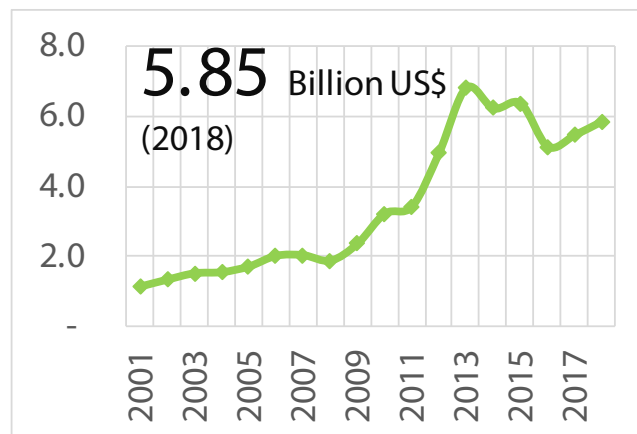


COTTON YARN IMPORT DATA

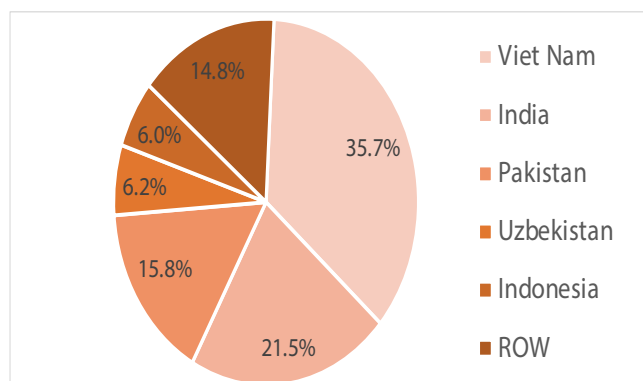
Quantity



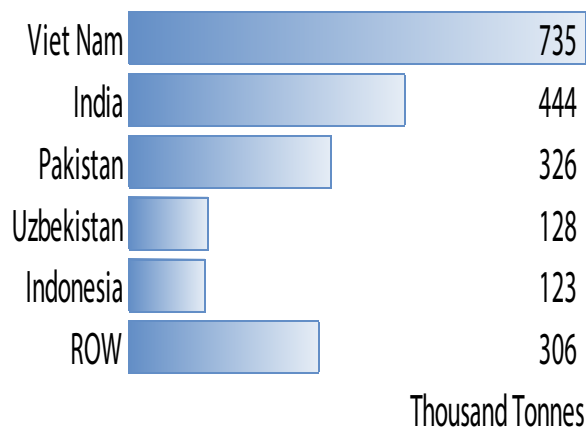
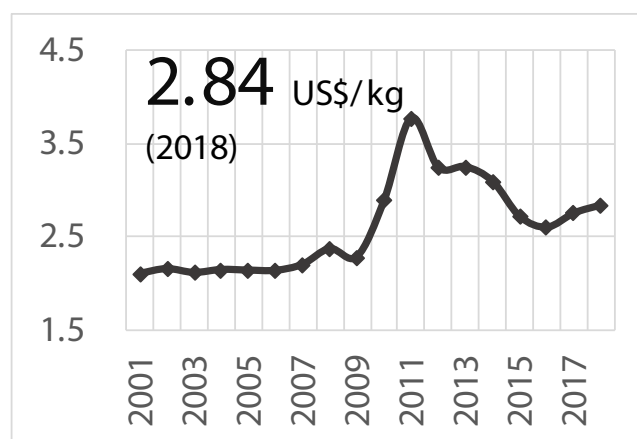
Value



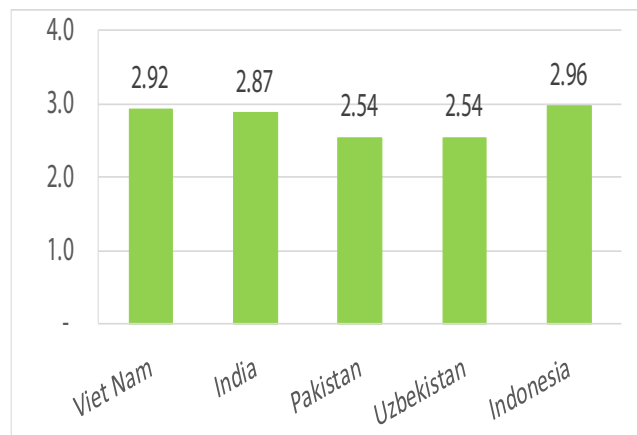
Market Share by Country



Average Price: US\$/Kg

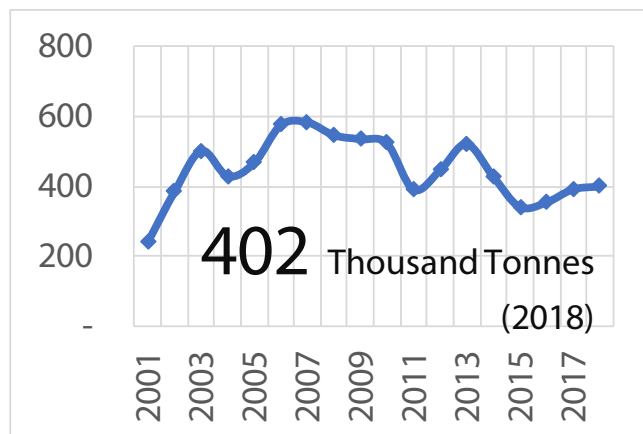


Average Price by Country 2018: US\$/Kg

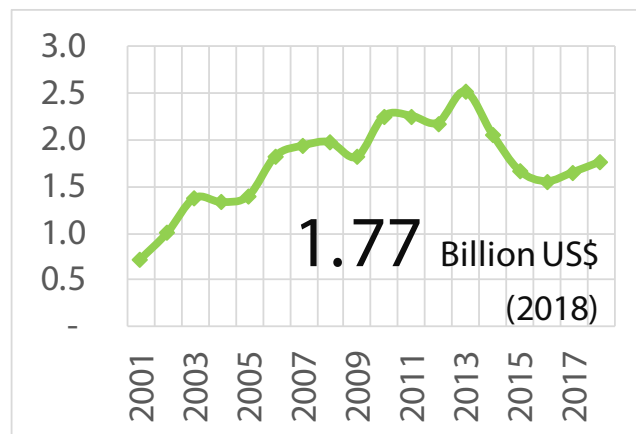


COTTON YARN EXPORT DATA

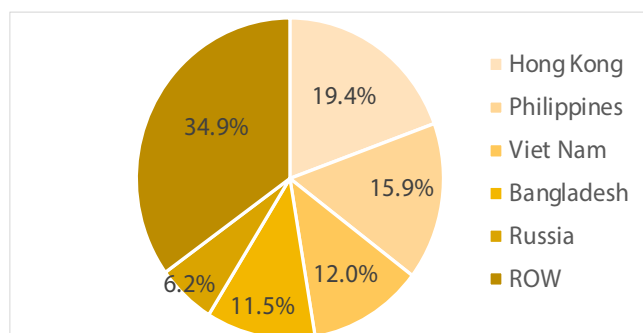
Quantity



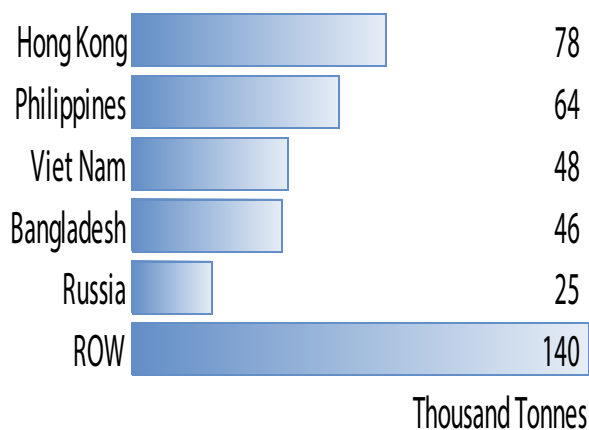
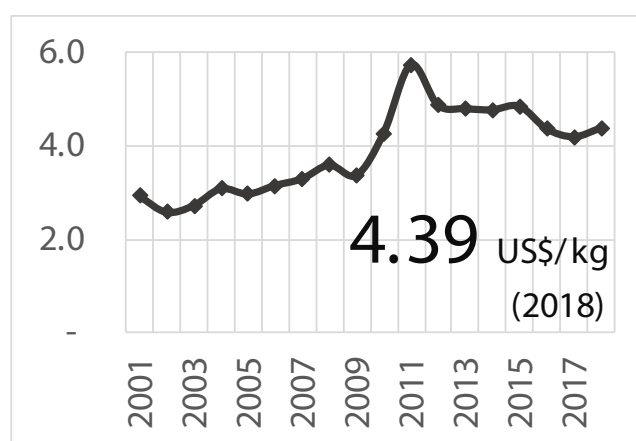
Value



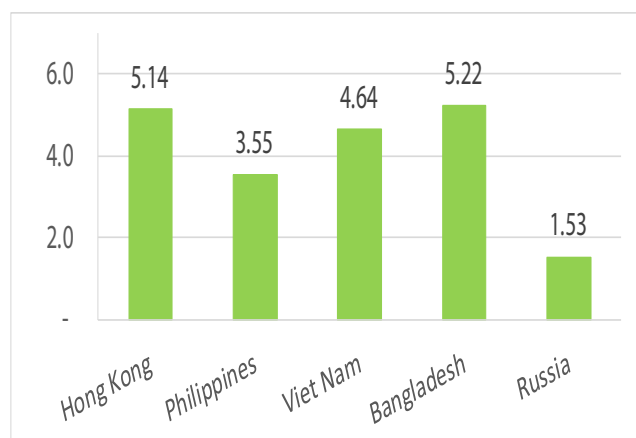
Market Share by Country



Average Price: US\$/Kg

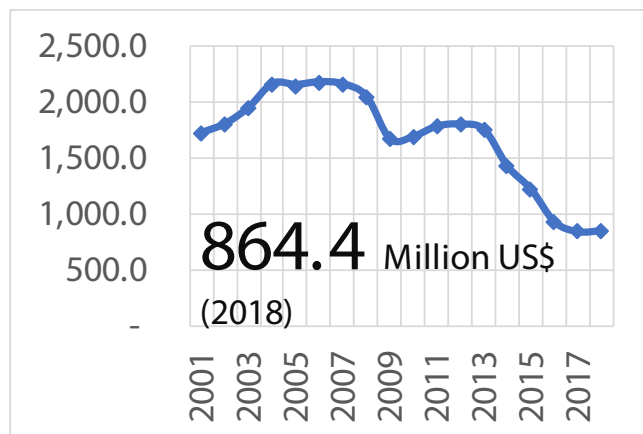


Average Price by Country 2018: US\$/Kg

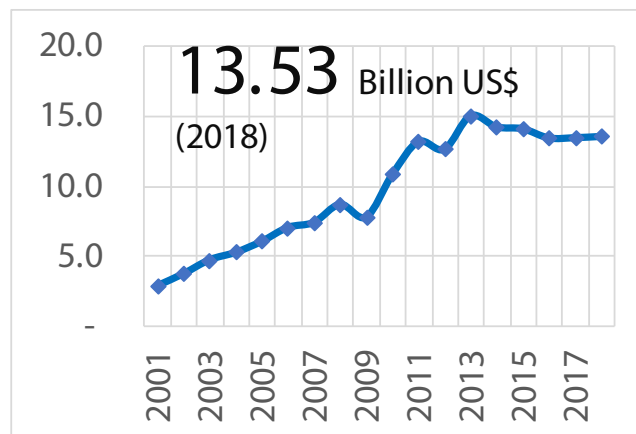


COTTON FABRIC TRADE DATA

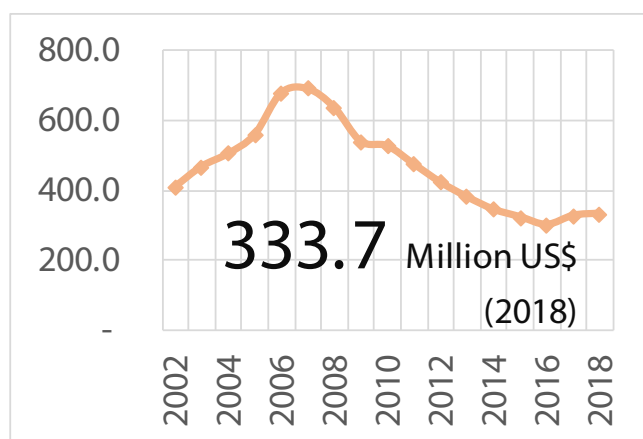
Woven Cotton Fabric Imports



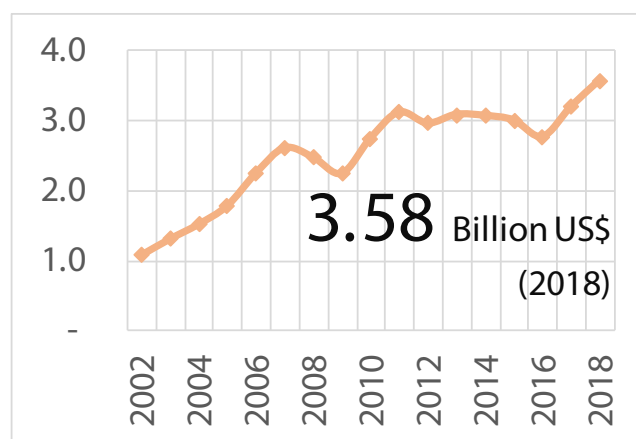
Woven Cotton Fabric Exports



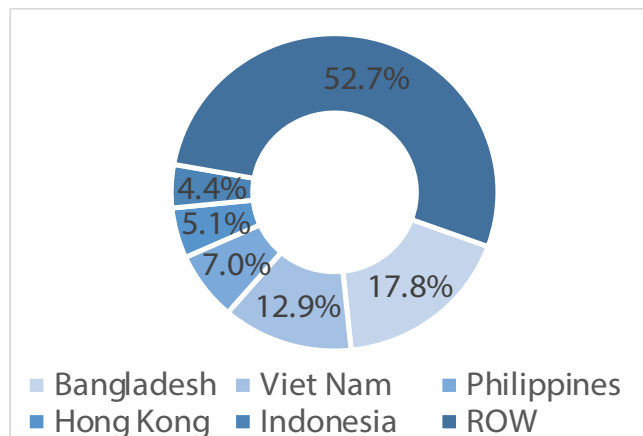
Knitted Cotton Fabric Imports



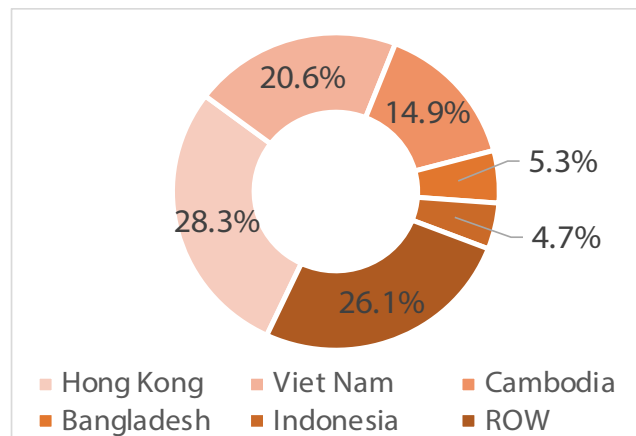
Knitted Cotton Fabric Exports



Market Share Exports by Country - 2018 Woven Cotton Fabric

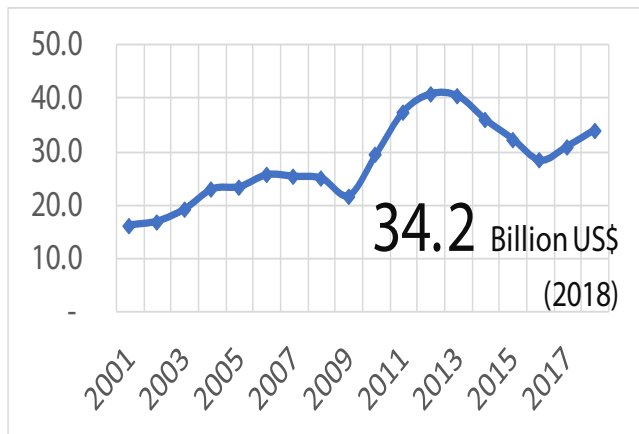


Market Share Exports by Country - 2018 Knitted Cotton Fabric

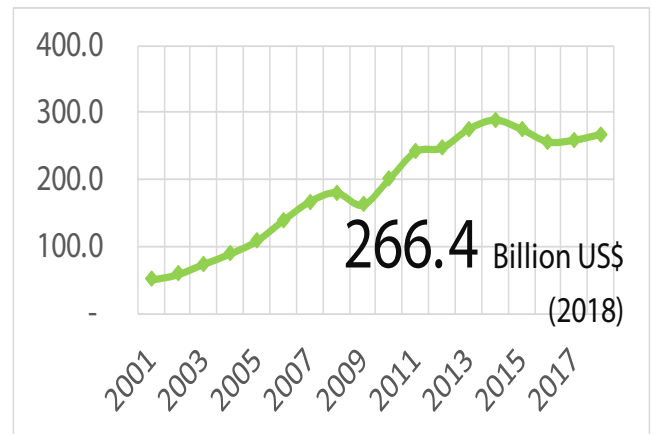


TEXTILE & APPAREL TRADE DATA

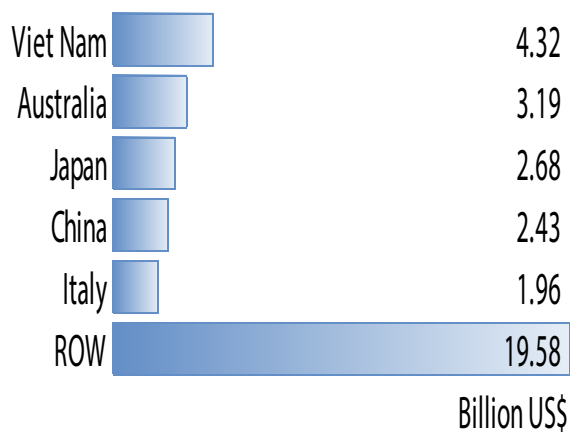
Imports



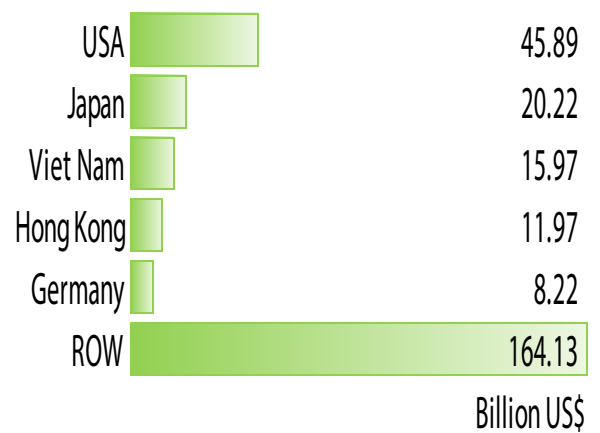
Exports



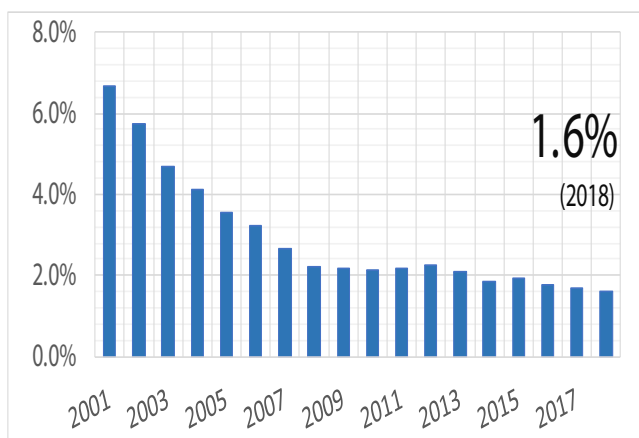
Imports by Country - 2018



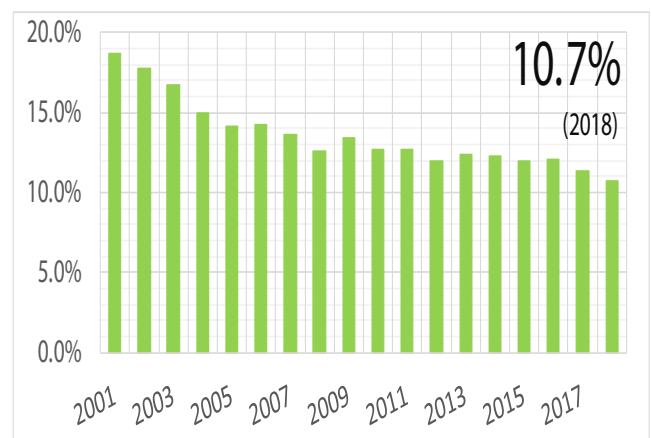
Exports by Country - 2018



T&A Imports Share in Overall Imports

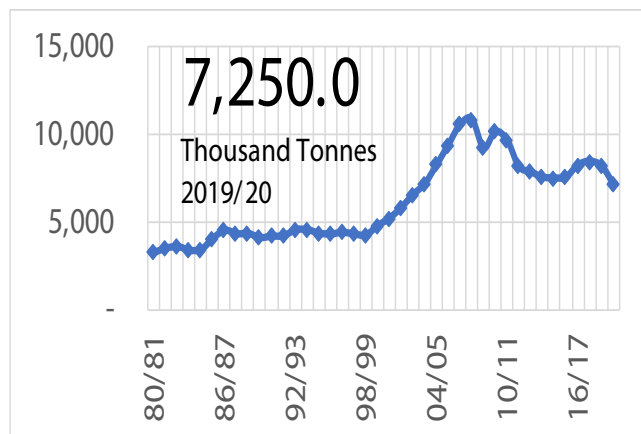


T&A Exports Share in Overall Exports

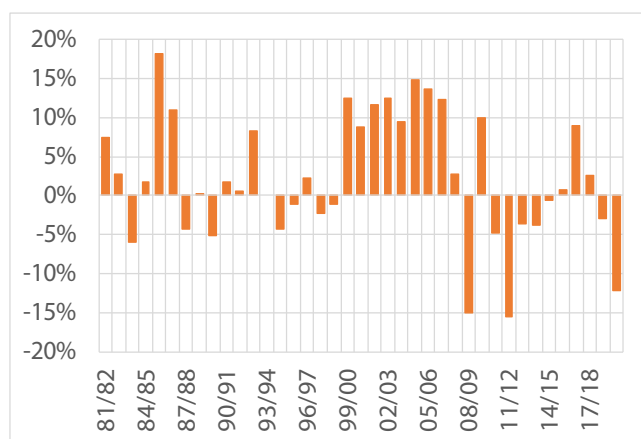


COMPOSITION OF THE TEXTILE & APPAREL INDUSTRY

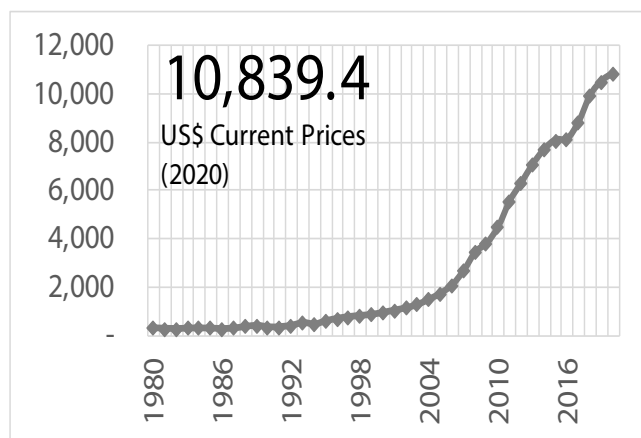
Cotton Mill Use



Mill Use - Annual Variation %



GDP per capita



Employment

6,400,000

Textile & Apparel Sector '000

Spinning Machinery

204,300

Air-Jet Spindles

3,400,000

Open-End '000

92,000,000

Short-Staple Spindles

Weaving Machinery

280,000

Shuttle Looms

875,000

Shuttle-less Looms

Better Cotton Produced in
2018/19

896,000 tonnes

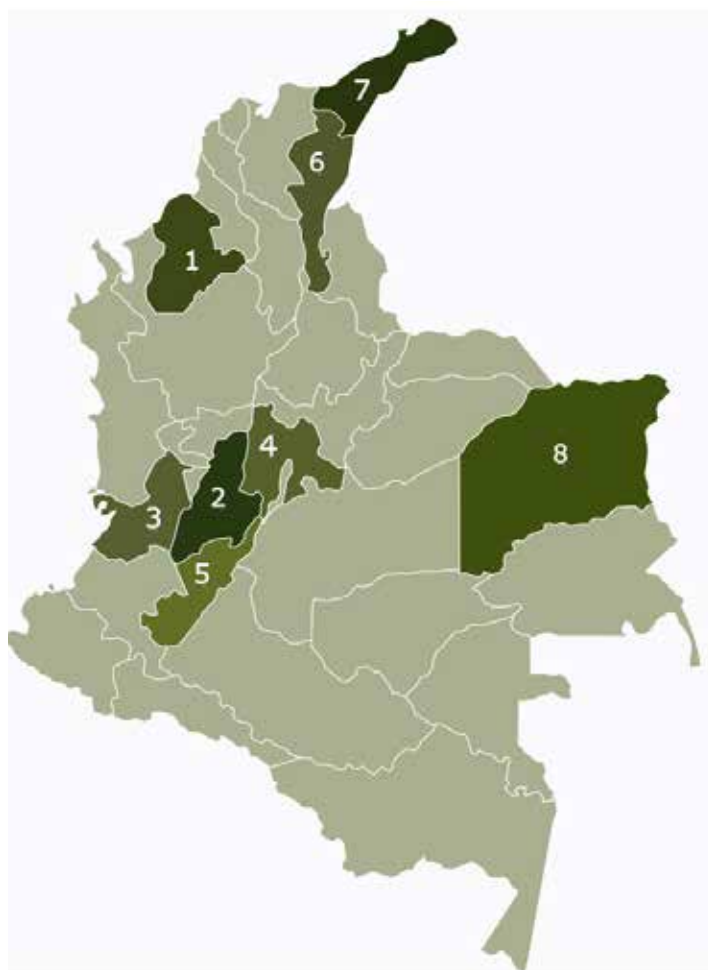
Organic Cotton Produced in
2018/19

41,247 tonnes





Basic Data 2020



Production

15

'000 Tonnes

Lint Yield

847

Kg/Hectare

Consumption

27

'000 Tonnes

Lint Exports

0

'000 Tonnes

Farmers

496

Male

Farmers

113

Female

Arable Area

6,021

'000 Hectares

Cotton Area

18

'000 Hectares

PRODUCTION 2020

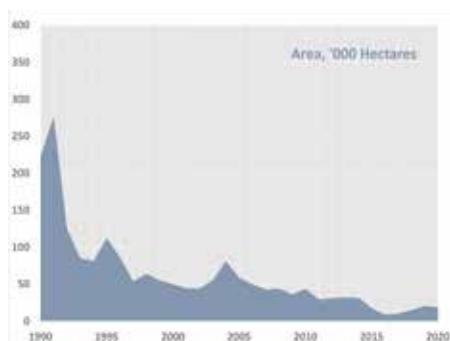
		Area '000 Ha	Yield Kg/Ha	Production '000 Tonnes
1	Cordoba	14	854	12
2	interior	4	822	3
National		18	847	15

NUMBER OF FARMERS

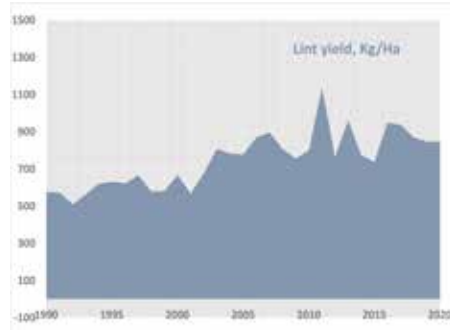
	Men	Women
Interior	140	50
Coastal	356	63
Total	496	113

PRODUCTION

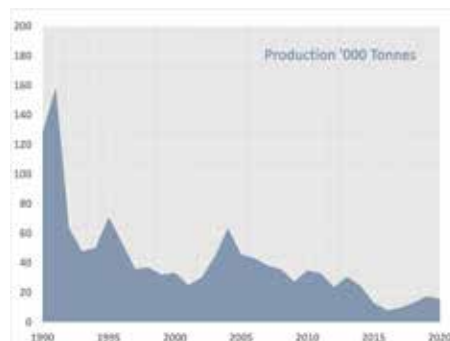
Cotton Area '000 Hectares



Lint Yield Kg/Ha

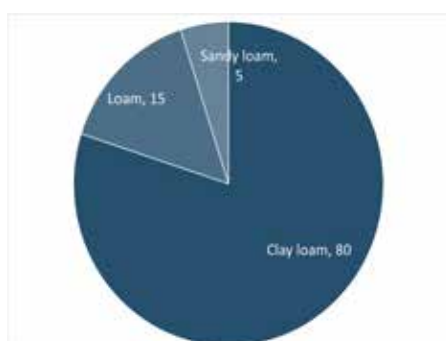


Production '000 Tonnes

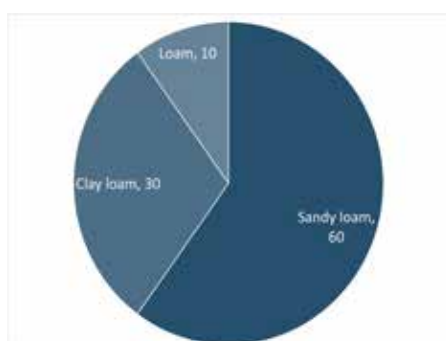


SOILS

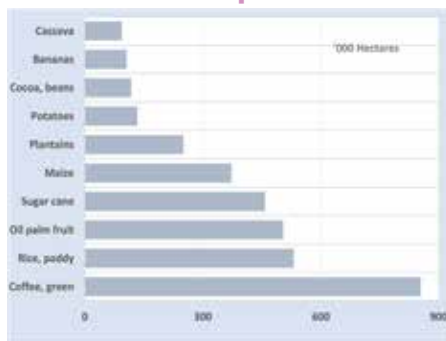
Soil Types -Cordoba



Soil Types -Interior

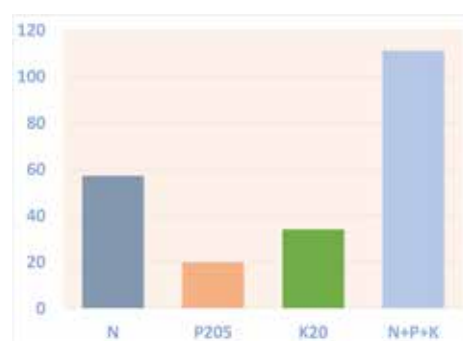


Area of Crops '000 Ha

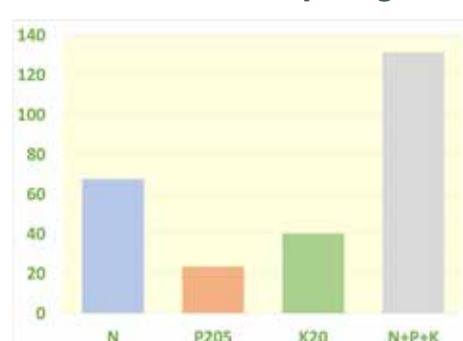


FERTILISERS

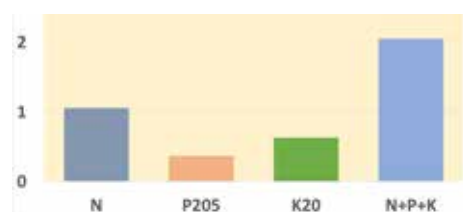
Fertiliser (NPK) use Kg/Hectare



Fertiliser (NPK) use per Kg Lint



Fertiliser (NPK) use '000 Tons



COMPETING CROPS

Cordoba	Interior
Corn	Rice
Cowpea	Corn

ROTATION CROPS

Cordoba	Interior
Corn	Rice
Cowpea	Corn

Tillage Methods (% Area)

interior	5	80	15	95
Coastal	0	81	19	15
National	1	81	18	34
	Zero Tillage	Disc Plough	Chisel Plough	Conventional Tillage



VARIETIES AND FIBRE TRAITS

	Release Year	% Area	Ginning %	Length UHML mm	Strength g/tex	Mic
Varieties in Interior						
FM1830 GLT	2019	50		1 5/32	33	4.6
FM2334 GLT	2019	30		1 5/32	33	4.6
ST 6182 GLT	2019	10		1 5/32	33	4.6
FM9250 GL(REF)	2019	10		1 5/32	33	4.6
Varieties in Coastal						
FM 1830 GLT		66.00		30.162	33	4.6
FM 2334 GLT		28.40		30.162	33	4.6
FM 2322 GLT		1.90		29.368	34	4.5
FM 9250 GL		0.40		31.75	34	4.4
LCER 0044		0.20		30.162	31	4.3
SINIANA M-137		3.10		29,368	29	4.2

INSECTS, PATHOGENS, WEEDS & PESTICIDES

INSECT PESTS / INSECTICIDES
CORDOBA
EARLY-SEASON
<i>Anthonomus grandis</i> , <i>Spodoptera frugiperda</i>
<i>Bemisia tabaci</i> , <i>Dysdercus</i> & <i>Aphis gossypii</i>
MID-SEASON
<i>Spodoptera frugiperda</i> , <i>Anthonomus grandis</i>
<i>Bemisia tabaci</i> & <i>Dysdercus</i> spp.
INSECTICIDES
Fipronil, Chitin inhibitors
Cypermethrin & Pyriproxyfen
WEEDS / HERBICIDES
INTERIOR
NARROW-LEAF WEEDS
<i>Cenchrus brownii</i> , <i>Rottboellia exaltata</i>
<i>Digitaria sanguinalis</i> , & <i>Setaria geniculata</i>
<i>Cyperus rotundus</i>
BROAD-LEAF WEEDS
<i>Kallstroemia maxima</i> , <i>Ipomea</i> spp.
<i>Amaranthus dubius</i> , <i>Eclipta alba</i> & <i>Cassia tora</i>
HERBICIDES
Glyphosate
CORDOBA
NARROW-LEAF WEEDS
<i>Panicum fasciculatum</i> , <i>Digitaria</i> spp.
<i>Cenchrus</i> spp. & <i>Rottboellia exaltata</i>
BROAD-LEAF WEEDS
<i>Amaranthus</i> spp., <i>Ipomea</i> spp. & <i>Cucumis melo</i>
<i>Desmodium</i> spp., <i>Amaranthus</i> spp.
HERBICIDES
Glyphosate, Diuron & Glufosinate

INSECT PESTS / INSECTICIDES
INTERIOR
EARLY-SEASON
<i>Aphis gossypii</i> , <i>Bemisia tabaci</i>
<i>Spodoptera sunia</i> & <i>Tetranychus urticae</i>
MID-SEASON
<i>Anthonomus grandis</i> , <i>Spodoptera frugiperda</i>
<i>Cyclocephala</i> , <i>Alabama argillacea</i>
<i>Sacadoses pyralis</i>
INSECTICIDES
Fipronil, Actara, Arrivo, Engao & Overon

DISEASES / PATHOGENS
CORDOBA
DISEASES / PATHOGENS
<i>Anthracnosis</i> & <i>Ramularia areola</i>
CHEMICAL CONTROL
Benomil, Carbendazim & Estrobirulines + Triazols
INTERIOR
<i>Anthracnosis</i> & <i>Ramularia areola</i>
CHEMICAL CONTROL
Nativo, Amistar
Carbendazim

COTTON RESEARCH

The Colombian Agricultural Research Corporation-CORPOICA (Corporación Colombiana de Investigación Agropecuaria) carries out research work within the National research agenda. This entity works on the development of new varieties and the dynamics of crop diseases and pests. Conalgodón, Bogotá works exclusively on cotton research. CORPOICA also works on genetic improvement, mainly by breeding varieties adapted to the region's climate, as well as Ramulosis resistant varieties. In 2018, the CORPOICA provided two transgenic varieties to cotton farmers: NEVADA 123 & OASIS 129. The institute is working on the development of transgenic cotton that confer resistance

to boll weevil, *Anthonomus grandis*. The institute produces bio Fertilisers based on nitrogen, phosphorus and potassium solubilising bacteria and *Lecanicillium lecanii* based bio pesticides for whitefly (*Bemisia tabaci*) control.

RESEARCH ORGANOGRAM



SEEDS & PLANTING

Seeds Used for Sowing (%)

National	0	100	100	0
	Fuzzy Seeds	Delinted	Chemical Treated	Untreated

Planting Method (%)

Seed Source (%)

Interior	5	95	0	100
Cordoba	1	99	2	98
National	2	98	1	99
	Manual	Machine	Local	Imported

Use of Cotton Seeds (% Use)

Interior	0	100	0	0
Cordoba	30	65	5	0
National	23	73	4	0
	Crushed for Oil	Direct Cattle-Feed	Used for Sowing	wasted

Seed Rate, Spacing & Plant Population/Ha

National	12	80	13	96,154
	Seed Rate Kg/Ha	Between Rows cm	Within Row cm	Population/ Ha

WATER

Rainwater & Irrigation water (mm)

Cordoba	2,743	825	4	120
interior	2,016	1,084	6	180
National	2343	1120	6	120
	Total Rainfall	Effective Rainfall	No. of Irrigations	Irrigation Water/Ha

Methods of Irrigation (% Area)

Cordoba	0	100	0	0
interior	100	0	0	0
National	100	0	0	0
	Flood	Furrow	Sprinkler	Drip

Rainfed Area (%) & Water Used /Kg Lint

Cordoba	30	12	984	9,660
interior	100	0	0	13,184
National	46	12	761	13,223
	Rainfed % Area	Irrigation Billion L	Irrigation L/Kg Lint	Rainwater L/Kg Lint

STALKS, WEEDING & HARVESTING

Use of Cotton stalks (% Use)

Cordoba	2	0	98	0
interior	0	0	100	0
National	1	0	00	0
	Burnt in Fields	Used as Firewood	Ploughed Back	Stacked on Bunds

Weeding Method (%)

Harvest Method (%)

Interior	0	100	10	0
Cordoba	15	85	65	35
National	11	89	53	48
	Machine	Herbicide	Hand	Machine

WEATHER 2019-2020

Heat Units (DD₆₀) -Valle-Del-Cauca



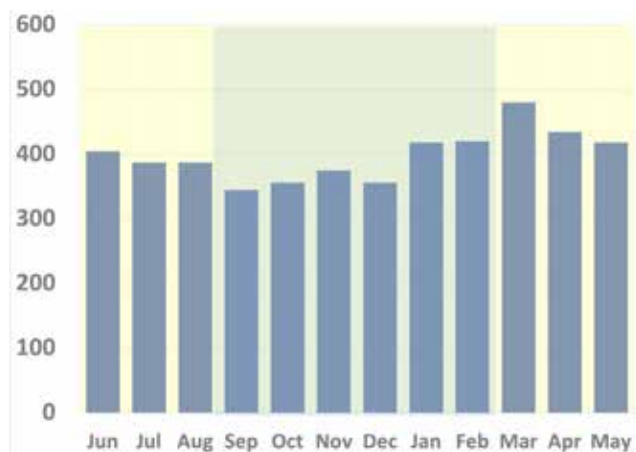
Rainfall (mm) -Valle-Del-Cauca



WEATHER 2019-2020

DD60 Fahrenheit Heat Units= Average daily temperature -60°F. The light green box denotes months of the cotton season. The blue bars are monthly averages of heat units and precipitation (rainfall in mm)

Heat Units (DD₆₀) -Cordoba



Rainfall (mm) -Cordoba



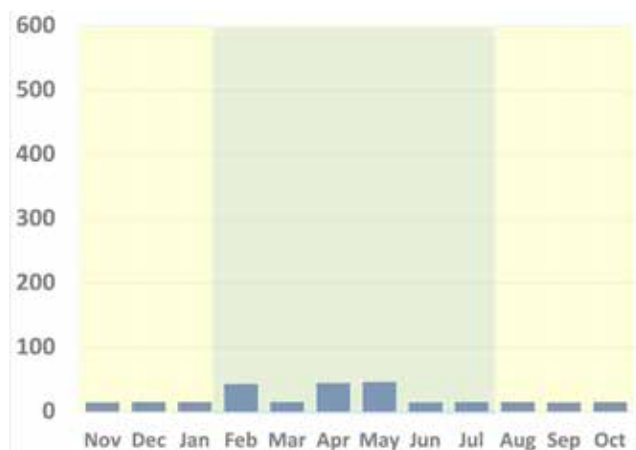
Heat Units (DD₆₀) -Tolima



Rainfall (mm) -Tolima



Heat Units (DD₆₀) -Cundinamarca



Rainfall (mm) -Cundinamarca



CORDOBA: COST OF CULTIVATION US\$/Hectare

INPUTS	Quantity (Kg/Ha)	Operations per season	Total cost /Ha
Non-GM seeds	14	1	55
Biotech/GM seeds	12	1	182
NPK+Other	600	3	154
Insecticides	5	8	132
Herbicides	6	3	63
Fungicides	1	1	30
Growth regulators	1	1	22
Defoliants	0.1	1	21
Manure			0
Others (please specify)			0
MANPOWER / LABOUR	Wages per person	Persons per operation	Total cost per hectare
Land preparation /tillage etc.,	11.0	0.1	28
Sowing	11.0	0.1	28
Fertiliser / manure application	4.1	6	25
Irrigation	8.3	6	50
Thinning	0.0		0
Weeding	0.0		0
Hoeing	0.0		0
Pesticide application	7.4	7	52
Defoliator application	7.4	1	7
Picking / harvesting	4.1	49	202
Stalk cutting & removal	4.1	4.66	19
Transportation /unloading etc.,			33
Ginning cost per 100 Kg			144
Others (please specify)			0
MACHINERY /ANIMALS etc.	Cost per Operation	Number of Operations	Total cost per hectare
Tractors			0
Implements & tools			0
Electric / Diesel pumps etc.,			0
Electricity / Diesel etc.,			0
Harvesting machines		1	201
Hoeing / Tillage machinery etc.,			0
Bullocks /Buffaloes			0
Land rent			138
MARKET VALUE	Yield Kg/per hectare	Market value per 100 Kg	Value per hectare
Seed cotton	1972	0.58	1143
Ginning % (output)	35.8	0.00	0
Lint (fibre)	706.3	1.58	1116
Seed	970.2	0.18	175
COST OF CULTIVATION			1102
NET RETURNS (SEED-COTTON)			41
NET RETURNS (SEED + LINT)			45

INTERIOR: COST OF CULTIVATION US\$/Hectare

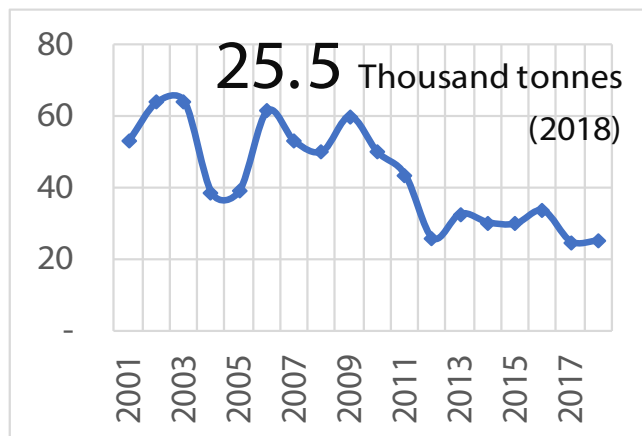
INPUTS	Quantity (Kg/Ha)	Operations per season	Total cost /Ha
Non-GM seeds			
Biotech/GM seeds	10	1	153
NPK+Other	800	4	441
Insecticides	3	4	102
Herbicides	4	4	44
Fungicides	3	3	50
Growth regulators	2	2	55
Defoliants	2	2	55
Manure	0	0	0
Others (please specify)	0	0	0
MANPOWER / LABOUR	Wages per person	Persons per operation	Total cost per hectare
Land preparation /tillage etc.,	20.6	4	83
Sowing	20.6	1	21
Fertiliser / manure application	8.3	4	33
Irrigation	5.5	8	44
Thinning	0.0	0	0
Weeding	0.0	0	0
Hoeing	6.9	2	14
Pesticide application	6.9	8	55
Defoliator application	6.9	2	14
Picking / harvesting	74.3	1	74
Stalk cutting & removal	22.0	1	22
Transportation /unloading etc.,	22.0	2	44
Ginning cost per 100 Kg	9.9	1	99
Others (please specify)	0	0	0
MACHINERY /ANIMALS etc.	Cost per Operation	Number of Operations	Total cost per hectare
Tractors	21	1	21
Implements & tools	0	0	0
Electric / Diesel pumps etc.,	0	0	0
Electricity / Diesel etc.,	0	0	0
Harvesting machines	74	1	74
Hoeing / Tillage machinery etc.,	0	0	0
Bullocks /Buffaloes	0	0	0
Land rent	248	1	248
MARKET VALUE	Yield Kg/per hectare	Market value per 100 Kg	Value per hectare
Seed cotton	3300	0.45	1496
Ginning % (output)	33	0.00	0
Lint (fibre)	1100	1.35	1487
Seed	2100	0.08	165
COST OF CULTIVATION			1323
NET RETURNS (SEED-COTTON)			164
NET RETURNS (SEED + LINT)			230

TRADE DATA

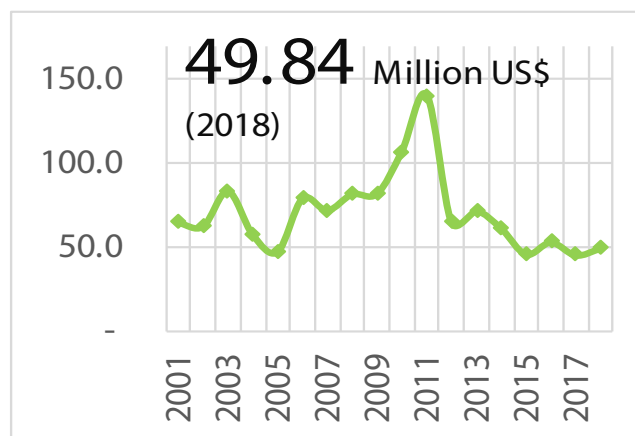


COTTON FIBRE IMPORT DATA

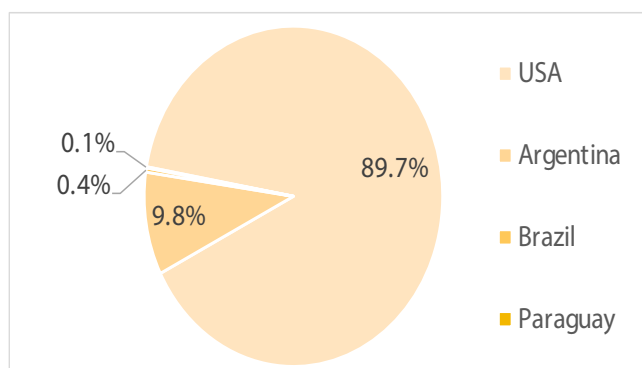
Quantity



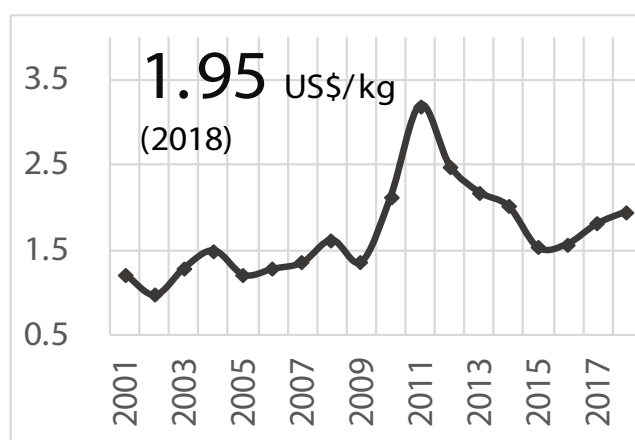
Value



Market Share by Country



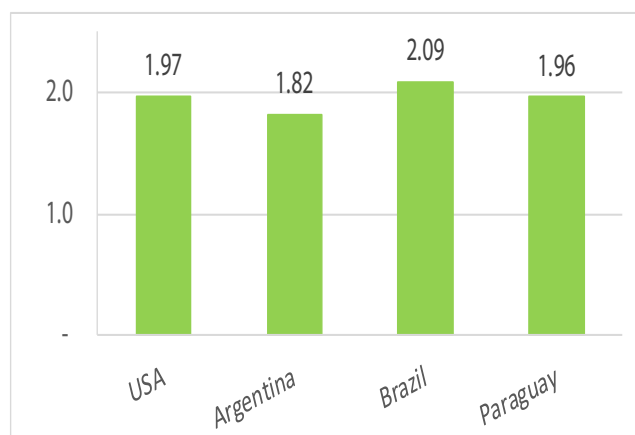
Average Price: US\$/Kg



USA	22.89
Argentina	2.49
Brazil	0.10
Paraguay	0.03

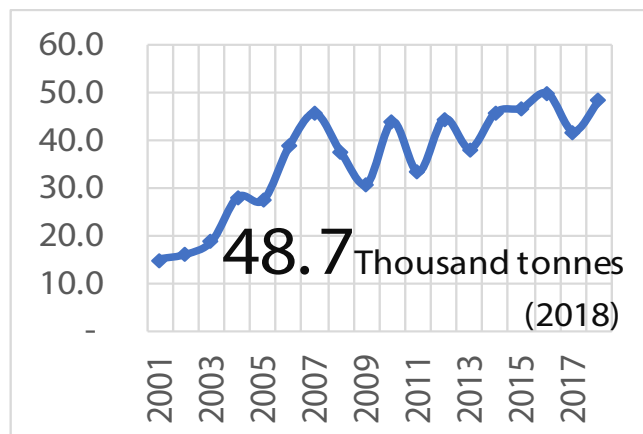
Thousand Tonnes

Average Price by Country 2018: US\$/Kg

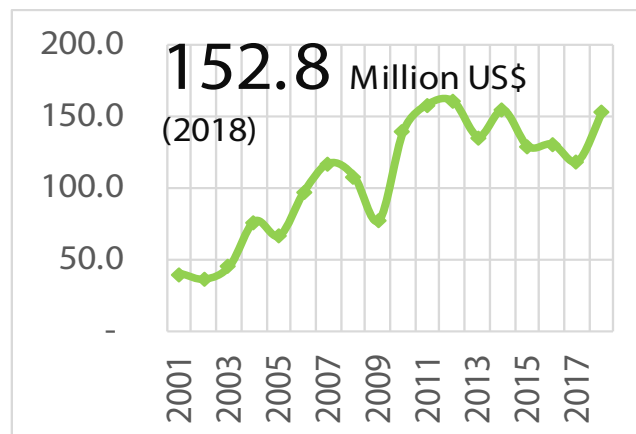


COTTON YARN IMPORT DATA

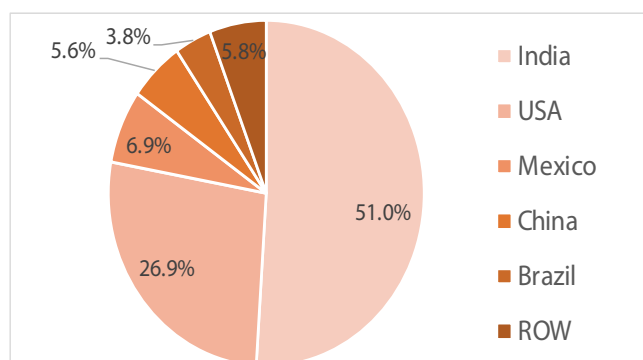
Quantity



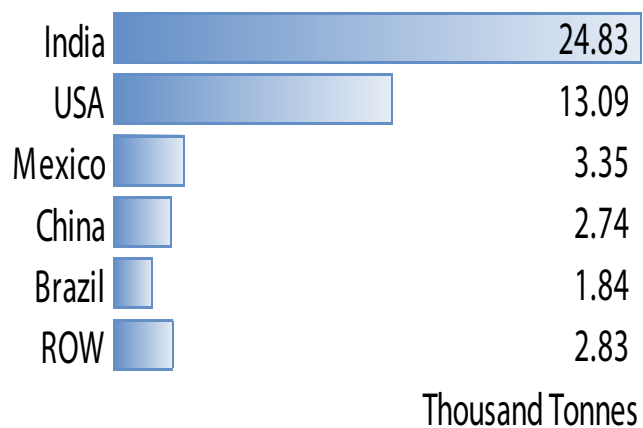
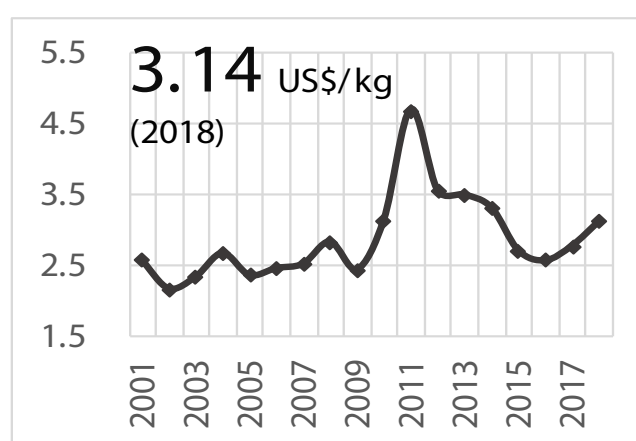
Value



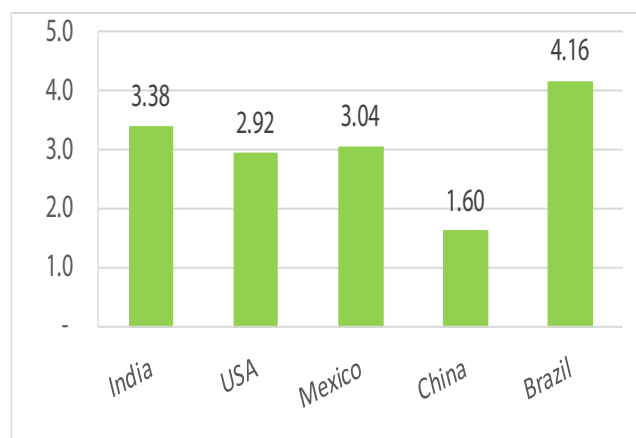
Market Share by Country



Average Price: US\$/Kg

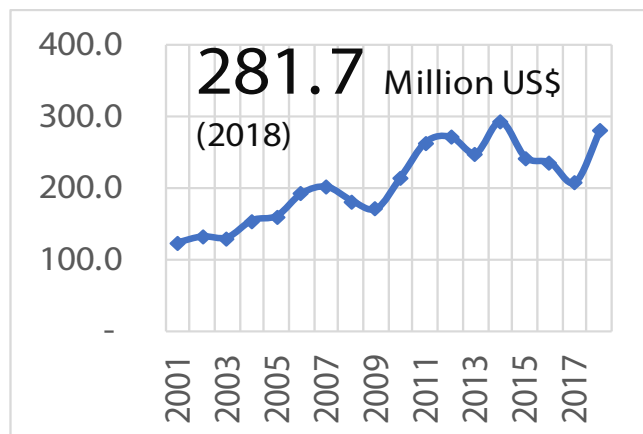


Average Price by Country 2018: US\$/Kg

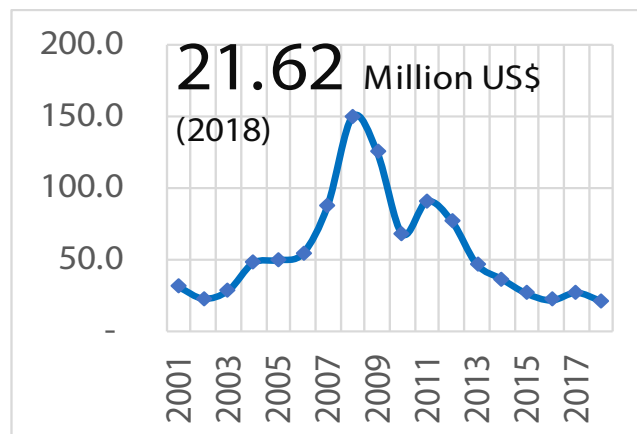


COTTON FABRIC TRADE DATA

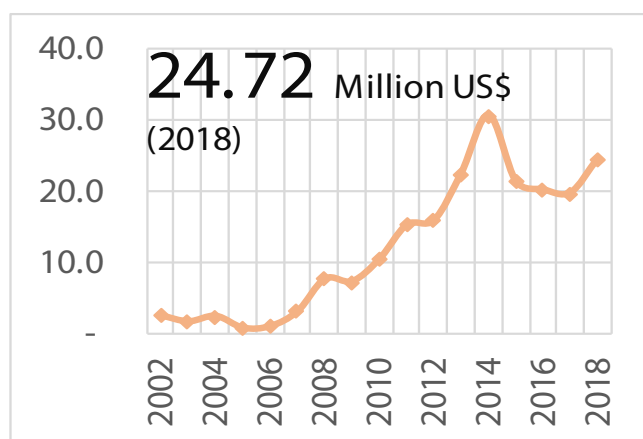
Woven Cotton Fabric Imports



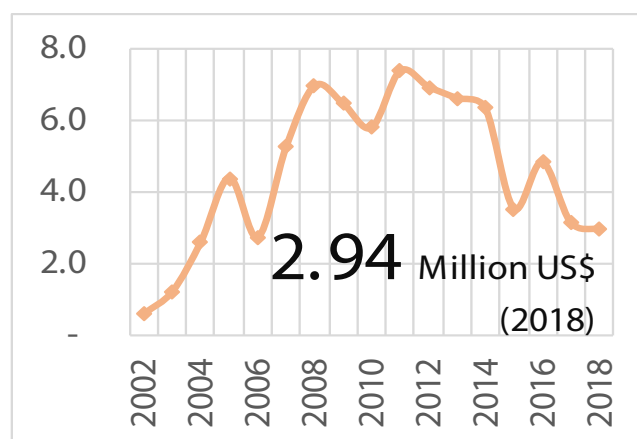
Woven Cotton Fabric Exports



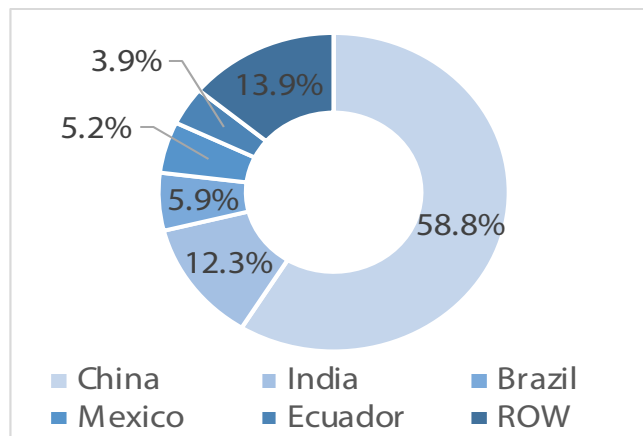
Knitted Cotton Fabric Imports



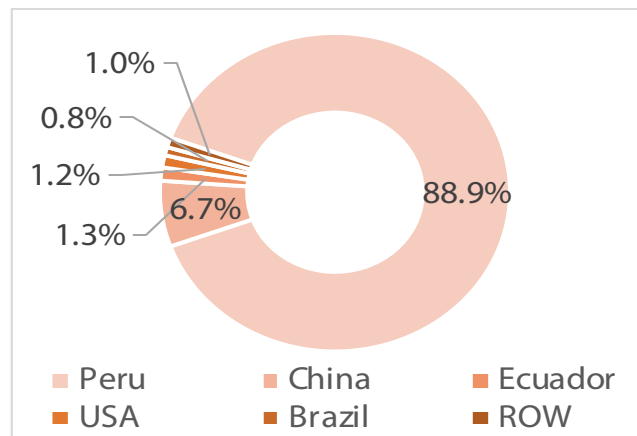
Knitted Cotton Fabric Exports



Market Share Imports by Country - 2018 Woven Cotton Fabric

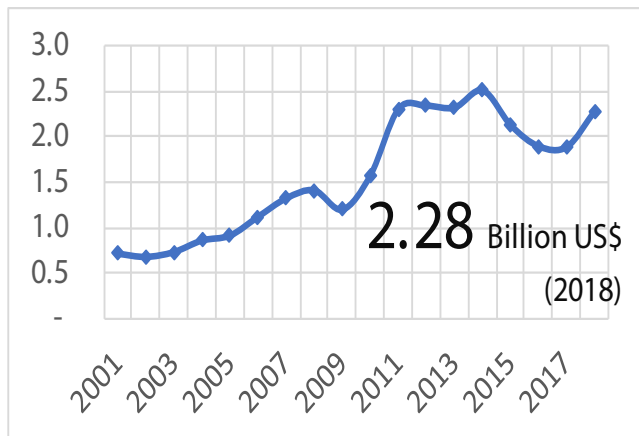


Market Share Imports by Country - 2018 Knitted Cotton Fabric

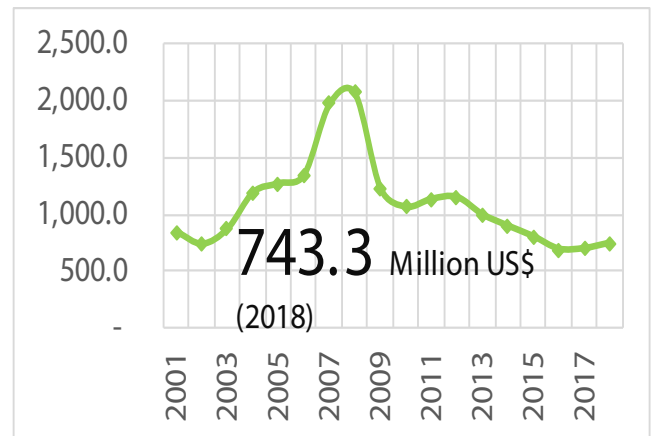


TEXTILE & APPAREL TRADE DATA

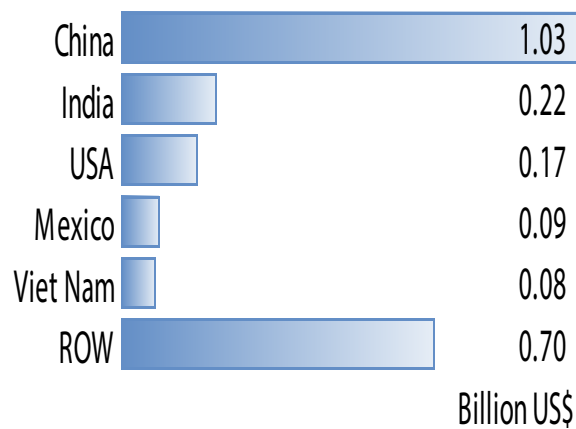
Imports



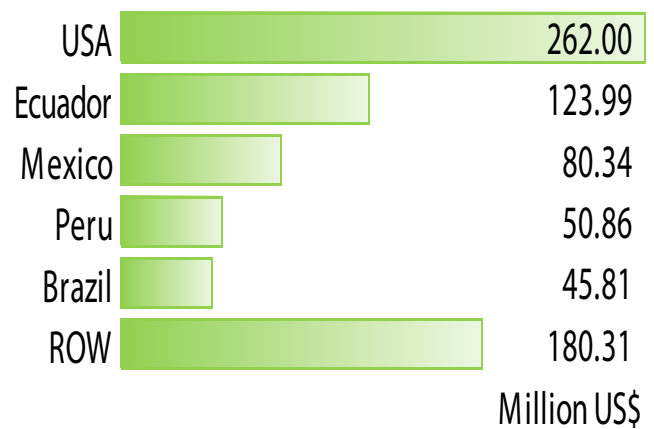
Exports



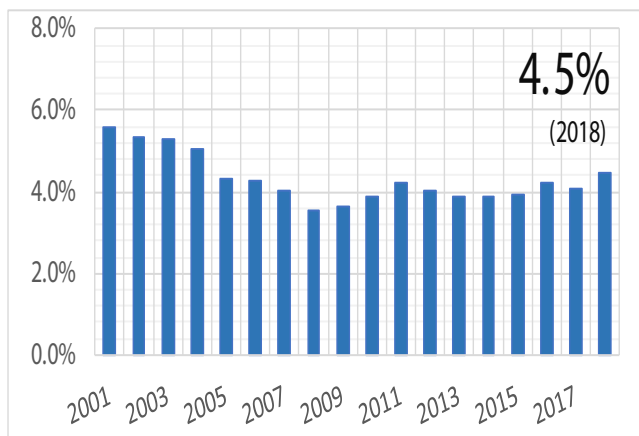
Imports by Country - 2018



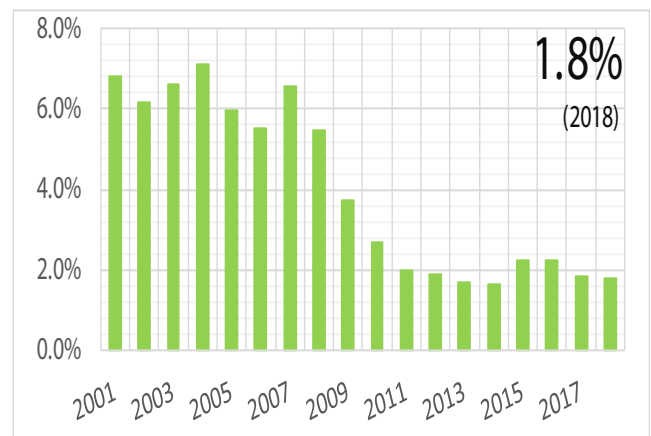
Exports by Country - 2018



T&A Imports Share in Overall Imports

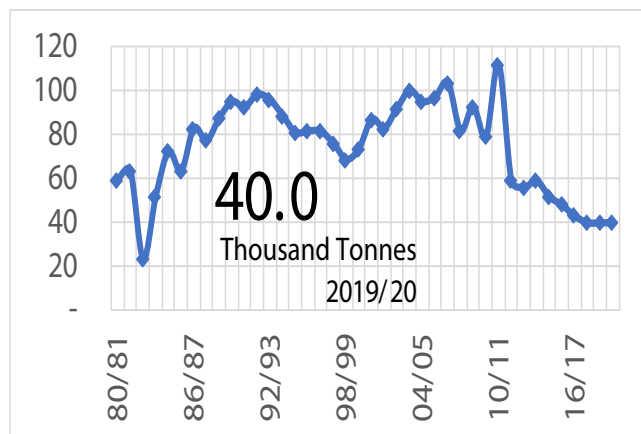


T&A Exports Share in Overall Exports



COMPOSITION OF THE TEXTILE & APPAREL INDUSTRY

Cotton Mill Use



Employment

542,000

Textile & Apparel Sector '000

Spinning Machinery

15,000

Open-End

230,000

Short-Staple Spindles

Weaving Machinery

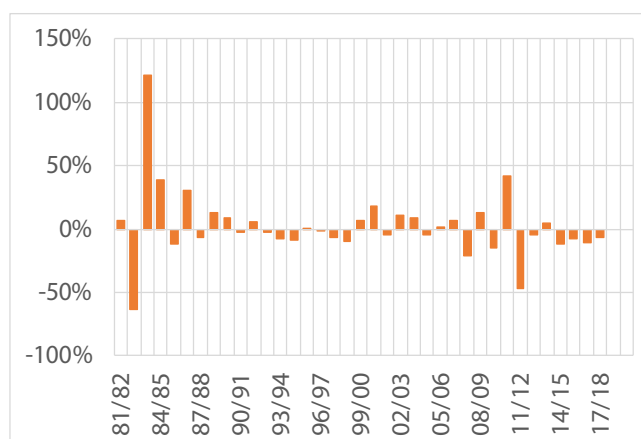
8,500

Shuttle Looms

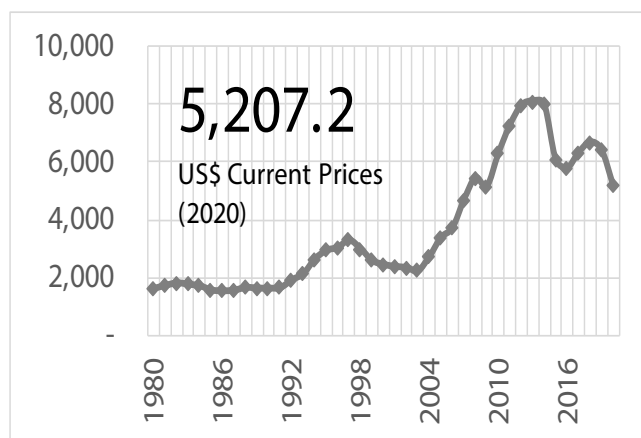
4,000

Shuttle-less Looms

Mill Use - Annual Variation %



GDP per capita





Basic Data 2020



Consumption

2

'000 Tonnes

Lint Exports

227

'000 Tonnes

Farmers

117,766

Male

Farmers

2,270

Female

PRODUCTION 2020

		Area '000 Ha	Yield Kg/Ha	Production '000 Tonnes
1	CIDT	66	724	48
2	IVOIRE	151	477	72
3	COIC	119	531	63
4	SECO	72	406	29
5	GLOBAL	0	431	0
National		408	520	212

Arable Area

3,500

'000 Hectares

Cotton Area

408

'000 Hectares

Production

212

'000 Tonnes

Lint Yield

520

Kg/Hectare

Number of Farmers

	Men	Women
CIDT	22,474	459
IVOIRE COTON	44,642	848
COIC	32,456	617
SECO	17,691	336
GLOBAL COTON	503	10
Total	117,766	2270

WATER

Rainwater & Irrigation water (mm)

1,348	689	0	0
Total Rainfall	Effective Rainfall	No. of Irrigations	Irrigation Water/Ha

Methods of Irrigation (% Area)

0	0	0	0
Flood	Furrow	Sprinkler	Drip

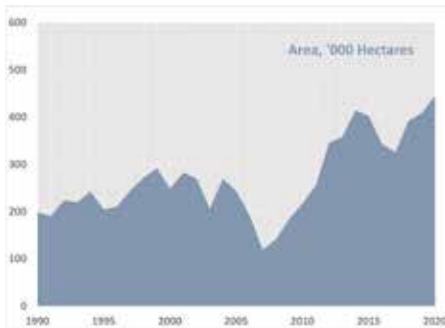
Rainfed Area (%) & Water Used /Kg Lint

100	0	0	13,553
Rainfed % Area	Irrigation Billion L	Irrigation L/Kg Lint	Rainwater L/Kg Lint

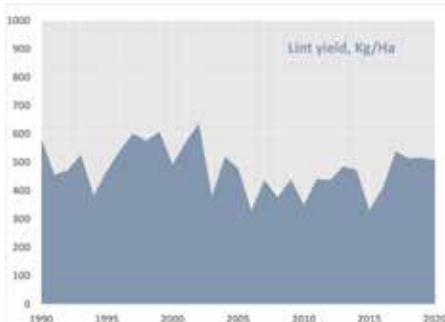


PRODUCTION

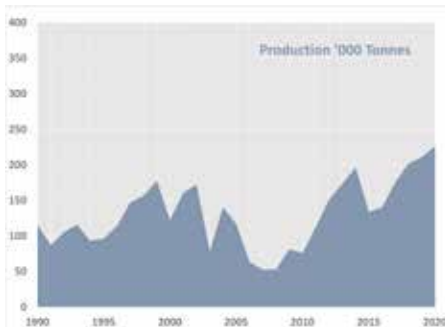
Cotton Area '000 Hectares



Lint Yield Kg/Ha

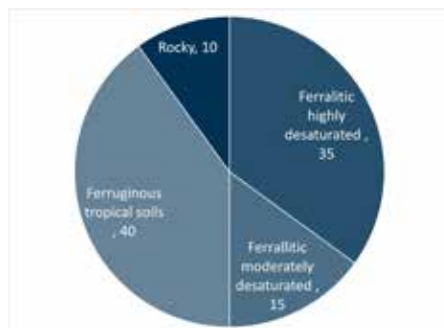


Production '000 Tonnes



SOILS

Soil Types



COMPETING CROPS

National
Peanut
Rice
Sorghum

ROTATION CROPS

National
Peanut
Rice & Corn
Sorghum

FERTILISERS

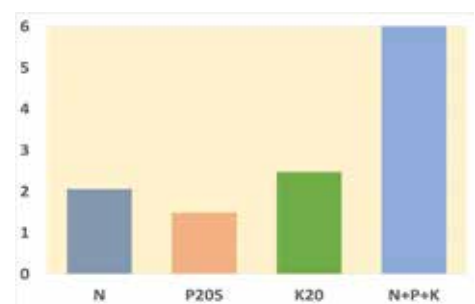
Fertiliser (NPK) use Kg/Hectare



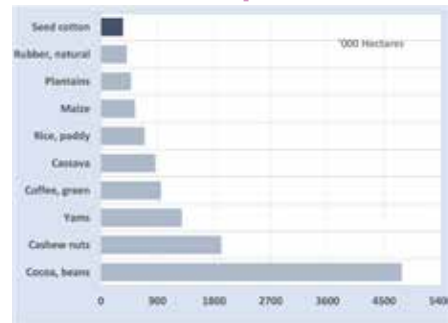
Fertiliser (NPK) use per Kg Lint



Fertiliser (NPK) use '000 Tons



Area of Crops '000 Ha



WEATHER 2019-2020

Heat Units (DD60) -Savanes



Rainfall (mm) -Savanes



VARIETIES AND FIBRE TRAITS

	Release Year	% Area	Ginning %	Length UHML mm	Strength g/tex	Mic
Y 331 BLT	2014	65	44	29		
Y 331 C	2013	5	43	28		
GOUASSOU Fus 1	2018	10	45	29		
SICAMA Vir 1	2018	10	43	28.5		

Tillage Methods (% Area)

6	94	6	94
Zero Tillage	Disc Plough	Chisel Plough	Conventional Tillage

Seeds Used for Sowing (%)

100	0	50	50
Fuzzy Seeds	Delinted	Chemical Treated	Untreated

Use of Cotton stalks (% Use)

80	20	0	0
Burnt in Fields	Used as Firewood	Ploughed Back	Stacked on Bunds

Planting Method (%)

100	0	100	0
Manual	Machine	Local	Imported

Seed Source (%)

Weeding Method (%)

40	60	100	0
Hand	Herbicide	Hand Picked	Machine Picked

Harvesting Method (%)

Use of Cotton Seeds (% Use)

87	1	12	0
Crushed for Oil	Direct Cattle-Feed	Used for Sowing	wasted

STRUCTURE OF COTTON RESEARCH

The National Agricultural Research System (NARS) evolved significantly over the years in Cote d'Ivoire, especially after restructuring initiatives by the Government in the 1990s. The National Centre for Agricultural Research (CNRA) was established in April 1998. The CNRA was created by merging three former institutes of agricultural research: Agronomic Research Institute in Forest Zone (IDFOR), Agronomic Research Institute in Savannah Zone (IDESSA) and the Ivorian Centre for Technological Research (CIRT). Over the years, the CNRA evolved as Côte d'Ivoire's principal agricultural research agency. There are two Universities which also conduct research on cotton projects. The Department of Sciences and Nature-Unité de Formation et de Recherche des Sciences de la Nature and the Université de Abobo-Adjamé conduct research on cotton.

DISEASES / PATHOGENS

Damping off, Fusarium wilt & Phyllody

CHEMICAL CONTROL

Thiram+chlorpyrifos ethyl & Thiram+Imidacloprid

Seed Rate, Spacing & Plant Population/Ha

30	80	30	41,666
Seed Rate Kg/Ha	Between Rows cm	Within Row cm	Plant Population/ Ha

INSECTS, PATHOGENS & WEEDS

INSECT PESTS / INSECTICIDES

EARLY-SEASON
<i>H. armigera & Earias insulana</i>
<i>Jacobiella facialis & Leaf eating larvae</i>
<i>Bemisia tabaci, Aphis gossypii</i>
MID-SEASON
<i>Helicoverpa armigera & Bemisia tabaci</i>
<i>Polyphagotarsonemus latus</i>
<i>Cryptophlebia leucotreta, Dysdercus spp.</i>
INSECTICIDES
Profenofos, Acetamiprid, Chlorpyrifos ethyl
Imidacloprid, Abamectin, Emamectin
Spirotetramat
Cypermethrin
Flubendiamide

WEEDS / HERBICIDES

NARROW-LEAF WEEDS
<i>Ageratum conyzoides</i>
<i>Digitaria horizontalis</i>
<i>Rottboellia cochinchinensis</i>
<i>Imperata cylindrica</i>
<i>Brachiaria lata</i>
BROAD-LEAF WEEDS
<i>Commelina benghalensis</i>
<i>Ipomea eriocarpa</i>
<i>Chromolaena odorata</i>
HERBICIDES
Glyphosate
Cotonett 500
Gallant super



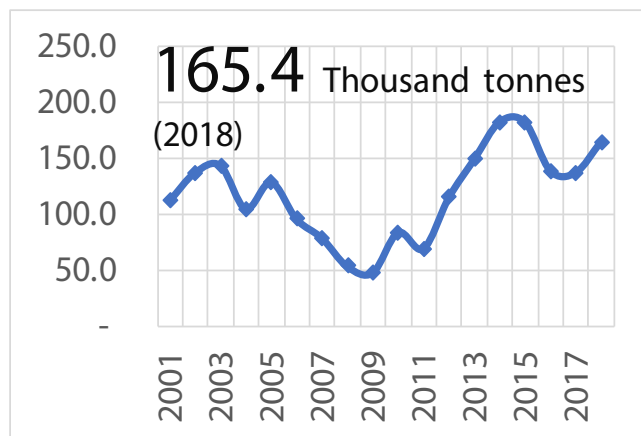
COST OF CULTIVATION US\$/Hectare

INPUTS	Quantity (Kg/Ha)	Operations per season	Total cost /Ha
Non-GM seeds	50 Kg	1	Free
Biotech/GM seeds			
NPK+Other	250	2	120
Insecticides	3	6	43
Herbicides	4	2	34
Fungicides			
Growth regulators	1	1	3
Defoliants			
Manure			
Others (please specify)			
MANPOWER / LABOUR	Wages per person	Persons per operation	Total cost per hectare
Land preparation /tillage etc.,	2	4	6.9
Sowing	2	10	17.2
Fertiliser / manure application	2	6	10.3
Irrigation	0	0	0.0
Thinning	2	4	6.9
Weeding	2	10	17.2
Hoeing	2	5	8.6
Pesticide application	2	6	10.3
Defoliator application	0	0	0.0
Picking / harvesting	2	25	43.1
Stalk cutting & removal	2	10	17.2
Transportation /unloading etc.,	2	10	17.2
Ginning cost per 100 Kg			51.0
Others (please specify)			
MACHINERY /ANIMALS etc.	Cost per Operation	Number of Operations	Total cost per hectare
Tractors	60	1	60.3
Implements & tools	Various		
Electric / Diesel pumps etc.,			
Electricity / Diesel etc.,			
Harvesting machines			
Hoeing / Tillage machinery etc.,			
Bullocks /Buffaloes	0.1	1.0	34.5
Land rent			
MARKET VALUE			
Seed cotton	1212	0.52	627
Ginning % (output)	43.47	0.00	0
Lint (fibre)	526.9	1.75	922
Seed	630.2	0.15	92
COST OF CULTIVATION			451
NET RETURNS (SEED-COTTON)			176
NET RETURNS (SEED + LINT)			512

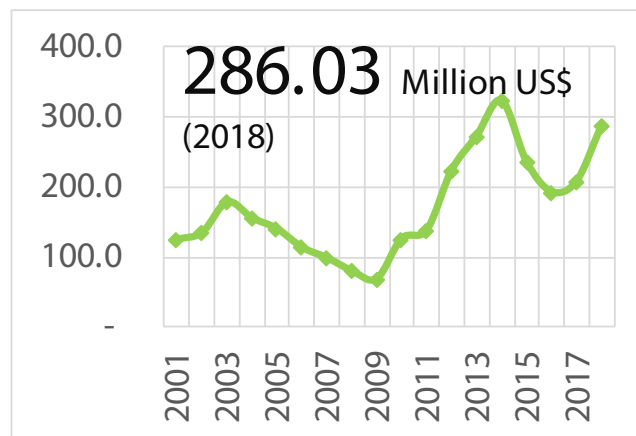
TRADE DATA

COTTON FIBRE EXPORT DATA

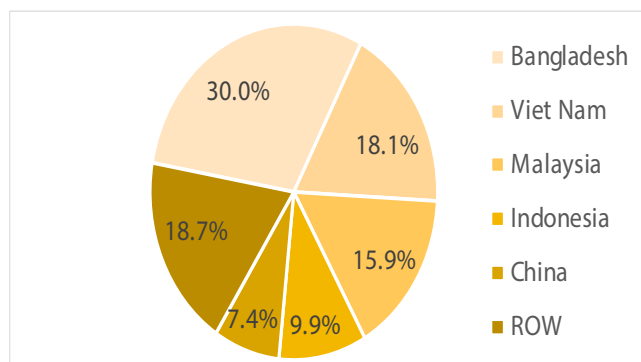
Quantity



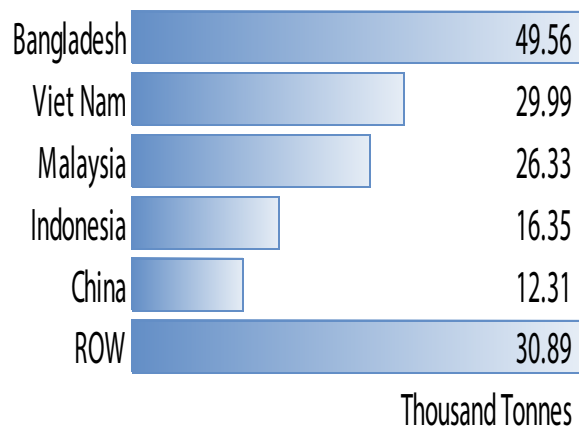
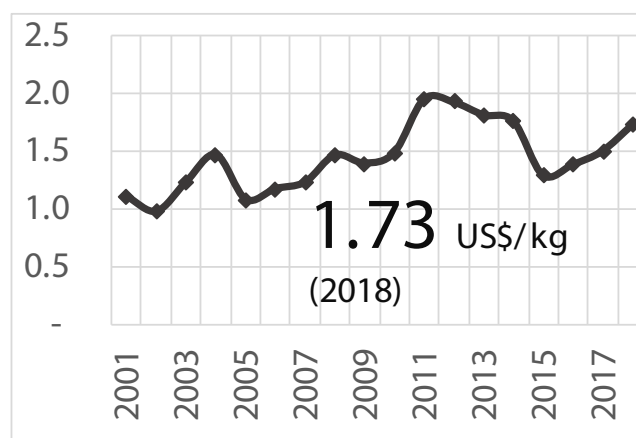
Value



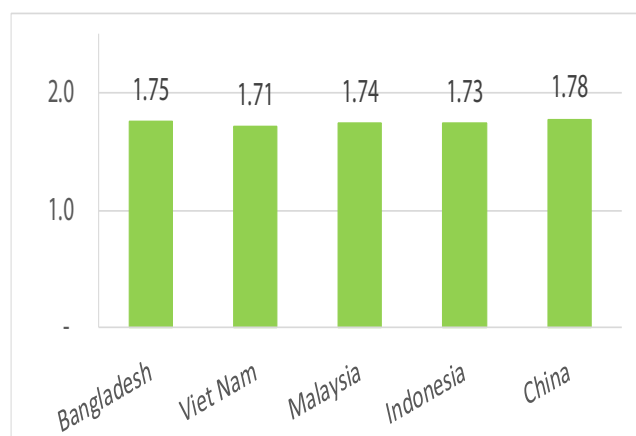
Market Share by Country



Average Price: US\$/Kg

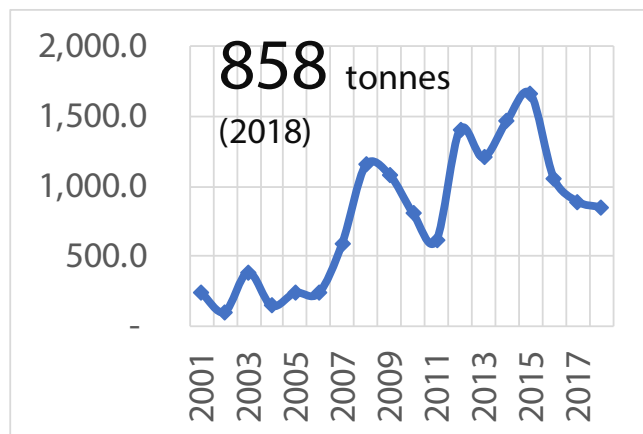


Average Price by Country 2018: US\$/Kg

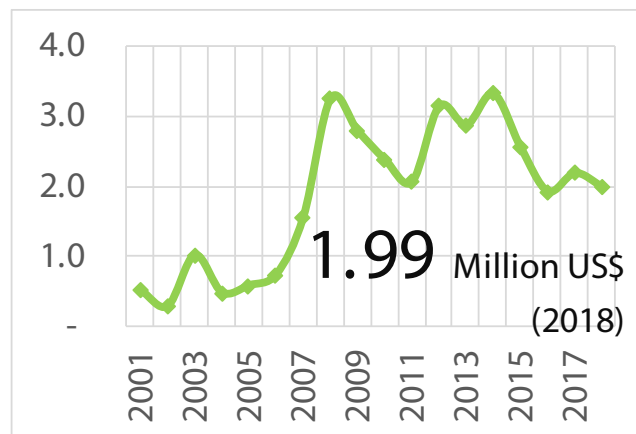


COTTON YARN IMPORT DATA

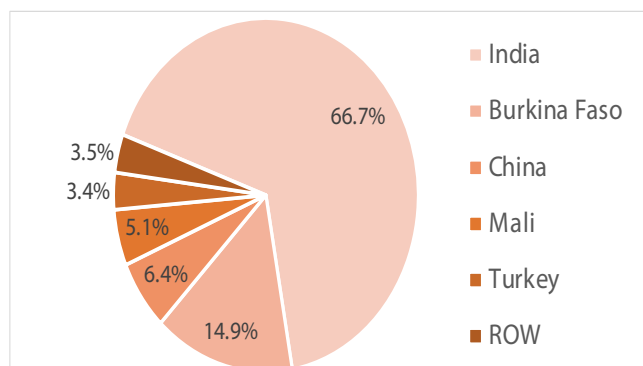
Quantity



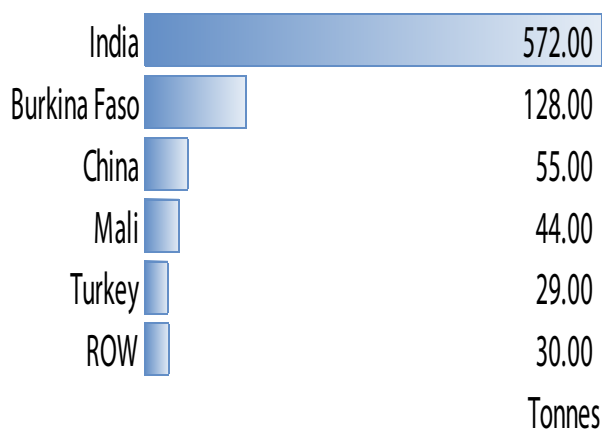
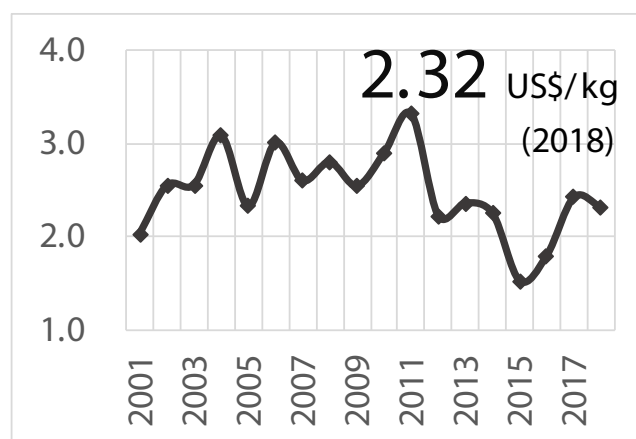
Value



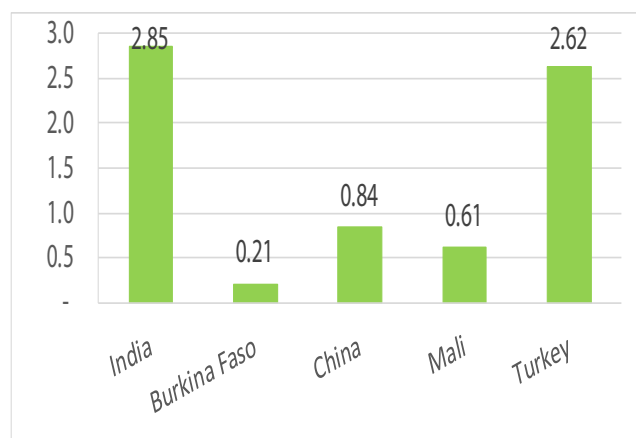
Market Share by Country



Average Price: US\$/Kg

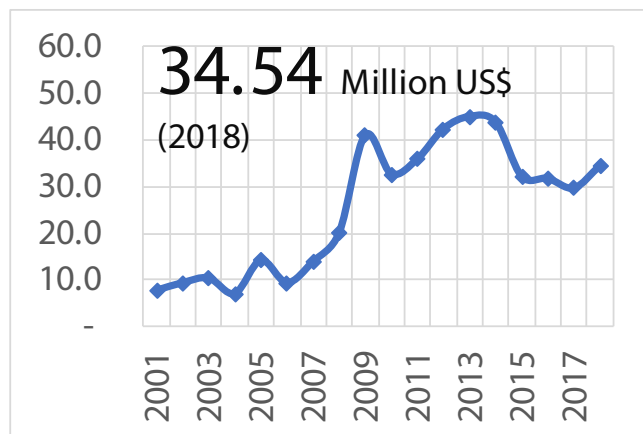


Average Price by Country 2018: US\$/Kg

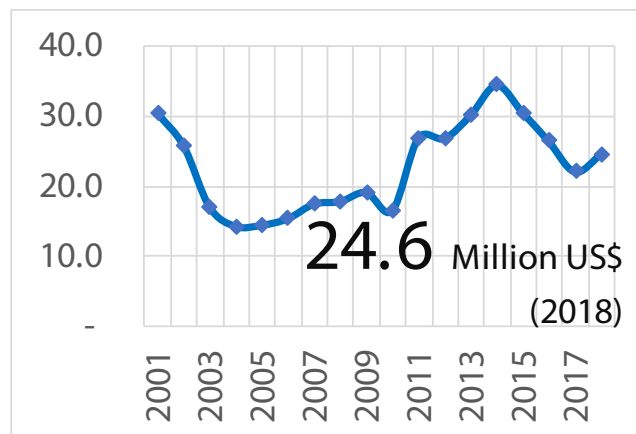


COTTON FABRIC TRADE DATA

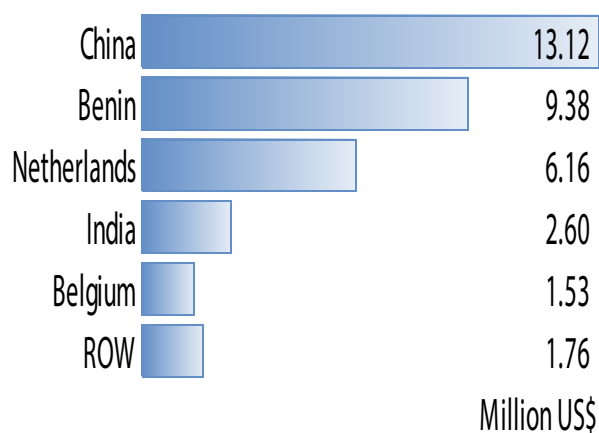
Woven Cotton Fabric Imports



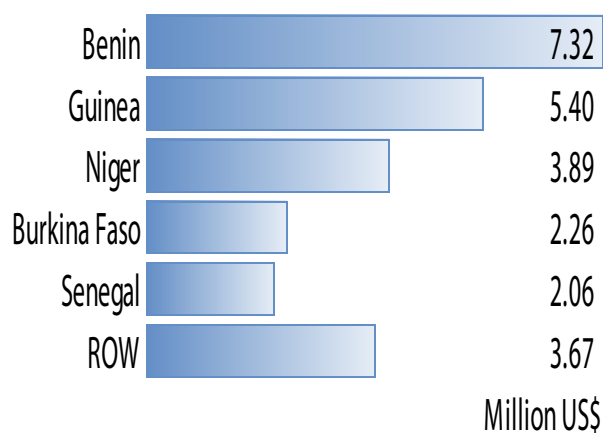
Woven Cotton Fabric Exports



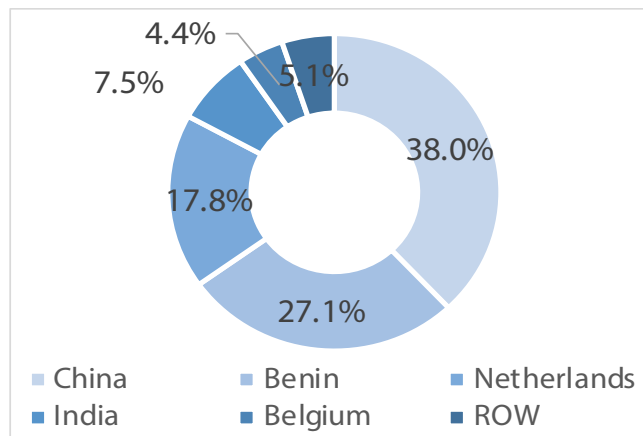
Woven Cotton Fabric Imports



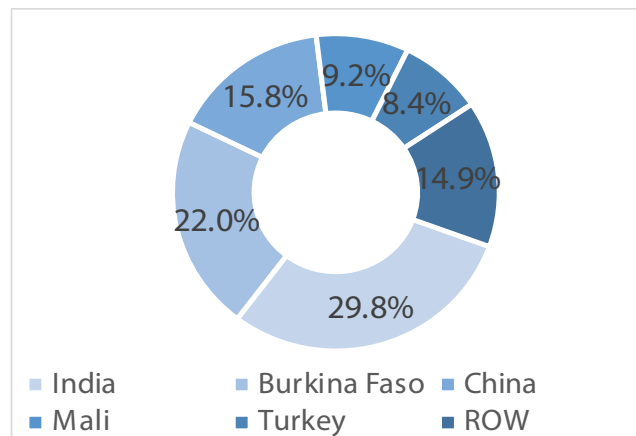
Woven Cotton Fabric Exports



Market Share Imports by Country - 2018 Woven Cotton Fabric

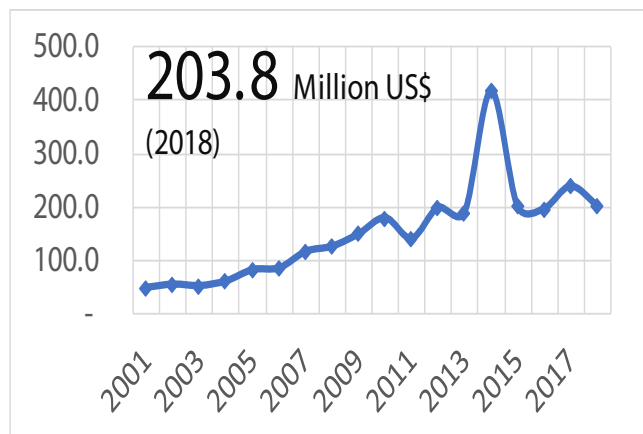


Market Share Exports by Country - 2018 Woven Cotton Fabric

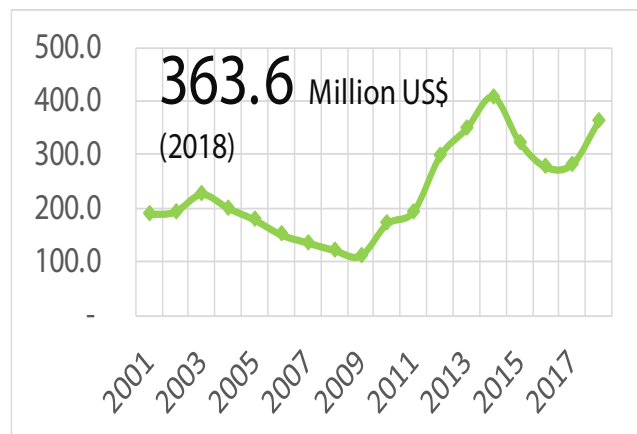


TEXTILE & APPAREL TRADE DATA

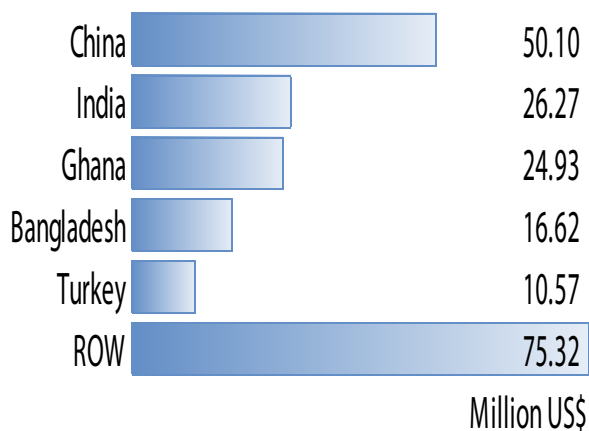
Imports



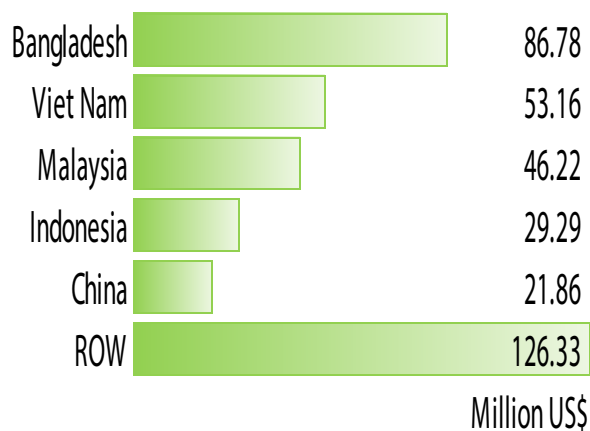
Exports



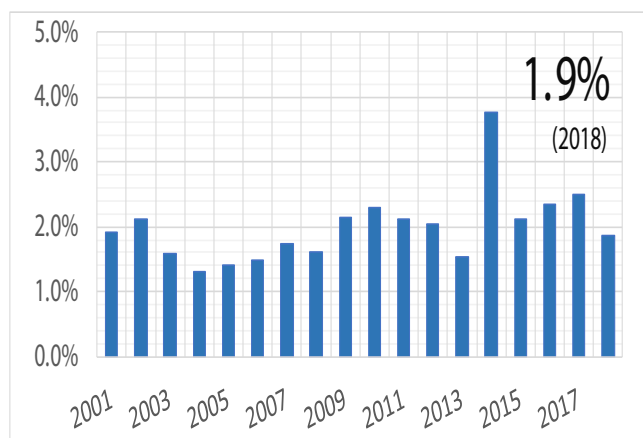
Imports by Country - 2018



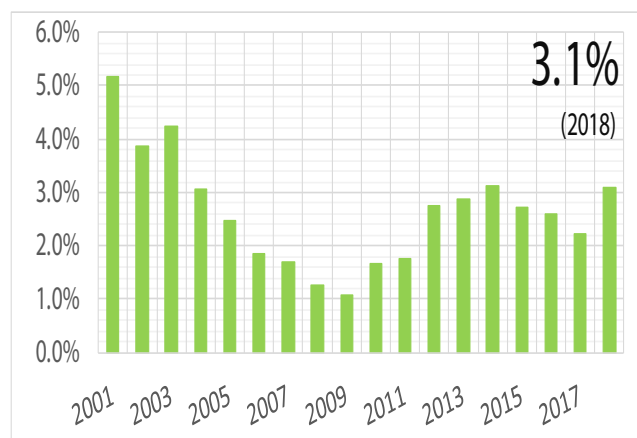
Exports by Country - 2018



T&A Imports Share in Overall Imports

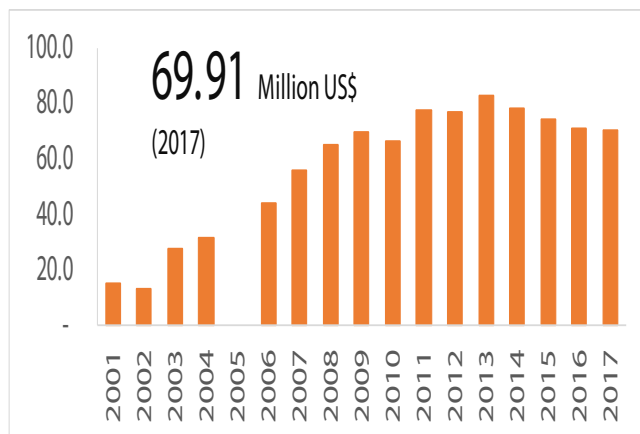


T&A Exports Share in Overall Exports



COMPOSITION OF THE TEXTILE & APPAREL INDUSTRY

Imports - Worn Clothing & Articles



Spinning Machinery

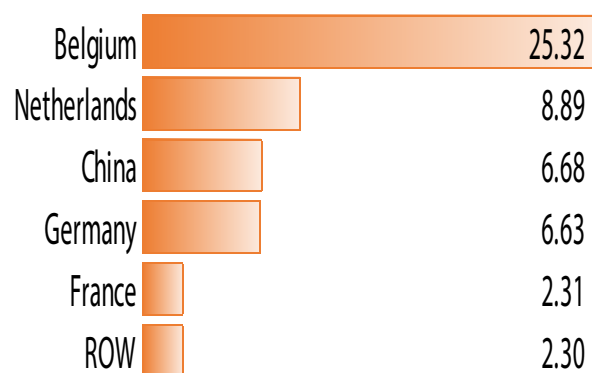
3,000

Open-End

40,000

Short-Staple Spindles

Imports by Country - 2018



Million US\$

Weaving Machinery

2,000

Shuttle Looms

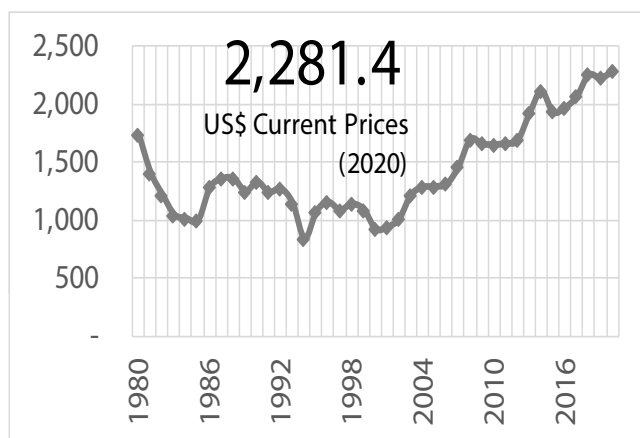
60

Shuttle-less Looms

Better Cotton Produced in
2018/19

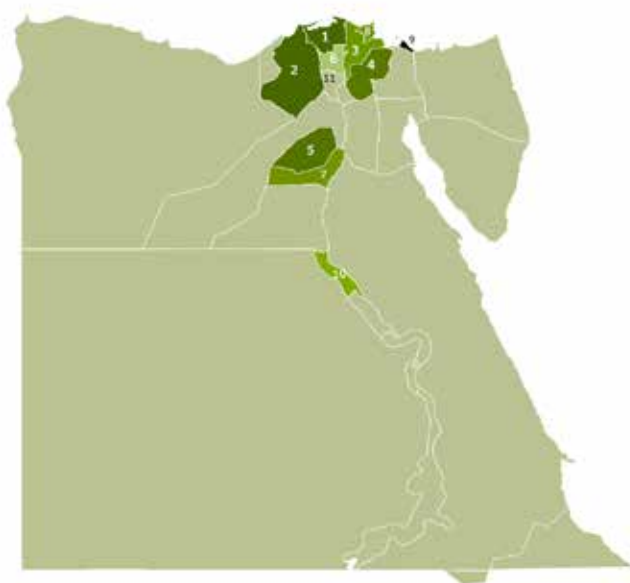
194,474 tonnes

GDP per capita





Basic Data 2020



Consumption

105

'000 Tonnes

Lint Exports

55

'000 Tonnes

Farmers

67,129

Male

Farmers

25,819

Female

PRODUCTION 2020

		Area '000 Ha	Yield Kg/Ha	Production '000 Tonnes
1	Kafr El-Shekh	25	833	21
2	Behiera	9	740	7
3	Dakahlia	14	720	10
4	Sharkia	13	707	9
5	Gharbia	4	754	3
6	Fayyoun	4	784	3
7	Others	7	724	5
	National	76	763	58

NUMBER OF FARMERS

	Men	Women
Kafr El-Shekh	22344	8594
Behiera	8185	3148
Dakahlia	12544	4825
Sharkia	11351	4366
Gharbia	3137	1207
Fayyoun	3134	1206
Others	6433	2474
Total	67129	25819

WATER

Rainwater & Irrigation water (mm)

95	0	8	833
Total Rainfall	Effective Rainfall	No. of Irrigations	Irrigation Water/Ha

Methods of Irrigation (% Area)

26	50	11	13
Flood	Furrow	Sprinkler	Drip

Rainfed Area (%) & Water Used /Kg Lint

0	633	10,917	0
Rainfed % Area	Irrigation Billion L	Irrigation L/Kg Lint	Rainwater L/Kg Lint

Arable Area

2,910

'000 Hectares

Cotton Area

76

'000 Hectares

Production

58

'000 Tonnes

Lint Yield

763

Kg/Hectare



INSECTS, PATHOGENS & WEEDS

INSECT PESTS / INSECTICIDES

EARLY-SEASON

Agrotis ipsilon, Thrips tabaci, Tetranychus spp.

Aphis gossypii, Empoasca spp.

MID-SEASON

Helicoverpa armigera, Pectinophora gossypiella

Earias insulana & Spodoptera littoralis

INSECTICIDES

Demeron, Demelen, Clevron & Acson

Pestban, Dorcel, Teleton & Somi alpha,

DISEASES / PATHOGENS

Rhizoctonia solani & Fusarium oxysporum

Fusarium oxysporum vasinfectum

CHEMICAL CONTROL

Rizolex monceren & Galben copper

WEEDS / HERBICIDES

NARROW-LEAF WEEDS

Echinochloa colonum & Digitaria sanguinalis

BROAD-LEAF WEEDS

Xanthium strumarium, Amaranthus ascendens

Sonchus oleraceus, Chenopodium album

Hibiscus trionium

HERBICIDES

Amix & Stomp Extra CS 45.5%

Tillage Methods (% Area)

1	99	0	99
Zero Tillage	Disc Plough	Chisel Plough	Conventional Tillage

Use of Cotton stalks (% Use)

0	0	40	60
Burnt in Fields	Used as Firewood	Ploughed Back	Stacked on Bunds

Weeding Method (%)

90	10	100	0
Hand	Herbicide	Hand Picked	Machine Picked

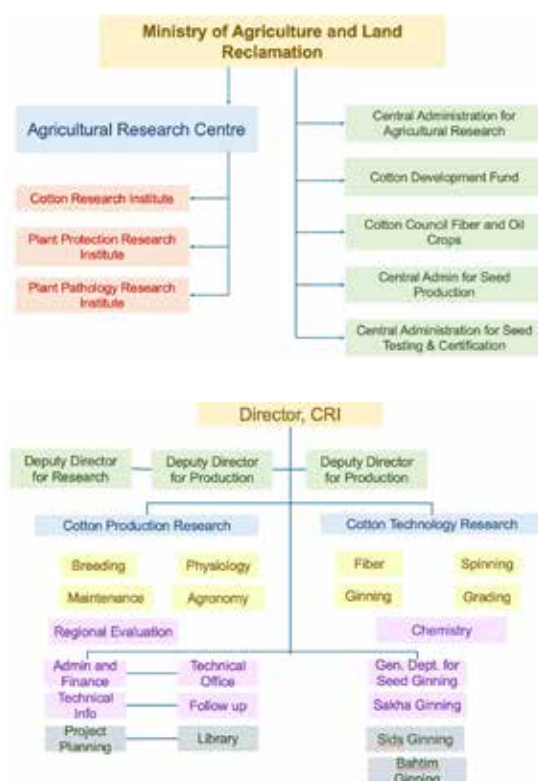
Harvesting Method (%)

100	0
Hand Picked	Machine Picked

COTTON RESEARCH

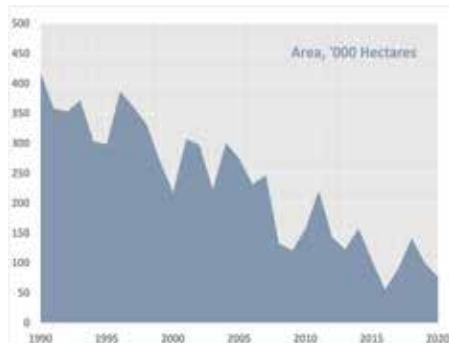
Cotton Research Institute (CRI), Agricultural Research Centre, Giza, Cairo, was established in 1912. The Institute is a scientific organisation within the Ministry of Agriculture and land reclamation. It conducts research, application and service activities in the field of agriculture. Systematic breeding, seed production and agro-technical research are conducted on cotton. The CRI is a "nonprofit organisation". It operates within the framework of Egypt Agricultural Policy and Associated Universities, Academy of Scientific Research and Technology, Textile industries and Cotton Trade Association and the Farmers Association. The CRI is responsible for cotton breeding and technology development programs. CRI carries out field and lab trials on cotton, aiming to improve production and quality, besides studying cotton production technologies, quality and processing problems, suggesting solutions and regulations required to maintain and improve cotton production. The CRI consists of two main branches i.e. production and technology. The cotton production research branch includes plant breeding, variety maintenance, regional evaluation, agronomy and physiology sections. The cotton technology department comprises the spinning, fibre, cotton chemistry, grading, and ginning sections. The CRI cooperates with some institutions and authorities including research institutions belonging to the Agricultural Research Centre, such as the Agricultural Genetic Engineering Research Institute, the Plant Protection Research Institute, the Plant Pathology Research Institute and the Soil and Water Research Institute. The Institute also extends full cooperation to the Council of Cotton, Fibres and Oil Crops, Cotton Arbitration & Testing General Organisation (CATGO), the Alexandria Cotton Exporters' Association (ALCOTEXA), the Academy of Scientific Research and Technology and to public, private investment sectors and spinning and weaving companies. The Institute gets funding from the Government and also generates some of its budget from seed sales.

RESEARCH ORGANOGAM

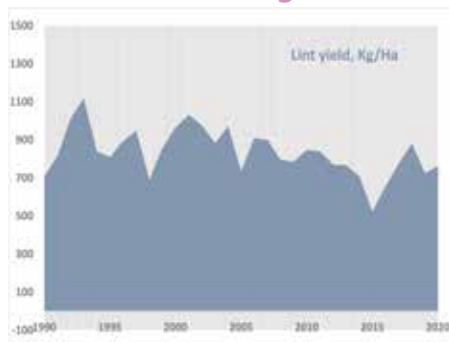


PRODUCTION

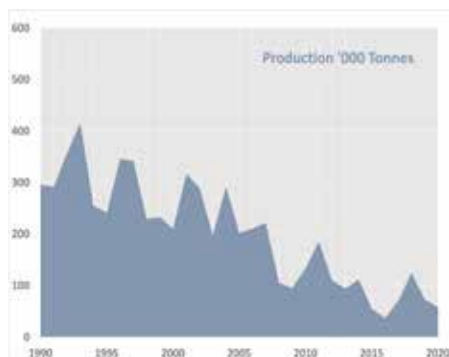
Cotton Area '000 Hectares



Lint Yield Kg/Ha

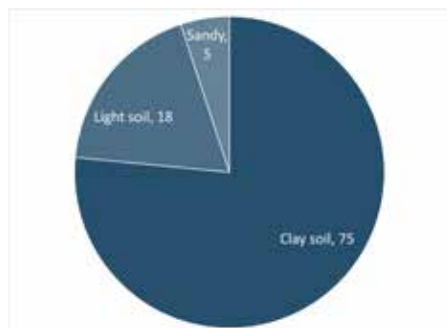


Production '000 Tonnes



SOILS

Soil Types



COMPETING CROPS

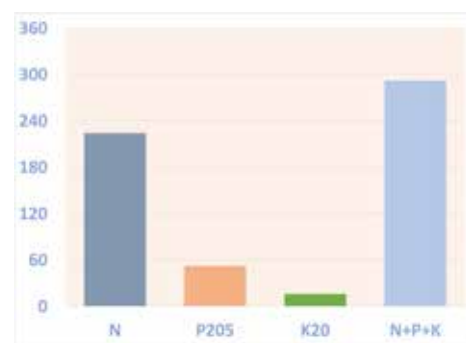
National	National
Wheat	Wheat
Beans	Beans
Sugar beet	Sugar beet
	Alfalfa

ROTATION CROPS

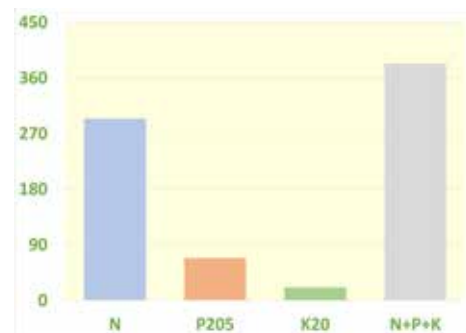
National	National
Wheat	Wheat
Beans	Beans
Sugar beet	Sugar beet
	Alfalfa

FERTILISERS

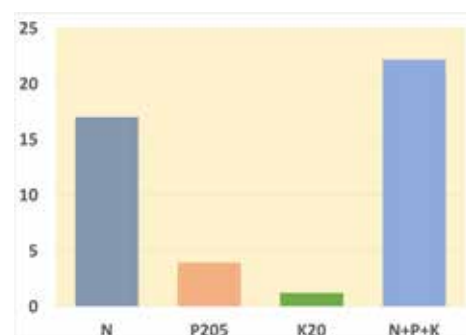
Fertiliser (NPK) use Kg/Hectare



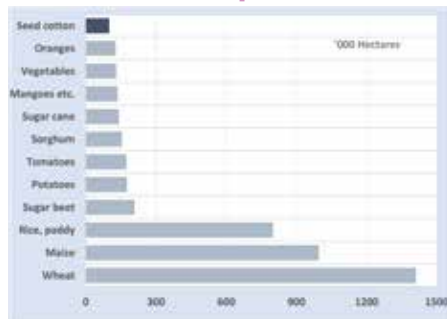
Fertiliser (NPK) use per Kg Lint



Fertiliser (NPK) use '000 Tons



Area of Crops '000 Ha



SEEDS & PLANTING

Seeds Used for Sowing (%)

0	100	0	100
Fuzzy Seeds	Delinted	Chemical Treated	Untreated

Use of Cotton Seeds (% Use)

70	0	30	0
Crushed for Oil	Direct Cattle-Feed	Used for Sowing	wasted

Planting Method (%)

98	2	100	0
Manual	Machine	Local	Imported

Seed Source (%)

Seed Rate, Spacing & Plant Population/Ha

50	60	25	66,667
Seed Rate Kg/Ha	Between Rows cm	Within Row cm	Plant Population/ Ha

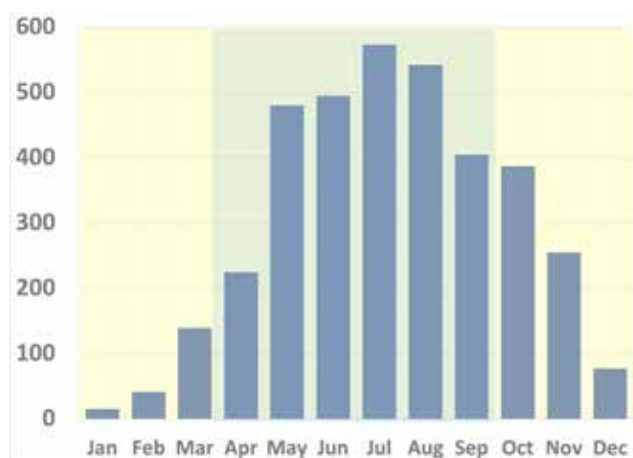


VARIETIES AND FIBRE TRAITS

	Release Year	% Area	Ginning %	Length UHML mm	Strength g/tex	Mic
Varieties in kafr El-Sheikh						
Giza 96	2017	1	38	35.6	44.3	4.2
Giza 94	2016	32	39	33.3	42.3	4.2
Varieties in Beheria						
Giza 86	1998	12	39	32.5	43	4.3
Varieties in Dakahlia						
Giza 94	2016	19	39	33.3	42.3	4.2
Varieties in Sharkia						
Giza 94	2016	17	39	33.3	42.3	4.2
Varieties in Gharbia						
Giza 86	1998	0	39	32.5	43	4.3
Giza 94	2016	4	39	32.8	41.3	4.3
Varieties in Fayyoun						
Giza 95	2015	5	40	29.3	36.5	4.3
Varieties in Others						
Giza 92	2010	4	38	34	47.3	3.7

WEATHER 2019-2020

Heat Units (DD₆₀) -Kafr-El-Sheikh



Rainfall (mm) -Kafr-El-Sheikh



COST OF CULTIVATION US\$/Hectare

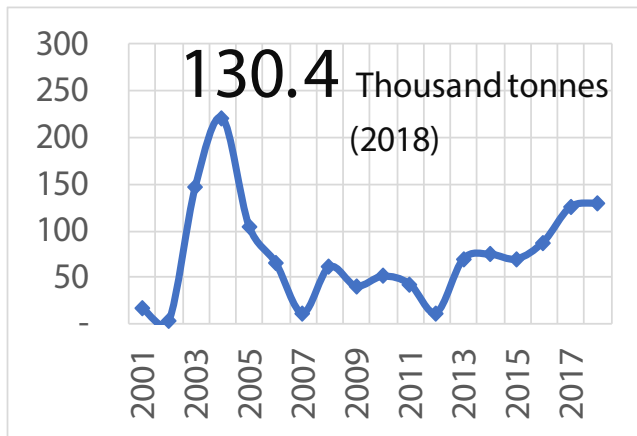
INPUTS	Quantity (Kg/Ha)	Operations per season	Total cost /Ha
Non-GM seeds	57 Kg		51.6
Biotech/GM seeds			0.0
NPK+Other	275	3	265.3
Insecticides	9 Litre/Ha	4	124.3
Herbicides	0		0.0
Fungicides	0		0.0
Growth regulators	0		0.0
Defoliants	0		0.0
Manure	20m3	1	91.0
Others (please specify)			0.0
MANPOWER / LABOUR	Wages per person	Persons per operation	Total cost per hectare
Land preparation /tillage etc.,	5.10	10	51.0
Sowing	5.10	5	25.5
Fertiliser / manure application	5.10	14	71.3
Irrigation	5.10	18	91.7
Thinning	5.10	12	61.1
Weeding	5.10	30	114.6
Hoeing	5.10	10	51.0
Pesticide application	5.10	60	305.7
Defoliator application			0.0
Picking / harvesting	5.10	40	203.8
Stalk cutting & removal	5.10	8	40.8
Transportation /unloading etc.,	5.10	15	76.4
Ginning cost per 100 Kg			149.0
Others (please specify)			0.0
MACHINERY /ANIMALS etc.	Cost per Operation	Number of Operations	Total cost per hectare
Tractors	15.92	2	31.8
Implements & tools	15.92	3	47.8
Electric / Diesel pumps etc.,	6.37	8	6.4
Electricity / Diesel etc.,	0.00		0.0
Harvesting machines	0		0.0
Hoeing / Tillage machinery etc.,	0		0.0
Bullocks /Buffaloes	0		0.0
MARKET VALUE	Yield Kg/per hectare	Market value per 100 Kg	Value per hectare
Seed cotton	2249	0.8	1819
Ginning % (output)	38	0	0
Lint (fibre)	857	2.3	1965
Seed	1372	0.4	532
COST OF CULTIVATION			1711
NET RETURNS (SEED-COTTON)			108
NET RETURNS (SEED + LINT)			637

TRADE DATA

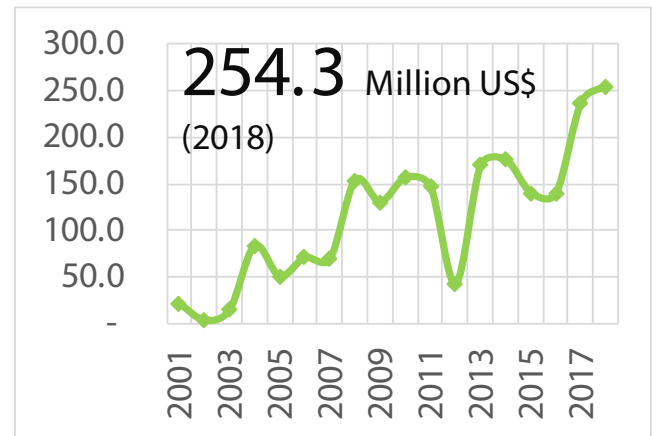


COTTON FIBRE IMPORT DATA

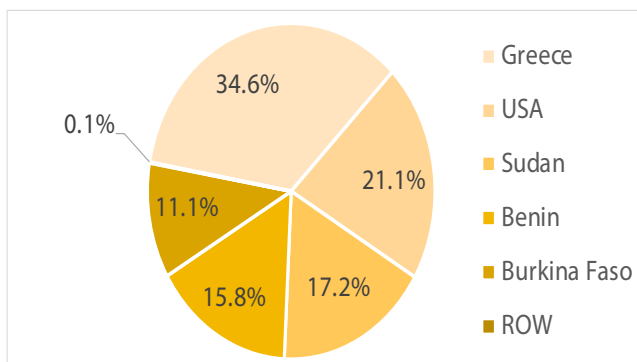
Quantity



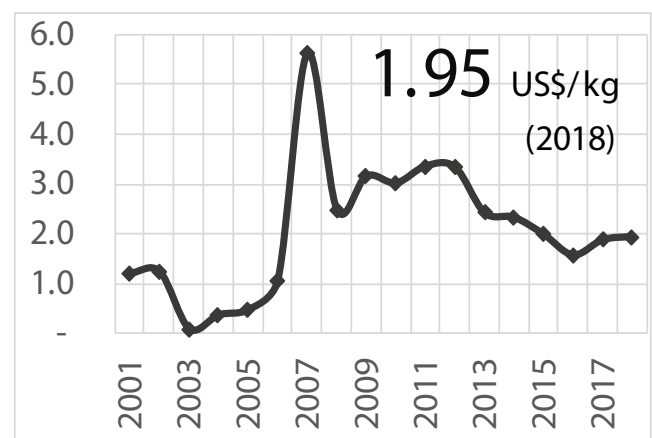
Value



Market Share by Country



Average Price: US\$/Kg



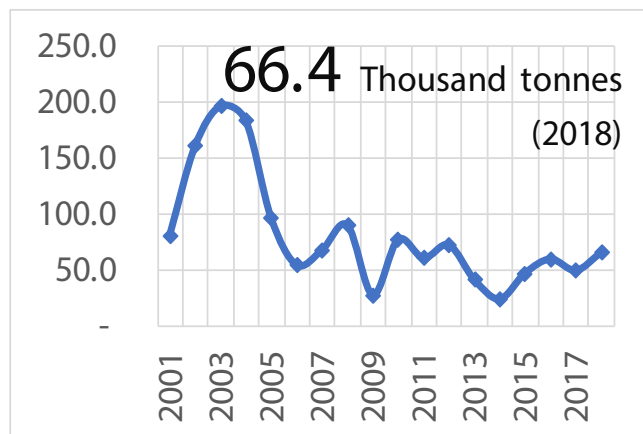
Greece	45.18
USA	27.54
Sudan	22.47
Benin	20.63
Burkina Faso	14.49
ROW	0.10

Thousand Tonnes

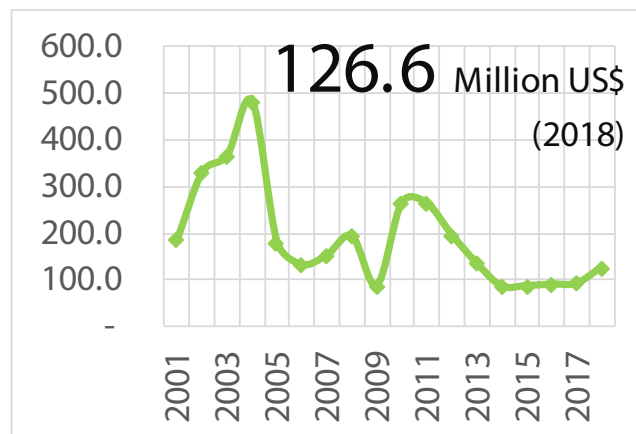


COTTON FIBRE EXPORT DATA

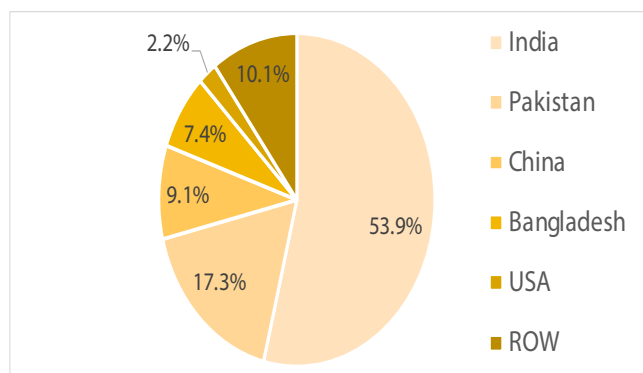
Quantity



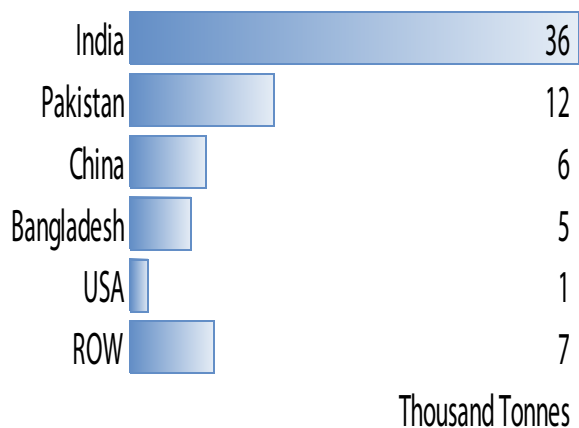
Value



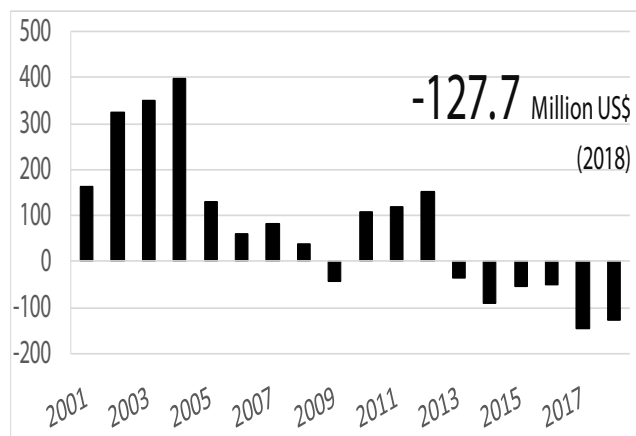
Market Share by Country



Average Price: US\$/Kg

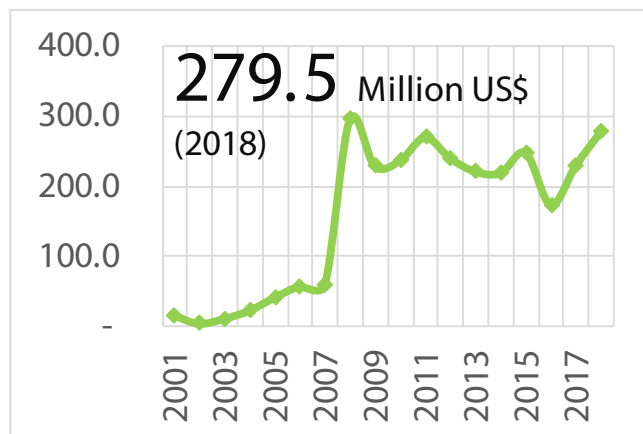


Cotton Fibre Trade Balance

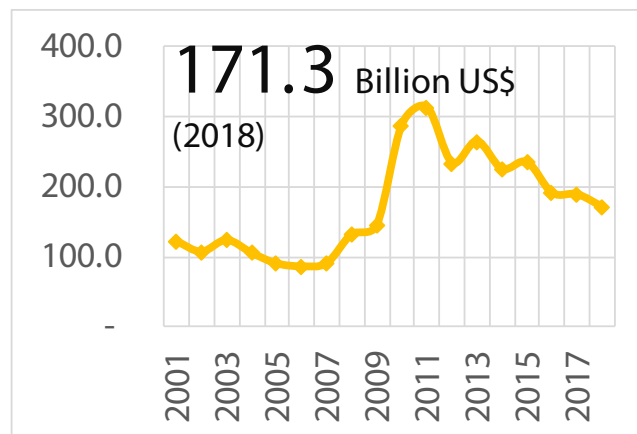


COTTON YARN TRADE DATA

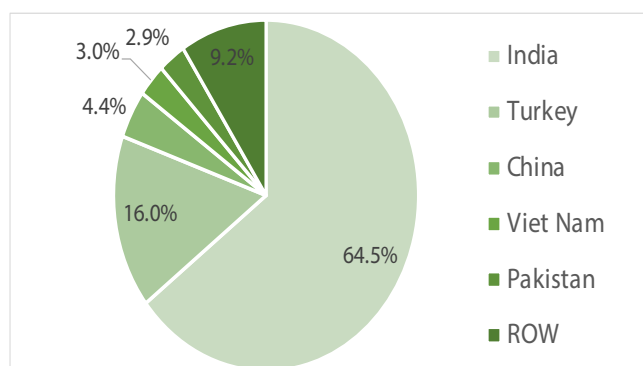
Imports - Value



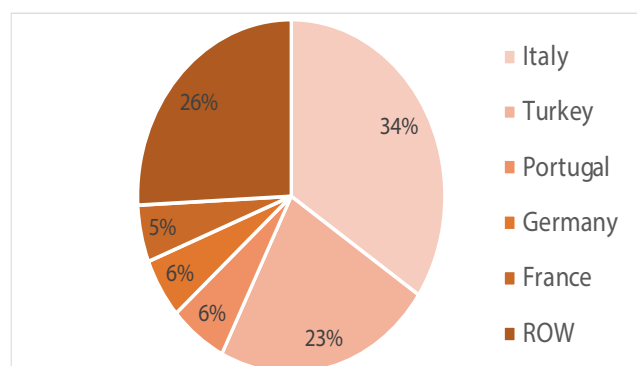
Exports - Value



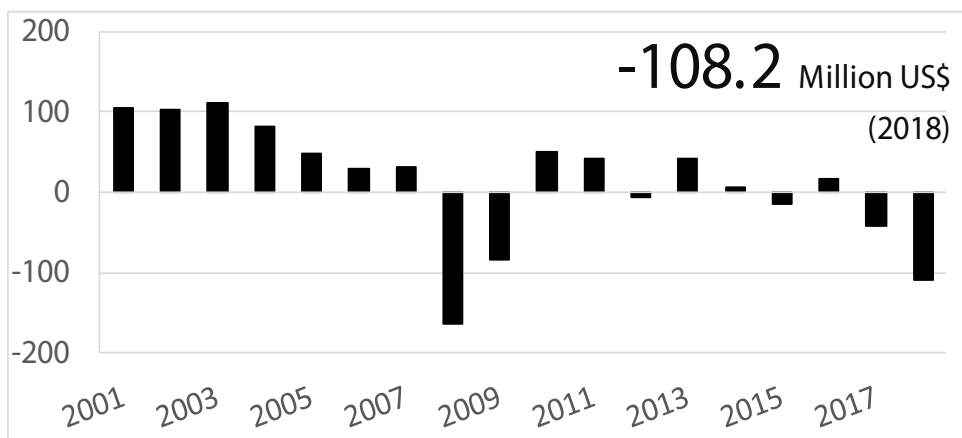
Imports by Country - 2018



Exports by Country - 2018

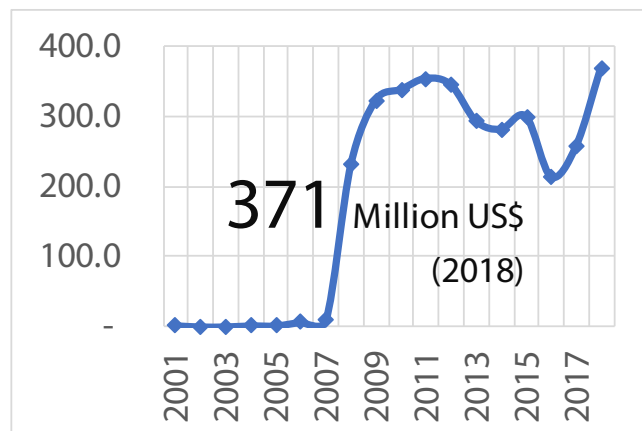


Cotton Yarn Trade Balance

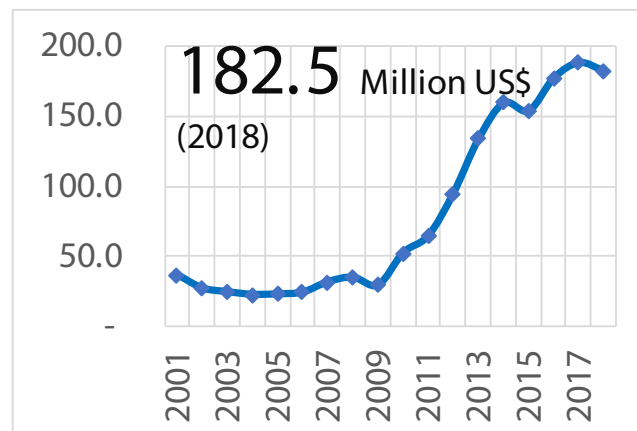


COTTON FABRIC TRADE DATA

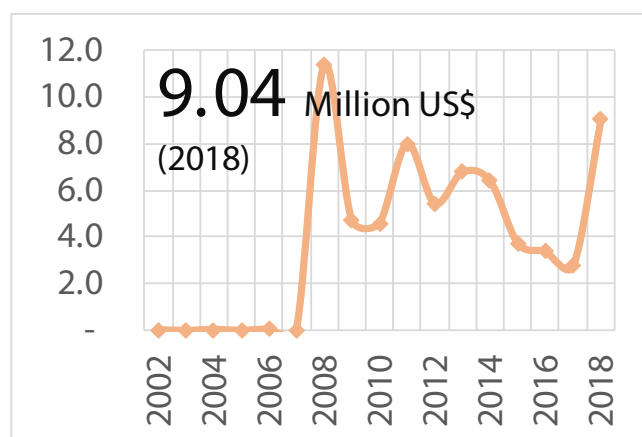
Woven Cotton Fabric Imports



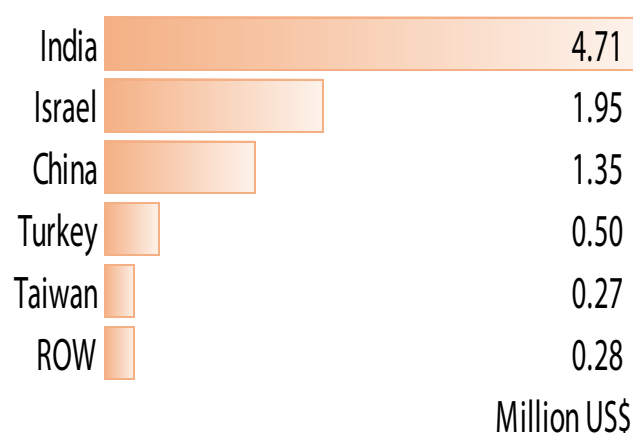
Woven Cotton Fabric Exports



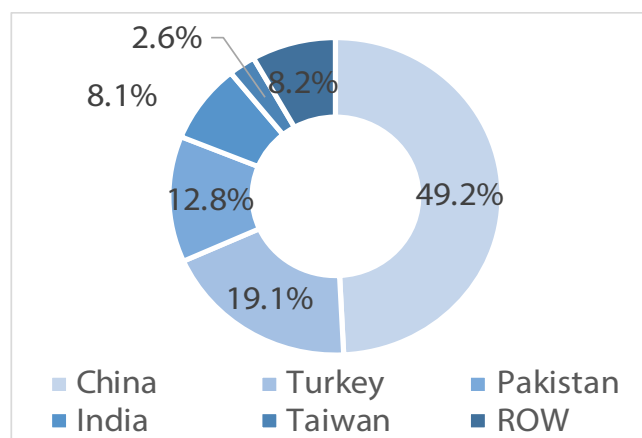
Knitted Cotton Fabric Imports



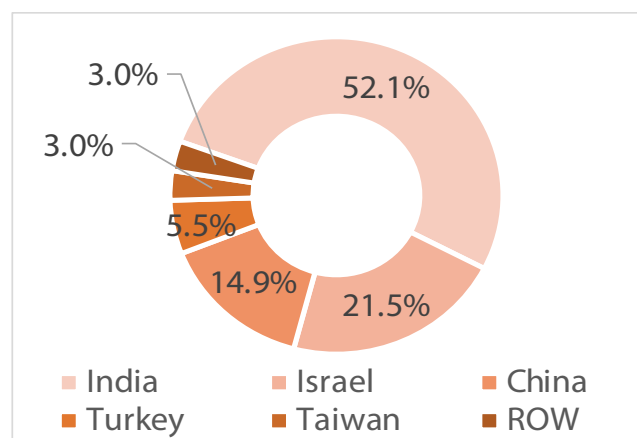
Knitted Cotton Fabric Imports - by Country



Market Share Imports by Country - 2018 Woven Cotton Fabric

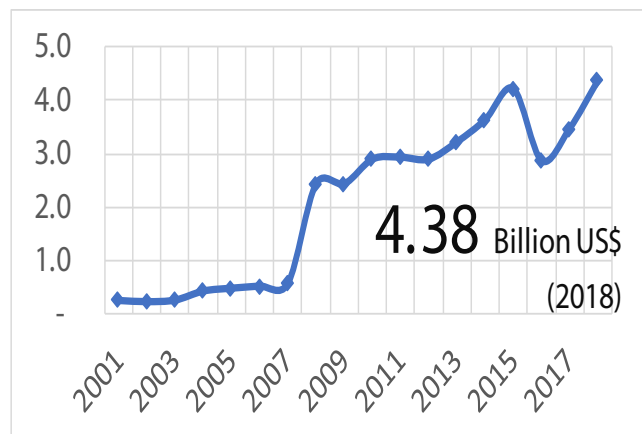


Market Share Imports by Country - 2018 Knitted Cotton Fabric

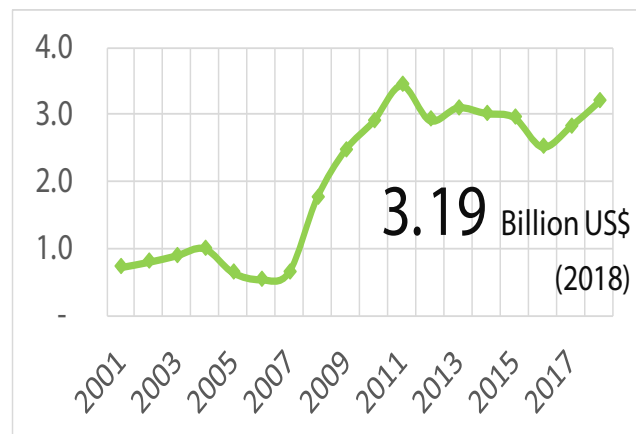


TEXTILE & APPAREL TRADE DATA

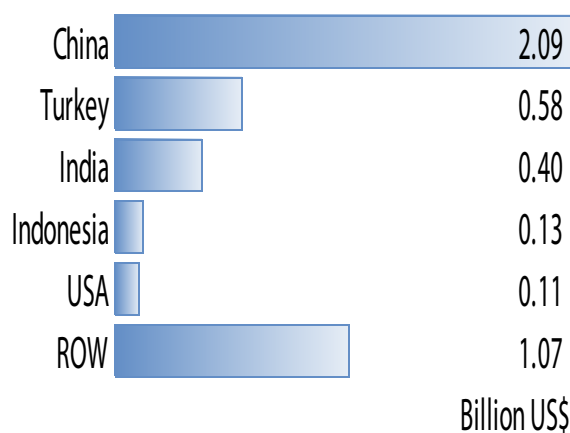
Imports



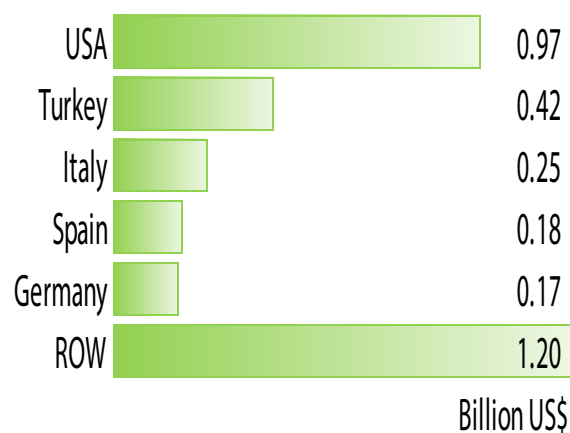
Exports



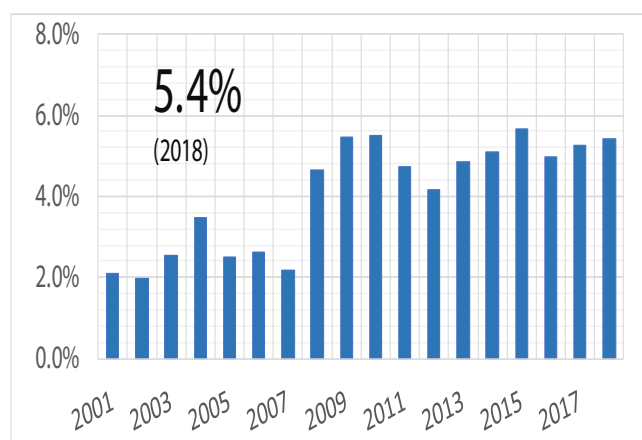
Imports by Country - 2018



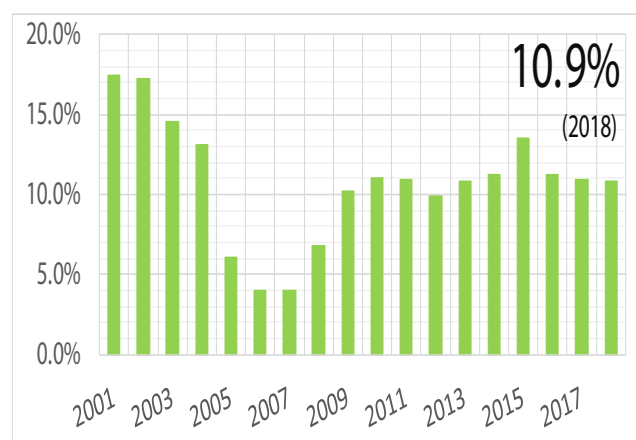
Exports by Country - 2018



T&A Imports Share in Overall Imports

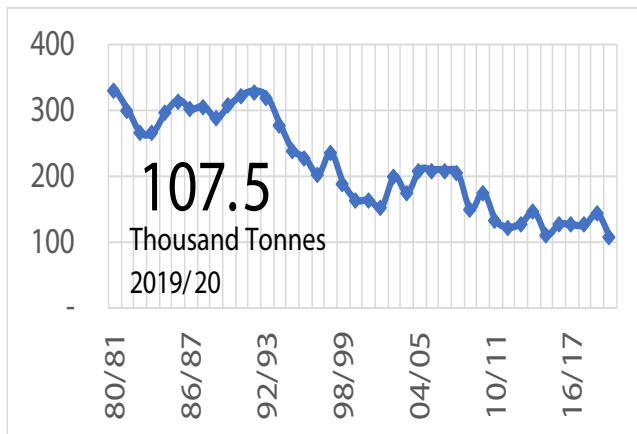


T&A Exports Share in Overall Exports

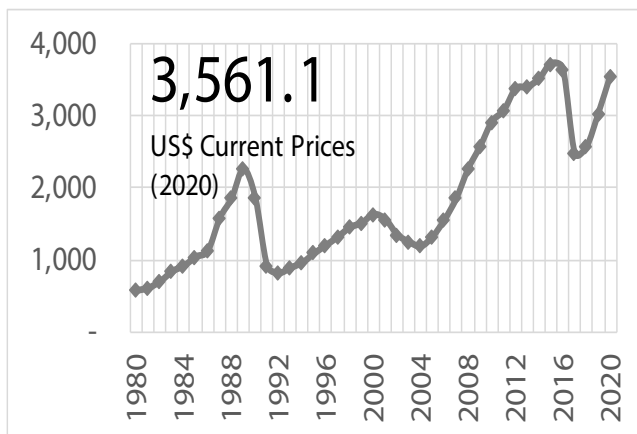


COMPOSITION OF THE TEXTILE & APPAREL INDUSTRY

Cotton Mill Use



GDP per capita



Production (Thousand)

165 Tonnes Cotton Yarn	25 Tonnes Chemical Yarn
230 Tonnes Fabrics	640 Tonnes Apparel
160 Tonnes Home Textiles	

Employment

22,200 Spinning	8,500 Weaving
600,000 Garment Sector '000	

Spinning Machinery

12,300

Open-End '000

1,500,000

Short-Staple Spindles

Weaving Machinery

790

Shuttle Looms

2,600

Shuttle-less Looms

Organic Cotton Produced in 2018/19

287 tonnes

No. Garment Factories 7,150

No. Spinning Mills 235

No. Cotton Associations 11





Basic Data 2020



Consumption

55

'000 Tonnes

Lint Exports

7

'000 Tonnes

Farmers

48,627

Male

Farmers

750

Female

PRODUCTION 2020

		Area '000 Ha	Yield Kg/Ha	Production '000 Tonnes
1	Amhara	31	629	19
2	Benishangul	8	629	5
3	Gambela	16	666	10
4	Tigray	5	740	3
5	Afar	12	1036	13
6	South/SNNPR	10	814	8
7	Oromiya	1	999	1
	National	82	731	60

SEEDS & PLANTING

Seeds Used for Sowing (%)

Irrigated	0	100	90	10
Rainfed	5	95	90	10
National	2	98	90	10
	Fuzzy Seeds	Delinted	Chemical Treated	Untreated

Planting Method (%)

Seed Source (%)

National	100	0	100	0
	Manual	Machine	Local	Imported

Use of Cotton Seeds (% Use)

Irrigated	100	0	0	0
Rainfed	99	0	1	0
National	99	0	1	0
	Crushed for Oil	Direct Cattle-Feed	Used for Sowing	wasted

Seed Rate, Spacing & Plant Population/Ha

National	15	90	20	55,556
	Seed Rate Kg/Ha	Between Rows cm	Within Row cm	Population/ Ha

Arable Area

16,187

'000 Hectares

Cotton Area

82

'000 Hectares

Production

60

'000 Tonnes

Lint Yield

731

Kg/Hectare



VARIETIES AND FIBRE TRAITS

	Release Year	% Area	Ginning %	Length UHML mm	Strength g/tex	Mic
Dp-90	1996	95	37	28.8	27.15	4.55
Acla SJ-2	1993	1	36	27.5	27	4.5
Claudia	2017	1	46	29.5	29.6	4.6
werer -50	2018	0.5	38.9	28.5	27.5	4.3
Woyito	2018	0.5	38	28.5	27.2	4.5

WATER

Rainwater & Irrigation water (mm)

1,228	836	4	150
Total Rainfall	Effective Rainfall	No. of Irrigations	Irrigation Water/Ha

Methods of Irrigation (% Area)

0	96	4	0
Flood	Furrow	Sprinkler	Drip

Rainfed Area (%) & Water Used /Kg Lint

97	4	62	11,442
Rainfed % Area	Irrigation Billion L	Irrigation L/Kg Lint	Rainwater L/Kg Lint

TILLAGE, STALKS-USE WEEDING & HARVESTING

Tillage Methods (% Area)

Irrigated	0	75	24	100
Rainfed	70	55	15	30
National	60	62	18	40
	Zero Tillage	Disc Plough	Chisel Plough	Conventional Tillage

Use of Cotton stalks (% Use)

Irrigated	0	10	90	0
Rainfed	0	25	75	0
National	0	20	81	0
	Burnt in Fields	Used as Firewood	Ploughed Back	Stacked on Bunds

Weeding Method (%)

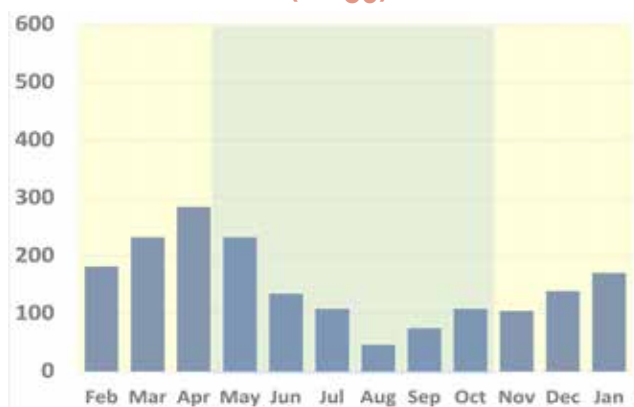
National	99	1
	Hand	Herbicide

Harvest Method (%)

National	100	0
	Hand	Machine

WEATHER 2019-2020

Heat Units (DD₆₀) -Amhara

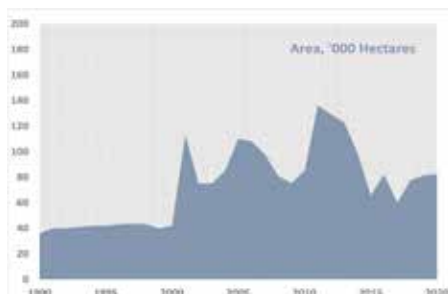


Rainfall (mm) -Amhara

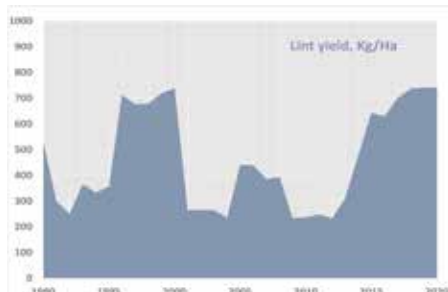


PRODUCTION

Cotton Area '000 Hectares



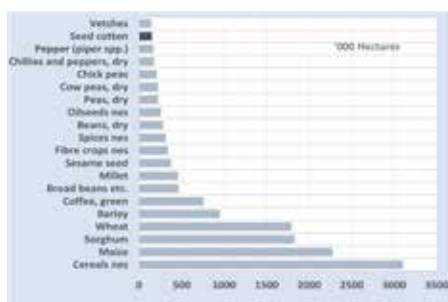
Lint Yield Kg/Ha



Production '000 Tonnes



Area of Crops '000 Ha



COMPETING CROPS

Sesame
Sorghum
Corn

ROTATION CROPS

Sesame
Sorghum
Corn

PESTS

INSECTS, PATHOGENS & WEEDS

INSECT PESTS / INSECTICIDES

EARLY-SEASON

Helicoverpa armigera

Aphis gossypii

Empoasca lybica

MID-SEASON

Helicoverpa armigera

Bemisia tabaci

Empoasca lybica

INSECTICIDES

Endosulfan 25%ULV

DISEASES / PATHOGENS

Verticillium dahliae

Fusarium oxysporum vasinfectum

CHEMICAL CONTROL

none

WEEDS / HERBICIDES

NARROW-LEAF WEEDS

Cyanodon dactylon

Setaria sp

Sorghum arundinaceum

Digitaria sp

Cyperus spp

BROAD-LEAF WEEDS

Xanthium strumarium

Portulaca oleracea

Solanum nigrum

Ipomoea sp

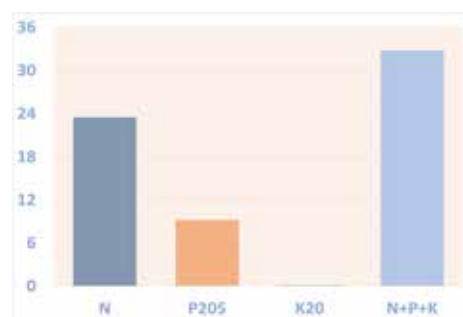
Convolvulus arvensis

HERBICIDES

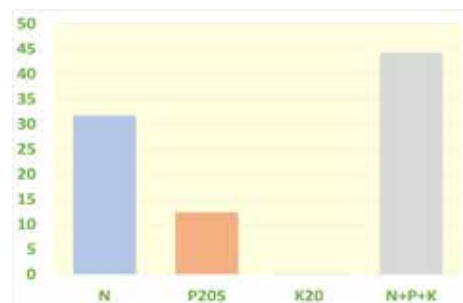
None

FERTILISERS

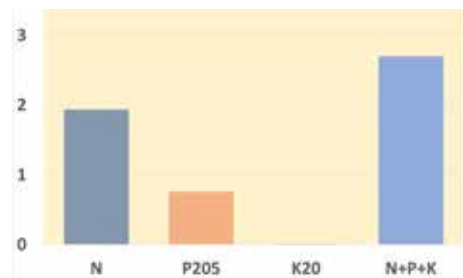
Fertiliser (NPK) use Kg/Hectare



Fertiliser (NPK) use per Kg Lint



Fertiliser (NPK) use '000 Tons



RESEARCH ORGANOGRAM

The Ethiopian Institute of Agricultural Research (EIAR) under the Ministry of Agriculture is mandated for agriculture research. EIAR has Centres of excellence for most commodities including one for cotton at Werer Agricultural Research Centre (WARC). Research sub-centres on most commodities are available at different regions/states. However, cotton does not have any sub-centre. The commercial cotton farms serve as testing and demonstration sites for cotton research. The Ethiopian Textile Industry Development Institute (ETIDI) Project was established in 2013 as an International Project for capacity building and benchmarking. The main objectives were to strengthen the capabilities of ETIDI in Training, Consulting, Research and Marketing Support Services for the Ethiopian Apparel Industry and to transform it into a Centre of Excellence through a twinning arrangement with the National Institute of Fashion Technology (NIFT), India.

bilities of ETIDI in Training, Consulting, Research and Marketing Support Services for the Ethiopian Apparel Industry and to transform it into a Centre of Excellence through a twinning arrangement with the National Institute of Fashion Technology (NIFT), India.



COST OF CULTIVATION US\$/Hectare

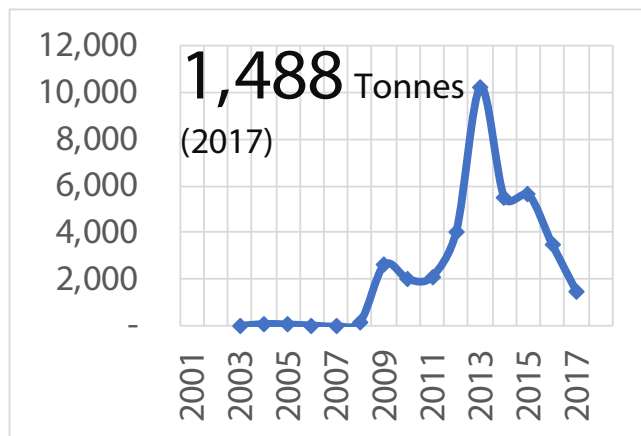
INPUTS	Quantity (Kg/Ha)	Operations per season	Total cost /Ha
Non-GM seeds	13	1	18.6
Biotech/GM seeds	3	1	90.0
NPK+Other	0	0	0.0
Insecticides	2.5	5	89.3
Herbicides	0	0	0.0
Fungicides	0	0	0.0
Growth regulators	0	0	0.0
Defoliants	0	0	0.0
Manure	0	0	0.0
Others (please specify)	0	0	0.0
MANPOWER / LABOUR	Wages per person	Persons per operation	Total cost per hectare
Land preparation /tillage etc.,	5.71	2	11.4
Sowing	5.71	2	11.4
Fertiliser / manure application	0.00	0	0.0
Irrigation	8.57	3	25.7
Thinning	5.71	10	57.1
Weeding	5.71	10	57.1
Hoeing	5.71	5	28.6
Pesticide application	10.00	2	20.0
Defoliator application	0.00	0	0.0
Picking / harvesting	4.29	15	64.3
Stalk cutting & removal	5.71	5	28.6
Transportation /unloading etc.,	0.00	0	0.0
Ginning cost per 100 Kg	8.57	0	168.6
Others (please specify)			
MACHINERY /ANIMALS etc.	Cost per Operation	Number of Operations	Total cost per hectare
Tractors			42.9
Implements & tools			28.6
Electric / Diesel pumps etc.,			8.6
Electricity / Diesel etc.,			0.0
Harvesting machines			0.0
Hoeing / Tillage machinery etc.,			28.6
Bullocks /Buffaloes			28.6
Land rent			857.1
MARKET VALUE	Yield Kg/per hectare	Market value per 100 Kg	Value per hectare
Seed cotton	1900	0.4	814.3
Ginning % (output)	37	0.0	0.0
Lint (fibre)	703	1.1	803.4
Seed	1197	0.3	314.9
COST OF CULTIVATION			639
NET RETURNS (SEED-COTTON)			175
NET RETURNS (SEED + LINT)			310

TRADE DATA

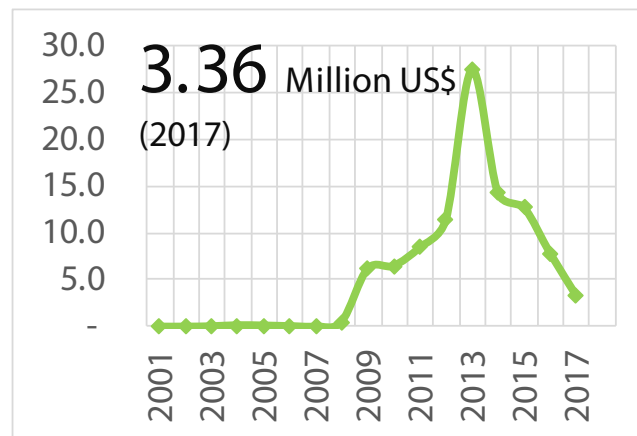


COTTON YARN EXPORT DATA

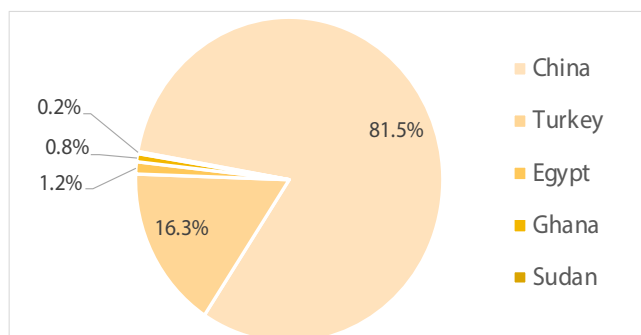
Quantity



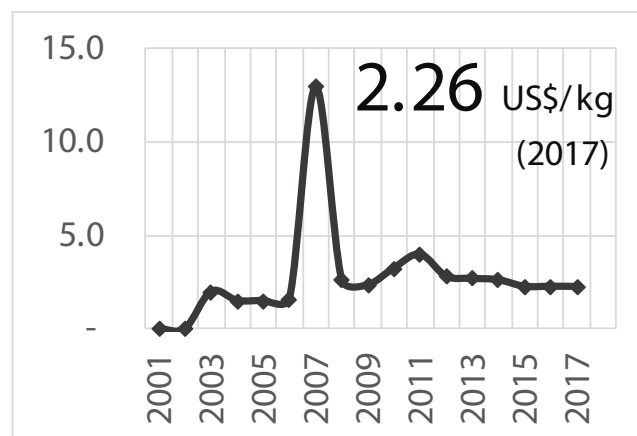
Value



Market Share by Country



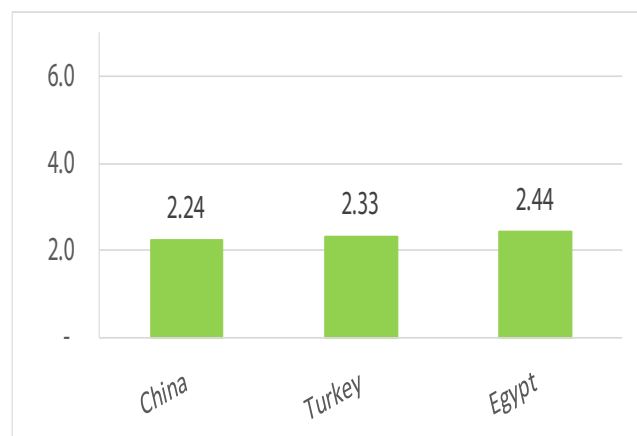
Average Price: US\$/Kg



China	1,214
Turkey	242
Egypt	18
Ghana	12
Sudan	3

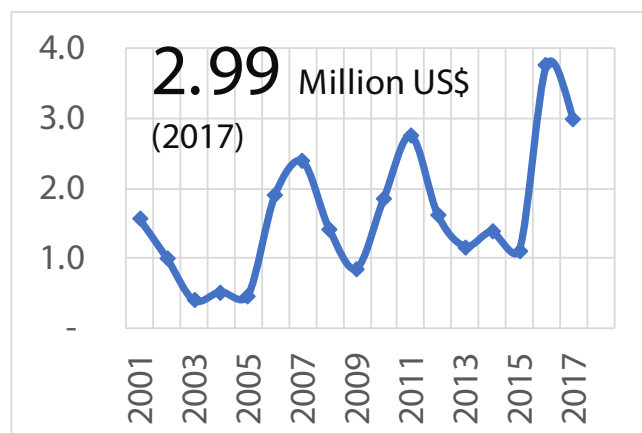
Tonnes

Average Price by Country 2017: US\$/Kg

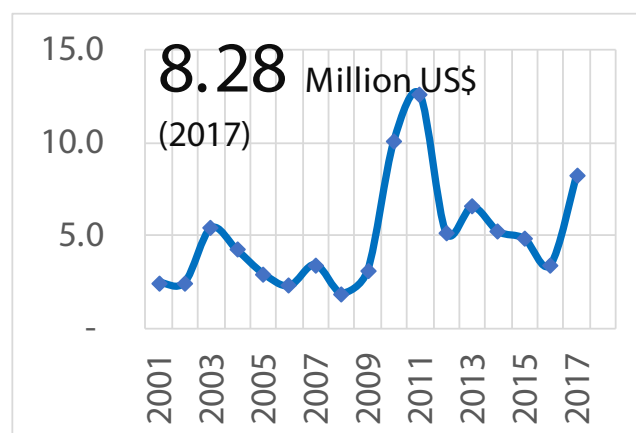


COTTON FABRIC TRADE DATA

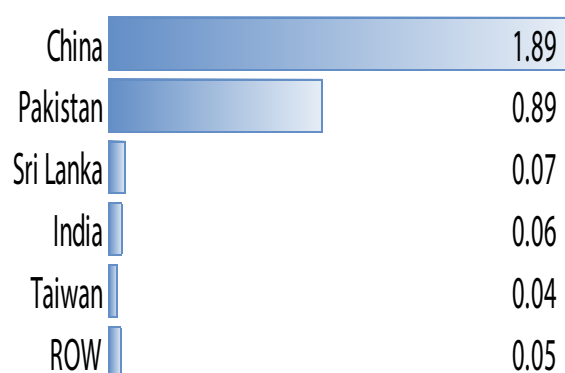
Woven Cotton Fabric Imports



Woven Cotton Fabric Exports

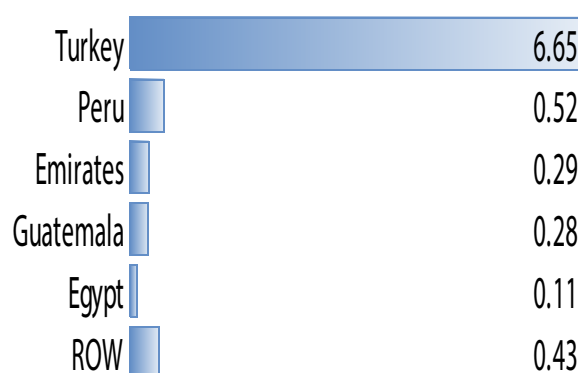


Woven Cotton Fabric Imports by Country



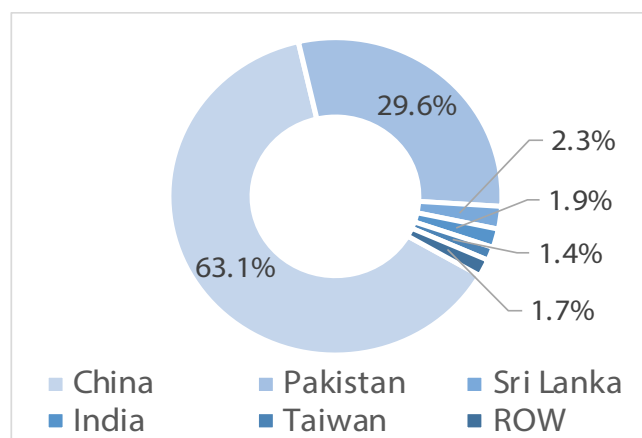
Million US\$

Woven Cotton Fabric Exports by Country

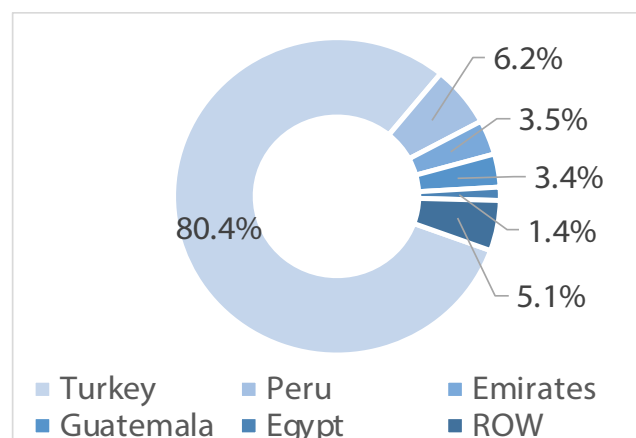


Million US\$

Market Share Imports by Country - 2017 Woven Cotton Fabric

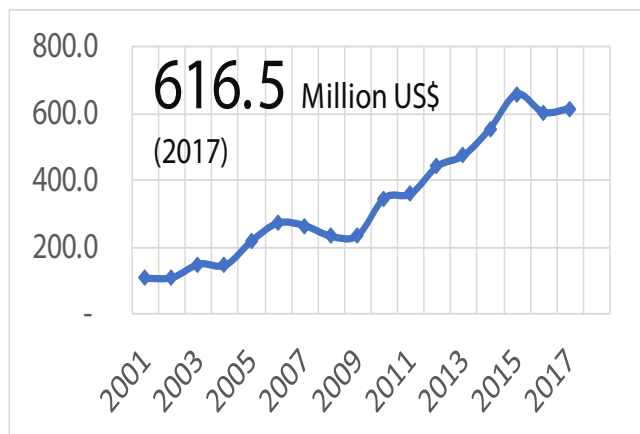


Market Share Exports by Country - 2017 Woven Cotton Fabric

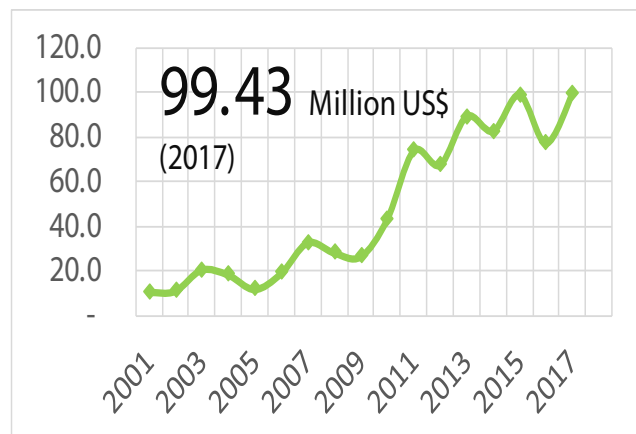


TEXTILE & APPAREL TRADE DATA

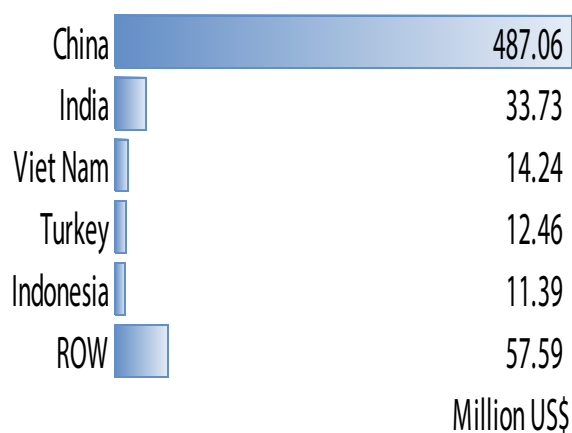
Imports



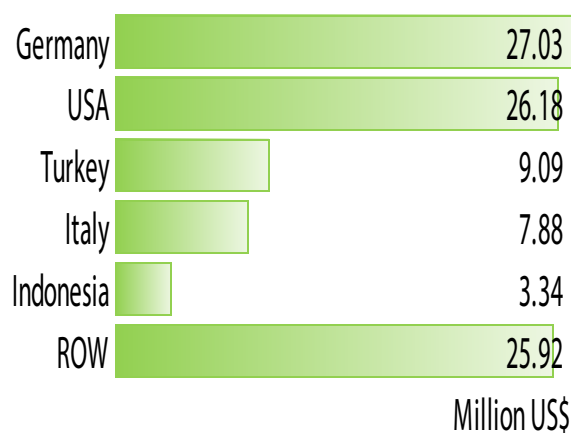
Exports



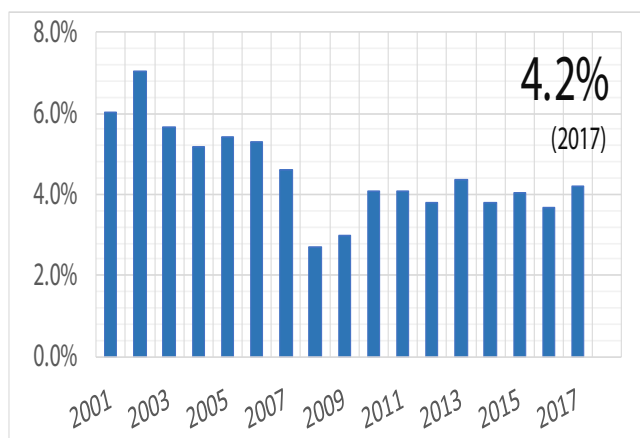
Imports by Country - 2017



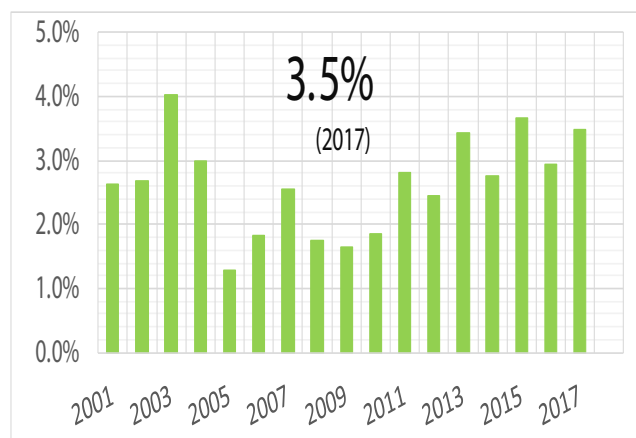
Exports by Country - 2017



T&A Imports Share in Overall Import

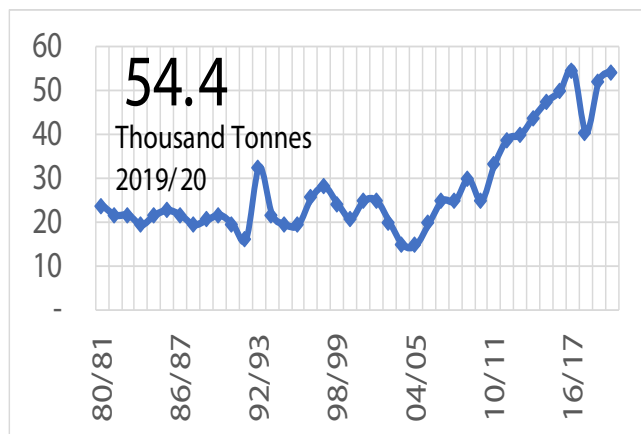


T&A Exports Share in Overall Exports



COMPOSITION OF THE TEXTILE & APPAREL INDUSTRY

Cotton Mill Use



Employment

50,000 - 70,000

Textile & Apparel Sector '000

Spinning Machinery

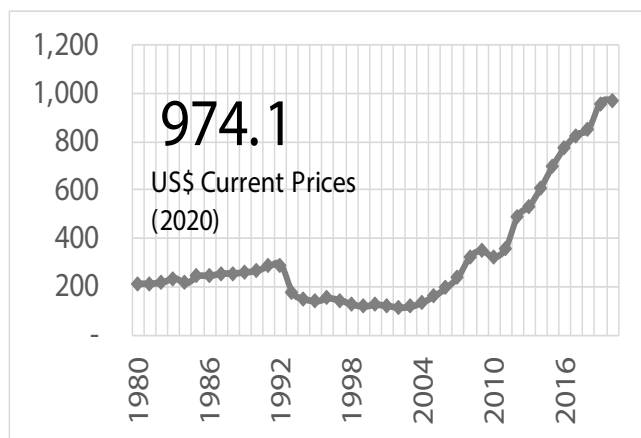
294,000

Short-Staple Spindles

19,000

Open-End

GDP per capita



Weaving Machinery

170

Shuttle Looms

2,200

Shuttle-less Looms

No. Textiles & Garment Factories

200

Organic Cotton Produced in 2018/19

130 tonnes



Basic Data 2020



PRODUCTION 2020

		Area '000 Ha	Yield Kg/Ha	Production '000 Tonnes
1	Thessaly	90	1,249	112
2	Makedonia	87	861	75
3	Thraki	78	1,114	87
4	Sterea Ellada	33	1,040	34
5	Others	4	4,971	19
	National	291	1,122	327

NUMBER OF FARMERS

	Men	Women
Thessaly	12,9670	8,921
Makedonia	12,8167	7,474
Thraki	55,366	5,163
Sterea Ellada	41,660	3,311
Others	5,809	387
Total	360,672	25,256

Arable Area

3,222

'000 Hectares

Cotton Area

291

'000 Hectares

Production

327

'000 Tonnes

Lint Yield

1,122

Kg/Hectare

Consumption

16

'000 Tonnes

Lint Exports

352

'000 Tonnes

Farmers

25,256

Male

Farmers

23,025

Female

TILLAGE, STALKS-USE WEEDING & HARVESTING

Tillage Methods (% Area)

0	100	0	100
Zero Tillage	Disc Plough	Chisel Plough	Conventional Tillage

Use of Cotton stalks (% Use)

0	0	100	0
Burnt in Fields	Used as Firewood	Ploughed Back	Stacked on Bunds

Weeding Method (%)

0	100	2	98
Hand	Herbicide	Hand Picked	Machine Picked

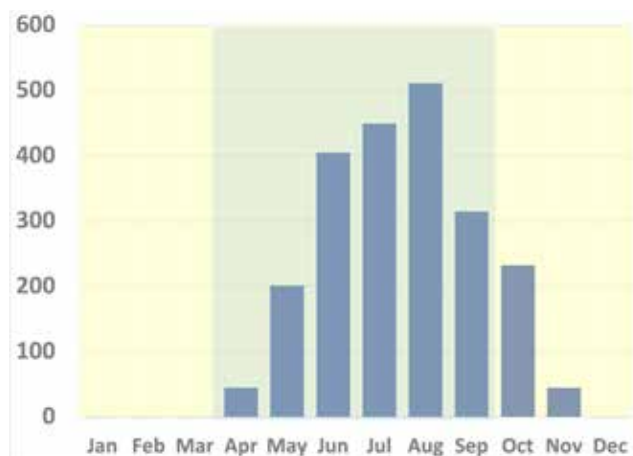
Harvesting Method (%)

VARIETIES AND FIBRE TRAITS

	Release Year	% Area	Ginning %	Length UHML mm	Strength g/tex	Mic
Varieties in Thessaly						
CELIA	2000	23		28.0-29.0	29-30	4.0-4.3
HERSI	2009	14		26.5-30.0	30-31	4.1-4.2
ST 402	2008	10		28.5-29.0	28-30	4.4-4.7
ELPIDA		9				
Varieties in Makedonia						
ST 402	2008	32		28.5-29.0	28-30	4.4-4.7
ST 318	2008	11		28.0-29.0	28.5-30	4.3-4.5
ELPIDA		11				
DP 332	2010	3		28.0-29.0	29-30	4.3-4.5
Varieties in Thraki						
ST 402	2008	24		28.5-29.0	28-30	4.4-4.7
ST 474	2003	7		27.0-28.0	29-30	4.7-4.9
ST 318	2008	6		28.0-29.0	28.5-30	4.3-4.5
ELPIDA		5				
Varieties in Others						
ST 402	2008	35		28.5-29.0	28-30	4.4-4.7
ELPIDA		21				
LIDER		6				
PHY 983		4				
ST 318	2008	4		28.0-29.0	28.5-30	4.3-4.5

WEATHER 2019-2020

Heat Units (DD₆₀) -Thessaly

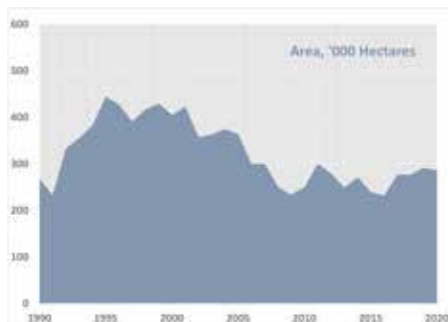


Rainfall (mm) -Thessaly

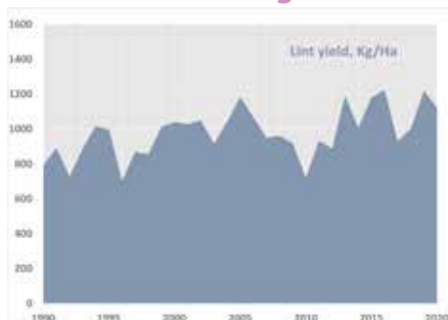


PRODUCTION

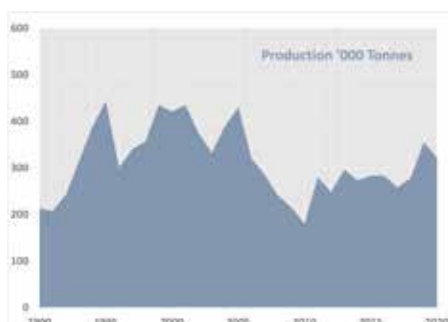
Cotton Area '000 Hectares



Lint Yield Kg/Ha

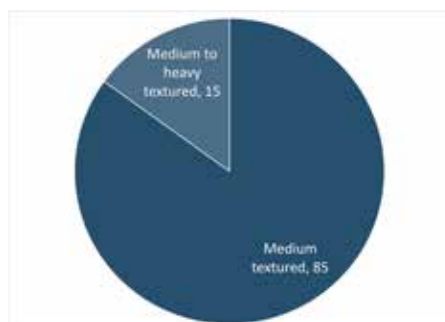


Production '000 Tonnes



SOILS

Soil Types



COMPETING CROPS

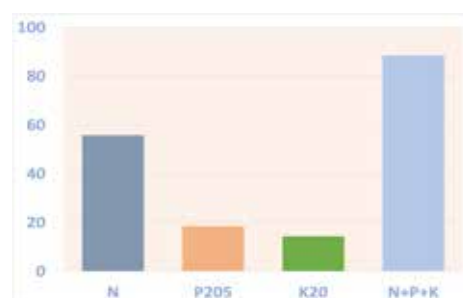
National	National
Wheat	Wheat
Legumes	Legumes
Grains	Grains

ROTATION CROPS

National	National
Wheat	Wheat
Legumes	Legumes
Grains	Grains

FERTILISERS

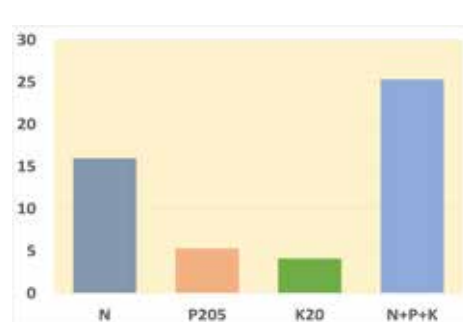
Fertiliser (NPK) use Kg/Hectare



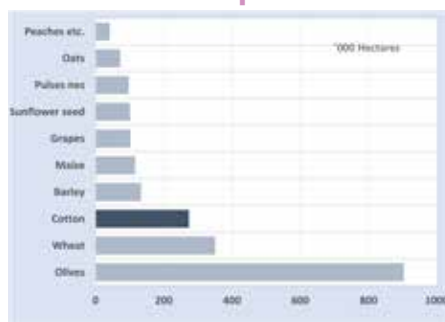
Fertiliser (NPK) use per Kg Lint



Fertiliser (NPK) use '000 Tons



Area of Crops '000 Ha



STRUCTURE OF COTTON RESEARCH

The Hellenic Agricultural Organisation (HAO) – DEMETER was established in 2011 by merging the National Agricultural Research Foundation (NAGREF) of Greece, established in 1989, with three other Greek organisations of the agricultural sector. The HAO institutes that deal with cotton research are listed below:

1. The Institute of Plant Breeding and Genetic Resources (IPBGR) is a research institute located in Thessaloniki.
2. The Institute of Industrial and Forage Crops is located in Centre Greece.
3. The National Centre for Quality Control, Classification and Standardisation of Cotton and its laboratories in Karditsa and Orchomenos, are in the division of the Institute of Industrial and Forage Crops of the Hellenic Agricultural Organisation "DEMETER". The laboratory of Karditsa provides services in quality control of cotton for the manufacturing industry (ginning), cotton seed companies, cotton merchants and other customers. It participates in international inter-laboratory tests (CSITC, BCRT, 7 tests / year).

The following Greek Universities, conduct cotton research:

4. Aristotelian University of Thessaloniki- School of Agriculture (www.agro.auth.gr)
5. Agricultural University of Athens (www2.aau.gr)
6. University of Thessaly- School of Agricultural Sciences (www.agr.uth.gr)
7. Democritus University of Thrace – School of Agricultural Sciences (www.agro.duth.gr)

Many private companies also conduct cotton research. The Ministry of Rural Development and Food has the responsibility of coordination of cotton research in Greece. The National and European Union fund programmes on cotton research in Greece. The Ministry of Rural Development and Food approves and funds special agricultural programs for the development of new cotton varieties. The programmes are assigned to the HAO - DEMETER. A few projects are also funded by private companies, cooperatives and Regional Operational Programmes.

INSECTS, PATHOGENS & WEEDS

INSECT PESTS / INSECTICIDES

EARLY-SEASON

Aphis gossypii, *Thrips tabaci*

Tetranychus spp. *Agrotis ipsilon* & *Lygus spp.*

MID-SEASON

Helicoverpa armigera

Pectinophora gossypiella

Bemisia tabaci

INSECTICIDES

Rynaxypyr

Flonicamid

Sulfoxaflor

Cypermethrin, Deltamethrin

Chlorpyrifos

Abamectin

DISEASES / PATHOGENS

Verticillium sp.

Alternaria

Rhizoctonia solani

WEEDS / HERBICIDES

NARROW-LEAF WEEDS

Cyperus sp

Cyanodon dactylon

Sorghum halepense

Echinochloa crus-galli

Setaria viridis

BROAD-LEAF WEEDS

Datura stramonium

Xanthium strumarium

Abutilon theophrasti

Convolvulus arvensis

Solanum nigrum

HERBICIDES

Pendimethalin, Fluometuron

Terbuthylazin

S-metolachlor

Pyriathiobac sodium

WATER

Rainwater & Irrigation water (mm)

Thessaly	418	236	6	360
Macedonia	510	257	5	350
Thraki	480	229	6	360
National	474	220	6	357
	Total Rainfall	Effective Rainfall	No. of Irrigations	Irrigation Water/Ha

Methods of Irrigation (% Area)

Thessaly	0	10	60	30
Macedonia	0	8	65	17
Thraki	0	12	70	18
National	0	10	65	22
	Flood	Furrow	Sprinkler	Drip

Rainfed Area (%) & Water Used /Kg Lint

Thessaly	8	298	2,654	1,892
Macedonia	8	280	3,734	2,989
Thraki	7	260	2,992	2,054
National	7	838	2,959	1,961
	Rainfed % Area	Irrigation Billion L	Irrigation L/Kg Lint	Rainwater L/Kg Lint

SEEDS & PLANTING

Seeds Used for Sowing (%)

0	100	100	0
Fuzzy Seeds	Delinted	Chemical Treated	Untreated

Planting Method (%)

Seed Source (%)

0	100	95	5
Manual	Machine	Local	Imported

Use of Cotton Seeds (% Use)

20	78	2	0
Crushed for Oil	Direct Cattle-Feed	Used for Sowing	wasted

Seed Rate, Spacing & Plant Population/Ha

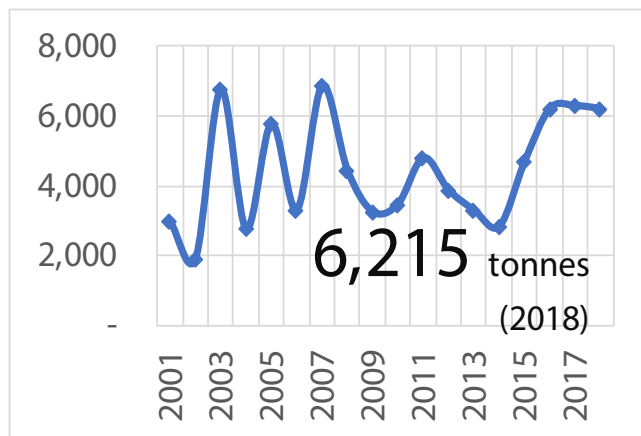
25	96	6	173,611
Seed Rate Kg/Ha	Between Rows cm	Within Row cm	Plant Population/ Ha

COST OF CULTIVATION US\$/Hectare

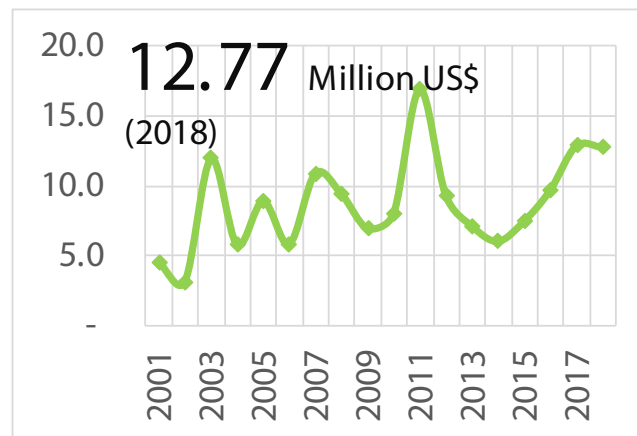
INPUTS	Quantity (Kg/Ha)	Operations per season	Total cost /Ha
Non-GM seeds	20-25	1	144.6
Biotech/GM seeds			0.0
NPK+Other	400-500	2--3	241.0
Insecticides		5	204.8
Herbicides		3	120.5
Fungicides		0	0.0
Growth regulators		2	36.1
Defoliants		1	84.3
Manure	0	0	0.0
Others (please specify)	0	0	0.0
MANPOWER / LABOUR	Wages per person	Persons per operation	Total cost per hectare
Land preparation /tillage etc.,	36.1	1	36
Sowing	36.1	1	36
Fertiliser / manure application	36.1	2	72
Irrigation	36.1	6	216
Thinning		0	0
Weeding	36.1	2	72
Hoeing		0	0
Pesticide application	36.1	5	181
Defoliator application	36.1	2	72
Picking / harvesting	72	1	72
Ginning cost per 100 Kg		7Eur/100 kg seed cotton	244
Others (please specify)		20 euros/100kg lint	
MACHINERY /ANIMALS etc.	Cost per Operation	Number of Operations	Total cost per hectare
Tractors			452
Implements & tools			
Electric / Diesel pumps etc.,			
Electricity / Diesel etc.,			
Harvesting machines			
Hoeing / Tillage machinery etc.,			
Bullocks /Buffaloes			
Land rent			722.9
MARKET VALUE	Yield Kg/per hectare	Market value per 100 Kg	Value per hectare
Seed cotton	3580	0.58	2076
Ginning % (output)	34.5	0	0.0
Lint (fibre)	1235	1.62	2001
Seed	2340	0.32	748.8
COST OF CULTIVATION			2040
NET RETURNS (SEED-COTTON)			36
NET RETURNS (SEED + LINT)			465

COTTON FIBRE IMPORT DATA

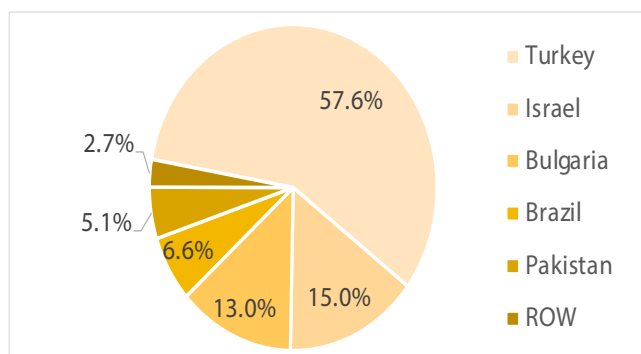
Quantity



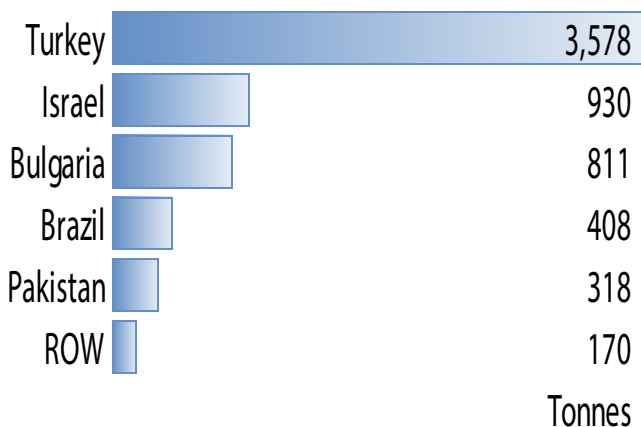
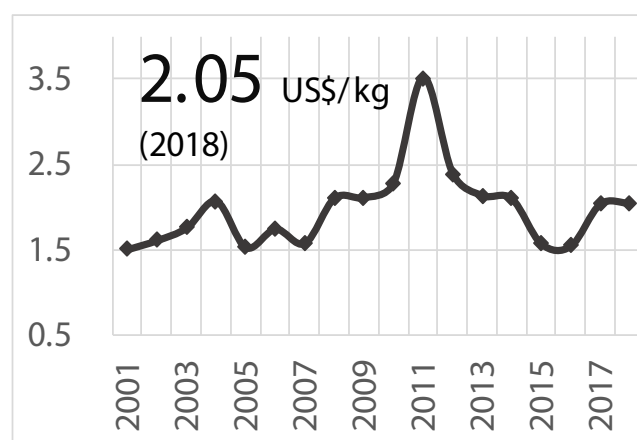
Value



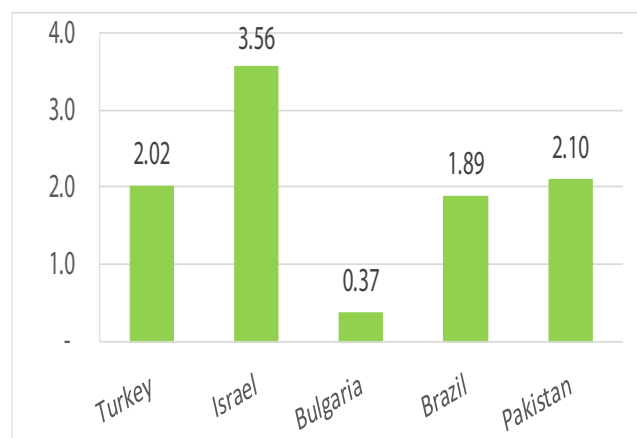
Market Share by Country



Average Price: US\$/Kg

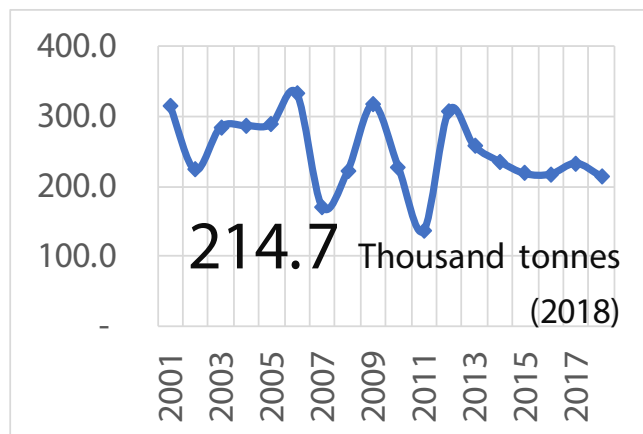


Average Price by Country 2018: US\$/Kg

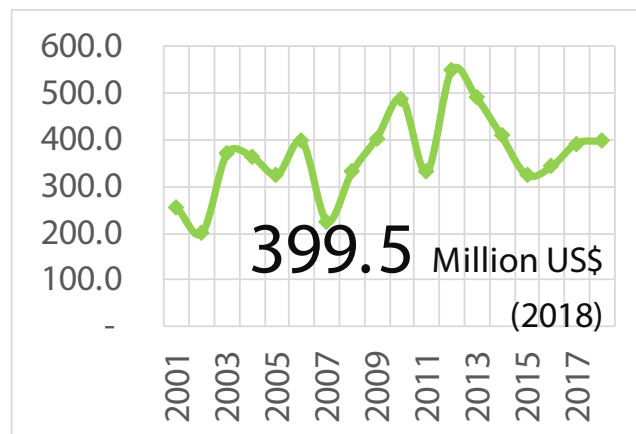


COTTON FIBRE EXPORT DATA

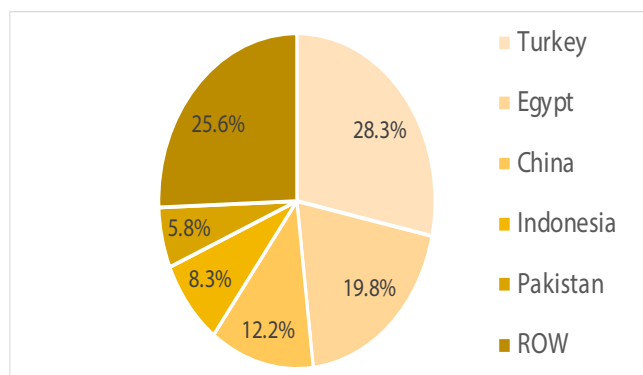
Quantity



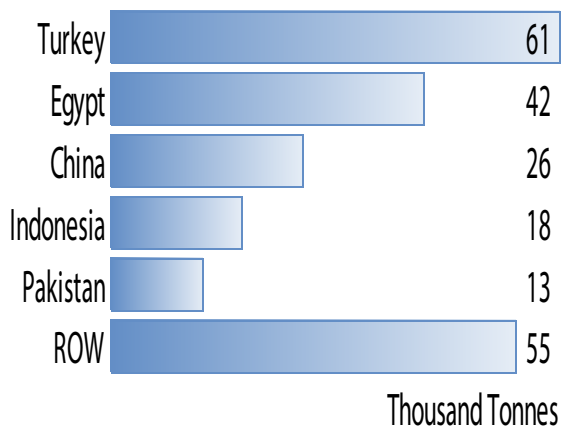
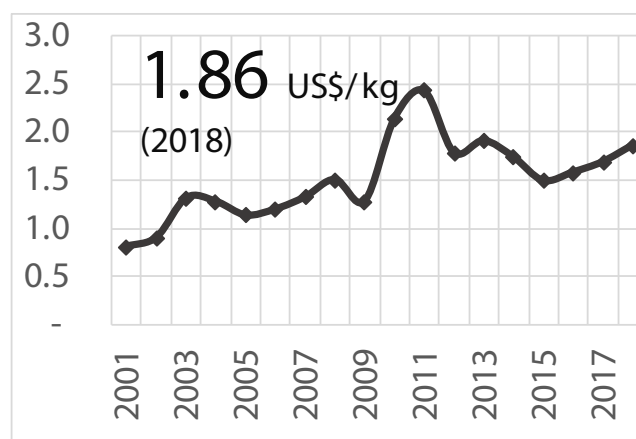
Value



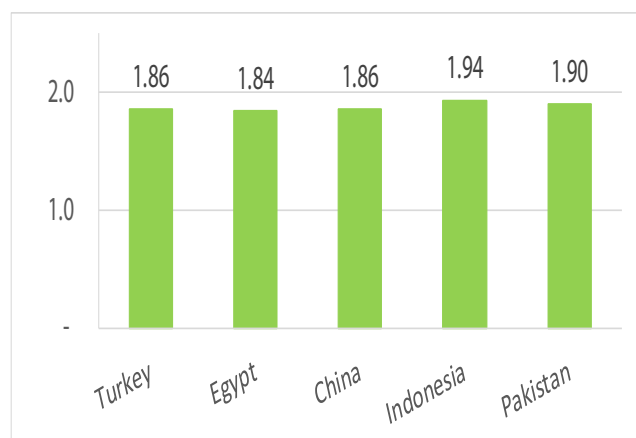
Market Share by Country



Average Price: US\$/Kg

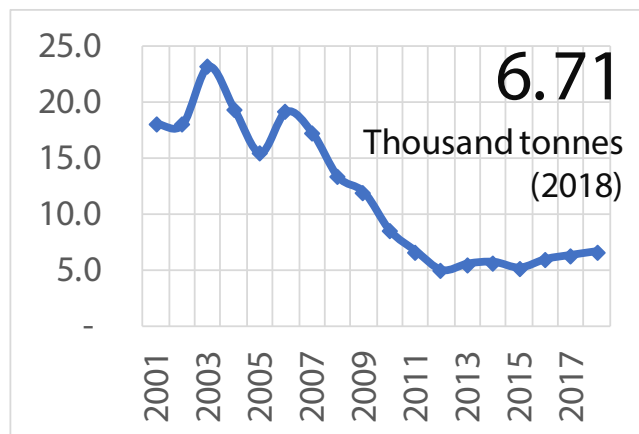


Average Price by Country 2018: US\$/Kg

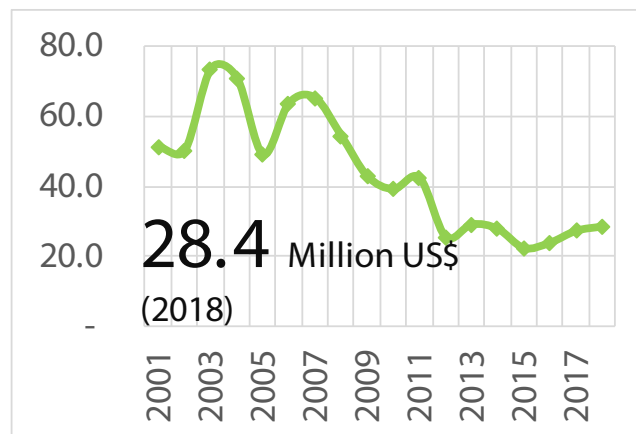


COTTON YARN IMPORT DATA

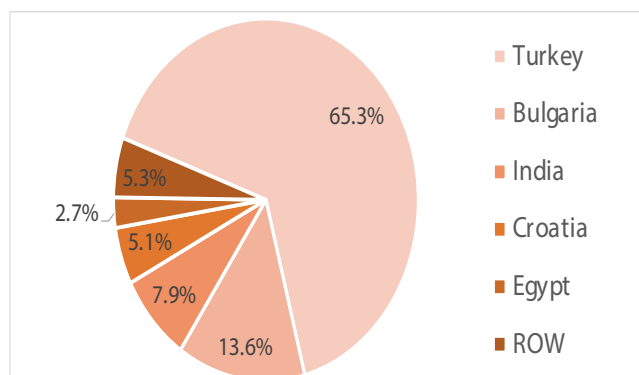
Quantity



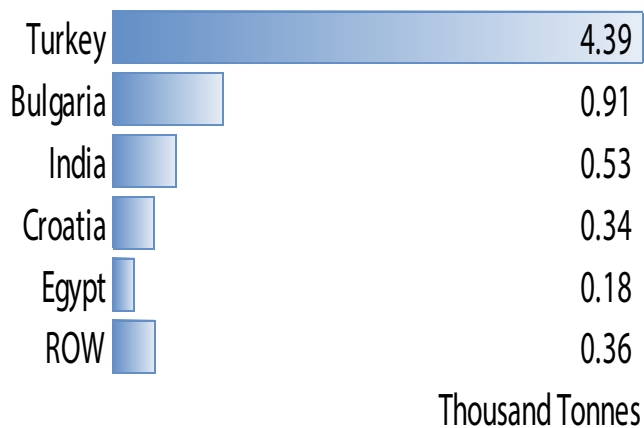
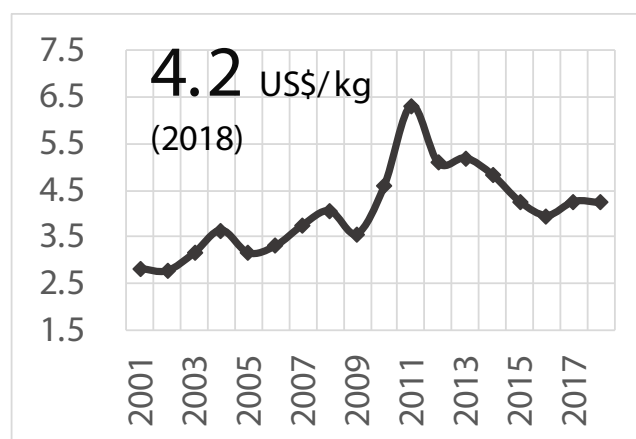
Value



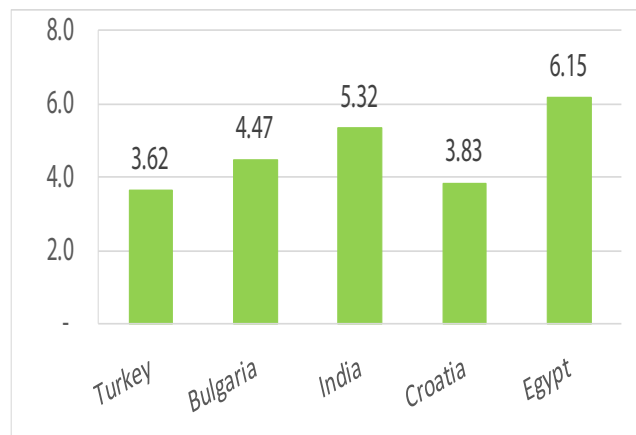
Market Share by Country



Average Price: US\$/Kg

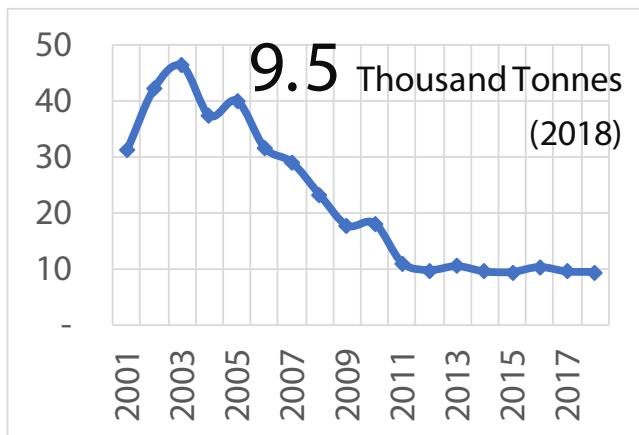


Average Price by Country 2018: US\$/Kg

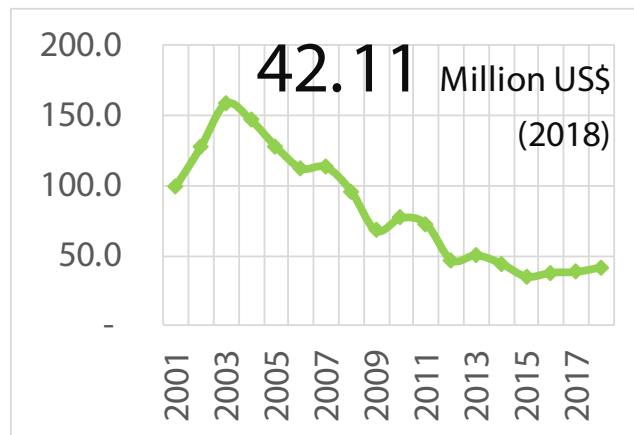


COTTON YARN EXPORT DATA

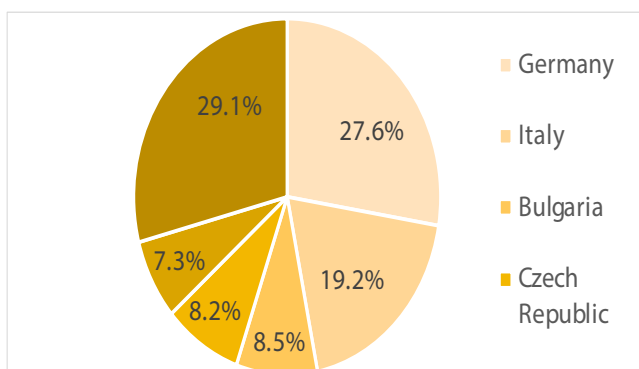
Quantity



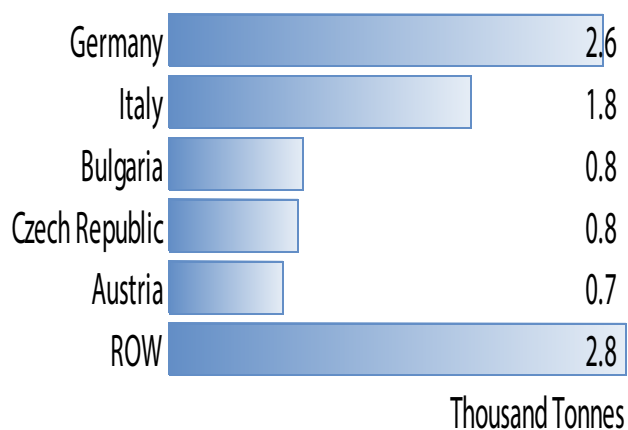
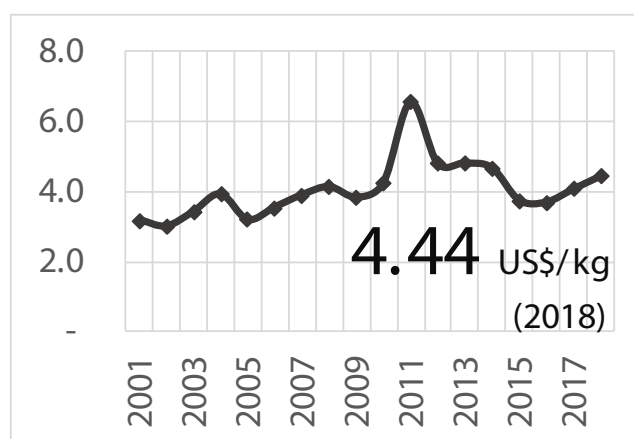
Value



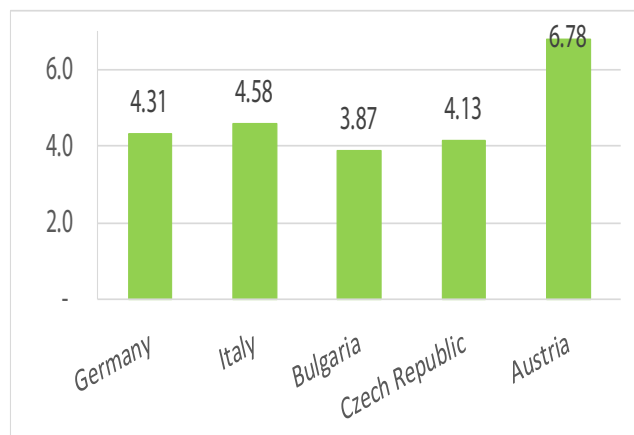
Market Share by Country



Average Price: US\$/Kg

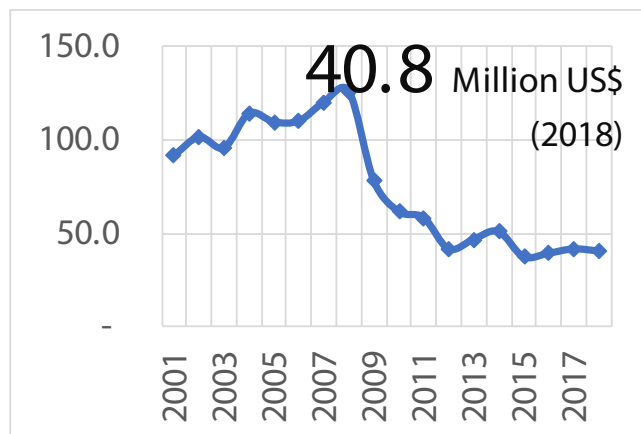


Average Price by Country 2018: US\$/Kg

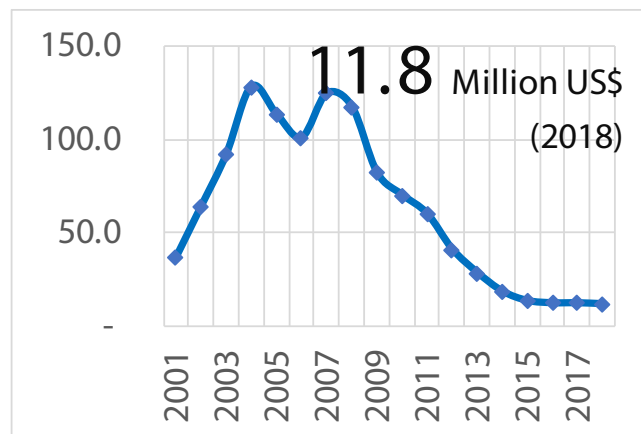


COTTON FABRIC TRADE DATA

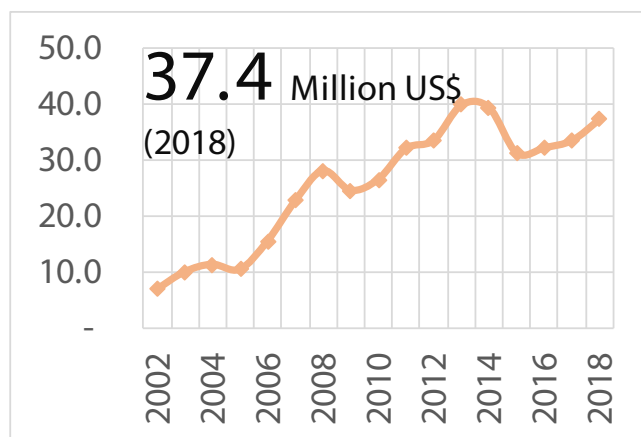
Woven Cotton Fabric Imports



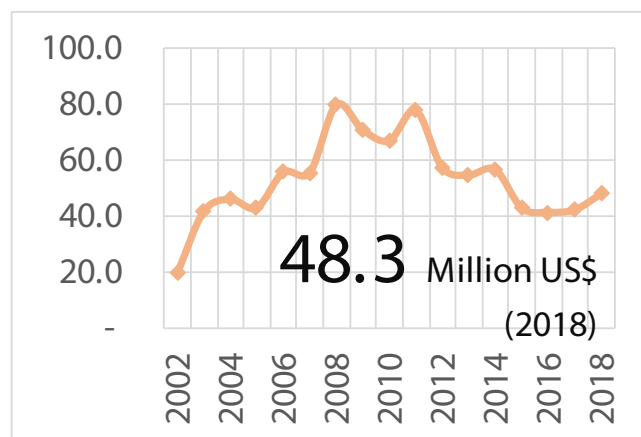
Woven Cotton Fabric Exports



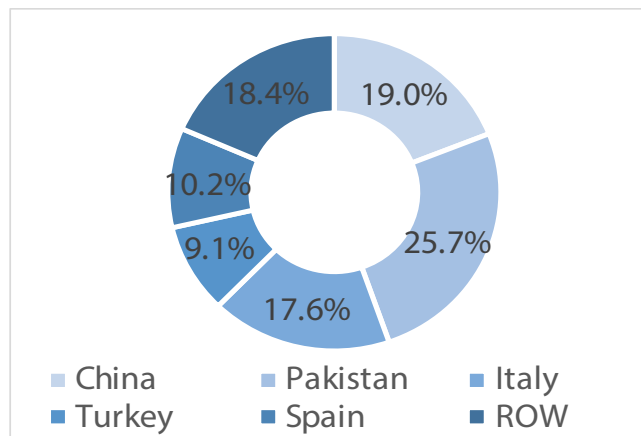
Knitted Cotton Fabric Imports



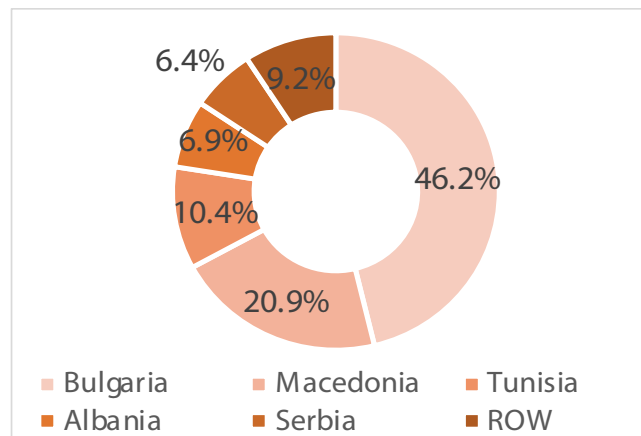
Knitted Cotton Fabric Exports



Market Share Imports by Country - 2018 Woven Cotton Fabric

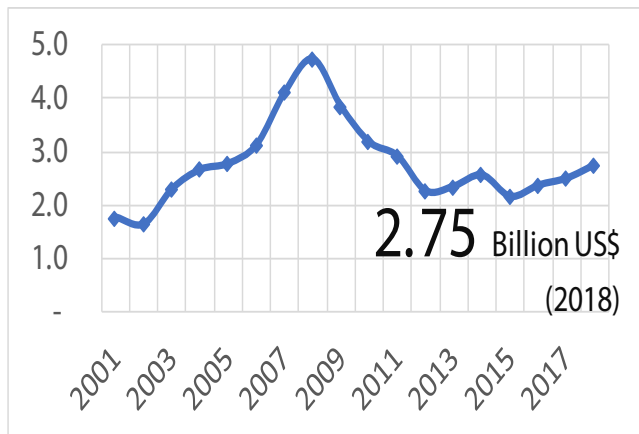


Market Share Exports by Country - 2018 Knitted Cotton Fabric

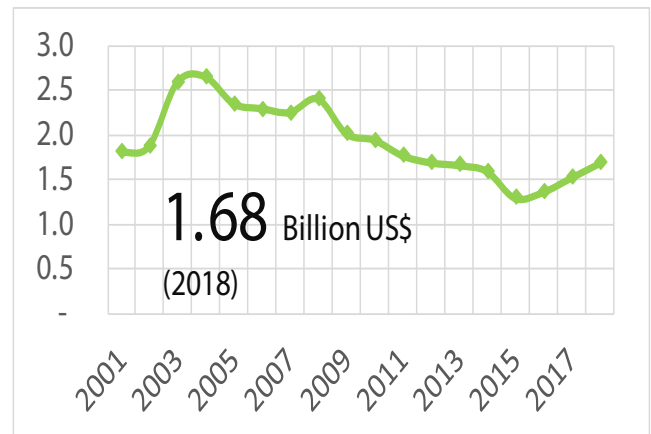


TEXTILE & APPAREL TRADE DATA

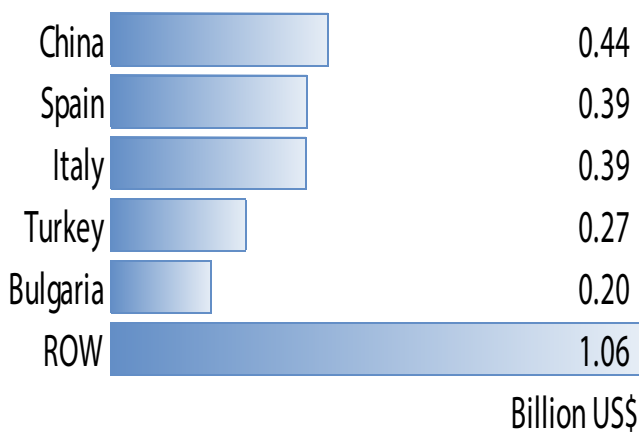
Imports



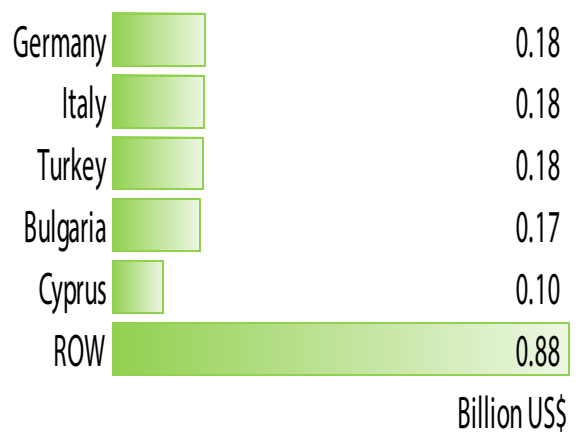
Exports



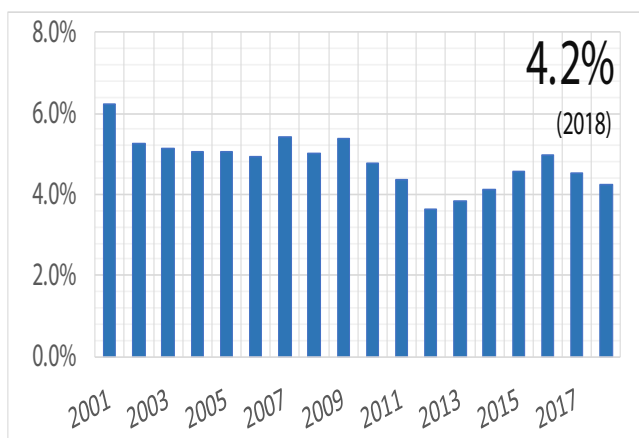
Imports by Country - 2018



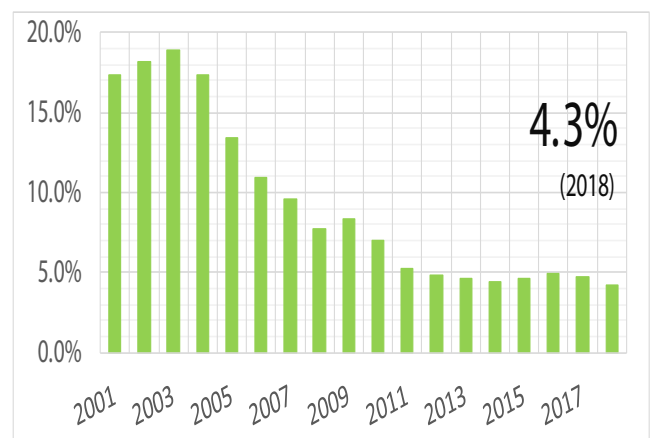
Exports by Country - 2018



T&A Imports Share in Overall Imports

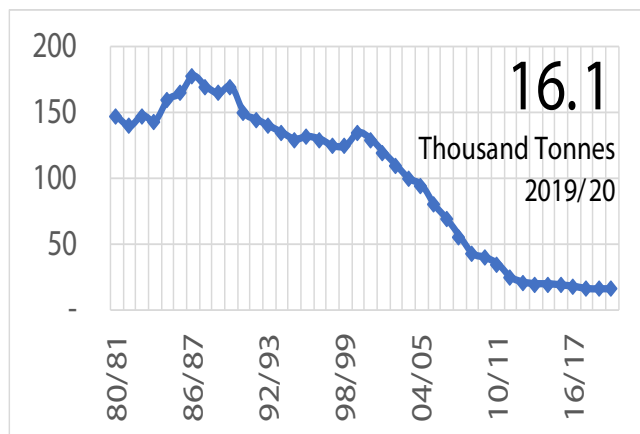


T&A Exports Share in Overall Exports



COMPOSITION OF THE TEXTILE & APPAREL INDUSTRY

Cotton Mill Use



Spinning Machinery

220 Air-Jet Spindles
5,700 Open-End
147,000 Short-Staple Spindles

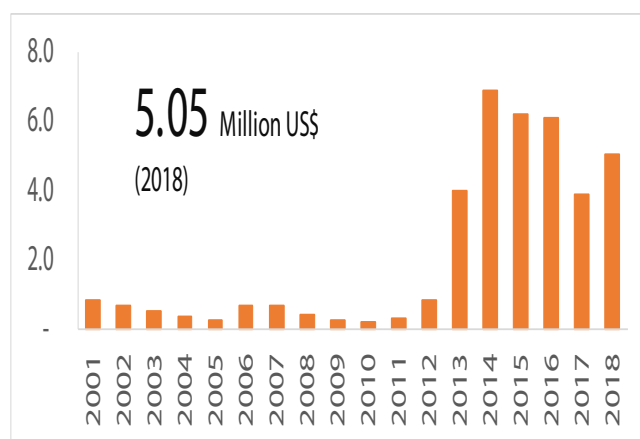
Weaving Machinery

2,000 Shuttle Looms
60 Shuttle-less Looms

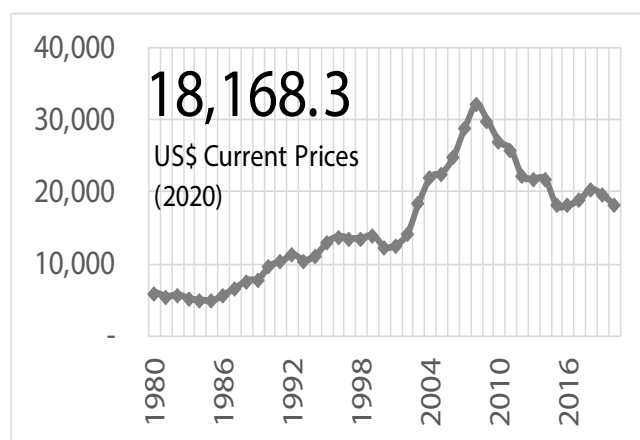
Organic Cotton Produced in
2018/19

1,168 tonnes

Imports - Worn Clothing & Articles

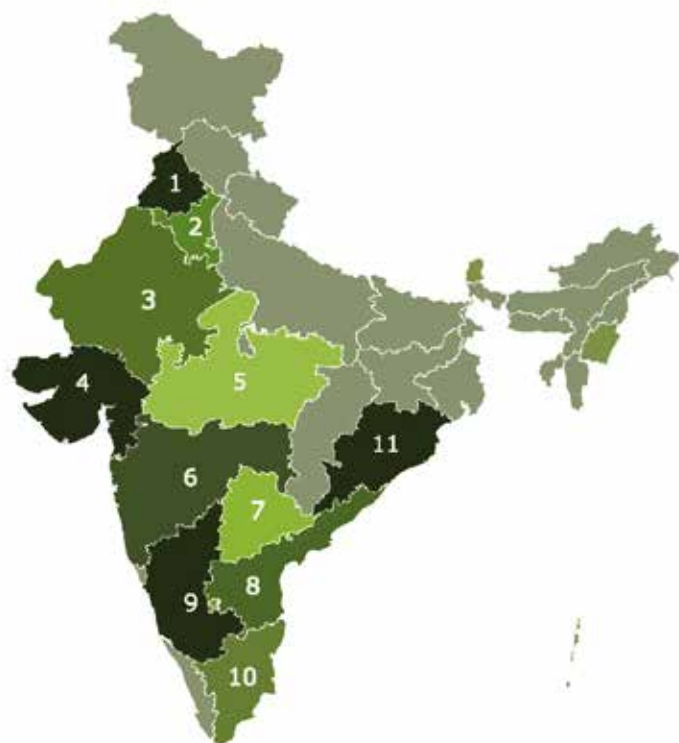


GDP per capita





Basic Data 2020



Arable Area
156,416
'000 Hectares

Cotton Area
12,957
'000 Hectares

Production
6,271
'000 Tonnes

Lint Yield
484
Kg/Hectare

Consumption
5450
'000 Tonnes

Lint Exports
1144
'000 Tonnes

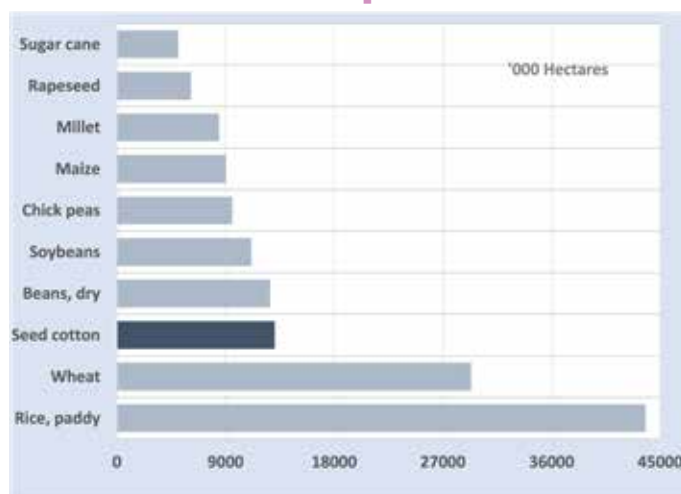
Farmers
6,157,385
Male

Farmers
4,104,922
Female

PRODUCTION 2020

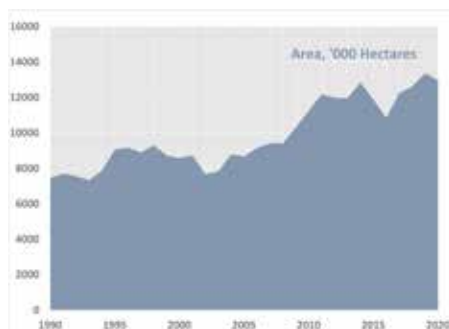
		Area '000 Ha	Yield Kg/Ha	Production '000 Tonnes
1	Punjab	501	407	204
2	Haryana	737	577	425
3	Rajasthan	672	683	459
4	Gujarat	2273	677	1539
5	Madhya Pradesh	644	544	350
6	Maharashtra	4184	349	1460
7	Telangana	2373	430	1020
8	Andhra Pradesh	524	584	306
9	Karnataka	721	472	340
10	Tamilnadu	155	548	85
11	Odisha	168	455	76
National		12957	484	6271

Area of Crops '000 Ha

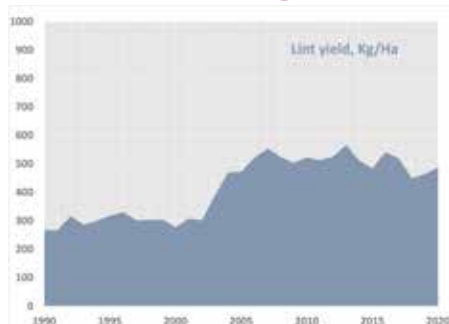


PRODUCTION

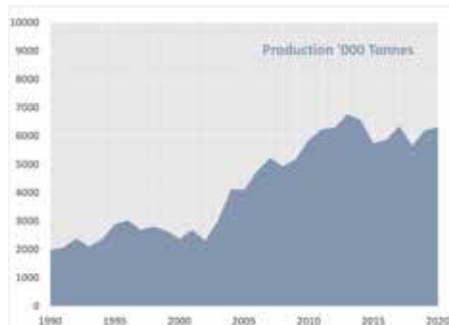
Cotton Area '000 Hectares



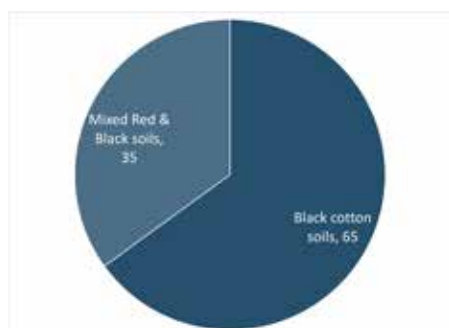
Lint Yield Kg/Ha



Production '000 Tonnes

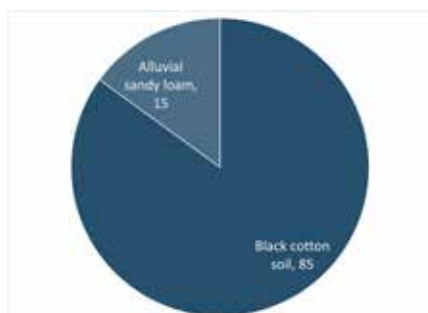


Soil Types- AP & Telangana

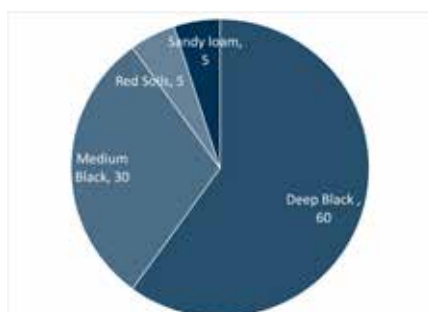


SOILS

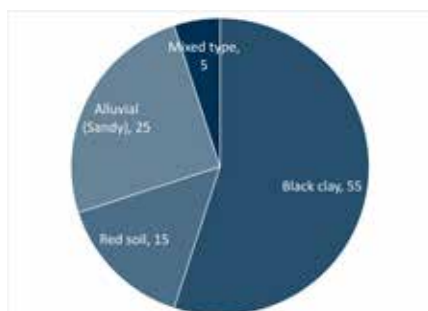
Soil Types -Gujarat



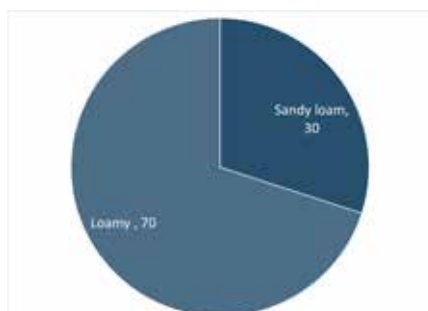
Soil Types -Karnataka



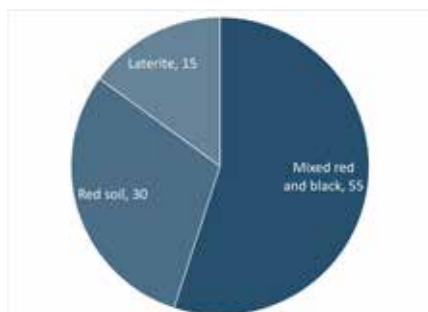
Soil Types -MP & Maharashtra



Soil Types -North India

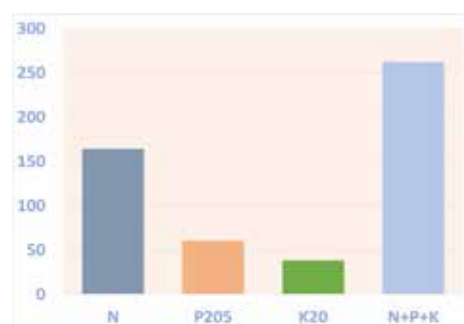


Soil Types -Odisha

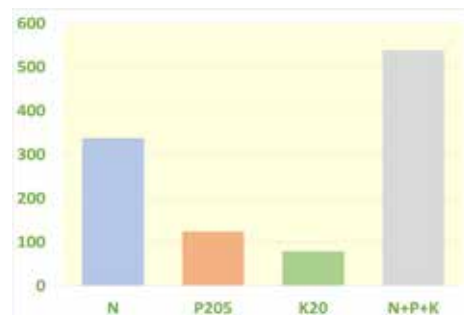


FERTILISERS

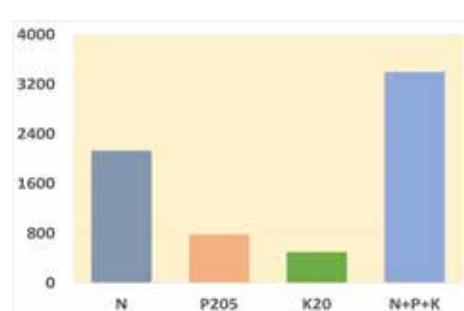
Fertiliser (NPK) use Kg/Hectare



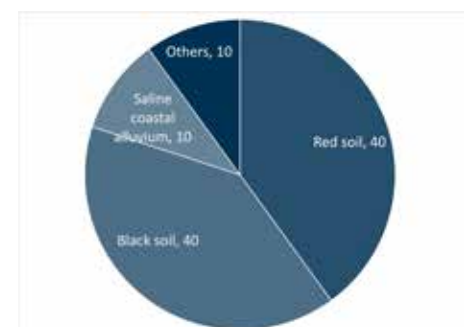
Fertiliser (NPK) use per Kg Lint



Fertiliser (NPK) use '000 Tons



Soil Types -TamilNadu



Seeds Used for Sowing (%)

National	0	100	100	0
	Fuzzy Seeds	Delinted	Chemical Treated	Untreated

Planting Method (%)

	100	0	100	0
National	Manual	Machine	Local	Imported

Seed Source (%)

Use of Cotton Seeds (% Use)

Punjab	95	3	1	1
Haryana	96	3	1	0
Rajasthan	95	3	2	0
Gujarat	90	10	0	0
Madhya Pradesh	88	10	0	2
Maharashtra	80	18	1	1
Karnataka	90	10	0	0
Telangana	90	8	1	1
Andhra Pradesh	95	5	0	0
Odisha	80	15	2	3
Tamilnadu	98	1	1	0
National	91	7	1	1
	Oil Crushing	Cattle-feed	Sowing	Wasted

Seed Rate, Spacing & Plant Population/Ha

National	5	90	30	37,037
National	4	90	45	24,691
National	3	90	60	18,519
National	2	90	90	12,346
National	2	120	60	13,889
National	1.5	120	90	9,259
	Seed rate Kg/Ha	Between rows cm	Within row cm	Plant population per Hectare

Tillage Methods (% Area)

Punjab	0	95	5	100
Haryana	0	100	0	100
Rajasthan	0	100	0	100
Gujarat	5	95	5	95
Madhya pradesh	20	80	20	80
Maharashtra	10	90	10	90
Karnataka	10	90	10	90
Telangana	10	90	10	90
Andhra Pradesh	5	95	5	95
Odisha	25	75	25	75
Tamilnadu	10	90	10	90
National	8	92	8	92
	Zero Tillage	Disc Plough	Chisel Plough	Conventional Tillage

Use of Cotton Stalks (% Use)

Punjab	20	20	10	50
Haryana	25	25	10	40
Rajasthan	10	20	5	65
Gujarat	0	20	5	75
Madhya pradesh	10	35	5	50
Maharashtra	15	55	0	30
Karnataka	5	25	0	70
Telangana	5	50	0	45
Andhra Pradesh	5	35	0	60
Odisha	5	60	0	35
Tamilnadu	10	65	0	25
National	10	40	2	48
	Burnt in Fields	Used as Firewood	Ploughed Back	Stacked on Bunds

WATER

Rainwater & Irrigation water (mm)

AP	1,200	806	2	45
Gujarat	980	628	2	90
Haryana	625	399	6	390
Karnataka	980	628	2	65
MP	1,062	681	2	58
Maharashtra	1,100	706	2	60
Odisha	1,650	1,061	0	0
Punjab	449	286	6	360
Rajasthan	367	233	5	175
Tamilnadu	998	640	3	90
Telangana	1,020	654	1	41
National	975	627	2	169
	Total Rainfall	Effective Rainfall	No. of Irrigations	Irrigation Water/Ha

Methods of Irrigation (% Area)

AP	15	75	3	7
Gujarat	10	85	0	5
Haryana	80	14	0	6
Karnataka	10	80	0	10
MP	34	55	0	11
Maharashtra	25	65	0	10
Odisha	0	100	0	0
Punjab	90	4	0	6
Rajasthan	88	7	0	5
Tamilnadu	80	18	0	3
Telangana	52	40	0	8
National	36	56	0	8
	Flood	Furrow	Sprinkler	Drip

Rainfed Area (%) & Water Used /Kg Lint

AP	69	73	240	13,806
Gujarat	28	1,466	953	9,281
Haryana	4	2,769	6,511	6,922
Karnataka	67	154	451	13,313
MP	48	193	551	12,523
Maharashtra	97	68	47	20,222
Odisha	100	0	0	23,308
Punjab	2	1,760	8,633	7,023
Rajasthan	3	1,139	2,482	3,411
Tamilnadu	68	45	530	11,678
Telangana	91	87	85	15,213
National	65	7,755	1,240	12,955
	Rainfed % Area	Irrigation Billion L	Irrigation L/Kg Lint	Rainwater L/Kg Lint

STRUCTURE OF COTTON RESEARCH

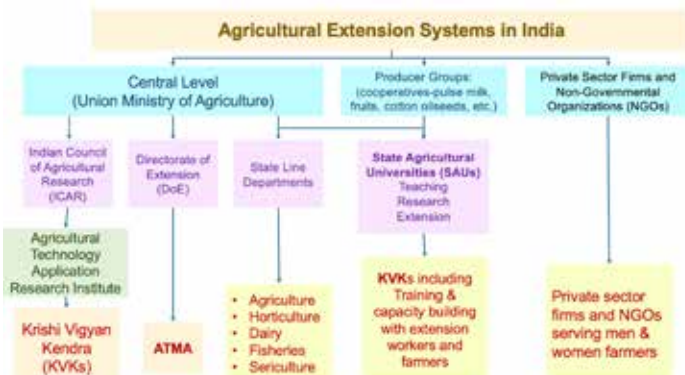
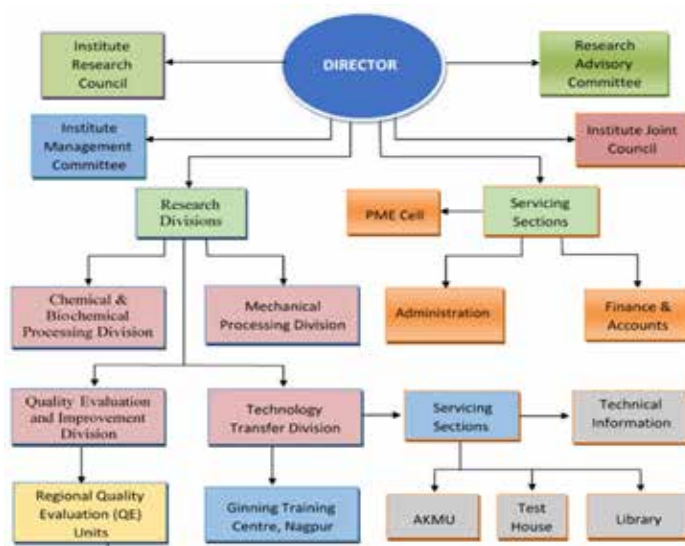
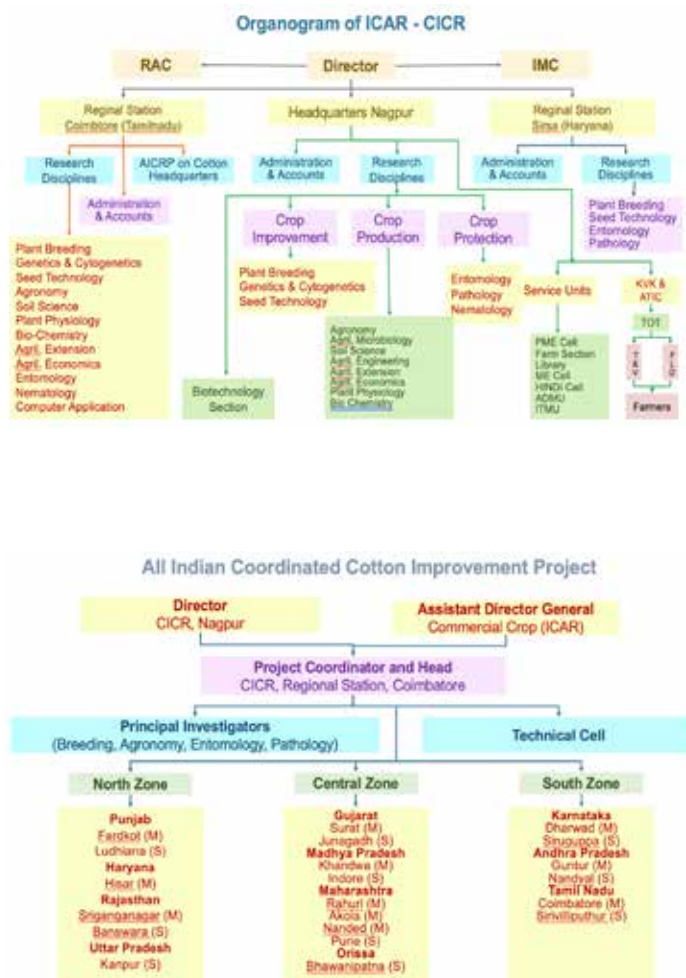
There are two research institutes under the Indian Council for Agricultural Research (ICAR): The ICAR-Central Institute for Cotton Research (CICR) for production research and the ICAR-Central Institute for Research on Cotton Technology (CIRCOT) for research on post-harvest technology and cotton value-chain. Through funding support from the Central Government, the ICAR supports the All India Coordinated Research Project on Cotton (AICRP on Cotton) which has a network of research programmes conducted by the scientists of the State Agricultural Universities in cotton growing states.

THE ICAR-Central Institute for Cotton Research (CICR) Nagpur, is a premier institution of cotton production research in India under the aegis of Indian Council of Agricultural Research (ICAR), New Delhi. It was established in 1976 with headquarters at Nagpur (Maharashtra) and two Regional Stations at Coimbatore (Tamil Nadu) and Sirsa (Haryana). The institute has a total sanctioned staff strength of 271, with 81 scientists, 72 technical staff, 48 administrative staff and 70 supporting staff. The institute has a 425-acre research farm at Nagpur, 55-acre farm at its regional station Sirsa and 88-acre farm at regional station Coimbatore.

The ICAR-Central Institute for Research on Cotton Technology (CIRCOT), Mumbai, is a premier institution on cotton post-harvest processing and value-addition research. The institute has a total sanctioned staff strength of 266, with 50 scientists, 112 technical staff, 47 administrative staff and 57 supporting staff. The CIRCOT was originally established in the year 1924 by the then Indian Central Cotton Committee (ICCC) under the name of Technological Laboratory (TL).

The All India Coordinated Research Project on Cotton (AICIP) was established by the ICAR in 1967 at Coimbatore, India. Currently, the AICRP on cotton project operates over 21 participating Centres involving 16 State Agricultural Universities including more than 10 voluntary Centres that are involved in cotton research. ICAR research Institutes receive funding from the Ministry of Agriculture, Government of India. Besides, external funds granted by other ministries are also utilised for special research programs. Research institutions under the state agricultural universities receive 75% of the total budget from ICAR and remaining 25% from the respective State Governments.

RESEARCH ORGANOGRAMS



INSECTS, PATHOGENS & WEEDS

INSECT PESTS / INSECTICIDES

TAMILNADU

EARLY-SEASON

Amrasca biguttula

Thrips tabaci

Bemisia tabaci

Aphis gossypii

MID-SEASON

Aleurodicus dispersus

Maconellicoccus hirsutus

Dysdercus cingulatus

Oxycarenus hyalinipennis

Spodoptera litura

INSECTICIDES

Imida-Marshall 200SL

Profenophos 50EC

Acetamprid 20EC

Triazophos

Chlorpyrifos 20EC

Pyriproxyfen (Admiral)

Emamectin benzoate (Affirm)

Fenvalerate (Pyrethroids)

Tank mixes of insecticides

DISEASES / PATHOGENS

TAMILNADU

DISEASES / PATHOGENS

Alternaria macrospora

Myrothecium oridum

Tobacco streak virus

Phakopsora gossypii

M. oridum

CHEMICAL CONTROL

Indofil M-45

Carbendazim

WEEDS / HERBICIDES

TAMILNADU

NARROW-LEAF WEEDS

Cyperus rotundus

Cynodon dactylon

Panicum repens

Chloris barbat

Dactyloctenium aegyptium

BROAD-LEAF WEEDS

Trianthema portulacastrum

Parthenium hysterophorus

Amaranthus viridis

Cleome gynandra

Digeria arvensis

HERBICIDES

Pendimethlin

Quizalofop ethyl

Pyriithiobac sodium

COMPETING CROPS

North

Wheat

AP+Telan-gana

Corn

Chillies

Soybean

Maharash-tra+MP

Sorghum

Soybean

Gujarat

Peanut

Castor

Karnataka

Chickpea

Corn

Wheat

Tamil Nadu

Turmeric

Sugarcane

Rice

ROTATION CROPS

North

Wheat

AP+Telan-gana

Corn

Chillies

Soybean

Maharash-tra+MP

Sorghum

Soybean

Gujarat

Peanut

Castor

Karnataka

Chickpea

Corn

Wheat

Tamil Nadu

Turmeric

Sugarcane

Rice

WEEDING & HARVESTING

Weeding Method (%)

Harvesting Method (%)

	60	40	30	99	1
Punjab	60	40	30	99	1
Haryana	55	45	20	100	0
Rajasthan	70	30	10	100	0
Gujarat	60	40	40	99	1
Madhya pradesh	90	10	5	100	0
Maharashtra	90	10	35	100	0
Karnataka	90	10	15	100	0
Telangana	90	10	15	100	0
Andhra Pradesh	75	25	25	100	0
Odisha	95	5	2	100	0
Tamilnadu	65	35	10	100	0
National	79	21	19	100	0
	Hand	Machine	Herbicide	Hand	Machine

INSECTS, PATHOGENS & WEEDS

INSECT PESTS / INSECTICIDES
NORTH INDIA
EARLY-SEASON
<i>Earias insulana/vittella</i>
<i>Thrips tabaci</i>
<i>Aphis gossypii</i>
MID-SEASON
<i>Bemisia tabaci</i>
<i>Amrasca biguttula biguttula</i>
<i>Helicoverpa armigera</i>
<i>Earias insulana /vittella</i>
<i>Pectinophora gossypiella</i>
INSECTICIDES
Imidacloprid 200SI
Thiamethoxam 25WG
Acetamiprid 20SP
Clothianidin 50%WDG
Diafenthiuron 50WF
Flonicamid 50WG
Acephate 75SP
Triazophos 40EC
Ethion 50EC
Fipronil 5%
Tank mixes of insecticides

INSECT PESTS / INSECTICIDES
AP+TELANGANA
EARLY-SEASON
<i>Amrasca devastans</i>
<i>Thrips tabaci</i>
<i>Aphis gossypii</i>
MID-SEASON
<i>Mirid bug</i>
<i>Aphis gossypii</i>
<i>Bemisia tabaci</i>
<i>Phenacoccus solenopsis</i>
<i>Pectinophora gossypiella</i>
INSECTICIDES
Monorotophos 36%
Acephate 75%
Imidacloprid 17.8%
Acetamiprid 20%
Fipronil 5%
Pyriproxyfen (Admiral)
Diafenthiuron (Pegasus)
Emamectin benzoate (Affirm)
Abamectin (Abamectin)
Fenvalerate (Pyrethroids)
Tank mixes of insecticides

INSECT PESTS / INSECTICIDES
KARNATAKA
EARLY-SEASON
<i>Amrasca devastans</i>
<i>Thrips tabaci</i>
<i>Creontiades biseratense</i>
MID-SEASON
<i>Aphis gossypii</i>
<i>Lygus bug</i>
<i>Bemisia tabaci</i>
<i>Phenacoccus solenopsis</i>
<i>Pectinophora gossypiella</i>
INSECTICIDES
Monorotophos 36%
Acephate 75%
Imidacloprid 17.8%
Acetamiprid 20%
Fipronil 5%
Pyriproxyfen (Admiral)
Diafenthiuron (Pegasus)
Emamectin benzoate (Affirm)
Tank mixes of insecticides

DISEASES / PATHOGENS
NORTH INDIA
DISEASES / PATHOGENS
<i>Cotton leaf curl virus</i>
<i>Fusarium oxysporum</i>
<i>Xanthomonas axonopodis</i>
<i>Rhizoctonia solani</i>
<i>A. gossypina /macrospora</i>
CHEMICAL CONTROL
Carbendazim 50WP
Copper-oxychloride 50WP
Streptocycline

DISEASES / PATHOGENS
AP+TELANGANA
DISEASES / PATHOGENS
<i>Bacterial blight</i>
<i>Alternaria macrospora</i>
<i>Ramularia areola</i>
<i>Phakopsora gossypii</i>
CHEMICAL CONTROL
Copper oxychloride
Mancozeb 75WP
Carbendazim

DISEASES / PATHOGENS
KARNATAKA
DISEASES / PATHOGENS
<i>Alternaria leaf spot</i>
<i>Bacterial blight</i>
<i>Ramularia areola</i>
<i>Phakopsora gossypii</i>
CHEMICAL CONTROL
Copper oxychloride 50WP
Mancozeb 75WP
Streptomycin sulphate

WEEDS / HERBICIDES
NORTH INDIA
NARROW-LEAF WEEDS
<i>Acrachne verticillata</i>
<i>Eleusine indica</i>
<i>Cynodon dactylon</i>
<i>Cyperus rotundus</i>
BROAD-LEAF WEEDS
<i>Trianthema portulacastrum</i>
<i>Abutilon indicum</i>
<i>Rumex retroflexus</i>
HERBICIDES
Pendimethlin 30EC
Gramoxone 24WSC
Glyphosate 41%

WEEDS / HERBICIDES
AP+TELANGANA
NARROW-LEAF WEEDS
<i>Cynodon spp.</i>
<i>Cyperus spp.</i>
<i>Echinochloa spp.</i>
<i>Cynotis</i>
BROAD-LEAF WEEDS
<i>Euphorbia geniculata</i>
<i>iCechorus</i>
<i>Parthenium spp.</i>
<i>Digeria arvensis</i>
<i>Amaranthus viridis</i>
HERBICIDES
Pendimethlin 30EC
Quizalofop ethyl 5EC
Pyriathiobac sodium 10EC
Glyphosate 71SG

WEEDS / HERBICIDES
KARNATAKA
NARROW-LEAF WEEDS
<i>Cynodon dactylon</i>
<i>Cyperus rotundus</i>
<i>Cynotis spp.</i>
<i>Echinochloa colona</i>
BROAD-LEAF WEEDS
<i>Euphorbia geniculata</i>
<i>Corchorus spp.</i>
<i>Portulaca oleracea</i>
<i>Digeria arvensis</i>
<i>P. hysterothorus, A viridis</i>
HERBICIDES
Pendimethlin 30EC
Quizalofop ethyl 5EC
Pyriathiobac sodium 10EC
Pendimethalin 38.7CS



INSECTS, PATHOGENS & WEEDS

INSECT PESTS / INSECTICIDES
MAHARASHTRA+MP
EARLY-SEASON
<i>Amrasca biguttula</i>
<i>Thrips tabaci</i>
<i>Bemisia tabaci</i>
<i>Aphis gossypii</i>
MID-SEASON
<i>Amrasca biguttula</i>
<i>Thrips tabaci</i>
<i>Bemisia tabaci</i>
<i>Phenacoccus solenopsis</i>
<i>Pectinophora gossypiella</i>
INSECTICIDES
Imida-Confidor
Thiamethoxam 25WG
Flonicamid (Ulala)
Coragen
Acephate
monocrotophos
Profenophos
Chlorpyrifos
Fenvalerate (Pyrethroids)
Tank mixes of insecticides

INSECT PESTS / INSECTICIDES
GUJARAT
EARLY-SEASON
<i>Amrasca biguttula</i>
<i>Thrips tabaci</i>
<i>Bemisia tabaci</i>
<i>Aphis gossypii</i>
MID-SEASON
<i>Amrasca biguttula</i>
<i>Thrips tabaci</i>
<i>Bemisia tabaci</i>
<i>Phenacoccus solenopsis</i>
<i>Pectinophora gossypiella</i>
INSECTICIDES
Monocrotophos 36%
Acephate 75%
Imidacloprid 17.8%
Acetamiprid 20%
Fipronil 5%
Pyriproxyfen (Admiral)
Diafenthiuron (Pegasus)
Emamectin benzoate (Affirm)
Deltamethrin (Pyrethroids)
Tank mixes of insecticides

INSECT PESTS / INSECTICIDES
ORISSA
EARLY-SEASON
<i>Amrasca biguttula</i>
<i>Thrips tabaci</i>
<i>Bemisia tabaci</i>
<i>Aphis gossypii</i>
MID-SEASON
<i>Amrasca biguttula</i>
<i>Thrips tabaci</i>
<i>Bemisia tabaci</i>
<i>Phenacoccus solenopsis</i>
<i>Pectinophora gossypiella</i>
INSECTICIDES
Imidacloprid
Thiamethoxam 25WG
Flonicamid
Acephate
Chlorantraniliprole
Pyriproxyfen (Admiral)
Emamectin benzoate (Affirm)
Fenvalerate (Pyrethroids)
Tank mixes of insecticides

DISEASES / PATHOGENS
MP+MAHARASHTRA
<i>Bacterial blight</i>
<i>Sudden wilt</i>
CHEMICAL CONTROL
Streptocycline 100
Copper-oxychloride

DISEASES / PATHOGENS
GUJARAT
<i>Xanthomonas campestris</i>
<i>Sudden wilt</i>
CHEMICAL CONTROL
Streptocycline 100
Copper-oxychloride
Mercaptothion

DISEASES / PATHOGENS
ORISSA
<i>Bacterial blight</i>
CHEMICAL CONTROL
Streptocycline 100
Copper-oxychloride
Mercaptothion

WEEDS / HERBICIDES
MP+MAHARASHTRA
NARROW-LEAF WEEDS
<i>Cyperus rotundus</i>
<i>Digitaria ciliaris</i>
<i>Dinebra retroflexa</i>
BROAD-LEAF WEEDS
<i>Digeria muricata</i>
<i>Celosia argentea</i>
<i>Commelina spp.</i>
<i>Cyanotis axillaris</i>
<i>Euphorbia hirta</i>
HERBICIDES
Pendimethalin
Pyrothiobac sodium
Quizalofop ethyl

WEEDS / HERBICIDES
GUJARAT
NARROW-LEAF WEEDS
<i>Cyperus rotundus</i>
<i>Digitaria ciliaris</i>
<i>Dinebra retroflexa</i>
BROAD-LEAF WEEDS
<i>Digeria muricata</i>
<i>Celosia argentea</i>
<i>Commelina sp</i>
<i>Cyanotis axillaris</i>
<i>Euphorbia hirta</i>
HERBICIDES
Pendimethalin
Pyrothiobac sodium
Quizalofop ethyl

WEEDS / HERBICIDES
ORISSA
NARROW-LEAF WEEDS
<i>Cyperus rotundus</i>
<i>Digitaria ciliaris</i>
<i>Dinebra retroflexa</i>
BROAD-LEAF WEEDS
<i>Digeria muricata</i>
<i>Celosia argentea</i>
<i>Commelina sp</i>
<i>Cyanotis axillaris</i>
<i>Euphorbia hirta</i>
HERBICIDES
Pendimethalin, Glyphosate
Pyrothiobac sodium
Quizalofop ethyl



PUNJAB: VARIETIES AND FIBRE TRAITS

	Release Year	% Area	Ginning %	Length UHML mm	Strength g/tex	Mic
RCH773 BGII	2012	40	35-36	26-27.5	29-30	4.5
RCH776 BGII	2012	30	34-35.5	27-28	28-30	4.4
RCH650 BGII	2010	5	35-36	28-29	29-31	4.5
RCH653 BGII	2010	2	35-36.5	27-28	29-30	4.5
SAKTHI9 BGII	2010	0.9	34-35	28-29	30-31	4.3
MRCH 7365BG-II	2009		35-36.5	27-28	29-30	4.5
Bio 2510-2BG-II	2008		33-35	28-30	21-22	4.2-4.5
SP 7172BG-II	2017		33-36	28-30	21-22	4.2-4.5
SWCH-4755BG-II (US 71- BG II)	2010		33-37	28-31	27-29	4.2-4.6
Bioseed 6488 BG2	2006		33-35	28-30	21-22	4.2-4.5
Bioseed 6588 BG2	2008		33-36	28-30	21-22	4.2-4.5

MADHYA PRADESH: VARIETIES AND FIBRE TRAITS

	Release Year	% Area	Ginning %	Length UHML mm	Strength g/tex	Mic
RCH659 BGII	2010	40	34-35	28-30	29-30	4.3
RCH779 BGII	2014	0.2	35-36	28-29	28-29	4.2
RCH578 BGII	2008	5	34-35	28-29	29-30	4.5
RCH530 BGII	2009	3	34-35	28-29	29-30	4.5
RCH386 BGII	2010	7	34-35	28-30	29-30	4.2
RCH2 BGII	2007	1	35-36	29-30	27-28	4.3
RCHB625BGII	2010	1	30-31	37-38	34-36	3.5
RCHB708BGII	2014	1	29-30	36-37	34-35	4
Ajeet-155 BG2	2007		35	30-32	29-30	4.0-4.5
Mallika BG2	2008		36	30-32	28-29	4.0-4.5
ACH 155 BG2	2010		36-37	29-30	29-30	4.3
Suraj	2008		34	30-32	27-28	4
Gold Cot (NCS 909)	2009		34-35	28-30	29-30	4.3
Super Cot (PCH 115)	2009		33-34	28-31	29-30	4.2
Money Maker (KCH 100)	2010		34-35	28-30	28-29	4.4
Moksha (KCH- 15 K 39)	2009		34-35	28-29	29-30	4.3



MAHARASHTRA: VARIETIES AND FIBRE TRAITS

	Release Year	% Area	Ginning %	Length UHML mm	Strength g/tex	Mic
RCH659 BGII	2010	16	34-35	28-30	29-30	4.3
RCH779 BGII	2012	4	35-36	28-29	28-29	4.2
RCH578 BGII	2008	7	34-35	28-29	29-30	4.5
RCH530 BGII	2009	2	34-35	28-29	29-30	4.5
RCH386 BGII	2010	5	34-35	28-30	29-30	4.2
RCH2 BGII	2007	1	35-36	29-30	27-28	4.3
RCH608 BGII	2009	0.2	37-38	28-29	28-29	4.3
Suraj	2008		34	30-32	27-28	4
AKH 081	1984		34	25	24	4.2
NH 615	2007		35	27.8	20.6	3.5
AKA 07	2007		40	22	20	4.8
Ajeet-155 BG2	2007		35	30-32	28-29	4.0-4.5
Mallika (NCS 207 BG II)	2008		36	30-32	29-30	4.0-4.5
Surpass First Class (SP 7149)	2011		34-35	28-30	29-30	4.2
Jaadoo BG2	2009		34-35	28-29	29	4.5
Money Maker	2010		34	28-29	29-30	4.2
ATM (KCH-311)	2010		34-35	28-30	29-30	4.3
Ankur 3028	2009		35	29-30	27-28	4.3
Bindass (7213-2 BG II)	2010		33-34	28-29	28-29	4
Vittal (GBCH 8888)	2012		34	29-30	28	4.2

HARYANA: VARIETIES AND FIBRE TRAITS

	Release Year	% Area	Ginning %	Length UHML mm	Strength g/tex	Mic
RCH773 BGII	2014	25	35-36	26-27.5	29-30	4.5
RCH776 BGII	2012	30	34-35.5	27-28	28-30	4.4
RCH650 BGII	2010	7	35-36	28-29	29-31	4.5
RCH653 BGII	2010	2	35-36.5	27-28	29-30	4.5
Bioseed 6488 BG2	2006		33-35	28-30	21-22	4.2-4.5
Bioseed 6588 BG2	2008		33-36	28-30	21-22	4.2-4.5
SP7172BG-II			33-37	28-31	27-29	4.2-4.6
SWCH-4744BG-II	2010		33-38	27-29	27-30	4.2-4.7
RCH773BG-II	2017		33-39	28-29	27-31	4.2-4.8
Ankur3028BG-II	2009		33-40	27-29	27-32	4.2-4.9

RAJASTHAN: VARIETIES AND FIBRE TRAITS

	Release Year	% Area	Ginning %	Length UHML mm	Strength g/tex	Mic
RCH773 BGII	2014	5	35-36	26-27.5	29-30	4.5
RCH776 BGII	2012	20	34-35.5	27-28	28-30	4.4
RCH650 BGII	2010	8	35-36	28-29	29-31	4.5
RCH653 BGII	2010	2	35-36.5	27-28	29-30	4.5
RCH314 BGII	2009	25	35-36	26-27.5	29-30	4.5
RCH569 BGII	2008	15	35-36	29-31.5	30-31	4.2
SP7172BG-II			31.7	28.9	28.5	3.8
SWCH4755BG-II	2010		34.3	30.9	28.8	3.7
NCS495BG-II	2012		34.5	32.5	29.1	3.25
MRCH7365BG-II	2009		33.4	30.2	28.7	3.45
ACH 155 BG2	2010		35	29-30	29-31	4.3

TAMILNADU: VARIETIES AND FIBRE TRAITS

	Release Year	% Area	Ginning %	Length UHML mm	Strength g/tex	Mic
RCH659 BGII	2010	40	35-36	29-31.5	29-30	4.3
RCH668 BGII	2011	3	36-37	28-30	28-29	4.5
RCH578 BGII	2011	5	35-36	28-30	29-30	4.5
RCH530 BGII	2007	3	35-37	28-29	29-30	4.5
RCH386 BGII	2014	8	35-36	28-30	29-30	4.3
Jaadoo BG2	2009			30-32	21-23	4.0-4.5
BHAKTI BG-II (NCS 245)	2012		35-36	27-32	25-28	4-4.9
Puli (Bioseed 6188-II HB)	2011	4	34-35	32-34	32.5	3.5
Bahubali (MRC 7918)	2008		35-36	28-30	25-28	3.5
Subari	1993	5	34	32.5	22.6	3.8
MCU 5	1968	2	34	34	23	3.5
MCU 7	1972	1	34	26	21.5	3.9
SVPR 2	2000	2	33.5	26.5	21.3	4.2
SVPR 4	2009	1	34	28	22	4
Suraj	1992	5	36	34	24	3.6
Anjali	1982	1	38	28	21	3.4
LRA 5166	1982	4	33	26	21	3.8
ATM (KCH 311 BG II)	2010		34-35	28-30	29-30	4.3
Money Maker (KCH-100 BG II)	2010		34	28-29	29-30	4.2



GUJARAT: VARIETIES AND FIBRE TRAITS

	Release Year	% Area	Ginning %	Length UHML mm	Strength g/tex	Mic
RCH659 BGII	2010	10	34-35	28-31	29-30	4.3
RCH779 BGII	2012	0.2	35-36	28-29	28-29	4.2
RCH578 BGII	2008	6	34-35	28-29	29-30	4.5
RCH530 BGII	2009	2	34-35	28-29	29-30	4.5
RCH386 BGII	2010	2	34-35	28-30	29-30	4.2
RCH2 BGII	2007	2	35-36	29-30	27-28	4.3
Mallika BG2	2008		35-36	>32.5	28-29	3-3.9
Jaadoo BG2	2009		35	30-32	28-29	4.3
ATM BG2	2010		35	30-32	28-29	4.2
Ajeet-155 BG2	2010		35	30-32	28-29	4.5
G.Cot.Hy.8 BG II	2012	0.01	35.4	28.8	27-28	4.2
G.Cot.Hy.10 BG II	2015	0.07	33.8	28.8	27-29	4.3
G.Cot.Hy.12 BG II	2015	0.01	33.4	28.8	27-30	4.5
GTHH 49 BG II	2014	0.03	36.3	28.7	27-31	4.4

TELANGANA: VARIETIES AND FIBRE TRAITS

	Release Year	% Area	Ginning %	Length UHML mm	Strength g/tex	Mic
RCH659 BGII	2010	17	35-36	29-31.5	29-30	4.3
RCH386 BGII	2014	10	35-36	28-30	29-30	4.3
RCH530 BGII	2007	7	35-37	28-29	29-30	4.5
RCH668 BGII	2011	5	36-37	28-30	28-29	4.5
RCH578 BGII	2011	7	35-36	28-30	29-30	4.5
MRC 7017 plus BG II	2012		34-35	28-29	29-30	4.2
SADANAND (KSCH-232 BG II)	2015		35-36	28-30	28-29	4.3
AJEET -155 BG-II	2007		34-35	28-29	29-30	4.2
DHANDEV MRC-7373-BG-II	2009		33-35	28-30	28-29	4.4
BHAKTI BG-II (NCS 245)	2012		35-36	27-32	25-28	4-4.9
FIRST CLASS BG-II (SP 7149 BGII)	2011		33-35	28-29	29-30	4.5
Yuva BG2	2010		34	30-32	21-23	4.0-4.5
Aarvinda (Desi)	1998		35	22	20	5.5
Jaadoo BG2	2009		34-35	30-32	21-23	4.0-4.5



ORISSA: VARIETIES AND FIBRE TRAITS

	Release Year	% Area	Ginning %	Length UHML mm	Strength g/tex	Mic
RCH659 BGII	2010	15	35-36	29-31.5	29-30	4.3
RCH668 BGII	2011	4	36-37	28-30	28-29	4.5
RCH578 BGII	2011	3	34-35	28-30	29-30	4.5
RCH530 BGII	2007	3	34-35	28-29	29-30	4.5
RCH386 BGII	2014	4	35-36	28-30	29-30	4.3
JK-Durga	2010		35	32.1	23.4	4.5
Atal	2009		36	33.6	23.2	4.2
Dhanno	2009		36	32.4	23.8	4.5
Gabbar	2007		35	32.6	23.1	4.6
Sri Tulasi	2009		36	33.3	24.1	4.6
Bunny	2005		35	32.4	23.9	4.5

ANDHRA PRADESH: VARIETIES AND FIBRE TRAITS

	Release Year	% Area	Ginning %	Length UHML mm	Strength g/tex	Mic
RCH659 BGII	2010	17	35-36	29-31.5	29-30	4.3
RCH668 BGII	2011	3	36-37	28-30	28-29	4.5
RCH578 BGII	2011	4	35-36	28-30	29-30	4.5
RCH530 BGII	2007	2	35-37	28-29	29-30	4.5
RCH386 BGII	2014	4	35-36	28-30	29-30	4.3
Jaadoo BG2	2009		34-35	30-32	21-23	4.0-4.5
ATM (KCH 311 BG II)	2010		34-35	28-30	29-30	4.3
Money Maker (KCH-100 BG II)	2010		34	28-29	29-30	4.2
Sadanand (KSCH-232 BG II)	2014		35-36	28-30	28-29	4.3
US Agri 7067 (SWCH 4749)	2017		32-33	31-33	31	4
Khiladi (KCHB 3355 BG II)	2015		35-37	28-29	29-30	4.5
SUPERCOT (PCH-115 BGII)	2007		33-34	28-31	29-30	4.2
Zabardast (NCS 2123 BG II)	2012		35-36	28-30	29-30	4.5
Tadaka (KSCH-207)	2010		35-37	28-29	29-30	4.5



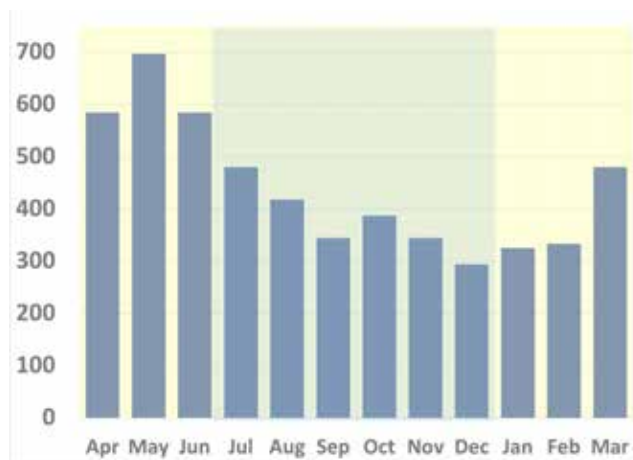
KARNATAKA: VARIETIES AND FIBRE TRAITS

	Release Year	% Area	Ginning %	Length UHML mm	Strength g/tex	Mic
RCH659 BGII	2010	4	35-36	29-31.5	29-30	4.3
RCH668 BGII	2011	0.5	36-37	28-30	28-29	4.5
RCH578 BGII	2011	0.5	35-36	28-30	29-30	4.5
RCH530 BGII	2007	0.5	35-37	28-29	29-30	4.5
RCH386 BGII	2014	1	35-36	28-30	29-30	4.3
RCHB625BGII	2012	1	30-31	37-38	35-37	3.5
RCHB708BGII	2012	1	29-30	36-37	34-35	3.5
Yuva	2010	13	32-33	29-31	29.5	4
US7067	2017	9	32-33	31-33	31	4
Jadoo	2011	8	36.9	30-31.5	30	5.3
Puli (H*B)	2011	9.5	34-35	32-34	32.5	3.5
MRC7383	2013	5.5	34-35	31-32	23	4.2
DHB 1071	2014		33	35-36	26-28	3.2-3.5
DHH 263	2012		38-39	29-30	22-23	4.0-4.5
DHB 915	2010		33.7	34	27	3.4
ARBH-813	2010		36-37	27-28	21-22	4.0-4.5
Sahana	2000		38	24.3	19	4.1
DHH 11	2000		38-39	29.2	19.5	4
DHH 543	2004		37-38	26-29	20.5	4.2
DHB 105	2000		34	32.6	23	2.9
Money Maker (KCH-100 BG II)	2010		34	28-29	29-30	4.2
KAVERI (KCH-111 BG-II)	2009		36	30-31	29-30	5.3
MRC-7383 BG-II (MAHYCO)	2009		35	30	29-30	4.4
FIRST CLASS BG-II	2011		34-35	28-30	29-30	4.3
AJEET -111-2 (AJEET SEEDS)	2012		34	29	29	4.2
DHANDEV MRC-7373-BG-II	2009		33-35	29-30	29-30	4.3
ATM BG-II (KAVERI)	2010		34-35	28-30	29-30	4.3
AJEET -155 BG-II	2007		34-35	28-29	29-30	4.2
BINDASS BG-II (7213-2)	2010		33	30	30	4.2
Minerva (SP 911-B2 BG II)	2012		36	32	32	3.6
Bahubali (MRC 7918 BG II)	2008		35-36	28-30	25-28	3.5



WEATHER 2019-2020

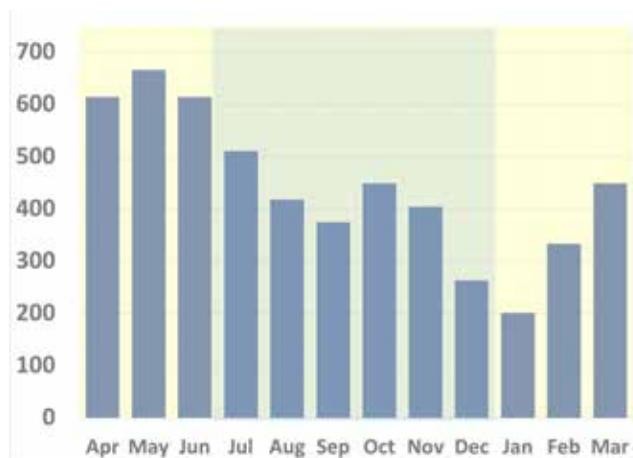
Heat Units (DD₆₀) -Andhra Pradesh



Rainfall (mm) -Andhra Pradesh



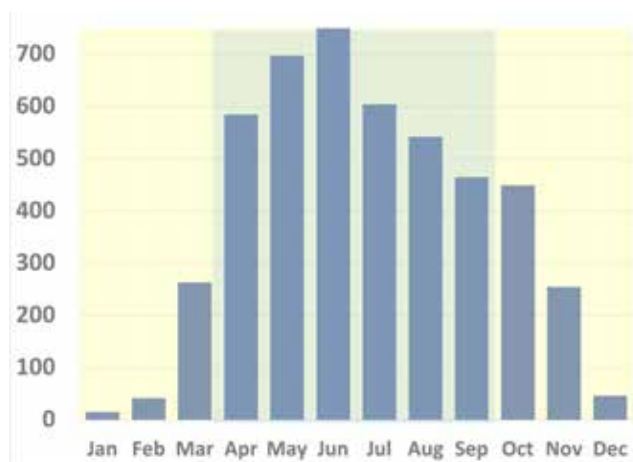
Heat Units (DD₆₀) -Gujarat



Rainfall (mm) -Gujarat



Heat Units (DD₆₀) -Haryana

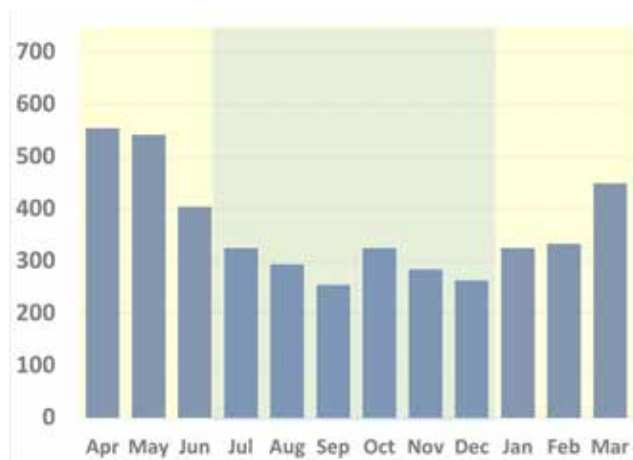


Rainfall (mm) -Haryana



WEATHER 2019-2020

Heat Units (DD₆₀) -Karnataka



Rainfall (mm) -Karnataka



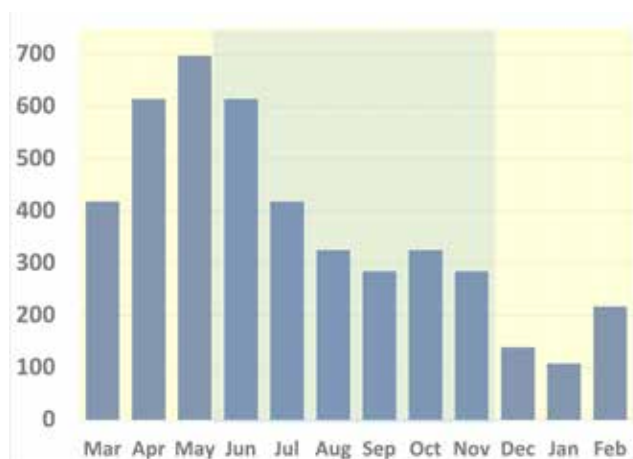
Heat Units (DD₆₀) -Maharashtra



Rainfall (mm) -Maharashtra



Heat Units (DD₆₀) -Madhya pradesh

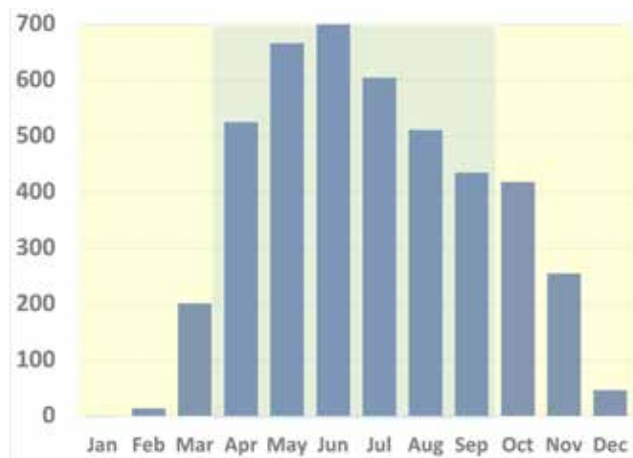


Rainfall (mm) -Madhya pradesh



WEATHER 2019-2020

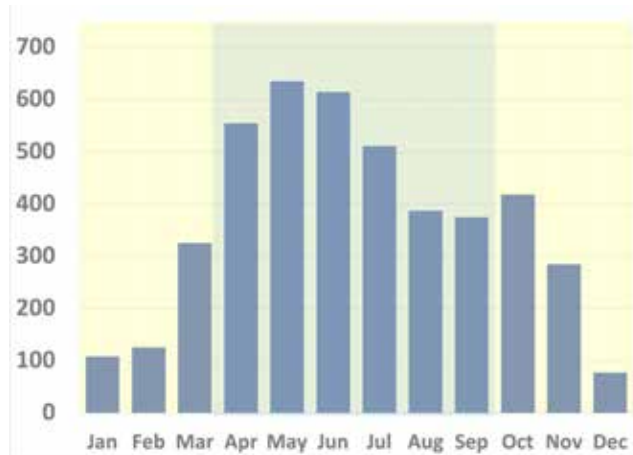
Heat Units (DD₆₀) -Punjab



Rainfall (mm) -Punjab



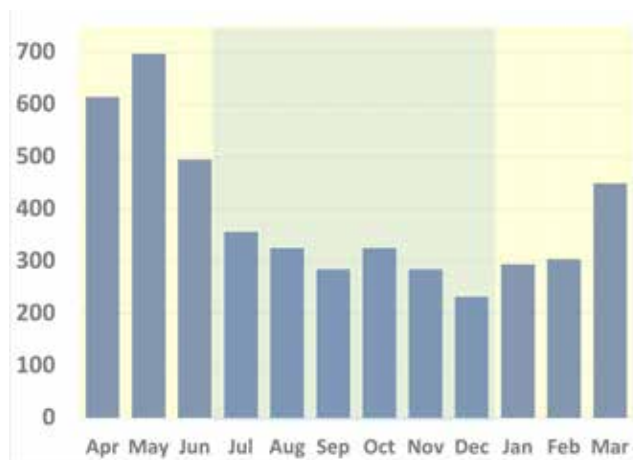
Heat Units (DD₆₀) -Rajasthan



Rainfall (mm) -Rajasthan



Heat Units (DD₆₀) -Telangana



Rainfall (mm) -Telangana



INDIA (National): COST OF CULTIVATION US\$/Hectare

INPUTS	Quantity (Kg/Ha)	Operations per season	Total cost /Ha
Non-GM seeds			
Biotech/GM seeds	2.7	1	53.9
NPK+Other	243.0	2	96.1
Insecticides		5	57.9
Herbicides			
Fungicides			
Growth regulators			
Defoliant			
Manure	1234.2	1	23.6
Others (please specify)			
MANPOWER / LABOUR	Wages per person	Persons per operation	Total cost per hectare
Land preparation /tillage etc.,	3.9	2	7.9
Sowing	2.6	14	36.4
Fertiliser / manure application	3.9	9	34.9
Irrigation	3.2	3	9.7
Thinning		0	0.0
Weeding	2.5	33	83.4
Hoeing		0	0.0
Pesticide application	3.7	18	66.3
Defoliator application		0	0.0
Picking / harvesting	4.4	44	193.2
Stalk cutting & removal	4.0	5	20.1
Transportation /unloading etc.,			0.0
Ginning cost per 100 Kg			70.0
Others (please specify)			0.0
MACHINERY /ANIMALS etc.	Cost per Operation	Number of Operations	Total cost per hectare
Tractors	30.4	3	80.4
Implements & tools			
Electric / Diesel pumps etc.,	12.0	3	33.8
Electricity / Diesel etc.,			
Harvesting machines			
Hoeing / Tillage machinery etc.,			
Bullocks /Buffaloes	16.1	5	73.5
Land rent			246.7
MARKET VALUE	Yield Kg/per hectare	Market value per 100 Kg	Value per hectare
Seed cotton	1424	0.68	968.3
Ginning % (output)	34	0.00	0.0
Lint (fibre)	484	1.66	801.6
Seed	940	0.41	386.2
COST OF CULTIVATION			871
NET RETURNS (SEED-COTTON)			-6
NET RETURNS (SEED + LINT)			247

ANDHRA PRADESH: COST OF CULTIVATION US\$/Hectare

INPUTS	Quantity (Kg/Ha)	Operations per season	Total cost /Ha
Non-GM seeds			
Biotech/GM seeds	3.1	1	71.6
NPK+Other	276.9	2	112.6
Insecticides		7	78.2
Herbicides			
Fungicides			
Growth regulators			
Defoliant			
Manure	782.5	1	5.3
Others (please specify)			
MANPOWER / LABOUR	Wages per person	Persons per operation	Total cost per hectare
Land preparation /tillage etc.,	4.4	2	8.8
Sowing	3.7	11	40.7
Fertiliser / manure application	4.9	8	39.0
Irrigation	5.4	2	10.8
Thinning			0.0
Weeding	3.5	27	93.3
Hoeing			0.0
Pesticide application	5.3	14	74.2
Defoliator application			0.0
Picking / harvesting	5.7	38	216.2
Stalk cutting & removal	5.6	4	22.5
Transportation /unloading etc.,			0.0
Ginning cost per 100 Kg			74.0
Others (please specify)	0.0	0	0.0
MACHINERY /ANIMALS etc.	Cost per Operation	Number of Operations	Total cost per hectare
Tractors	33.9	2	67.7
Implements & tools			
Electric / Diesel pumps etc.,	1.6	1	1.6
Electricity / Diesel etc.,			
Harvesting machines			
Hoeing / Tillage machinery etc.,			
Bullocks /Buffaloes	17.9	5	89.5
Land rent			354.2
MARKET VALUE	Yield Kg/per hectare	Market value per 100 Kg	Value per hectare
Seed cotton	1717	0.59	1010.34
Ginning % (output)	34	0.00	0.00
Lint (fibre)	584	1.66	967.28
Seed	1133	0.41	465.55
COST OF CULTIVATION			932
NET RETURNS (SEED-COTTON)			78
NET RETURNS (SEED + LINT)			427

GUJARAT: COST OF CULTIVATION US\$/Hectare

INPUTS	Quantity (Kg/Ha)	Operations per season	Total cost /Ha
Non-GM seeds			
Biotech/GM seeds	2.0	1	46.3
NPK+Other	218.9	2	77.4
Insecticides		6	47.0
Herbicides			
Fungicides			
Growth regulators			
Defoliant			
Manure	3655.0	1	63.9
Others (please specify)			
MANPOWER / LABOUR	Wages per person	Persons per operation	Total cost per hectare
Land preparation /tillage etc.,	3.9	2	7.9
Sowing	2.4	15	36.4
Fertiliser / manure application	3.2	11	34.9
Irrigation	3.2	3	9.6
Thinning			0.0
Weeding	2.1	39	83.3
Hoeing			0.0
Pesticide application	3.2	21	66.3
Defoliator application			0.0
Picking / harvesting	4.0	48	193.1
Stalk cutting & removal	3.4	6	20.1
Transportation /unloading etc.,			0.0
Ginning cost per 100 Kg			85.0
Others (please specify)	0.0	0	0.0
MACHINERY /ANIMALS etc.	Cost per Operation	Number of Operations	Total cost per hectare
Tractors	30.5	3	91.6
Implements & tools			
Electric / Diesel pumps etc.,	11.1	5	55.7
Electricity / Diesel etc.,			
Harvesting machines			
Hoeing / Tillage machinery etc.,			
Bullocks /Buffaloes	23.9	2	47.8
Land rent			257.8
MARKET VALUE	Yield Kg/per hectare	Market value per 100 Kg	Value per hectare
Seed cotton	1990	0.64	1271.4
Ginning % (output)	34	0	0
Lint (fibre)	677	1.66	1121.3
Seed	1313	0.41	539.5
COST OF CULTIVATION			881
NET RETURNS (SEED-COTTON)			390
NET RETURNS (SEED + LINT)			695

HARYANA: COST OF CULTIVATION US\$/Hectare

INPUTS	Quantity (Kg/Ha)	Operations per season	Total cost /Ha
Non-GM seeds			
Biotech/GM seeds	2.26	1	57.6
NPK+Other	126.15	2	41.2
Insecticides		4	33.2
Herbicides			
Fungicides			
Growth regulators			
Defoliants			
Manure	0.00	1	0.0
Others (please specify)			
MANPOWER / LABOUR	Wages per person	Persons per operation	Total cost per hectare
Land preparation /tillage etc.,	3.32	2	6.7
Sowing	3.42	9	30.8
Fertiliser / manure application	4.93	6	29.6
Irrigation	4.09	2	8.2
Thinning			0.0
Weeding	3.53	20	70.6
Hoeing			0.0
Pesticide application	5.11	11	56.2
Defoliator application			0.0
Picking / harvesting	4.09	40	163.7
Stalk cutting & removal	5.68	3	17.1
Transportation /unloading etc.,			0.0
Ginning cost per 100 Kg			75.0
Others (please specify)	0.00	0	0.0
MACHINERY /ANIMALS etc.	Cost per Operation	Number of Operations	Total cost per hectare
Tractors	40.01	2	80.0
Implements & tools			
Electric / Diesel pumps etc.,	10.64	4	42.6
Electricity / Diesel etc.,			
Harvesting machines			
Hoeing / Tillage machinery etc.,			
Bullocks /Buffaloes	1.48	2	3.0
Land rent			284.4
MARKET VALUE	Yield Kg/per hectare	Market value per 100 Kg	Value per hectare
Seed cotton	1695	0.62	1045.5
Ginning % (output)	34	0	0
Lint (fibre)	577	1.66	955.7
Seed	1118	0.41	459.4
COST OF CULTIVATION			640
NET RETURNS (SEED-COTTON)			405
NET RETURNS (SEED + LINT)			700

KARNATAKA: COST OF CULTIVATION US\$/Hectare

INPUTS	Quantity (Kg/Ha)	Operations per season	Total cost /Ha
Non-GM seeds			
Biotech/GM seeds	12.1	1	59.4
NPK+Other	140.9	2	64.8
Insecticides		5	47.0
Herbicides			
Fungicides			
Growth regulators			
Defoliant			
Manure	694.0	1	12.1
Others (please specify)			
MANPOWER / LABOUR	Wages per person	Persons per operation	Total cost per hectare
Land preparation /tillage etc.,	4.7	1	4.7
Sowing	2.0	11	21.9
Fertiliser / manure application	3.0	7	21.0
Irrigation	2.9	2	5.8
Thinning			0.0
Weeding	2.0	25	50.1
Hoeing			0.0
Pesticide application	3.1	13	39.9
Defoliator application			0.0
Picking / harvesting	3.1	38	116.1
Stalk cutting & removal	3.0	4	12.1
Transportation /unloading etc.,			0.0
Ginning cost per 100 Kg			70.0
Others (please specify)	0.0	0	0.0
MACHINERY /ANIMALS etc.	Cost per Operation	Number of Operations	Total cost per hectare
Tractors	28.9	3	86.6
Implements & tools			
Electric / Diesel pumps etc.,	5.9	2	11.8
Electricity / Diesel etc.,			
Harvesting machines			
Hoeing / Tillage machinery etc.,			
Bullocks /Buffaloes	17.2	4	68.8
Land rent			216.4
MARKET VALUE	Yield Kg/per hectare	Market value per 100 Kg	Value per hectare
Seed cotton	1386	0.68	945.2
Ginning % (output)	34	0.00	0.0
Lint (fibre)	472	1.66	781.8
Seed	914	0.41	375.6
COST OF CULTIVATION			622
NET RETURNS (SEED-COTTON)			323
NET RETURNS (SEED + LINT)			465

MADHYA PRADESH: COST OF CULTIVATION US\$/Hectare

INPUTS	Quantity (Kg/Ha)	Operations per season	Total cost /Ha
Non-GM seeds			
Biotech/GM seeds	1.2	1	32.9
NPK+Other	148.2	2	55.2
Insecticides		6	79.5
Herbicides			
Fungicides			
Growth regulators			
Defoliants			
Manure	1249.5	1	37.1
Others (please specify)			
MANPOWER / LABOUR	Wages per person	Persons per operation	Total cost per hectare
Land preparation /tillage etc.,	3.8	2	7.5
Sowing	2.3	15	34.9
Fertiliser / manure application	3.7	9	33.5
Irrigation	3.1	3	9.3
Thinning			0.0
Weeding	2.4	34	80.0
Hoeing			0.0
Pesticide application	3.5	18	63.6
Defoliator application			0.0
Picking / harvesting	3.6	51	185.5
Stalk cutting & removal	3.9	5	19.3
Transportation /unloading etc.,			0.0
Ginning cost per 100 Kg			80.0
Others (please specify)	0.0	0	0.0
MACHINERY /ANIMALS etc.	Cost per Operation	Number of Operations	Total cost per hectare
Tractors	28.3	2	56.5
Implements & tools			
Electric / Diesel pumps etc.,	10.9	2	21.7
Electricity / Diesel etc.,			
Harvesting machines			
Hoeing / Tillage machinery etc.,			
Bullocks /Buffaloes	18.7	5	93.7
Land rent			254.2
MARKET VALUE	Yield Kg/per hectare	Market value per 100 Kg	Value per hectare
Seed cotton	1630	0.53	864.9
Ginning % (output)	34	0.00	0.0
Lint (fibre)	554	1.66	917.6
Seed	1076	0.41	442.1
COST OF CULTIVATION			810
NET RETURNS (SEED-COTTON)			55
NET RETURNS (SEED + LINT)			469

MAHARASHTRA: COST OF CULTIVATION US\$/Hectare

INPUTS	Quantity (Kg/Ha)	Operations per season	Total cost /Ha
Non-GM seeds			
Biotech/GM seeds	1.9	1	46.7
NPK+Other	299.2	2	123.5
Insecticides		6	57.9
Herbicides			
Fungicides			
Growth regulators			
Defoliant			
Manure	336.0	1	13.1
Others (please specify)			
MANPOWER / LABOUR	Wages per person	Persons per operation	Total cost per hectare
Land preparation /tillage etc.,	3.8	2	7.6
Sowing	2.2	16	35.3
Fertiliser / manure application	3.4	10	33.9
Irrigation	3.1	3	9.4
Thinning			0.0
Weeding	2.2	37	80.9
Hoeing			0.0
Pesticide application	3.2	20	64.4
Defoliant application			0.0
Picking / harvesting	4.5	42	187.5
Stalk cutting & removal	3.3	6	19.5
Transportation /unloading etc.,			0.0
Ginning cost per 100 Kg			48.0
Others (please specify)	0.0	0	0.0
MACHINERY /ANIMALS etc.	Cost per Operation	Number of Operations	Total cost per hectare
Tractors		1	28.3
Implements & tools			
Electric / Diesel pumps etc.,		2	20.4
Electricity / Diesel etc.,			
Harvesting machines			
Hoeing / Tillage machinery etc.,			
Bullocks /Buffaloes		7	30.6
Land rent			160.6
MARKET VALUE	Yield Kg/per hectare	Market value per 100 Kg	Value per hectare
Seed cotton	1245	0.69	859.0
Ginning % (output)	32	0.00	0.0
Lint (fibre)	398	1.68	578.0
Seed	847	0.41	347.0
COST OF CULTIVATION			759
NET RETURNS (SEED-COTTON)			99
NET RETURNS (SEED + LINT)			49

ODISHA: COST OF CULTIVATION US\$/Hectare

INPUTS	Quantity (Kg/Ha)	Operations per season	Total cost /Ha
Non-GM seeds			
Biotech/GM seeds	1.6	1	39.0
NPK+Other	208.0	2	111.8
Insecticides		3	13.8
Herbicides			
Fungicides			
Growth regulators			
Defoliant			
Manure	1135.0	1	21.5
Others (please specify)			
MANPOWER / LABOUR	Wages per person	Persons per operation	Total cost per hectare
Land preparation /tillage etc.,	4.3	2	8.6
Sowing	2.2	18	39.8
Fertiliser / manure application	2.9	13	38.2
Irrigation	2.6	4	10.6
Thinning			0.0
Weeding	1.9	48	91.3
Hoeing			0.0
Pesticide application	2.9	25	72.6
Defoliator application			0.0
Picking / harvesting	4.6	46	211.5
Stalk cutting & removal	2.8	8	22.0
Transportation /unloading etc.,			0.0
Ginning cost per 100 Kg			52.0
Others (please specify)	0.0	0	0.0
MACHINERY /ANIMALS etc.	Cost per Operation	Number of Operations	Total cost per hectare
Tractors	26.5	2	52.9
Implements & tools			
Electric / Diesel pumps etc.,	0.0	2	0.0
Electricity / Diesel etc.,			
Harvesting machines			
Hoeing / Tillage machinery etc.,			
Bullocks /Buffaloes	10.1	2	20.2
Land rent			239.9
MARKET VALUE	Yield Kg/per hectare	Market value per 100 Kg	Value per hectare
Seed cotton	1339	0.56	753.3
Ginning % (output)	34	0.00	0.0
Lint (fibre)	455	1.66	753.6
Seed	884	0.41	363.2
COST OF CULTIVATION			754
NET RETURNS (SEED-COTTON)			0
NET RETURNS (SEED + LINT)			311

PUNJAB: COST OF CULTIVATION US\$/Hectare

INPUTS	Quantity (Kg/Ha)	Operations per season	Total cost /Ha
Non-GM seeds			
Biotech/GM seeds	3.2	1	77.1
NPK+Other	184.3	2	52.7
Insecticides		5	84.3
Herbicides			
Fungicides			
Growth regulators			
Defoliants			
Manure	0.0	1	0.0
Others (please specify)			
MANPOWER / LABOUR	Wages per person	Persons per operation	Total cost per hectare
Land preparation /tillage etc.,	3.3	2	6.6
Sowing	3.0	10	30.4
Fertiliser / manure application	4.9	6	29.2
Irrigation	4.0	2	8.1
Thinning			0.0
Weeding	3.0	23	69.7
Hoeing			0.0
Pesticide application	4.6	12	55.4
Defoliator application			0.0
Picking / harvesting	2.8	58	161.5
Stalk cutting & removal	4.2	4	16.8
Transportation /unloading etc.,			0.0
Ginning cost per 100 Kg			96.0
Others (please specify)	0.0	0	0.0
MACHINERY /ANIMALS etc.	Cost per Operation	Number of Operations	Total cost per hectare
Tractors	26.5	4	105.9
Implements & tools			
Electric / Diesel pumps etc.,	4.3	4	17.1
Electricity / Diesel etc.,			
Harvesting machines			
Hoeing / Tillage machinery etc.,			
Bullocks /Buffaloes	2.0	1	2.0
Land rent			495.2
MARKET VALUE	Yield Kg/per hectare	Market value per 100 Kg	Value per hectare
Seed cotton	1197	0.63	748.6
Ginning % (output)	34	0.00	0.0
Lint (fibre)	407	1.66	674.1
Seed	790	0.41	324.6
COST OF CULTIVATION			717
NET RETURNS (SEED-COTTON)			32
NET RETURNS (SEED + LINT)			186

RAJASTHAN: COST OF CULTIVATION US\$/Hectare

INPUTS	Quantity (Kg/Ha)	Operations per season	Total cost /Ha
Non-GM seeds			
Biotech/GM seeds	3.0	1	69.26
NPK+Other	147.8	2	54.41
Insecticides		4	37.45
Herbicides			
Fungicides			
Growth regulators			
Defoliants			
Manure	575.5	1	11.09
Others (please specify)			
MANPOWER / LABOUR	Wages per person	Persons per operation	Total cost per hectare
Land preparation /tillage etc.,	4.0	2	8.05
Sowing	3.1	12	37.27
Fertiliser / manure application	5.1	7	35.74
Irrigation	4.9	2	9.89
Thinning			0.00
Weeding	3.3	26	85.40
Hoeing			0.00
Pesticide application	4.8	14	67.92
Defoliator application			0.00
Picking / harvesting	4.0	50	197.90
Stalk cutting & removal	5.2	4	20.62
Transportation /unloading etc.,			0.00
Ginning cost per 100 Kg			90.00
Others (please specify)	0.0	0	0.00
MACHINERY /ANIMALS etc.	Cost per Operation	Number of Operations	Total cost per hectare
Tractors	29.8	2	59.68
Implements & tools			
Electric / Diesel pumps etc.,	12.1	5	60.59
Electricity / Diesel etc.,			
Harvesting machines			
Hoeing / Tillage machinery etc.,			
Bullocks /Buffaloes	6.0	1	6.05
Land rent			218.22
MARKET VALUE	Yield Kg/per hectare	Market value per 100 Kg	Value per hectare
Seed cotton	2008	0.64	1283.46
Ginning % (output)	34	0.00	0.00
Lint (fibre)	683	1.66	1131.25
Seed	1325	0.41	544.44
COST OF CULTIVATION			761
NET RETURNS (SEED-COTTON)			522
NET RETURNS (SEED + LINT)			824

TAMIL NADU: COST OF CULTIVATION US\$/Hectare

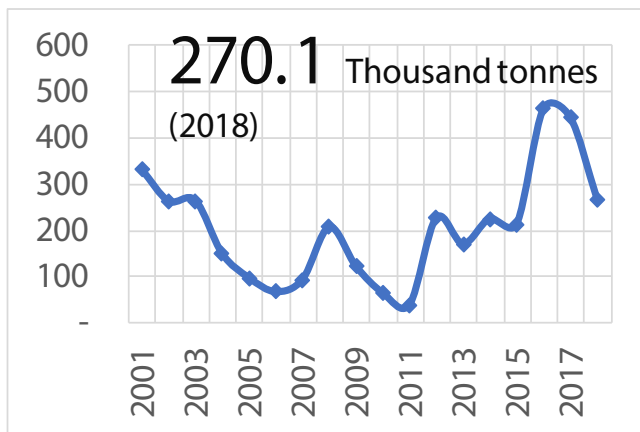
INPUTS	Quantity (Kg/Ha)	Operations per season	Total cost /Ha
Non-GM seeds			
Biotech/GM seeds	3.0	1	69.26
NPK+Other	147.8	2	54.41
Insecticides		4	37.45
Herbicides			
Fungicides			
Growth regulators			
Defoliants			
Manure	575.5	1	11.09
Others (please specify)			
MANPOWER / LABOUR	Wages per person	Persons per operation	Total cost per hectare
Land preparation /tillage etc.,	5.4	3	16.1
Sowing	3.4	22	74.5
Fertiliser / manure application	5.1	14	71.4
Irrigation	4.9	4	19.8
Thinning			0.0
Weeding	3.4	50	170.6
Hoeing			0.0
Pesticide application	5.2	26	135.7
Defoliator application			0.0
Picking / harvesting	4.2	30	126
Stalk cutting & removal	5.1	8	41.2
Transportation /unloading etc.,			0.0
Ginning cost per 100 Kg			88.0
Others (please specify)	0.0	0	0.0
MACHINERY /ANIMALS etc.	Cost per Operation	Number of Operations	Total cost per hectare
Tractors	19.5	5	97.5
Implements & tools			
Electric / Diesel pumps etc.,	20.3	2	40.7
Electricity / Diesel etc.,			
Harvesting machines			
Hoeing / Tillage machinery etc.,			
Bullocks /Buffaloes	0.4	1	0.4
Land rent			268.0
MARKET VALUE	Yield Kg/per hectare	Market value per 100 Kg	Value per hectare
Seed cotton	1712	0.70	1198.0
Ginning % (output)	32	0.00	0.0
Lint (fibre)	548	1.66	907.7
Seed	1064	0.41	437.2
COST OF CULTIVATION			1188
NET RETURNS (SEED-COTTON)			98
NET RETURNS (SEED + LINT)			157

TRADE DATA

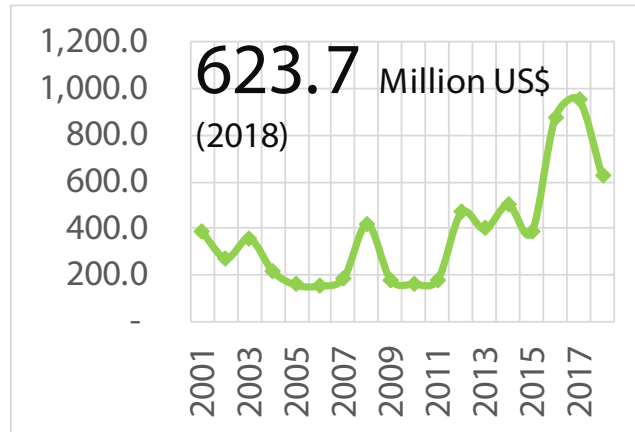


COTTON FIBRE IMPORT DATA

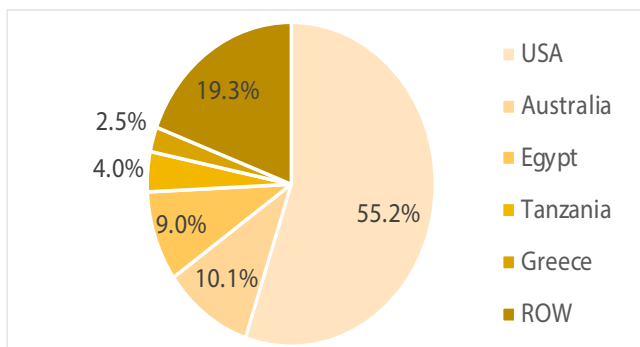
Quantity



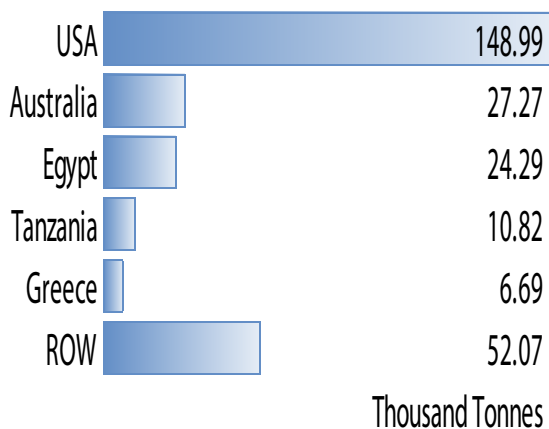
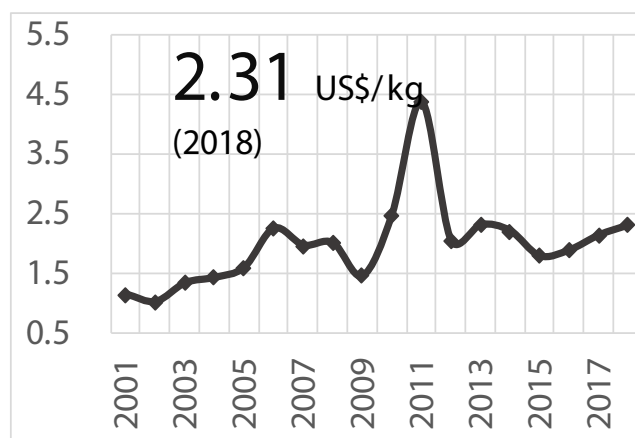
Value



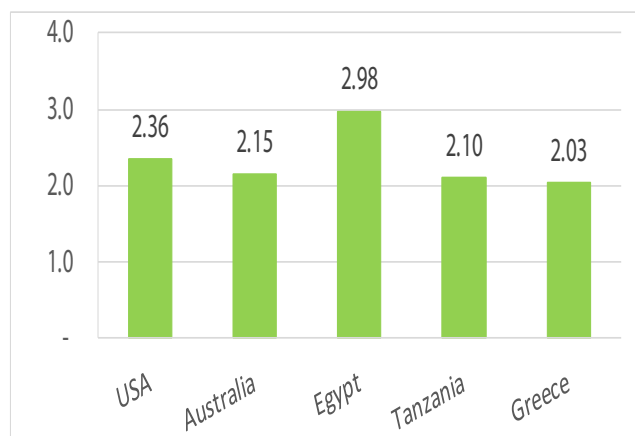
Market Share by Country



Average Price: US\$/Kg

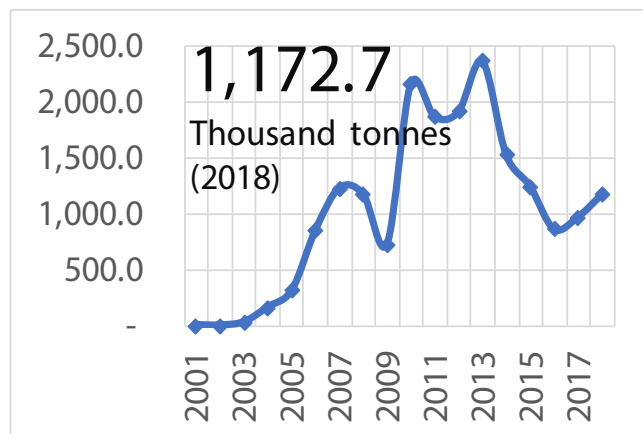


Average Price by Country 2018: US\$/Kg

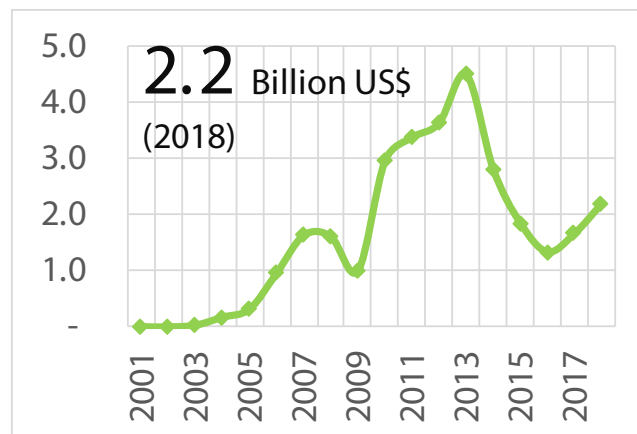


COTTON FIBRE EXPORT DATA

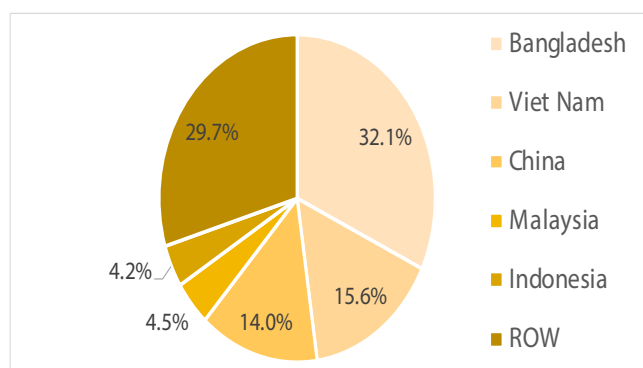
Quantity



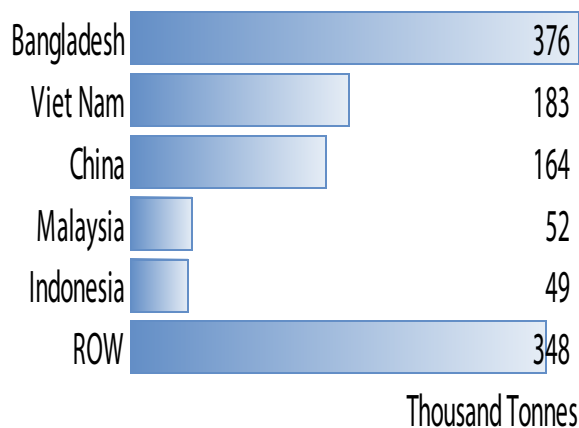
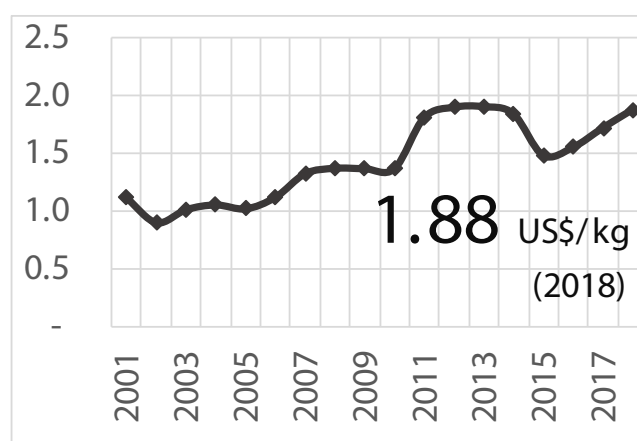
Value



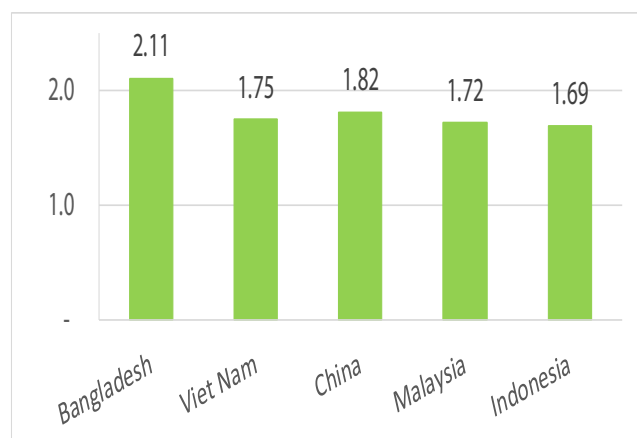
Market Share by Country



Average Price: US\$/Kg

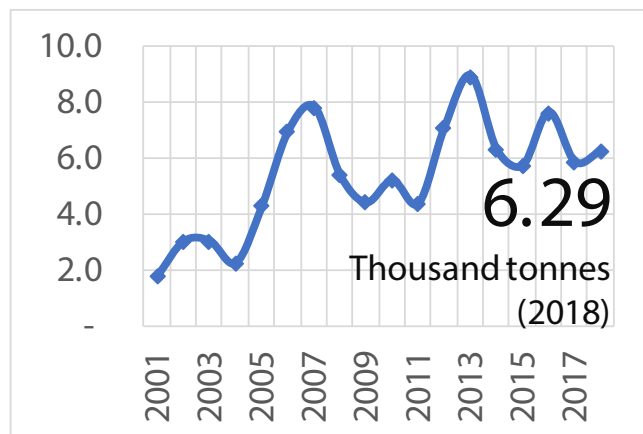


Average Price by Country 2018: US\$/Kg

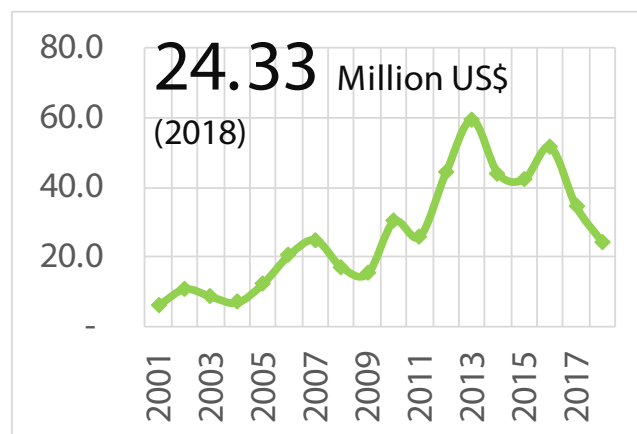


COTTON YARN IMPORT DATA

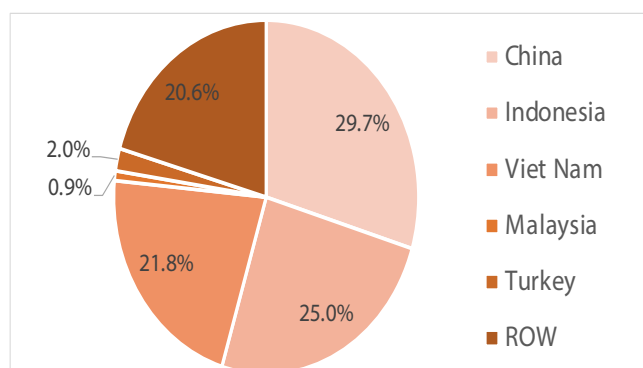
Quantity



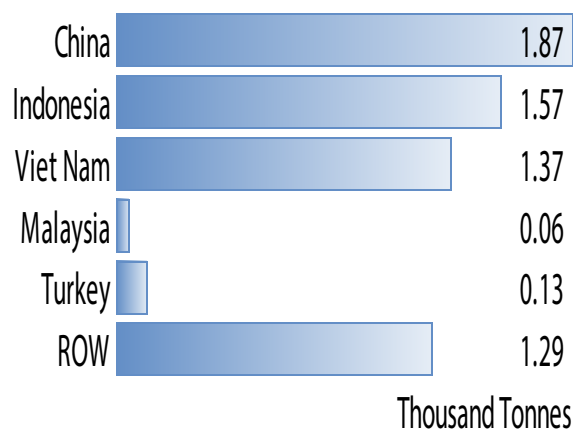
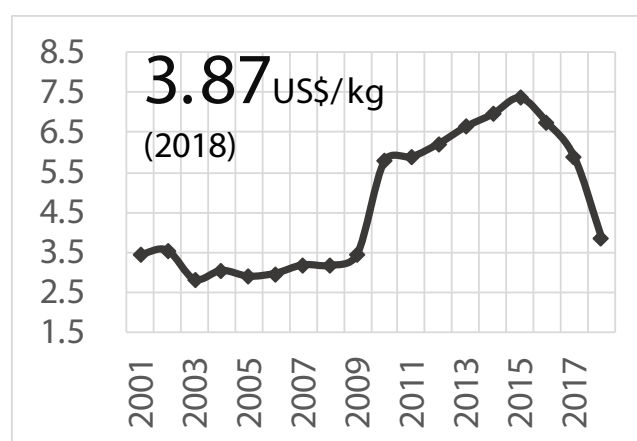
Value



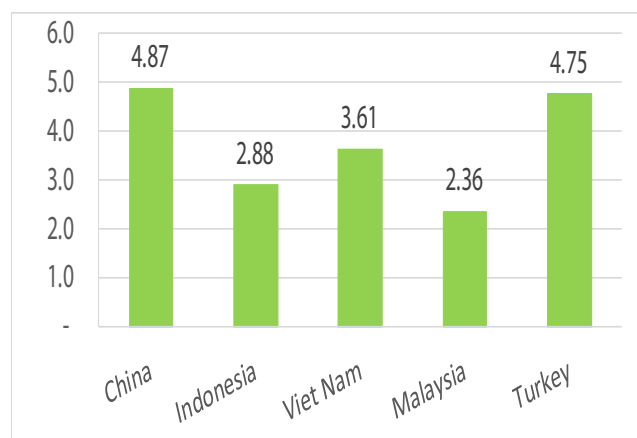
Market Share by Country



Average Price: US\$/Kg

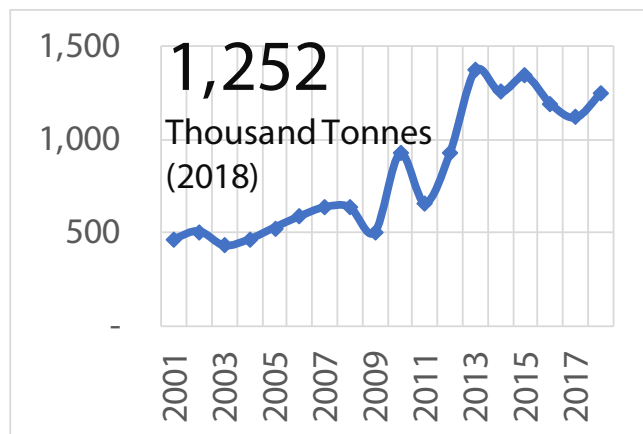


Average Price by Country 2018: US\$/Kg

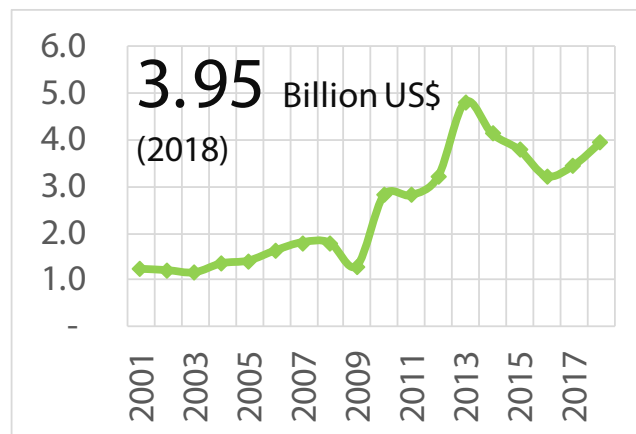


COTTON YARN EXPORT DATA

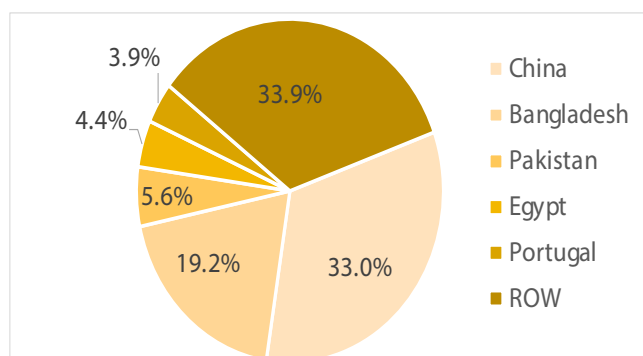
Quantity



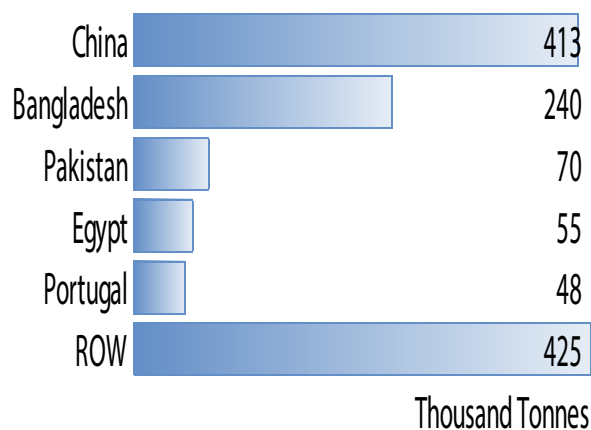
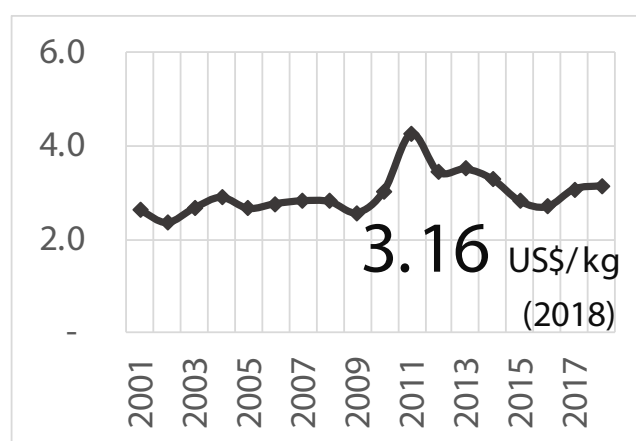
Value



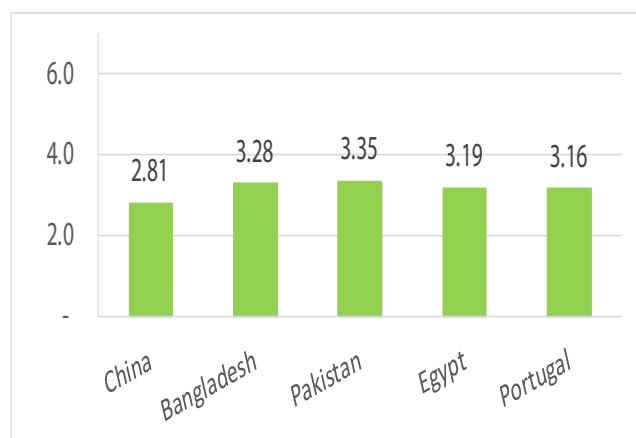
Market Share by Country



Average Price: US\$/Kg

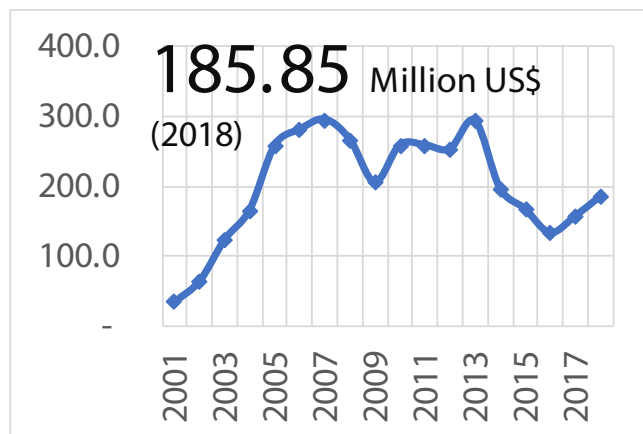


Average Price by Country 2018: US\$/Kg

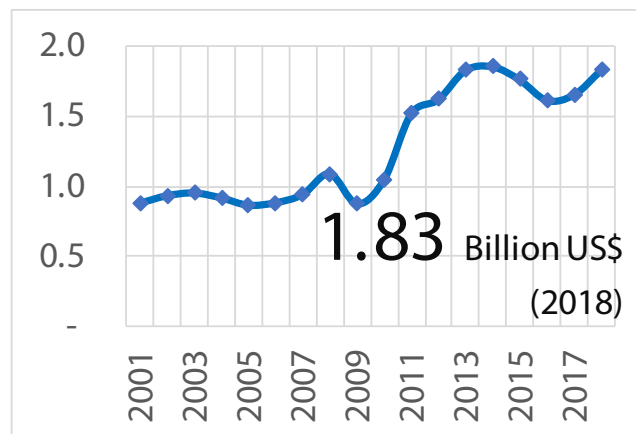


COTTON FABRIC TRADE DATA

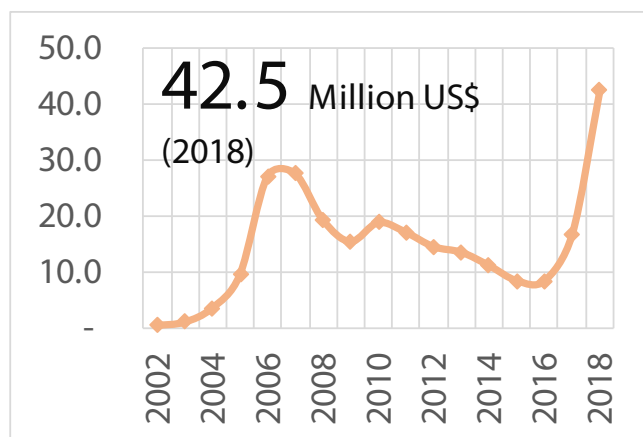
Woven Cotton Fabric Imports



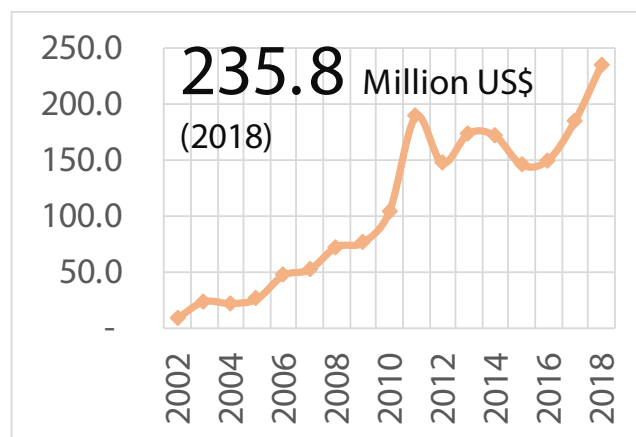
Woven Cotton Fabric Exports



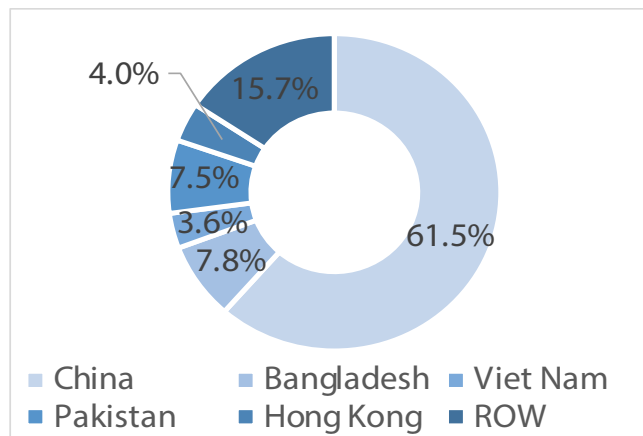
Knitted Cotton Fabric Imports



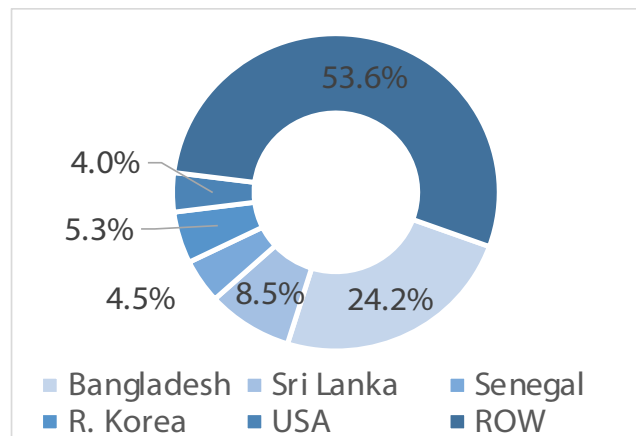
Knitted Cotton Fabric Exports



Market Share Imports by Country - 2018 Woven Cotton Fabric

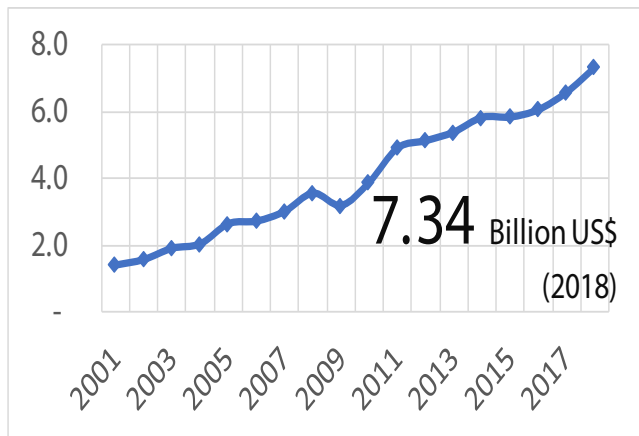


Market Share Exports by Country - 2018 Woven Cotton Fabric

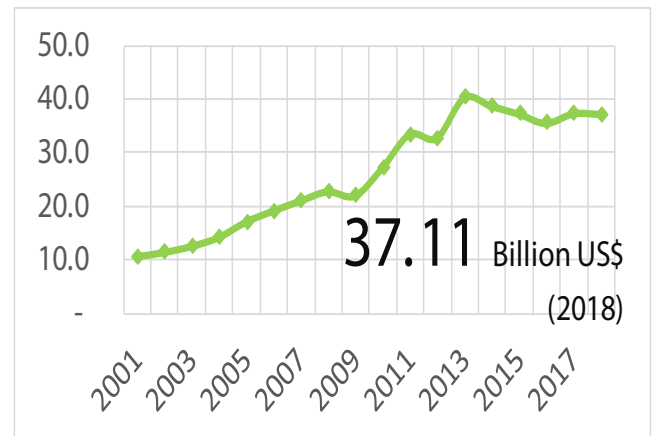


TEXTILE & APPAREL TRADE DATA

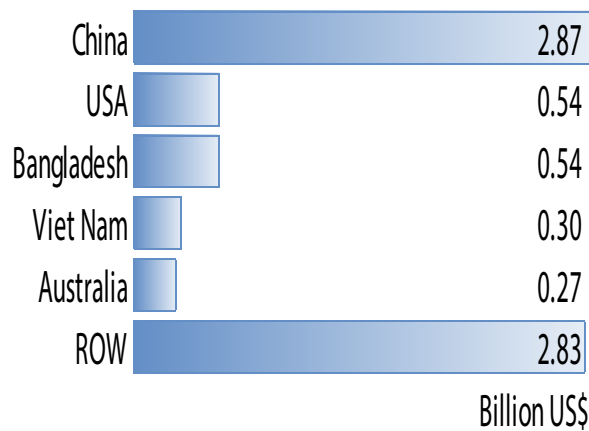
Imports



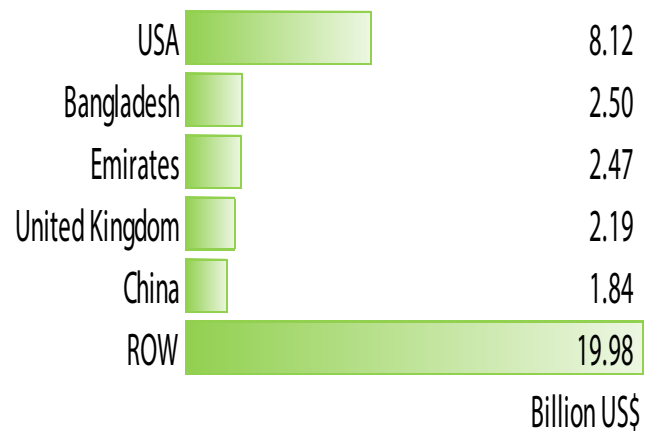
Exports



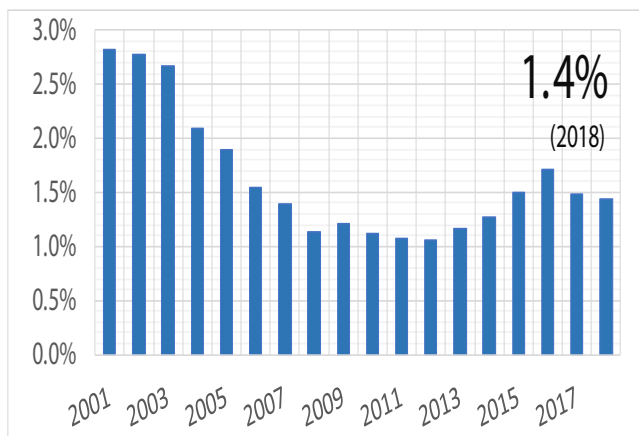
Imports by Country - 2018



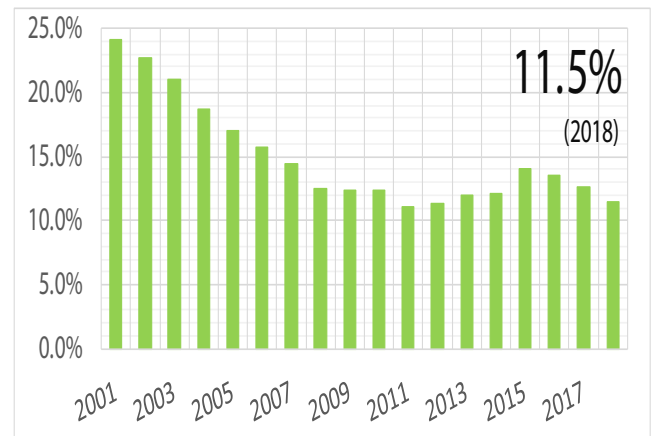
Exports by Country - 2018



T&A Imports Share in Overall Imports

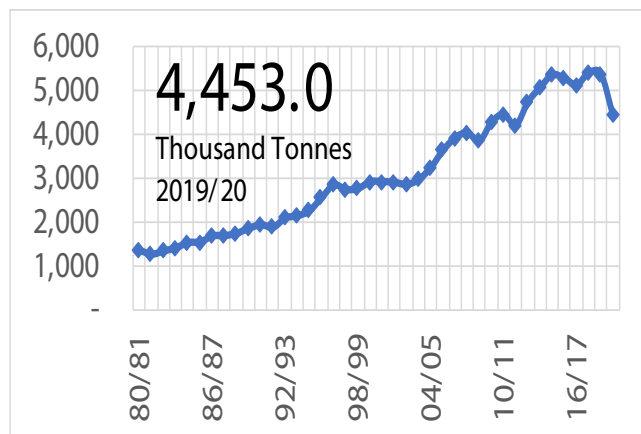


T&A Exports Share in Overall Exports

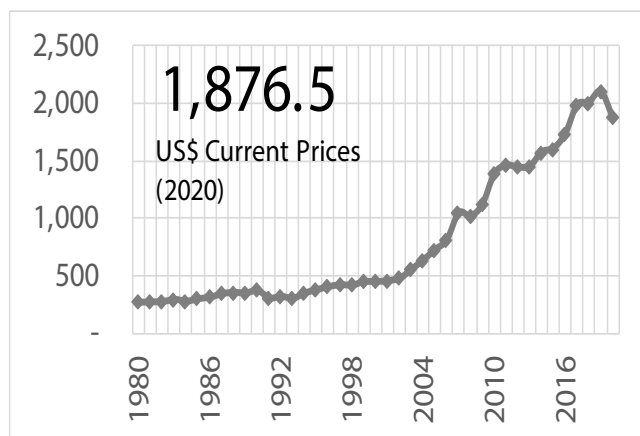


COMPOSITION OF THE TEXTILE & APPAREL INDUSTRY

Cotton Mill Use



GDP per capita



Employment

950,306

Spinning Sector

45,000,000

Textile and Apparel Sector

Spinning Machinery

18,100

Air-Jet Spindles

878,000

Open-End

52,490,000

Short-Staple Spindles

Weaving Machinery

45,500

Shuttle Looms

125,000

Shuttle-less Looms

Production (Million)

5.75 Tonnes
Yarn

4.05 Tonnes
Cotton Yarn

42,204 Sq. Mtrs
Fabrics

Better Cotton Produced in
2018/19

652,000 tonnes

Organic Cotton Produced in
2018/19

122,668 tonnes

No. Spinning Mills 3,369





Basic Data 2020

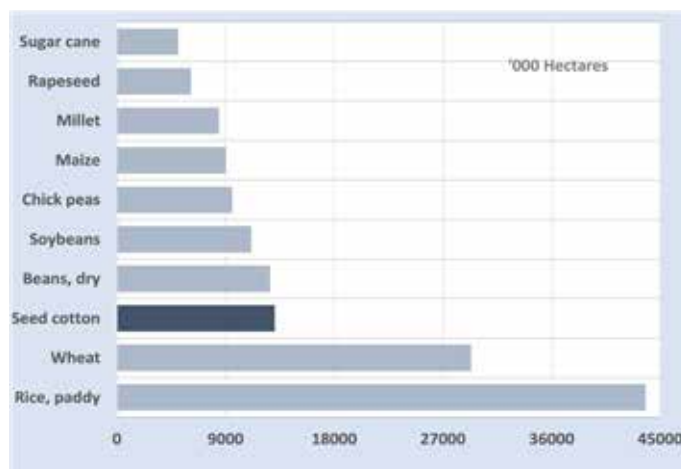


Arable Area 26,300 '000 Hectares	Cotton Area 4,998 Hectares	Consumption 605 '000 Tonnes	Lint Exports 0 '000 Tonnes
Production 1,092 Tonnes	Lint Yield 218 Kg/Hectare	Farmers 600 Male	Farmers 400 Female

PRODUCTION 2020

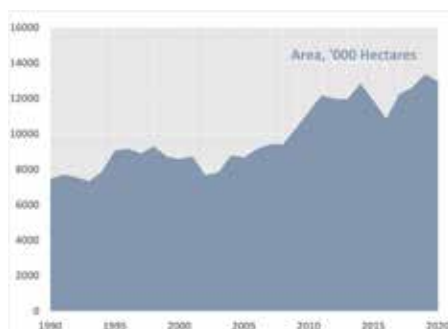
		Area Hectares	Yield Kg/Ha	Production Tonnes
1	South Sulawesi	2549	219	558
2	East Nusa Tenggara	1250	215	269
3	East Java	400	217	87
4	West Nusa Tenggara	400	213	85
5	Others	400	231	93
	National	4998	218	1092

Area of Crops '000 Ha

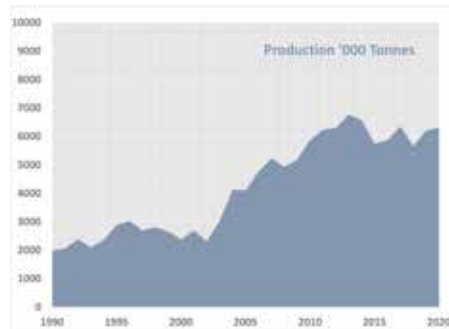


PRODUCTION

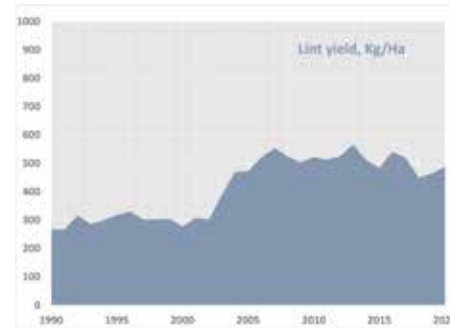
Cotton Area '000 Hectares



Production '000 Tonnes



Lint Yield Kg/Ha



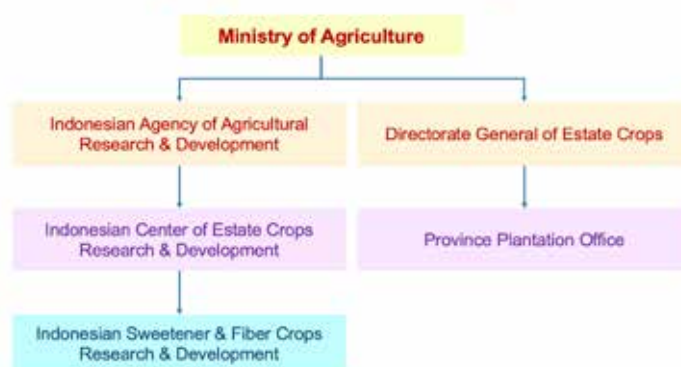
STRUCTURE OF COTTON RESEARCH

The Indonesian Sweetener and Fibre Crops Research Institute (ISFRI) East Java and the Indonesian Atomic Energy Agency undertake research on cotton. Research at the Indonesian Atomic Energy Agency is limited to varietal development only. The ISFRI is one of the technical implementation units on cotton under the coordination of Indonesian Centre for Estate Crops Research and Development (ICECRD). The main function of ISFRI is to conduct research on genetics, plant breeding, seed production, exploration, conservation, characterisation and the utilisation of germplasm of tobacco and fibre industrial crops. The ISFRI conducts research on agronomy, morphology, physiology, ecology, entomology and phytopathology of tobacco and fibre industrial crops. It also prepares information, documentation, and dissemination of tobacco and technologies on tobacco, cotton, kapok, kenaf, jute, rosella, jute, gave (sisal) and abaca.

The Government provides funds for research, with occasional collaborative research with companies also brings some additional funding.

RESEARCH ORGANOGRAM

Organogram of Cotton Research System

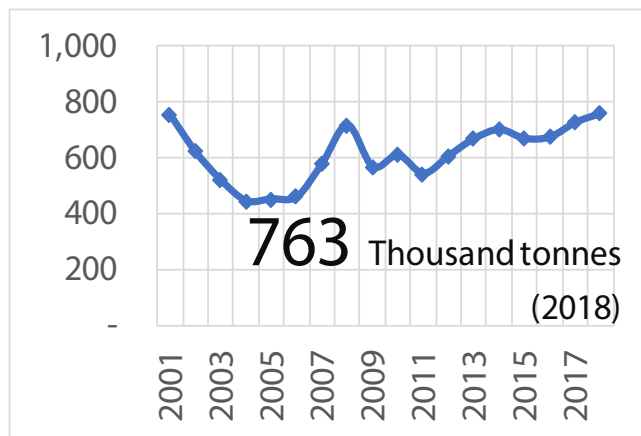


TRADE DATA

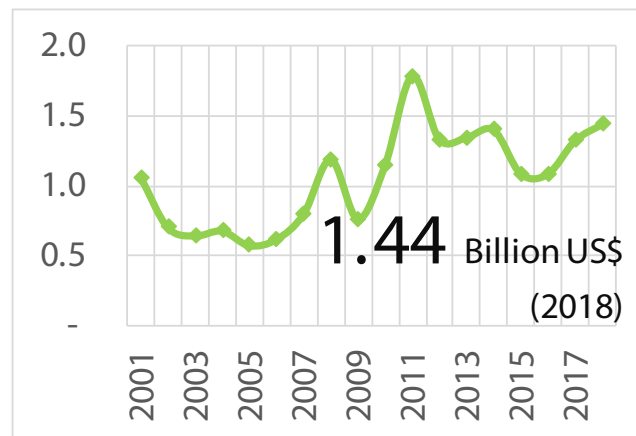


COTTON FIBRE IMPORT DATA

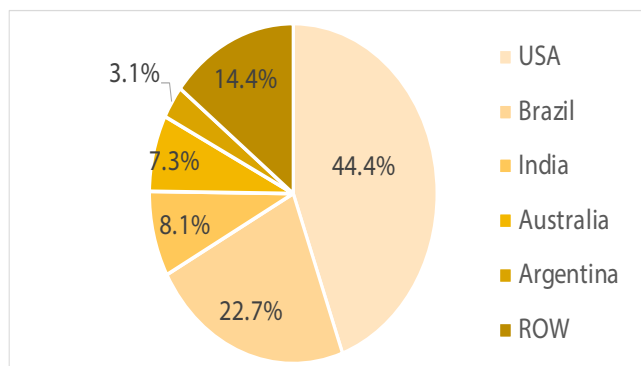
Quantity



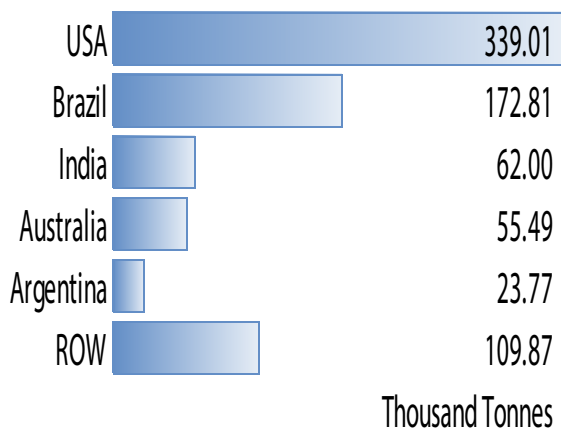
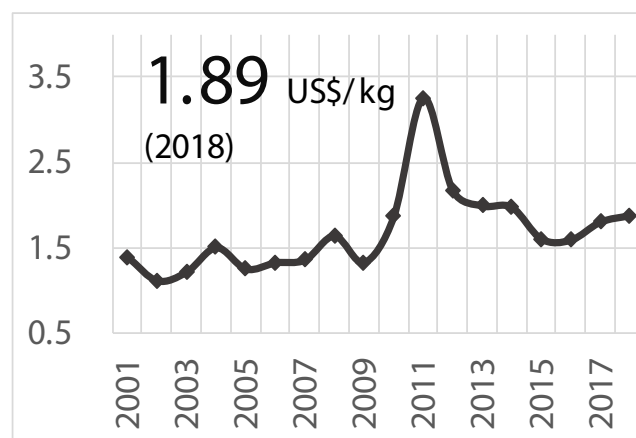
Value



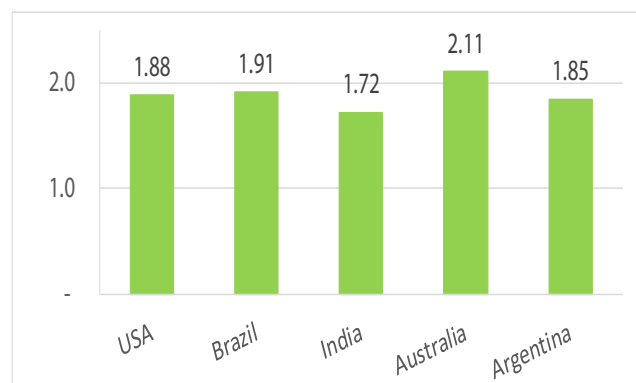
Market Share by Country



Average Price: US\$/Kg

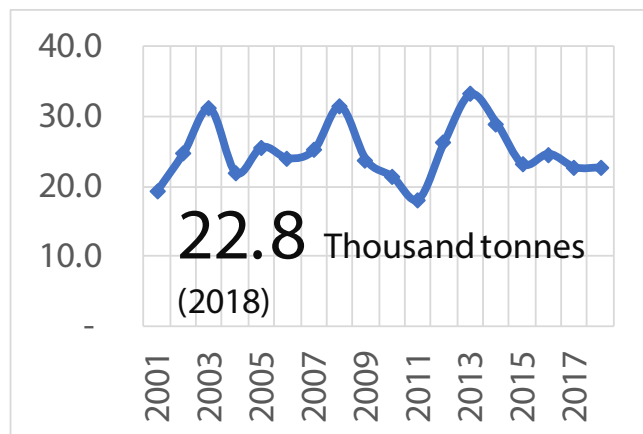


Average Price by Country 2018: US\$/Kg

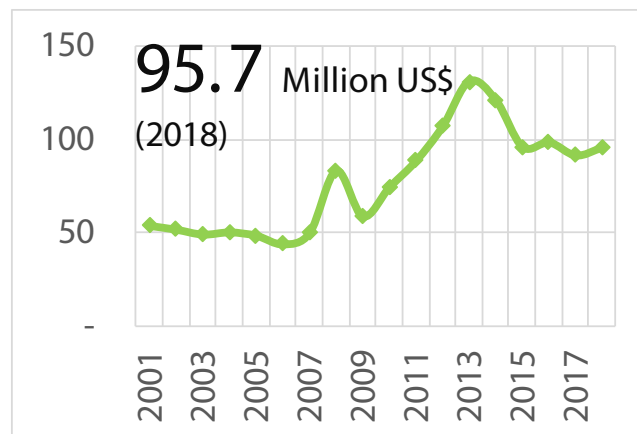


COTTON YARN IMPORT DATA

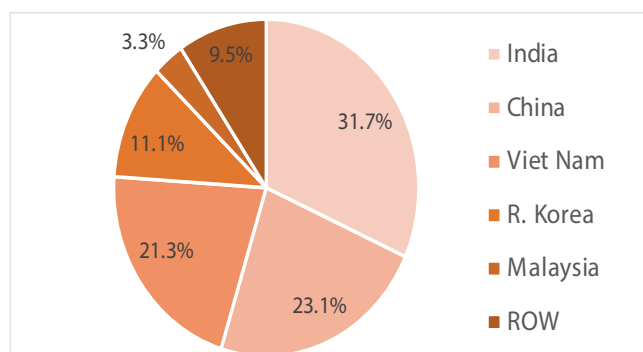
Quantity



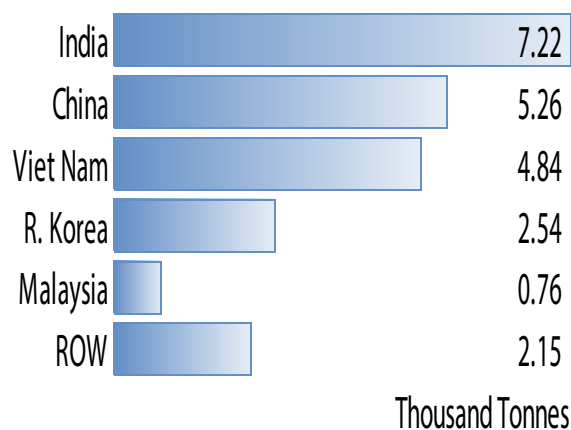
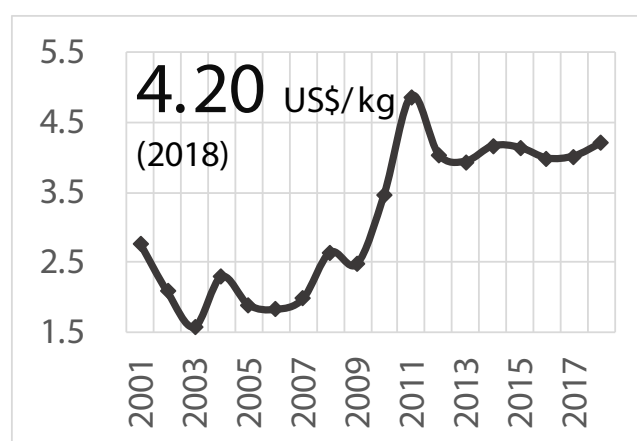
Value



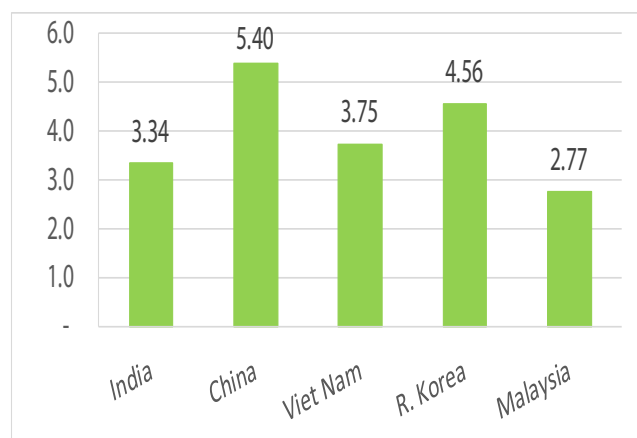
Market Share by Country



Average Price: US\$/Kg

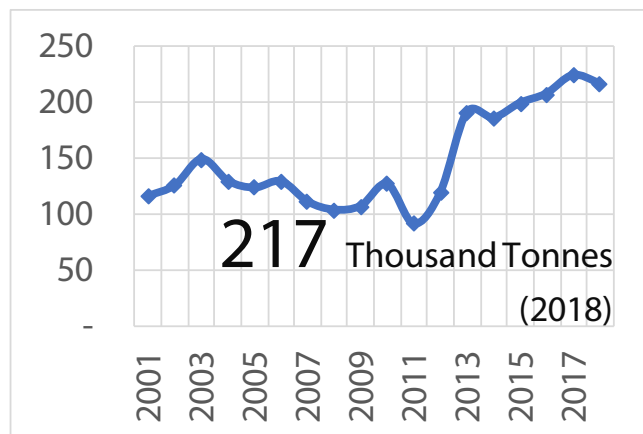


Average Price by Country 2018: US\$/Kg

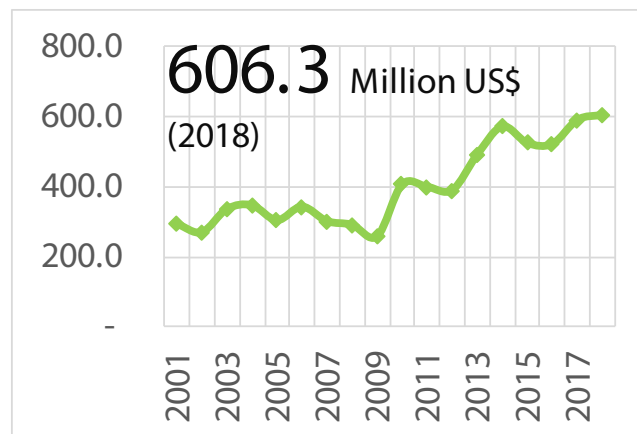


COTTON YARN EXPORT DATA

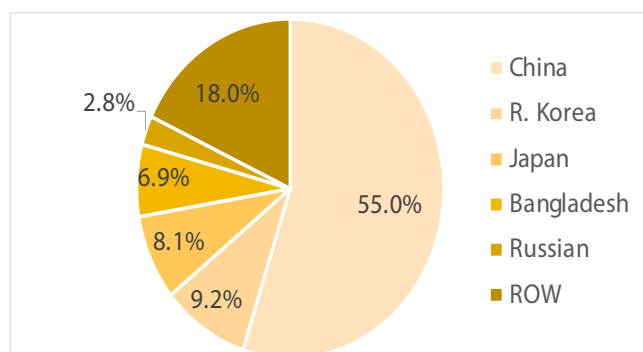
Quantity



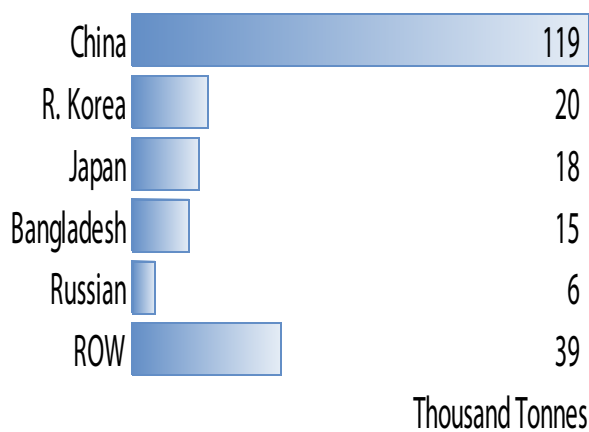
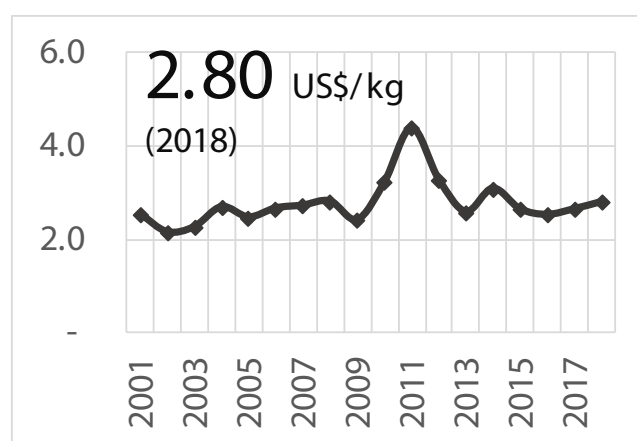
Value



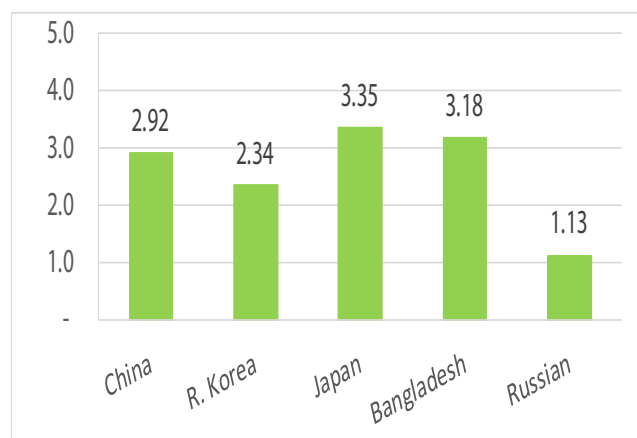
Market Share by Country



Average Price: US\$/Kg

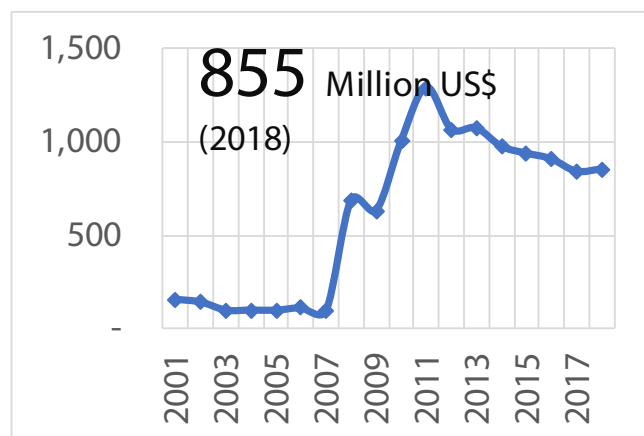


Average Price by Country 2018: US\$/Kg

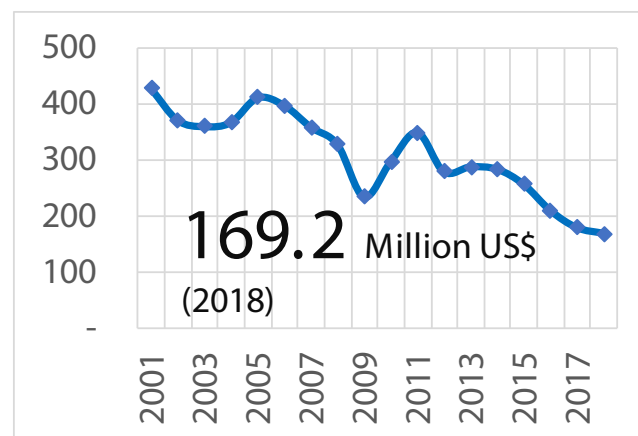


COTTON FABRIC TRADE DATA

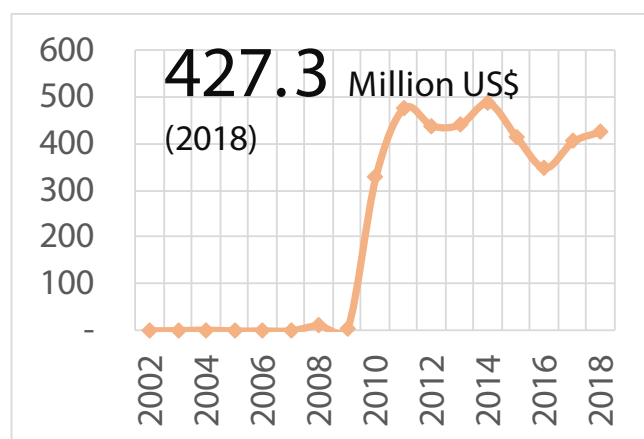
Woven Cotton Fabric Imports



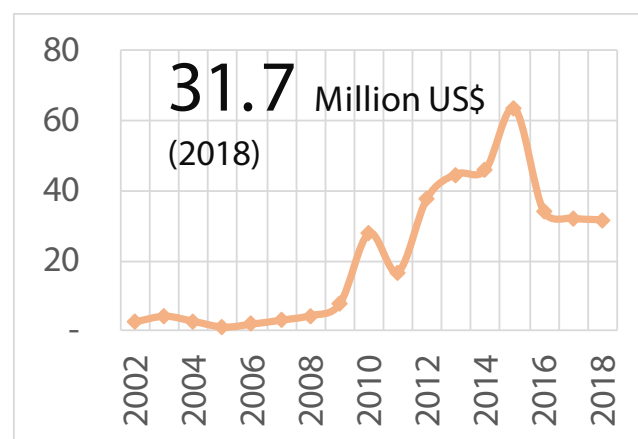
Woven Cotton Fabric Exports



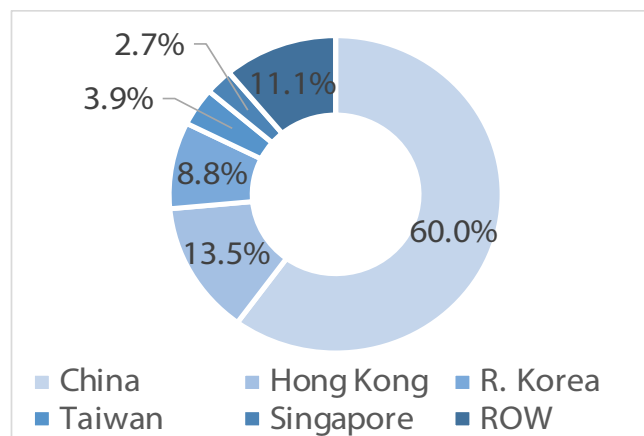
Knitted Cotton Fabric Imports



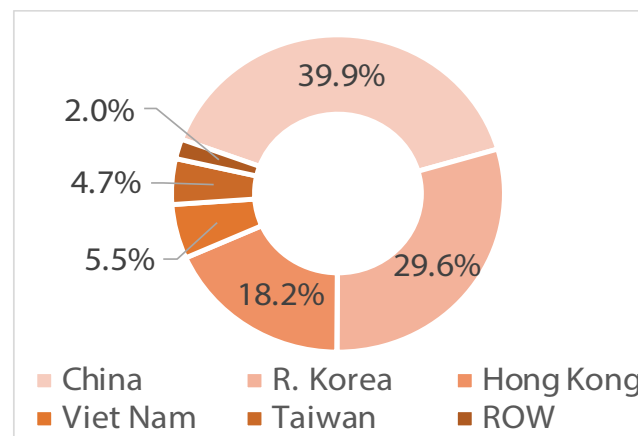
Knitted Cotton Fabric Exports



Market Share Imports by Country - 2018 Woven Cotton Fabric

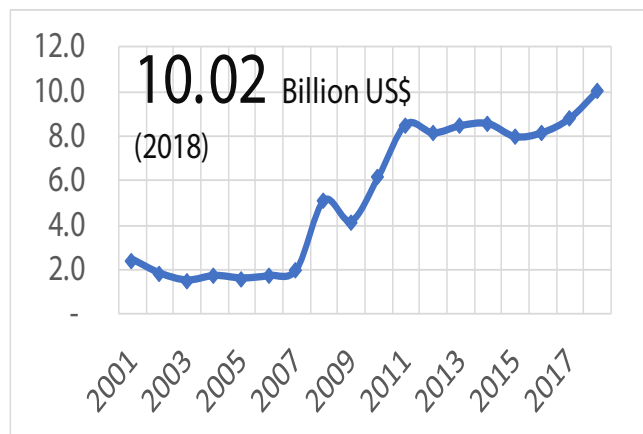


Market Share Imports by Country - 2018 Knitted Cotton Fabric

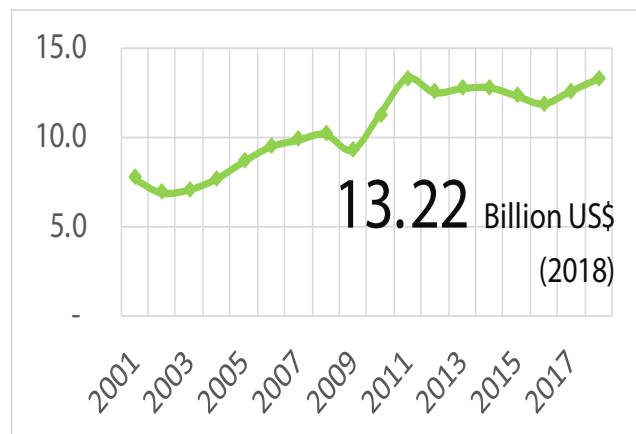


TEXTILE & APPAREL TRADE DATA

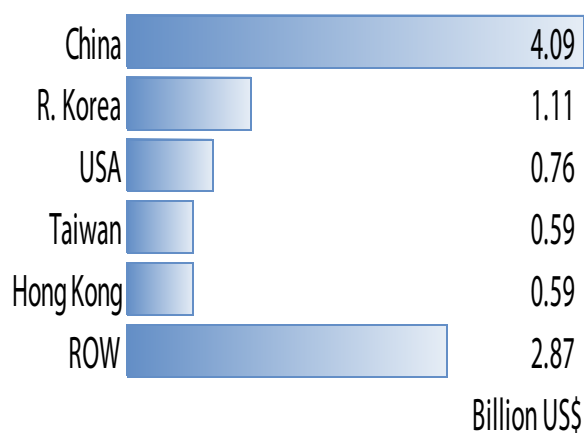
Imports



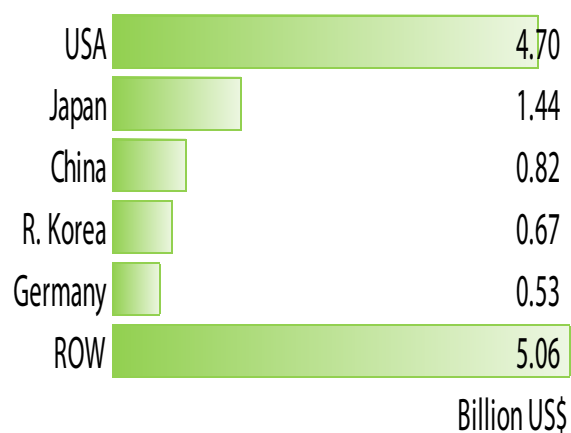
Exports



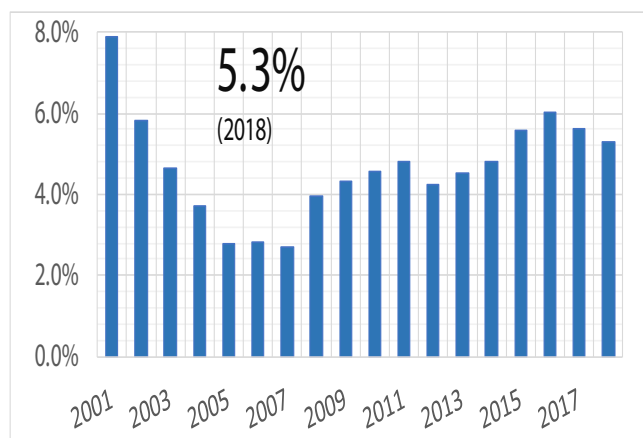
Imports by Country - 2018



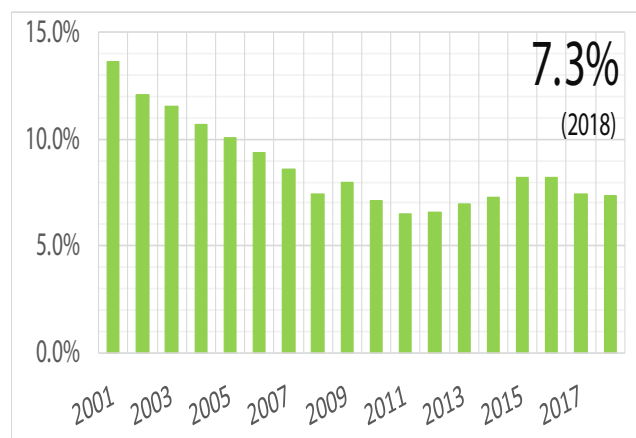
Exports by Country - 2018



T&A Imports Share in Overall Imports

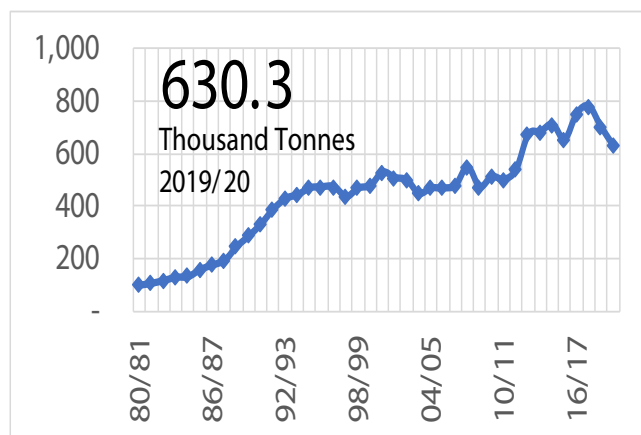


T&A Exports Share in Overall Exports

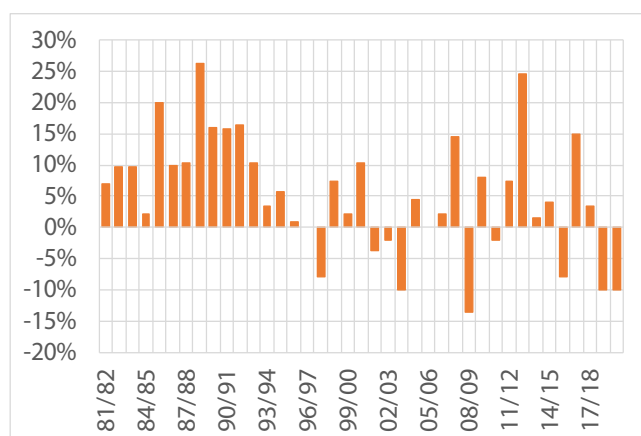


COMPOSITION OF THE TEXTILE & APPAREL INDUSTRY

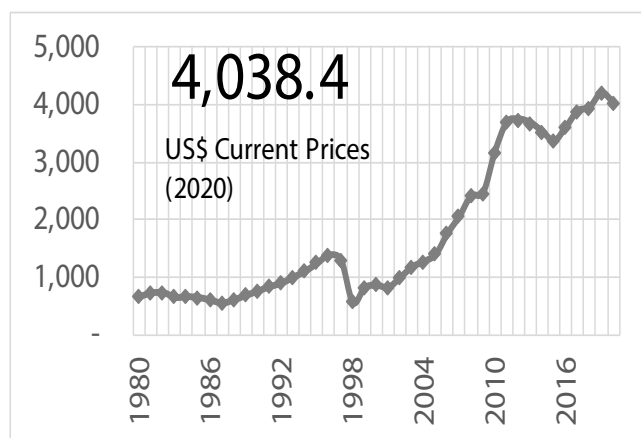
Cotton Mill Use



Mill Use - Annual Variation %



GDP per capita



Employment

3,750,000

Textile & Apparel Sector '000

Spinning Machinery

22,400 **230,000**

Air-Jet Spindles

Open-End

12,250,000

Short-Staple Spindles

Weaving Machinery

197,000 **76,000**

Shuttle Looms

Shuttle-less Looms

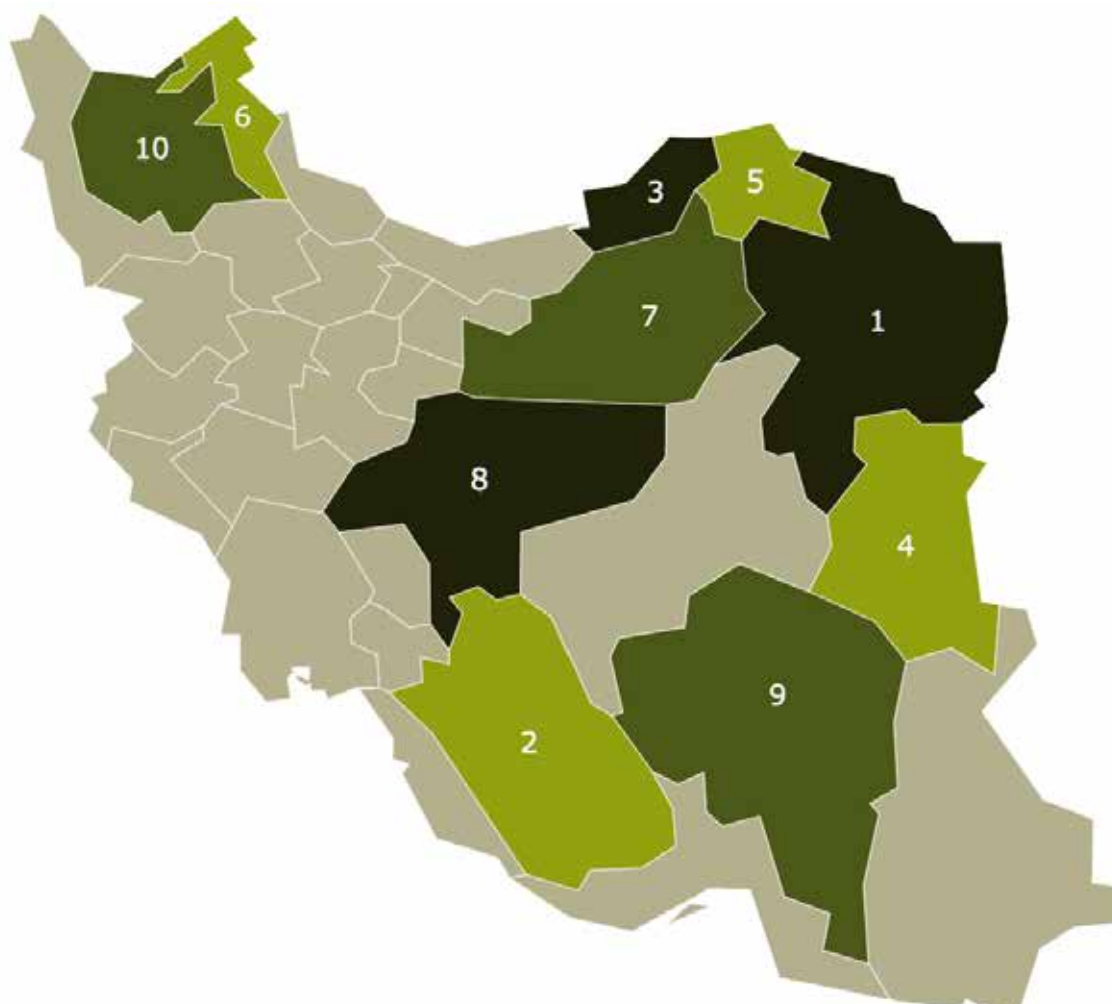
No. Garment Factories

3,000





Basic Data 2020



Arable Area

14,687

'000 Hectares

Cotton Area

98

'000 Hectares

Consumption

150

'000 Tonnes

Lint Exports

0

'000 Tonnes

Production

81

'000 Tonnes

Lint Yield

827

Kg/Hectare

Farmers

32,951

Male

Farmers

0

Female

PRODUCTION 2020

		Area '000 Ha	Yield Kg/Ha	Production '000 Tonnes
1	East & Central	45	822	37
2	Fars	18	944	17
3	Golestan & Mazandran	21	619	13
4	Ardebil	14	1000	14
	National	98	827	81

NUMBER OF FARMERS

	Men	Women
East & Central	21406	0
Fars	3622	0
Golestan & Mazandran	5680	0
Ardebil	2243	0
Total	32951	0

TILLAGE, STALKS-USE, WEEDING & HARVESTING

Tillage Methods (% Area)

East & Central	5	95	5	95
Fars	24	76	24	76
Golestan & Mazandran	2	98	2	98
Ardebil	0	100	0	100
National	8	92	8	92
	Zero Tillage	Disc Plough	Chisel Plough	Conventional Tillage

Use of Cotton Stalks (% Use)

National	0	0	100	0
	Burnt in Fields	Used as Firewood	Ploughed Back	Stacked on Bunds

Weeding Method (%)

Harvest Method (%)

East & Central	15	55	30	97	3
Fars	10	50	40	91	9
Golestan & Mazandran	10	60	30	100	0
Ardebil	0	50	50	96	4
National	9	54	38	96	4
	Hand	Machine	Herbicide	Hand	Machine

VARIETIES AND FIBRE TRAITS

	Release Year	% Area	Ginning %	Length UHML mm	Strength g/tex	Mic
Varieties in East and Central						
Golestan		25	30	29	30	4.3-4.6
Sajedi		7	31	27	28	4.5-4.7
Armaghan		5	30	29	30	4.7
Varamin		20	31	30	32	4.5-4.7
Kkhordad		5	30	28-30	30-31	4.5-4.8
May		5	31	31	33	4.6
Maxa		3	32			
Lider		3	32			
Varieties in Fars						
Golestan		70	30	28	29	4.7
Sajedi		6	31			
Armaghan		6	30			
Karisma		3	32	29	30	4
Maxa		5	32	29	31	4.2
Lider		5	32			
Varieties in Golestan and Mazandran						
Golestan		55	30	29-30	30-31	4.6
Latif		3	31	30	32	4.5-4.8
May		25	31	30-31	30-31	4.3
Lodos		1	32	31-32	32-33	4
Varieties in Ardebil						
Sajedi		4	31	29	30	4.3
Varamin		3	31	29	28	4.6
May		55	31	30	31-33	4.5-4.8
AGN112-115		3	32			



WATER

Rainwater & Irrigation water (mm)

East & Central	404	170	12	800
Fars	534	59	10	760
Golestan & Mazandran	738	82	4	280
Ardebil	477	150	4	280
National	374	106	8	623

Methods of Irrigation (% Area)

East & Central	35	58	3	4
Fars	36	55	3	6
Golestan & Mazandran	59	15	3	3
Ardebil	67	22	3	8
National	49	38	3	5

Rainfed Area (%) & Water Used /Kg Lint

East & Central	0	360	9,730	2,061
Fars	0	137	8,047	627
Golestan & Mazandran	22	46	3,528	1,321
Ardebil	0	39	2,800	1,500
National	5	582	7,185	1,279

COMPETING CROPS

Ardebil	East & Central
Wheat	Barley
Soybean	Sugar Beet
	Corn
	Wheat

Fars	Mazandran/ Golestan
Wheat	Wheat
Corn	Canola
	Barley

ROTATION CROPS

Ardebil	East & Central
Wheat	Barley
Soybean	Sugar Beet
	Corn
	Wheat
Fars	Mazandran/ Golestan
Wheat	Wheat
Corn	Canola
	Barley



SEEDS & PLANTING

Seeds Used for Sowing (%)

East & Central	70	30	40	60
Fars	60	40	40	60
Golestan & Mazan-dran	30	70	75	25
Ardebil	45	55	60	40
National	51	49	54	46
	Fuzzy Seeds	Delinted	Chemical Treated	Untreated

Planting Method (%)

Seed Source (%)

East & Central	30	70	95	5
Fars	20	80	87	13
Golestan & Mazan-dran	10	90	95	5
Ardebil	0	100	40	60
National	15	85	79	21
	Manual	Machine	Local	Imported

Use of Cotton Seeds (% Use)

East & Central	0	63	30	7
Fars	0	89	5	6
Golestan & Mazan-dran	0	79	17	4
Ardebil	0	62	35	3
National	0	73	22	5
	Oil Crushing	Cattle-feed	Sowing	Wasted

Seed Rate, Spacing & Plant Population/Ha

National	25	70	20	71,429
	Seed rate Kg/Ha	Between rows cm	Within row cm	Plant population per Hectare

INSECTS, PATHOGENS & WEEDS

INSECT PESTS / INSECTICIDES	INSECT PESTS / INSECTICIDES	INSECT PESTS / INSECTICIDES	INSECT PESTS / INSECTICIDES
FARS	EAST & CENTRAL	ARDABIL	MAZANDRAN/GOLESTAN
EARLY-SEASON	EARLY-SEASON	EARLY-SEASON	EARLY-SEASON
<i>Thrips tabaci</i>	<i>Thrips spp.</i>	<i>Thrips tabaci</i>	<i>Thrips tabaci</i>
<i>Agrotis segetum</i>	<i>Aphis gossypii</i>	<i>Agrotis spp.</i>	<i>Agrotis segetum</i>
MID-SEASON	MID-SEASON	MID-SEASON	MID-SEASON
<i>Tetranychus turkistani</i>	<i>Creontiades pallidus</i>	<i>Aphis gossypii</i>	<i>Tetranychus turkistani</i>
<i>Lygus rugulipennis</i>	<i>Heliothis obsoleta</i>	<i>Helicoverpa armigera</i>	<i>Lygus rugulipennis</i>
<i>Heliothis spp.</i>	<i>Tetranychus turkistani</i>	<i>Tetranychus urticae</i>	<i>Heliothis spp.</i>
<i>Bemisia tabaci</i>	<i>Bemisia spp.</i>	<i>Bemisia tabaci</i>	<i>Earias insulana</i>
<i>Earias insulana</i>	<i>Earias insulana</i>		<i>Bemisia spp.</i>
INSECTICIDES	INSECTICIDES	INSECTICIDES	INSECTICIDES
Metasystox 25%	Metasystox 25%	Chlorpyrifos 40%	Oxydemeton 25%
Thiodicarb 80%	Thiodicarb 80%	Metasystox 25%	Monocrotophos 40%
Imidacloprid 35%	Carbaryl 85%	Thiodicarb 80%	Amitraz 20%
Dimethoate 40%	Endosulfan 35%	Profenofos 40%	Pymetrozine 25%
Boprophezin	Monocrotophos 40%	Monocrotophos 40%	Imidacloprid 35%
Diazinoun	Propargite 57%	Propargite 57%	
Carbayl 85%	Dimethoate 40%		
Pimetrozin 25%	Tetradifon 75%		
	Profenofos 40%		
DISEASES / PATHOGENS	DISEASES / PATHOGENS	DISEASES / PATHOGENS	DISEASES / PATHOGENS
FARS	EAST & CENTRAL	ARDABIL	MAZANDRAN / GOLESTAN
<i>Pythium spp.</i>	<i>Rhizoctonia solani</i>	<i>Verticillium dahliae</i>	<i>Verticillium dahliae</i>
<i>Verticillium dahliae</i>	<i>Pythium spp.</i>	<i>Damping off</i>	<i>Damping off</i>
	<i>Verticillium dahliae</i>		
CHEMICAL CONTROL	CHEMICAL CONTROL	CHEMICAL CONTROL	CHEMICAL CONTROL
Carboxin/thiram	Carboxin/thiram	Carboxin/thiram	Carboxin/thiram
Carbendazin			
WEEDS / HERBICIDES	WEEDS / HERBICIDES	WEEDS / HERBICIDES	WEEDS / HERBICIDES
FARS	EAST & CENTRAL	ARDABIL	MAZANDRAN / GOLESTAN
NARROW-LEAF WEEDS	NARROW-LEAF WEEDS	NARROW-LEAF WEEDS	NARROW-LEAF WEEDS
<i>Sorghum halepense</i>	<i>Sorghum halepense</i>	<i>Cynodon dactylon</i>	<i>Sorghum halepense</i>
<i>Bromus tectorum</i>	<i>Cynodon dactylon</i>	<i>Echinochloa crus-galli</i>	<i>Bromus tectorum</i>
	<i>Cyperus rotundus</i>		
	<i>Bromus tectorum</i>		
BROAD-LEAF WEEDS	BROAD-LEAF WEEDS	BROAD-LEAF WEEDS	BROAD-LEAF WEEDS
<i>Amaranthus spp.</i>	<i>Amaranthus spp.</i>	<i>Solanum nigrum</i>	<i>Cyperus rotundus</i>
<i>Solanum nigrum</i>	<i>Solanum nigrum</i>	<i>Portulaca oleracea</i>	<i>Cynodon dactylon</i>
<i>Abutilon spp.</i>	<i>Convolvulus spp.</i>	<i>Echinochloa crus-galli</i>	<i>Polymum spp.</i>
<i>Setaria viridis</i>	<i>Portulaca oleracea</i>	<i>Convolvulus arvensis</i>	<i>Setaria spp.</i>
<i>Convolvulus spp.</i>	<i>Alhagi camelorum</i>	<i>Abutilon avicennae</i>	<i>Chenopodium album</i>
HERBICIDES	HERBICIDES	HERBICIDES	HERBICIDES
Ethalfuralin	Ethalfuralin	Ethalfuralin	Ethalfuralin
Trifluralin	Trifluralin	Trifluralin	Trifluralin
Diniramine	Invoke		Diniramine

STRUCTURE OF COTTON RESEARCH

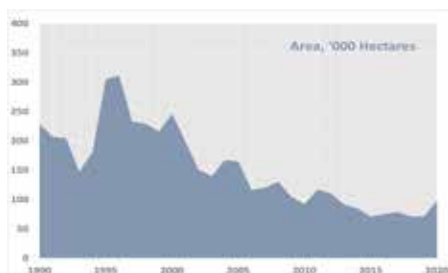
The Cotton Research Institute (CRI) under the Agricultural Research, Education and Extension Organisation of the Ministry of Jihad-e-Agriculture is responsible for research on cotton. The Cotton Research Institute (CRI) was established in 1997 at Gorgan, with an independent branch in Varamin. At present, there are five research departments in Gorgan, two research departments in Varamin, and five cotton research stations in several cotton producing regions. Before the establishment of the Seed and Plant Improvement Institute in 1959, Varamin Plant Breeding Corporation was the only responsible agency for cotton research in Iran. In 1979, research activities on cotton were shifted to the Seed and Plant Improvement Institute in the Cotton Research Department. Cotton and Oil Seeds Development Organisation, Tehran plays an important role in supporting cotton research.

RESEARCH ORGANOGRAM

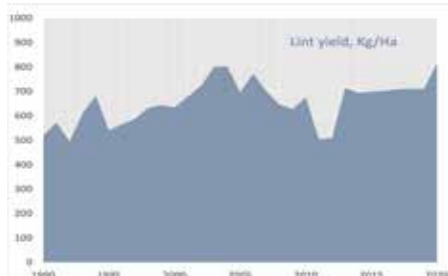


PRODUCTION

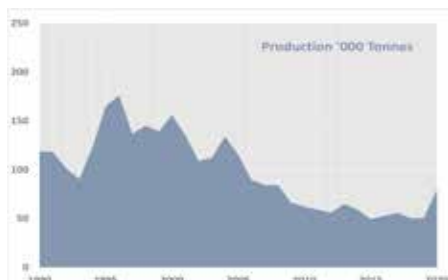
Cotton Area '000 Hectares



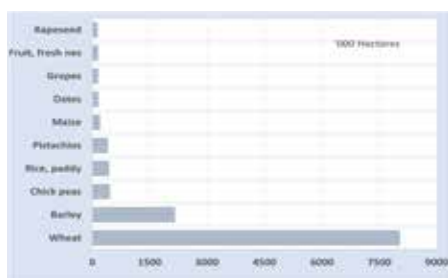
Lint Yield Kg/Ha



Production '000 Tonnes

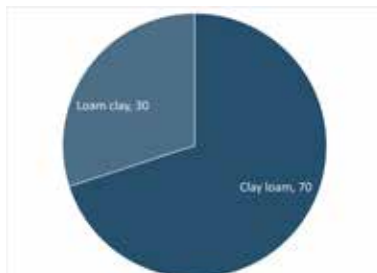


Area of Crops '000 Ha

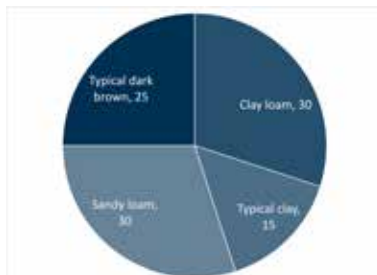


SOILS

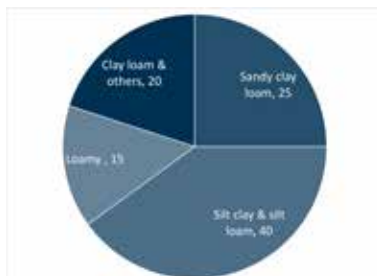
Soil Types -Ardebil



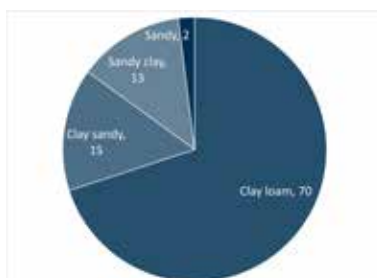
Soil Types -East



Soil Types -Fars

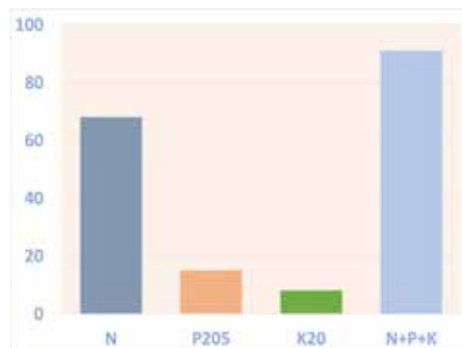


Soil Types -Mazandran

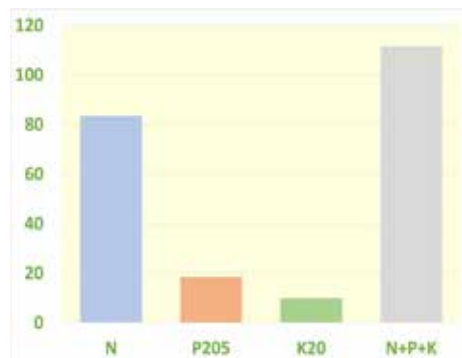


FERTILISERS

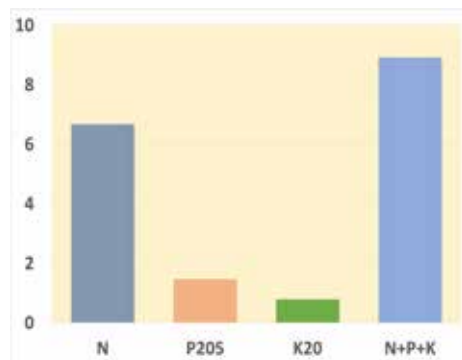
Fertiliser (NPK) use Kg/Hectare



Fertiliser (NPK) use per Kg Lint



Fertiliser (NPK) use '000 Tons



WEATHER 2019-2020

Heat Units (DD60) -Khorasan-jonobi

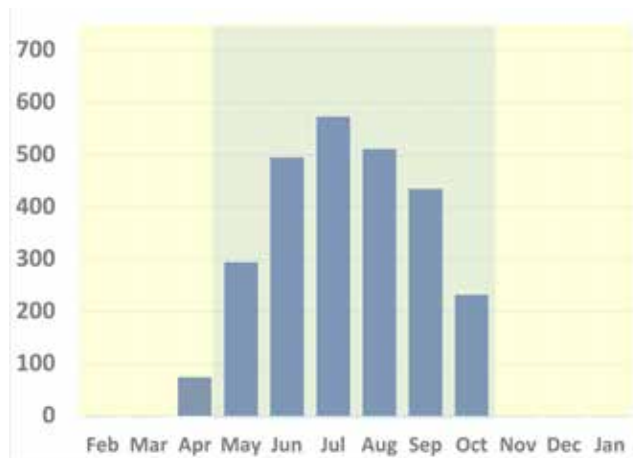


Rainfall (mm) -Khorasan-jonobi



WEATHER 2019-2020

Heat Units (DD₆₀) -Fars



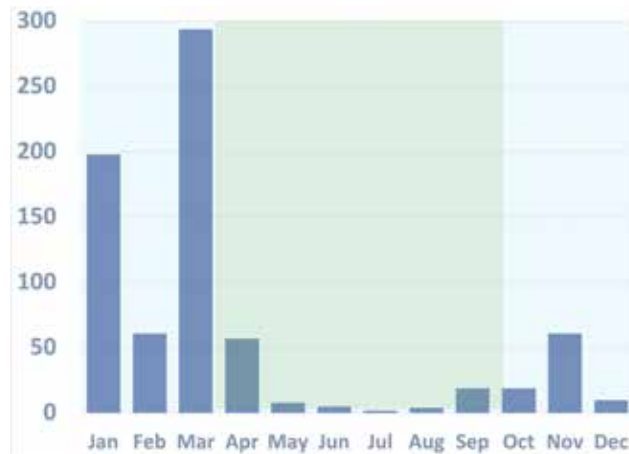
Rainfall (mm) -Fars



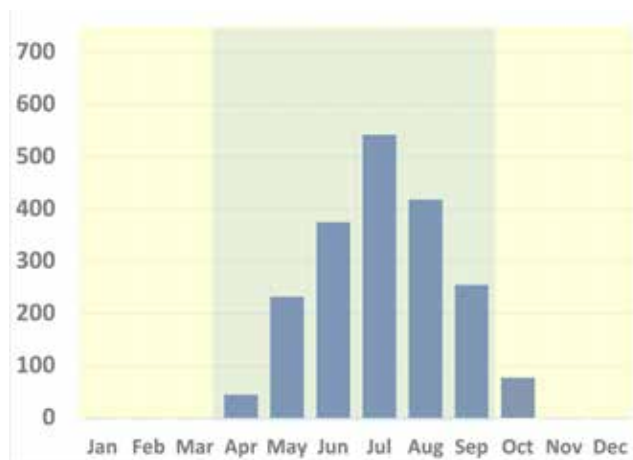
Heat Units (DD₆₀) -Golestan



Rainfall (mm) -Golestan



Heat Units (DD₆₀) -Khorasan



Rainfall (mm) -Khorasan



COST OF CULTIVATION US\$/Hectare

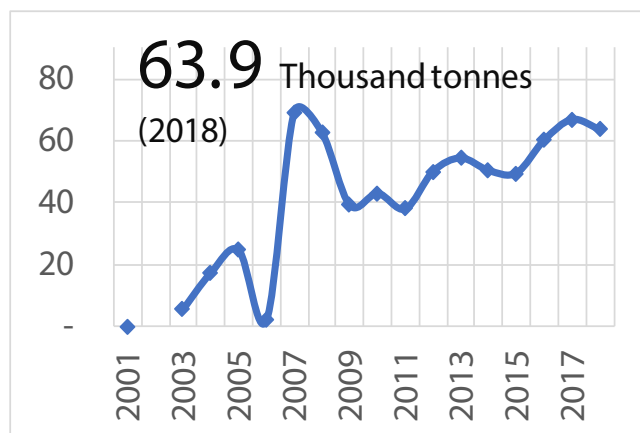
INPUTS	Quantity (Kg/Ha)	Operations per season	Total cost /Ha
Non-GM seeds	25	1	31
Biotech/GM seeds			
NPK+Other	500	3	144
Insecticides	5 lit/ha	3	88
Herbicides	2.5 lit/ha	1	41
Fungicides	1 lit/ha	1	18
Growth regulators	1 lit/ha	2	23
Defoliants	1.5 lit/ha	1	34
Manure			-
Others (please specify)	1 lit/ha	2	5
MANPOWER / LABOUR	Wages per person	Persons per operation	Total cost per hectare
Land preparation /tillage etc.,	10	4	40
Sowing	13	1	13
Fertiliser / manure application	5	3	15
Irrigation	15	8	120
Thinning	4	20	80
Weeding	4	20	80
Hoeing	9	1	9
Pesticide application	10	3	30
Defoliator application	4	1	4
Picking / harvesting	6	50	300
Stalk cutting & removal			-
Transportation /unloading etc.,	6	5	30
Ginning cost per 100 Kg			8
Others (please specify)			75
MACHINERY /ANIMALS etc.	Cost per Operation	Number of Operations	Total cost per hectare
Tractors			
Implements & tools			
Electric / Diesel pumps etc.,			
Electricity / Diesel etc.,			
Harvesting machines			
Hoeing / Tillage machinery etc.,			
Bullocks /Buffaloes			
Land rent			
MARKET VALUE	Yield Kg/per hectare	Market value per 100 Kg	Value per hectare
Seed cotton	2755	0.60	1,653
Ginning % (output)	30	-	-
Lint (fibre)	826.5	1.75	1,446
Seed	1900	0.35	665
COST OF CULTIVATION			1178
NET RETURNS (SEED-COTTON)			475
NET RETURNS (SEED + LINT)			743

TRADE DATA

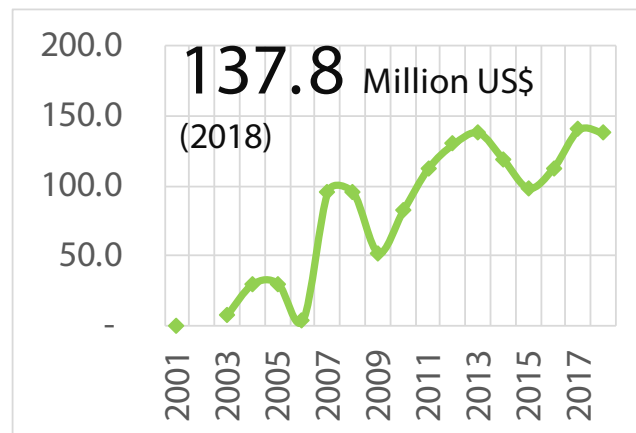


COTTON FIBRE IMPORT DATA

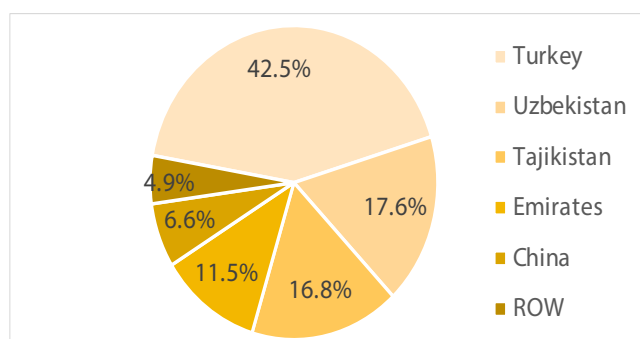
Quantity



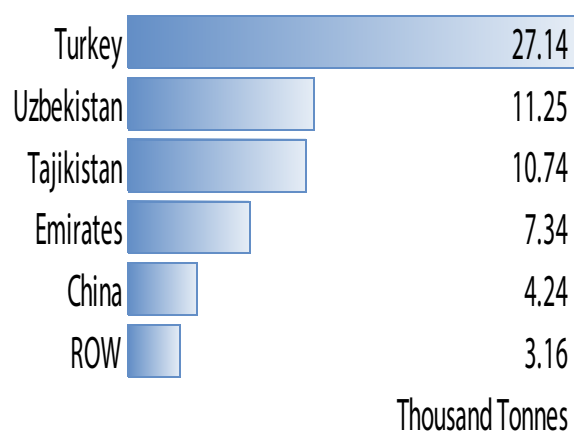
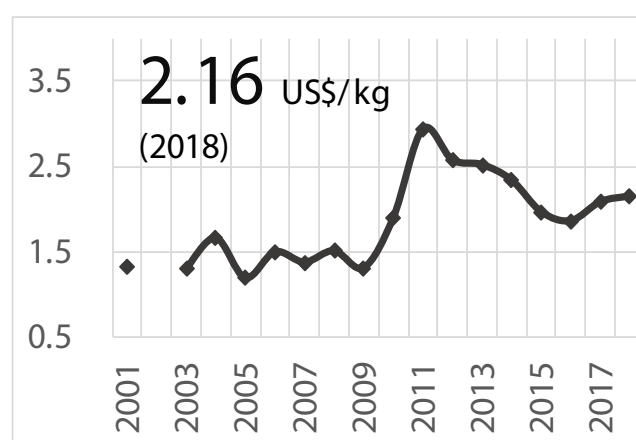
Value



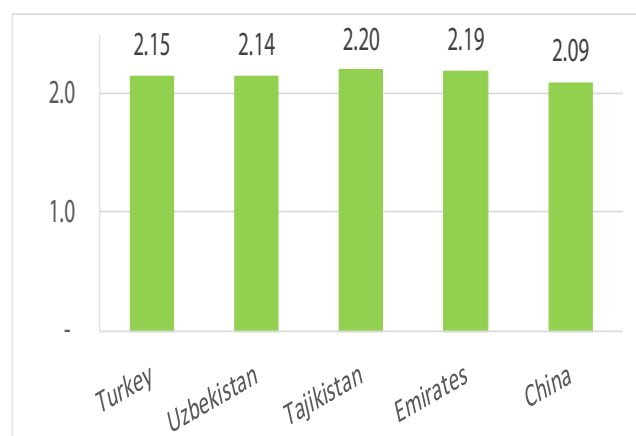
Market Share by Country



Average Price: US\$/Kg

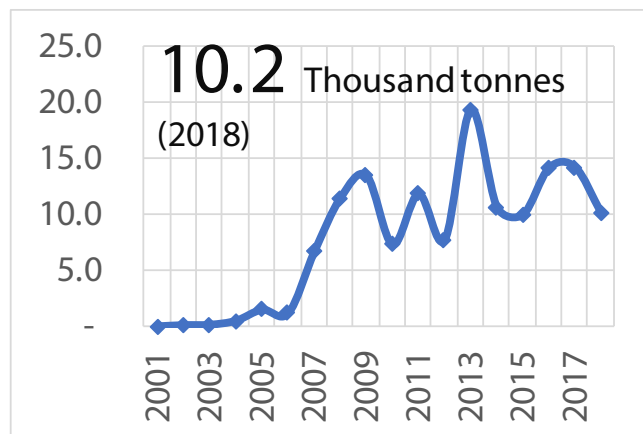


Average Price by Country 2018: US\$/Kg

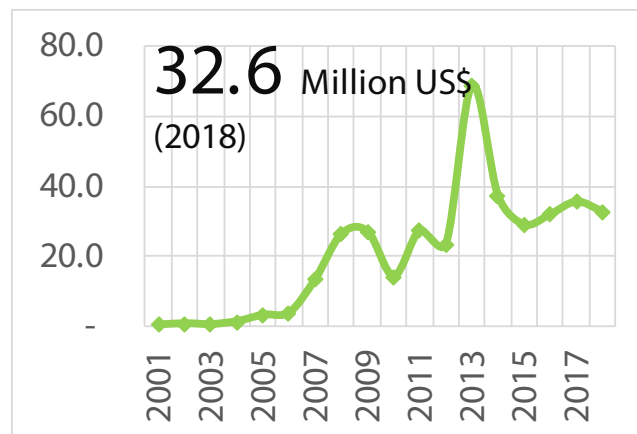


COTTON YARN IMPORT DATA

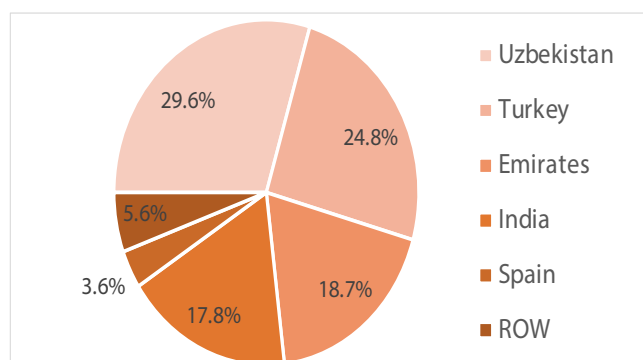
Quantity



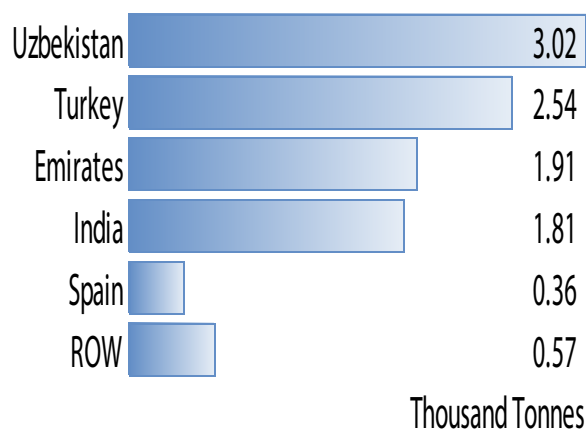
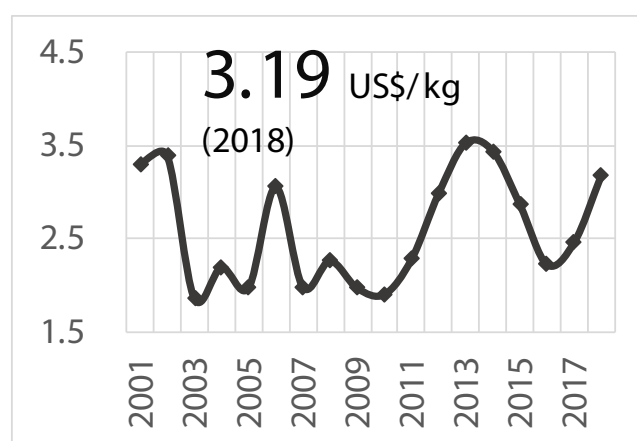
Value



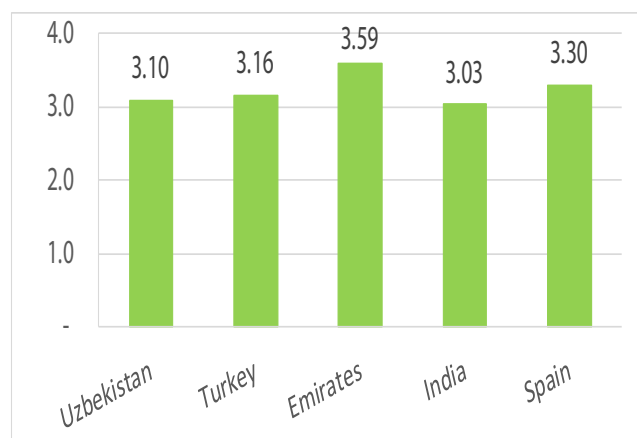
Market Share by Country



Average Price: US\$/Kg

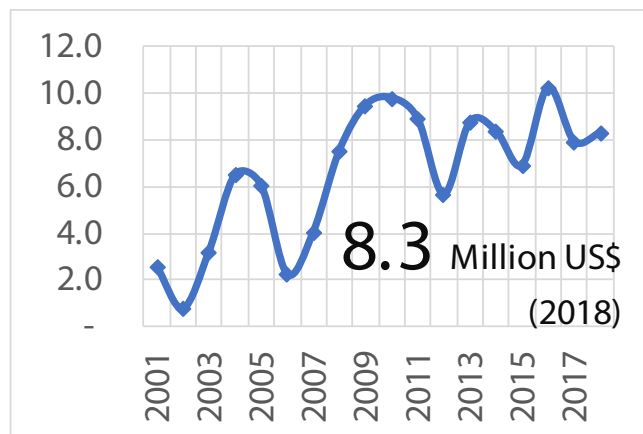


Average Price by Country 2018: US\$/Kg

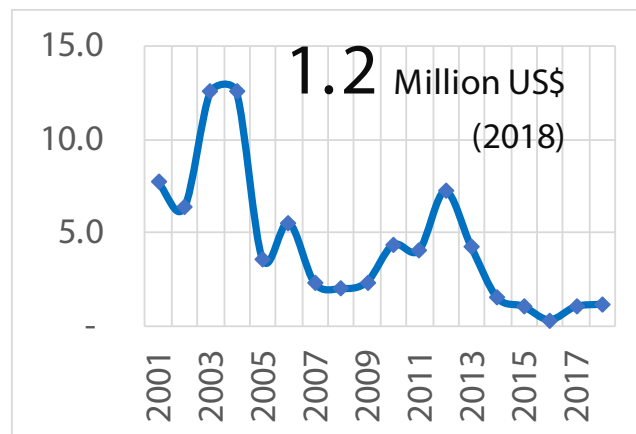


COTTON FABRIC TRADE DATA

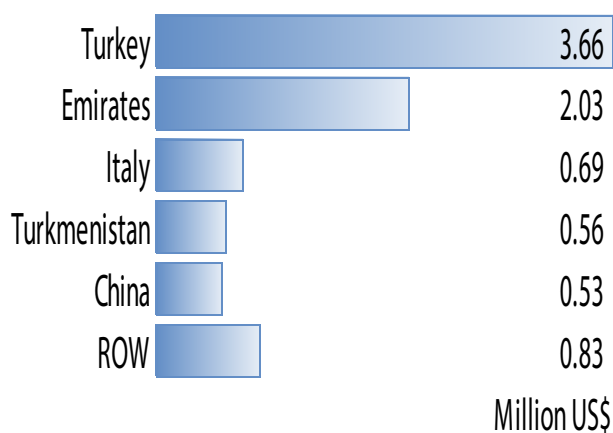
Woven Cotton Fabric Imports



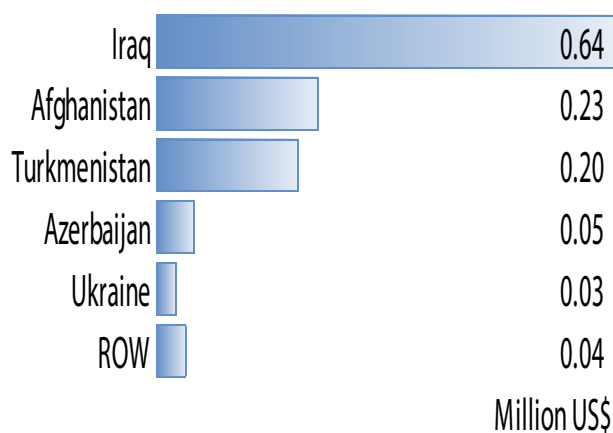
Woven Cotton Fabric Exports



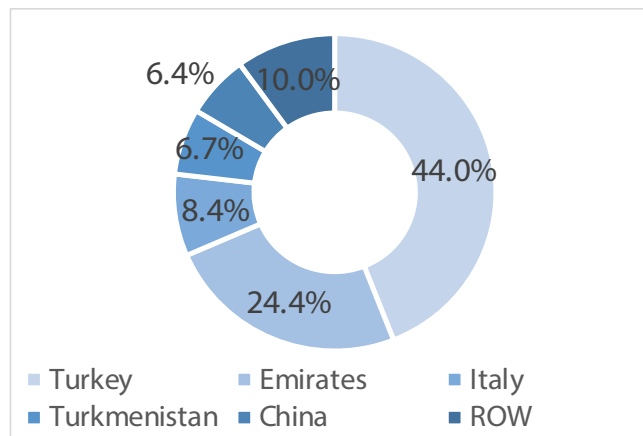
Woven Cotton Fabric Imports - by Country



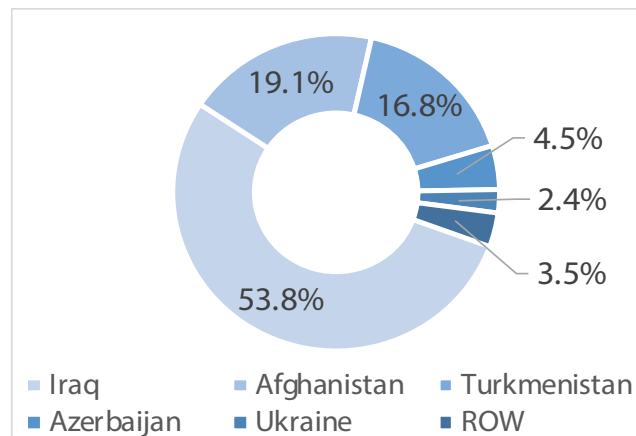
Woven Cotton Fabric Exports - by Country



Market Share Imports by Country - 2018 Woven Cotton Fabric

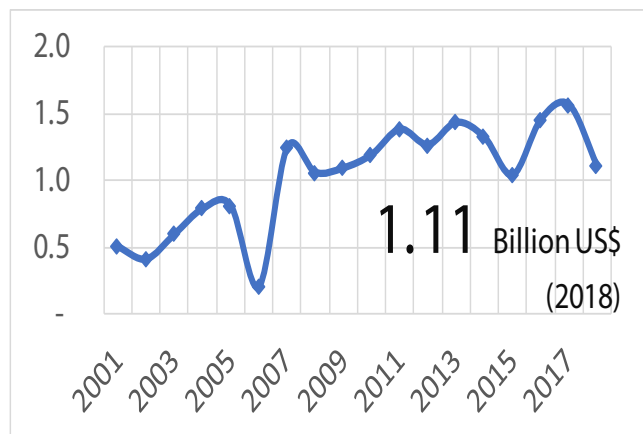


Market Share Exports by Country - 2018 Woven Cotton Fabric

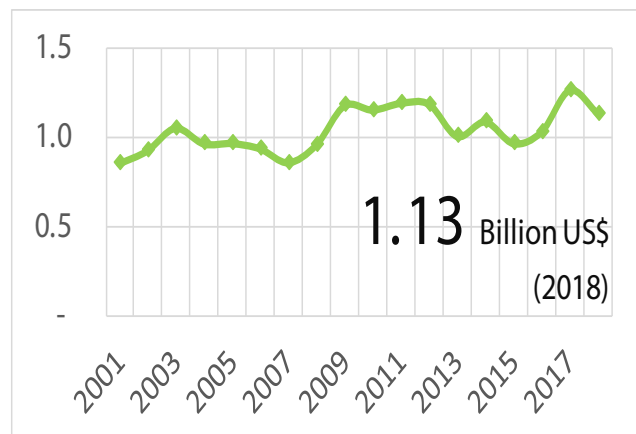


TEXTILE & APPAREL TRADE DATA

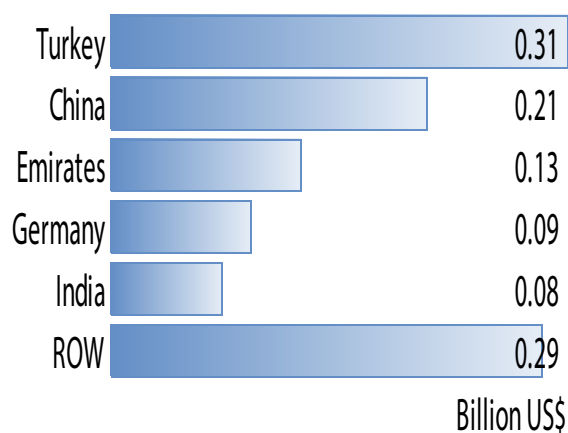
Imports



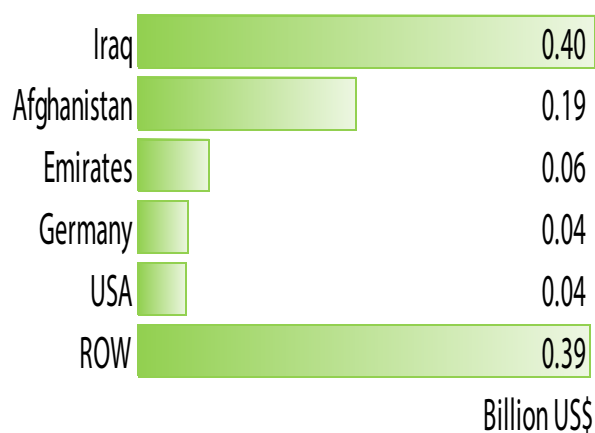
Exports



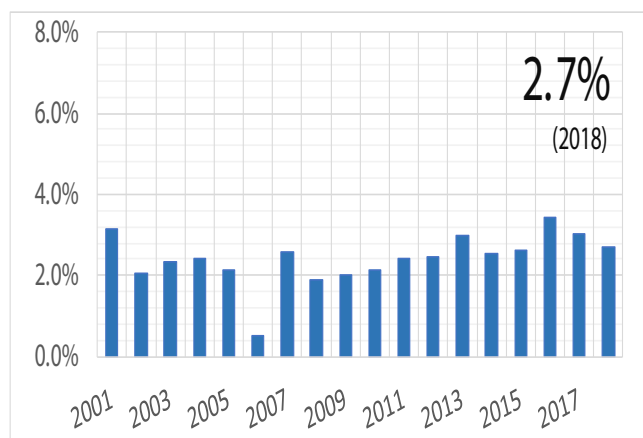
Imports by Country - 2018



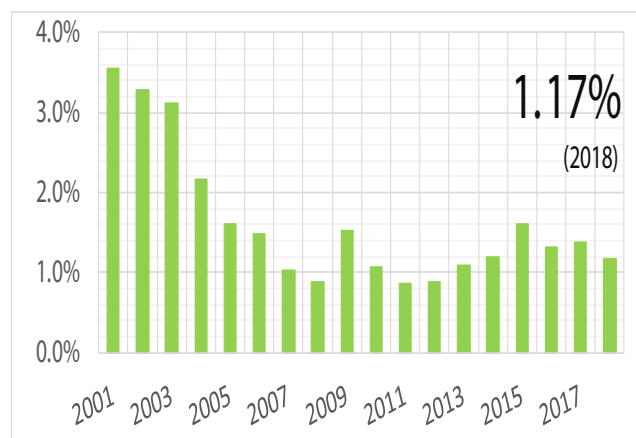
Exports by Country - 2018



T&A Imports Share in Overall Imports

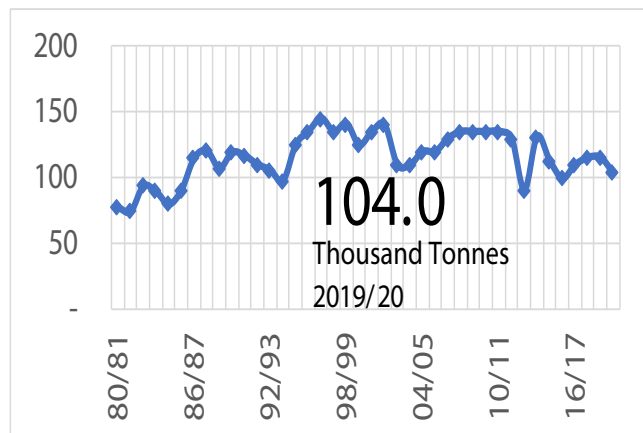


T&A Exports Share in Overall Exports

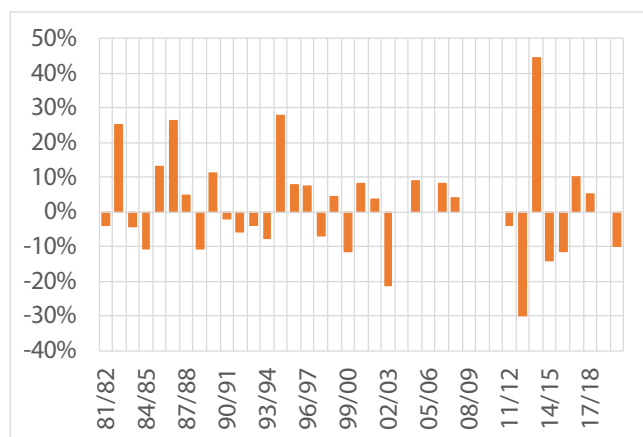


COMPOSITION OF THE TEXTILE & APPAREL INDUSTRY

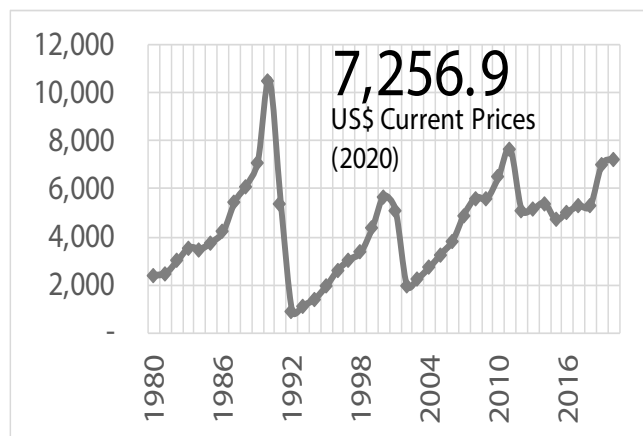
Cotton Mill Use



Mill Use - Annual Variation %



GDP per capita



Employment

300,000

Textile & Apparel Sector '000

Spinning Machinery

1,600

Air-Jet Spindles

90,000

Open-End

2,000,000

Short-Staple Spindles

Weaving Machinery

8,500

Shuttle Looms

12,000

Shuttle-less Looms

No. Textile & Apparel Factories

9,818

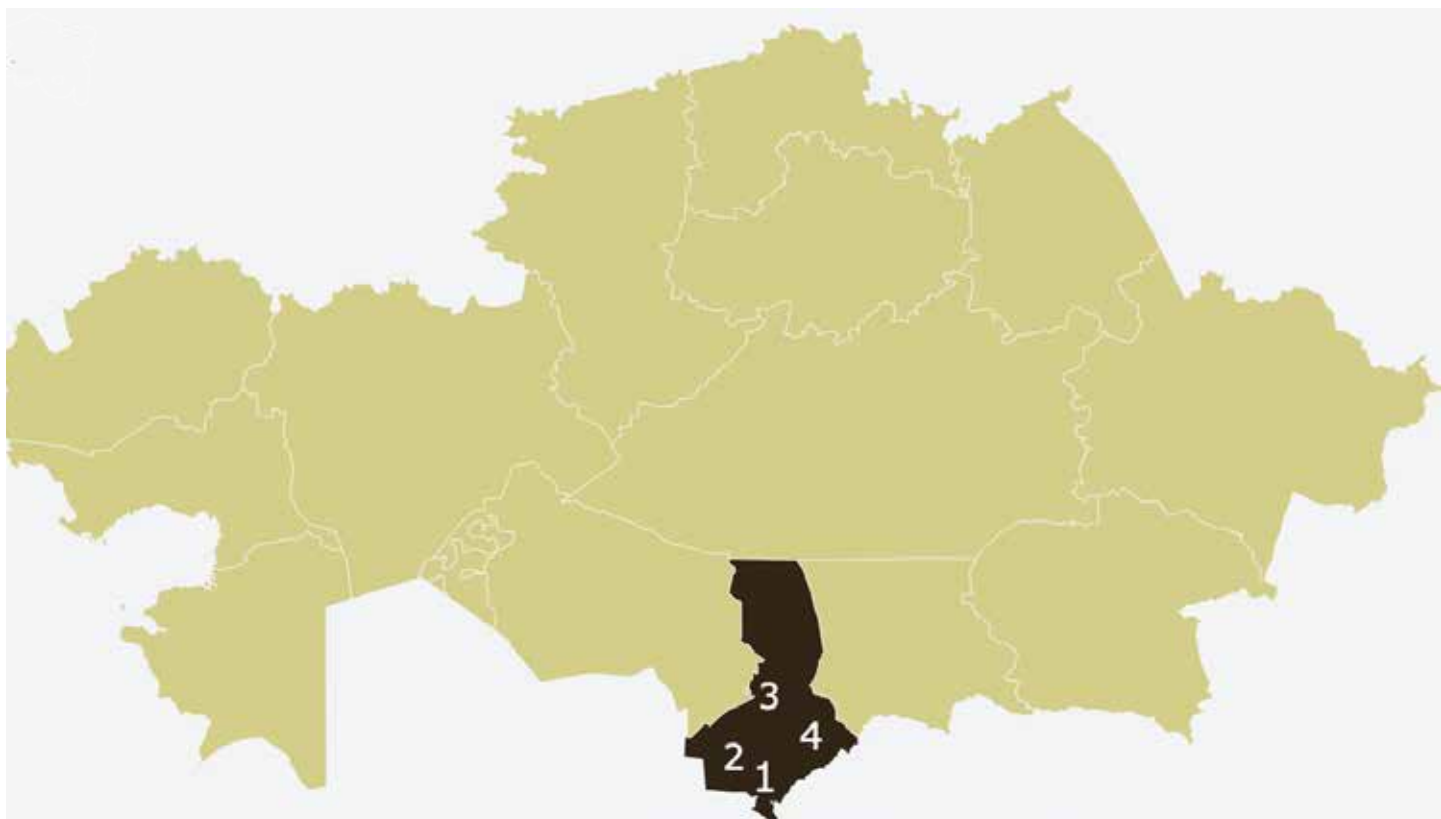


KAZAKHSTAN

Data on the Cotton Sector



Basic Data 2020



Arable Area

29,748

'000 Hectares

Cotton Area

119

'000 Hectares

Production

79

'000 Tonnes

Lint Yield

666

Kg/Hectare

PRODUCTION 2020

		Area '000 Ha	Yield Kg/Ha	Production '000 Tonnes
1	Maktaaral	80	660	53
2	Shardara	22	696	15
3	Ordabasy	8	710	6
4	Turkistan	8	568	4
5	Others	1	846	1
	National	119	666	79

Consumption

13

'000 Tonnes

Lint Exports

67

'000 Tonnes

Farmers

31,745

Male

Farmers

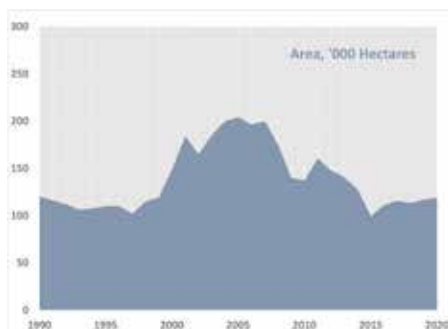
10,000

Female

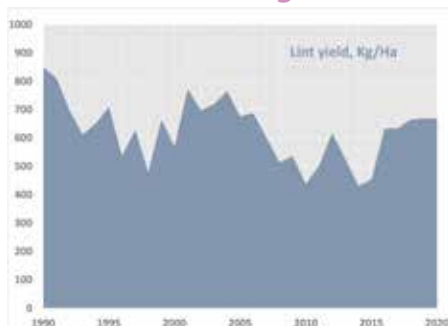


PRODUCTION

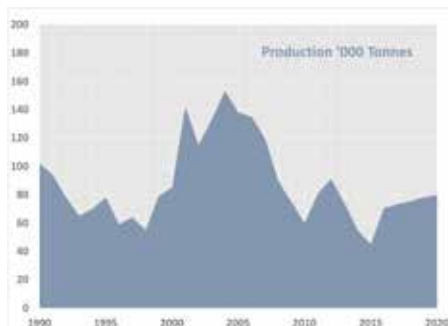
Cotton Area '000 Hectares



Lint Yield Kg/Ha

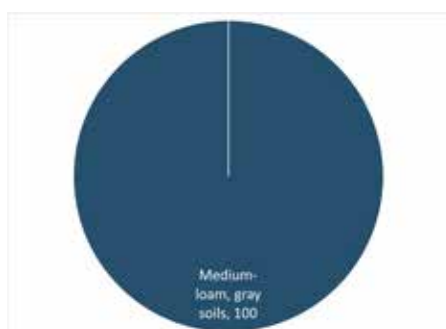


Production '000 Tonnes



SOILS

Soil Types -West



COMPETING CROPS

Chickpea
Alfalfa
Soybean

ROTATION CROPS

Chickpea
Alfalfa
Soybean

DISEASES

DISEASES / PATHOGENS

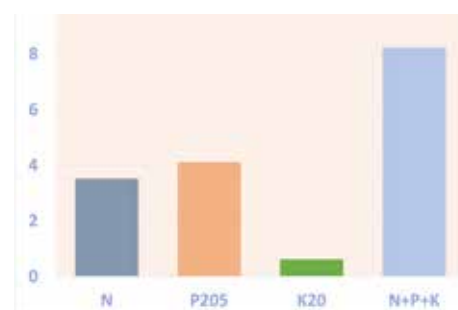
Rhizoctonia solani
Xanthomonas malvacearum
Verticillium dahliae

CHEMICAL CONTROL

Prometryn, 50%
 Metolachlor, 960 g/l
 fluazifop-p-butyl 150 g/l

FERTILISERS

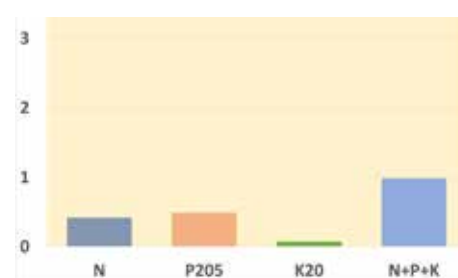
Fertiliser (NPK) use Kg/Hectare



Fertiliser (NPK) use per Kg Lint



Fertiliser (NPK) use '000 Tons



TILLAGE, STALKS-USE & SEEDS

Tillage Methods (% Area)

20	90	10	80
Zero Tillage	Disc Plough	Chisel Plough	Conventional Tillage

Use of Cotton stalks (% Use)

5	0	60	35
Burnt in Fields	Used as Firewood	Ploughed Back	Stacked on Bunds

Use of Cotton Seeds (% Use)

95	0	5	0
Crushed for Oil	Direct Cattle-Feed	Used for Sowing	wasted

Rainwater & Irrigation water (mm)

		6	292
Total Rainfall	Effective Rainfall	No. of Irrigations	Irrigation Water/Ha

Methods of Irrigation (% Area)

0	94	5	1
Flood	Furrow	Sprinkler	Drip

Rainfed Area (%) & Water Used /Kg Lint

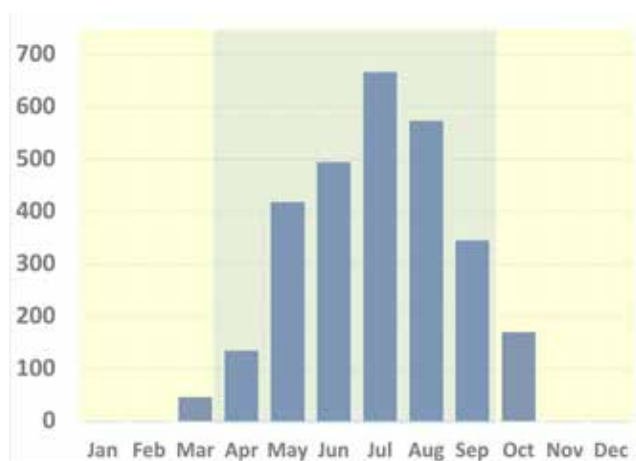
0	348	4,374	0
Rainfed % Area	Irrigation Billion L	Irrigation L/Kg Lint	Rainwater L/Kg Lint

VARIETIES AND FIBRE TRAITS

	Release Year	% Area	Ginning %	Length UHML mm	Strength g/tex	Mic
M-4005	2006	20	36.8	32.6	25-29	4.7
M-4007	2009	30	37.5	33	25-29	4.7
M-4011	2010	35	37.8	33.1	25-29	4.7
PA 3044			38.2	32.6	25-29	4.7
Bereke-07			37.6	33	25-29	4.7
Myrzashol			38.5	33.3	25-29	4.6

WEATHER 2019-2020

Heat Units (DD₆₀) -Maktaaral



Rainfall (mm) -Maktaaral



COTTON RESEARCH

The National Agrarian Scientific Educational Centre of the Ministry of Agriculture of the Republic of Kazakhstan is the only authorised organisation for agricultural research. All scientific research in the field of agriculture is coordinated by the Ministry of Education and Science of the Republic of Kazakhstan. KazAgroInnovatsiya Atakent of the Ministry of Agriculture of the Republic of Kazakhstan is responsible for research on cotton. Scientific research in the Republic of Kazakhstan is funded mainly from the republican budget according to the 255 "Budget Program" in accordance with the rules of basic-grant and program-targeted funding, approved by the Government of the Republic of Kazakhstan dated May 25, 2011 No. 575. The Centre gets funds from the government through the state budget. Program-oriented funding is made on scientific research that addresses important public-policy objectives. Funding can also be received from the regional budget program 019 for introduction of new scientific developments in a particular area. Funding is also provided under the regional budget program 019 for new scientific developments. Private financing is also done by farmers and cotton producers.

INSECTS & WEEDS

INSECT PESTS / INSECTICIDES

NATIONAL

EARLY-SEASON

Tetranychus urticae

Agrotis segetum

Thrips tabaci

Helicoverpa armigera

Spodoptera exigua

MID-SEASON

Acyrtosiphon gossypii

Trialeurodes vaporariorum

INSECTICIDES

Chlorpyr+Cyper 500+50

Lambda-cyhalothrin 50 g/l

Sumi-alpha, 5% a.e. (Esfenvalerate, 50 g/l)

Decis extra, 12.5% a.e. (Deltamethrin, 125 g/l)

Engio 247, Talstar 10%

Confidor extra, Kinmix 5% (Beta-Cyper)

Dimilin, 48% (Diflubenzuron, 480 g/l)

WEEDS / HERBICIDES

NATIONAL

NARROW-LEAF WEEDS

Cynodon dactylon

Sorghum halepense

Elytrigia repens

Echinochloa crus-galli

Setaria viridis

BROAD-LEAF WEEDS

Convolvulus arvensis

Chenopodium album

Amaranthus retroflexus

Cirsium arvense

Capsella bursapastoris

HERBICIDES

Gezaguard 50, (Prometryn, 500g/gl)

Dual Gold 960 (s-metolachlor, 960 g/l)

Fuzilad Forte 150, (Fluazifop-p-butyl)

Panthera (Imazethapyr, 100 g/l)

COST OF CULTIVATION US\$/Hectare

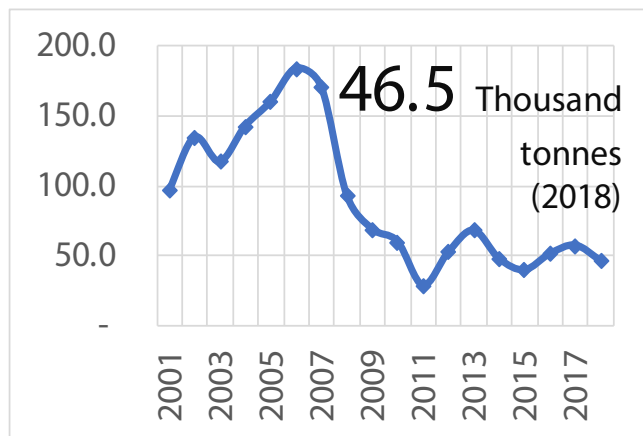
INPUTS	Quantity (Kg/Ha)	Operations per season	Total cost /Ha
Non-GM seeds			44
Biotech/GM seeds			
NPK+Other			85
Insecticides			30
Herbicides			
Fungicides			
Growth regulators			
Defoliants			
Manure		1	
Others (please specify)			
MANPOWER / LABOUR	Wages per person	Persons per operation	Total cost per hectare
Land preparation /tillage etc.,	5.5	20	110
Sowing	5.5	5	30
Fertiliser / manure application	5.5	4	20
Irrigation	5.5	4	24
Thinning	5.5	2	10
Weeding	5.5	11	60
Hoeing	5.5	4	20
Pesticide application	5.5	6	32
Defoliator application	5.5	3	15
Picking / harvesting	5.5	65	180
Stalk cutting & removal	5.5	5	30
Transportation /unloading etc.,	5.5	7	40
Ginning cost per 100 Kg			80
Others (please specify)	0.0	0	0.00
MACHINERY /ANIMALS etc.	Cost per Operation	Number of Operations	Total cost per hectare
Tractors			40
Implements & tools			20
Electric / Diesel pumps etc.,			
Electricity / Diesel etc.,			
Harvesting machines			
Hoeing / Tillage machinery etc.,			20
Bullocks /Buffaloes			
Land rent			
MARKET VALUE	Yield Kg/per hectare	Market value per 100 Kg	Value per hectare
Seed cotton	1766	0.55	1026
Ginning % (output)	30.3		
Lint (fibre)	535	1.6	856
Seed	1225	0.22	269.5
COST OF CULTIVATION			815
NET RETURNS (SEED-COTTON)			211
NET RETURNS (SEED + LINT)			319

TRADE DATA

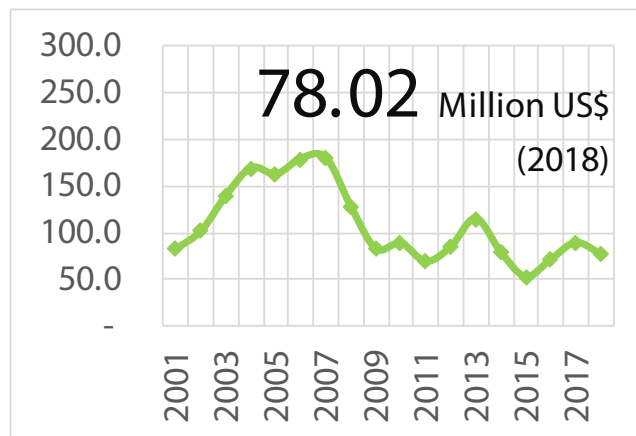


COTTON FIBRE EXPORT DATA

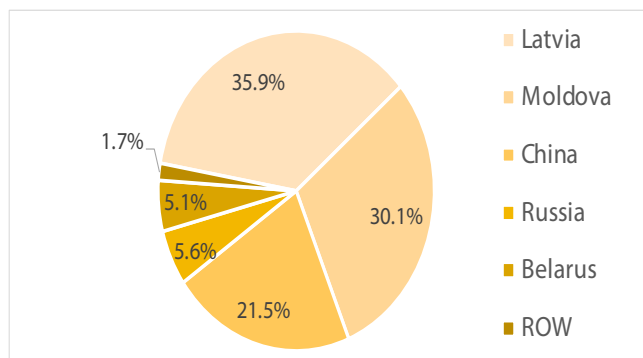
Quantity



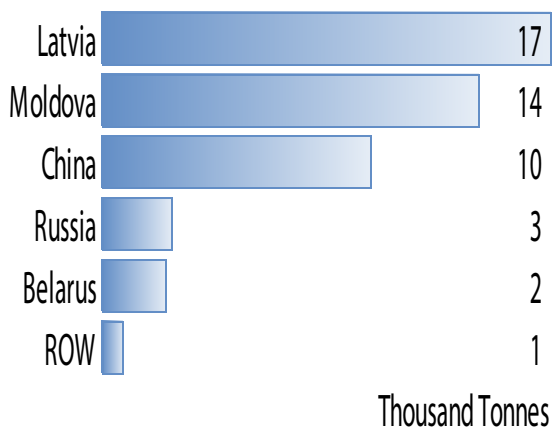
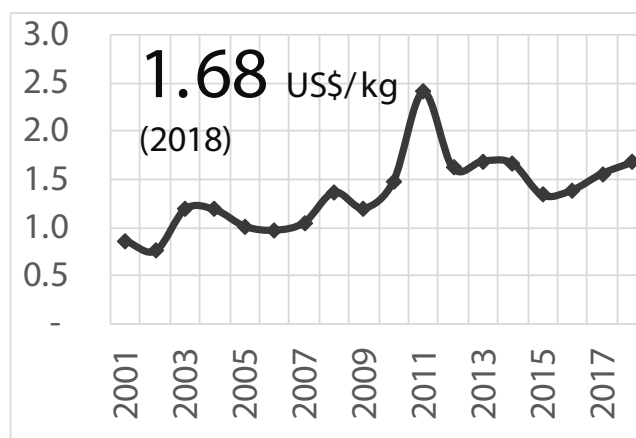
Value



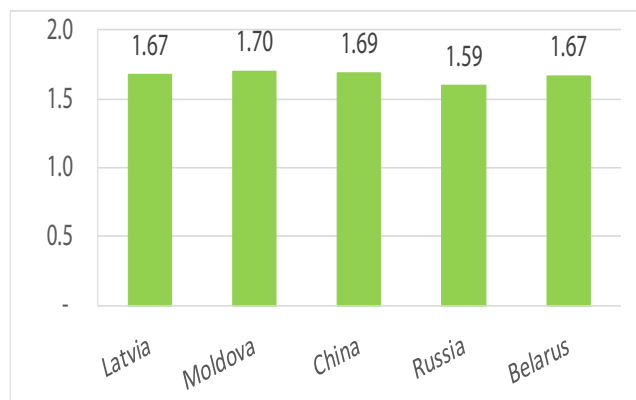
Market Share by Country



Average Price: US\$/Kg

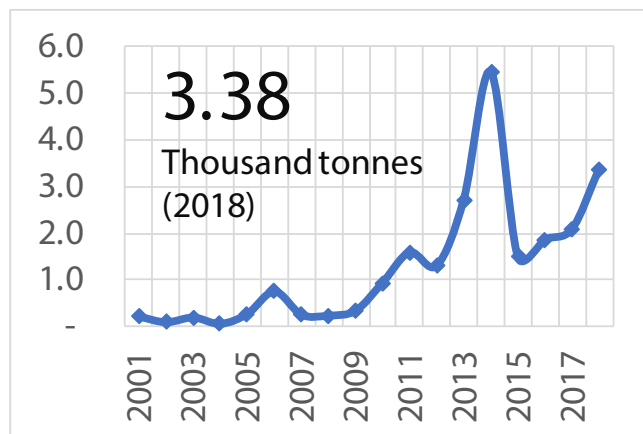


Average Price by Country 2018: US\$/Kg

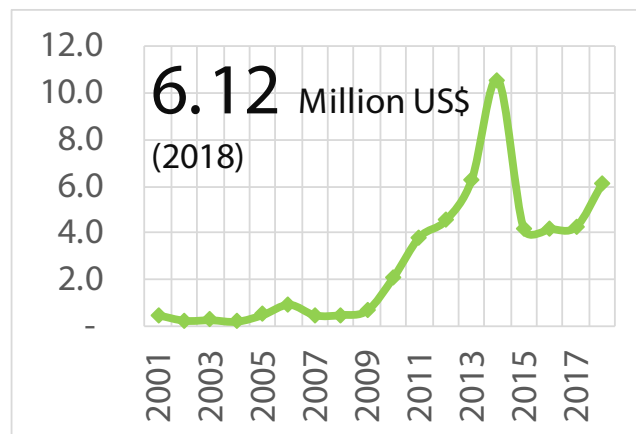


COTTON YARN IMPORT DATA

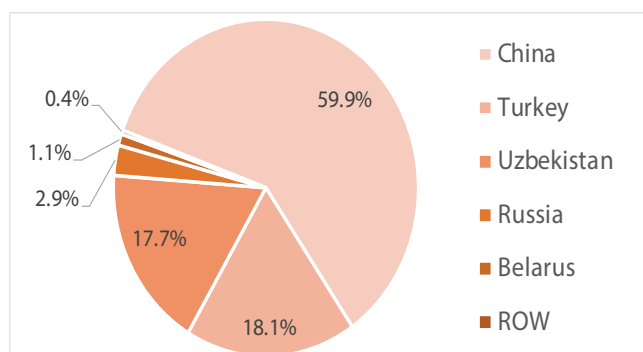
Quantity



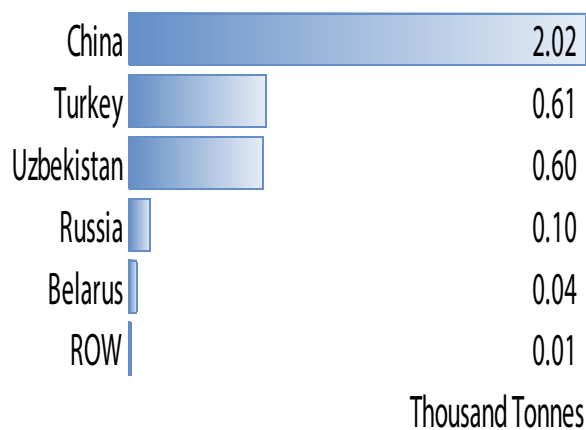
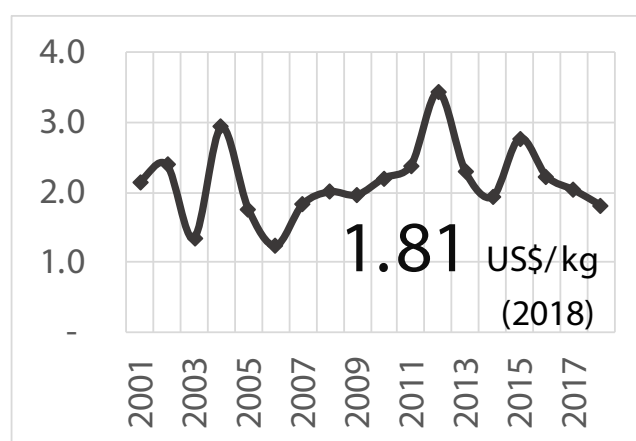
Value



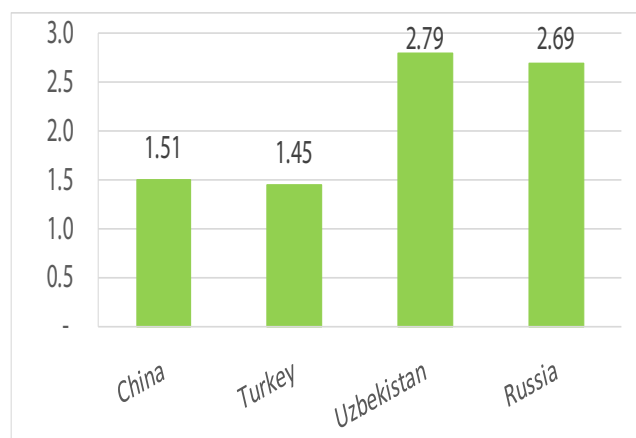
Market Share by Country



Average Price: US\$/Kg

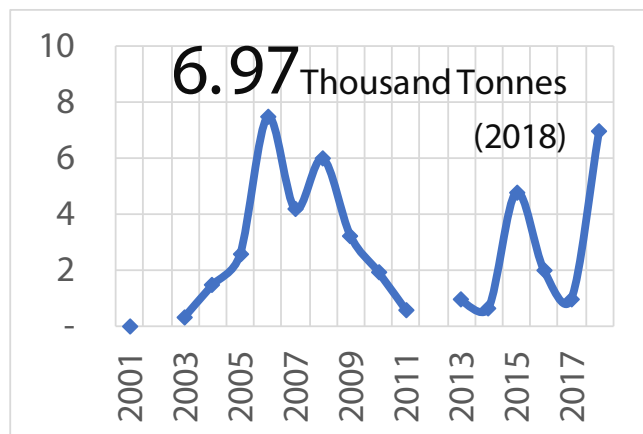


Average Price by Country 2018: US\$/Kg

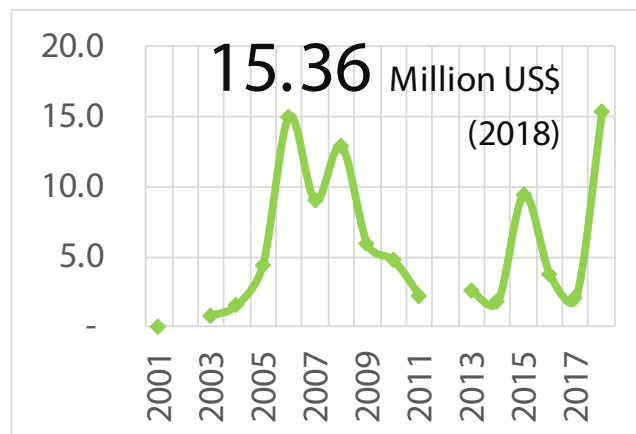


COTTON YARN EXPORT DATA

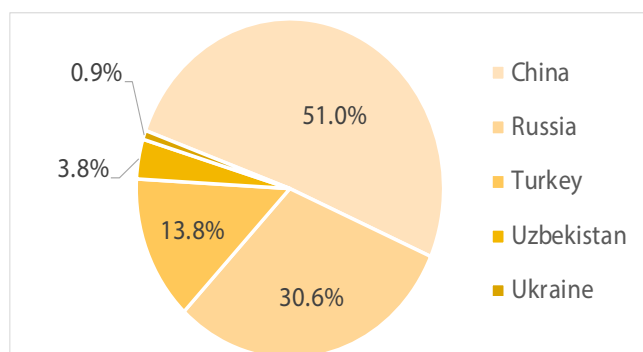
Quantity



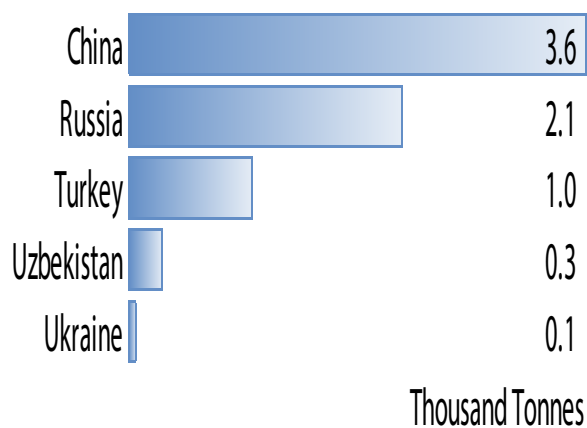
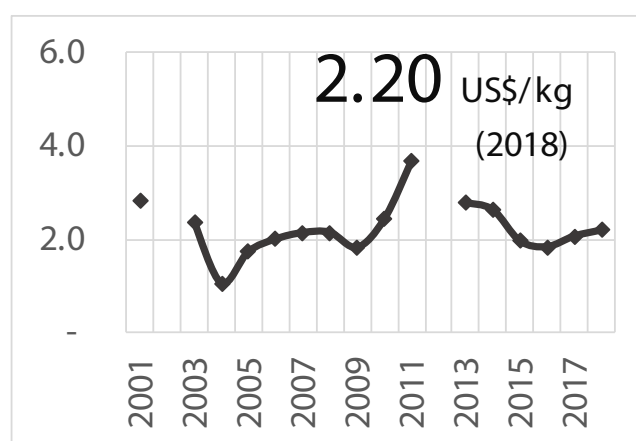
Value



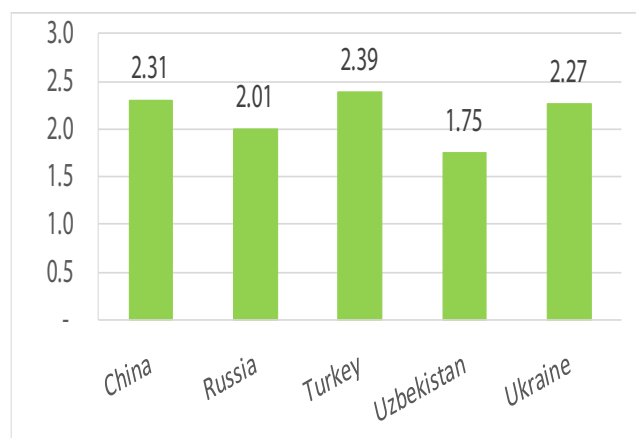
Market Share by Country



Average Price: US\$/Kg

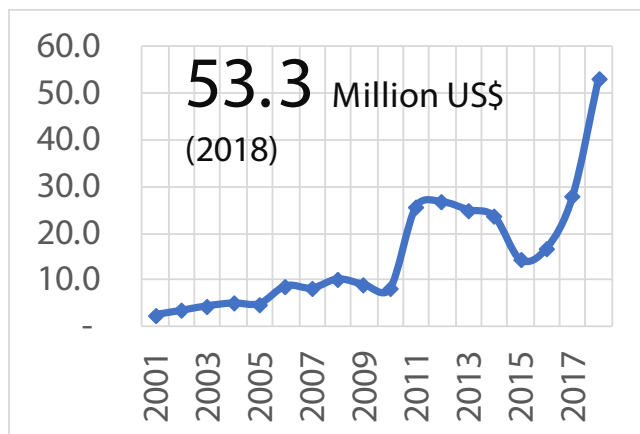


Average Price by Country 2018: US\$/Kg

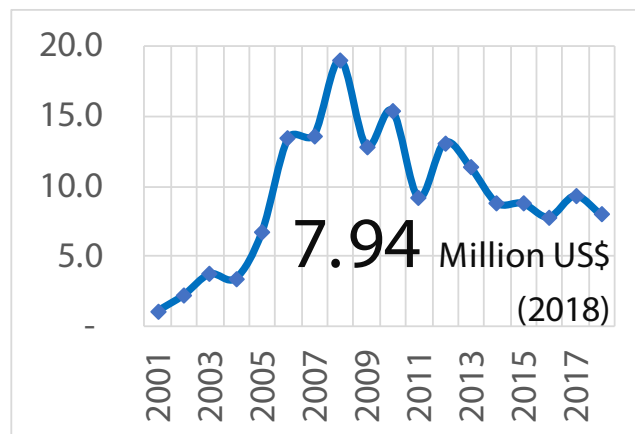


COTTON FABRIC TRADE DATA

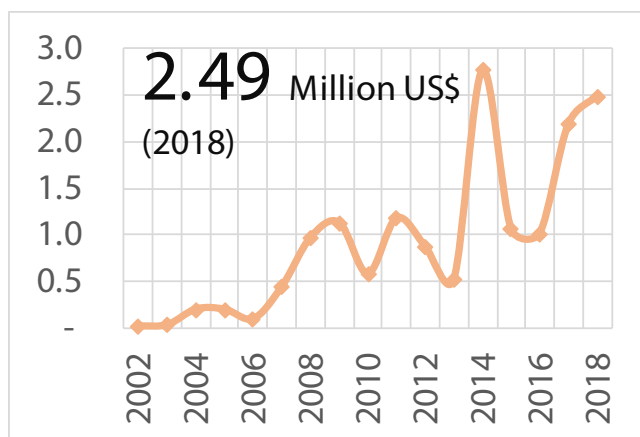
Woven Cotton Fabric Imports



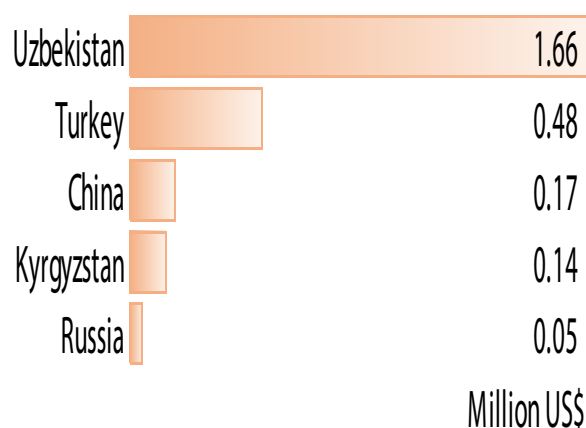
Woven Cotton Fabric Exports



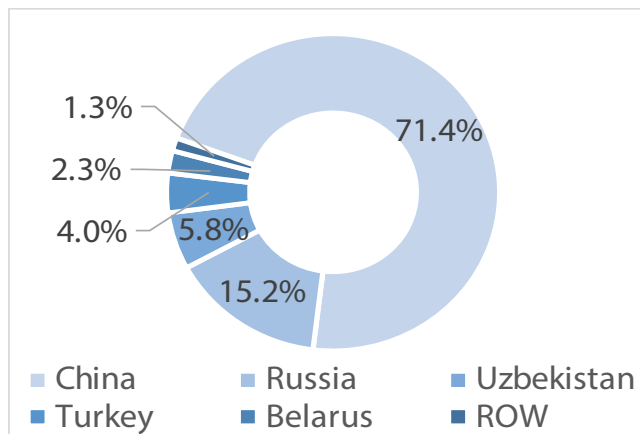
Knitted Cotton Fabric Imports



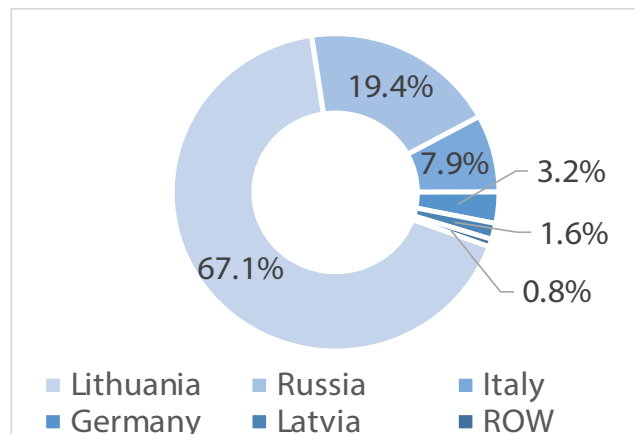
Knitted Cotton Fabric imports by Country



Market Share Imports by Country - 2018 Woven Cotton Fabric

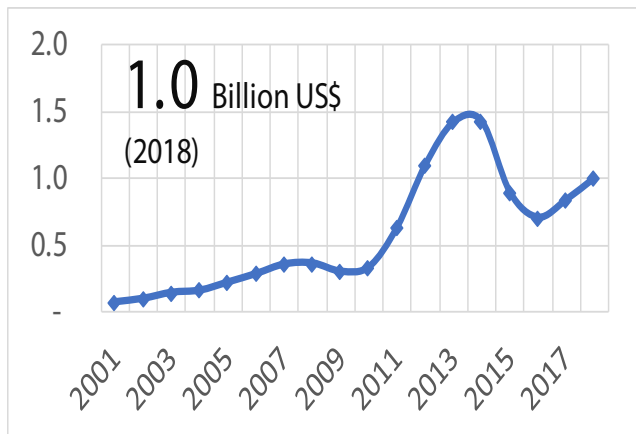


Market Share Exports by Country - 2018 Woven Cotton Fabric

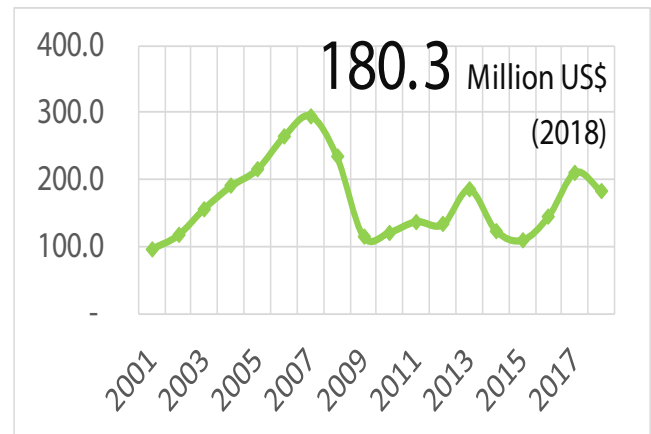


TEXTILE & APPAREL TRADE DATA

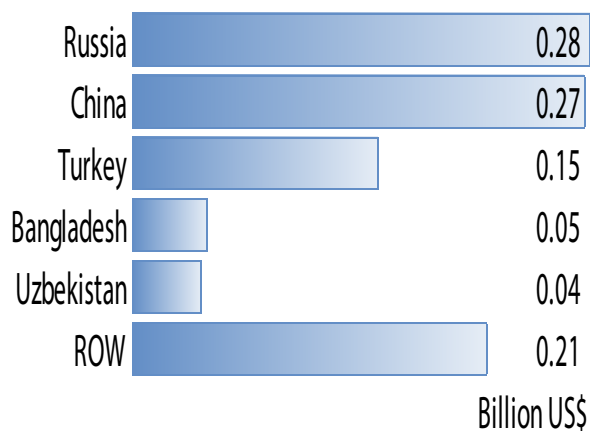
Imports



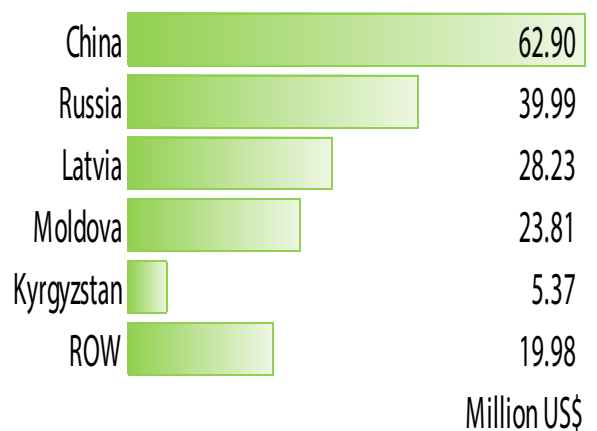
Exports



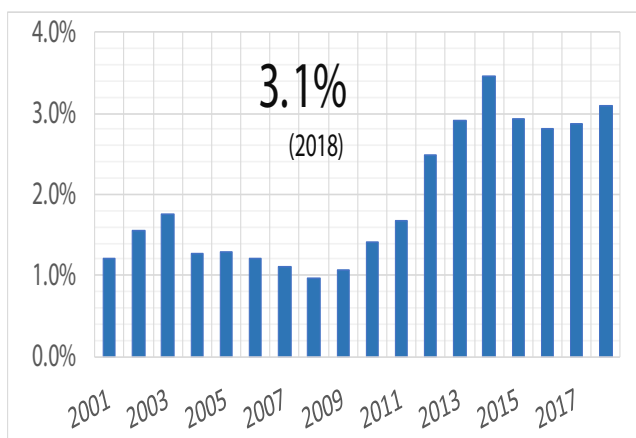
Imports by Country - 2018



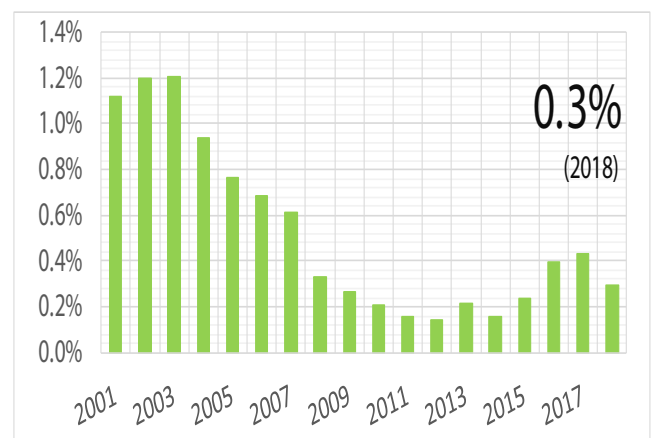
Exports by Country - 2018



T&A Imports Share in Overall Imports

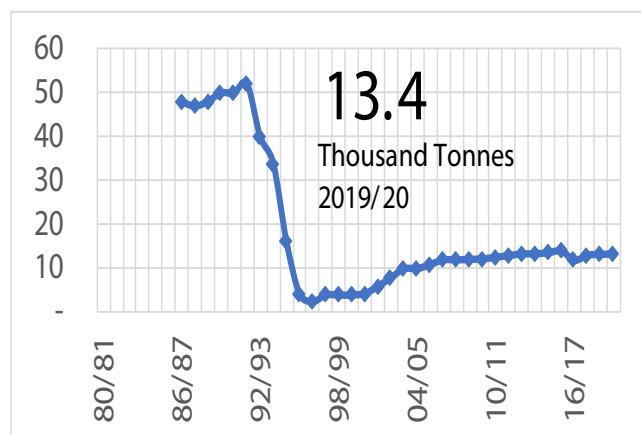


T&A Exports Share in Overall Exports



COMPOSITION OF THE TEXTILE & APPAREL INDUSTRY

Cotton Mill Use



Spinning Machinery

10,400

Open-End

41,500

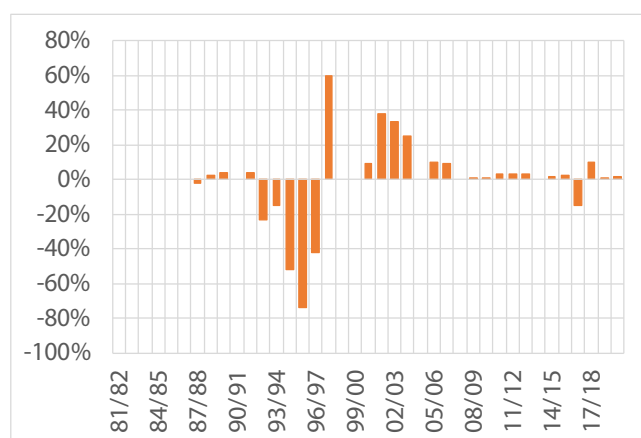
Short-Staple Spindles

Weaving Machinery

400

Shuttle-less Looms

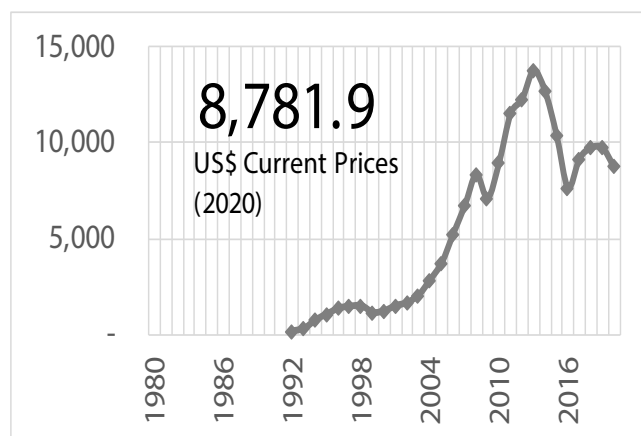
Mill Use - Annual Variation %



Better Cotton Produced in
2019/20

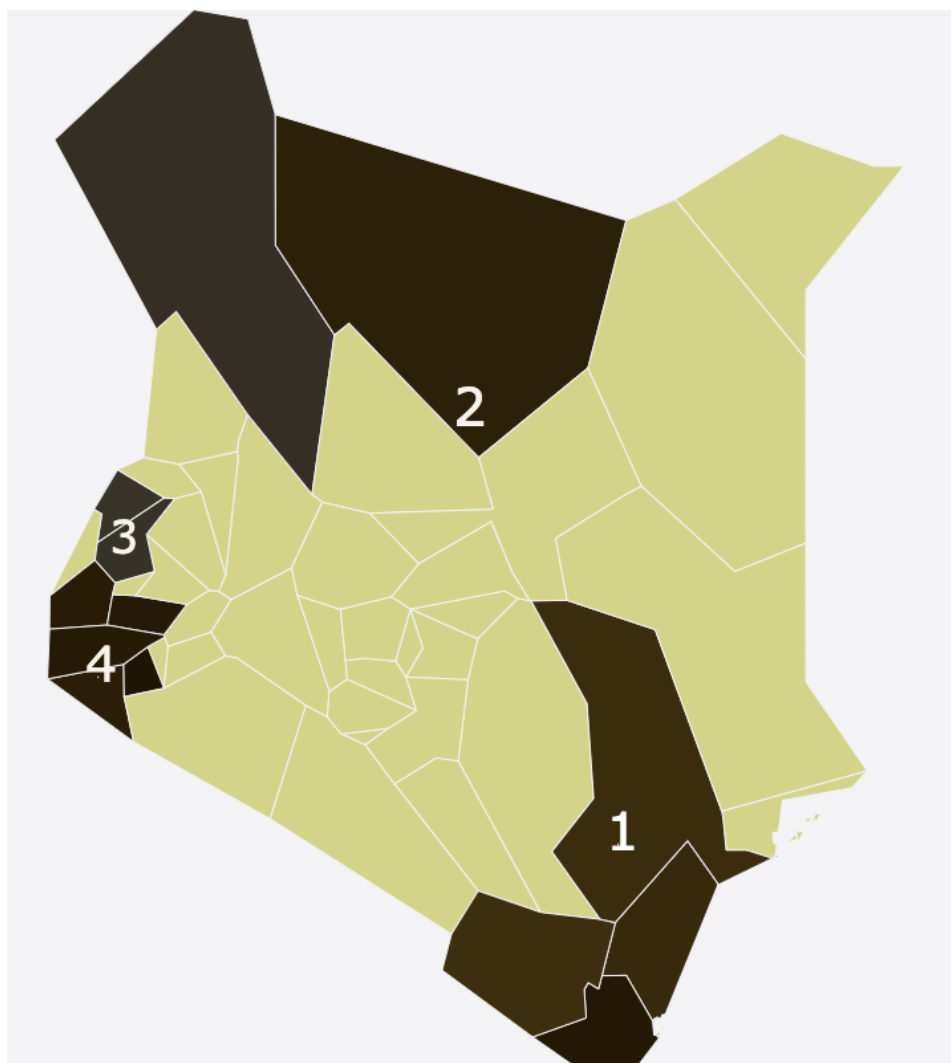
2,000 tonnes

GDP per capita





Basic Data 2020



Arable Area

5,800

'000 Hectares

Cotton Area

24

'000 Hectares

Consumption

8

'000 Tonnes

Lint Exports

0

'000 Tonnes

Production

6

'000 Tonnes

Lint Yield

235

Kg/Hectare

Farmers

18,745

Male

Farmers

9,293

Female



PRODUCTION 2020

		Area '000 Ha	Yield Kg/Ha	Production '000 Tonnes
1	Coastal	5	224	1
2	Eastern	5	230	1
3	Western	13	242	3
4	Others-Rift Valley	1	220	0
	Total	24	235	6

NUMBER OF FARMERS

	Men	Women
Coastal	1,340	2,130
Eastern	11,000	3,500
Western	6269	3343
Others-Rift Valley	136	320
Total	18,745	9,293

TILLAGE, STALKS-USE, WEEDING & HARVESTING

Tillage Methods (% Area)

National	2	66	34	98
	Zero Tillage	Disc Plough	Chisel Plough	Conventional Tillage

Use of Cotton Stalks (% Use)

Coastal	50	50	0	0
Eastern	40	30	10	20
Western	15	40	30	15
Others	90	5	5	0
National	29	39	19	13
	Burnt in Fields	Used as Firewood	Ploughed Back	Stacked on Bunds

Weeding Method (%)

Harvest Method (%)

National	99	0	1	100	0
	Hand	Machine	Herbicide	Hand	Machine

WATER

Methods of Irrigation (% Area)

Coastal	0	0	0	0
Eastern	0	100	0	0
Western	0	0	0	0
Rift Valley	0	0	0	0
National	0	100	0	0
	Flood	Furrow	Sprinkler	Drip

Rainwater & Irrigation water (mm)

Coastal			0	0
Eastern			4	120
Western	1,058	653	0	0
Rift Valley			0	0
National			4	120
	Total Rainfall	Effective Rainfall	No. of Irrigations	Irrigation Water/Ha

SEEDS & PLANTING

Seeds Used for Sowing (%)

Coastal	10	90	100	0
Eastern	100	0	100	0
Western	99	1	100	0
Others	80	20	100	0
National	81	19	100	0
	Fuzzy Seeds	Delinted	Chemical Treated	Untreated

Planting Method (%)

Seed Source (%)

Coastal	100	0	10	90
Eastern	100	0	100	0
Western	100	0	99	1
Others	100	0	80	20
National	100	0	81	19
	Manual	Machine	Local	Imported

Use of Cotton Seeds (% Use)

Coastal	78	0	22	0
Eastern	5	0	90	5
Western	60	2	30	8
Others	42	0	55	3
National	0	73	22	5
	Oil Crushing	Cattle-feed	Sowing	Wasted

Seed Rate, Spacing & Plant Population/Ha

National	12.5	90	60	37,037
National	15	90	30	37,037
	Seed rate Kg/Ha	Between rows cm	Within row cm	Plant population per Hectare



VARIETIES AND FIBRE TRAITS

	Release Year	% Area	Ginning %	Length UHML mm	Strength g/tex	Mic
Varieties/Hybrids in Coastal						
C567	2019	22	36	25-35mm	26-31	3.7-4.7
C570	2019	40	36	25-35mm	26-31	3.7-4.7
C571	2019	28	36	25-35mm	26-31	3.7-4.7
HART 89M	1989	10	34	25-35	28-30	3.7-4.7
Varieties in Eastern						
HART 89M	1989	100	34	25-35	28-30	3.7-4.7
Varieties in Western						
KSA 81M	1981	80	34	25-35	28-30	3.7-4.7
C567	2019	8	36	25-35mm	26-31	3.7-4.7
C570	2019	6	36	25-35mm	26-31	3.7-4.7
C571	2019	6	36	25-35mm	26-31	3.7-4.7
Varieties/Hybrids in Others-Rift Valley						
KSA 81M	1981	38%	34			
C-567	2019		36	25-35mm	26-31	3.7-4.7
C-570	2019	62%	36	25-35mm	26-31	3.7-4.7
C-571	2019		36	25-35mm	26-31	3.7-4.7

INSECTS, PATHOGENS & WEEDS

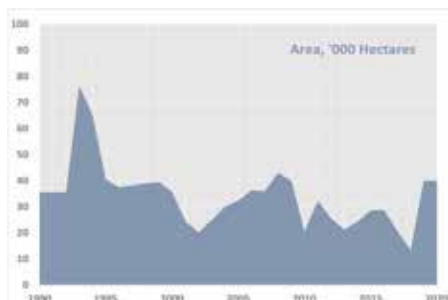
INSECT PESTS / INSECTICIDES	INSECT PESTS / INSECTICIDES
EASTERN	WESTERN
EARLY-SEASON	EARLY-SEASON
<i>Helicoverpa armigera</i>	<i>Agrotis segetum</i> , <i>Aphis gossypii</i>
<i>Aphis gossypii</i>	<i>Bemisia tabaci</i> , <i>Empoasca</i> spp., <i>Tetranychus</i> spp.
<i>Thrips tabaci</i>	
MID-SEASON	MID-SEASON
<i>Tetranychus telarius</i>	<i>Helicoverpa armigera</i>
<i>Dysdercus</i> spp.	<i>Pectinophora gossypiella</i>
<i>Helicoverpa armigera</i>	<i>Dysdercus</i> spp., <i>Earias biplaga</i>
	<i>Cryptophlebia leucotreta</i>
INSECTICIDES	INSECTICIDES
Beta-cyfluthrin 25 EC	Beta-cyfluthrin 25 EC
Imidaclopride + Betacyfluthrin 100 + 45g/L	Imidaclopride + Betacyfluthrin 100 + 45g/L
Deltamethrin (Pyrethroids)	Deltamethrin (Pyrethroids)
DISEASES / PATHOGENS	WEEDS / HERBICIDES
WESTERN	WESTERN
Root rot, <i>Fusarium wilt</i> & <i>Boll rot</i>	NARROW-LEAF WEEDS
EASTERN	<i>Bermuda grasses</i>
Root rot	<i>Cyperus rotundus</i>
WEEDS / HERBICIDES	BROAD-LEAF WEEDS
EASTERN	<i>Amaranthus</i> spp.
NARROW-LEAF WEEDS	<i>Ipomoea</i> spp.
<i>Cyperus rotundus</i> , <i>Panicum maximum</i>	
<i>Striga hermonthica</i> , <i>Cynodon plectostachyus</i>	
<i>Lolium perenne</i>	
BROAD-LEAF WEEDS	
<i>Bidens pilosa</i>	
<i>Commelina benghalensis</i>	
<i>Oxygonum sinuatum</i>	
<i>Sonchus oleraceus</i>	
<i>Galinsoga parviflora</i>	

COTTON RESEARCH

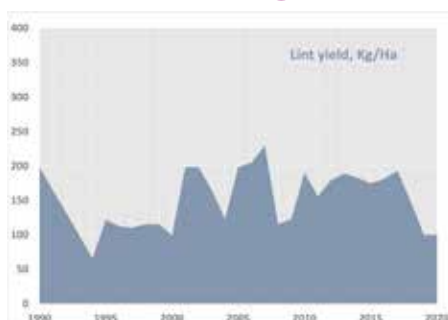
Kenya Agriculture and Livestock Organisation (KALRO) is the main national institution that coordinates research programs in food crops, horticultural and industrial crops, livestock and range management, land and water management, and socio-economics. In addition, international agriculture research organisations such as the International Plant Genetic Resource Institute (IPGRI), International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), Centro Internacional de Mejoramiento de Maíz y Trigo (CIMMYT) and International Centre for Insect Physiology and Ecology (ICIPE) assist with research projects. There are also specialised policy research institutions that are linked to Government institutions whose work is to help analyse trends in the agricultural sector. They include; Tegemeo Institute (Egerton University), Kenya Institute for Public Policy Research and Analysis (KIPPRA, linked to the Ministry of Planning) and the Public Policy and Research (privately managed Institute). Cotton research has been confined to public institutions characterised with inadequate funding.

PRODUCTION

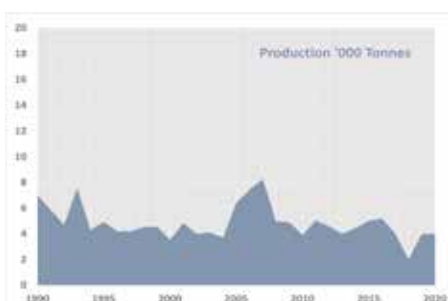
Cotton Area '000 Hectares



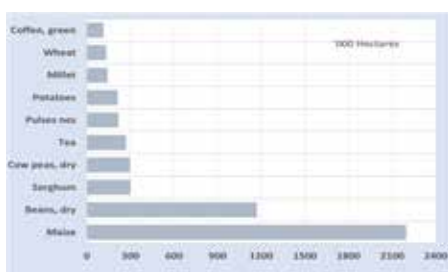
Lint Yield Kg/Ha



Production '000 Tonnes



Area of Crops '000 Ha

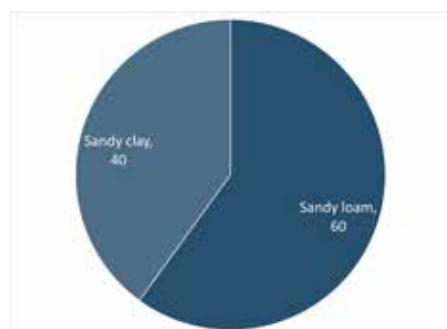


ROTATION CROPS

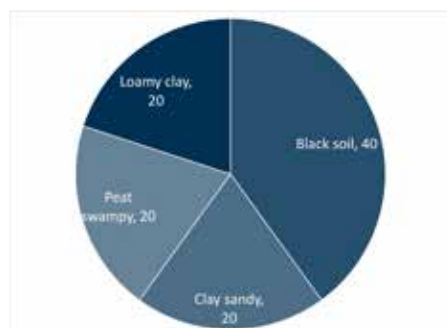
Eastern	Western
Corn	Sorghum
Greengran	beans
	Millet
	Cassava

SOILS

Soil Types -East



Soil Types -West



COMPETING CROPS

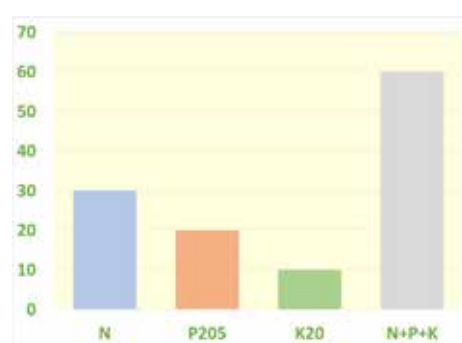
Eastern	Western
Corn	Sorghum
Greengran	Beans
	Millet
	Cassava

FERTILISERS

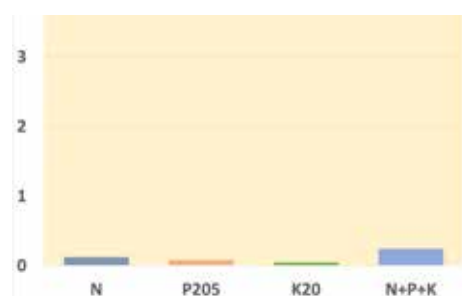
Fertiliser (NPK) use Kg/Hectare



Fertiliser (NPK) use per Kg Lint



Fertiliser (NPK) use '000 Tons



WATER

Rainfed Area (%) & Water Used /Kg Lint

Coastal	100	0	0	0
Eastern	90	1	522	0
Western	100	0	0	26,994
Rift Valley	100	0	0	0
National	98	1	117	0
	Rainfed % Area	Irrigation Billion L	Irrigation L/Kg Lint	Rainwater L/Kg Lint

WEATHER 2019-2020

Heat Units (DD₆₀) -Coastal



Rainfall (mm) -Coastal



Heat Units (DD₆₀) -Eastern



Rainfall (mm) -Eastern



Heat Units (DD₆₀) -Western



Rainfall (mm) -Western



COST OF CULTIVATION US\$/Hectare

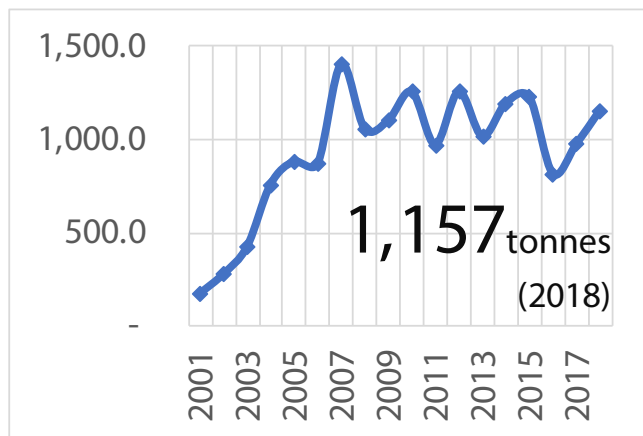
INPUTS	Quantity (Kg/Ha)	Operations per season	Total cost /Ha
Non-GM seeds	15	1	8.5
Biotech/GM seeds			0.0
NPK+Other	125	less frequent	5.0
Insecticides	2L	5 (a few farmers)	25.0
Herbicides			
Fungicides			
Growth regulators			
Defoliant			
Manure	1TON	1	0.0
Others (please specify)	0	0	0.0
MANPOWER / LABOUR	Wages per person	Persons per operation	Total cost per hectare
Land preparation /tillage etc.,	4.63	10	46.3
Sowing	3.70	10	46.3
Fertiliser / manure application	4.63	1	4.6
Irrigation	0.00		0.0
Thinning	2.78	2	5.6
Weeding	2.78	8	22.2
Hoeing	0.00		0.0
Pesticide application	4.63	5	23.2
Defoliator application	0.00		0.0
Picking / harvesting	4.63	10	46.3
Stalk cutting & removal	0.00		0.0
Transportation /unloading etc.,	0.93	2	1.9
Ginning cost per 100 Kg			44.0
Others (please specify)			
MACHINERY /ANIMALS etc.	Cost per Operation	Number of Operations	Total cost per hectare
Tractors			
Implements & tools			
Electric / Diesel pumps etc.,			
Electricity / Diesel etc.,			
Harvesting machines			
Hoeing / Tillage machinery etc.,	46.25	rare	
Bullocks /Buffaloes	41.63	rare	
Land rent	37.00	rare	37.0
MARKET VALUE	Yield Kg/per hectare	Market value per 100 Kg	Value per hectare
Seed cotton	572	0.49	279.4
Ginning % (output)	34	0.00	0.0
Lint (fibre)	234	1.52	355.7
Seed	330	0.29	95.0
COST OF CULTIVATION			235
NET RETURNS (SEED-COTTON)			45
NET RETURNS (SEED + LINT)			172

TRADE DATA

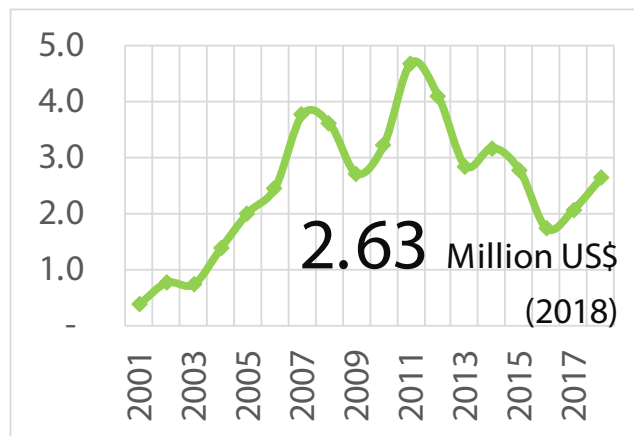


COTTON YARN IMPORT DATA

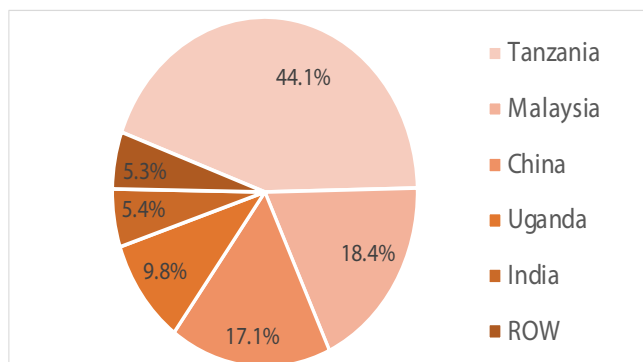
Quantity



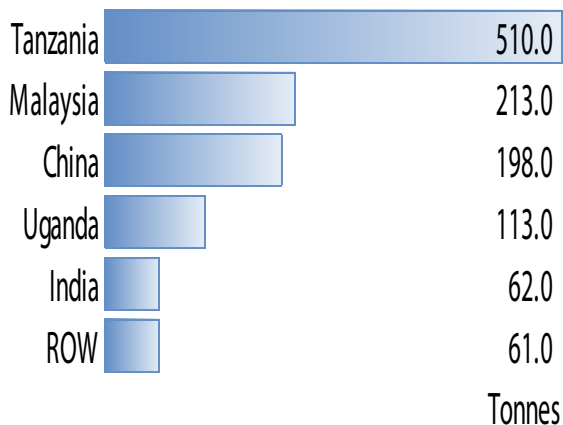
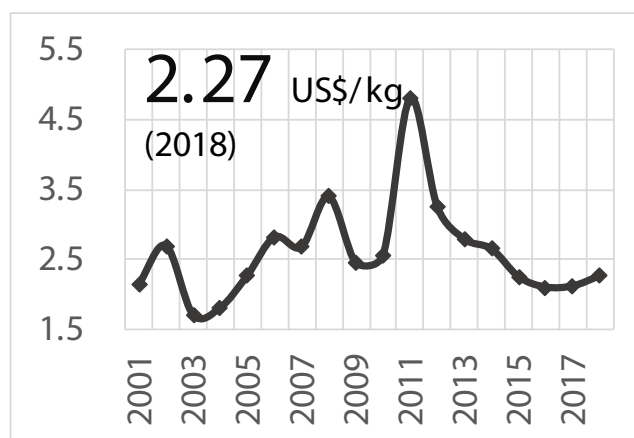
Value



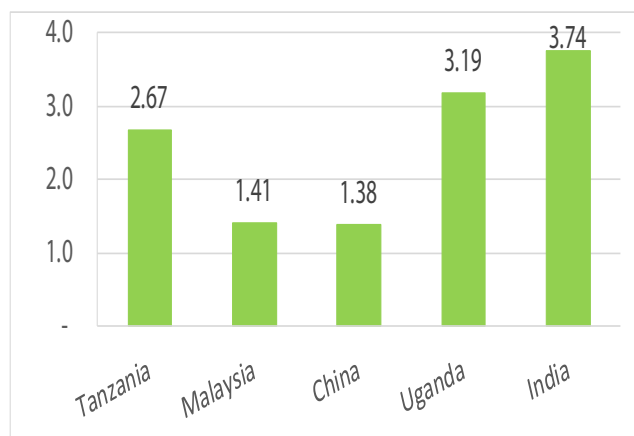
Market Share by Country



Average Price: US\$/Kg

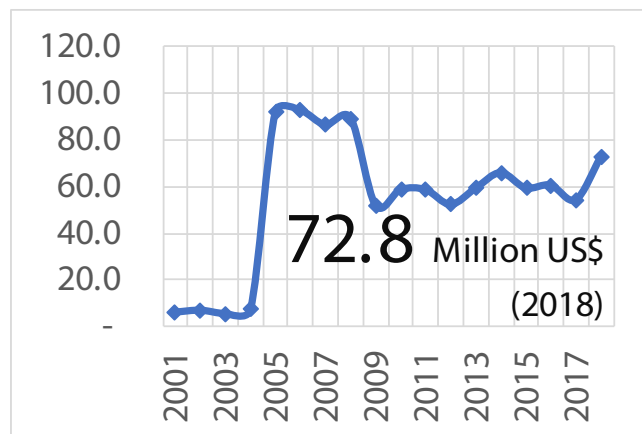


Average Price by Country 2018: US\$/Kg

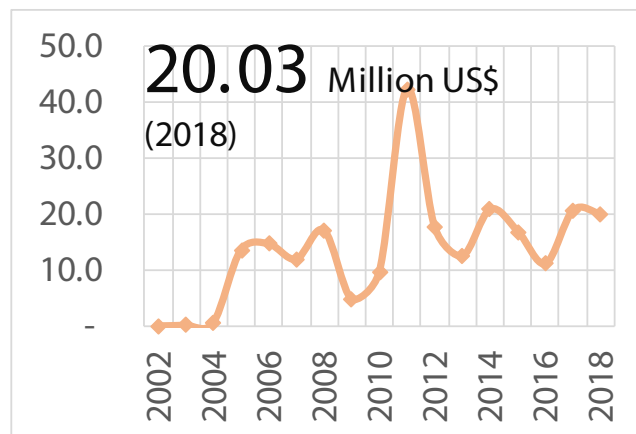


COTTON FABRIC TRADE DATA

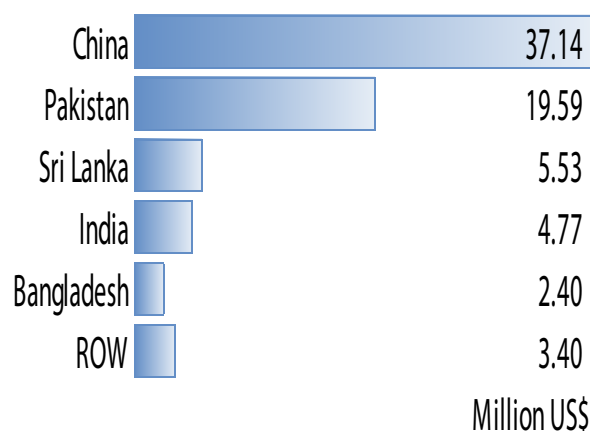
Woven Cotton Fabric Imports



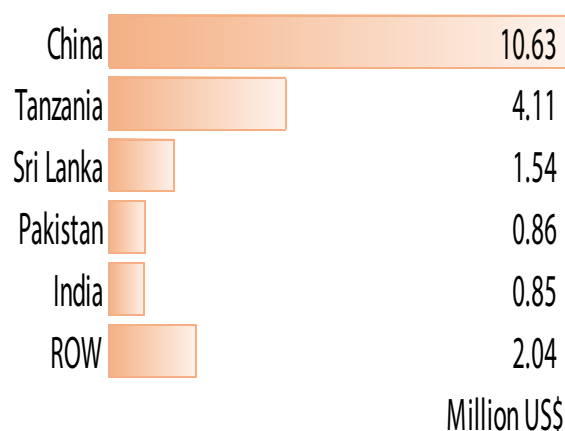
Knitted Cotton Fabric Imports



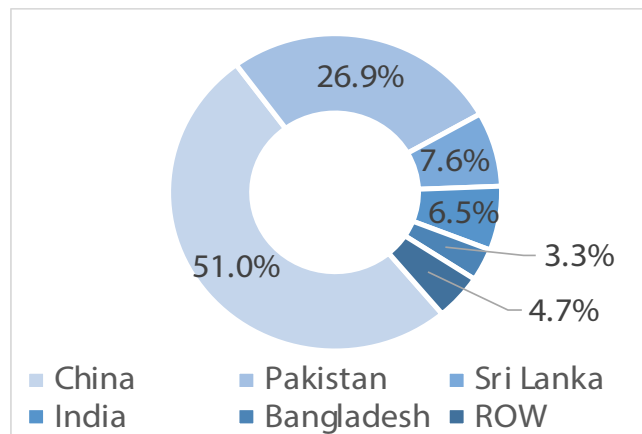
Woven Cotton Fabric Imports by Country



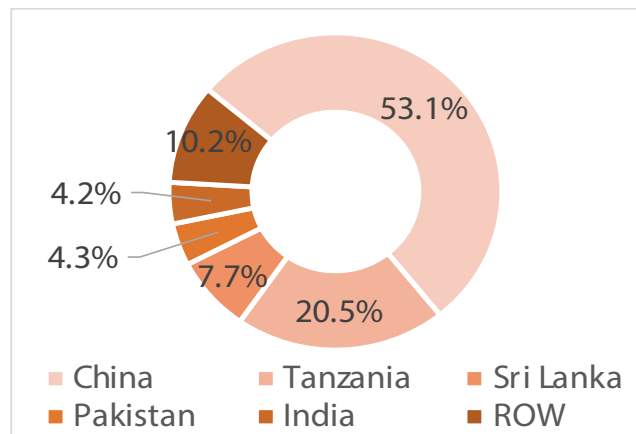
Knitted Cotton Fabric Imports by Country



Market Share Imports by Country - 2018 Woven Cotton Fabric

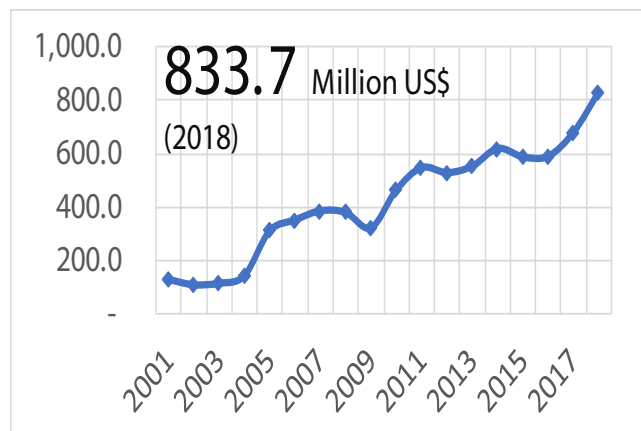


Market Share Imports by Country - 2018 Knitted Cotton Fabric

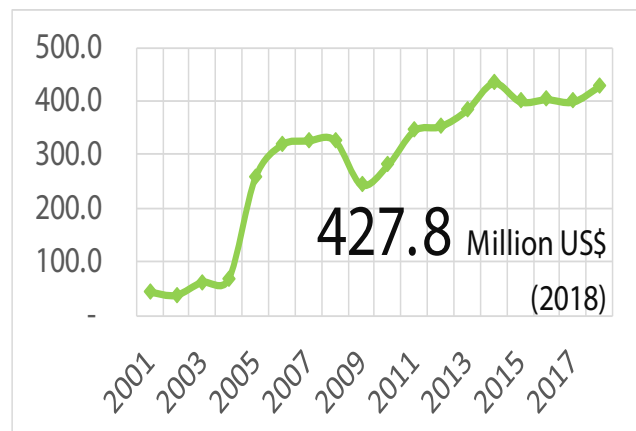


TEXTILE & APPAREL TRADE DATA

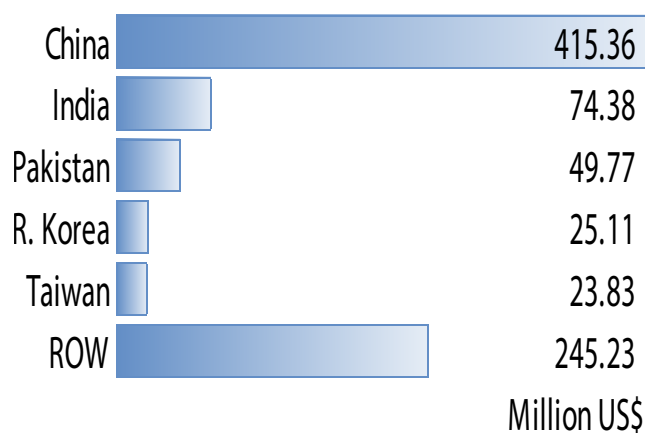
Imports



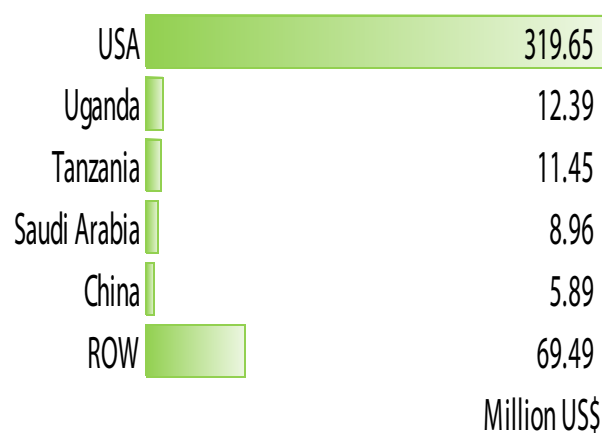
Exports



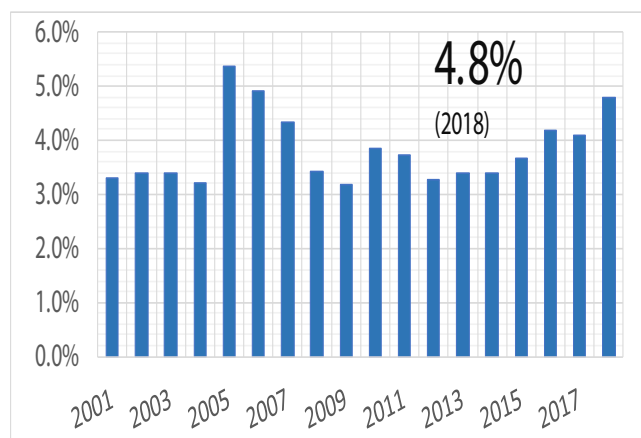
Imports by Country - 2018



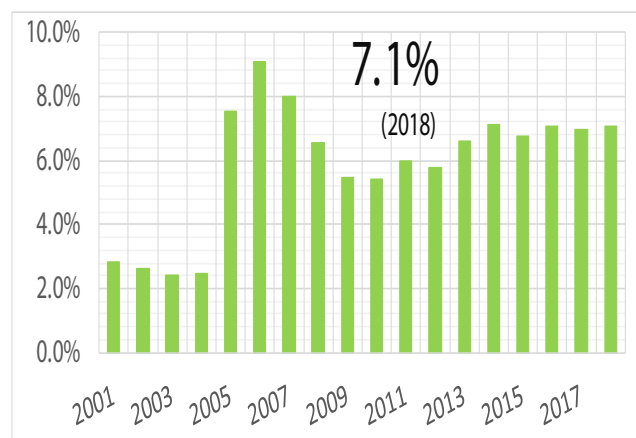
Exports by Country - 2018



T&A Imports Share in Overall Imports

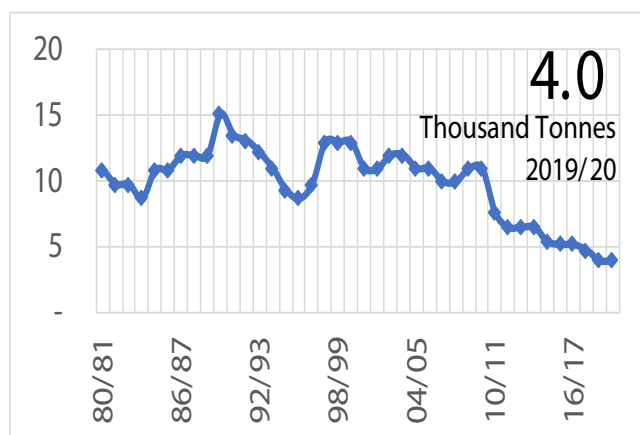


T&A Exports Share in Overall Exports



COMPOSITION OF THE TEXTILE & APPAREL INDUSTRY

Cotton Mill Use



Spinning Machinery

1,500

Open-End

53,200

Short-Staple Spindles

Weaving Machinery

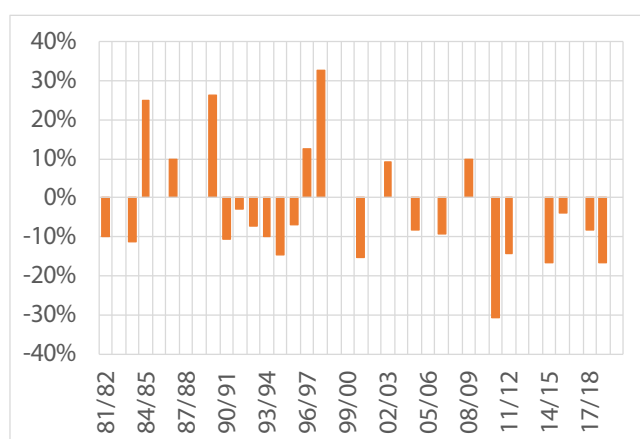
200

Shuttle Looms

430

Shuttle-less Looms

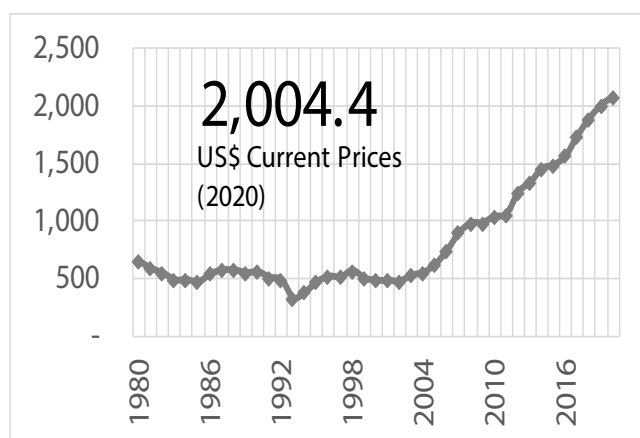
Mill Use - Annual Variation %



No. Textile & Apparel Factories

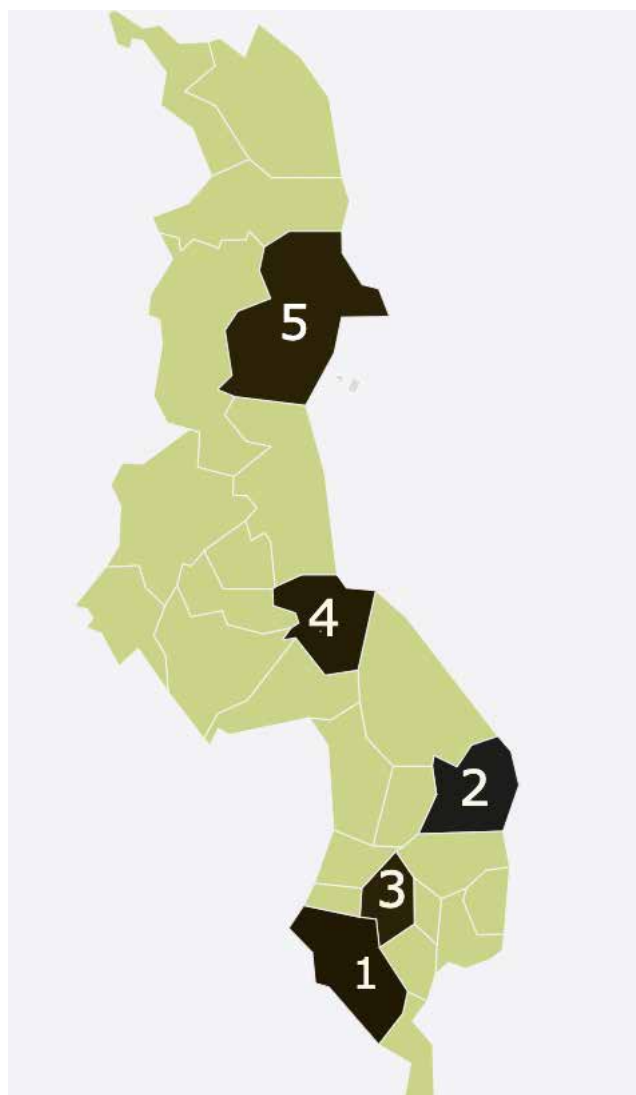
70

GDP per capita





Basic Data 2020



Arable Area

3,600

'000 Hectares

Cotton Area

84

'000 Hectares

Production

21

'000 Tonnes

Lint Yield

245

Kg/Hectare

Consumption

3

'000 Tonnes

Lint Exports

23

'000 Tonnes

Farmers

21,000

Male

Farmers

14,000

Female

WATER

PRODUCTION 2020

		Area '000 Ha	Yield Kg/Ha	Production '000 Tonnes
1	Lower Shire Valley	43	254	11
2	Machinga	6	220	1
3	Blantyre	2	285	1
4	Salima	9	260	2
5	Karonga	5	236	1
6	Others	18	222	4
Total		84	245	21

Rainwater & Irrigation water (mm)

1,181	664	0	0
Total Rainfall	Effective Rainfall	No. of Irrigations	Irrigation Water/Ha

Methods of Irrigation (% Area)

0	0	0	0
Flood	Furrow	Sprinkler	Drip

Rainfed Area (%) & Water Used /Kg Lint

100	0	0	27,092
Rainfed % Area	Irrigation Billion L	Irrigation L/Kg Lint	Rainwater L/Kg Lint

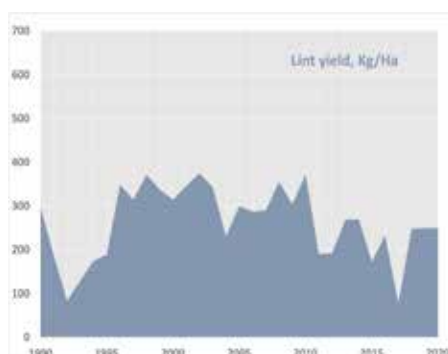


PRODUCTION

Cotton Area '000 Hectares



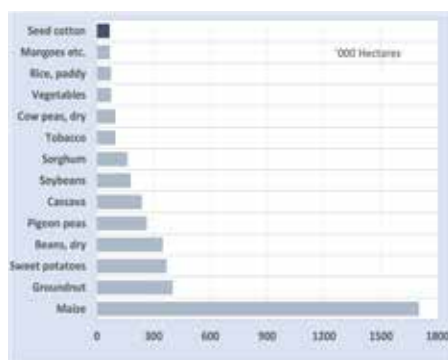
Lint Yield Kg/Ha



Production '000 Tonnes



Area of Crops '000 Ha



INSECTS, PATHOGENS & WEEDS

INSECT PESTS / INSECTICIDES

EARLY-SEASON

Earias insulana
Tetranychus spp.
Aphis gossypii
Thrips tabaci

MID-SEASON

Heliothis armigera
Aphis gossypii
Thrips tabaci
Bemisia tabaci
Tetranychus telarius

INSECTICIDES

Cypermethrin, Chlorpyrifos
 Dimethoate, Bifenthrin
 Malathion, Cyfluthrin
 Omite, Dicofol
 Carbofuran, Ethoprophos

DISEASES / PATHOGENS

Xanthomonas malvacearum
Verticillium / Fusarium
Ramularia areola

WEEDS / HERBICIDES

NARROW-LEAF WEEDS

Panicum maximum
Rottboellia exaltata

BROAD-LEAF WEEDS

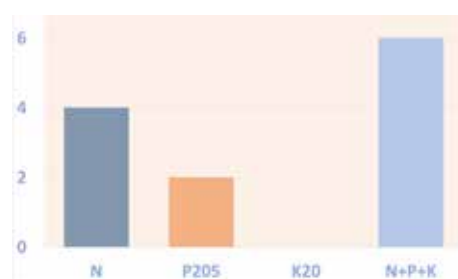
Portulaca oleracea

HERBICIDES

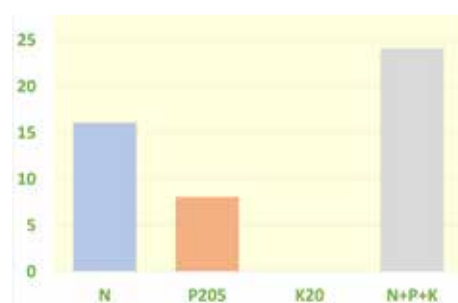
Glyphosate 360SL
 Metolachlar 960 EC
 Dual Magnum
 Harness

FERTILISERS

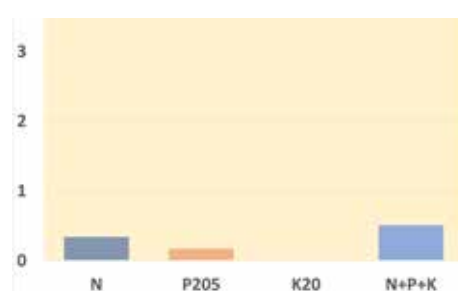
Fertiliser (NPK) use Kg/Hectare



Fertiliser (NPK) use per Kg Lint



Fertiliser (NPK) use '000 Tons



STRUCTURE OF COTTON RESEARCH

The Ministry of Agriculture, Irrigation and Water Development (MoAIWD) coordinates agricultural research through the Department of Agricultural Research Services (DARS) with support from various agencies such as the Government of Malawi and development partners, particularly the World Bank through Agricultural Productivity Programme for Southern Africa (APPSA). DARS is headquartered at Chitedze Research Station in Lilongwe and operates 10 research stations across the country. DARS is responsible for conducting research for agricultural technology development and providing regulatory, technology dissemination and specialist services on all crops and livestock, except tobacco, tea and sugarcane. The Lilongwe university of Agriculture and Natural Resources (LUANR) was established by transforming the Bunda College of Agriculture and Natural Resources College (NRC) into a University through an Act of Parliament No. 22 of 2011. LUANAR became operational on 1st July 2012. LUANR conducts agricultural research including projects on cotton.



VARIETIES AND FIBRE TRAITS

	Release Year	% Area	Ginning %	Length UHML mm	Strength g/tex	Mic
MAKOKA 2000	2000	10	~30	~34	28-33	
RASAM 34		5	~30	~32	28-33	
IRM		5	~30	~34	28-33	
CHUREZA		35	~30	~35	28-33	
MAHYCO HYBRIDS	2018	15	~28	~27	28-33	
QM-301	2004	25	~30	~32	28-33	

TILLAGE, STALKS-USE WEEDING & HARVESTING

Tillage Methods (% Area)

11	89	11	89
Zero Tillage	Disc Plough	Chisel Plough	Conventional Tillage

Use of Cotton stalks (% Use)

75	10	5	10
Burnt in Fields	Used as Firewood	Ploughed Back	Stacked on Bunds

Weeding Method (%)

78	22
Hand	Herbicide

Harvesting Method (%)

100	0
Hand Picked	Machine Picked

SEEDS & PLANTING

Seeds Used for Sowing (%)

70	30	30	70
Fuzzy Seeds	Delinted	Chemical Treated	Untreated

Planting Method (%)

5	95	95	5
Manual	Machine	Local	Imported

Seed Source (%)

Use of Cotton Seeds (% Use)

84	1	10	5
Crushed for Oil	Direct Cattle-Feed	Used for Sowing	wasted

Seed Rate, Spacing & Plant Population/Ha

25	70	30	47,619
Seed Rate Kg/Ha	Between Rows cm	Within Row cm	Plant Population/ Ha



COST OF CULTIVATION US\$/Hectare

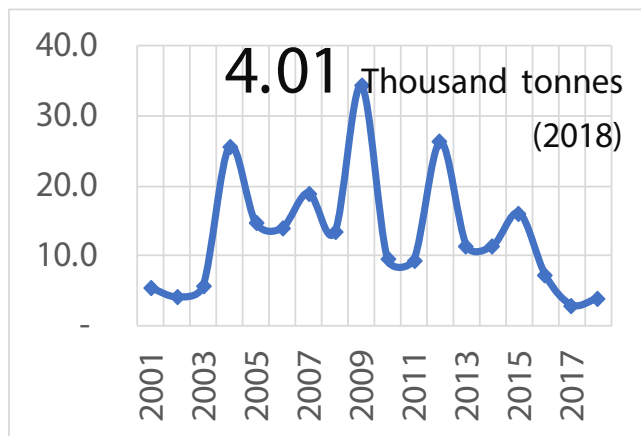
INPUTS	Quantity (Kg/Ha)	Operations per season	Total cost /Ha
Non-GM seeds	15	1	6.0
Biotech/GM seeds			
NPK+Other	10	1	6.1
Insecticides	500	3	10.0
Herbicides	2.5	1	5.7
Fungicides	30	3	14.0
Growth regulators	1	4500	6.0
Defoliants			0.0
Manure	8000	2	46.7
Others (please specify)		1	36.0
MANPOWER / LABOUR	Wages per person	Persons per operation	Total cost per hectare
Land preparation /tillage etc.,	3.5	6	21.0
Sowing	3	6	18.0
Fertiliser / manure application	2.5	6	15.0
Irrigation			0.0
Thinning	2.5	4	10.0
Weeding	2	20	40.0
Hoeing	3.5	6	21.0
Pesticide application	6	1	6.0
Defoliator application	6	1	6.0
Picking / harvesting	3.5	20	70.0
Stalk cutting & removal	3.5	4	14.0
Transportation /unloading etc.,	6	1	6.0
Ginning cost per 100 Kg			38.0
Others (please specify)			0.0
MACHINERY /ANIMALS etc.	Cost per Operation	Number of Operations	Total cost per hectare
Tractors			0.0
Implements & tools	48	1	48.0
Electric / Diesel pumps etc.,	0		0.0
Electricity / Diesel etc.,	0		0.0
Harvesting machines	2	0	0.0
Hoeing / Tillage machinery etc.,	4.7	3	14.0
Bullocks /Buffaloes	11.3	2	22.7
Land rent	60	1	60.0
MARKET VALUE	Yield Kg/per hectare	Market value per 100 Kg	Value per hectare
Seed cotton	610	0.41	250.1
Ginning % (output)	40	0	0
Lint (fibre)	245	1.6	392
Seed	365	0.28	102.2
COST OF CULTIVATION			442
NET RETURNS (SEED-COTTON)			-192
NET RETURNS (SEED + LINT)			14

TRADE DATA

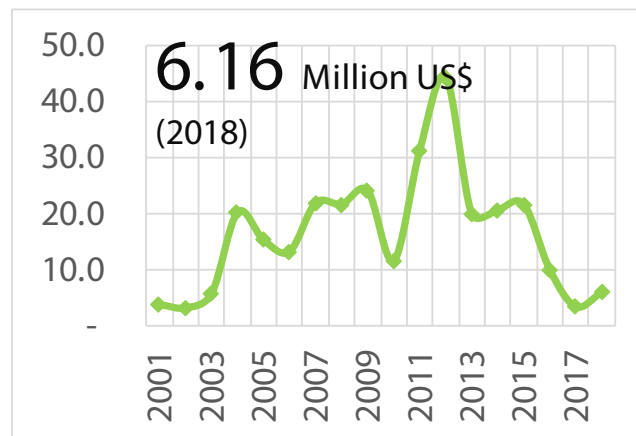


COTTON FIBRE EXPORT DATA

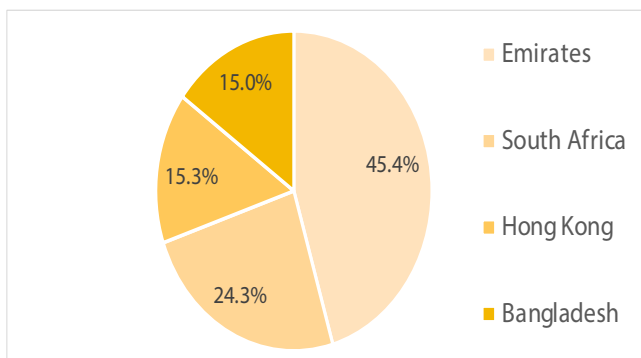
Quantity



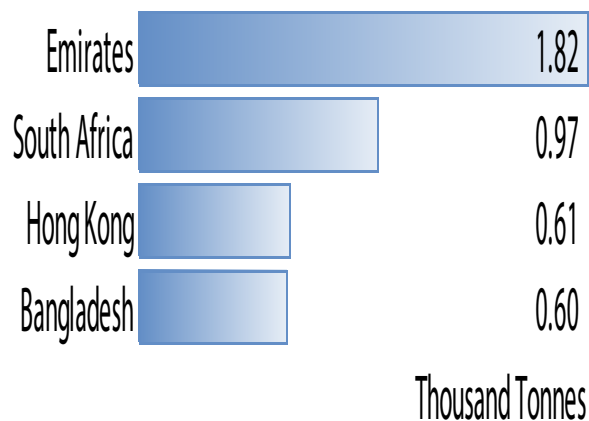
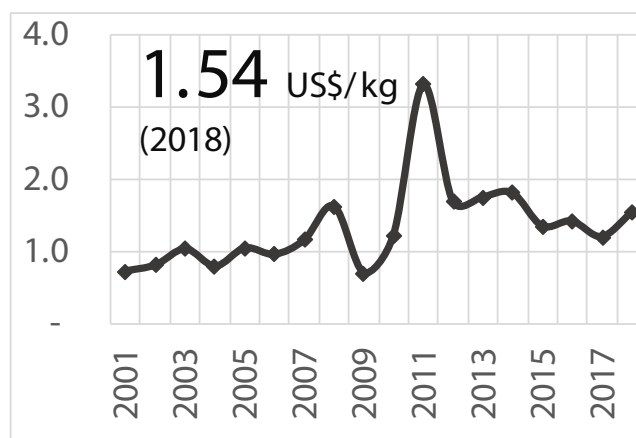
Value



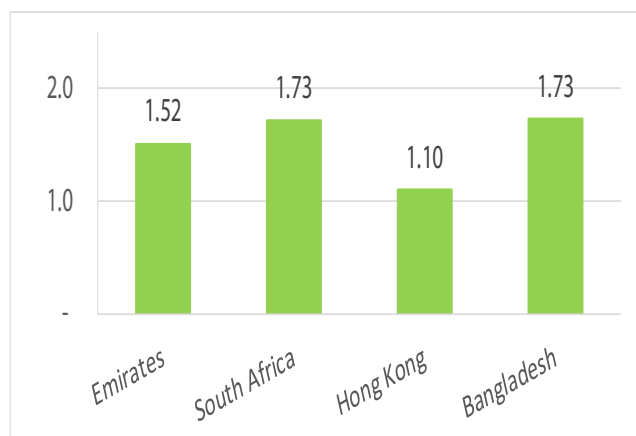
Market Share by Country



Average Price: US\$/Kg

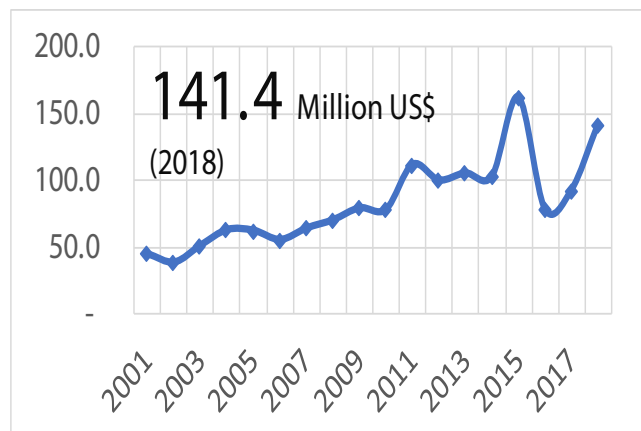


Average Price by Country 2018: US\$/Kg

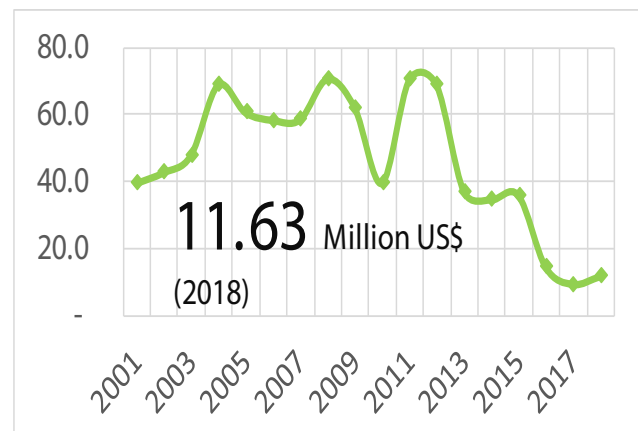


TEXTILE & APPAREL TRADE DATA

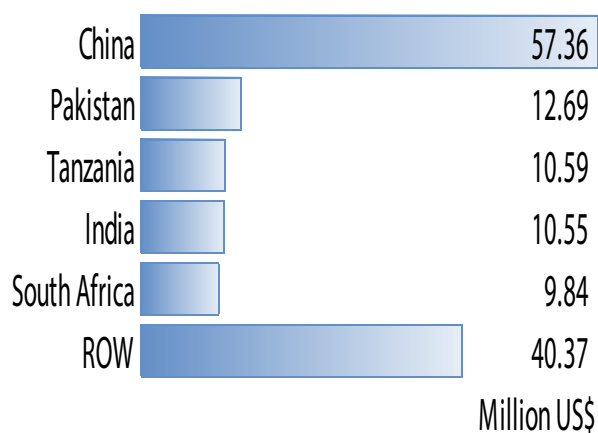
Imports



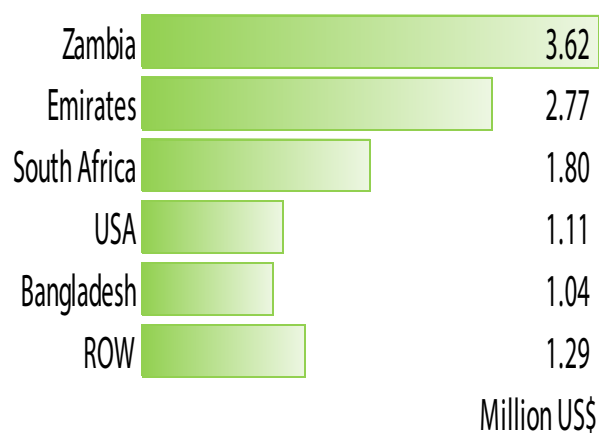
Exports



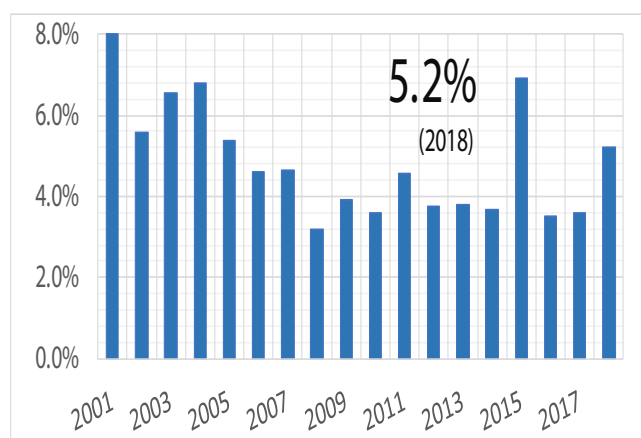
Imports by Country - 2018



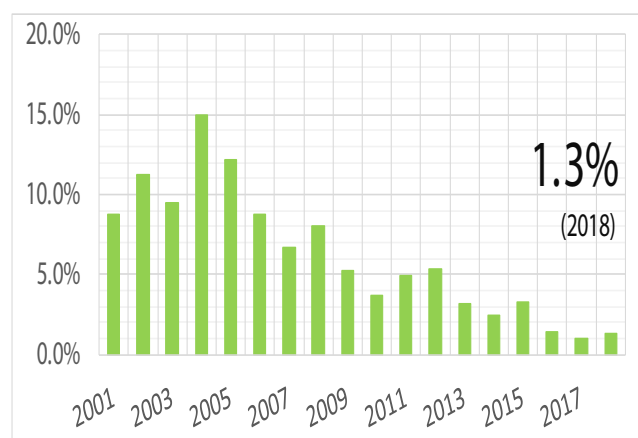
Exports by Country - 2018



T&A Imports Share in Overall Imports

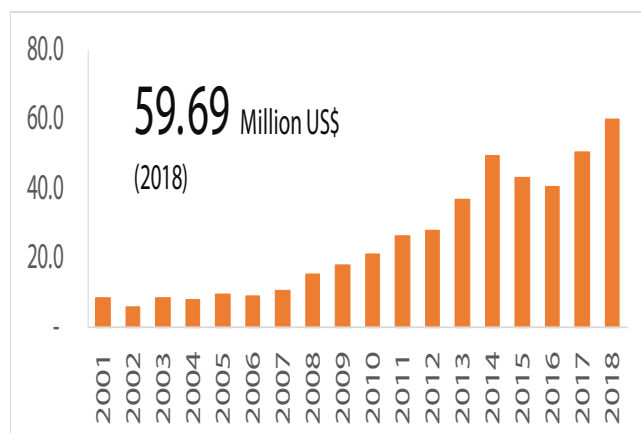


T&A Exports Share in Overall Exports



COMPOSITION OF THE TEXTILE & APPAREL INDUSTRY

Imports - Worn Clothing & Articles



Spinning Machinery

40,000

Short-Staple Spindles

Weaving Machinery

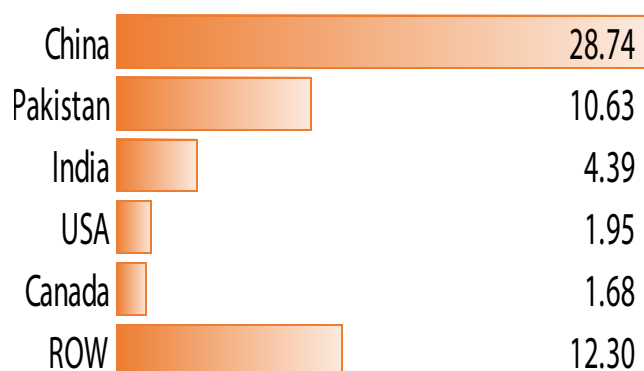
350

Shuttle Looms

70

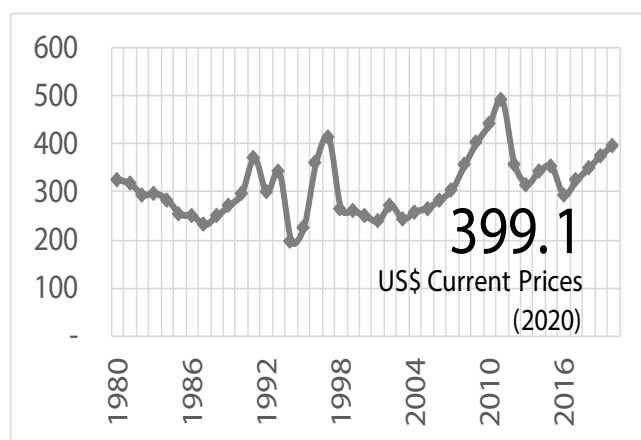
Shuttle-less Looms

Imports by Country - 2018



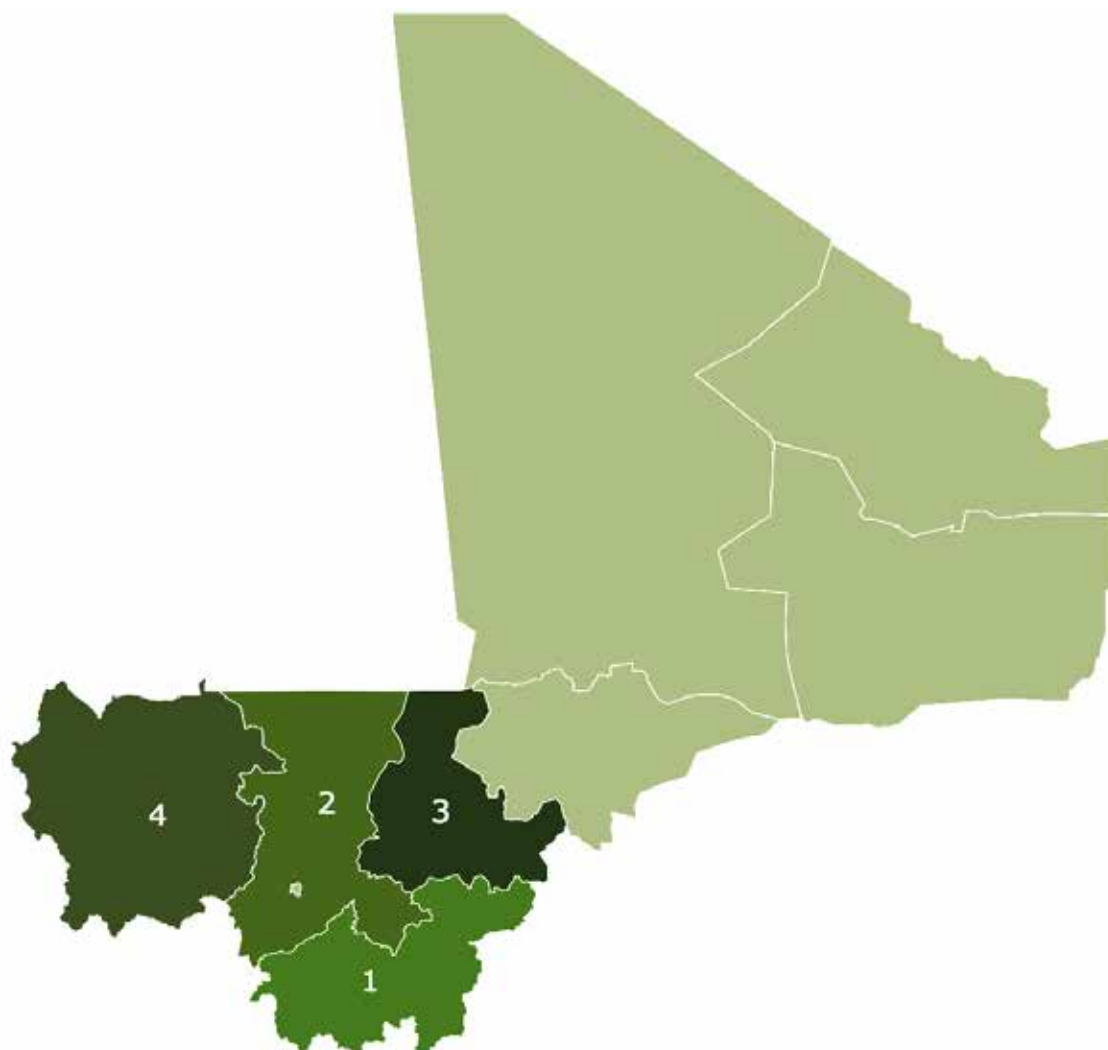
Million US\$

GDP per capita





Basic Data 2020



Arable Area

6,411

'000 Hectares

Cotton Area

165

'000 Hectares

Consumption

2

'000 Tonnes

Lint Exports

154

'000 Tonnes

Production

62

'000 Tonnes

Lint Yield

375

Kg/Hectare

Farmers

40,414

Male

Farmers

275

Female



PRODUCTION 2020

		Area '000 Ha	Yield Kg/Ha	Production '000 Tonnes
1	Sikasso	107	223	24
2	Koulikoro	30	61	2
3	Segou	17	35	1
4	Kayes	11	24	0
	National	165	375	62

WATER

Rainwater & Irrigation water (mm)

678	379	0	0
Total Rainfall	Effective Rainfall	No. of Irrigations	Irrigation Water/Ha

Methods of Irrigation (% Area)

0	0	0	0
Flood	Furrow	Sprinkler	Drip

Rainfed Area (%) & Water Used /Kg Lint

100	0	0	10,100
Rainfed % Area	Irrigation Billion L	Irrigation L/Kg Lint	Rainwater L/Kg Lint

SEEDS & PLANTING

Seeds Used for Sowing (%)

100	0	100	0
Fuzzy Seeds	Delinted	Chemical Treated	Untreated

Planting Method (%)

Seed Source (%)

5	95	95	5
Manual	Machine	Local	Imported

Use of Cotton Seeds (% Use)

95	0	5	0
Crushed for Oil	Direct Cattle-Feed	Used for Sowing	wasted

Seed Rate, Spacing & Plant Population/Ha

20	80	30	41,666
Seed Rate Kg/Ha	Between Rows cm	Within Row cm	Plant Population/ Ha

INSECTS, PATHOGENS & WEEDS

INSECT PESTS / INSECTICIDES

EARLY-SEASON

Sylepta derogata, Anomis flava & Earias insulana

MID-SEASON

Helicoverpa armigera, Earias insulana

Diparopsis watersi, Jassids, Bemisia tabaci

INSECTICIDES

Spirotetramat, Indoxacarb, Teflubenzuron

Cypermethrin+Acetamiprid, Emamectin benzoate

Cypermethrin+Imidacloprid & Profenofos,

WEEDS / HERBICIDES

NARROW-LEAF WEEDS

Pennisetum pedicellatum, Digitaria argillacea

Dactyloctenium aegyptium, Eleusine indica

Bulbostylis barbara

BROAD-LEAF WEEDS

Ipomoea eriocarpa, Cassia tora & Cucumis melo

Crotalaria retusa, Corchorus tridens

HERBICIDES

Stomp 330SC, Callifor 500Sc & Malik

TILLAGE, STALKS-USE WEEDING & HARVESTING

Tillage Methods (% Area)

18	30	10	81
Zero Tillage	Disc Plough	Chisel Plough	Conventional Tillage

Use of Cotton stalks (% Use)

80	10	0	10
Burnt in Fields	Used as Firewood	Ploughed Back	Stacked on Bunds

Weeding Method (%)

Harvesting Method (%)

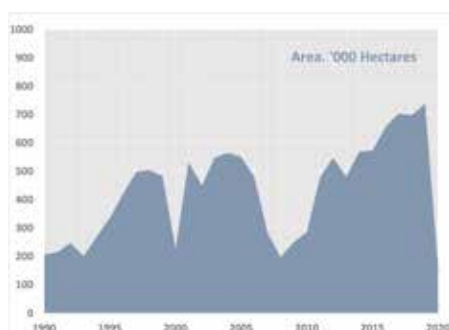
60	40	100	0
Hand	Herbicide	Hand Picked	Machine Picked

VARIETIES AND FIBRE TRAITS

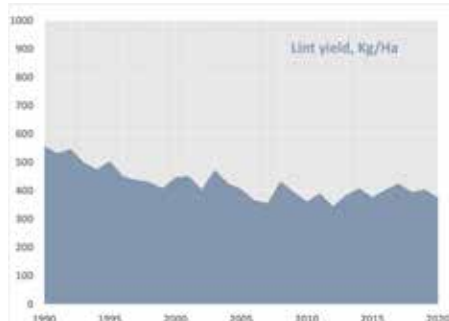
	Release Year	% Area	Ginning %	Length UHML mm	Strength g/tex	Mic
Stam 59A	1996	50	43.8	29.1	28.2	4.1
Stam 279A	2003	11	43.4	28.5	26.6	4.3
NTA 90-5	1996	20	43.5	30.7	29	4.1
NTA 93-15	2004	11	44.9	29.9	26.9	3.8
G 440	2004	8	42.7	28.2	26.8	4.3

PRODUCTION

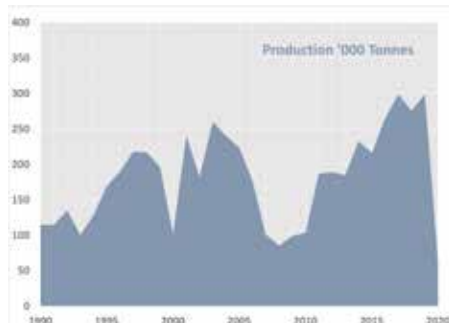
Cotton Area '000 Hectares



Lint Yield Kg/Ha

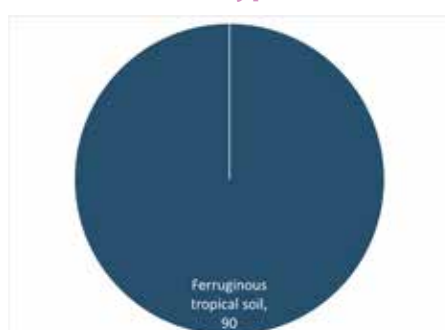


Production '000 Tonnes



SOILS

Soil Types



COMPETING CROPS

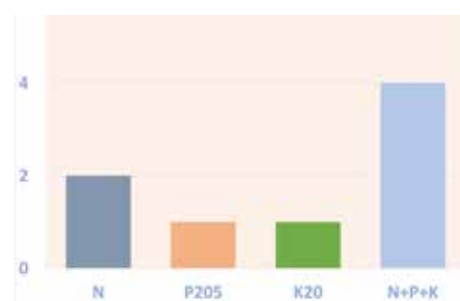


ROTATION CROPS

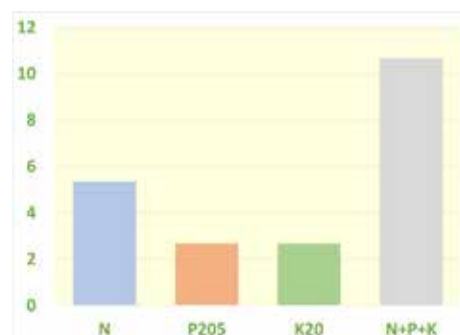


FERTILISERS

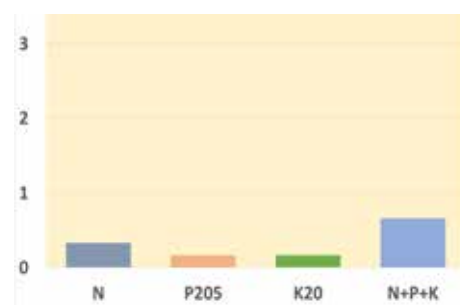
Fertiliser (NPK) use Kg/Hectare



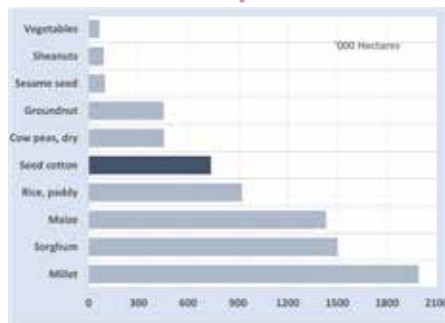
Fertiliser (NPK) use per Kg Lint



Fertiliser (NPK) use '000 Tons



Area of Crops '000 Ha



STRUCTURE OF COTTON RESEARCH

In Mali, the cotton program of the Institute of Rural Economy-IER (Institut d'Economie Rurale) Sikasso is responsible for planning and execution of the research program. Cotton researchers are located at four sites or areas of research. The headquarters of the Cotton Research Program are located in Sikasso. Research priorities for each Centre depend on the Centre where it is based but, in general, overall advice comes from the Scientific Department of IER located in Bamako. The Laboratory Soil-Water-Plant-LaboSEP (Laboratoire Sol-Eau-Plante) is also involved in cotton research. The reports produced are analysed annually during a program committee of the IER. The Malian Company for Textile Development-CMDT (Compagnie Malienne du Développement des Textiles) provides funding for research while the government finances the salaries of researchers, and operating budgets of infrastructures (offices, fields used for experiments, etc.). Part of the funding also comes from services provided to agrochemical companies.

The Institute for Training and Applied Research (IFRA) (Institut de formation et de recherche appliquée) is part of the University of Mali. It depends on the Ministry of Secondary, Higher Education and Scientific Research for funding. The IFRA is located in Katibougou near Koulikoro, 60km east of Bamako. It includes 380 hectares of land extending along River Niger. It was established in 1897 and is one of the oldest agricultural training centres in Africa. It took its actual name in 1996. The mandates of IFRA are to produce agricultural engineers (baccalaureat+2+3 years) and senior technicians (baccalaureat+2 years) specialised either in agronomy or economics. The IFRA trains staff involved in rural development, provides training to rural communities and promotes scientific and technological research.

WEATHER 2019-2020

DD60 Fahrenheit Heat Units= Average daily temperature -60°F. The light green box denotes months of the cotton season. The blue bars are monthly averages of heat units and precipitation (rainfall in mm)

Heat Units (DD60) -Sikasso



Rainfall (mm) -Sikasso



COST OF CULTIVATION US\$/Hectare

INPUTS	Quantity (Kg/Ha)	Operations per season	Total cost /Ha
Non-GM seeds			32
Biotech/GM seeds	3.0	1	
NPK+Other	147.8	2	165
Insecticides		4	55
Herbicides			5
Fungicides			
Growth regulators			
Defoliant			
Manure	575.5	1	
Others (please specify)			
MANPOWER / LABOUR	Wages per person	Persons per operation	Total cost per hectare
Land preparation /tillage etc.,	3.4	18	60
Sowing		8	25
Fertiliser / manure application			
Irrigation			
Thinning			
Weeding	3.3	47	155
Hoeing			
Pesticide application			
Defoliator application			
Picking / harvesting	3.3	36	120
Stalk cutting & removal			
Transportation /unloading etc.,			
Ginning cost per 100 Kg		18	60
Others (please specify)	0.0	0	0.00
MACHINERY /ANIMALS etc.	Cost per Operation	Number of Operations	Total cost per hectare
Tractors			
Implements & tools			
Electric / Diesel pumps etc.,			
Electricity / Diesel etc.,			
Harvesting machines			
Hoeing / Tillage machinery etc.,			
Bullocks /Buffaloes			
Land rent			
MARKET VALUE	Yield Kg/per hectare	Market value per 100 Kg	Value per hectare
Seed cotton	1012	0.52	522
Ginning % (output)	37	0	
Lint (fibre)	375	1.74	652
Seed	637	0.2	130
COST OF CULTIVATION			617
NET RETURNS (SEED-COTTON)			-95
NET RETURNS (SEED + LINT)			105



Basic Data 2020



Arable Area

23,905

'000 Hectares

Cotton Area

144

'000 Hectares

Consumption

330

'000 Tonnes

Lint Exports

155

'000 Tonnes

Production

228

'000 Tonnes

Lint Yield

1,584

Kg/Hectare

Farmers

6,676

Male

Farmers

788

Female



PRODUCTION 2020

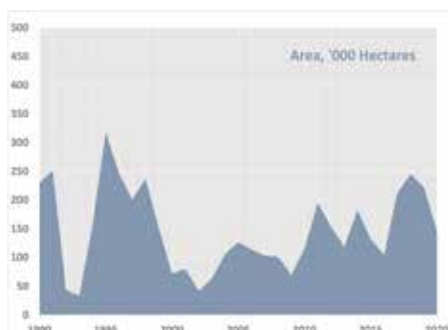
		Area '000 Ha	Yield Kg/Ha	Production '000 Tonnes
1	Chihuahua	103	1639	169
2	Baja California	18	1450	26
3	Coahuila	9	1102	9
4	Tamaulipas	9	1580	14
5	Durango	1	1820	2
6	Sonora	4	1745	8
	National	144	1584	228

NUMBER OF FARMERS

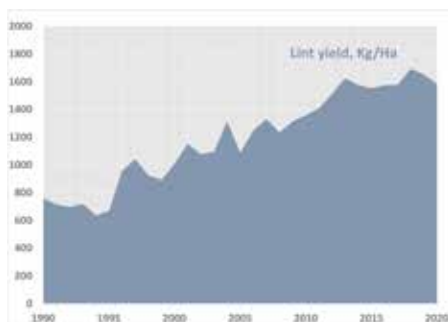
	Men	Women
Chihuahua	4,352	267
Baja California	803	310
Coahuila	1,350	50
Tamaulipas	49	141
Durango	38	0
Sonora	84	20
Total	6,676.00	788.00

PRODUCTION

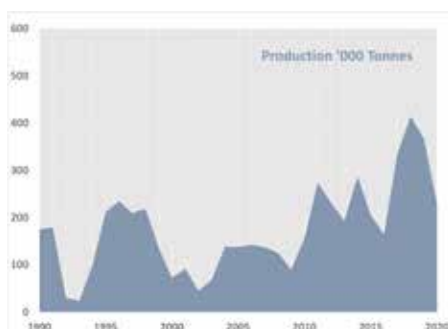
Cotton Area '000 Hectares



Lint Yield Kg/Ha



Production '000 Tonnes



INSECTS, PATHOGENS & WEEDS

INSECT PESTS / INSECTICIDES

EARLY-SEASON

Chlorochroa ligata

Bemisia argentifolii

MID-SEASON

Pectinophora gossypiella, ,

Anthonomus grandis,

Heliothis virescens,

Helicoverpa zea,

Spodoptera exigua

INSECTICIDES

Methyl parathion, Methamidophos

Chlorpyrifos

Cypermethrin, Deltamethrin

Malathion, Imidacloprid

Acephate, Monocrotophos

Monocrotophos

Abamectin, Diafenthiuron (Pegasus)

Emamectin benzoate (Affirm)

Abamectin (Abamectin)

DISEASES / PATHOGENS

Verticillium

Xanthomonas malvacearum

WEEDS / HERBICIDES

NARROW-LEAF WEEDS

Sorghum halepense

Echinochloa colona

BROAD-LEAF WEEDS

Convolvulus arvensis

Ipomoea hederacea

Ipomoea purpurea

Amaranthus palmeri

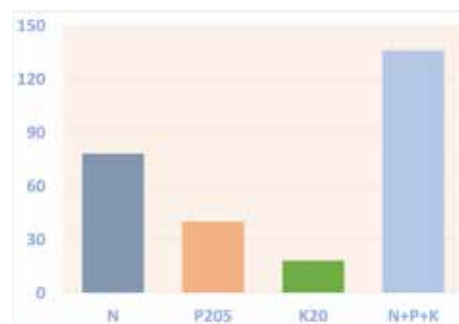
HERBICIDES

Glyphosate

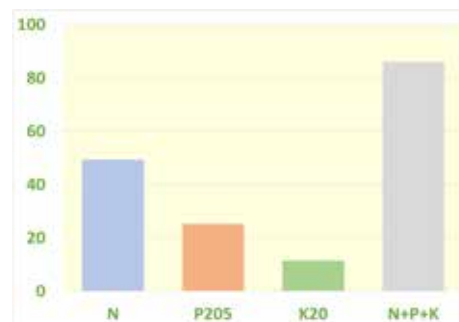
Glufosinate

FERTILISERS

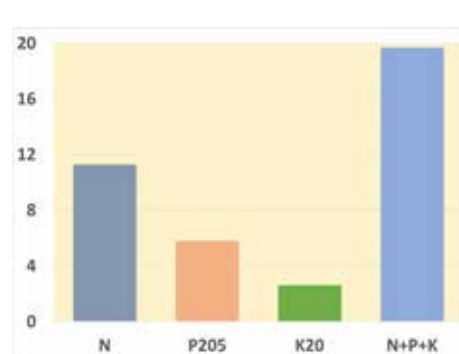
Fertiliser (NPK) use Kg/Hectare



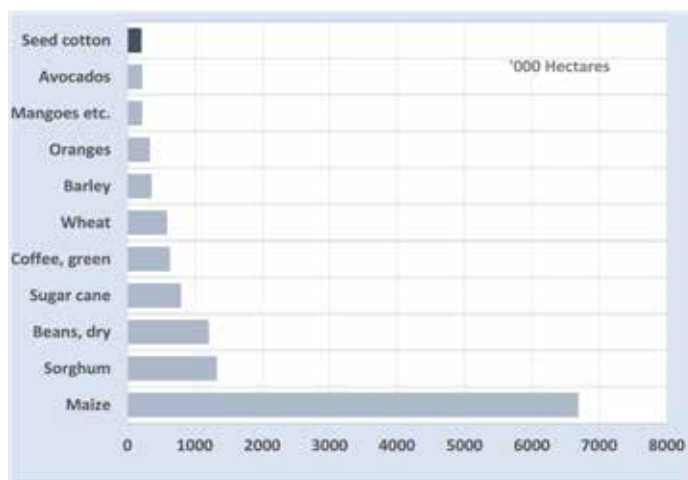
Fertiliser (NPK) use per Kg Lint



Fertiliser (NPK) use '000 Tons



Area of Crops '000 Ha



WEEDING & HARVESTING

	Weeding Method (%)			Harvest Method (%)	
	Hand	Machine	Herbicide	Hand	Machine
Chihuahua	0	0	100	0	100
Baja California	0	10	90	0	100
Coahuila	10	20	70	20	80
Tamaulipas	0	0	100	0	100
Durango	30	0	70	10	90
Sonora	0	0	100	0	100
National	1	2	97	1	99
	Hand	Machine	Herbicide	Hand	Machine

SEEDS & PLANTING

Seeds Used for Sowing (%)

0	100	100	0
Fuzzy Seeds	Delinted	Chemical Treated	Untreated

Planting Method (%)

5	95	95	5
Manual	Machine	Local	Imported

Seed Source (%)

Use of Cotton Seeds (% Use)

0	100	0	0
Crushed for Oil	Direct Cattle-Feed	Used for Sowing	wasted

WATER

Rainwater & Irrigation water (mm)

Chihuahua	0	95	0	5
Baja California	0	100	0	0
Coahuila	95	0	2	3
Tamaulipas	0	98	0	2
Durango	96	0	0	4
Sonora	0	98	0	2
National	6	93	0	0
	Total Rainfall	Effective Rainfall	No. of Irrigations	Irrigation Water/Ha

Methods of Irrigation (% Area)

Chihuahua	0	95	0	5
Baja California	0	100	0	0
Coahuila	95	0	2	3
Tamaulipas	0	98	0	2
Durango	96	0	0	4
Sonora	0	98	0	2
National	6	93	0	0
	Flood	Furrow	Sprinkler	Drip

Rainfed Area (%) & Water Used /Kg Lint

Chihuahua	0	288	1,708	0
Baja California	0	90	3,393	0
Coahuila	0	20	2,178	0
Tamaulipas	0	32	2,278	0
Durango	0	6	3,736	0
Sonora	0	19	2,407	0
National	0	455	1,997	1,444
	Rainfed % Area	Irrigation Billion L	Irrigation L/Kg Lint	Rainwater L/Kg Lint

SEEDS & PLANTING

Seed Rate, Spacing & Plant Population/Ha

14	80	10	125,000
15	75	10	133,333
10	90	10	111,111
Seed Rate Kg/Ha	Between Rows cm	Within Row cm	Plant Population/ Ha



VARIETIES AND FIBRE TRAITS

	Release Year	% Area	Ginning %	Length UHML mm	Strength g/tex	Mic
Chihuahua						
DP 1555			44	30.2	31.2	4.5
DP 1219			36	29.2	30.3	4.1
DP 1441 RF			38.4	26.5	30.4	3.9
DP 1845			44	1.21	30.5	4.5
Baja California						
DP 1555			44	30.2	31.2	4.5
DP 1219			36	29.2	30.3	4.1
DP 1441 RF			38.4	26.5	30.4	3.9
DP 1845			44	1.21	30.5	4.5
Coahuila						
DP 0912 B2RF			39.5	28.5	29.4	4.9
FM 1740			35	27.8	28.5	4.5
DP 1321			39.7	29.2	31.2	4.8
Tamaulipas						
DP 1219 BR2			36	29.2	30.3	4.1
Durango						
DP 0912 B2RF			39.5	28.5	29.4	4.9
DP 1441 RF			38.4	26.5	30.4	3.9
Sonora						
DP 1219			36	28.5	28.8	4.1
DP 1359			32	30.2	32.4	4
DP 1441 RF			38.4	26.5	30.4	3.9
DP 1555			44	30.2	31.2	4.5
DP 1845			44	1.21	30.5	4.5
DP 1822			43	1.18	33.2	4.7

TILLAGE & STALKS-USE

Tillage Methods (% Area)

0	100	0	100
Zero Tillage	Disc Plough	Chisel Plough	Conventional Tillage

Use of Cotton stalks (% Use)

0	0	100	10
Burnt in Fields	Used as Firewood	Ploughed Back	Stacked on Bunds



WEATHER 2019-2020

Heat Units (DD₆₀) -Chihuahua



Rainfall (mm) -Chihuahua



STRUCTURE OF COTTON RESEARCH

It is estimated that about 180 agencies deal with agricultural R&D in Mexico. The Ministry of Agriculture, Livestock, Rural Development, Fisheries and Food (SAGARPA) is the federal agency that is responsible for formulating policies and strategies for regulating and promoting seed research, production quality, health, registration, certification and marketing. The Directorate General for Productivity and Technological Development (DGPDT) functions under SAGARPA and coordinates R&D activities through several institutions such as the National Service for Seed Inspection and Certification (SNICS), the National Agri-food Health, Safety and Quality Service (SENASICA), the National System for Research and Technology Transfer (SNITT) and the National Institute of Forestry, Agricultural and Livestock Research (INIFAP). Several institutes are active in cotton research. A few such institutes are, Instituto de Ecología, Universidad Nacional Autónoma de México, Ciudad de México, Mexico, Instituto de Biotecnología, Universidad Nacional Autónoma de México, Cuernavaca, Mexico, Facultad de Agricultura y Zootecnia/Facultad de Ciencias Biológicas, Universidad Juárez del Estado de Durango, Gómez Palacio, Mexico, Dirección de Recursos Naturales, Instituto Tecnológico de Sonora, Ciudad Obregón, Mexico and the National Laboratory of Genomics for Biodiversity (LANGE BIO) at the Centre for Research and Advanced Studies of the National Polytechnic Institute (CINVESTAV), Irapuato Mexico campus.



MEXICO NATIONAL: COST OF CULTIVATION US\$/Hectare

INPUTS	Quantity (Kg/Ha)	Operations per season	Total cost /Ha
Non-GM seeds			
Biotech/GM seeds	12		290
NPK+Other	500	2	380
Insecticides	3	2	24
Herbicides	10	2	62
Fungicides	1	1	44
Growth regulators	2	2	96
Defoliants	3	1	40
Manure		0	
Others (please specify)			
MANPOWER / LABOUR	Wages per person	Persons per operation	Total cost per hectare
Land preparation /tillage etc.,	1	1	15
Sowing	1	1	15
Fertiliser / manure application	1	3	45
Irrigation	4	6	340
Thinning			
Weeding	3	4	170
Hoeing			
Pesticide application	1	2	30
Defoliator application	1	1	15
Picking / harvesting	1	1	15
Stalk cutting & removal	1	1	15
Transportation /unloading etc.,	1	1	15
Ginning cost per 100 Kg			175
Others (please specify)	0.0	0	0.00
MACHINERY /ANIMALS etc.	Cost per Operation	Number of Operations	Total cost per hectare
Tractors	31		260
Implements & tools	26		110
Electric / Diesel pumps etc.,			
Electricity / Diesel etc.,			
Harvesting machines			28
Hoeing / Tillage machinery etc.,	31		130
Bullocks /Buffaloes			
Land rent	468		490
MARKET VALUE	Yield Kg/per hectare	Market value per 100 Kg	Value per hectare
Seed cotton	4075	0.71	2900
Ginning % (output)	40	0.00	
Lint (fibre)	1630	1.71	2788
Seed	2300	0.20	454
COST OF CULTIVATION			2212
NET RETURNS (SEED-COTTON)			787
NET RETURNS (SEED + LINT)			971

BAJA-CALIFORNIA: COST OF CULTIVATION US\$/Hectare

INPUTS	Quantity (Kg/Ha)	Operations per season	Total cost /Ha
Non-GM seeds	0	0	0
Biotech/GM seeds	14	1	110
NPK+Other	800	1	180
Insecticides	1	12	60
Herbicides	6	1	30
Fungicides	0	0	0
Growth regulators	1	1	50
Defoliants	1	1	70
Manure	-	0	0
Others (please specify)	0	0	0
MANPOWER / LABOUR	Wages per person	Persons per operation	Total cost per hectare
Land preparation /tillage etc.,	7	1	7
Sowing	7	3	21
Fertiliser / manure application	7	3	21
Irrigation	7	1	7
Thinning	7	0	
Weeding	7	3	21
Hoeing	7	0	0
Pesticide application	7	2	25
Defoliator application	7	1	20
Picking / harvesting	7	1	42
Stalk cutting & removal	7	1	7
Transportation /unloading etc.,	7	1	7
Ginning cost per 100 Kg		4	122
Others (please specify)		1	20
MACHINERY /ANIMALS etc.	Cost per Operation	Number of Operations	Total cost per hectare
Tractors			271
Implements & tools			106
Electric / Diesel pumps etc.,			113
Electricity / Diesel etc.,			
Harvesting machines			518
Hoeing / Tillage machinery etc.,			104
Bullocks /Buffaloes			
Land rent	1	1	210
MARKET VALUE	Yield Kg/per hectare	Market value per 100 Kg	Value per hectare
Seed cotton	4,400	50	2,200
Ginning % (output)	34.7		
Lint (fibre)	1,530	160	2,440
Seed	1,440	18	250
COST OF CULTIVATION			1810
NET RETURNS (SEED-COTTON)			390
NET RETURNS (SEED + LINT)			758

CHIHUAHUA: COST OF CULTIVATION US\$/Hectare

INPUTS	Quantity (Kg/Ha)	Operations per season	Total cost /Ha
Non-GM seeds	0	0	0
Biotech/GM seeds	14	1	100
NPK+Other	800	1	175
Insecticides	1	12	60
Herbicides	6	1	30
Fungicides	0	0	0
Growth regulators	1	1	60
Defoliants	1	1	65
Manure	-	0	0
Others (please specify)	0	0	0
MANPOWER / LABOUR	Wages per person	Persons per operation	Total cost per hectare
Land preparation /tillage etc.,	7	1	7
Sowing	7	3	21
Fertiliser / manure application	7	3	21
Irrigation	7	1	7
Thinning	7	0	
Weeding	7	3	21
Hoeing	7	0	0
Pesticide application	7	2	45
Defoliator application	7	1	20
Picking / harvesting	7	1	42
Stalk cutting & removal	7	1	7
Transportation /unloading etc.,	7	1	7
Ginning cost per 100 Kg		4	148
Others (please specify)		1	15
MACHINERY /ANIMALS etc.	Cost per Operation	Number of Operations	Total cost per hectare
Tractors			251
Implements & tools			101
Electric / Diesel pumps etc.,			83
Electricity / Diesel etc.,			
Harvesting machines			468
Hoeing / Tillage machinery etc.,			89
Bullocks /Buffaloes			
Land rent	1	1	180
MARKET VALUE	Yield Kg/per hectare	Market value per 100 Kg	Value per hectare
Seed cotton	5,100	51	2,600
Ginning % (output)	36.3		
Lint (fibre)	1,850	160	3,000
Seed	1,650	18	300
COST OF CULTIVATION			1695
NET RETURNS (SEED-COTTON)			905
NET RETURNS (SEED + LINT)			1457

DURANGO: COST OF CULTIVATION US\$/Hectare

INPUTS	Quantity (Kg/Ha)	Operations per season	Total cost /Ha
Non-GM seeds	0	0	0
Biotech/GM seeds	14	1	100
NPK+Other	800	1	175
Insecticides	1	12	110
Herbicides	6	1	30
Fungicides	0	0	0
Growth regulators	1	1	60
Defoliant	1	1	65
Manure	-	0	0
Others (please specify)	0	0	0
MANPOWER / LABOUR	Wages per person	Persons per operation	Total cost per hectare
Land preparation /tillage etc.,	7	1	7
Sowing	7	3	21
Fertiliser / manure application	7	3	21
Irrigation	7	1	7
Thinning	7	0	
Weeding	7	3	21
Hoeing	7	0	0
Pesticide application	7	2	95
Defoliator application	7	1	20
Picking / harvesting	7	1	42
Stalk cutting & removal	7	1	7
Transportation /unloading etc.,	7	1	7
Ginning cost per 100 Kg		4	188
Others (please specify)		1	25
MACHINERY /ANIMALS etc.	Cost per Operation	Number of Operations	Total cost per hectare
Tractors			251
Implements & tools			121
Electric / Diesel pumps etc.,			103
Electricity / Diesel etc.,			
Harvesting machines			528
Hoeing / Tillage machinery etc.,			99
Bullocks /Buffaloes			
Land rent	1	1	200
MARKET VALUE	Yield Kg/per hectare	Market value per 100 Kg	Value per hectare
Seed cotton	5,120	51	2,600
Ginning % (output)	36.7		
Lint (fibre)	1,880	160	3,000
Seed	1,650	18	300
COST OF CULTIVATION			1915
NET RETURNS (SEED-COTTON)			685
NET RETURNS (SEED + LINT)			1197

COAHUILA: COST OF CULTIVATION US\$/Hectare

INPUTS	Quantity (Kg/Ha)	Operations per season	Total cost /Ha
Non-GM seeds	0	0	0
Biotech/GM seeds	14	1	100
NPK+Other	800	1	175
Insecticides	1	12	90
Herbicides	6	1	30
Fungicides	0	0	0
Growth regulators	1	1	60
Defoliantes	1	1	65
Manure	-	0	0
Others (please specify)	0	0	0
MANPOWER / LABOUR	Wages per person	Persons per operation	Total cost per hectare
Land preparation /tillage etc.,	7	1	7
Sowing	7	3	21
Fertiliser / manure application	7	3	21
Irrigation	7	1	7
Thinning	7	0	
Weeding	7	3	21
Hoeing	7	0	0
Pesticide application	7	2	90
Defoliator application	7	1	20
Picking / harvesting	7	1	42
Stalk cutting & removal	7	1	7
Transportation /unloading etc.,	7	1	7
Ginning cost per 100 Kg		4	188
Others (please specify)		1	25
MACHINERY /ANIMALS etc.	Cost per Operation	Number of Operations	Total cost per hectare
Tractors			251
Implements & tools			121
Electric / Diesel pumps etc.,			103
Electricity / Diesel etc.,			
Harvesting machines			528
Hoeing / Tillage machinery etc.,			99
Bullocks /Buffaloes			
Land rent	1	1	200
MARKET VALUE	Yield Kg/per hectare	Market value per 100 Kg	Value per hectare
Seed cotton	5,120	51	2,600
Ginning % (output)	36.7		
Lint (fibre)	1,880	160	3,000
Seed	1,650	18	300
COST OF CULTIVATION			1890
NET RETURNS (SEED-COTTON)			710
NET RETURNS (SEED + LINT)			1222

SONORA: COST OF CULTIVATION US\$/Hectare

INPUTS	Quantity (Kg/Ha)	Operations per season	Total cost /Ha
Non-GM seeds	0	0	0
Biotech/GM seeds	14	1	110
NPK+Other	800	1	180
Insecticides	1	12	60
Herbicides	6	1	30
Fungicides	0	0	0
Growth regulators	1	1	50
Defoliants	1	1	70
Manure	-	0	0
Others (please specify)	0	0	0
MANPOWER / LABOUR	Wages per person	Persons per operation	Total cost per hectare
Land preparation /tillage etc.,	7	1	7
Sowing	7	3	21
Fertiliser / manure application	7	3	21
Irrigation	7	1	7
Thinning	7	0	0
Weeding	7	3	21
Hoeing	7	0	0
Pesticide application	7	2	25
Defoliator application	7	1	20
Picking / harvesting	7	1	42
Stalk cutting & removal	7	1	7
Transportation /unloading etc.,	7	1	7
Ginning cost per 100 Kg		4	132
Others (please specify)		1	20
MACHINERY /ANIMALS etc.	Cost per Operation	Number of Operations	Total cost per hectare
Tractors			271
Implements & tools			106
Electric / Diesel pumps etc.,			113
Electricity / Diesel etc.,			
Harvesting machines			518
Hoeing / Tillage machinery etc.,			104
Bullocks /Buffaloes			
Land rent	1	1	210
MARKET VALUE	Yield Kg/per hectare	Market value per 100 Kg	Value per hectare
Seed cotton	4,700	50	2,350
Ginning % (output)	35.1		
Lint (fibre)	1,650	160	2,620
Seed	1,530	18	270
COST OF CULTIVATION			1810
NET RETURNS (SEED-COTTON)			540
NET RETURNS (SEED + LINT)			948

TAMAULIPAS: COST OF CULTIVATION US\$/Hectare

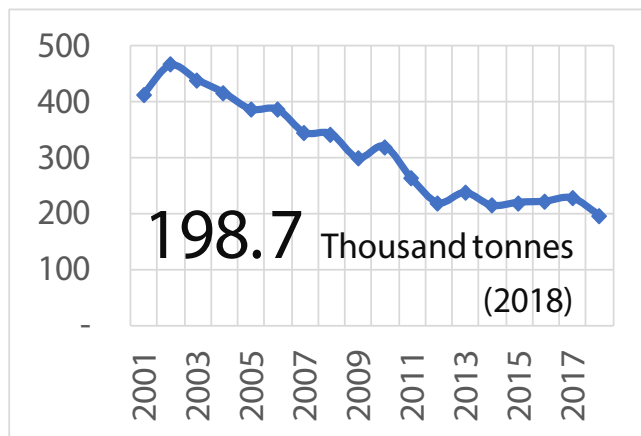
INPUTS	Quantity (Kg/Ha)	Operations per season	Total cost /Ha
Non-GM seeds	0	0	0
Biotech/GM seeds	14	1	90
NPK+Other	800	1	160
Insecticides	1	12	130
Herbicides	6	1	28
Fungicides	0	0	0
Growth regulators	1	1	55
Defoliant	1	1	60
Manure	-	0	0
Others (please specify)	0	0	0
MANPOWER / LABOUR	Wages per person	Persons per operation	Total cost per hectare
Land preparation /tillage etc.,	7	1	7
Sowing	7	3	21
Fertiliser / manure application	7	3	21
Irrigation	7	1	7
Thinning	7	0	0
Weeding	7	3	21
Hoeing	7	0	0
Pesticide application	7	2	130
Defoliator application	7	1	17
Picking / harvesting	7	1	42
Stalk cutting & removal	7	1	7
Transportation /unloading etc.,	7	1	7
Ginning cost per 100 Kg		4	165
Others (please specify)		1	20
MACHINERY /ANIMALS etc.	Cost per Operation	Number of Operations	Total cost per hectare
Tractors			251
Implements & tools			121
Electric / Diesel pumps etc.,			78
Electricity / Diesel etc.,			
Harvesting machines			508
Hoeing / Tillage machinery etc.,			114
Bullocks /Buffaloes			
Land rent	1	1	180
MARKET VALUE	Yield Kg/per hectare	Market value per 100 Kg	Value per hectare
Seed cotton	4,700	50	2,350
Ginning % (output)	35.1		
Lint (fibre)	1,650	160	2,620
Seed	1,530	18	270
COST OF CULTIVATION			1895
NET RETURNS (SEED-COTTON)			455
NET RETURNS (SEED + LINT)			830

TRADE DATA

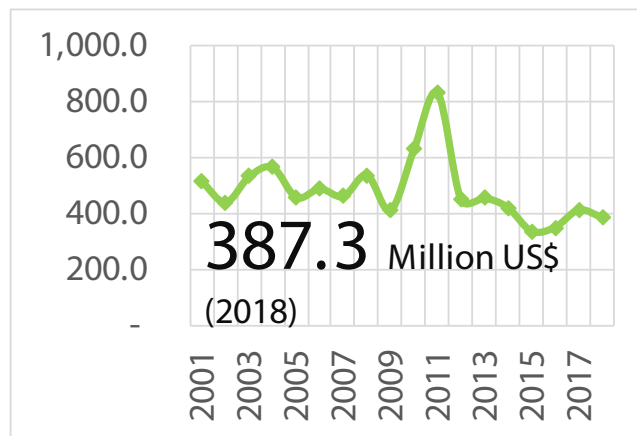


COTTON FIBRE IMPORT DATA

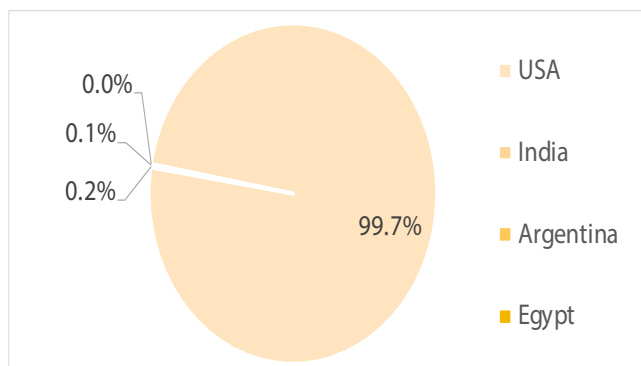
Quantity



Value



Market Share by Country



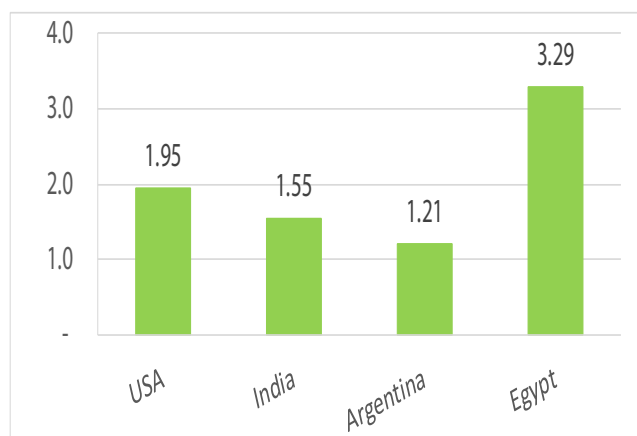
Average Price: US\$/Kg



USA	198.09
India	0.34
Argentina	0.30
Egypt	0.02

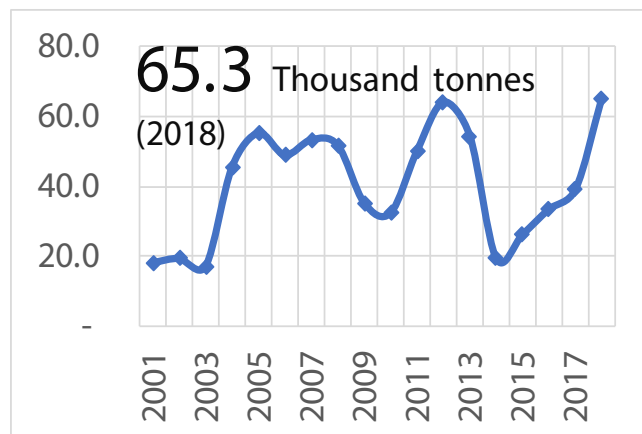
Thousand Tonnes

Average Price by Country 2018: US\$/Kg

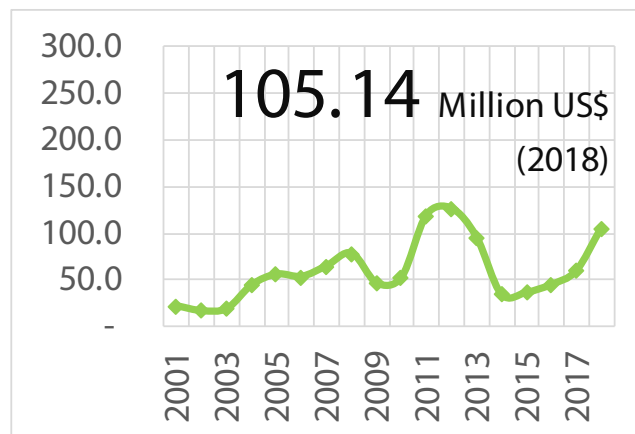


COTTON FIBRE EXPORT DATA

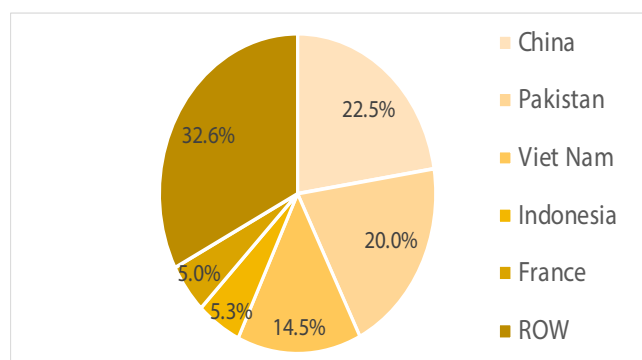
Quantity



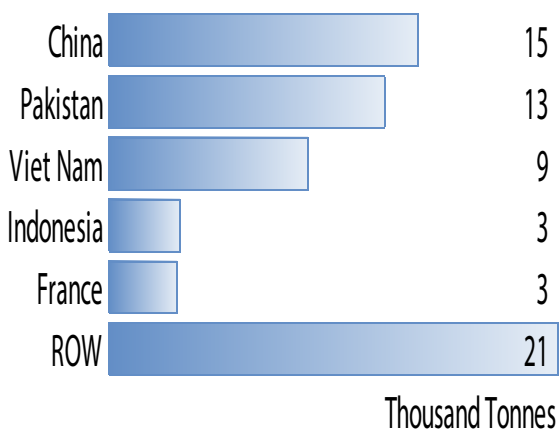
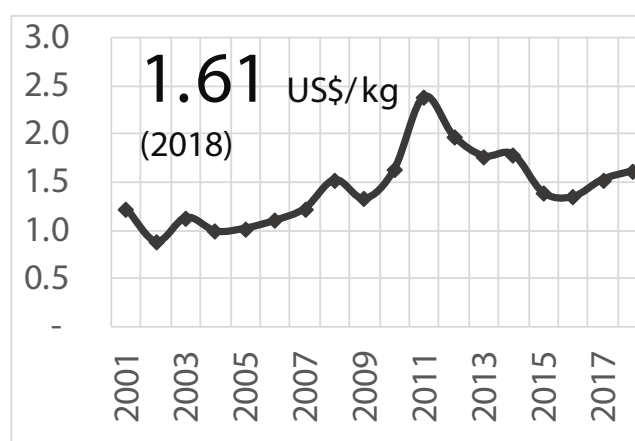
Value



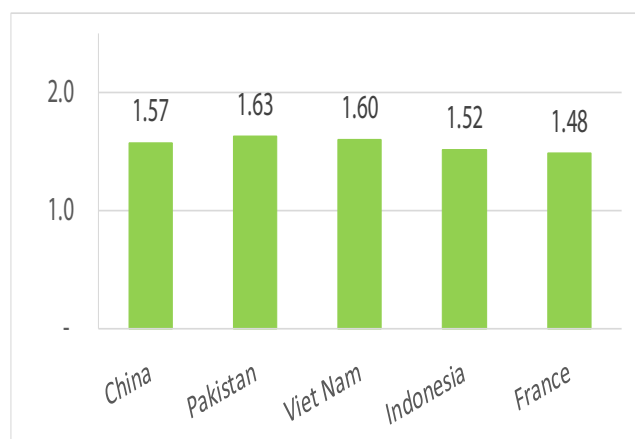
Market Share by Country



Average Price: US\$/Kg

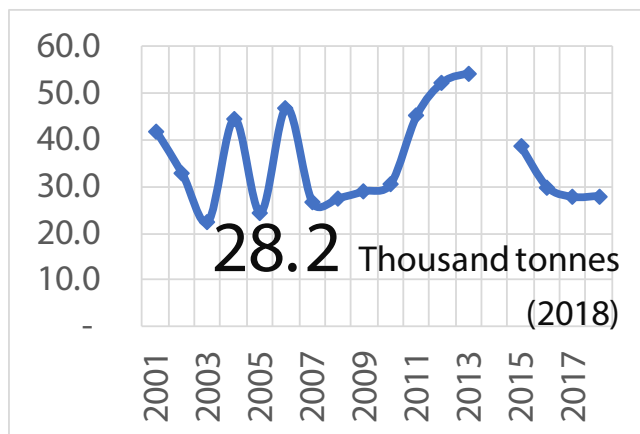


Average Price by Country 2018: US\$/Kg

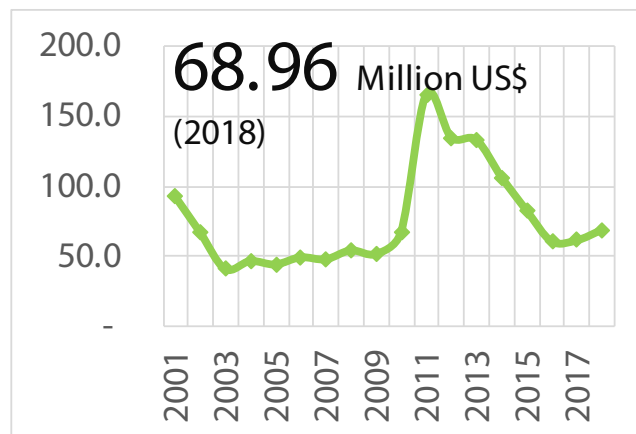


COTTON YARN IMPORT DATA

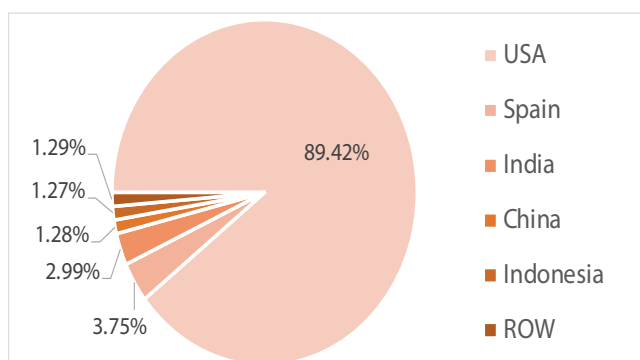
Quantity



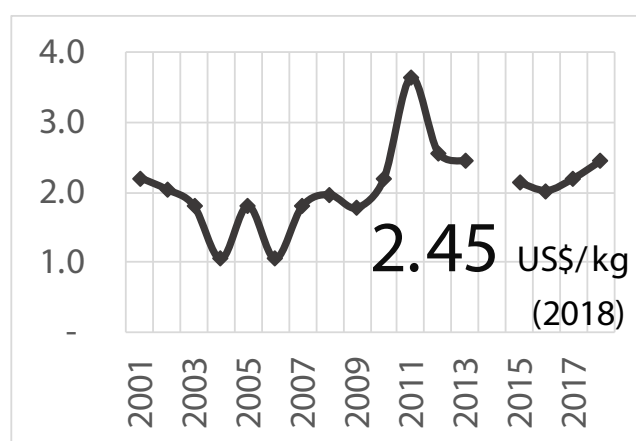
Value



Market Share by Country



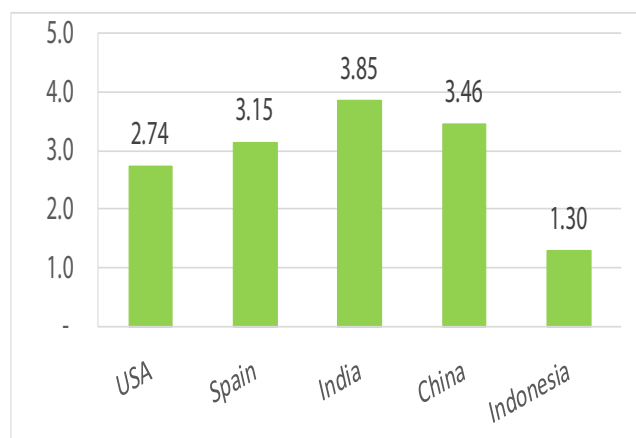
Average Price: US\$/Kg



USA	25.19
Spain	1.06
India	0.84
China	0.36
Indonesia	0.36
ROW	0.36

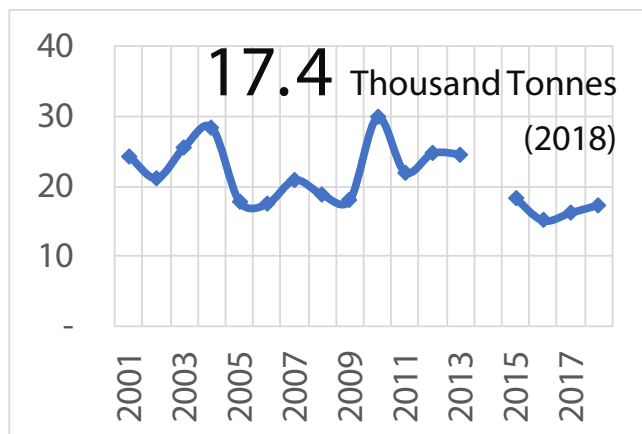
Thousand Tonnes

Average Price by Country 2018: US\$/Kg

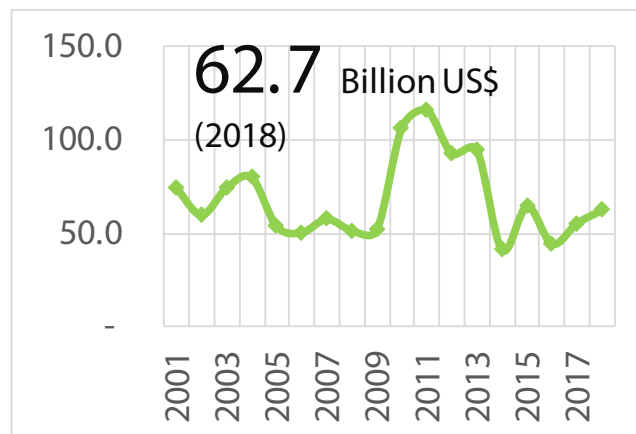


COTTON YARN EXPORT DATA

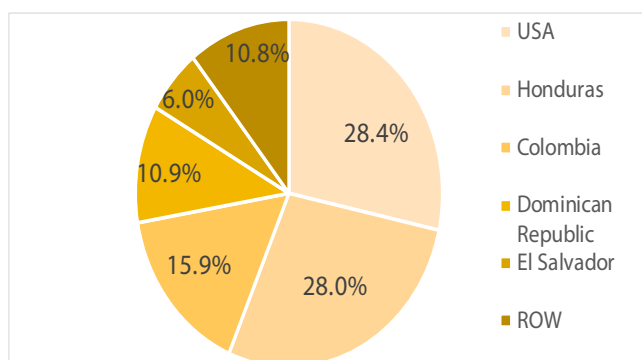
Quantity



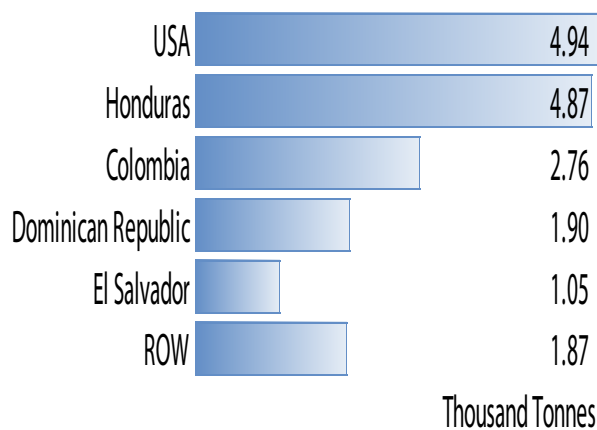
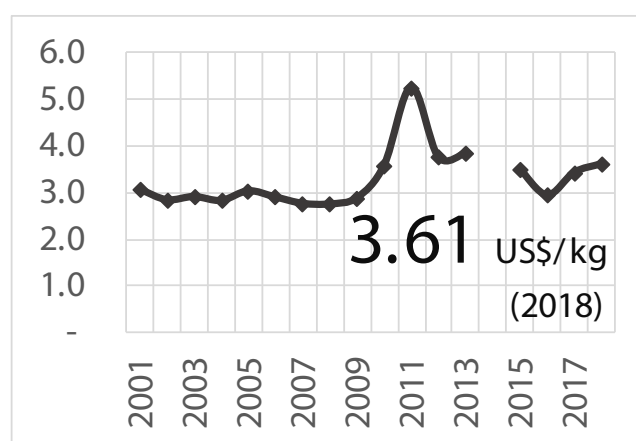
Value



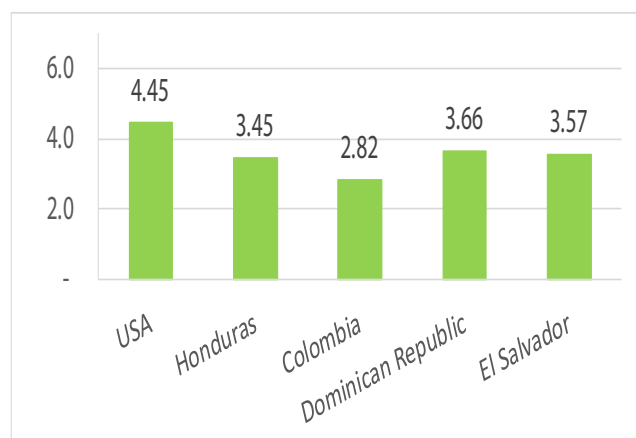
Market Share by Country



Average Price: US\$/Kg

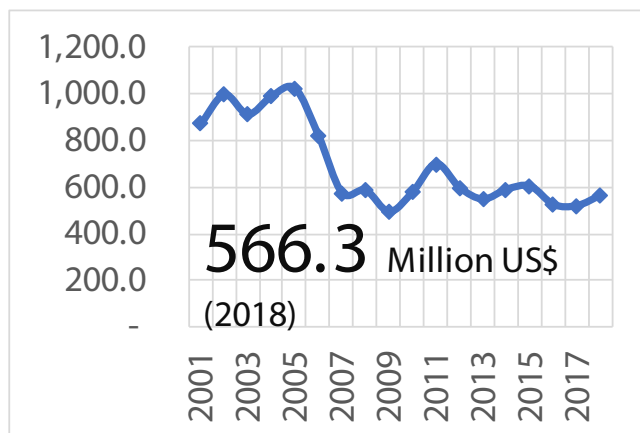


Average Price by Country 2018: US\$/Kg

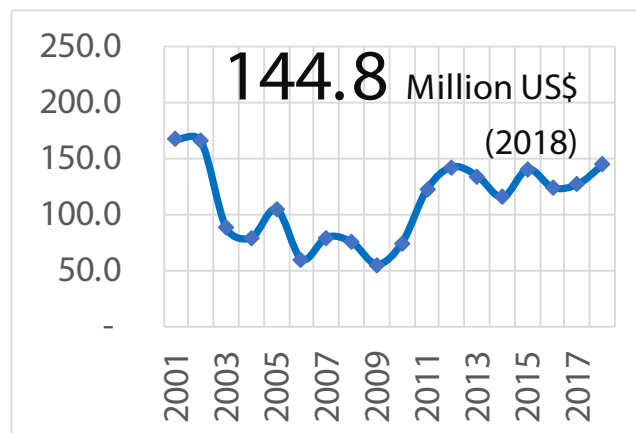


COTTON FABRIC TRADE DATA

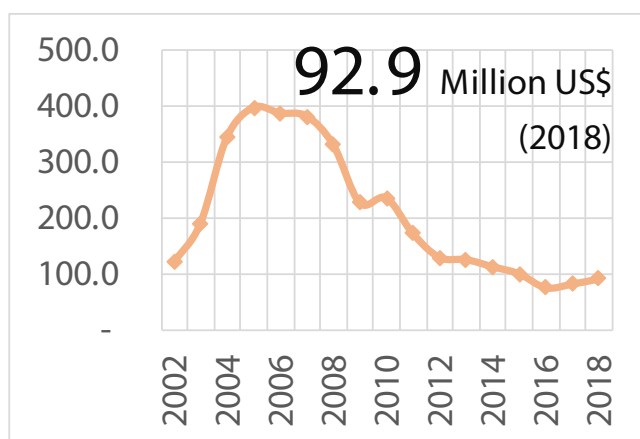
Woven Cotton Fabric Imports



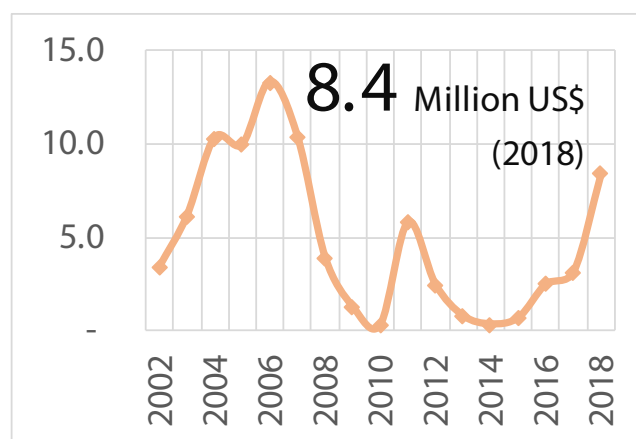
Woven Cotton Fabric Exports



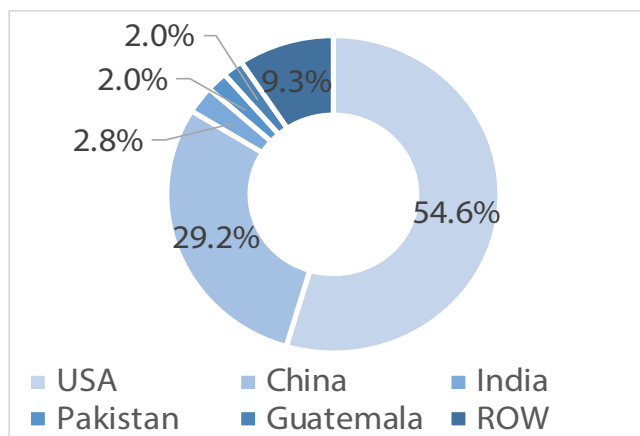
Knitted Cotton Fabric Imports



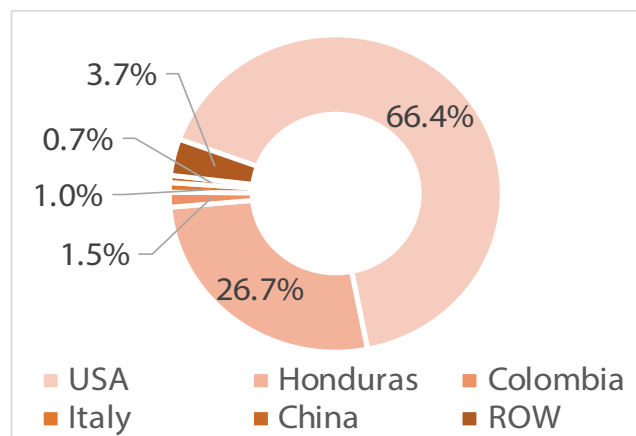
Knitted Cotton Fabric Exports



Market Share Imports by Country - 2018 Woven Cotton Fabric

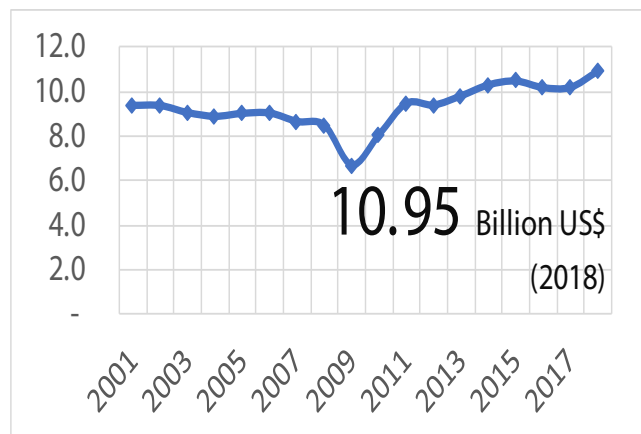


Market Share Imports by Country - 2018 Knitted Cotton Fabric

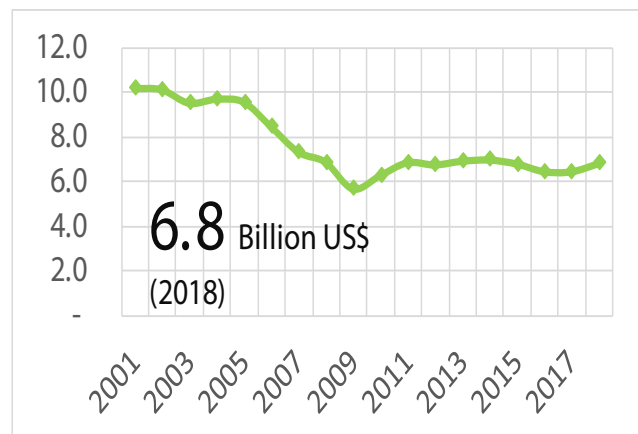


TEXTILE & APPAREL TRADE DATA

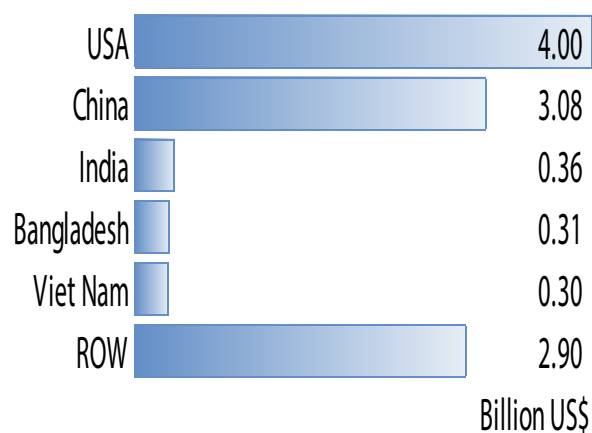
Imports



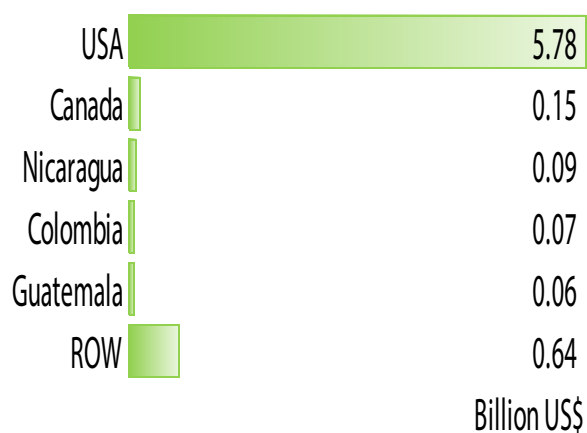
Exports



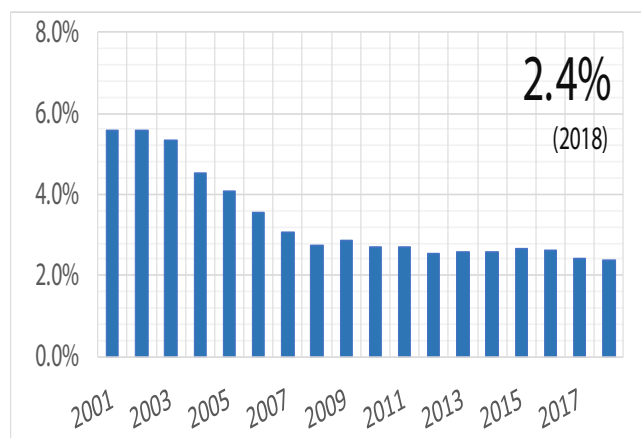
Imports by Country - 2018



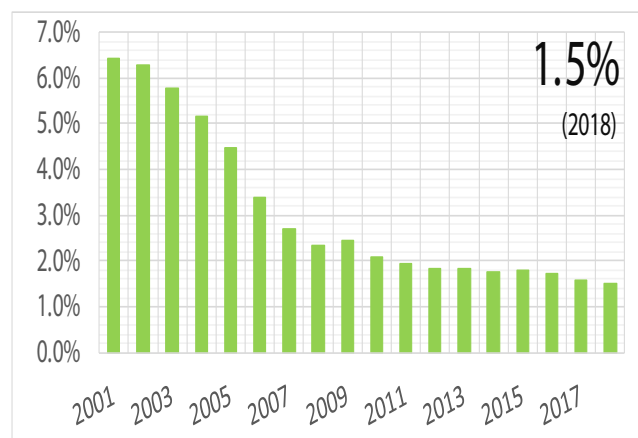
Exports by Country - 2018



T&A Imports Share in Overall Imports

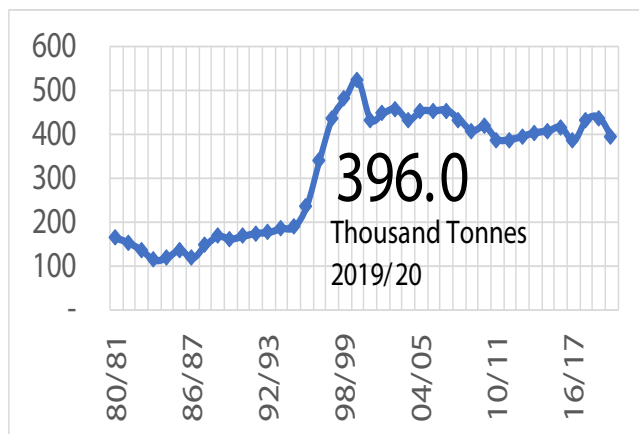


T&A Exports Share in Overall Exports

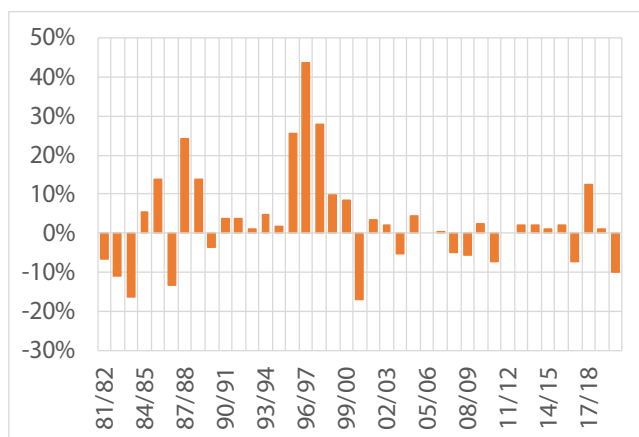


COMPOSITION OF THE TEXTILE & APPAREL INDUSTRY

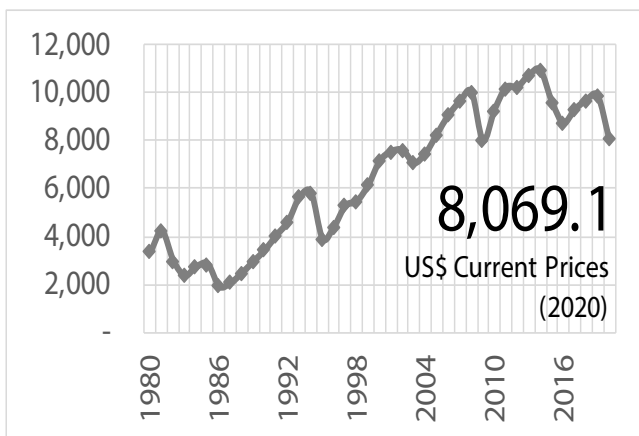
Cotton Mill Use



Mill Use - Annual Variation %



GDP per capita



Employment

1,249,000

Textile & Apparel Sector

Spinning Machinery

220

Air-Jet Spindles

61,100

Open-End

2,350,000

Short-Staple Spindles

Weaving Machinery

31,500

Shuttle Looms

35,000

Shuttle-less Looms

No. Textile & Apparel Factories

20,000

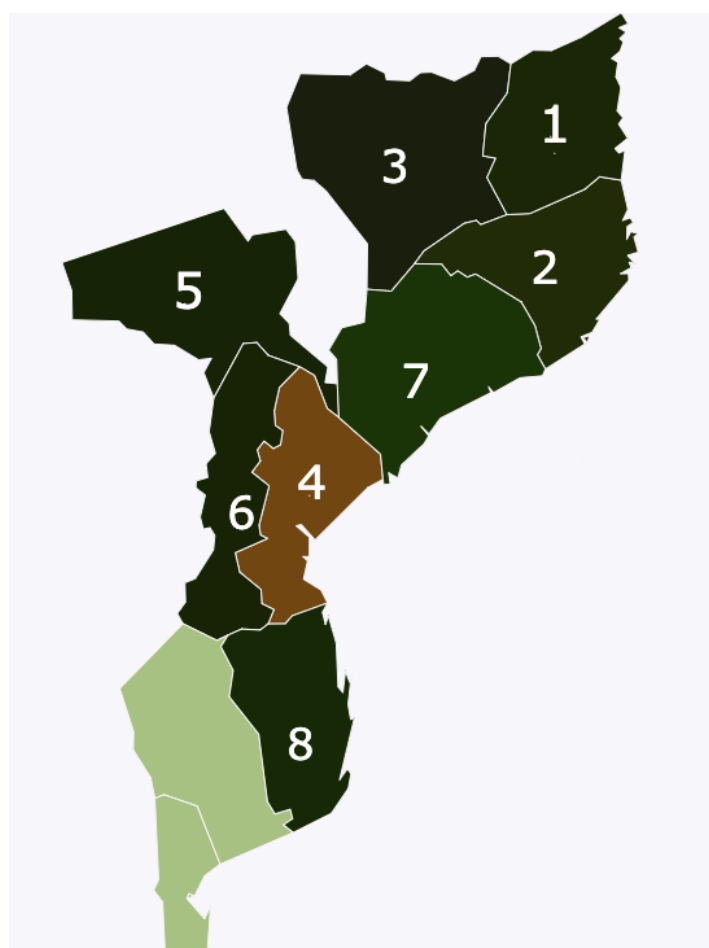


MOZAMBIQUE

Data on the Cotton Sector



Basic Data 2020



Arable Area

5,650

'000 Hectares

Cotton Area

133

'000 Hectares

Production

35

'000 Tonnes

Lint Yield

267

Kg/Hectare

Consumption

1

'000 Tonnes

Lint Exports

27

'000 Tonnes

Farmers

110,776

Male

Farmers

39,689

Female

NUMBER OF FARMERS

	Men	Women
Cabo Delgado	35,198	8,537
Nampula	51,545	20,808
Niassa	18,433	7,898
Sofala	4,296	1,840
Tete	722	327
Manica	183	78
Zambézia	305	78
Inhambane	94	123
Total	110,776	39,689

PRODUCTION 2020

		Area '000 Ha	Yield Kg/Ha	Production '000 Tonnes
1	Cabo Delgado	26	207	5
2	Nampula	81	246	20
3	Niassa	18	405	7
4	Sofala	7	350	2
5	Tete	1	495	0
6	Manica	0	532	0
7	Zambézia	0	288	0
8	Inhambane	0	199	0
	National	133	267	35



SEEDS & PLANTING

Seeds Used for Sowing (%)

Cabo Delgado	98	2	26	71
Cabo Delgado	0	0	1	99
Nampula	0	0	1	99
Niassa	0	100	100	0
Sofala	88	12	8	92
Tete & Manica	20	6	11	89
	Fuzzy Seeds	Delinted	Chemical Treated	Untreated

Planting Method (%)

Seed Source (%)

Cabo Delgado	97	3	95	5
Cabo Delgado	100	0	99	1
Nampula	100	0	95	5
Niassa	100	0	0	100
Sofala	100	0	100	0
Tete & Manica	100	0	93	7
	Manual	Machine	Local	Imported

Use of Cotton Seeds (% Use)

Cabo Delgado	5	2	33	60
Cabo Delgado	73	1	26	0
Nampula	10	7	15	68
Niassa	5	2	25	68
Sofala	0	4	20	76
Tete & Manica	0	3	20	77
National	47	2	26	25



Tillage Methods (% Area)

24	100	0	76
Zero Tillage	Disc Plough	Chisel Plough	Conventional Tillage

Use of Cotton stalks (% Use)

100	0	0	0
Burnt in Fields	Used as Firewood	Ploughed Back	Stacked on Bunds

Weeding Method (%)

98	2	100	0
Hand	Herbicide	Hand Picked	Machine Picked

Harvesting Method (%)

SEED RATE & PLANT POPULATION

25	90	30	37,037
25	80	20	62,500
40	70	20	71,429
Seed rate Kg/Ha	Between rows cm	Within row cm	Population/Ha

Rainwater & Irrigation water (mm)

1,320	829	0	0
Total Rainfall	Effective Rainfall	No. of Irrigations	Irrigation Water/Ha

Methods of Irrigation (% Area)

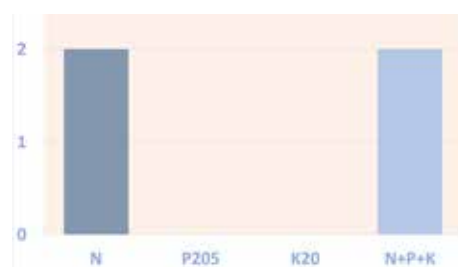
6	90	0	4
Flood	Furrow	Sprinkler	Drip

Rainfed Area (%) & Water Used /Kg Lint

100	0	0	31,022
Rainfed % Area	Irrigation Billion L	Irrigation L/Kg Lint	Rainwater L/Kg Lint

FERTILISERS

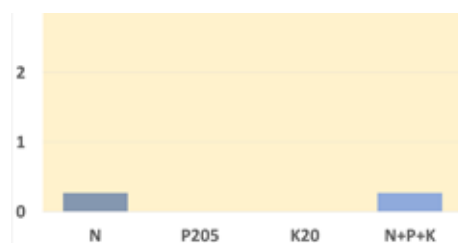
Fertiliser (NPK) use Kg/Hectare



Fertiliser (NPK) use per Kg Lint



Fertiliser (NPK) use '000 Tons



INSECTS, PATHOGENS & WEEDS

INSECT PESTS / INSECTICIDES

EARLY-SEASON

Empoasca facialis, *Aphis gossypii*
Spodoptera littoralis, *Zonocerus elegans*

MID-SEASON

Helicoverpa armigera, *Pectinophora gossypiella*
Dysdercus spp., *Diparopsis castanea*
Earias insulana

INSECTICIDES

Biomiprid 22.2%, Zakanaka Top 10%
Zakanaka PRO 64.8%

WEEDS / HERBICIDES

NARROW-LEAF WEEDS

Digitaria spp., *Panicum maximum*
Eragrotis spp., *Eulensia indica* & *Bacharia deflexa*

BROAD-LEAF WEEDS

Acanthospermum hispidum, *Boerhavia diffusa*
Commelina benghalensis, *Cyperus sphacelatus*

HERBICIDES

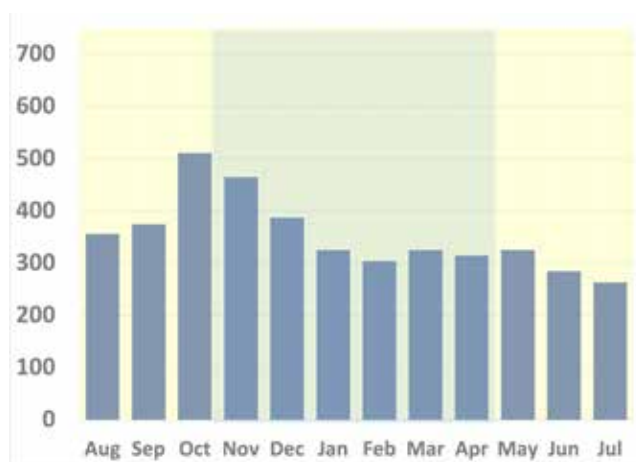
Kilo 500WG

VARIETIES AND FIBRE TRAITS

	Release Year	% Area	Ginning %	Length UHML mm	Strength g/tex	Mic
ALBAR SZ 9314	1999	2.00	41.57	28.60	26-29	3.5-4.0
Chureza	1994	5.00	40.00	28.60	26-28	3.5-4.0
CA-324	1994	93.00	41.60	28.60	33.00	3.5-4.0

WEATHER 2019-2020

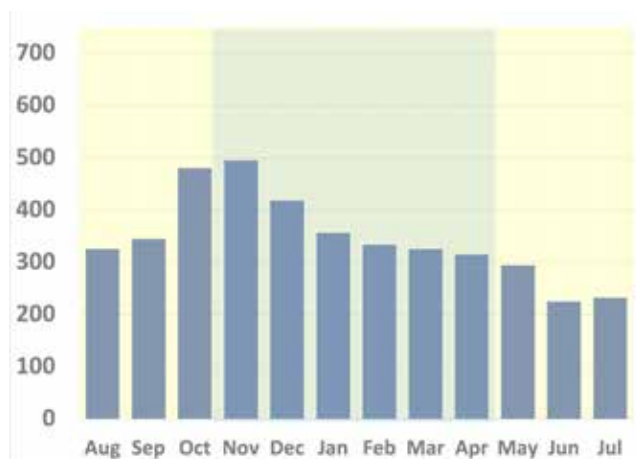
Heat Units (DD₆₀) -Cabo-Delgado



Rainfall (mm) -Cabo-Delgado



Heat Units (DD₆₀) -Nampula

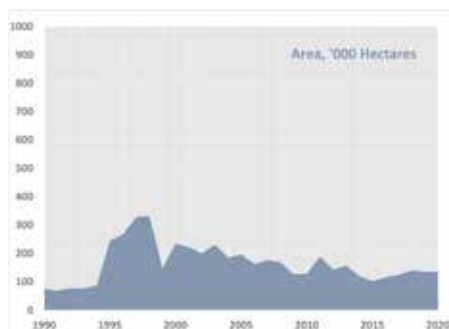


Rainfall (mm) -Nampula

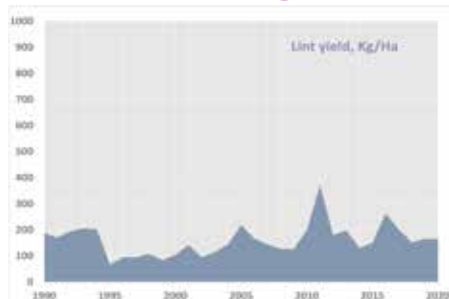


PRODUCTION

Cotton Area '000 Hectares

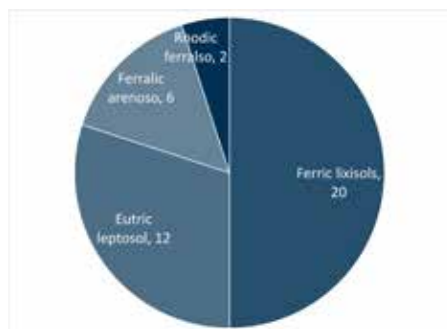


Lint Yield Kg/Ha

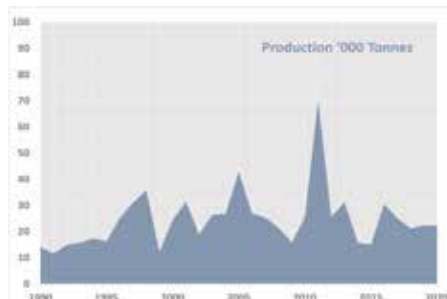


SOILS

Soil Types



Production '000 Tonnes



CROPS

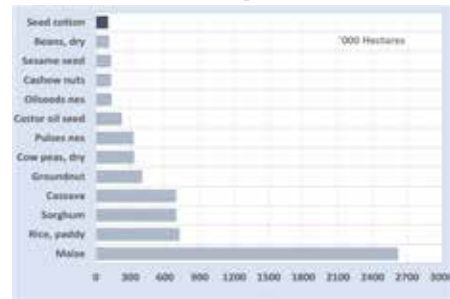
COMPETING CROPS

National
Corn
Beans

ROTATION CROPS

National
Corn
Beans

Area of Crops '000 Ha



STRUCTURE OF COTTON RESEARCH

The Agricultural Research Institute of Mozambique-IIAM (Instituto de Investigação Agrária de Moçambique), Maputo, under the Ministry of Agriculture-MINAG has the legal status, administrative and scientific autonomy, with a mission to contribute to the technological solutions for sustainable development of agribusiness, food security and nutrition. The Institute was created in 2004. The Cotton Research and Seed Multiplication Centre of Namialo-CIMSAN of IIAM is under the Northeast Zonal Centre and is assigned to undertake research on cotton. The Agricultural Research Institute of Mozambique – IIAM is the official body in charge of implementing cotton research programs in Mozambique. However, the Mozambique Institute for Cotton-IAM, the ginners/cotton companies and cotton farmer associations are important players in the process of setting priorities for cotton research. These research programs are set out through a cotton research unit, Cotton Research and Seed Multiplication Centre of Namialo – CIMSAN is located in Namialo village, Nampula province, which is one of the main cotton producing provinces of the country. There are 7 researchers involved on cotton research in the country (2 PhD – 1 Entomologist and 1 Genetics and Breeding; 1 MSc – Genetics and Breeding and 4 BSc – Agricultural Sciences). Five of these researchers are based in Namialo, Nampula province where the cotton research Centre is located and 2 researchers are based in Nampula city, the headquarter of the Northeast Zonal Centre of Agricultural Research Institute of Mozambique. The Mozambique Institute for Cotton-IAM (Instituto de Algodão de Moçambique) is an autonomous government institution with the mandate for overall coordination of the cotton sub-sector throughout its value chain. The mandates include, policy and regulation, formulation and enforcement; promotion

of research and technology transfer to farmers; monitoring and evaluation of both process and result based sub sector indicators; leading the technological innovation within the farming system from seed to harvest; price negotiation between companies and farmers, assessment of the quality of lint; and monitoring of the export process.

RESEARCH ORGANOGRAMS

Ministry of Agriculture and Food Security



Scheme of Input Supply system in Cotton Subsector in Mozambique



COST OF CULTIVATION US\$/Hectare

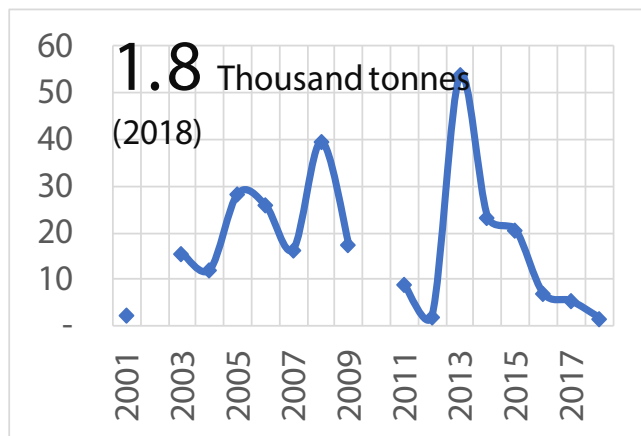
INPUTS	Quantity (Kg/Ha)	Operations per season	Total cost /Ha
Non-GM seeds	25	1	0
Biotech/GM seeds	0	0	
NPK+Other	0	0	
Insecticides	250 ml	6	21
Herbicides	250	1	25
Fungicides	0	0	0
Growth regulators	0	0	0
Defoliants	0	0	0
Manure	0	0	0
Others (please specify)	0	0	0
MANPOWER / LABOUR	Wages per person	Persons per operation	Total cost per hectare
Land preparation /tillage etc.,	8.9	5.0	44.6
Sowing	6.3	5.0	31.3
Fertiliser / manure application	0.0	0.0	0.0
Irrigation	0.0	0.0	0.0
Thinning	7.1	5.0	35.7
Weeding	11.2	4.0	44.6
Hoeing	0.0	0.0	0.0
Pesticide application	2.9	5.0	14.3
Defoliator application	0.0	0.0	0.0
Picking / harvesting	11.2	4.0	44.6
Stalk cutting & removal	5.4	2.0	10.7
Transportation /unloading etc.,	0.0	0.0	0.0
Ginning cost per 100 Kg	1.8	7.0	28.0
Others (please specify)	0	0	0
MACHINERY /ANIMALS etc.	Cost per Operation	Number of Operations	Total cost per hectare
Tractors	62.5	1	62.5
Implements & tools	0	0	0
Electric / Diesel pumps etc.,	0	0	0
Electricity / Diesel etc.,	0	0	0
Harvesting machines	0	0	0
Hoeing / Tillage machinery etc.,	0	0	0
Bullocks /Buffaloes	0	0	0
Land rent	0	0	0
MARKET VALUE	Yield Kg/per hectare	Market value per 100 Kg	Value per hectare
Seed cotton	500	0.45	223
Ginning % (output)	40	0.00	0
Lint (fibre)	200	1.68	336
Seed	297	0.28	83
COST OF CULTIVATION			335
NET RETURNS (SEED-COTTON)			-112
NET RETURNS (SEED + LINT)			56

TRADE DATA

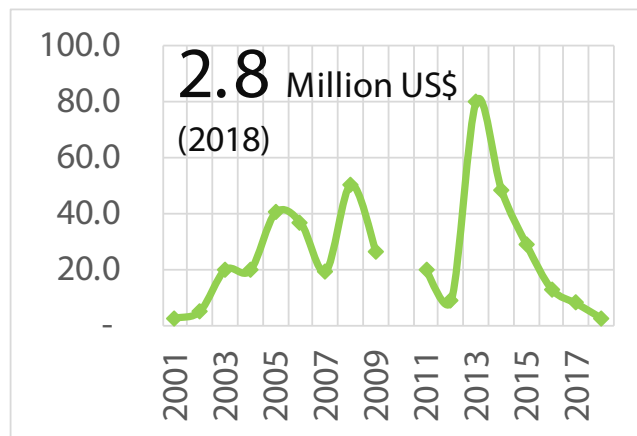


COTTON FIBRE EXPORT DATA

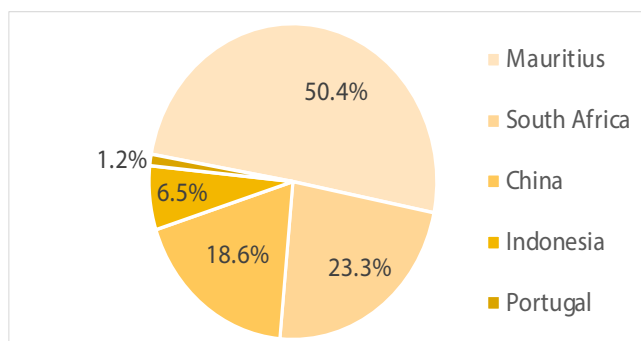
Quantity



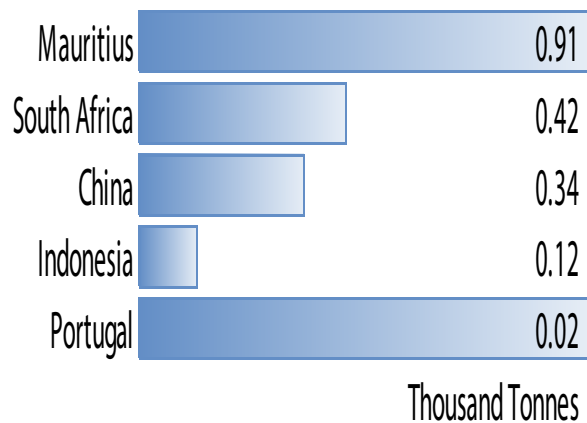
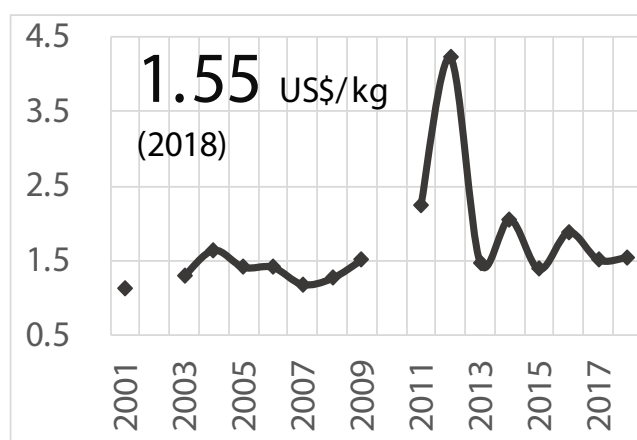
Value



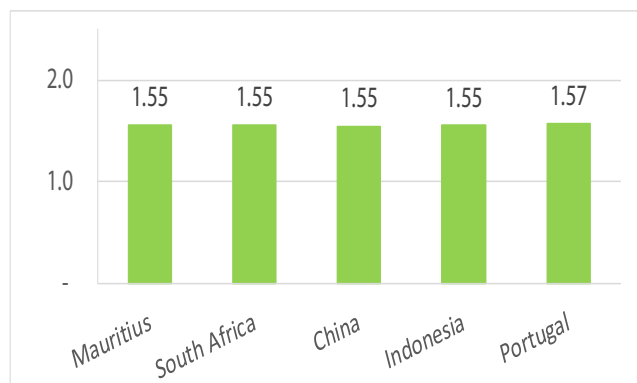
Market Share by Country



Average Price: US\$/Kg

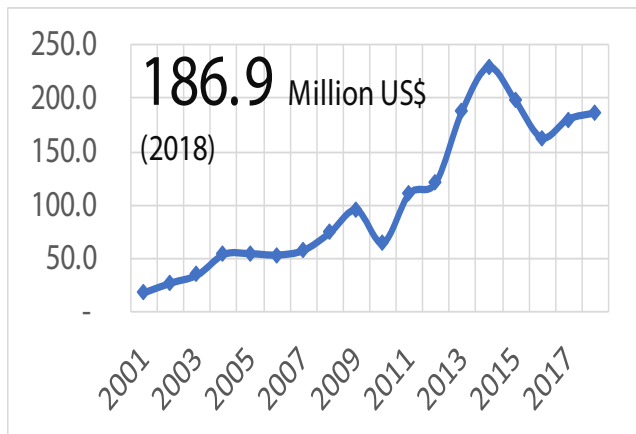


Average Price by Country 2018: US\$/Kg

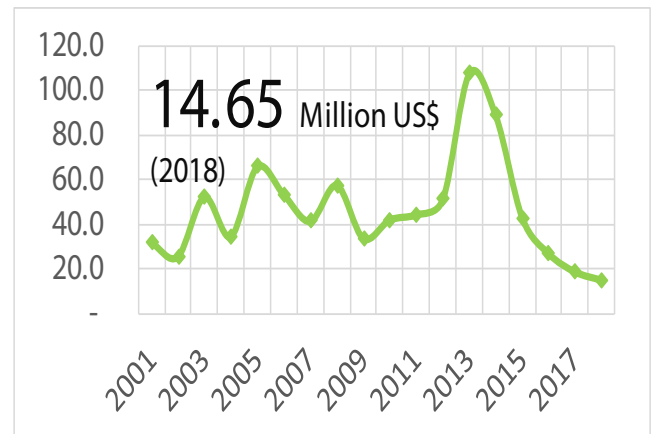


TEXTILE & APPAREL TRADE DATA

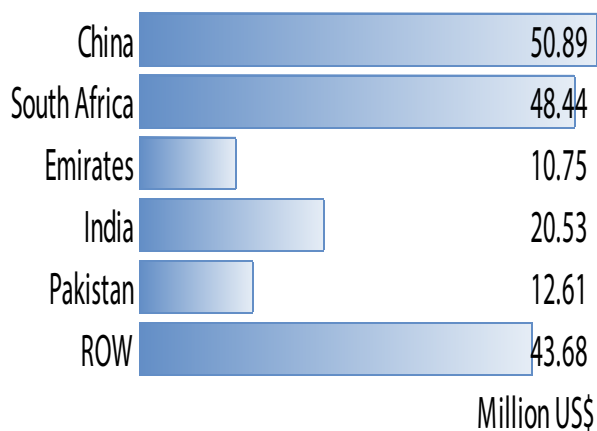
Imports



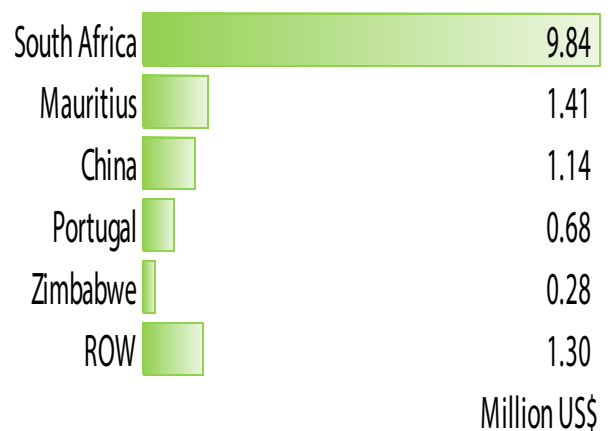
Exports



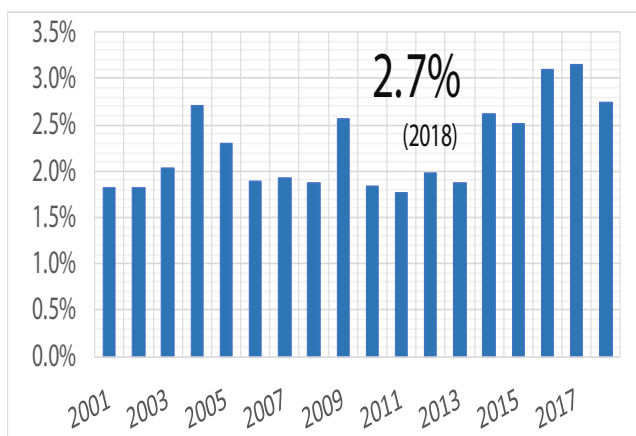
Imports by Country - 2018



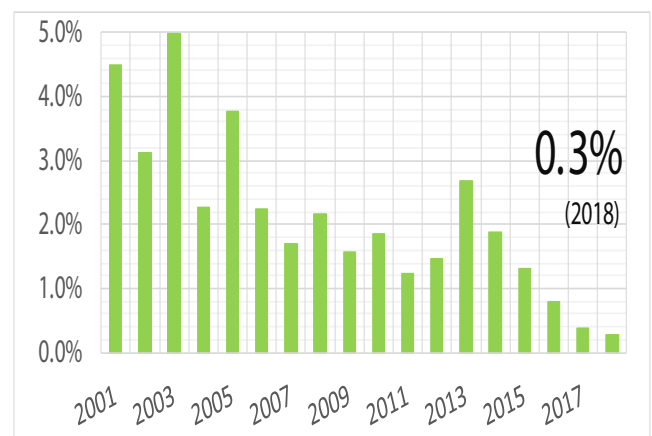
Exports by Country - 2018



T&A Imports Share in Overall Imports

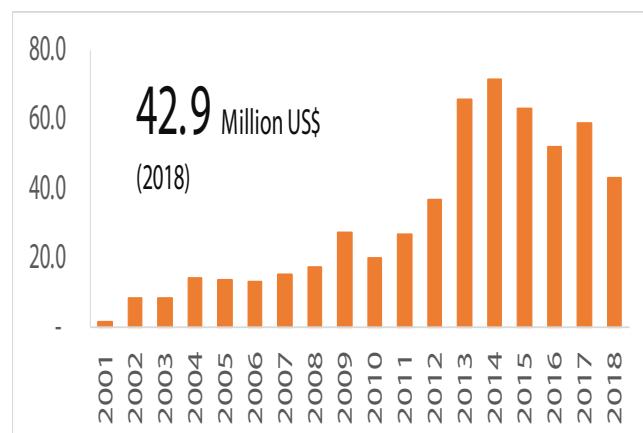


T&A Exports Share in Overall Exports



COMPOSITION OF THE TEXTILE & APPAREL INDUSTRY

Imports - Worn Clothing & Articles



Spinning Machinery

10,000

Short-Staple Spindles

Weaving Machinery

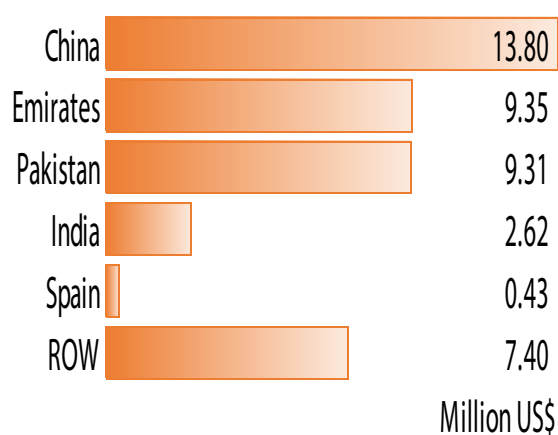
2,500

Shuttle Looms

120

Shuttle-less Looms

Imports by Country - 2018



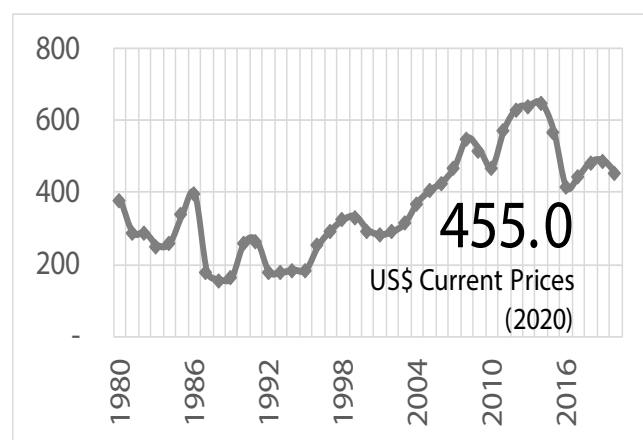
Better Cotton Produced in
2018/19

10,000 tonnes

Better Cotton+CmiA Produced in
2018/19

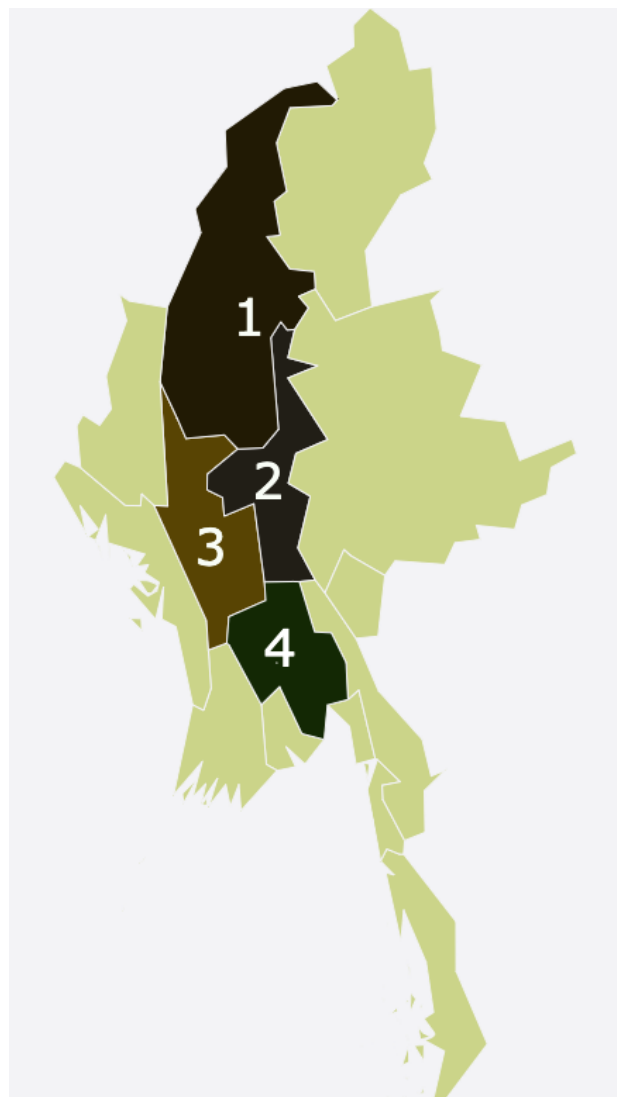
7,017 tonnes

GDP per capita





Basic Data 2020



Arable Area
11,080
'000 Hectares

Cotton Area
240
'000 Hectares

Production
152
'000 Tonnes

Lint Yield
633
Kg/Hectare

Consumption
187
'000 Tonnes

Lint Exports
0
'000 Tonnes

Farmers
190,424
Male

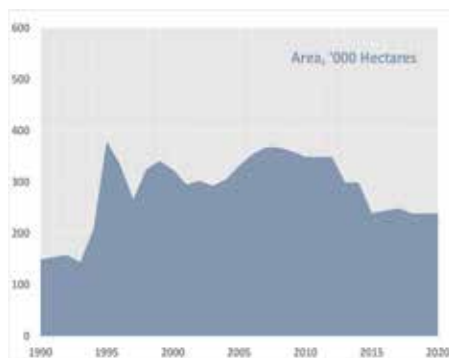
Farmers
47,606
Female

PRODUCTION 2020

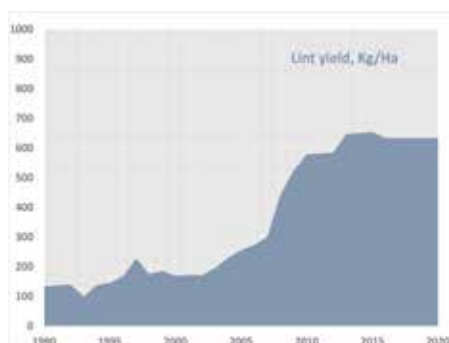
		Area '000 Ha	Yield Kg/Ha	Production '000 Tonnes
1	Sagaing	58	621	36
2	Mandalay	45	644	29
3	Magwe	30	633	19
4	Bago	26	615	16
5	Others	81	642	52
	National	240	633	152

PRODUCTION

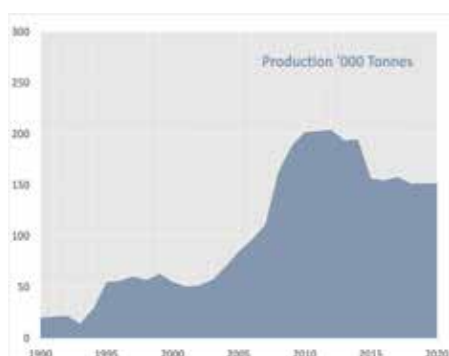
Cotton Area '000 Hectares



Lint Yield Kg/Ha



Production '000 Tonnes



INSECT PESTS

INSECT PESTS / INSECTICIDES

EARLY-SEASON

Amrasca biguttula biguttula
Aphis gossypii, *Bemisia tabaci*
Phenacoccus solenopsis & *Spodoptera litura*

MID-SEASON

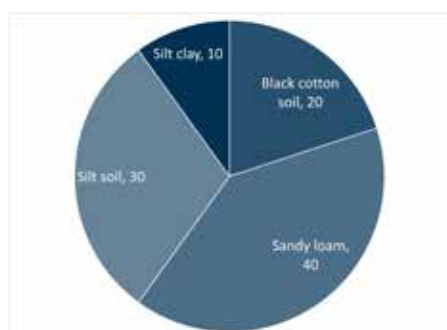
Phenacoccus solenopsis & *Aphis gossypii*
Amrasca biguttula

INSECTICIDES

Acephate, Imidacloprid
 Gaucho 70 WP, Cartap 50 SP
 Carbaryl 85W/W, Chlorpyrifos-25 EC
 Profenophos 40Ec, Chlorpyrifos 40 EC
 Cypermethrin 10 EC, Carbofuran 3G

SOILS

Soil Types



COMPETING CROPS

Pigeonpea
 Wheat
 Greengram
 Rice

ROTATION CROPS

Pigeonpea
 Wheat
 Greengram
 Rice

DISEASES

DISEASES / PATHOGENS

DISEASES / PATHOGENS

Rhizoctonia bataticola
Xanthomonas campestris

CHEMICAL CONTROL

Homai 70% WP & Streptomycin

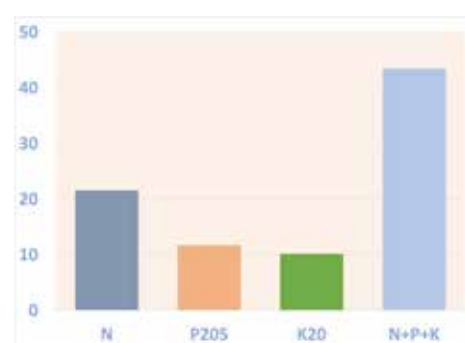
COTTON RESEARCH

The Cotton and Sericulture Department (CSD) undertakes Cotton research for the key cotton growing areas in upper Myanmar. Adaptive research activities are conducted at the CSD regional cotton farms and farmers' fields.

The Department of Agricultural Research Institute (DARI) is the main institution that coordinates and conducts agricultural research including cotton in Myanmar. The Yezin Agricultural University (YAU) located in Yezin has two other major campuses in Mawlamyine, Mon State and Hlegu, Yangon Region; five smaller regional campuses in Aung Pan, Hmawbi, Kyaukse, Magway and Phyu; and seven designated farms in Myanmar Agricultural Service.

FERTILISERS

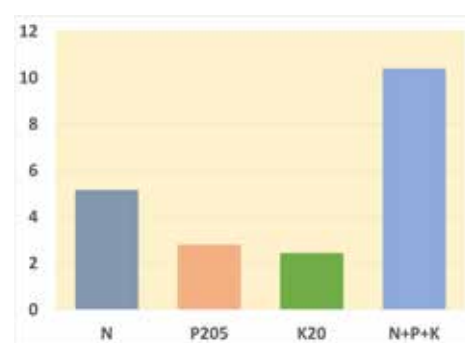
Fertiliser (NPK) use Kg/Hectare



Fertiliser (NPK) use per Kg Lint



Fertiliser (NPK) use '000 Tons



WEEDS

WEEDS / HERBICIDES

NARROW-LEAF WEEDS

Branchiaria reptans
Leptochloa virgata
Cyperus rotundus
Eleusine indica
Echinochloa crus-galli

BROAD-LEAF WEEDS

Amaranthus spinosus
Tribulus terrestris
Trianthema portulacastrum

HERBICIDES

Glyphosate 48% SL
 2,4D & Ansar



VARIETIES AND FIBRE TRAITS

	Release Year	% Area	Ginning %	Length UHML mm	Strength g/tex	Mic
Ngwe Chi 6	2010	44	38	28	8.2 lb/mg	4.8
Ngwe Chi 9	2016	12	37	30	8.2 lb/mg	4.9
SD-8	2016	14	39	29	8.2 lb/mg	4.7
Wargyi		14	33	20	7.0 lb/mg	7
Mahlaing		8.4	35-41	21-26	5.0-6.5 lb/mg	6.5
Tadaka (KSCH-207)	2010		35-37	28-29	29-30	4.5

WATER

Rainwater & Irrigation water (mm)

1,071	667	2	140
Total Rainfall	Effective Rainfall	No. of Irrigations	Irrigation Water/Ha

Methods of Irrigation (% Area)

0	100	0	0
Flood	Furrow	Sprinkler	Drip

Rainfed Area (%) & Water Used /Kg Lint

98	7	44	10,517
Rainfed % Area	Irrigation Billion L	Irrigation L/Kg Lint	Rainwater L/Kg Lint

TILLAGE, STALK-USE & SEEDS

Tillage Methods (% Area)

0	100	0	95
Zero Tillage	Disc Plough	Chisel Plough	Conventional Tillage

Use of Cotton stalks (% Use)

55	25	5	15
Burnt in Fields	Used as Firewood	Ploughed Back	Stacked on Bunds

Use of Cotton Seeds (% Use)

100	0	0	0
Crushed for Oil	Direct Cattle-Feed	Used for Sowing	wasted

Seed Rate, Spacing & Plant Population/Ha

15	90	30	37,037
Seed Rate Kg/Ha	Between Rows cm	Within Row cm	Plant Population/ Ha

WEATHER 2019-2020

DD60 Fahrenheit Heat Units= Average daily temperature -60°F. The light green box denotes months of the cotton season. The blue bars are monthly averages of heat units and precipitation (rainfall in mm)

Heat Units (DD60) -Sagaing



Rainfall (mm) -Sagaing



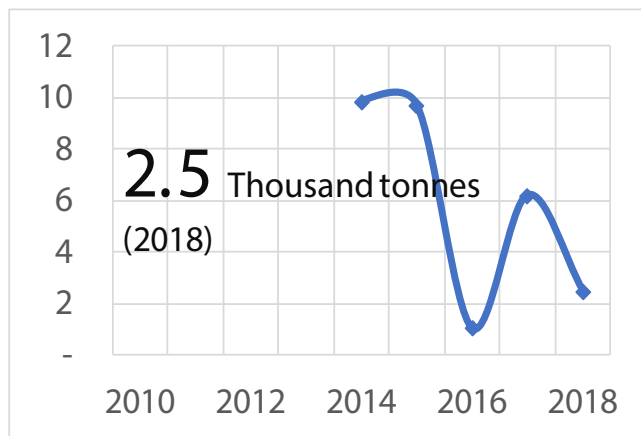
TRADE DATA

DATA ON THE COTTON SECTOR

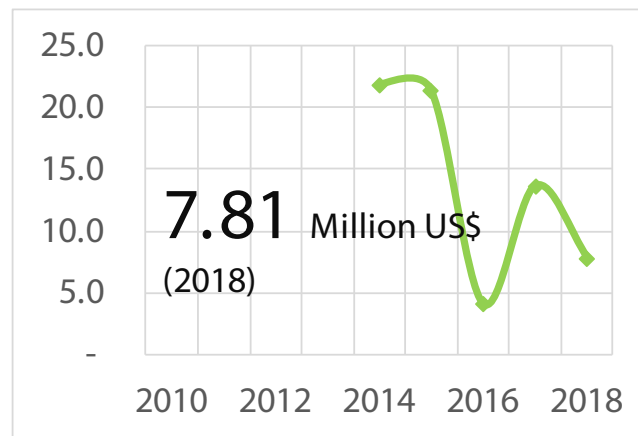


COTTON FIBRE EXPORT DATA

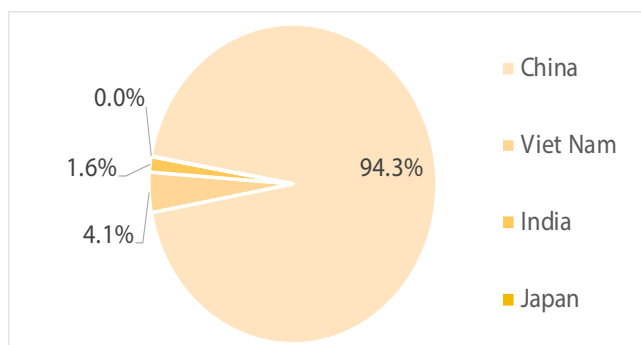
Quantity



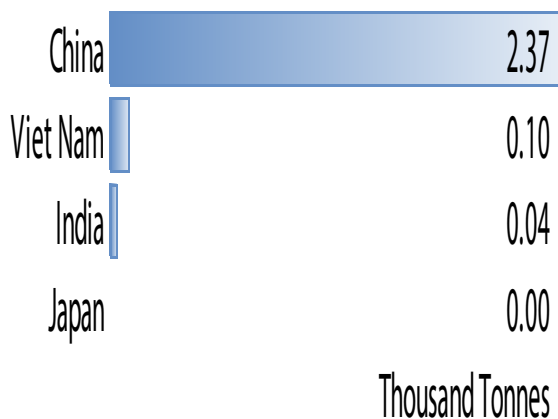
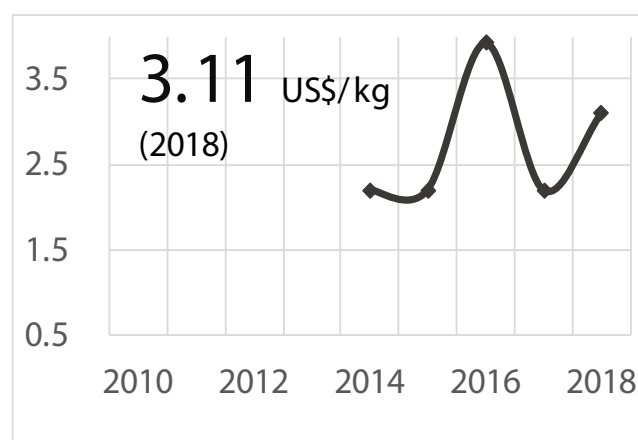
Value



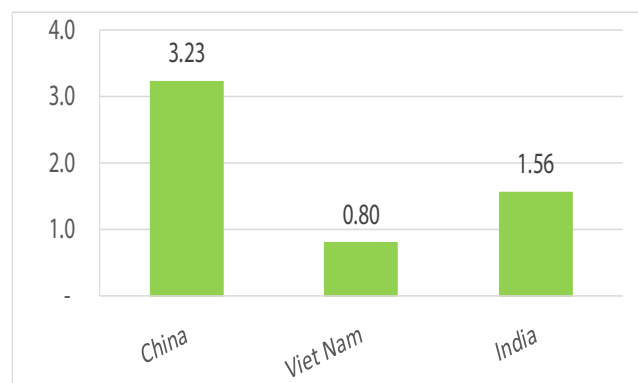
Market Share by Country



Average Price: US\$/Kg

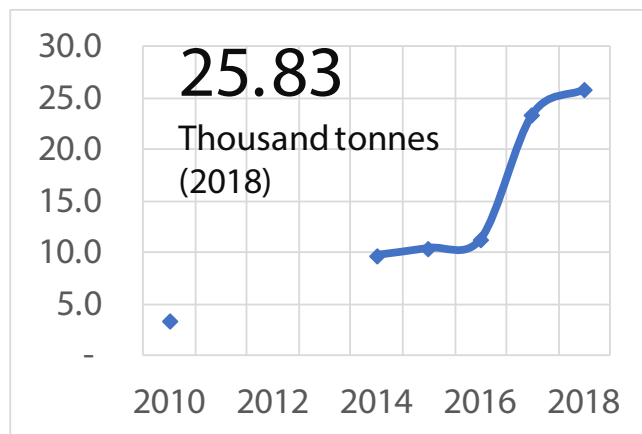


Average Price by Country 2018: US\$/Kg

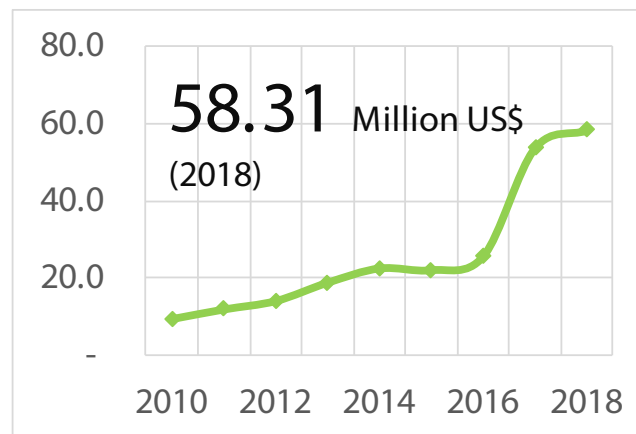


COTTON YARN IMPORT DATA

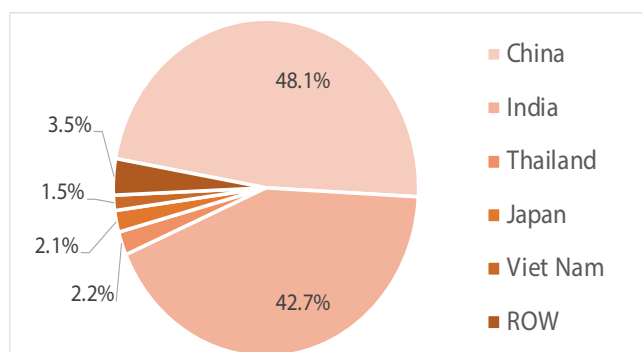
Quantity



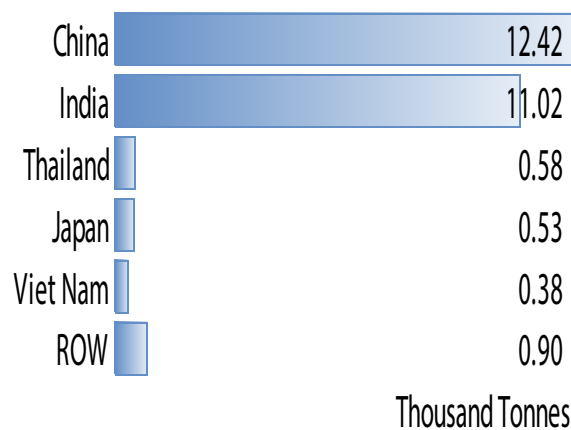
Value



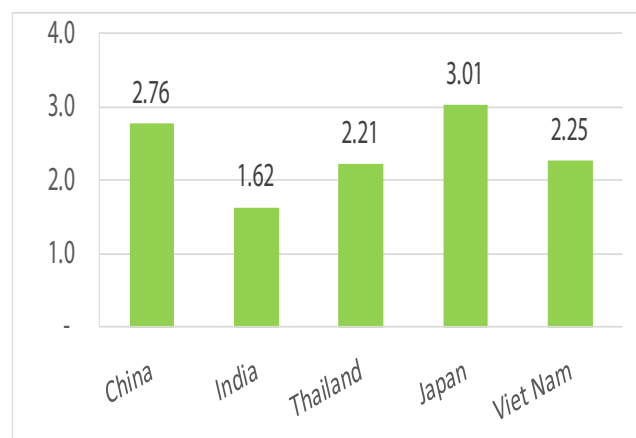
Market Share by Country



Average Price: US\$/Kg

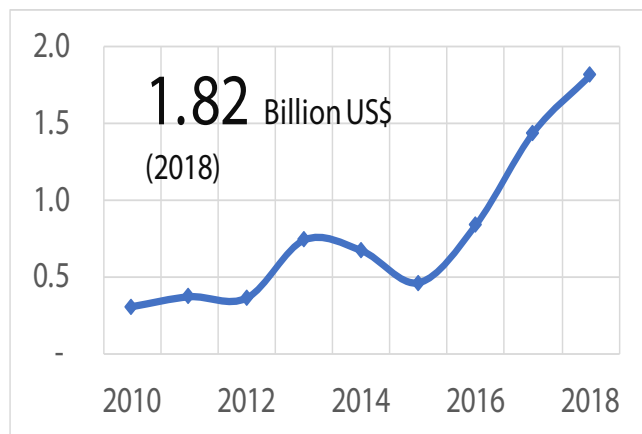


Average Price by Country 2018: US\$/Kg

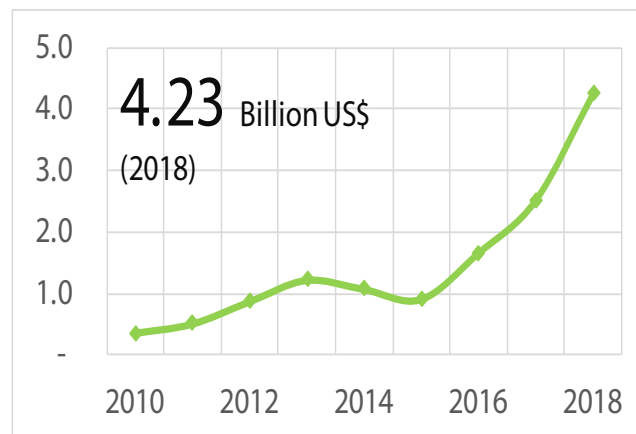


TEXTILE & APPAREL TRADE DATA

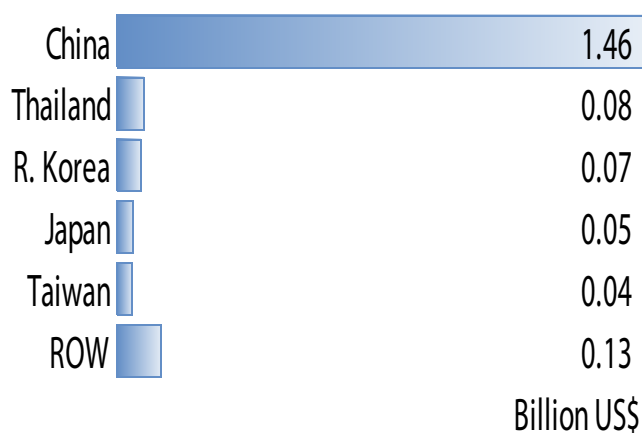
Imports



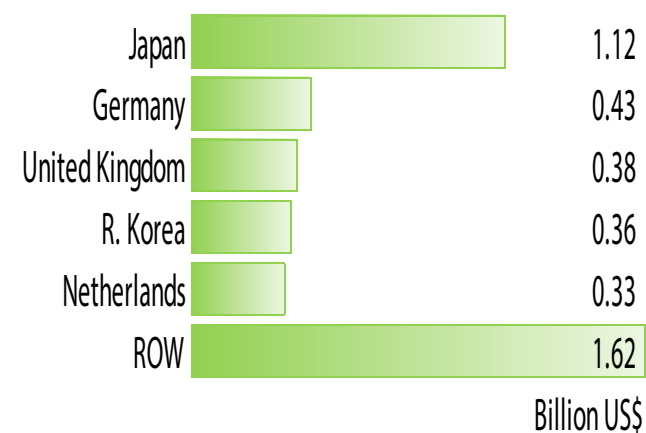
Exports



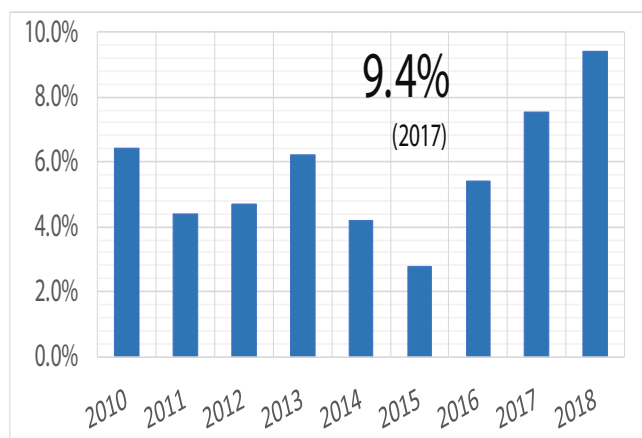
Imports by Country - 2018



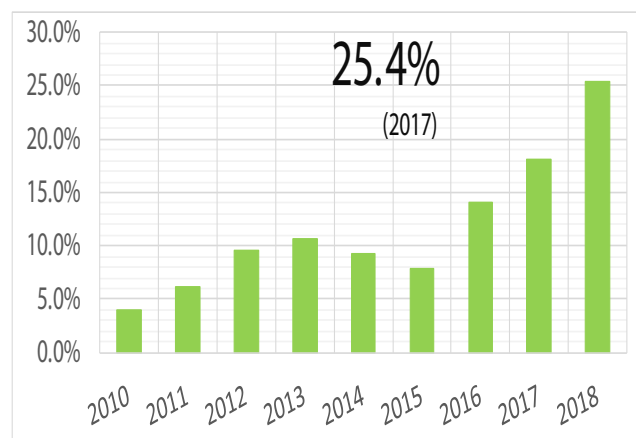
Exports by Country - 2018



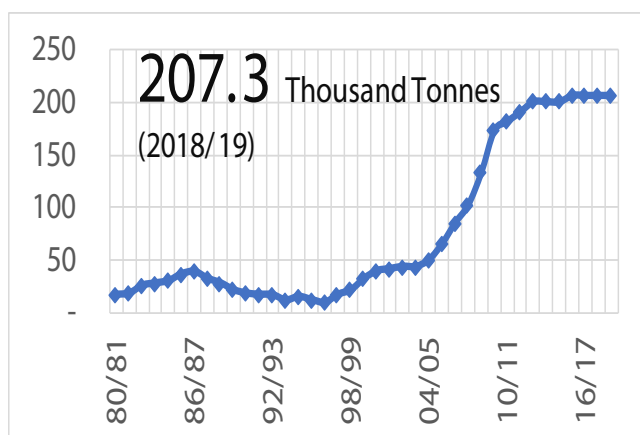
T&A Imports Share in Overall Imports



T&A Exports Share in Overall Exports



COTTON MILL USE



Employment

404,457

Garment Sector '000

Spinning Machinery

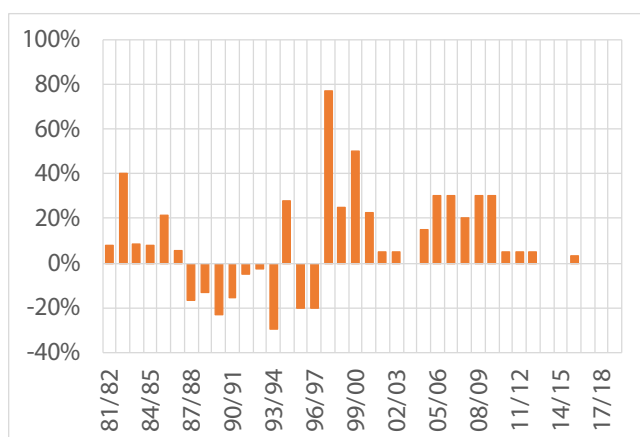
1,600

Open-End

250,000

Short-Staple Spindles

Mill Use - Annual Variation %



Weaving Machinery

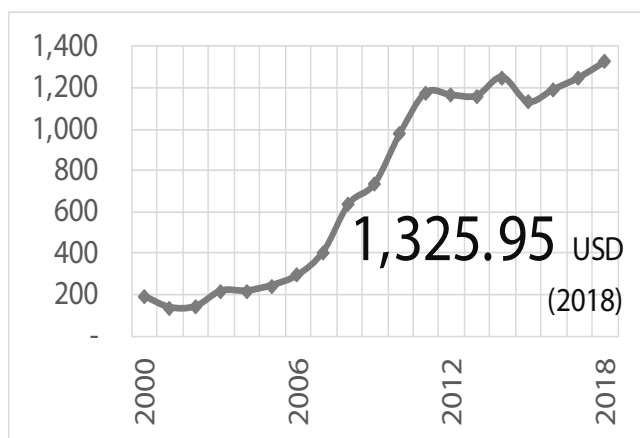
15,000

Shuttle Looms

750

Shuttle-less Looms

GDP per capita



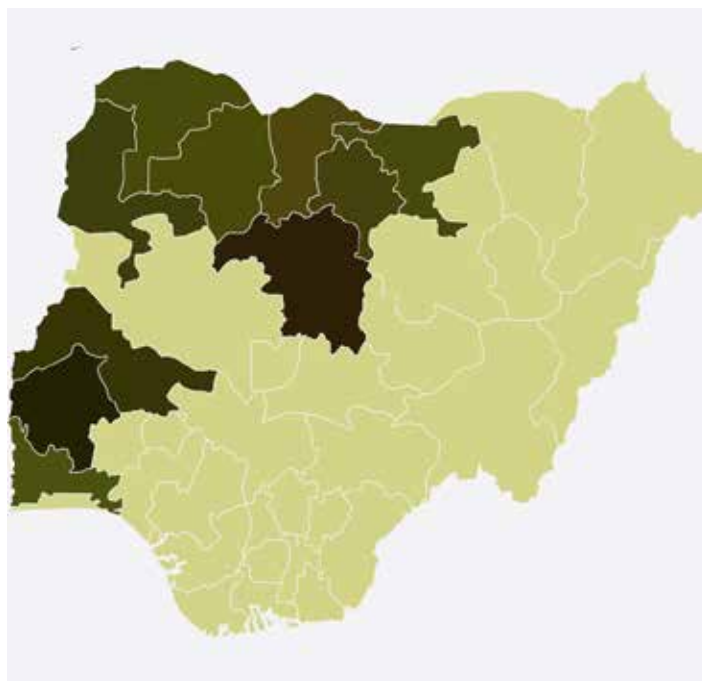
No. Garment Factories

533





Basic Data 2020



Cotton growing states: Kano, Kaduna, Oyo, Ondo, Kwara, Katsina, Jigawa, Ogun, Kebbi, Sokoto & Zamfara.

Arable Area
34,000
'000 Hectares

Cotton Area
264
'000 Hectares

Production
90
'000 Tonnes

Lint Yield
342
Kg/Hectare

Consumption
30
'000 Tonnes

Lint Exports
36
'000 Tonnes

Farmers
270,000
Male

Farmers
30,000
Female

PRODUCTION 2020

	Area '000 Ha	Yield Kg/Ha	Production '000 Tonnes
National	264	342	90

FERTILISERS

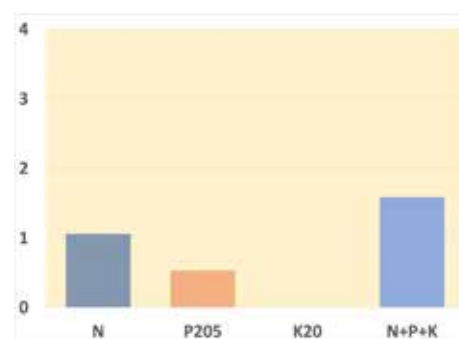
Fertiliser (NPK) use Kg/Hectare



Fertiliser (NPK) use per Kg Lint



Fertiliser (NPK) use '000 Tons



VARIETIES AND FIBRE TRAITS

	Release Year	% Area	Ginning %	Length UHML mm	Strength g/tex	Mic
Samcot-8	1977	20		23.3		3.8-4.0
Samcot-9	1989	15		23.3		3.8-4.0
Samcot-10	1989	15		23.3		3.8-4.0
Samcot-11	2003	10		24.3		3.4-4.0
Samcot-12	2003	13		24.5		3.7-4.0
Samcot-13	2003	11		25.5		3.7-4.0

TILLAGE, STALKS, WEEDING Etc.

Tillage Methods (% Area)

4	60	5	96
Zero Tillage	Disc Plough	Chisel Plough	Conventional Tillage

Use of Cotton stalks (% Use)

60	20	15	5
Burnt in Fields	Used as Firewood	Ploughed Back	Stacked on Bunds

Weeding Method (%)

60	40
Hand	Herbicide

Harvesting Method (%)

75	25
Hand	Machine

WATER

Rainwater & Irrigation water (mm)

996	664	0	0
Total Rainfall	Effective Rainfall	No. of Irrigations	Irrigation Water/Ha

Methods of Irrigation (% Area)

0	0	0	0
Flood	Furrow	Sprinkler	Drip

Rainfed Area (%) & Water Used /Kg Lint

100	0	0	19,408
Rainfed % Area	Irrigation Billion L	Irrigation L/Kg Lint	Rainwater L/Kg Lint

SEEDS & PLANTING

Seeds Used for Sowing (%)

60	40	40	60
Fuzzy Seeds	Delinted	Chemical Treated	Untreated

Use of Cotton Seeds (% Use)

85	9	6	0
Crushed for Oil	Direct Cattle-Feed	Used for Sowing	wasted

Planting Method (%)

5	95
Manual	Machine

Seed Source (%)

95	5
Local	Imported

Seed Rate, Spacing & Plant Population/Ha

7	75	25	53,333
Seed Rate Kg/Ha	Between Rows cm	Within Row cm	Plant Population/ Ha

STRUCTURE OF COTTON RESEARCH

The Institute for Agricultural Research (IAR) is affiliated with the Faculty of Agriculture, Ahmadu Bello University. It has a cotton research centre that is dedicated for research on plant breeding, agronomy and plant protection. The Ahmadu Bello University was established in 1962 by the Government of the then Northern Region of Nigeria. The University functions under the Federal Government of Nigeria in 1975 with a national mandate. The ABU

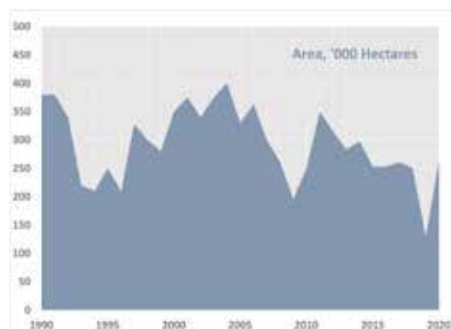
has of ninety-six Academic Departments, twelve Faculties, and twelve Research Institutes and Specialised Centres. The university has two campuses located on 7,000 hectares of land.

The Agricultural Development Programme (ADP) of the Ministry of Agriculture is the major public agency mandated to provide extension services to farmers. The Nigerian Federal Government pro-

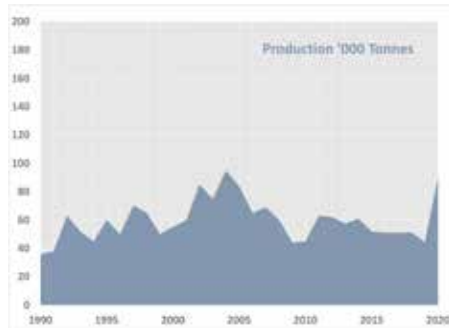
vides necessary funding. In 2009, the Agricultural Research Council of Nigeria (ARC), Abuja, directed all National Agricultural Research Institutes (NARIs) to establish adopted villages to showcase agricultural technologies developed by the research institutes. The offices of adopted villages served as Agricultural Research Outreach Centres (AROCs) managed jointly by farmers and the NARIs.

PRODUCTION & CROPS

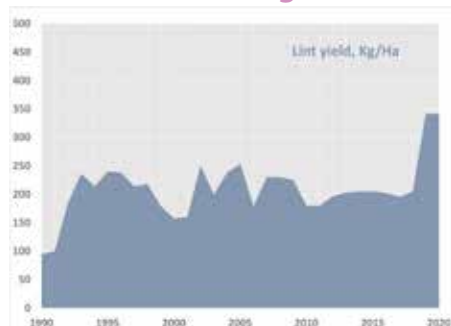
Cotton Area '000 Hectares



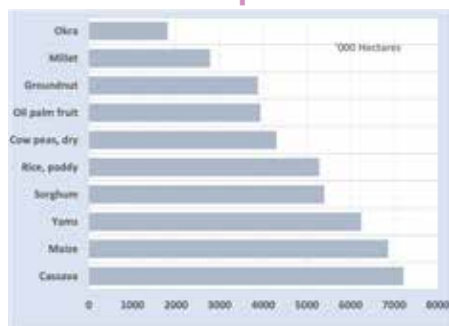
Production '000 Tonnes



Lint Yield Kg/Ha

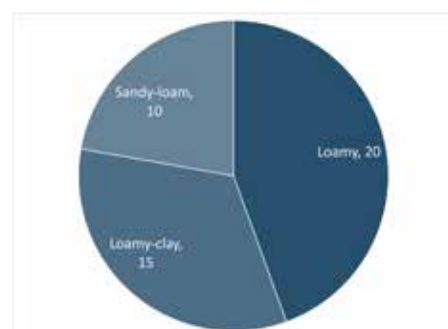


Area of Crops '000 Ha



SOILS

Soil Types



COMPETING CROPS

Cowpea

Peanut

Corn

ROTATION CROPS

Cowpea

Peanut

Corn

INSECTS, PATHOGENS & WEEDS

INSECT PESTS / INSECTICIDES

EARLY-SEASON

Earias insulana, *Sylepta derogata*
Dysdercus superstitionis, *Aphis gossypii*

MID-SEASON

Earias insulana, *Sylepta derogata*
Diparopsis watersii, *Aphis gossypii*
Dysdercus superstitionis

INSECTICIDES

Lambdacyhalothrin 2.5 EC
Cypermethrin 10 E
Dimethoate

DISEASES / PATHOGENS

DISEASES / PATHOGENS

Xanthomonas malvacearum
Rhizoctonia solani
Phytophthora capsici
Alternaria tenuis
Alternaria macrospora

CHEMICAL CONTROL

Apron Plus
Apron Star
Bronocot

WEEDS / HERBICIDES

NARROW-LEAF WEEDS

Cynodon dactylon, *Cyperus rotundus*
Rottboellia cochinchinensis
Digitaria ciliaris, *Paspalum orbiculare*

BROAD-LEAF WEEDS

Acanthospermum hispidum
Ageratum conyzoides, *Euphorbia heterophylla*
Tridax procumbens, *Vernonia spp.*

HERBICIDES

Glyphosate/Paraquat
metolachlor+Ametryn
Alachlor+Diuron, Norfluron+Diuron

WEATHER 2019-2020

Heat Units (DD60) -Zamfara



Rainfall (mm) -Zamfara



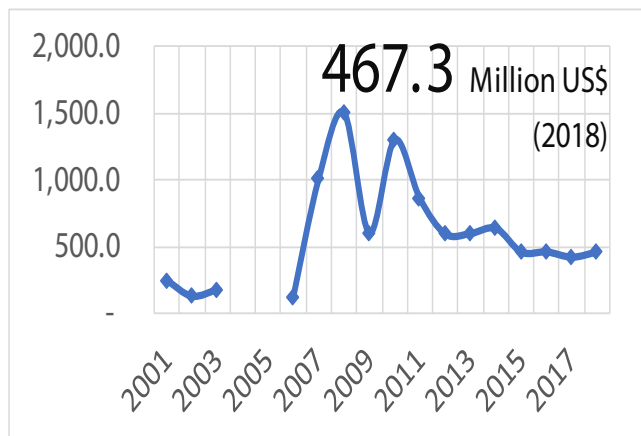
COST OF CULTIVATION US\$/Hectare

INPUTS	Quantity (Kg/Ha)	Operations per season	Total cost /Ha
Non-GM seeds			14
Biotech/GM seeds			
NPK+Other			10
Insecticides			20
Herbicides			
Fungicides			5
Growth regulators			0
Defoliants			0
Manure			
Others (please specify)			
MANPOWER / LABOUR	Wages per person	Persons per operation	Total cost per hectare
Land preparation /tillage etc.,	5	2	30
Sowing	5	5	25
Fertiliser / manure application	4	2	8
Irrigation	2	0	0
Thinning	5	3	15
Weeding	5	15	75
Hoeing	5	4	20
Pesticide application	5	4	20
Defoliator application	2	1	0
Picking / harvesting	5	15	75
Stalk cutting & removal	5	3	15
Transportation /unloading etc.,	5	2	10
Ginning cost per 100 Kg			40
Others (please specify)	0.0	0	0.00
MACHINERY /ANIMALS etc.	Cost per Operation	Number of Operations	Total cost per hectare
Tractors	15		
Implements & tools			
Electric / Diesel pumps etc.,	15		
Electricity / Diesel etc.,	1		
Harvesting machines	15		
Hoeing / Tillage machinery etc.,	15		15
Bullocks /Buffaloes			
Land rent	60		60
MARKET VALUE	Yield Kg/per hectare	Market value per 100 Kg	Value per hectare
Seed cotton	733	0.62	454.46
Ginning % (output)	38		
Lint (fibre)	282	1.58	445.56
Seed	446	0.28	124.88
COST OF CULTIVATION			397
NET RETURNS (SEED-COTTON)			97
NET RETURNS (SEED + LINT)			173

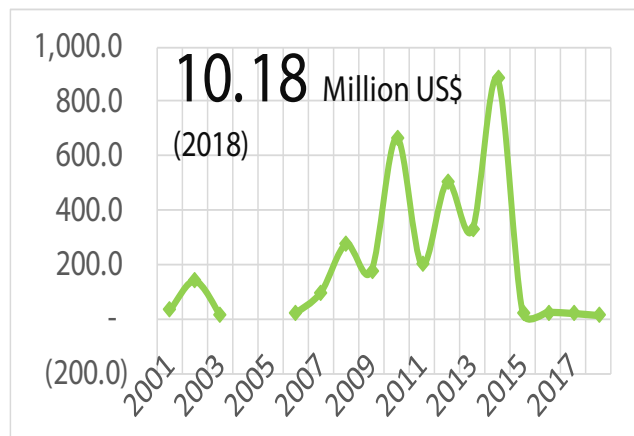
TRADE DATA

TEXTILE & APPAREL TRADE DATA

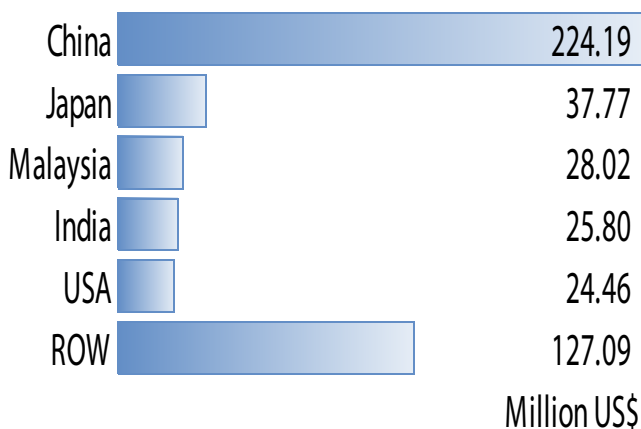
Imports



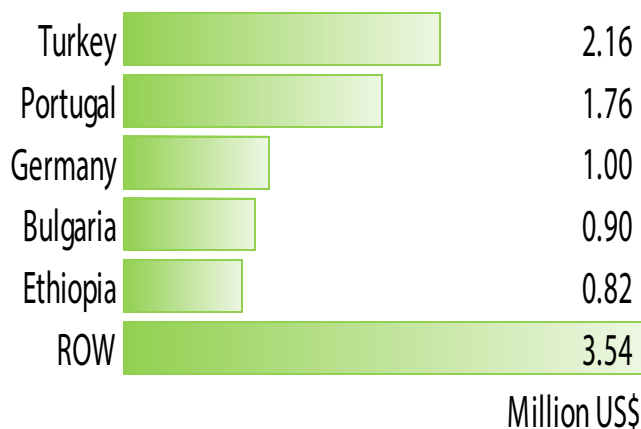
Exports



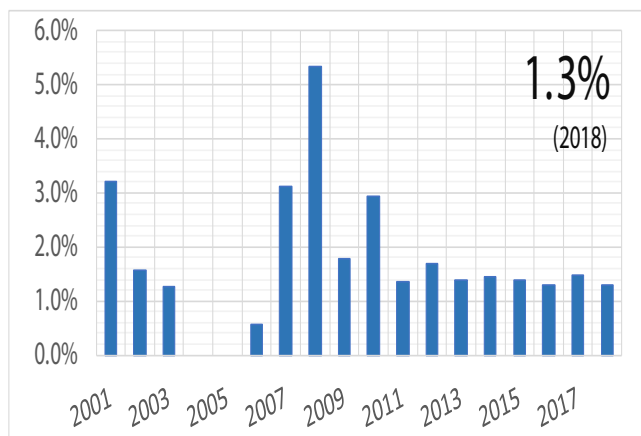
Imports by Country - 2018



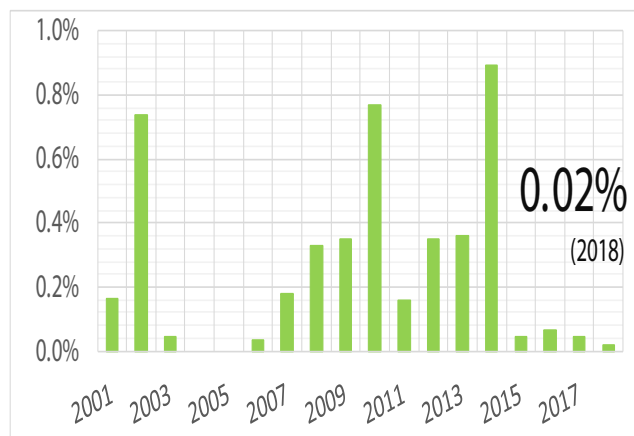
Exports by Country - 2018



T&A Imports Share in Overall Imports

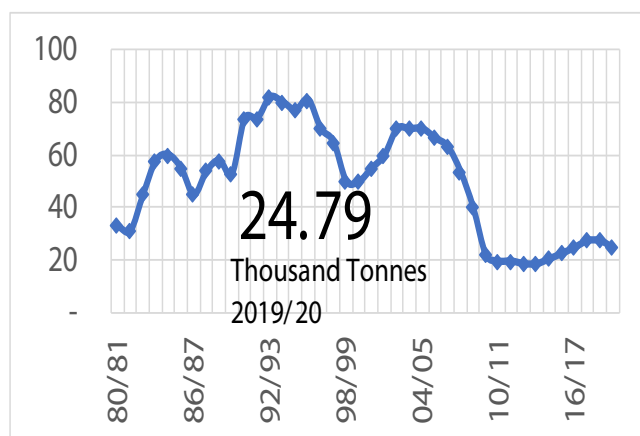


T&A Exports Share in Overall Exports

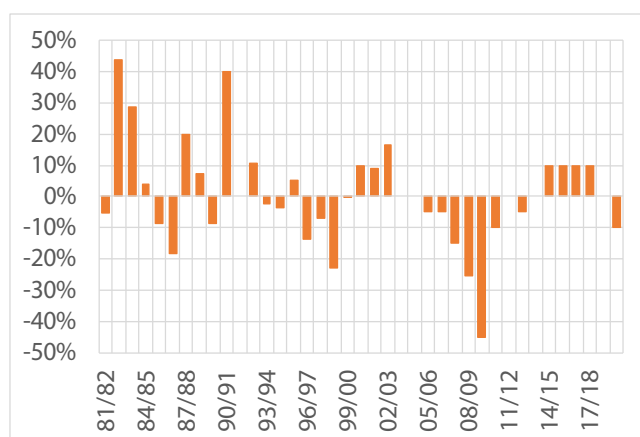


COMPOSITION OF THE TEXTILE & APPAREL INDUSTRY

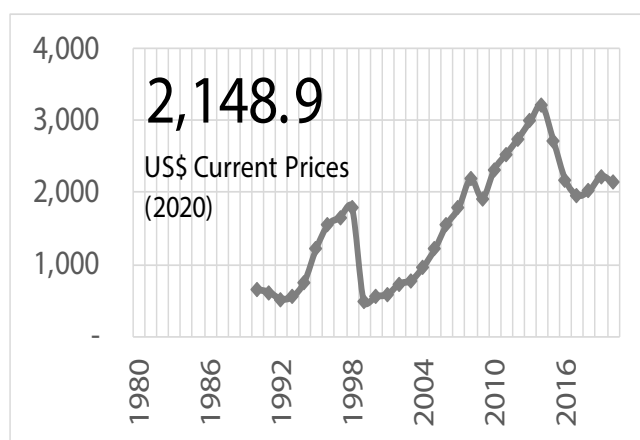
Cotton Mill Use



Mill Use - Annual Variation %



GDP per capita



Employment

25,000

Textile Sector

Spinning Machinery

12,000

Open-End

290,000

Short-Staple Spindles

Weaving Machinery

5,000

Shuttle Looms

3,500

Shuttle-less Looms

No. Textile Mills

25

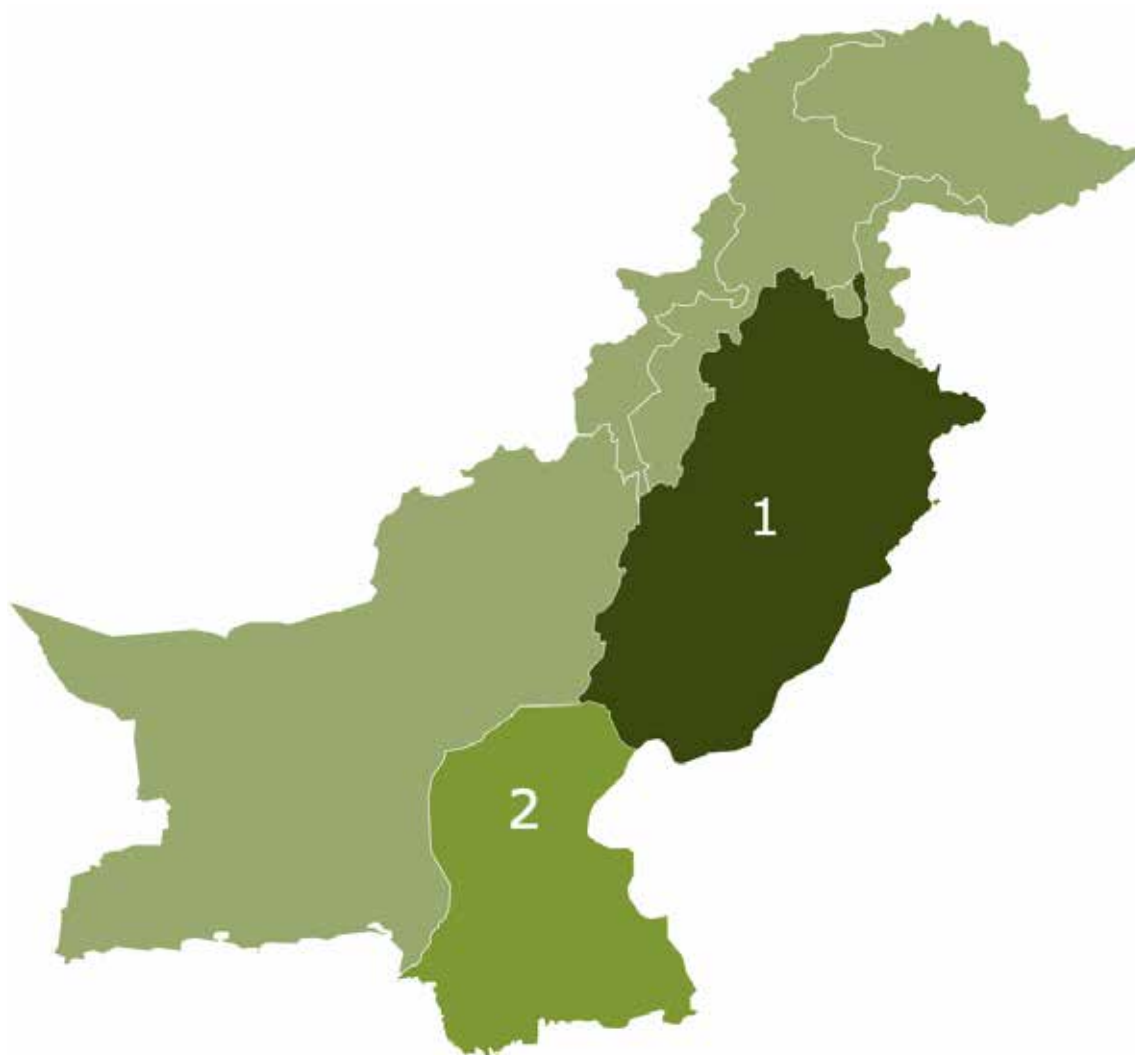
Better Cotton+CmiA Produced in
2018/19

1,351 tonnes





Basic Data 2020



Arable Area

30,507

'000 Hectares

Cotton Area

2,513

'000 Hectares

Consumption

1,984

'000 Tonnes

Lint Exports

9

'000 Tonnes

Production

1,457

'000 Tonnes

Lint Yield

580

Kg/Hectare

Farmers

1,440,900

Male

Farmers

59,100

Female



PRODUCTION 2020

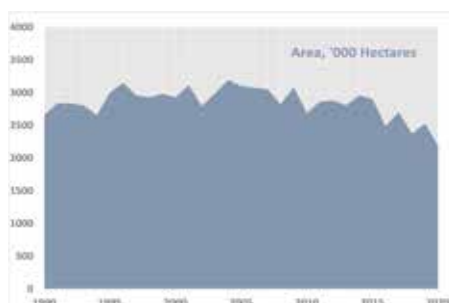
		Area '000 Ha	Yield Kg/Ha	Production '000 Tonnes
1	Punjab	1860	466	866
2	Sindh	615	925	569
3	Others	38	579	22
	National	2513	580	1457

NUMBER OF FARMERS

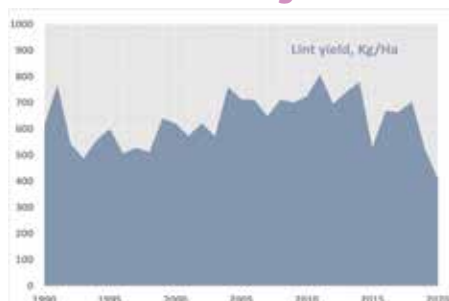
	Men	Women
Punjab	1,054,500	55,500
Sindh	356,400	3,600
Balochistan	22,500	
Others	7,500	
Total	1,440,900	59,100

PRODUCTION

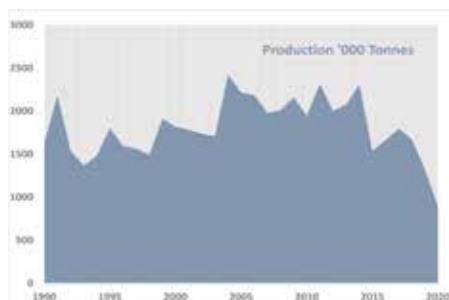
Cotton Area '000 Hectares



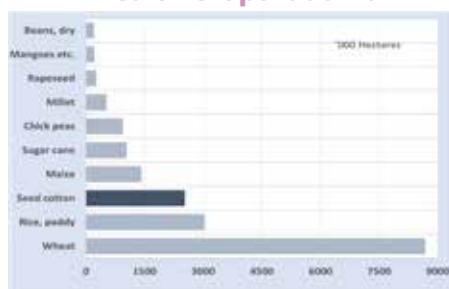
Lint Yield Kg/Ha



Production '000 Tonnes

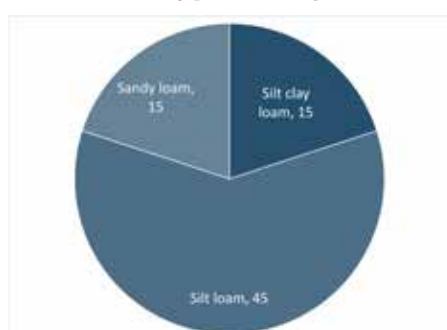


Area of Crops '000 Ha

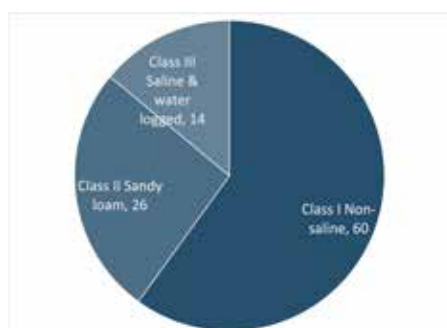


SOILS

Soil Types -Punjab



Soil Types -Sindh



COMPETING CROPS

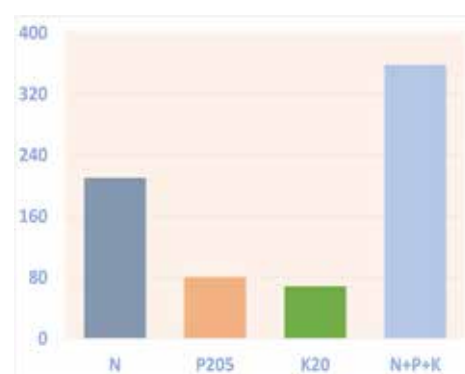
Punjab	Sindh
Wheat	Wheat
Sugarcane	Sugarcane
Rice	Rice

ROTATION CROPS

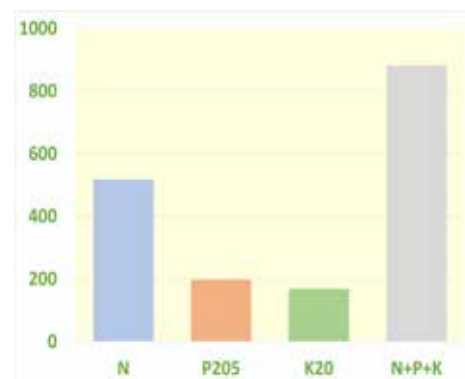
Punjab	Sindh
Wheat	Wheat
Sugarcane	Sugarcane
Rice	Rice

FERTILISERS

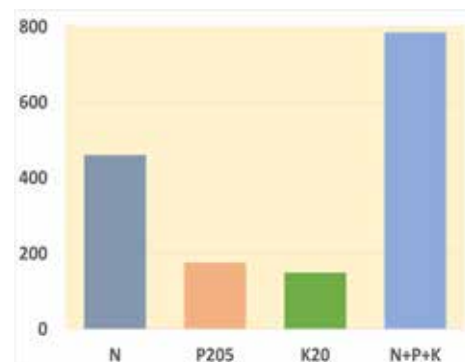
Fertiliser (NPK) use Kg/Hectare



Fertiliser (NPK) use per Kg Lint



Fertiliser (NPK) use '000 Tons



VARIETIES AND FIBRE TRAITS

	Release Year	% Area	Ginning %	Length UHML mm	Strength g/tex	Mic
Varieties in Punjab						
NS-121	2010		41.9	26.2	106.0	5.1
MNH-886	2013		41.0	28.2	99.5	5.0
IUB-13	2015		42.0	28.8	93.0	4.7
IR-3701	2010		43.6	25.9	95.6	5.7
FH-142	2013		40.1	28.3	101.4	4.8
FH-Lalazar	2015		42.0	28.9	98.6	4.8
CIM-620	2016		40.2	28.9	93.0	4.6
CIM-663	-		40	31.8	27.2	4.5
Bt.Cyto-179	2017		40.2	28.2	107.6	4.2
Bt.CIM-343	-		42	32.1	27.1	4.8
BS-15						
ALI AKBAR-703	2010		37.3	28.5	104.6	5.0
ALI AKBAR-802	2010		37.6	28.3	105.5	5.3
AGC-777	2015		40.2	29.2	95.7	4.8
AGC-555	2013		40.7	27.8	102.8	4.7
Bt.CIM-632	2018		42.2	28.8	100.6	4.5
CIM-610,	2018		40.2	28.8	101.9	4.3
Varieties in Sindh						
CRIS-129	2014		38.7	28.5	98.5	4.4
CRIS-510	2017		39.2	29.2	95.9	4.6
CRIS-533	2017		40.7	28.8	90.5	4.5
CRIS-585	2020		39.6	28.6	31.2	4.4
CRIS-543	2020		40.5	28.3	30.1	4.6
CRIS-613	2020		41.6	28.8	28.7	4.7
SINDH 1	2010		35.2	27.8	97.0	4.4
MAL MAL	2010		36.2	30.0	97.0	4.6
BAKHTAWAR	2017		38.0	29.0	98.0	4.3
MEHRAN	2017		39.0	31.0	98.0	4.6
KOONJ	2017		40.0	29.0	96.0	4.1
SAMI	2020		38.6	29.5	98.0	4.8
NUSRAT	2020		38.0	29.0	98.0	4.8
NIA UFAQ	2010		38.0	28.5	97.0	4.7
NIA NOORI	2014		38.0	28.0	97.0	4.3

TILLAGE, STALKS-USE , WEEDING & HARVESTING

Tillage Methods (% Area)

0	90	10	100
Zero Tillage	Disc Plough	Chisel Plough	Conventional Tillage

Use of Cotton stalks (% Use)

	0	80	15	5
Punjab	0	80	15	5
Sindh	0	90	5	5
National	0	86	12	2
	Burnt in Fields	Used as Firewood	Ploughed Back	Stacked on Bunds

Weeding Method (%)

	20	80	100	100	0
Punjab	20	80	100	100	0
Sindh	30	70	100	100	0
National	26	76	100	100	0
	Hand	Machine	Herbicide	Hand	Machine

Harvest Method (%)

SEEDS & PLANTING

Seeds Used for Sowing (%)

	50	50	70	30
Punjab	50	50	70	30
Sindh	50	50	80	20
National	50	50	72	28
	Fuzzy Seeds	Delinted	Chemical Treated	Untreated

Planting Method (%)

Seed Source (%)

	100	0	100	0
National	100	0	100	0
	Manual	Machine	Local	Imported

Use of Cotton Seeds (% Use)

	94	1	4	0
Irrigated	94	1	4	0
Rainfed	95	0	5	0
National	95	1	4	0
	Crushed for Oil	Direct Cattle-Feed	Used for Sowing	wasted

Seed Rate, Spacing & Plant Population/Ha

	15	75	30	44,444
National	15	75	30	44,444
	Seed Rate Kg/Ha	Between Rows cm	Within Row cm	Population/ Ha

WATER

Rainwater & Irrigation water (mm)

	550	379	12	418
Punjab	550	379	12	418
Sindh	250	161	11	390
Others			12	680
National	475	325	13	415
	Total Rainfall	Effective Rainfall	No. of Irrigations	Irrigation Water/Ha

Methods of Irrigation (% Area)

	25	75	0	0
Punjab	25	75	0	0
Sindh	15	85	0	0
Others	60	40	0	0
National	23	77	0	0
	Flood	Furrow	Sprinkler	Drip

Rainfed Area (%) & Water Used /Kg Lint

	0	7,766	8,968	8,135
Punjab	0	7,766	8,968	8,135
Sindh	0	2,397	4,212	1,743
Others	0	259	11,745	0
National	0	10,422	7,153	5,600
	Rainfed % Area	Irrigation Billion L	Irrigation L/Kg Lint	Rainwater L/Kg Lint



INSECTS, PATHOGENS & WEEDS

INSECT PESTS / INSECTICIDES
PUNJAB
EARLY-SEASON
<i>Thrips tabaci</i>
<i>Amrasca devastans</i>
<i>Bemisia tabaci</i>
MID-SEASON
<i>Bemisia tabaci</i>
<i>Pectinophora gossypiella</i>
<i>Earias insulana/vittella</i>
<i>Helicoverpa armigera</i>
<i>Phenacoccus solenopsis</i>
INSECTICIDES
Chlorfenapyr 360 SC
Spiriotoram 120SC
Buprofezin 20SC
Pyriproxyfen 10.8 SC
Spirotetramat 240 SC
Bifenthrin
Flonicamid
Profenophos
Dinotefuran
Profenophos

INSECT PESTS / INSECTICIDES
SINDH
EARLY-SEASON
<i>Thrips tabaci</i>
<i>Amrasca devastans</i>
<i>Bemisia tabaci</i>
MID-SEASON
<i>Earias spp.</i>
<i>Pectinophora gossypiella</i>
<i>Helicoverpa armigera</i>
<i>Tetranychus urticae</i>
<i>Bemisia tabaci</i>
INSECTICIDES
Imidacloprid
Acetamiprid
Acephate
Chlorfenapyr
Diafenthiuron
Profenophos
Emamectin benzoate
lambda-cyhalothrin
Flonicamid
Dinotefuran

DISEASES / PATHOGENS
PUNJAB
<i>Cotton leaf curl virus</i>
<i>Cotton wilt</i>
<i>Stem and twig blight</i>
<i>Bollrot of cotton</i>
CHEMICAL CONTROL
Dynasty
Native
Carbendazim

DISEASES / PATHOGENS
SINDH
<i>Boll rot</i>
<i>Seed & seedling rot</i>
<i>Leaf curl virus</i>
<i>Root rot</i>
CHEMICAL CONTROL
Derosal fungicide
PCNB-compound
Nimbokill

WEEDS / HERBICIDES
NARROW-LEAF WEEDS
<i>Cyperus rotundus</i>
<i>Gynodon dactylon</i>
<i>Echinochloa crus-galli</i>
BROAD-LEAF WEEDS
<i>Trianthema monogyna</i>
<i>Tribulus terrestris</i>
<i>Euphorbia granulata</i>
<i>Digeria arvensis</i>
<i>Mukia maderasptana</i>
HERBICIDES
Stomp330E, Dual Gold, Glyphosate

WEEDS / HERBICIDES
NARROW-LEAF WEEDS
<i>Leptochloa filiformis</i>
<i>Cyperus rotundus</i>
<i>Dismostachia bipinnata</i>
<i>Cynodon dactylon</i>
BROAD-LEAF WEEDS
<i>Trianthema monogyna</i>
<i>Tribulus terrestris</i>
<i>Rhynchosia minima</i>
HERBICIDES
Stomp, Dual Gold
Pendimethalin, Aatish

STRUCTURE OF COTTON RESEARCH

In Pakistan Research on cotton has been given prime importance. The following research institutions are engaged in cotton R & D work

1. Pakistan Central Cotton Committee (PCCC) Multan
2. Pakistan Atomic Energy Commission (PAEC) Islamabad
3. Agriculture universities
4. Province Agriculture research department
 - i. Sindh Agriculture research department
 - ii. Punjab agriculture research department
5. Central for molecular studies university of Punjab
6. Private Seed Companies.

9. Nuclear Institute of Agriculture (NIA), Tandojam.
10. Pest Warning and Quality Control of Pesticides Directorate, Lahore
11. Centre of Excellence in Molecular Biology (University of the Punjab), Lahore

PCCC derives its funding through Cotton Cess (levy). It is levied on raw cotton consumed in the country and on exports. The Directorate of Research, PCCC, coordinates all research on cotton.

Research and development on cotton is mainly carried out by the public sector, i.e. at federal and provincial institutions and universities. The Pakistan Central Cotton Committee-PCCC is an autonomous organisation established under the Pakistan Cotton Cess Act for the improvement and development of growing, marketing and processing of cotton. PCCC is thus engaged in agricultural, technological and economic research on cotton and its products through its mono-crop multi-disciplinary Central Cotton Research Institutes at Multan and Sakrand, and cotton research stations throughout the cotton growing areas in the four provinces. PCCC is the apex body at the federal level for research and development on cotton. In addition to PCCC, the following institutes/organisations also deal with cotton research.

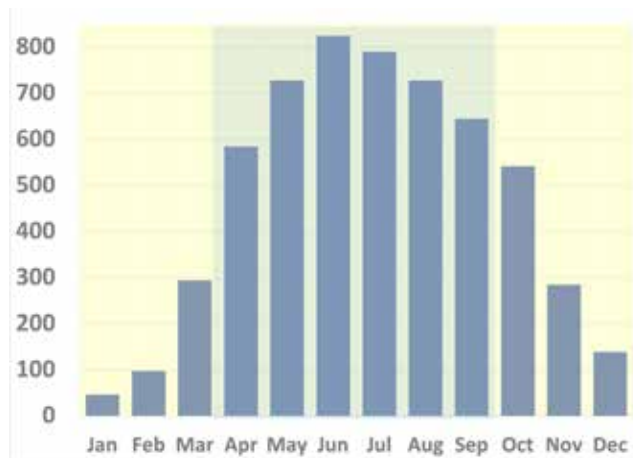
1. University of Agriculture, Faisalabad.
2. Sindh Agriculture University, Tandojam.
3. Agriculture University, Peshawar.
4. University of Agriculture Bahauddin Zakariya, Multan.
5. Cotton Research Institute, Faisalabad.
6. Agriculture Research Institute, Tandojam.
7. Nuclear Institute for Agriculture & Biology (NIAB), Faisalabad.
8. National Institute for Biotechnology & Genetic Engineering (NIBGE), Faisalabad.

RESEARCH ORGANOGRAMS



WEATHER 2019-2020

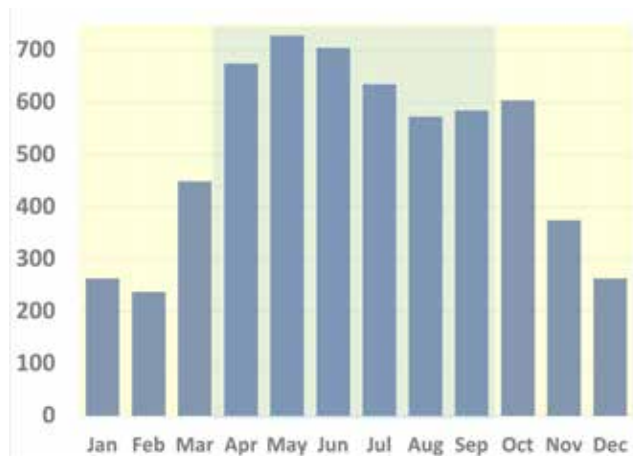
Heat Units (DD₆₀) -Punjab



Rainfall (mm) -Punjab



Heat Units (DD₆₀) -Sindh



Rainfall (mm) -Sindh



COST OF CULTIVATION US\$/Hectare

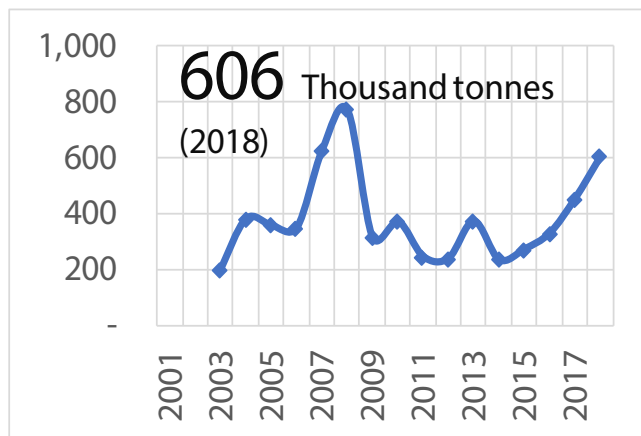
INPUTS	Quantity (Kg/Ha)	Operations per season	Total cost /Ha
Non-GM seeds	24.7	1.0	47.3
Biotech/GM seeds			0.0
NPK+Other	9.6	1.0	156.0
Insecticides	14.8	6.0	71.8
Herbicides			0.0
Fungicides			0.0
Growth regulators			0.0
Defoliants			0.0
Manure	741.3	1.5	26.9
Others (please specify)			
MANPOWER / LABOUR	Wages per person	Persons per operation	Total cost per hectare
Land preparation /tillage etc.,			
Sowing	3.4	5.2	16.8
Fertiliser / manure application	0.8	9.9	7.5
Irrigation	3.4	8.6	27.7
Thinning	3.4	4.4	15.1
Weeding	3.4	4.4	15.1
Hoeing	0.0		0.0
Pesticide application	2.5	6.0	14.7
Defoliator application	0.0		0.0
Picking / harvesting	2.6	54.4	141.0
Stalk cutting & removal	0.0		0.0
Transportation /unloading etc.,	0.0		0.6
Ginning cost per 100 Kg	3.2		211.5
Others (please specify)			
MACHINERY /ANIMALS etc.	Cost per Operation	Number of Operations	Total cost per hectare
Tractors	14.9	7.4	109.8
Implements & tools	0.0		0.0
Electric / Diesel pumps etc.,	15.2	4.0	60.9
Electricity / Diesel etc.,	0		0
Harvesting machines	0		0
Hoeing / Tillage machinery etc.,	0		0
Bullocks /Buffaloes	0		0
Land rent	40.1	8 months	320.5
MARKET VALUE	Yield Kg/per hectare	Market value per 100 Kg	Value per hectare
Seed cotton	2174.5	0.64	1386
Ginning % (output)	33.0	0.00	0
Lint (fibre)	725	1.68	1218
Seed	1450	0.28	410
COST OF CULTIVATION			711
NET RETURNS (SEED-COTTON)			675
NET RETURNS (SEED + LINT)			705

TRADE DATA

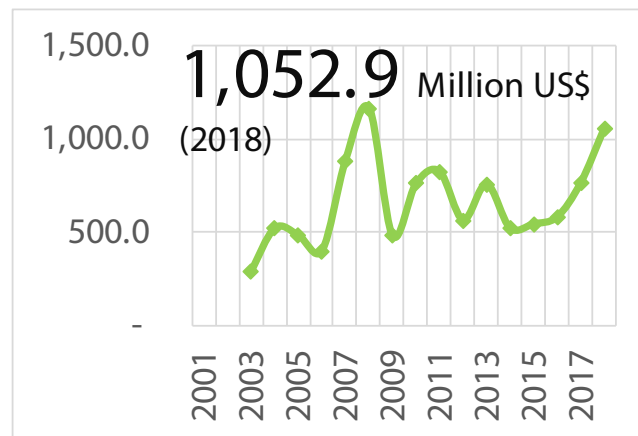


COTTON FIBRE IMPORT DATA

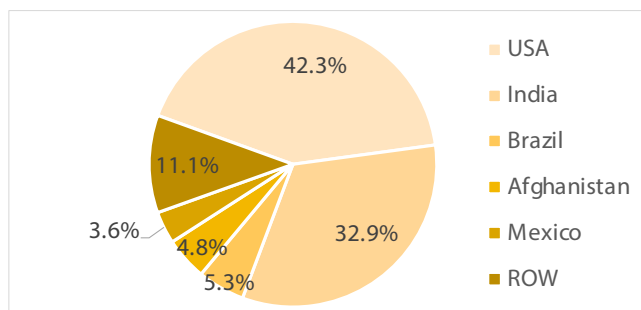
Quantity



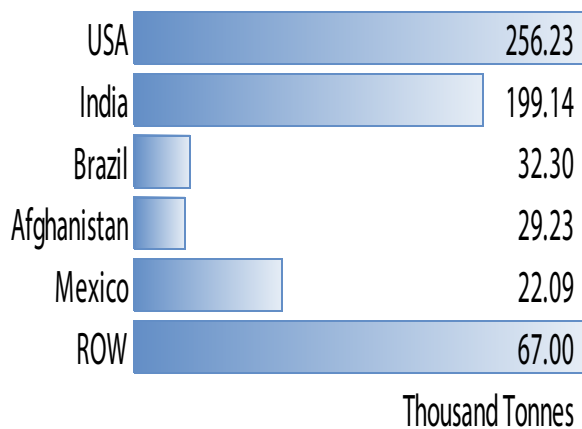
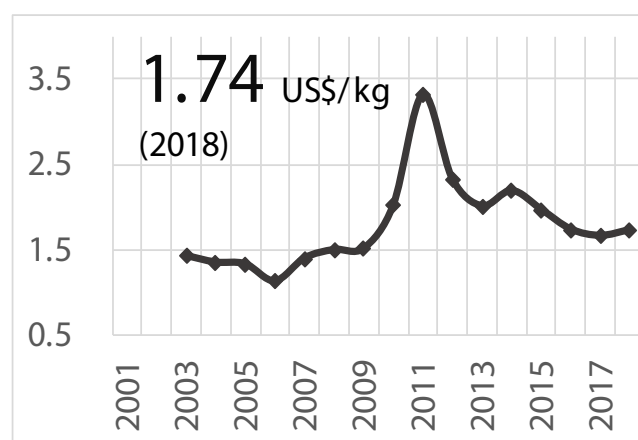
Value



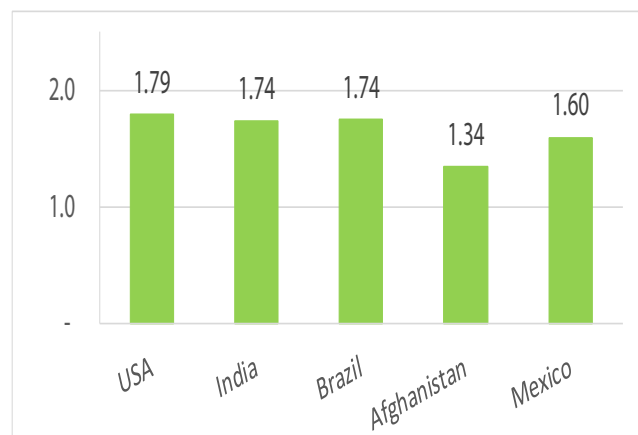
Market Share by Country



Average Price: US\$/Kg

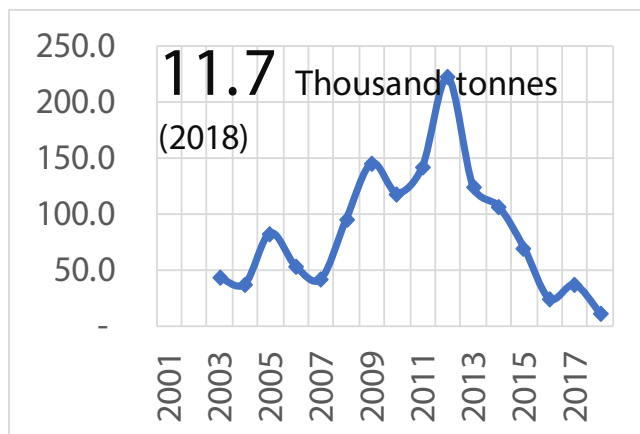


Average Price by Country 2018: US\$/Kg

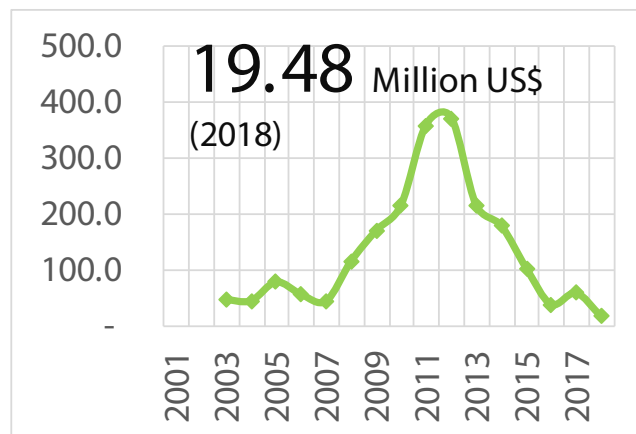


COTTON FIBRE EXPORT DATA

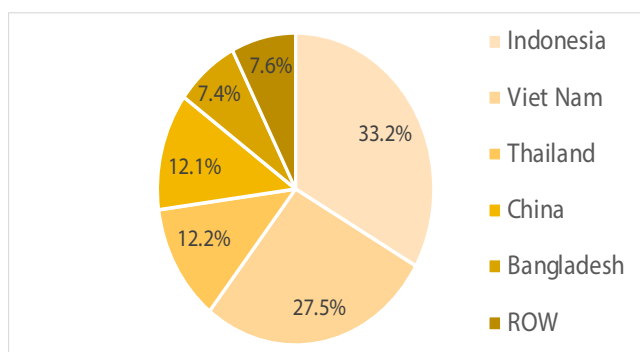
Quantity



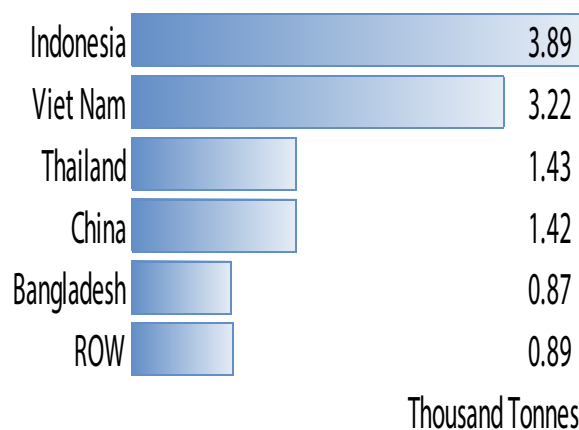
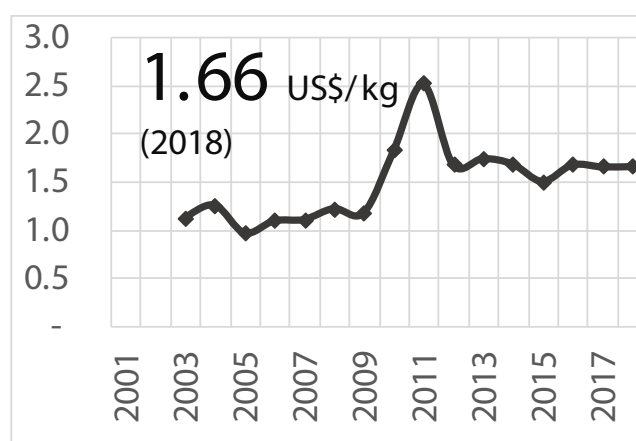
Value



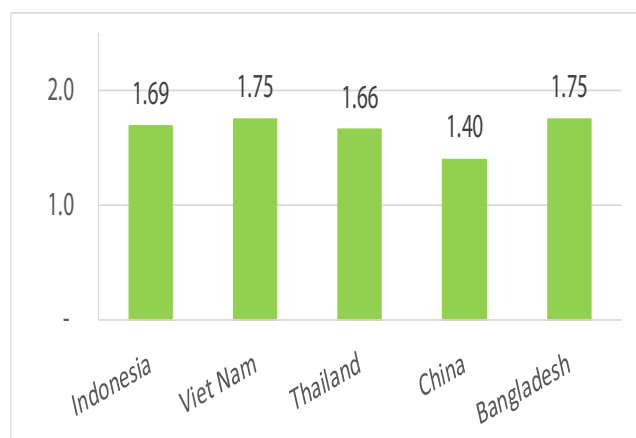
Market Share by Country



Average Price: US\$/Kg

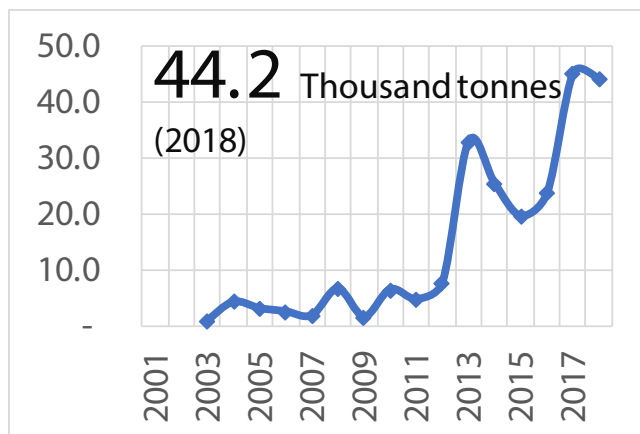


Average Price by Country 2018: US\$/Kg

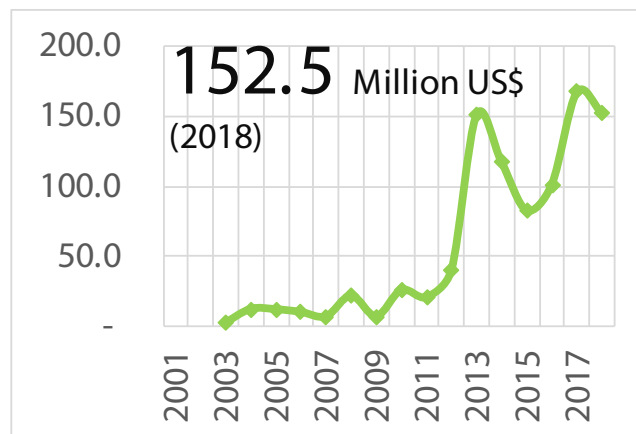


COTTON YARN IMPORT DATA

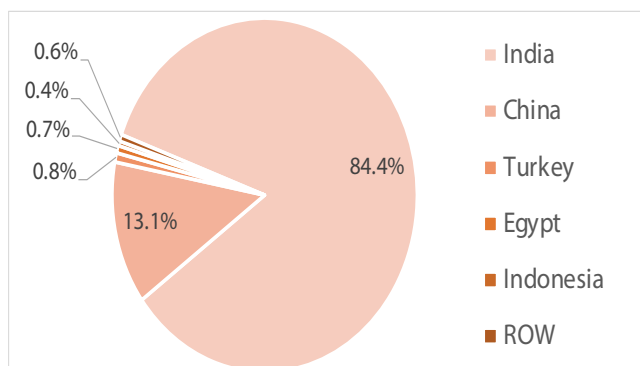
Quantity



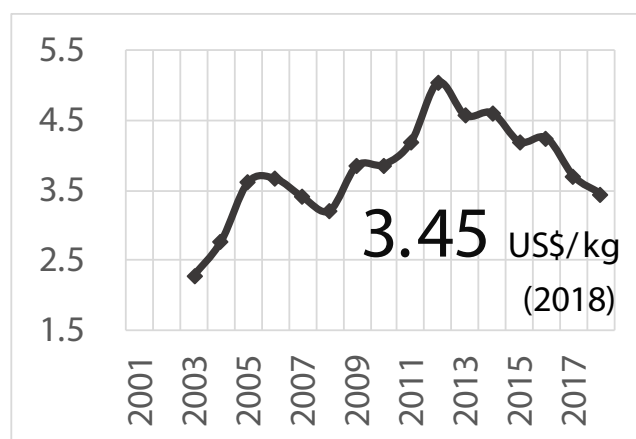
Value



Market Share by Country



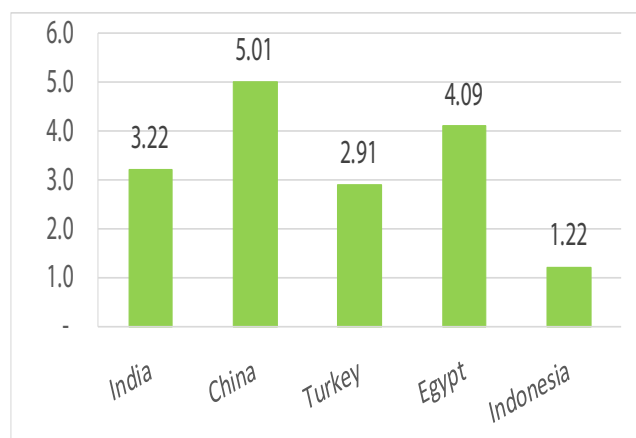
Average Price: US\$/Kg



India	37.29
China	5.79
Turkey	0.37
Egypt	0.30
Indonesia	0.19
ROW	0.27

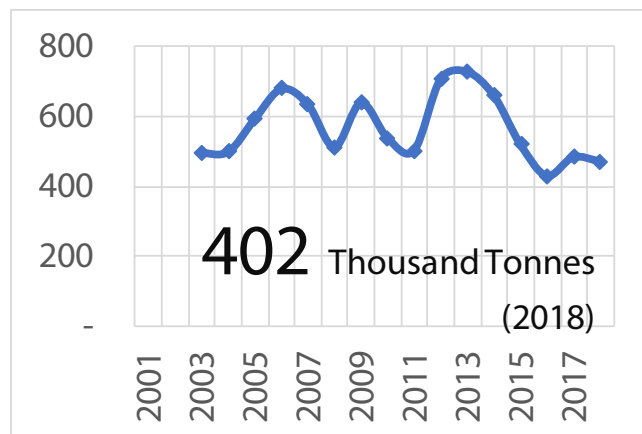
Thousand Tonnes

Average Price by Country 2018: US\$/Kg

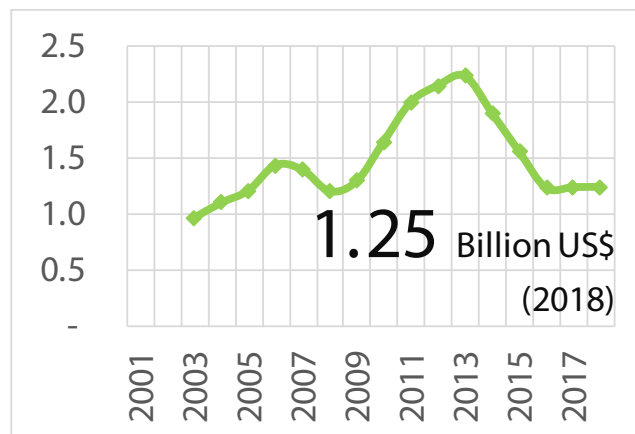


COTTON YARN EXPORT DATA

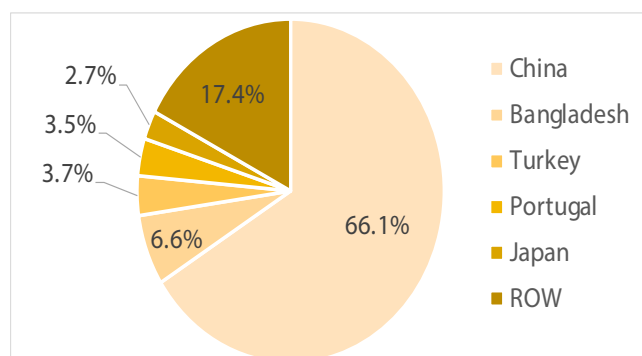
Quantity



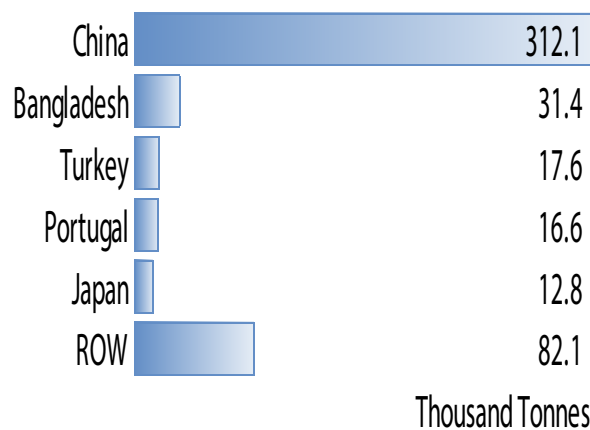
Value



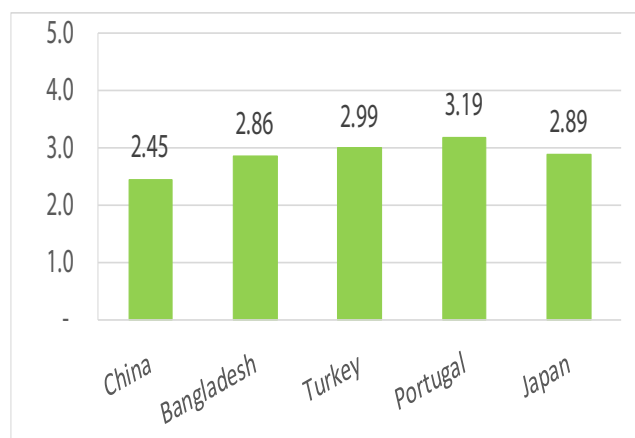
Market Share by Country



Average Price: US\$/Kg

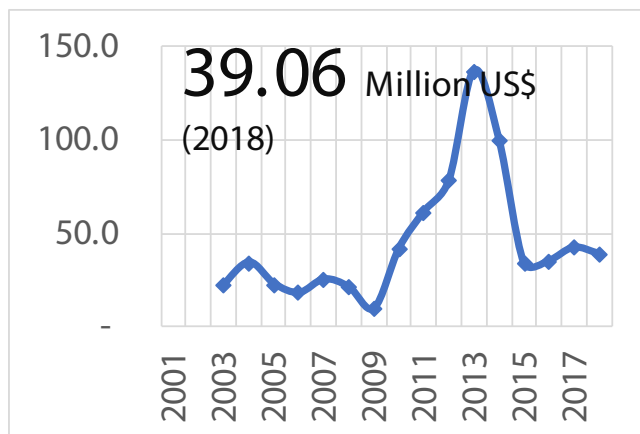


Average Price by Country 2018: US\$/Kg

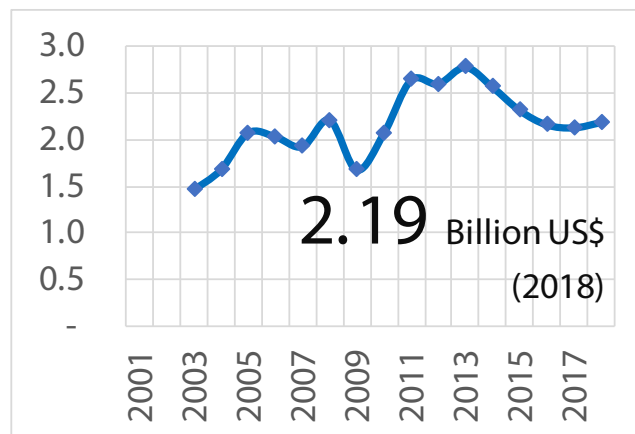


COTTON FABRIC TRADE DATA

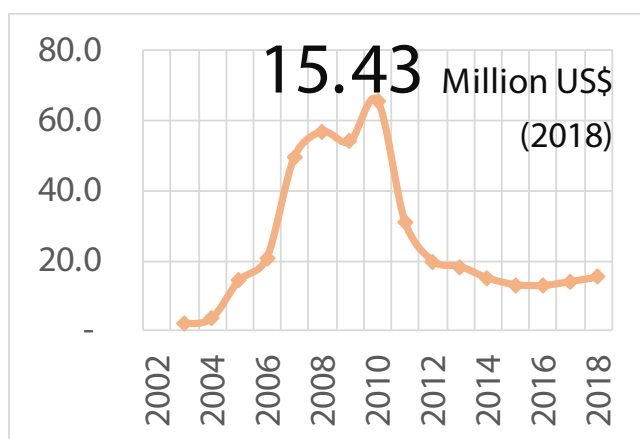
Woven Cotton Fabric Imports



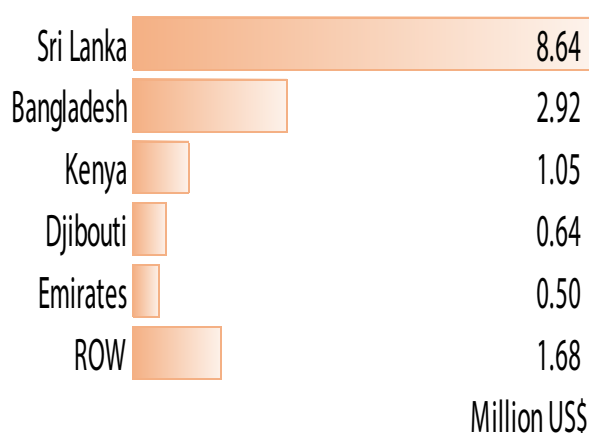
Woven Cotton Fabric Exports



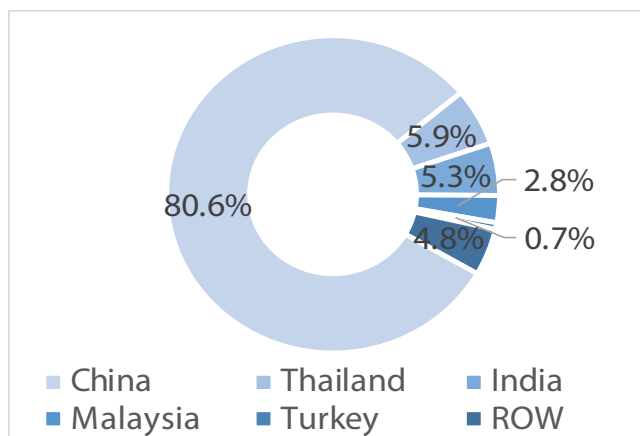
Knitted Cotton Fabric Exports



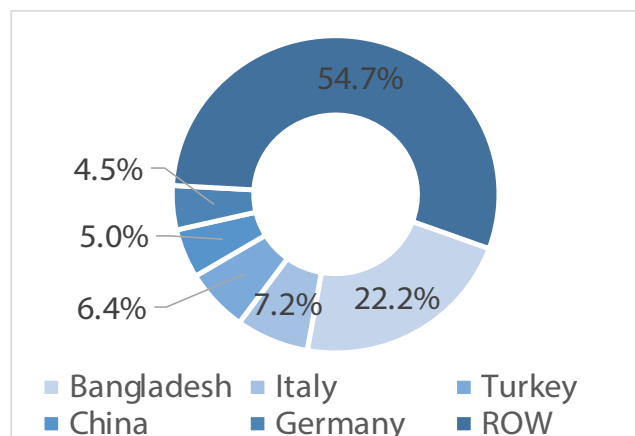
Knitted Cotton Fabric Exports by Country



Market Share Imports by Country - 2018 Woven Cotton Fabric

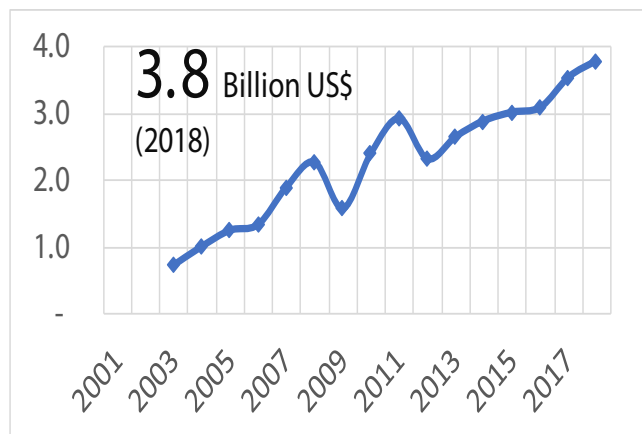


Market Share Exports by Country - 2018 Woven Cotton Fabric

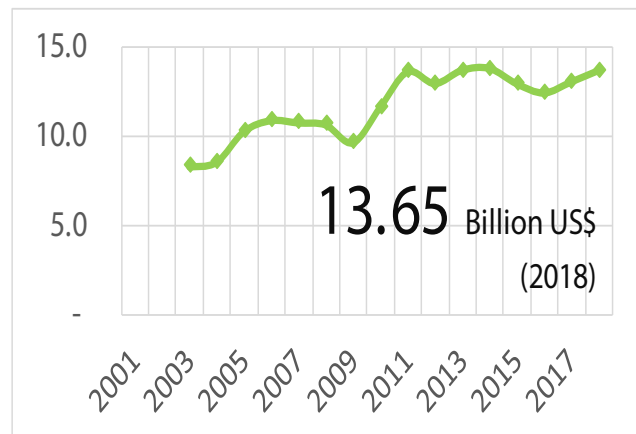


TEXTILE & APPAREL TRADE DATA

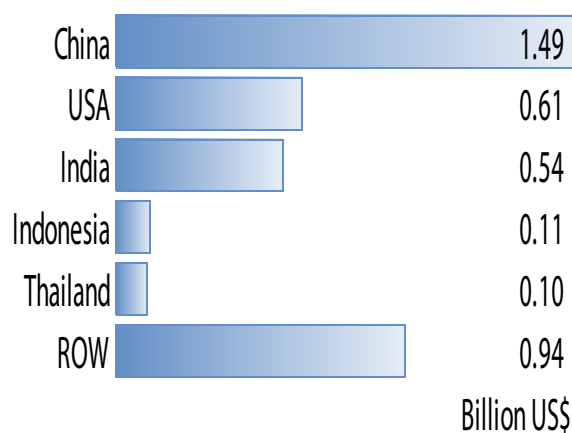
Imports



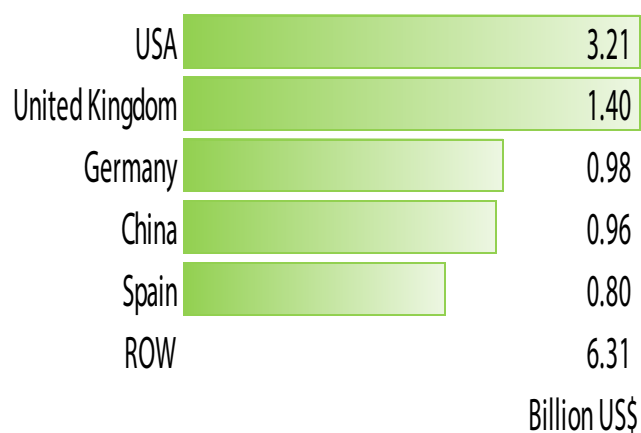
Exports



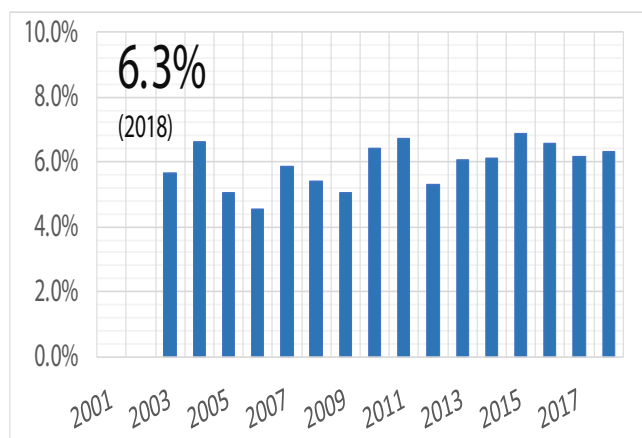
Imports by Country - 2018



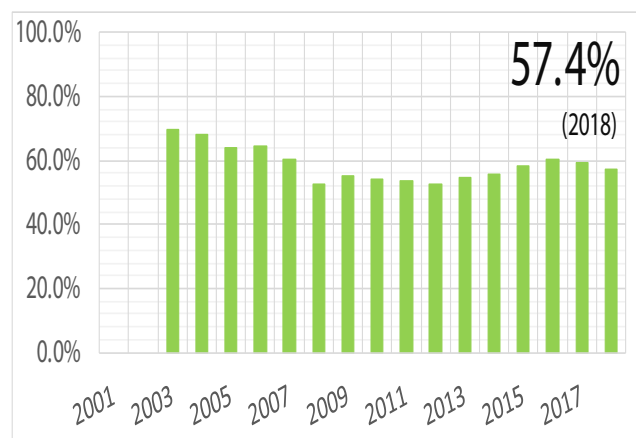
Exports by Country - 2018



T&A Imports Share in Overall Imports

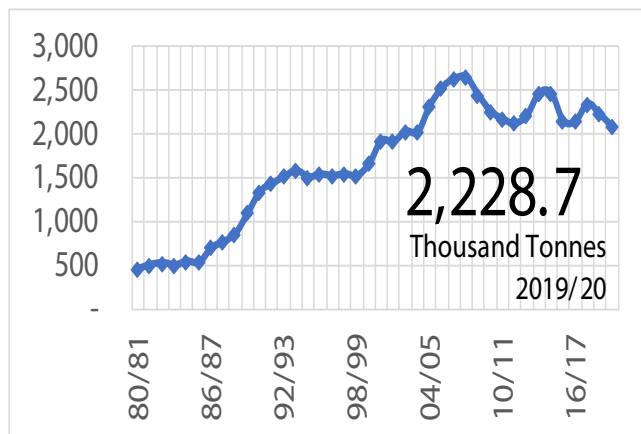


T&A Exports Share in Overall Exports



COMPOSITION OF THE TEXTILE & APPAREL INDUSTRY

Cotton Mill Use



Employment

3,000,00

Textile Sector

Spinning Machinery

4,200

Air-Jet Spindles

198,800

Open-End

13,409,400

Short-Staple Spindles

Weaving Machinery

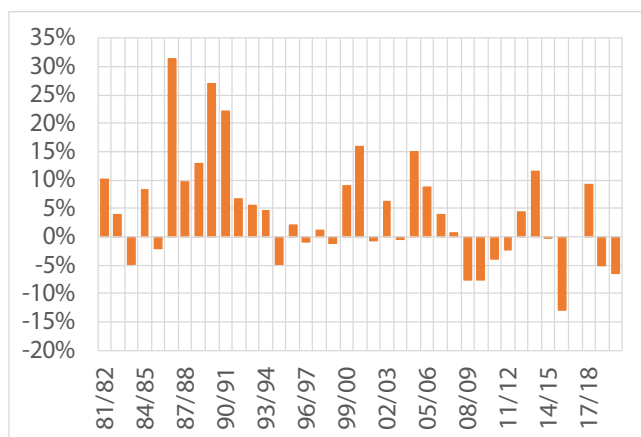
375,000

Shuttle Looms

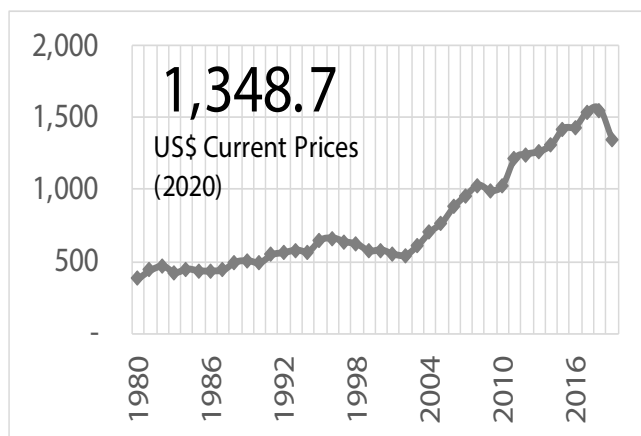
38,700

Shuttle-less Looms

Cotton Mill Use - Annual Variation %



GDP per capita



Better Cotton Produced in
2018/19

906,000 tonnes

Organic Cotton Produced in
2018/19

398 tonnes

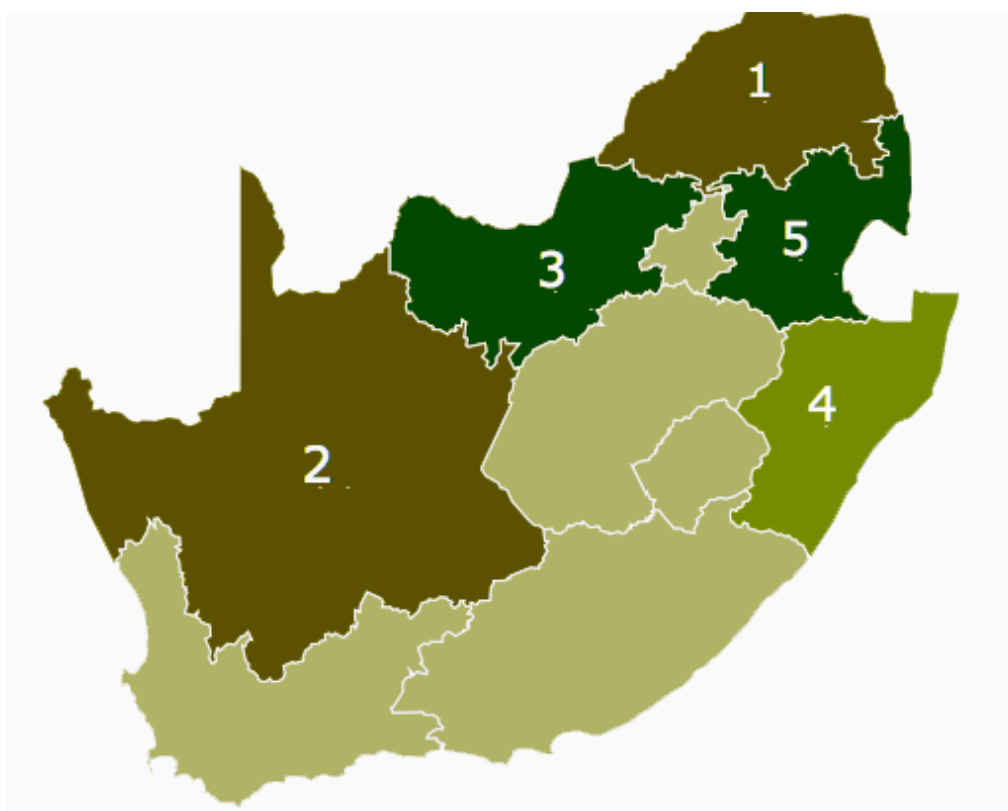


SOUTH AFRICA

Data on the Cotton Sector



Basic Data 2020



Arable Area

12,413

'000 Hectares

Cotton Area

28

'000 Hectares

Farmers

1,176

Male

Farmers

1,501

Female

Production

27

'000 Tonnes

Lint Yield

971

Kg/Hectare

Consumption

13

'000 Tonnes

Lint Exports

35

'000 Tonnes

PRODUCTION 2020

		Area '000 Ha	Yield Kg/Ha	Production '000 Tonnes
1	Limpopo	17	1005	17
2	North Cape	2	938	2
3	North West	5	926	5
4	KwaZulu-Natal	1	960	1
5	Mpumalanga	2	881	1
6	Free State	1	810	1
	National	28	971	27



VARIETIES AND FIBRE TRAITS

	Release Year	% Area	Ginning %	Length UHML mm	Strength g/tex	Mic
Varieties in LIMPOPO						
Candia BGRF		20.5	37%	29-30	27.9	3.9
DP 1240 BG2RF		43.33	37.5	29-30	28	4.3
DP 1531 BG2RF		12.98	37.5	28-29	27.6	4
DP 1541 BG2RF		20.07	37.5	28-29	27.9	4.2
PM 3225 BG2RF		1.78	38	27.2	27.8	3.8
Delta 18 RF		Refugia	37.5	27-29	27.1	40
Varieties in North Cape						
Candia BGRF		91.8	38	29-30	29	4
Delta 18 RF		Refugia	37.5	27-29	27.1	40
North West						
Candia BGRF		100	39	29-30	28.2	3.7
KwaZulu Natal						
PM3225		100	36	27.2	30.6	4

TILLAGE, WEEDING & HARVESTING

Tillage Methods (% Area)

Limpopo Irrigated	0	20	80	100
Limpopo Dry	40	0	100	60
North Cape irrigated	20	20	80	80
North Cape Dry	10	10	90	90
National	3	36	64	97
	Zero Tillage	Disc Plough	Chisel Plough	Conventional Tillage

Weeding Method (%) Harvest Method (%)

Limpopo Irrigated	5	95	10	90
Limpopo Dry	5	95	5	95
North Cape irrigated	0	100	0	100
North Cape Dry	0	100	0	100
National	3	97	6	94
	Hand	Herbicide	Hand	Machine

SEEDS & PLANTING

Use of Cotton Seeds (% Use)

National	35	65	0	0
	Crushed for Oil	Direct Cattle-Feed	Used for Sowing	wasted

Seed Rate, Spacing & Plant Population/Ha

National	15	90	10	111,111
	Seed Rate Kg/Ha	Between Rows cm	Within Row cm	Population/ Ha

Seeds Used for Sowing (%)

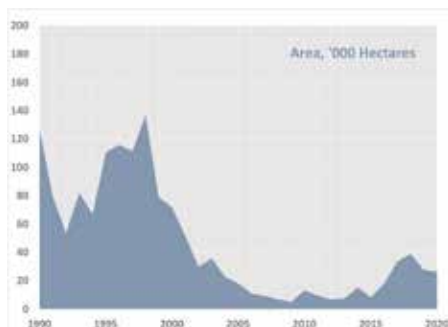
National	0	100	100	0
	Fuzzy Seeds	Delinted	Chemical Treated	Untreated

Planting Method (%) Seed Source (%)

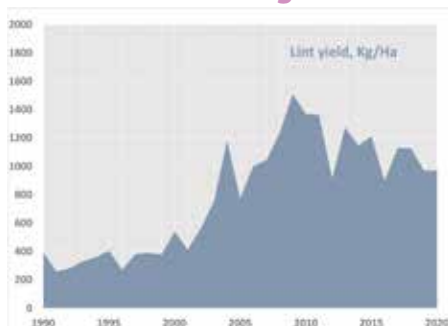
Limpopo Dry	10	90	100	0
Others	10	90	100	0
National	10	90	100	0
	Manual	Machine	Local	Imported

PRODUCTION

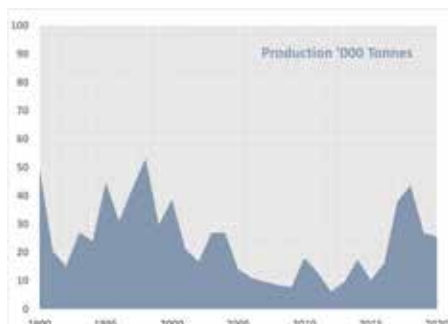
Cotton Area '000 Hectares



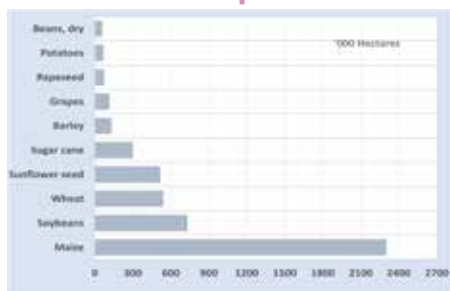
Lint Yield Kg/Ha



Production '000 Tonnes



Area of Crops '000 Ha



DISEASES & PESTICIDES

DISEASES / PATHOGENS

NATIONAL

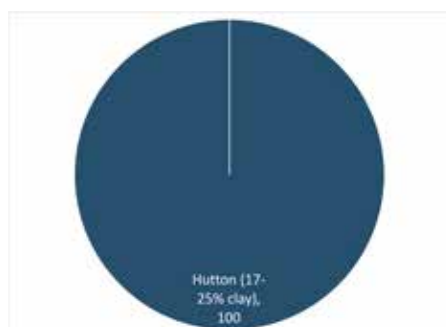
Pythium, *Verticillium wilt*
Rhizoctonia solani

CHEMICAL CONTROL

Vitavax, Celeste & Apron

SOILS

Soil Types



COMPETING CROPS

Loskpop (Irrigated)	Loskpop (Irrigated)
Maize	Wheat
Lucerne	Maize
Sunflower	Soya
Soya	Peas

ROTATION CROPS

INSECT PESTS & INSECTICIDES

INSECT PESTS / INSECTICIDES

EARLY-SEASON

Thrips tabaci, *Aphis gossypii*
Frankliniella schultzei, *F. occidentalis*
Syngus rugifrons, *Apion soleatum*

MID-SEASON

Helicoverpa armigera
Earias biplaga, *Earias insulana*
Diparopsis castanea
Nezara viridula
Jacobiella fascialis
Bemisia tabaci
Helopeltis schoutedeni
Lygus vosseleri

LATE-SEASON

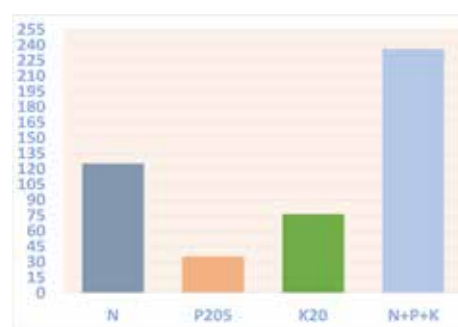
Tetranychus cinnabarinus
Jacobiella fascialis
Dysdercus fasciatus & *D. nigrofasciatus*
Oxycaeneus hyalinipennis

INSECTICIDES

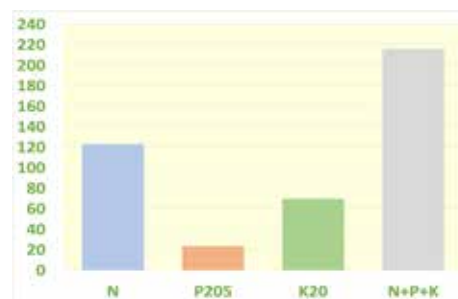
Cypermethrin, Deltamethrin, Dimethoate
Mospilan (acetamiprid) & Aceta Star
Abamectin, Bifenthrin, Fenamiphos
Imidacloprid (Gaucho)
Thiamethoxam (Cruiser)

FERTILISERS

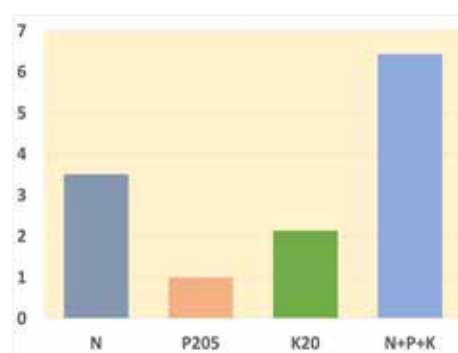
Fertiliser (NPK) use Kg/Hectare



Fertiliser (NPK) use per Kg Lint



Fertiliser (NPK) use '000 Tons



WEEDS & HERBICIDES

WEEDS / HERBICIDES

NARROW-LEAF WEEDS

Cyperus rotundus, *Cyanodon dactylon*

BROAD-LEAF WEEDS

Tribulus terrestris, *Datura spp.*
Portulaca oleracea (Purslane)
Ipomoea purpurea (Common morning glory)
Commelina benghalensis (Wandering Jew)
Parthenium hysterophorus (Maria-maria bush)
Amaranthus palmeri
Amaranthus spp. (Pigweed types)
Tagetes minuta (Tall Khaki weed)
Acanthospermum australe & *A. hispidum*
Bidens pilosa (Common blackjack)
Xanthium spp. (Cocklebur spp.)
10 various other sps

HERBICIDES

Glyphosate

USE OF COTTON STALKS

Use of Cotton stalks (% Use)

National	2	0	95	3
	Burnt in Fields	Used as Firewood	Ploughed Back	Ratooned

RAINWATER & IRRIGATION

Rainwater & Irrigation water (mm)

Limpopo	887	484	6	300
North Cape	540	329	6	300
North West			6	300
KwaZulu-Natal			6	300
Mpumalanga			0	0
Free State			6	300
National			6	300
	Total Rainfall	Effective Rainfall	No. of Irrigations	Irrigation Water/Ha

WATER

Methods of Irrigation (% Area)

Limpopo	0	0	100	0
North Cape	4	0	96	0
North West	0	0	100	0
KwaZulu-Natal	0	0	100	0
Mpumalanga	0	100	0	0
Free State	0	100	0	0
National	0	9	91	0
	Flood	Furrow	Sprinkler	Drip

Rainfed Area (%) & Water Used /Kg Lint

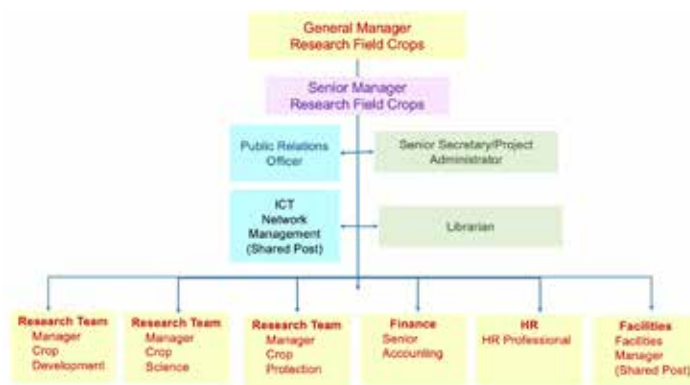
Limpopo	53	15	1,404	4,813
North Cape	0	3	3,198	3,507
North West	90	1	337	0
KwaZulu-Natal	47	1	1,646	0
Mpumalanga	100	0	0	0
Free State	53	1	1,736	0
National	58	21	1,289	0
	Rainfed % Area	Irrigation Billion L	Irrigation L/Kg Lint	Rainwater L/Kg Lint

STRUCTURE OF COTTON RESEARCH

Cotton South Africa, Pretoria facilitates cotton research at present in South Africa. Research ideas and concepts are suggested by cotton producers via the South African Cotton Producers Association. These concepts are evaluated and prioritised by The Technical Committee of Cotton SA and approved by the Cotton SA Board for funding, whereafter the necessary financial resources are allocated for research projects. Cotton SA makes use of several contractors, public and private to perform trials in different areas. Industrial Crops (IC), which is a division of the Agricultural Research Council (ARC), provides inputs in conjunction with the South African cotton growers, ginners, industry partners, some Dept. of Agriculture representatives and private contractors, on the Technical Committee of Cotton SA. Research on cotton production in South Africa is conducted by the ARC-IC and private contractors, while some South African universities may occasionally become involved in projects or when postgraduate students perform cotton projects. The ARC-IC is responsible to maintain the cotton germplasm. Cultivar trials were done in the form of strip-trials in varying production areas for the 2020 production year. Research focus is on growth regu-

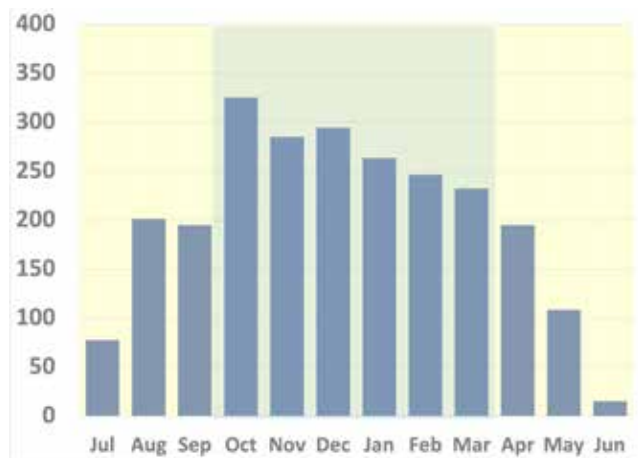
lators, plant population densities, row-spacing under dry-land conditions and the addition of micro-elements and fertilizer. Cotton SA focusses on seed security in the long term with an increase in fibre quality, by seeking access to 3rd generation technology (GMO). Close conversations are being held with patent holders for the de-regulation of new technologies in South Africa.

RESEARCH ORGANOGRAM



WEATHER 2019-2020

Heat Units (DD₆₀) -Limpopo



Rainfall (mm) -Limpopo



LIMPOPO Irrigated: COST OF CULTIVATION US\$/Hectare

INPUTS	Quantity (Kg/Ha)	Operations per season	Total cost /Ha
Non-GM seeds			
Biotech/GM seeds	10-12 kg	1	132
NPK+Other	380 kg	5	288
Insecticides	2.9 lit	4 - 5	84
Herbicides	5-6 lit	2	48
Fungicides	Treated seed	-	
Growth regulators	1.2 lit	2 - 3	21
Defoliant	1.8 lit	1	47
Manure			
Others (please specify)			
MANPOWER / LABOUR	Wages per person	Persons per operation	Total cost per hectare
Land preparation /tillage etc.,	206.3	1.0	3.8
Sowing	(Per month minimum	1.0	2.4
Fertiliser / manure application	wages 2019 = 1.19/hr)	1.0	2.4
Irrigation		1.0	5.7
Thinning		0.0	0.0
Weeding		0.0	0.0
Hoeing		0.0	0.0
Pesticide application		1.0	1.2
Defoliator application		1.0	1.2
Picking / harvesting		1.0	2.4
Stalk cutting & removal		1.0	2.4
Transportation /unloading etc.,		1.0	1.2
Ginning cost per 100 Kg		1	474
Others (please specify)		0	0
MACHINERY /ANIMALS etc.	Cost per Operation	Number of Operations	Total cost per hectare
Tractors	20.4	3.0	61.2
Implements & tools	9.5	7.0	66.4
Electric / Diesel pumps etc.,		season	243.5
Electricity / Diesel etc.,	53.8	3.0	161.6
Harvesting machines	292.1	1.0	292.1
Hoeing / Tillage machinery etc.,	23.5	3.0	70.6
Bullocks /Buffaloes	5.2	7.0	36.4
Land rent		owner	0
MARKET VALUE	Yield Kg/per hectare	Market value per 100 Kg	Value per hectare
Seed cotton	4800	0.5	2400
Ginning % (output)	38	0	0
Lint (fibre)	1824	1.19	2170.56
Seed	2448	0.21	518
COST OF CULTIVATION			1575
NET RETURNS (SEED-COTTON)			825
NET RETURNS (SEED + LINT)			639

LIMPOPO Dry: COST OF CULTIVATION US\$/Hectare

INPUTS	Quantity (Kg/Ha)	Operations per season	Total cost /Ha
Non-GM seeds		0	0
Biotech/GM seeds	5 - 8	1	85
NPK+Other	180	0	39
Insecticides	1.1	3 - 4	10
Herbicides	3	2	28
Fungicides			
Growth regulators			
Defoliant	0.9 lit	1	36
Manure			
Others (please specify)			
MANPOWER / LABOUR	Wages per person	Persons per operation	Total cost per hectare
Land preparation /tillage etc.,	206	1	4
Sowing	(Per month minimum	1	2
Fertiliser / manure application	wages 2019 = 1.19/hr)	1	1
Irrigation		0	0
Thinning		0	0
Weeding		0	0
Hoeing		0	0
Pesticide application		1	1
Defoliator application		1	1
Picking / harvesting		1	2
Stalk cutting & removal		1	2
Transportation /unloading etc.,		1	1
Ginning cost per 100 Kg		1	99
Others (please specify)		0	0
MACHINERY /ANIMALS etc.	Cost per Operation	Number of Operations	Total cost per hectare
Tractors	15	2	30
Implements & tools	9.7	5	48
Electric / Diesel pumps etc.,		-	
Electricity / Diesel etc.,	28.6	3	86
Harvesting machines	88.2	1	88
Hoeing / Tillage machinery etc.,	14.4	2	29
Bullocks /Buffaloes	5.2	5	26
Land rent		Owner	0
MARKET VALUE	Yield Kg/per hectare	Market value per 100 Kg	Value per hectare
Seed cotton	1000	0.67	670
Ginning % (output)	38	0	0
Lint (fibre)	380	1.68	638
Seed	510	0.21	108
COST OF CULTIVATION			521
NET RETURNS (SEED-COTTON)			149
NET RETURNS (SEED + LINT)			126

NORTH CAPE Irrigated: COST OF CULTIVATION US\$/Hectare

INPUTS	Quantity (Kg/Ha)	Operations per season	Total cost /Ha
Non-GM seeds	0	0	0
Biotech/GM seeds	10 - 12	1	129.41
NPK+Other	397	2	411.18
Insecticides	3.9 lit	3-4	200.53
Herbicides	4 - 7 lit	2	111.12
Fungicides	0	0	0.00
Growth regulators	1.2	2 - 3	21.12
Defoliant	1.8 lit	1	46.47
Manure	0	0	0.00
Others (please specify)	0	0	0.00
MANPOWER / LABOUR	Wages per person	Persons per operation	Total cost per hectare
Land preparation /tillage etc.,	206.3	1	3.82
Sowing	(Per month minimum	1	2.37
Fertiliser / manure application	wages 2019 = 1.19/hr)	1	2.37
Irrigation		1	5.69
Thinning		0	0.00
Weeding		0	0.00
Hoeing		0	0.00
Pesticide application		1	1.19
Defoliator application		1	1.19
Picking / harvesting		1	2.37
Stalk cutting & removal		1	2.37
Transportation /unloading etc.,		1	1.19
Ginning cost per 100 Kg		1	543
Others (please specify)		0	0
MACHINERY /ANIMALS etc.	Cost per Operation	Number of Operations	Total cost per hectare
Tractors	26.6	3.0	79.9
Implements & tools	9.9	7.0	68.8
Electric / Diesel pumps etc.,		season	79.8
Electricity / Diesel etc.,	62.5	4.0	250.3
Harvesting machines	251.5	1.0	251.5
Hoeing / Tillage machinery etc.,		-	69.4
Bullocks /Buffaloes	6.4	7.0	44.8
Land rent	-	owner	0.0
MARKET VALUE	Yield Kg/per hectare	Market value per 100 Kg	Value per hectare
Seed cotton	5500	0.5	2750
Ginning % (output)	38	0	0
Lint (fibre)	2098	1.19	2498
Seed	2805	0.21	594
COST OF CULTIVATION			1787
NET RETURNS (SEED-COTTON)			963
NET RETURNS (SEED + LINT)			762

NORTH CAPE Dry: COST OF CULTIVATION US\$/Hectare

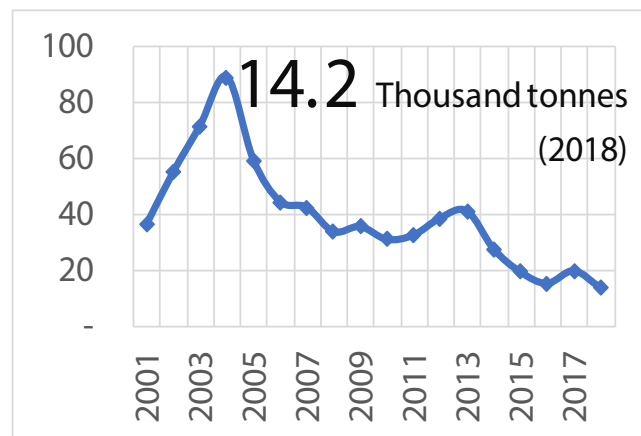
INPUTS	Quantity (Kg/Ha)	Operations per season	Total cost /Ha
Non-GM seeds	0	0	0
Biotech/GM seeds	5-8 kg	1	82
NPK+Other	205 kg	-	66
Insecticides	1.1 lit	3-4	12
Herbicides	3 lit	2	31
Fungicides	0	0	0
Growth regulators	0	0	0
Defoliant	0.9	1	37
Manure	0	0	0
Others (please specify)	0	0	0
MANPOWER / LABOUR	Wages per person	Persons per operation	Total cost per hectare
Land preparation /tillage etc.,	206.3	1	4
Sowing	(Per month minimum	1	2
Fertiliser / manure application	wages 2019 = 1.19/hr)	1	1
Irrigation		0	0
Thinning		0	0
Weeding		0	0
Hoeing		0	0
Pesticide application		1	1.2
Defoliator application		1	1.2
Picking / harvesting		1	2.4
Stalk cutting & removal		1	2.4
Transportation /unloading etc.,		1	1.2
Ginning cost per 100 Kg		1	148.0
Others (please specify)		0	0.0
MACHINERY /ANIMALS etc.	Cost per Operation	Number of Operations	Total cost per hectare
Tractors	18.76470588	2	37.5
Implements & tools	9.294117647	5	46.4
Electric / Diesel pumps etc.,	0	0	0.0
Electricity / Diesel etc.,	37.8	3	113.4
Harvesting machines	88.2	1	95.3
Hoeing / Tillage machinery etc.,	15	2	30.0
Bullocks /Buffaloes	5	5	24.8
Land rent	-	owner	0.0
MARKET VALUE	Yield Kg/per hectare	Market value per 100 Kg	Value per hectare
Seed cotton	1500	0.5	750
Ginning % (output)	38	0	0
Lint (fibre)	570	1.19	679
Seed	765	0.21	162
COST OF CULTIVATION			590
NET RETURNS (SEED-COTTON)			160
NET RETURNS (SEED + LINT)			103

TRADE DATA

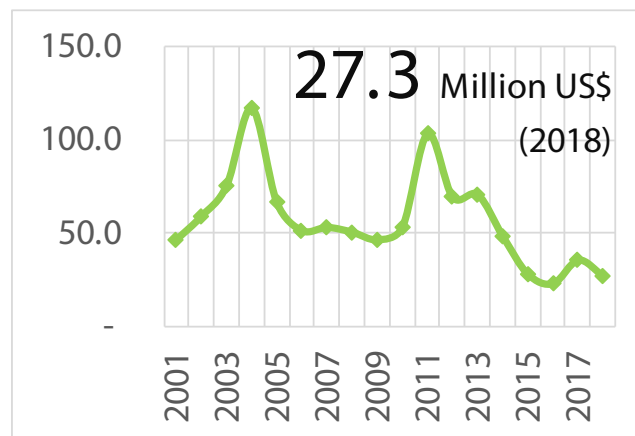


COTTON FIBRE IMPORT DATA

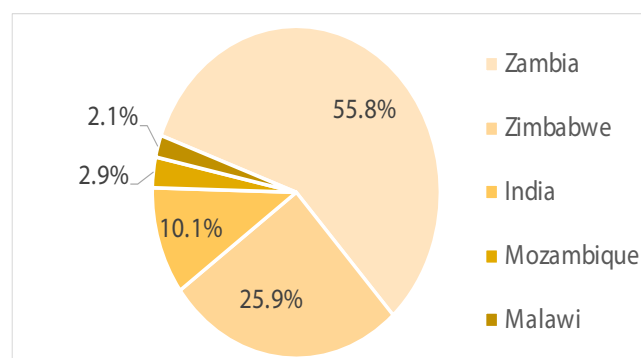
Quantity



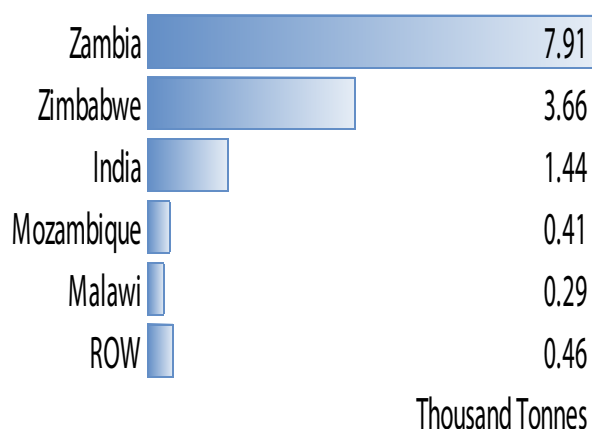
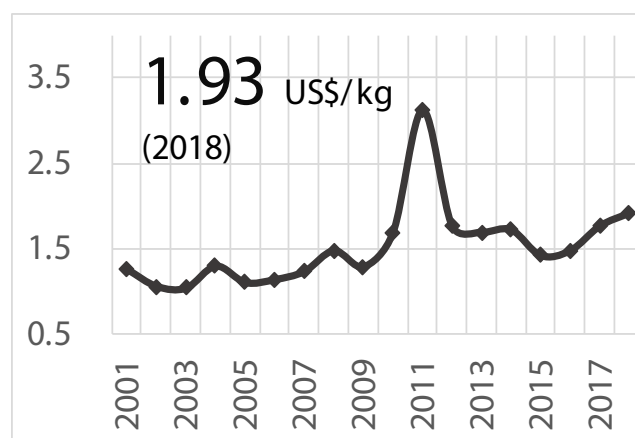
Value



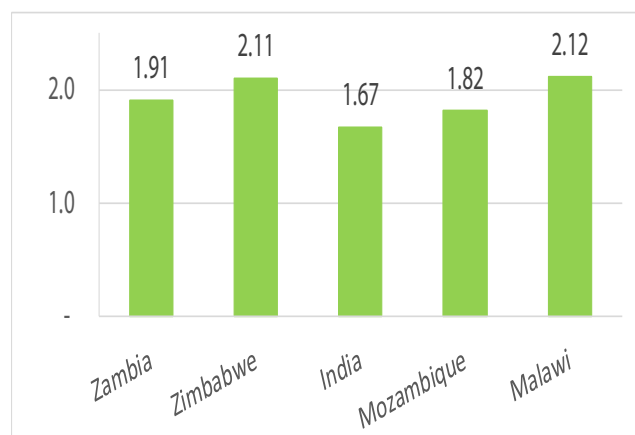
Market Share by Country



Average Price: US\$/Kg

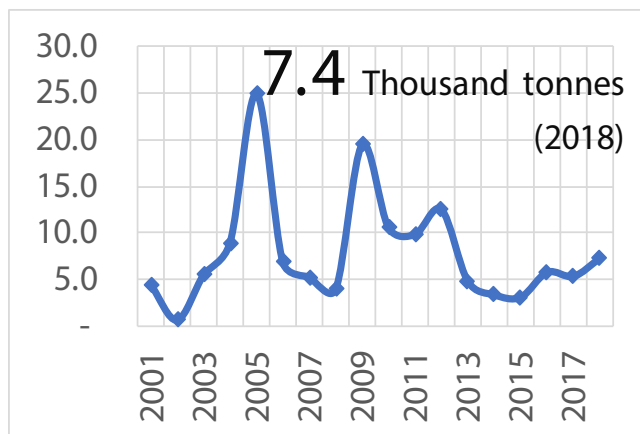


Average Price by Country 2018: US\$/Kg

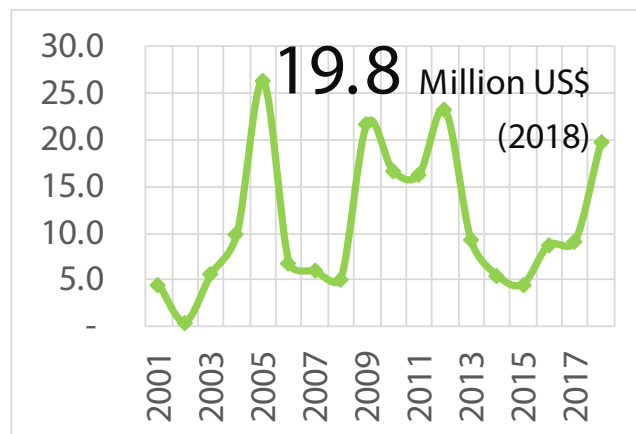


COTTON FIBRE EXPORT DATA

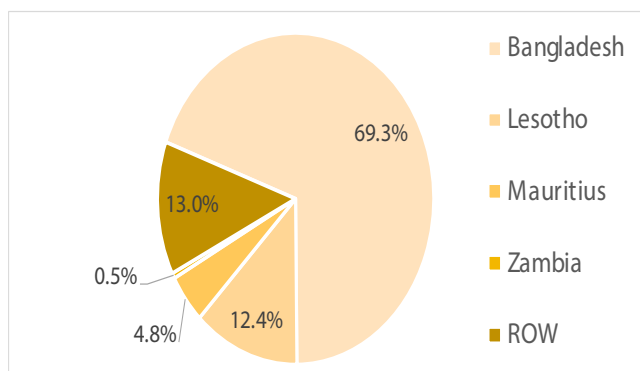
Quantity



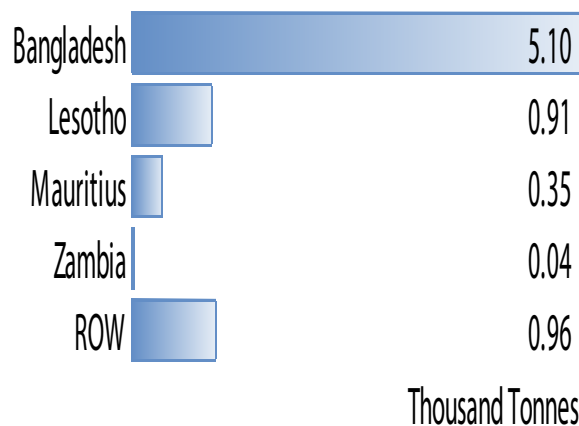
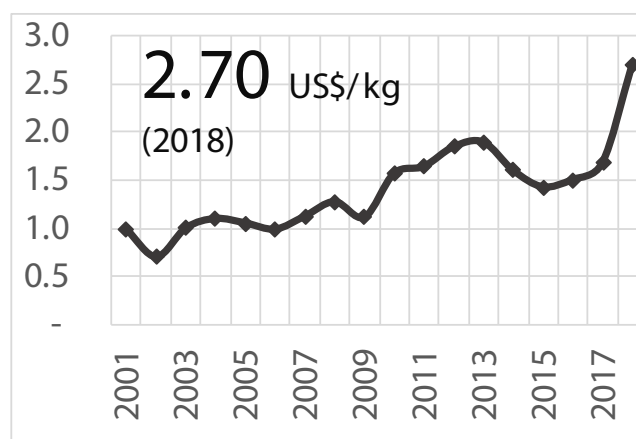
Value



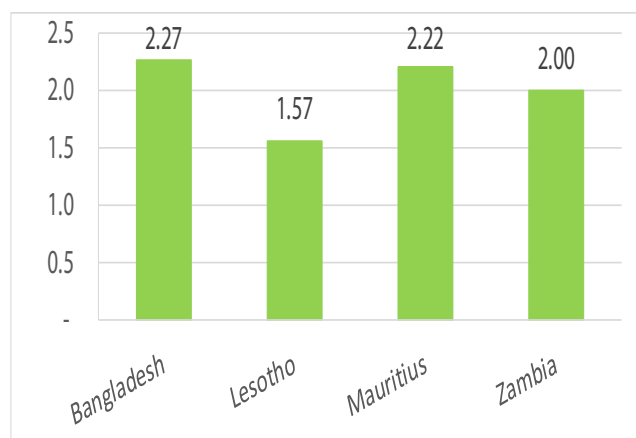
Market Share by Country



Average Price: US\$/Kg

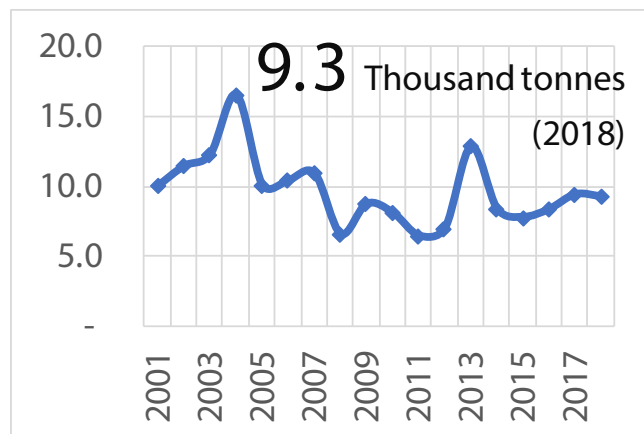


Average Price by Country 2018: US\$/Kg

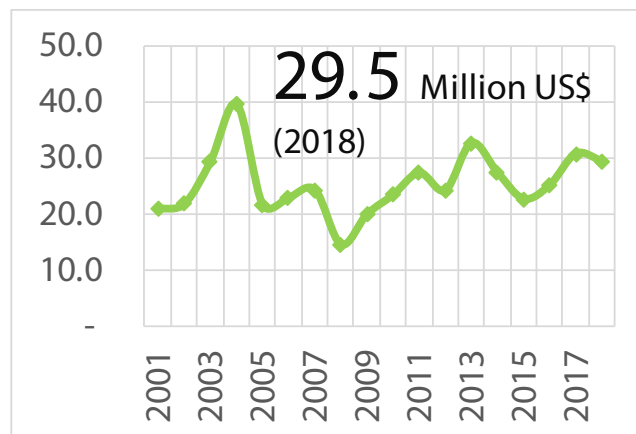


COTTON YARN IMPORT DATA

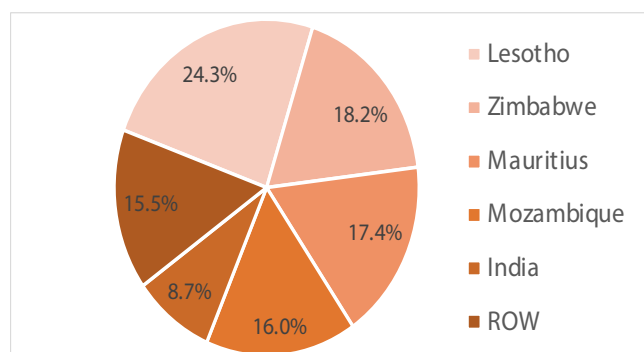
Quantity



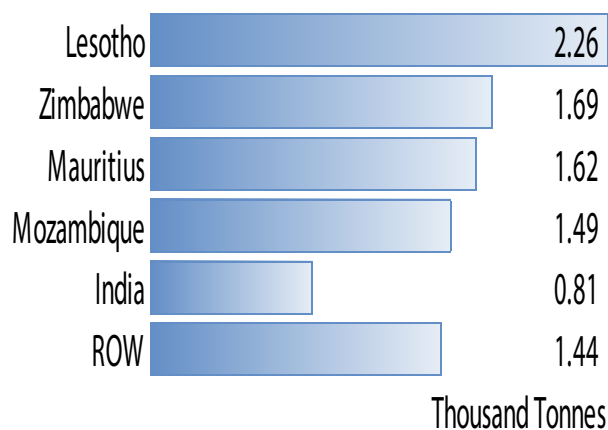
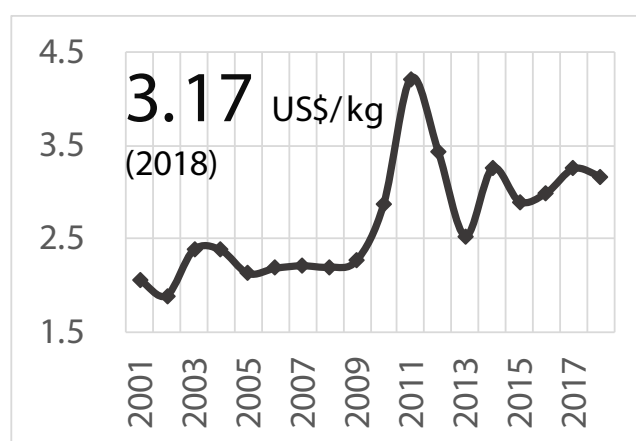
Value



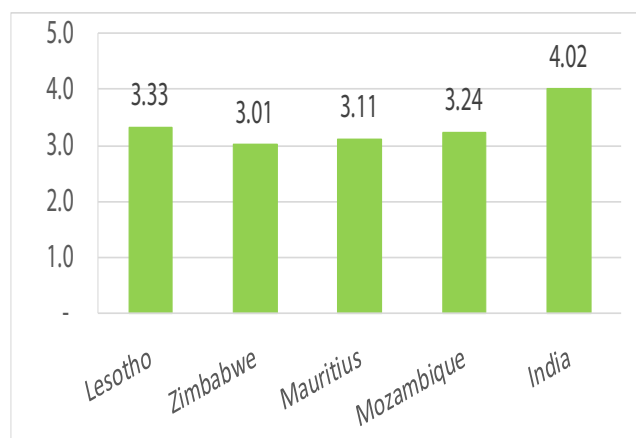
Market Share by Country



Average Price: US\$/Kg

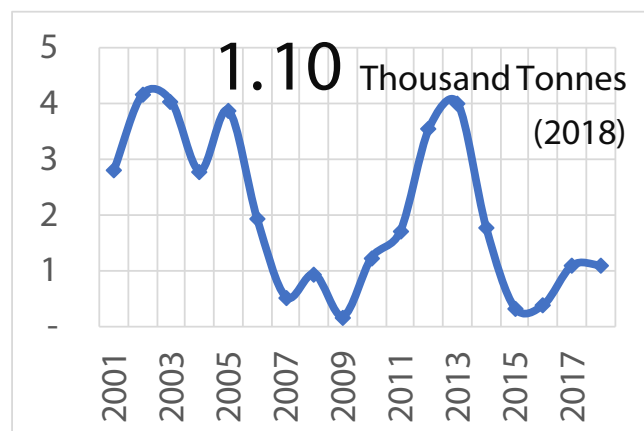


Average Price by Country 2018: US\$/Kg

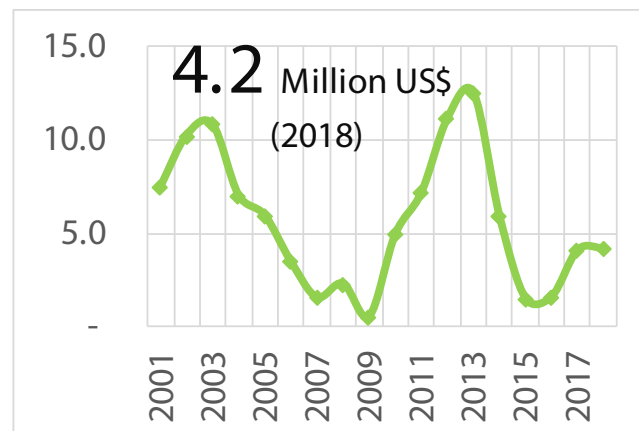


COTTON YARN EXPORT DATA

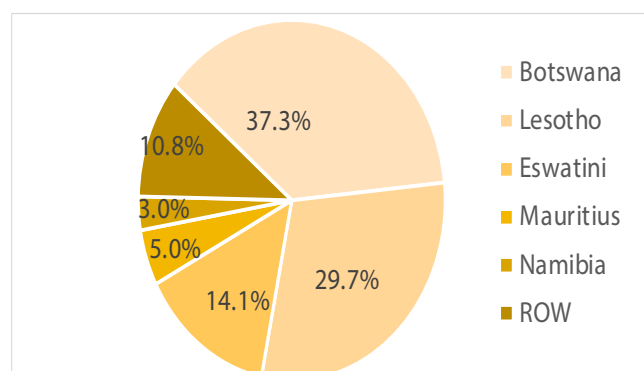
Quantity



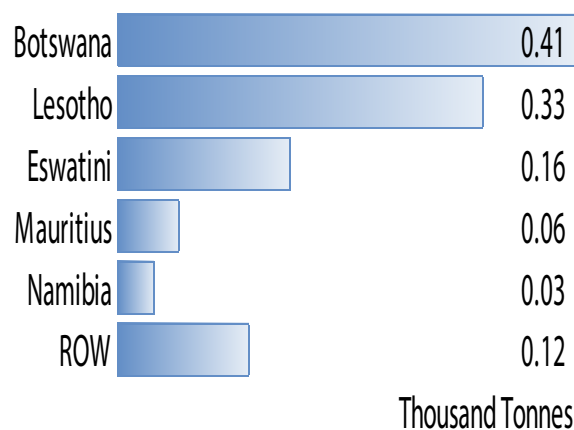
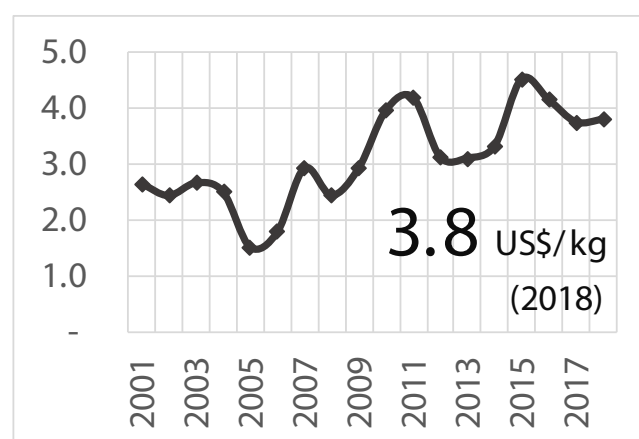
Value



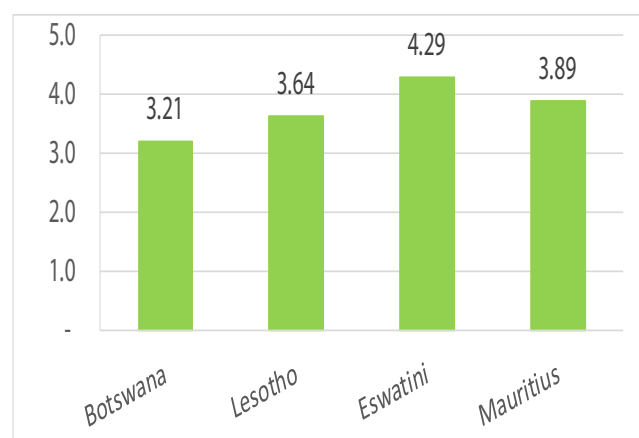
Market Share by Country



Average Price: US\$/Kg

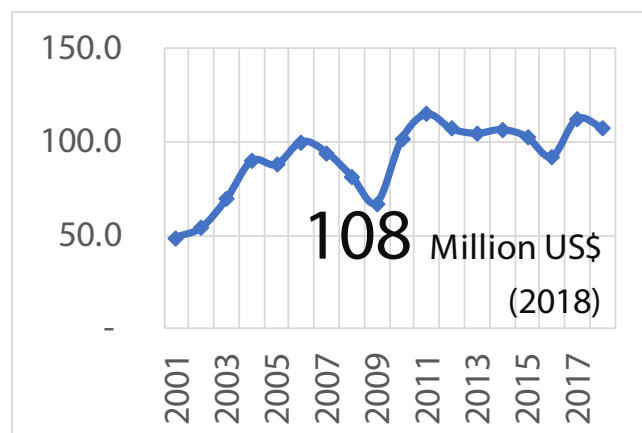


Average Price by Country 2018: US\$/Kg

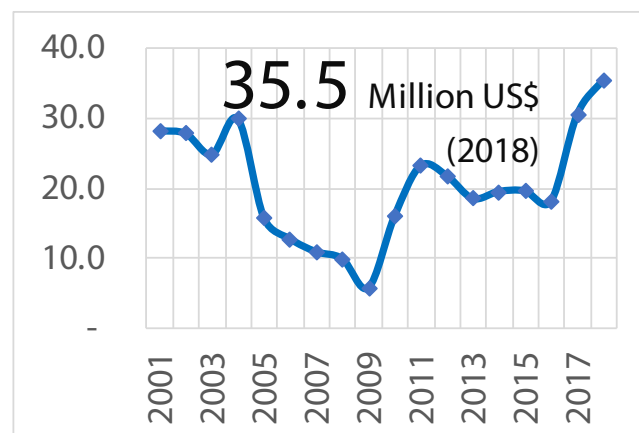


COTTON FABRIC TRADE DATA

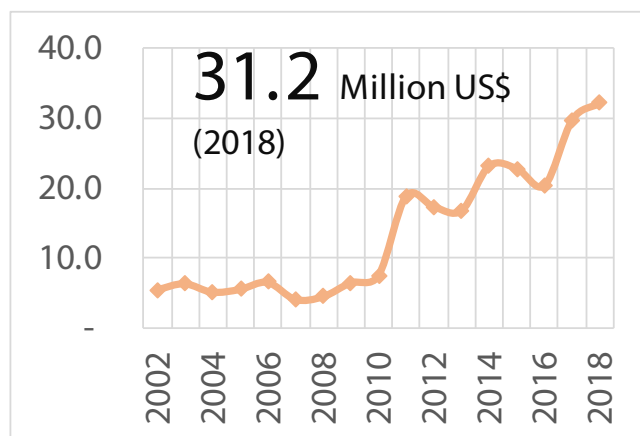
Woven Cotton Fabric Imports



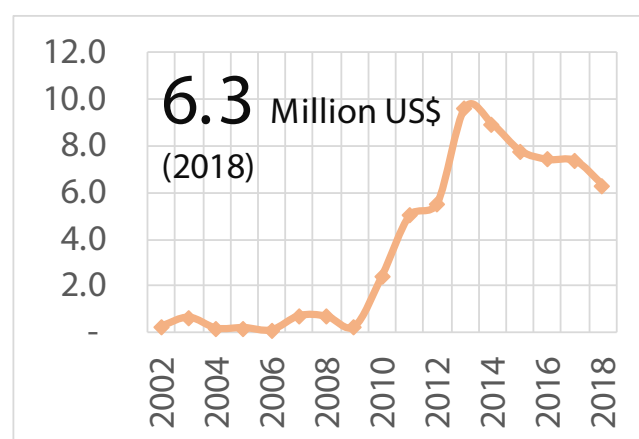
Woven Cotton Fabric Exports



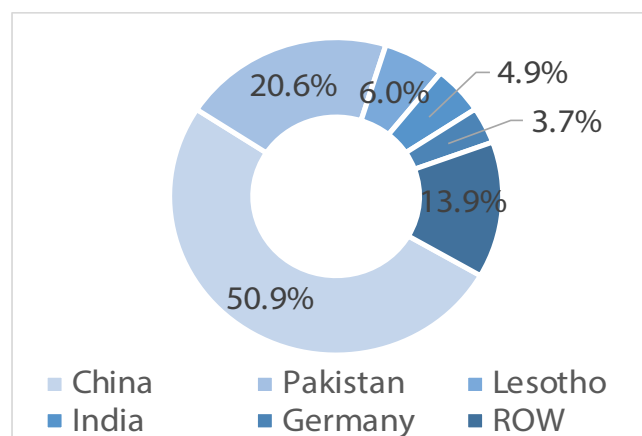
Knitted Cotton Fabric Imports



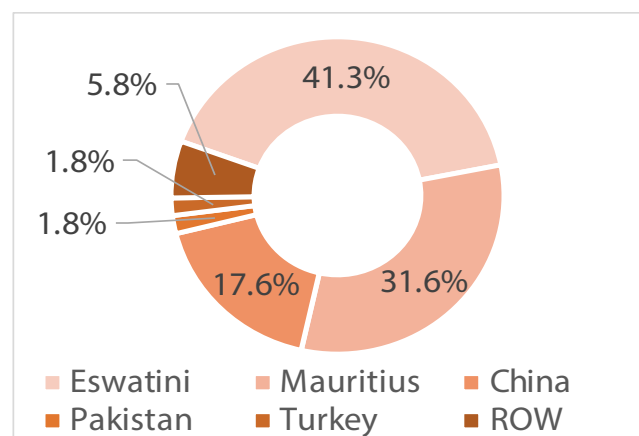
Knitted Cotton Fabric Exports



Market Share Imports by Country - 2018 Woven Cotton Fabric

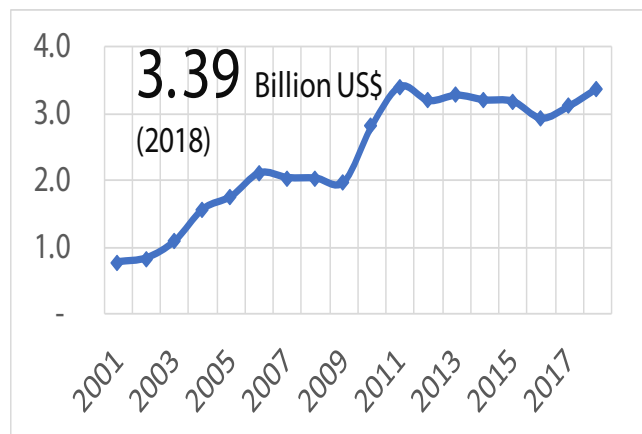


Market Share Imports by Country - 2018 Knitted Cotton Fabric

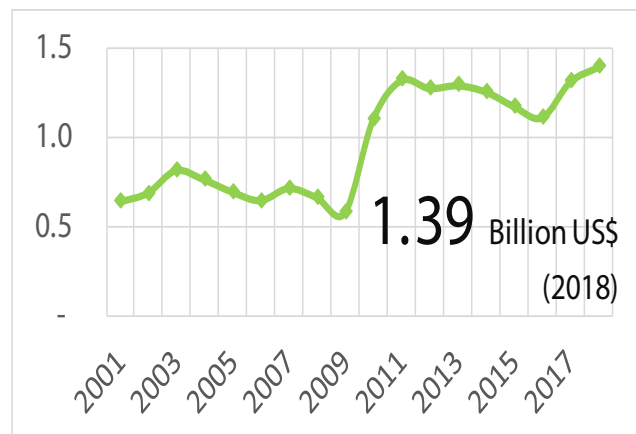


TEXTILE & APPAREL TRADE DATA

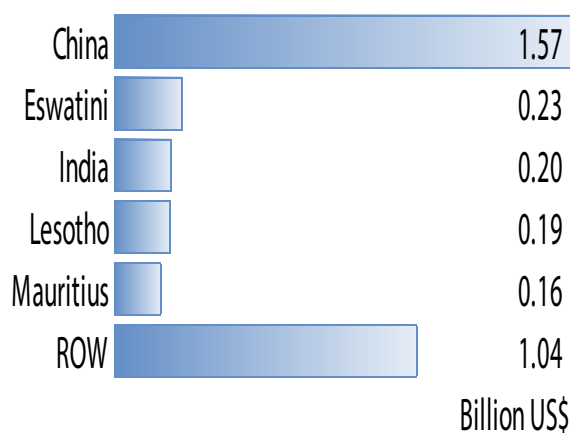
Imports



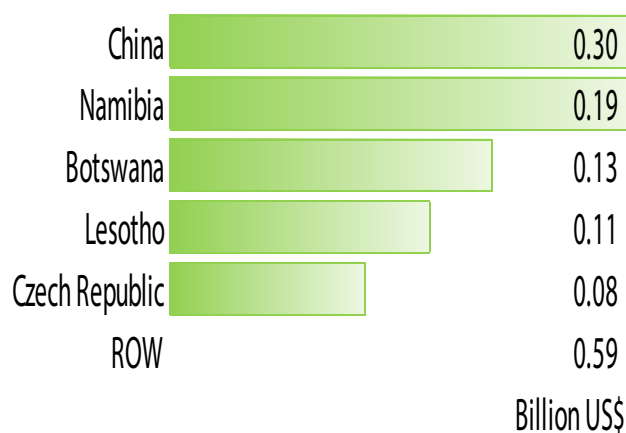
Exports



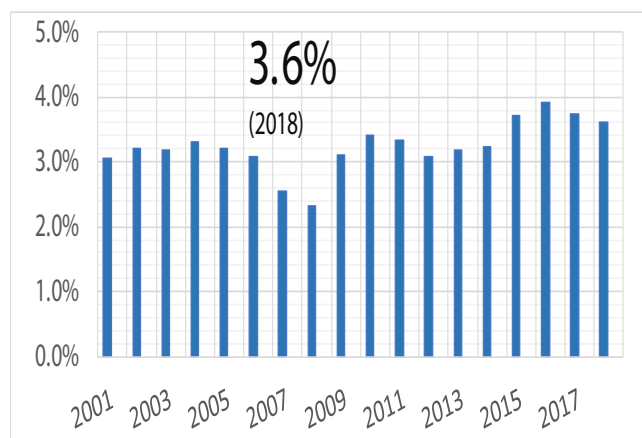
Imports by Country - 2018



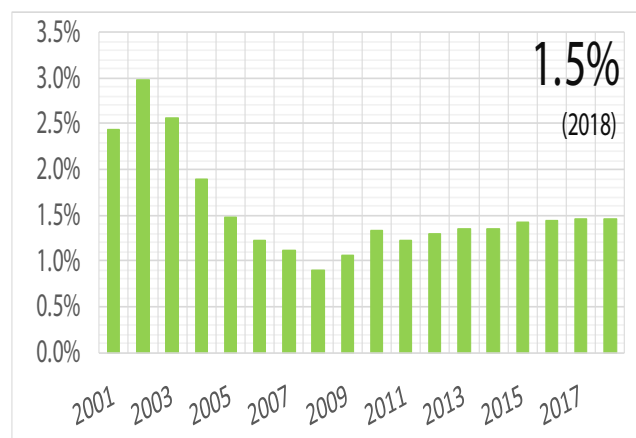
Exports by Country - 2018



T&A Imports Share in Overall Imports

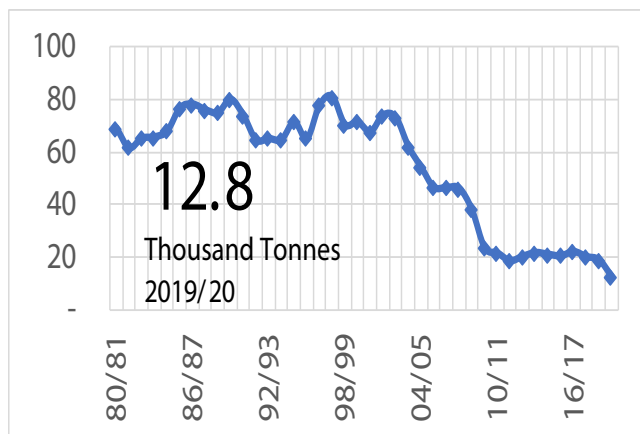


T&A Exports Share in Overall Exports

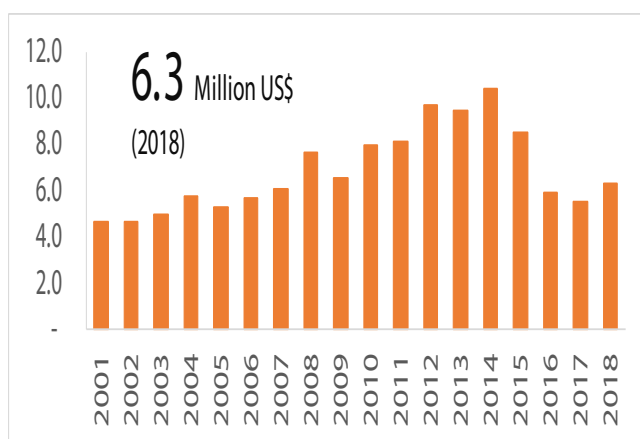


COMPOSITION OF THE TEXTILE & APPAREL INDUSTRY

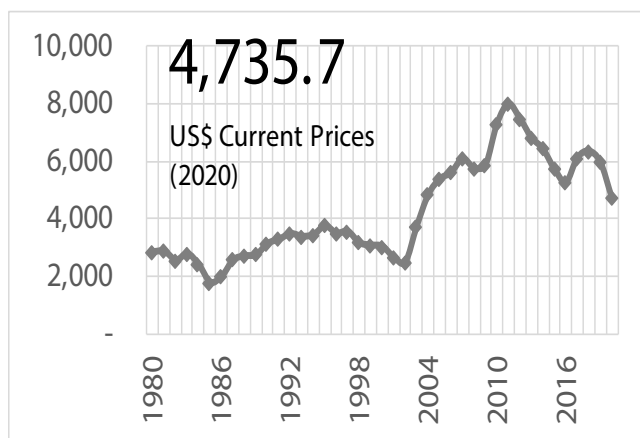
Cotton Mill Use



Imports - Worn Clothing & Articles



GDP per capita



Employment

31,261

Textile Sector000

Spinning Machinery

240

Air-Jet Spindles

7,500

Open-End

55,000

Short-Staple Spindles

Weaving Machinery

300

Shuttle Looms

450

Shuttle-less Looms

Better Cotton Produced in 2018/19

18,000 tonnes





Basic Data 2020



	Area '000 Ha	Yield Kg/Ha	Production '000 Tonnes
Andalusia	65	1040	68

Arable Area 11,884 '000 Hectares	Cotton Area 65 '000 Hectares	Consumption 4 '000 Tonnes	Lint Exports 70 '000 Tonnes
Production 68 '000 Tonnes	Lint Yield 1,040 Kg/Hectare	Farmers 3,112 Male	Farmers 1,689 Female

VARIETIES AND FIBRE TRAITS

	Release Year	% Area	Ginning %	Length UHML mm	Strength g/tex	Mic
JUNCAL	2004	15.67	43.5			
DP396	2007	12.11				
AZAHAR	2005	10.77				
ELPIDA		8.25				
CARLA		7.40				
ELSA	2009	6.88				
ST402	2008	5.65				
CELIA	2001	4.06	39.8	30.9	28.5	4.3
ALBARIZA	2006	3.88				
DP332	2009	2.98	43.0	28.5		4.7
SOLERA	2014	2.48				
DP419	2004	1.95				
FLASH (antes PG FLASH)		1.80				
DP377	2010	1.68				
KENDRA	2016	1.33				
HELENA	2005	1.17				
INTERCOTT 701	2013	1.16				
FIONA		1.12				
ARMONIA		1.09				
DP401	2007	1.06				
OTHERS		8.57				

STRUCTURE OF COTTON RESEARCH

Cotton research is coordinated by the Research and Training Institute for Agriculture and Fisheries of the Council of Andalucía (Instituto de Investigación y Formación Agraria y Pesquera-IFAPA, Junta de Andalucía), Plant Health Service of the Ministry of Agriculture and Fisheries of the Government of Andalucía (Servicio de Sanidad Vegetal, Consejería de Agricultura y Pesca, Junta de Andalucía) and the Board for Higher Scientific Research (Consejo Superior de Investigaciones Científicas -CSIC). The main sources of funding are the National Institute for Agricultural Research and Technology and Food (Instituto Nacional de Investigación y Tecnología Agraria y Alimentaria-INIA), the Research and Training Institute for Agriculture and Fisheries of the Council of Andalucía), the Secretariat of Livestock and Fisheries, (Consejería de Agricultura y Pesca), the Council of Andalucía and the European Union. There is

no specific structure of cotton research in Andalusia, the major cotton growing state. Currently, there are no R&D projects on cotton funded by the Ministry of Agriculture, Fisheries and Rural Development of Andalusia.



TILLAGE, STALKS-USE WEEDING & HARVESTING

Tillage Methods (% Area)

45	55	45	55
Zero Tillage	Disc Plough	Chisel Plough	Conventional Tillage

Use of Cotton stalks (% Use)

0	0	100	0
Burnt in Fields	Used as Firewood	Ploughed Back	Stacked on Bunds

Weeding Method (%)

0	100
Hand	Herbicide

Harvesting Method (%)

0	100
Hand Picked	Machine Picked

WATER

Rainwater & Irrigation water (mm)

8	198	2,919	2,416
Total Rainfall	Effective Rainfall	No. of Irrigations	Irrigation Water/Ha

Methods of Irrigation (% Area)

0	0	0	100
Flood	Furrow	Sprinkler	Drip

Rainfed Area (%) & Water Used /Kg Lint

100	0	0	19,408
Rainfed % Area	Irrigation Billion L	Irrigation L/Kg Lint	Rainwater L/Kg Lint

SEEDS & PLANTING

Seeds Used for Sowing (%)

0	100	100	0
Fuzzy Seeds	Delinted	Chemical Treated	Untreated

Use of Cotton Seeds (% Use)

0	100	0	0
Crushed for Oil	Direct Cattle-Feed	Used for Sowing	wasted

Planting Method (%)

5	95
Manual	Machine

Seed Source (%)

95	5
Local	Imported

Seed Rate, Spacing & Plant Population/Ha

25	90	9.5	116,959
Seed Rate Kg/Ha	Between Rows cm	Within Row cm	Plant Population/ Ha

INSECT PESTS & INSECTICIDES

INSECT PESTS / INSECTICIDES

EARLY-SEASON

Agrotis spp., Aphis gossypii

Tetranychus urticae

MID-SEASON

Helicoverpa armigera, Pectinophora gossypiella

Tetranychus urticae, Bemisia tabaci

INSECTICIDES

Abamectin,

Emamectin

Cloranthraniliprole

Acetamiprid

Chlorpyrifos

DISEASES & WEEDS

DISEASES / PATHOGENS

Verticillium dahliae

NO CHEMICALS AUTHORIZED

WEEDS / HERBICIDES

NARROW-LEAF WEEDS

Digitaria sanguinalis, Echinochloa spp.

Sorghum halepense

BROAD-LEAF WEEDS

Solanum nigrum, Chenopodium spp.

Amaranthus spp.

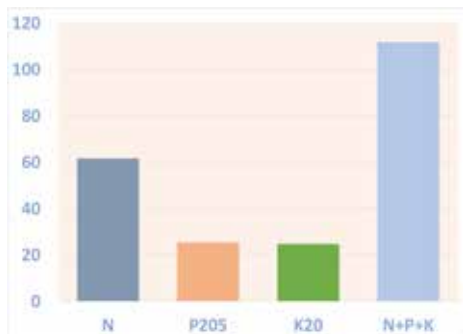
HERBICIDES

Fluometuron, Pendimethalin & Glyphosate

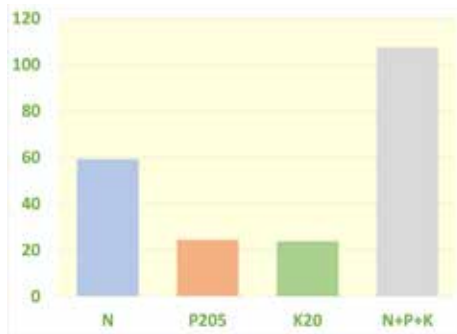
Fluometuron+Terbutylazina

FERTILISERS

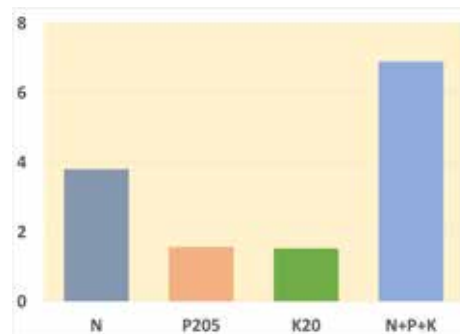
Fertiliser (NPK) use Kg/Hectare



Fertiliser (NPK) use per Kg Lint

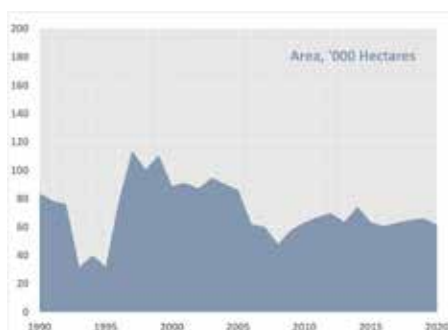


Fertiliser (NPK) use '000 Tons

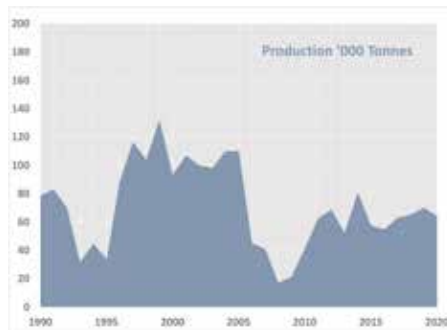


PRODUCTION

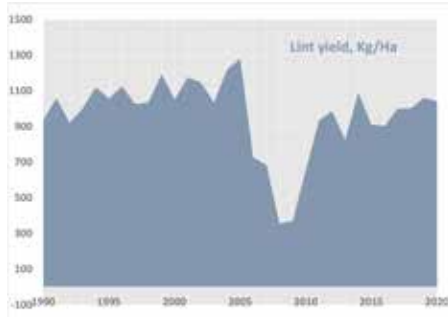
Cotton Area '000 Hectares



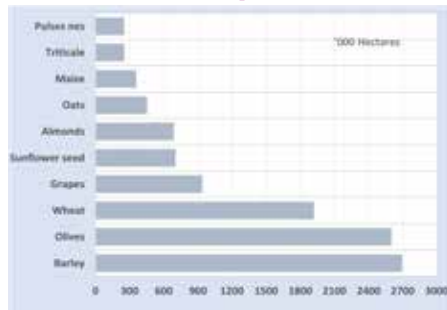
Production '000 Tonnes



Lint Yield Kg/Ha

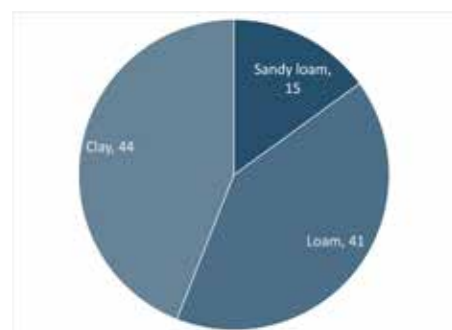


Area of Crops '000 Ha



SOILS

Soil Types



COMPETING CROPS

Corn
Sunflower
Wheat

ROTATION CROPS

Corn
Sunflower
Wheat

WEATHER 2019-2020

Heat Units (DD60) -Andalucia



Rainfall (mm) -Andalucia



COST OF CULTIVATION US\$/Hectare

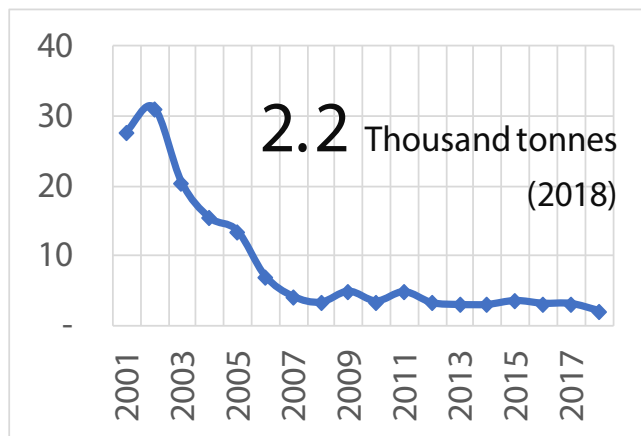
INPUTS	Quantity (Kg/Ha)	Operations per season	Total cost /Ha
Non-GM seeds	20-30		152.8
Biotech/GM seeds			
NPK+Other			339.7
Insecticides			347.5
Herbicides			
Fungicides			
Growth regulators			
Defoliants			
Manure			
Others (please specify)			394.9
MANPOWER / LABOUR	Wages per person	Persons per operation	Total cost per hectare
Land preparation /tillage etc.,			148.1
Sowing			
Fertiliser / manure application			
Irrigation			
Thinning			
Weeding			
Hoeing			
Pesticide application			
Defoliator application			
Picking / harvesting			
Stalk cutting & removal			
Transportation /unloading etc.,			
Ginning cost per 100 Kg			160.0
Others (please specify)			
MACHINERY /ANIMALS etc.	Cost per Operation	Number of Operations	Total cost per hectare
Tractors		10-15	618.5
Implements & tools			
Electric / Diesel pumps etc.,			
Electricity / Diesel etc.,			
Harvesting machines		1-2	
Hoeing / Tillage machinery etc.,			
Bullocks /Buffaloes			
Land rent			832.2
MARKET VALUE	Yield Kg/per hectare	Market value per 100 Kg	Value per hectare
Seed cotton	3230	0.69	2229
Ginning % (output)	33.6		
Lint (fibre)	1085	1.7	1845
Seed	2177	0.19	414
COST OF CULTIVATION			2001
NET RETURNS (SEED-COTTON)			228
NET RETURNS (SEED + LINT)			158

TRADE DATA

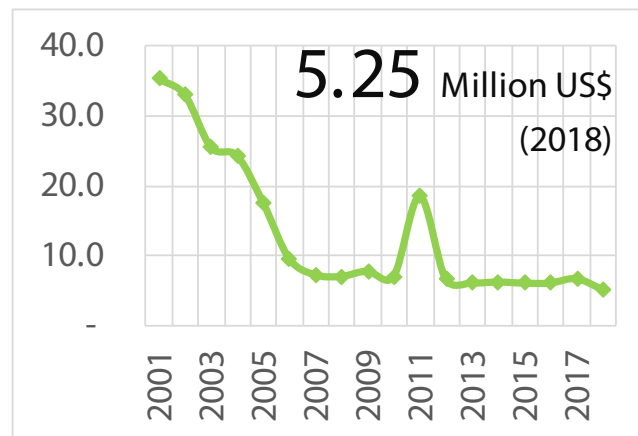


COTTON FIBRE IMPORT DATA

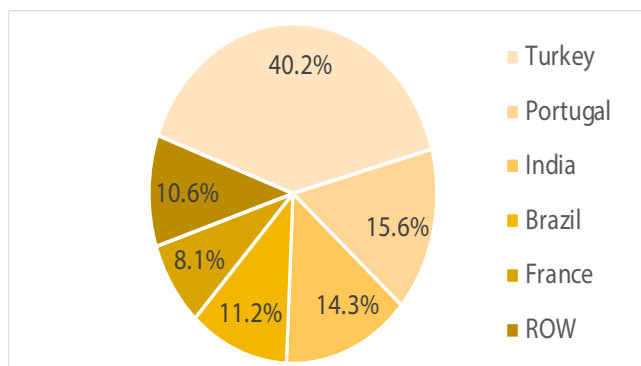
Quantity



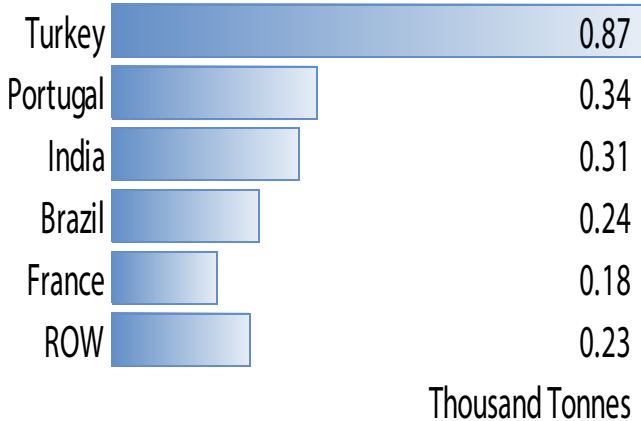
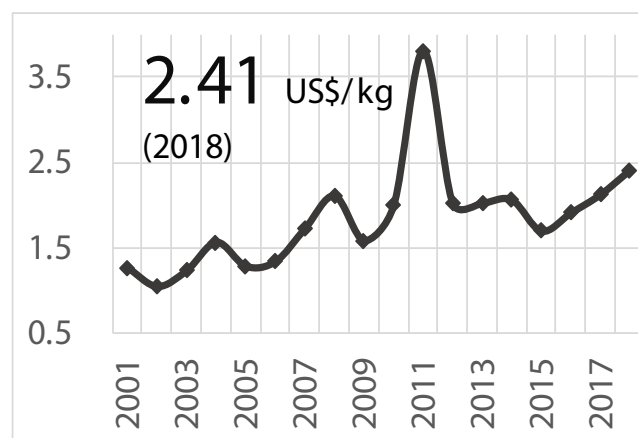
Value



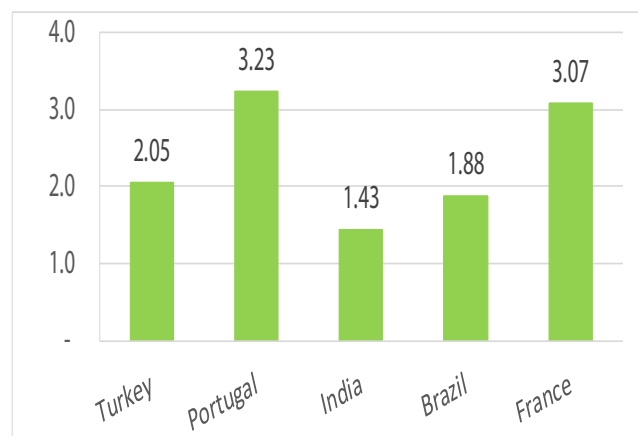
Market Share by Country



Average Price: US\$/Kg

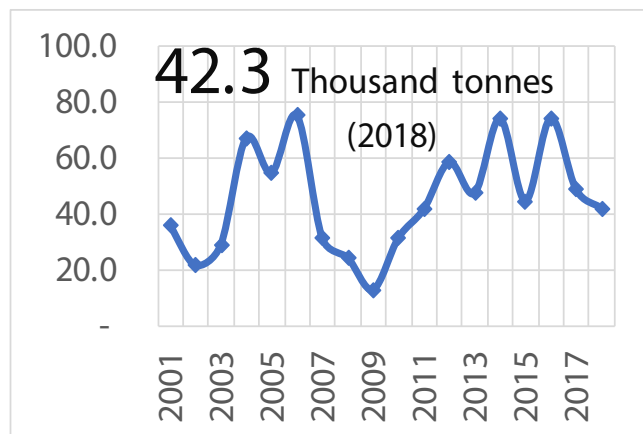


Average Price by Country 2018: US\$/Kg

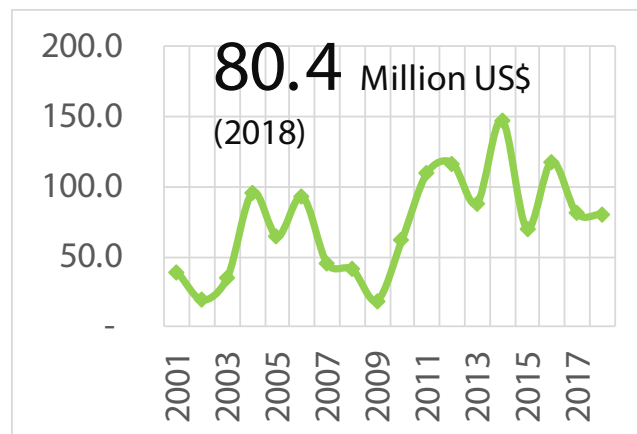


COTTON FIBRE EXPORT DATA

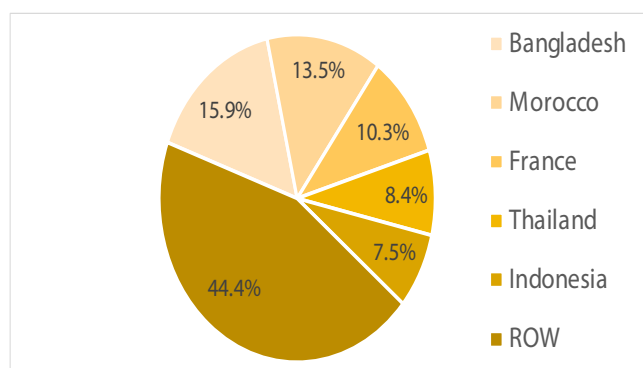
Quantity



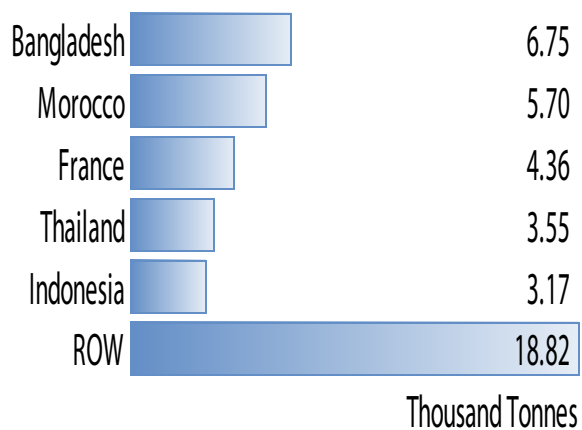
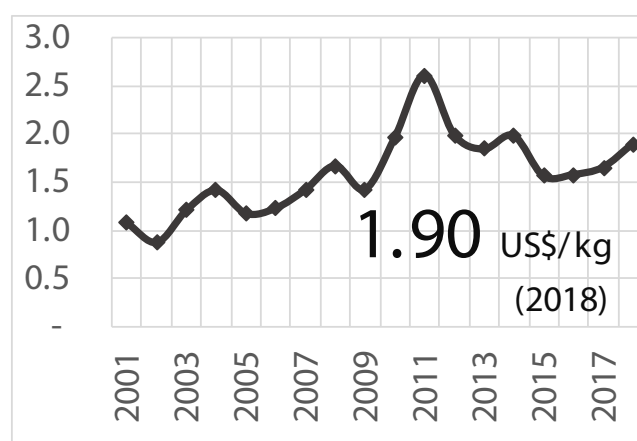
Value



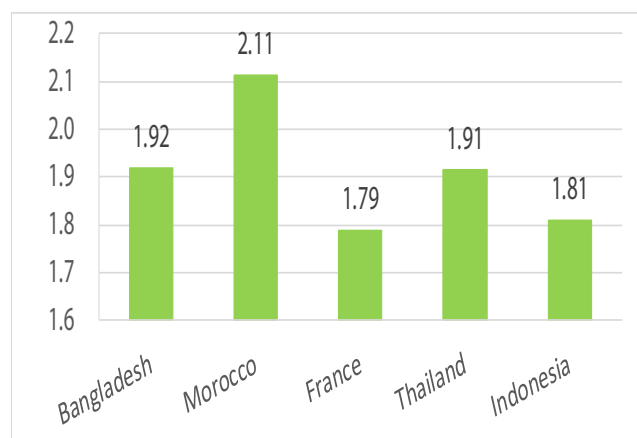
Market Share by Country



Average Price: US\$/Kg

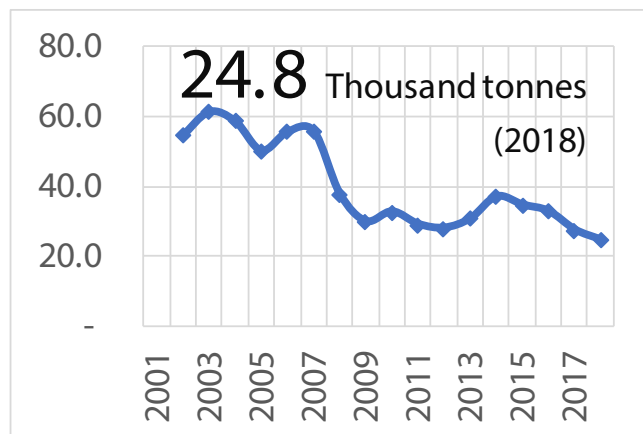


Average Price by Country 2018: US\$/Kg

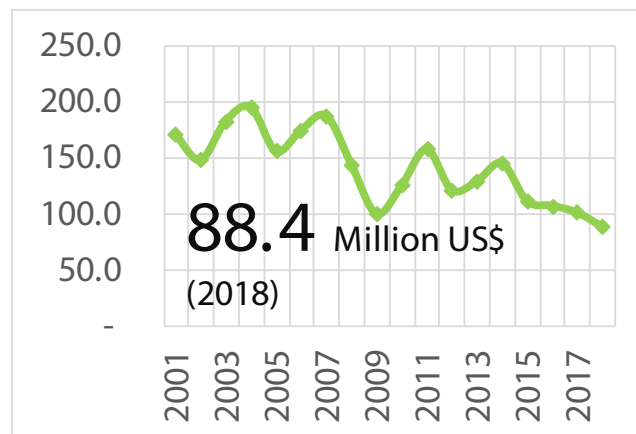


COTTON YARN IMPORT DATA

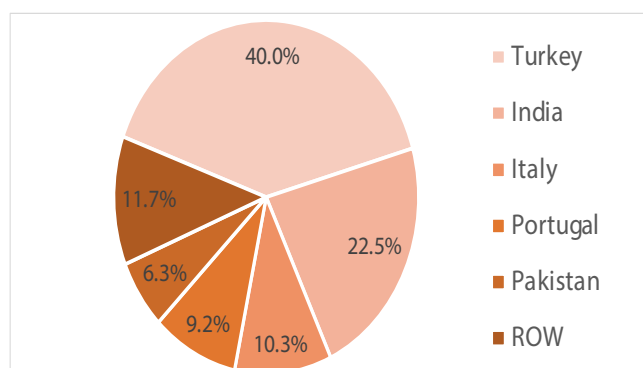
Quantity



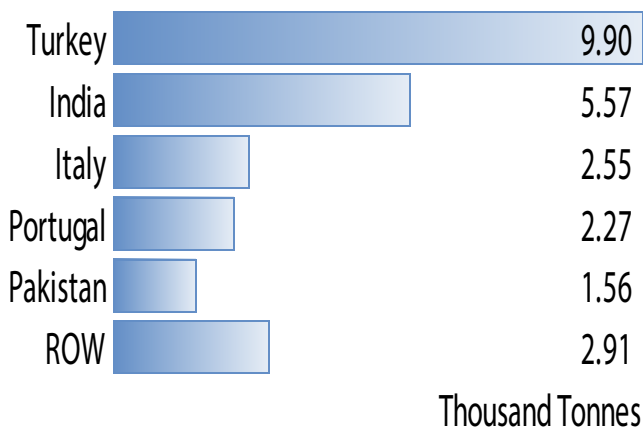
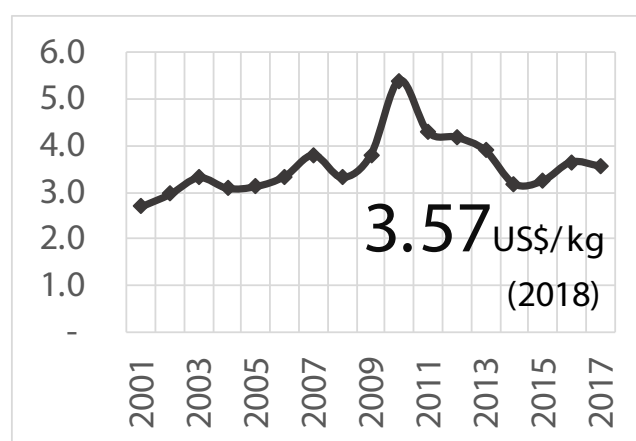
Value



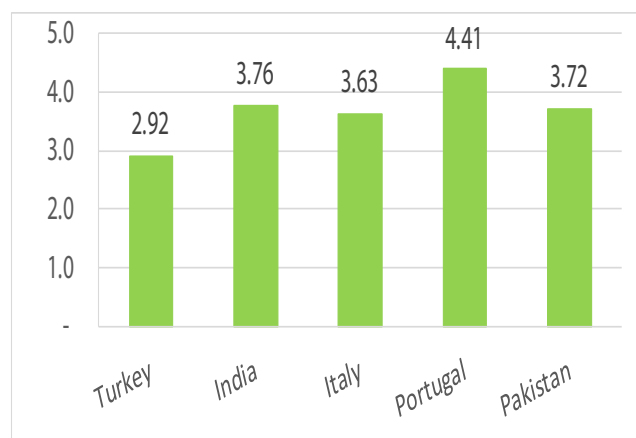
Market Share by Country



Average Price: US\$/Kg

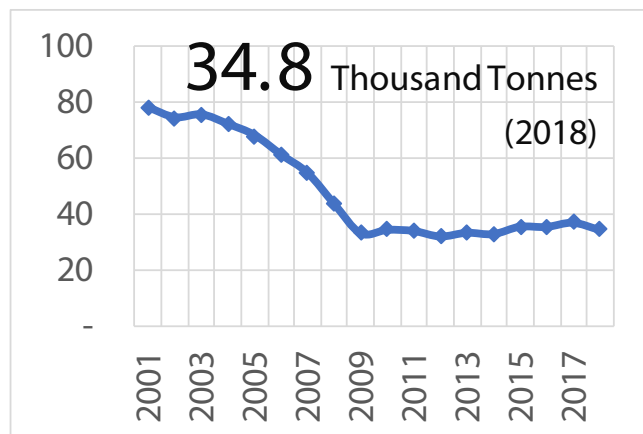


Average Price by Country 2018: US\$/Kg

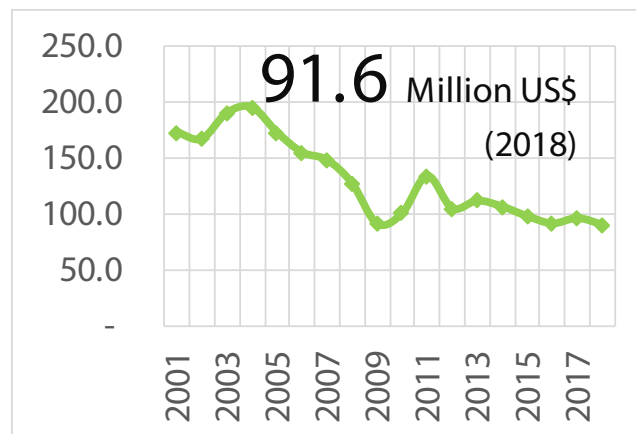


COTTON YARN EXPORT DATA

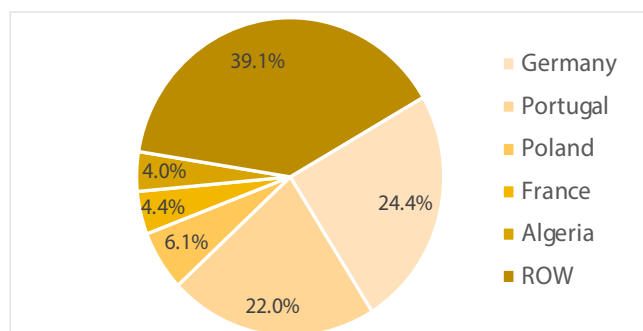
Quantity



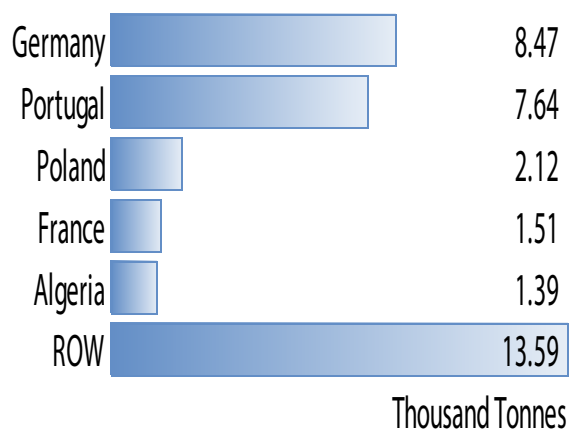
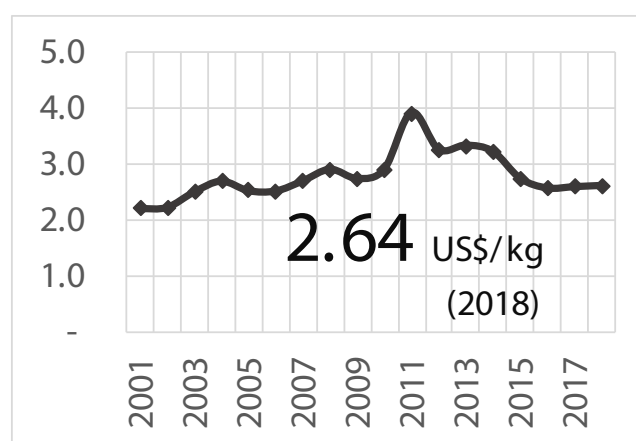
Value



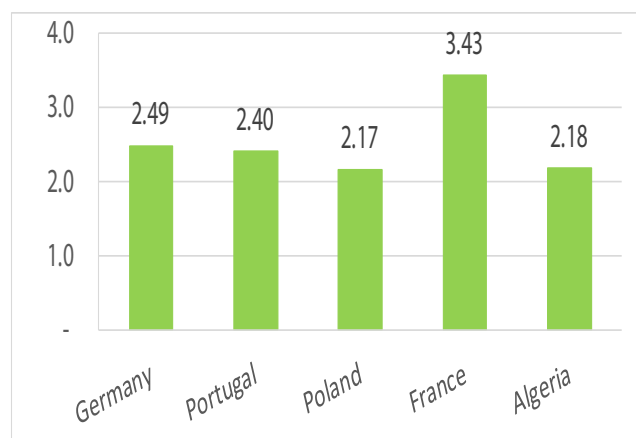
Market Share by Country



Average Price: US\$/Kg

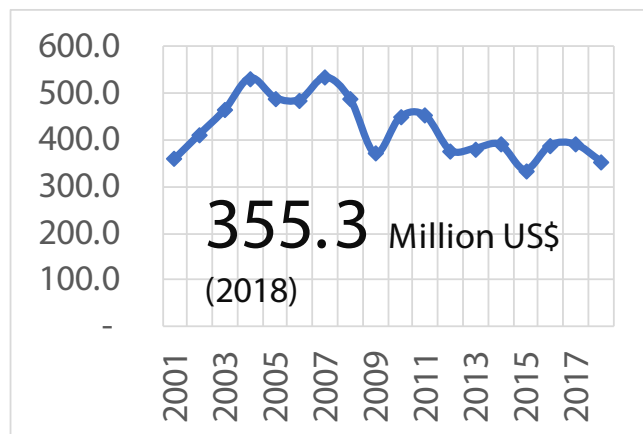


Average Price by Country 2018: US\$/Kg

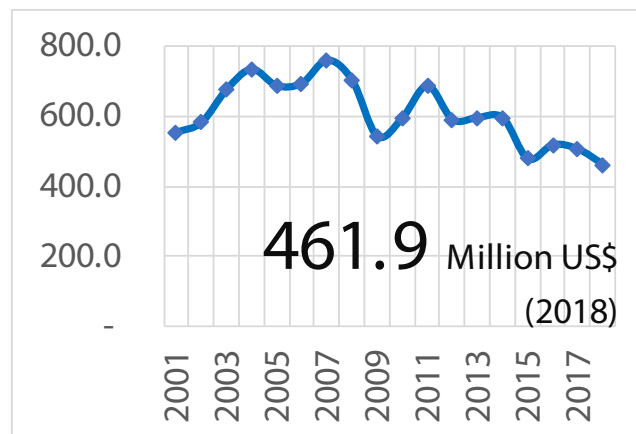


COTTON FABRIC TRADE DATA

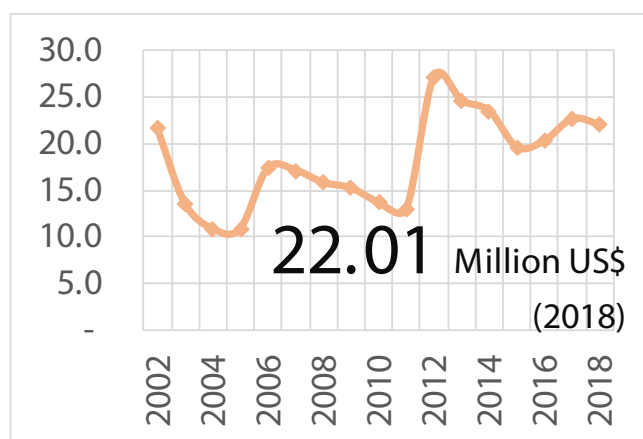
Woven Cotton Fabric Imports



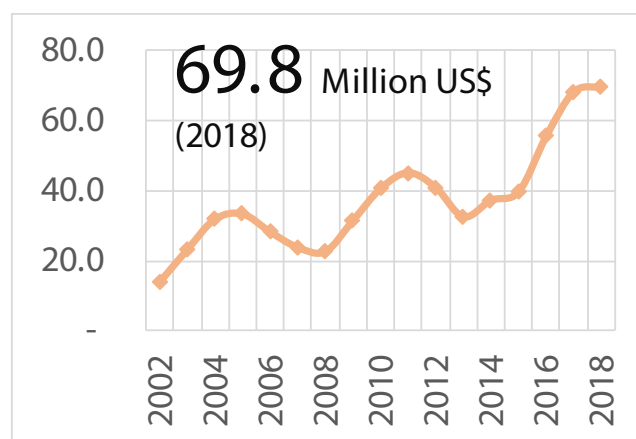
Woven Cotton Fabric Exports



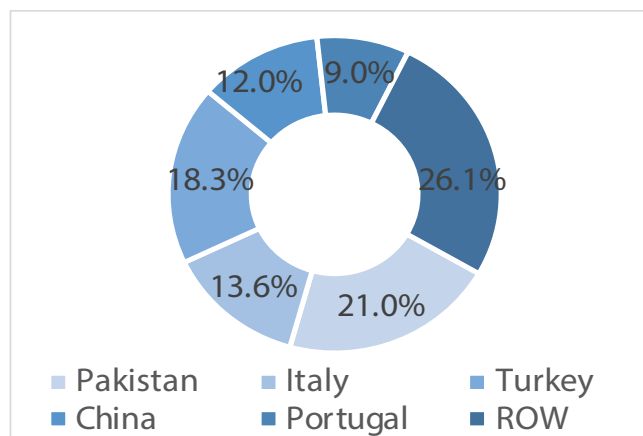
Knitted Cotton Fabric Imports



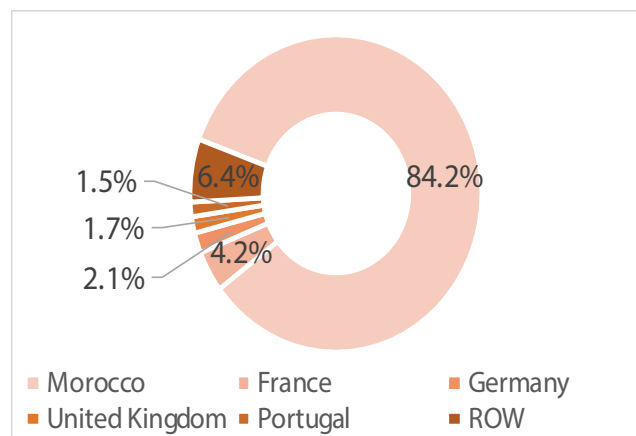
Knitted Cotton Fabric Exports



Market Share Imports by Country - 2018 Woven Cotton Fabric

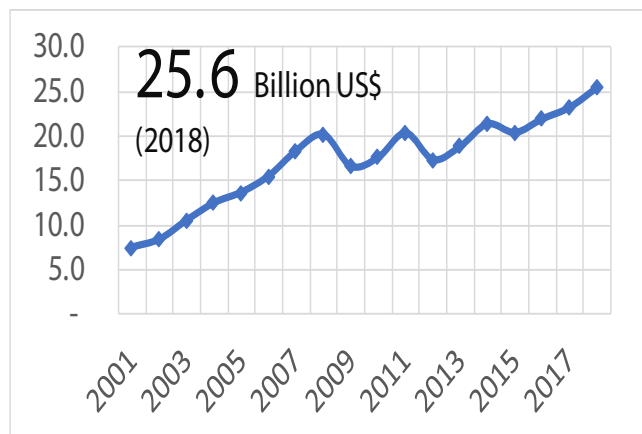


Market Share Imports by Country - 2018 Knitted Cotton Fabric

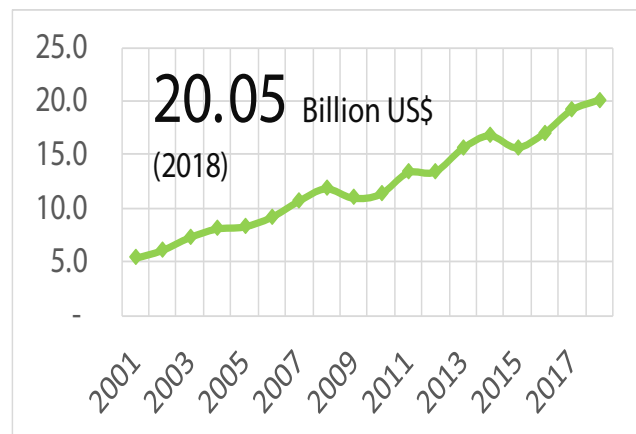


TEXTILE & APPAREL TRADE DATA

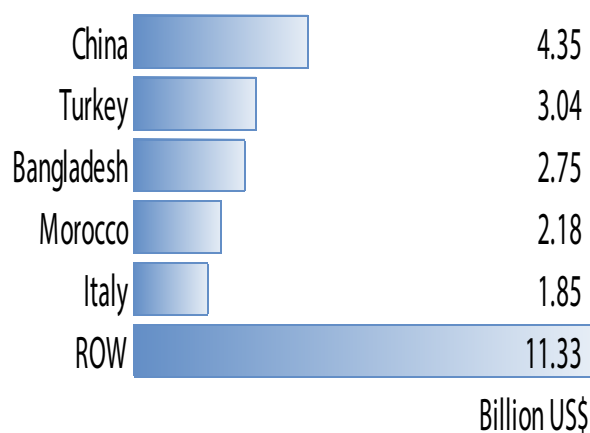
Imports



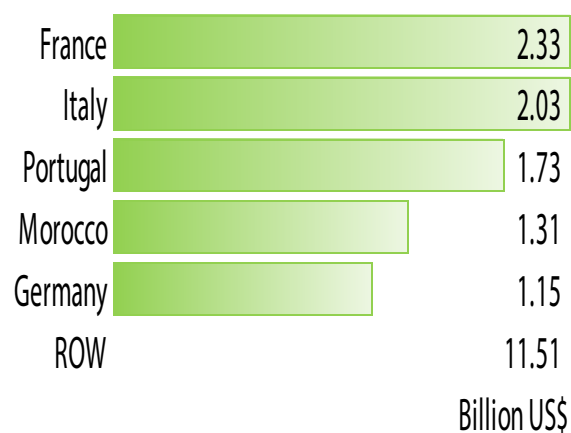
Exports



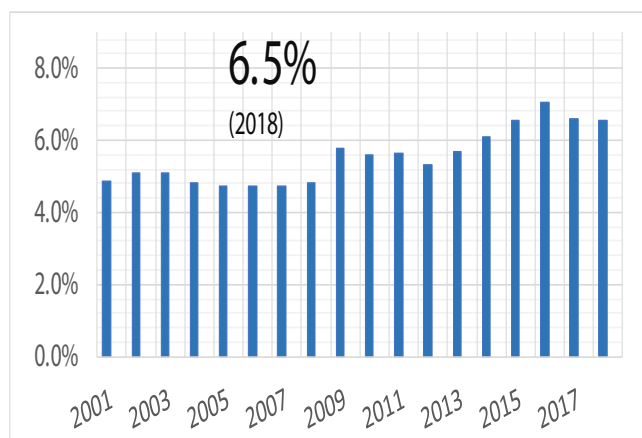
Imports by Country - 2018



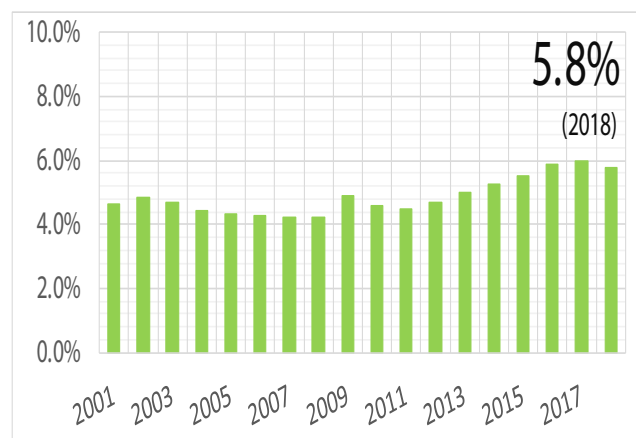
Exports by Country - 2018



T&A Imports Share in Overall Imports

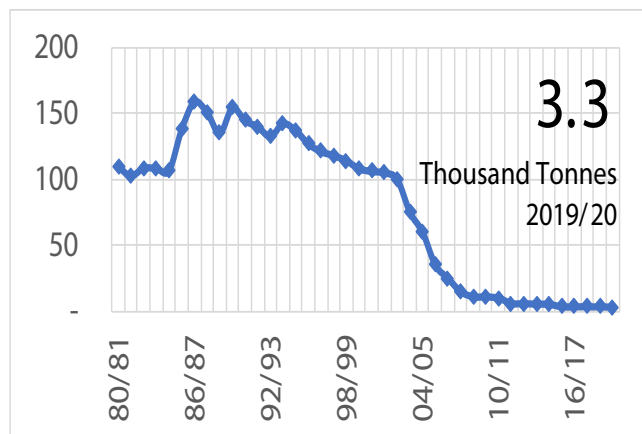


T&A Exports Share in Overall Exports

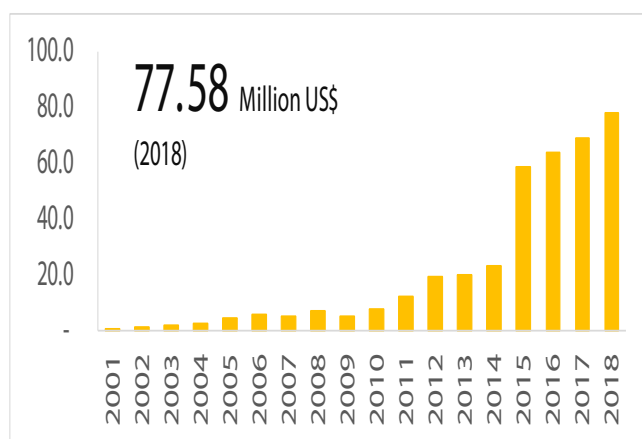


COMPOSITION OF THE TEXTILE & APPAREL INDUSTRY

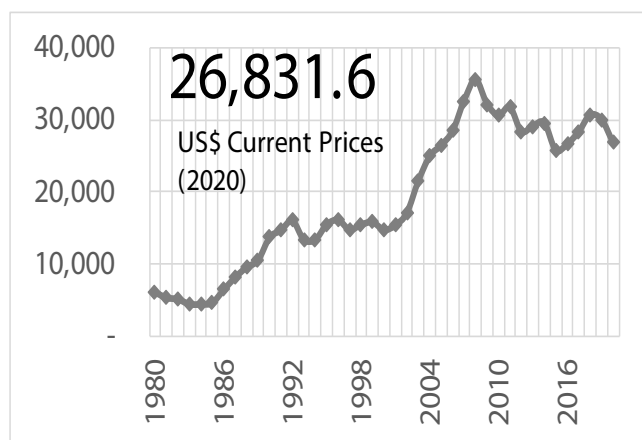
Cotton Mill Use



Exports - Worn Clothing & Articles



GDP per capita



Employment

96,500

Textile & Apparel Sector '000

Spinning Machinery

280

Air-Jet Spindles

29,500

Open-End

60,000

Short-Staple Spindles

Weaving Machinery

2,900

Shuttle-less Looms

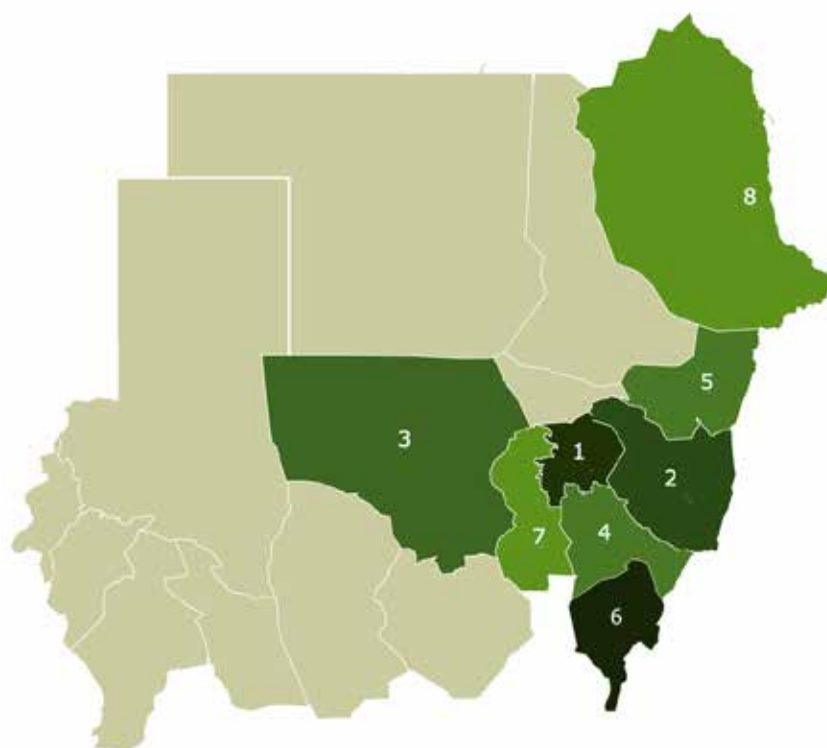
No. Textile Factories

20,485





Basic Data 2020



Production

130

'000 Tonnes

Lint Yield

722

Kg/Hectare

Arable Area

19,823

'000 Hectares

Cotton Area

180

'000 Hectares

PRODUCTION 2020

	Area '000 Ha	Yield Kg/Ha	Production '000 Tonnes
1 Gezira	52	870	45
2 Rahad	15	870	13
3 Halfa	18	870	16
4 White & Blue Niles	50	653	33
5 Kurdfan	28	435	12
6 flooded	17	645	11
National	180	722	130

Consumption

18

'000 Tonnes

Lint Exports

104

'000 Tonnes

Farmers

180,000

Male

Farmers

20,000

Female



VARIETIES AND FIBRE TRAITS

	Release Year	% Area	Ginning %	Length UHML mm	Strength g/tex	Mic
Acala	1967		38.0	28.0	29.0	4.2
Barakat-90	1990		33	35	37	4
Abdin	2006		35	31.4	30.1	4.6
Hamid	2005		37	29.7	29.4	4.9
Hindi-1 (Hybrid)	2015		35	28.3	30.2	4.4
Hindi 2 (hybrid)	2015		35	29.1	29.8	4.6
Seeni 1	2012		36	27.9	27.9	4.5
Seeni 2	2014		36	27.1	27	4.9

TILLAGE, STALKS-USE WEEDING & HARVESTING

Tillage Methods (% Area)

0	100	0	100
Zero Tillage	Disc Plough	Chisel Plough	Conventional Tillage

Use of Cotton stalks (% Use)

25	65	0	10
Burnt in Fields	Used as Firewood	Ploughed Back	Stacked on Bunds

Weeding Method (%)

20	80
Hand	Herbicide

Harvesting Method (%)

95	5
Hand Picked	Machine Picked

WATER

Rainwater & Irrigation water (mm)

750	409	8	420
Total Rainfall	Effective Rainfall	No. of Irrigations	Irrigation Water/Ha

Methods of Irrigation (% Area)

3	76	13	8
Flood	Furrow	Sprinkler	Drip

Rainfed Area (%) & Water Used /Kg Lint

8	696	5,352	5,661
Rainfed % Area	Irrigation Billion L	Irrigation L/Kg Lint	Rainwater L/Kg Lint

SEEDS & PLANTING

Seeds Used for Sowing (%)

0	100	100	0
Fuzzy Seeds	Delinted	Chemical Treated	Untreated

Use of Cotton Seeds (% Use)

60	30	10	0
Crushed for Oil	Direct Cattle-Feed	Used for Sowing	wasted

Planting Method (%)

5	95	95	5
Manual	Machine	Local	Imported

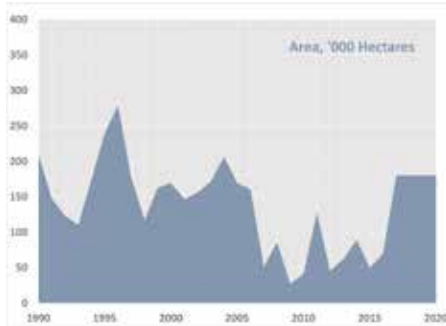
Seed Source (%)

Seed Rate, Spacing & Plant Population/Ha

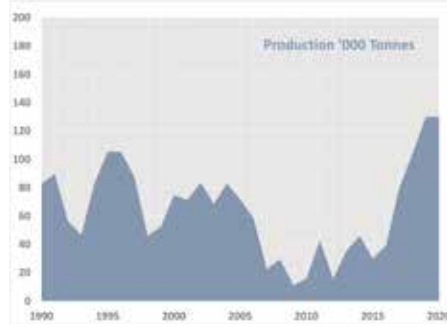
2.5	80	50	25,000
Seed Rate Kg/Ha	Between Rows cm	Within Row cm	Plant Population/ Ha

PRODUCTION

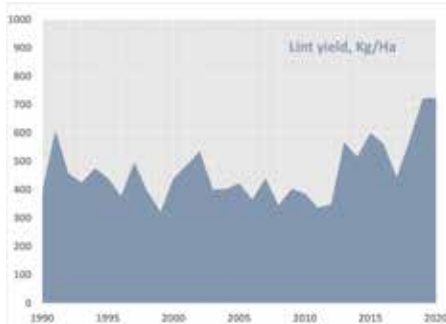
Cotton Area '000 Hectares



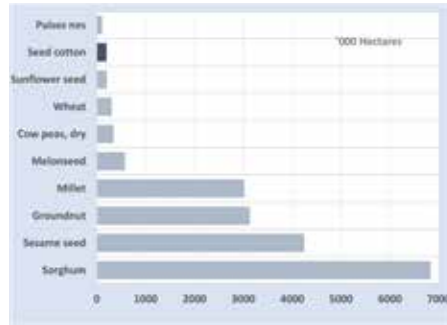
Production '000 Tonnes



Lint Yield Kg/Ha

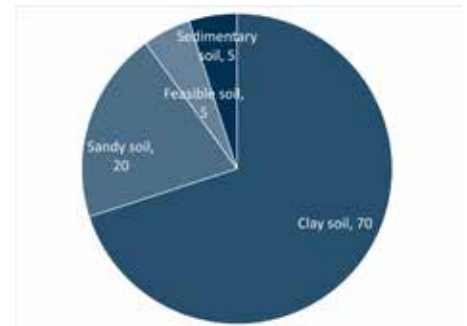


Area of Crops '000 Ha



SOILS

Soil Types



COMPETING CROPS

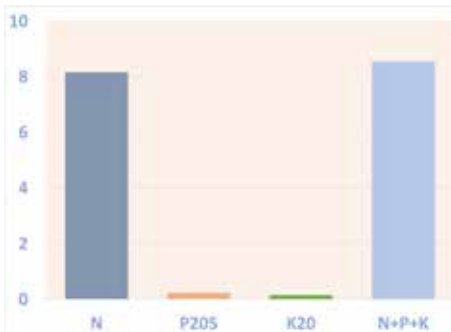
National
Sorghum
Peanuts

ROTATION CROPS

National
Sorghum
Peanuts

FERTILISERS

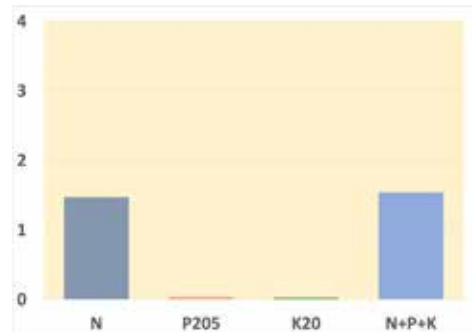
Fertiliser (NPK) use Kg/Hectare



Fertiliser (NPK) use per Kg Lint

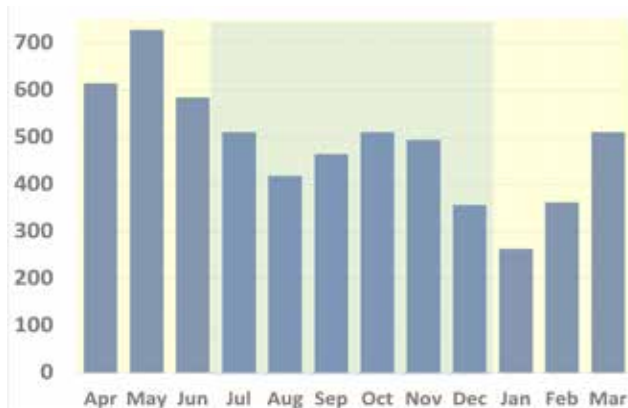


Fertiliser (NPK) use '000 Tons



WEATHER 2019-2020

Heat Units (DD60) -Gezira



Rainfall (mm) -Gezira



INSECT PESTS, DISEASES, WEEDS & PESTICIDES

INSECT PESTS / INSECTICIDES
NATIONAL
EARLY-SEASON
<i>Helicoverpa armigera</i>
<i>Empoasca spp.</i>
<i>Caliothrips impurus</i>
<i>Aphis gossypii</i>
<i>Bemisia tabaci</i>
MID-SEASON
<i>Bemisia tabaci</i>
<i>Aphis gossypii</i>
<i>Helicoverpa armigera</i>
INSECTICIDES
Profenophos 40+cypermethrin 4.0
Chlorpyrifos 5EC
Lamda-cyhalothrin 5 EC

DISEASES / PATHOGENS
NATIONAL
DISEASE / PATHOGEN
<i>F. paucispinosa</i> & <i>A. gossypii</i>
<i>Spodoptera</i> & <i>Heliothis</i>
<i>Eutinobothrus brasiliensis</i>
<i>Agrotis</i> & <i>Pyrophorus spp.</i>
<i>Tetranychus urticae</i>
CHEMICAL CONTROL
Imidacloprid
Thiamethoxam
Mercaptothion

WEEDS / HERBICIDES
NATIONAL
NARROW-LEAF WEEDS
<i>Cynodon dactylon</i>
<i>Sorghum vulgare</i>
<i>Difra</i>
BROAD-LEAF WEEDS
<i>Acalypha indica</i>
<i>Convolvulus spp.</i>
<i>Ipomea kordofan</i>
HERBICIDES
Hadaf 24%
Harris 24%
Golan 24%
Herbon 20EC

STRUCTURE OF COTTON RESEARCH

Cotton is one of the many commodities that are addressed by the Agricultural Research Corporation-ARC, Wad Medani, under the Ministry of Agriculture. The Agricultural Research is a semi-autonomous national research body. ARC is entrusted with planning and executing applied research in crop production and protection, land conservation forestry and range, water management, pesticide use,

environment, genetic resources, radioisotope uses, biotechnology, food processing, economic and social studies and seed production. With regard to cotton, ARC's main activities are focused on inter alia cotton breeding, fibre technology, integrated pest management and agronomy under the umbrella of the Cotton Research Program-CRP. The Cotton Research Program includes breeders,

agronomists, molecular biologists, entomologists, pathologists, fibre technologists, IPM specialists, extension workers, economists, physiologists and technical assistants. The Sudan Cotton Company, in addition to the Government, also provides funds for cotton research.

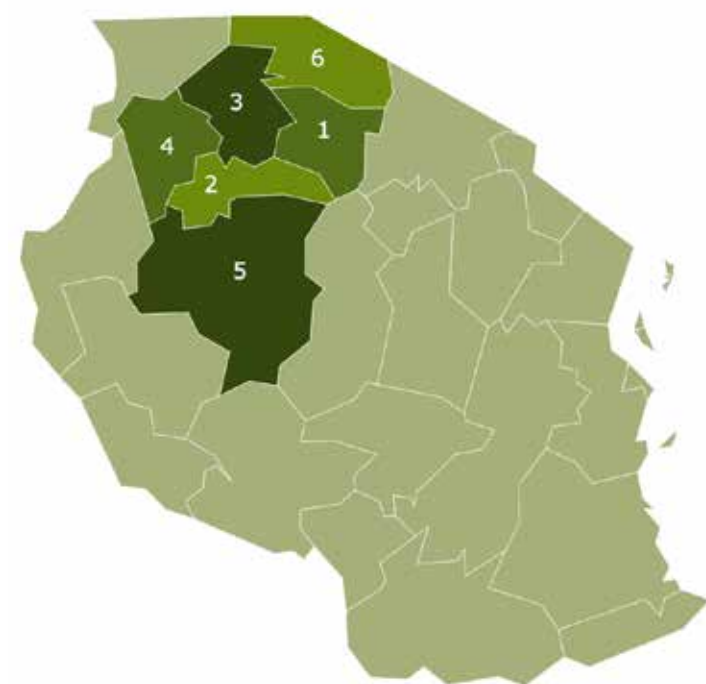


COST OF CULTIVATION US\$/Hectare

INPUTS	Quantity (Kg/Ha)	Operations per season	Total cost /Ha
Non-GM seeds			14
Biotech/GM seeds			55
NPK+Other			170
Insecticides			165
Herbicides			110
Fungicides			
Growth regulators			
Defoliants			
Manure			
Others (please specify)			
MANPOWER / LABOUR	Wages per person	Persons per operation	Total cost per hectare
Land preparation /tillage etc.,	2	1	6
Sowing	4	1	8
Fertiliser / manure application	3	1	6
Irrigation	1	12	12
Thinning	20	1	40
Weeding	25	2	100
Hoeing	2	1	6
Pesticide application	4	2	24
Defoliator application			0
Picking / harvesting	20	2	120
Stalk cutting & removal	4	1	12
Transportation /unloading etc.,	2	1	10
Ginning cost per 100 Kg			60
Others (please specify)			
MACHINERY /ANIMALS etc.	Cost per Operation	Number of Operations	Total cost per hectare
Tractors		3	55
Implements & tools		3	110
Electric / Diesel pumps etc.,			
Electricity / Diesel etc.,			
Harvesting machines			
Hoeing / Tillage machinery etc.,			20
Bullocks /Buffaloes			
Land rent			
MARKET VALUE	Yield Kg/per hectare	Market value per 100 Kg	Value per hectare
Seed cotton	1763	0.62	1093
Ginning % (output)	37		
Lint (fibre)	653	1.6	1044.8
Seed	1105	0.15	165.75
COST OF CULTIVATION			1043
NET RETURNS (SEED-COTTON)			50
NET RETURNS (SEED + LINT)			108



Basic Data 2020



Arable Area
13,500
'000 Hectares

Cotton Area
437
'000 Hectares

Production
108
'000 Tonnes

Lint Yield
247
Kg/Hectare

Consumption
45
'000 Tonnes

Lint Exports
41
'000 Tonnes

Farmers
394,021
Male

Farmers
224,393
Female

NUMBER OF FARMERS

	Men	Women
Simiyu	150,901	84,410
Geita	52,410	31,807
Shinyanga	47,091	34,101
Mwanza	35,263	18,503
Mara	31,183	23,087
Tabora	39,757	23,084
Singida & others	37,416	9,401
Total	394,021	224,393

PRODUCTION 2020

		Area '000 Ha	Yield Kg/Ha	Production '000 Tonnes
1	Simiyu	171	299	51
2	Geita	59	174	10
3	Shinyanga	58	238	14
4	Mwanza	39	266	10
5	Mara	38	168	6
6	Tabora	41	237	10
7	Singida & others	32	204	6
	National	437	247	108

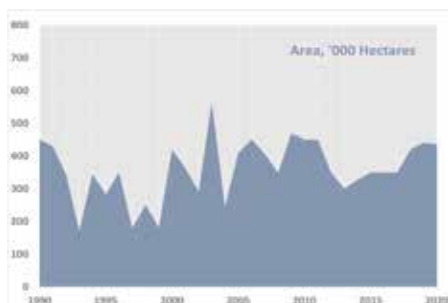


VARIETIES AND FIBRE TRAITS

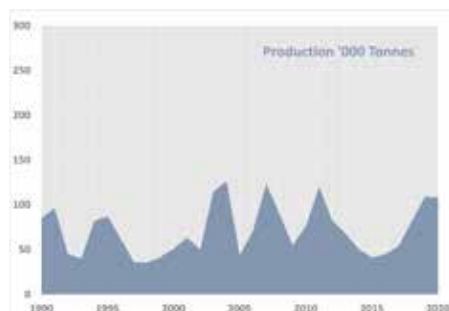
	Release Year	% Area	Ginning %	Length UHML mm	Strength g/tex	Mic
UKM 08	2008	100%	42.3	32.385	30.2	4.03

PRODUCTION

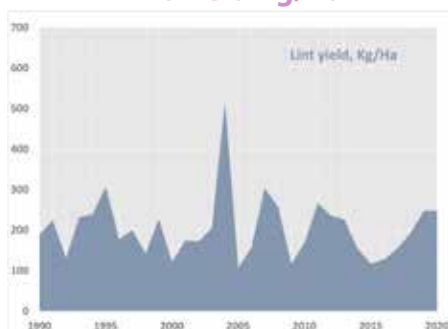
Cotton Area '000 Hectares



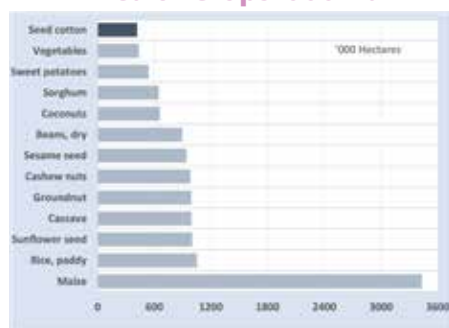
Production '000 Tonnes



Lint Yield Kg/Ha

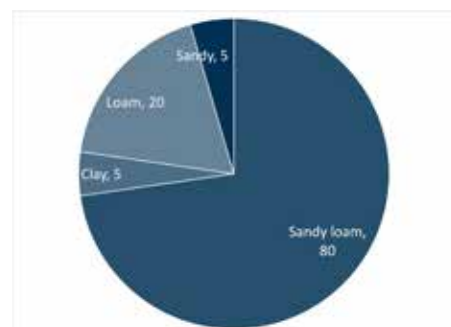


Area of Crops '000 Ha

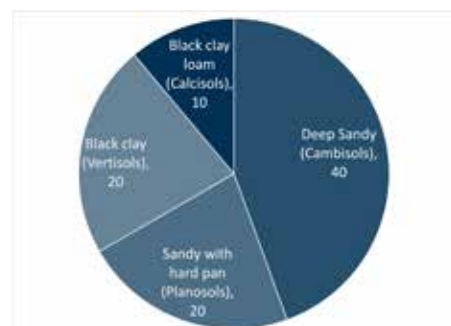


SOILS

Soil Types -East

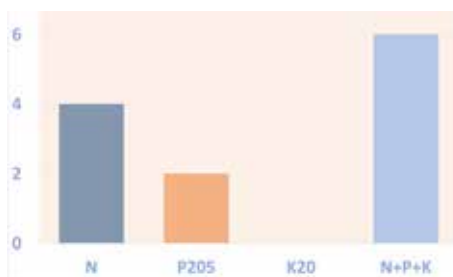


Soil Types -West

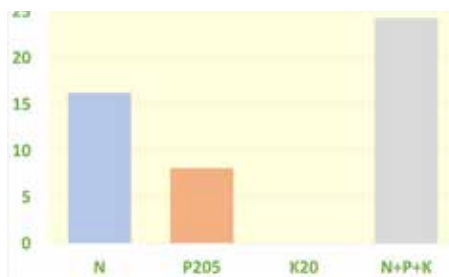


FERTILISERS

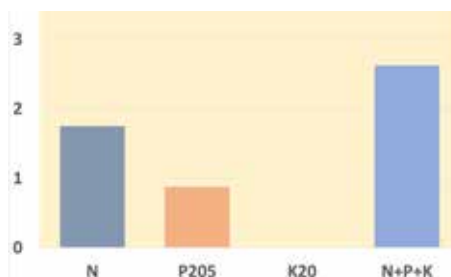
Fertiliser (NPK) use Kg/Hectare



Fertiliser (NPK) use per Kg Lint



Fertiliser (NPK) use '000 Tons



ROTATION CROPS

Eastern	Western
Pigeonpea	Cassava
Corn	Corn
Sunflower	Sunflower
Beans	Pigeonpea

COMPETING CROPS

Eastern	Western
Pigeonpea	Cassava
Corn	Corn
Sunflower	Sunflower
Beans	Pigeonpea

SEEDS & PLANTING

Planting Method (%)		Seed Source (%)	
99	1	100	0
Manual	Machine	Local	Imported

Seed Rate, Spacing & Plant Population/Ha			
25	90	40	27,778
Seed Rate Kg/Ha	Between Rows cm	Within Row cm	Plant Population/ Ha

WATER

Rainwater & Irrigation water (mm)				
Geita	650	386	0	0
Simiyu	980	581	0	0
National	780	569	0	0
	Total Rainfall	Effective Rainfall	No. of Irrigations	Irrigation Water/Ha

Methods of Irrigation (% Area)				
Geita	0	0	0	0
Simiyu	0	0	0	0
National	0	0	0	0
	Flood	Furrow	Sprinkler	Drip

Rainfed Area (%) & Water Used /Kg Lint				
Geita	100	0	0	22,211
Simiyu	100	0	0	19,455
National	100	0	0	0
	Rainfed % Area	Irrigation Billion L	Irrigation L/Kg Lint	Rainwater L/Kg Lint

Seeds Used for Sowing (%)

Simiyu	78	22	100	0
others	51	49	100	0
National	65	35	100	0
	Fuzzy Seeds	Delinted	Chemical Treated	Untreated

Use of Cotton Seeds (% Use)

Simiyu	100	0	0	0
Others	91	0	9	0
National	96	0	4	0
	Crushed for Oil	Direct Cattle-Feed	Used for Sowing	wasted

TILLAGE, STALKS-USE WEEDING & HARVESTING

Tillage Methods (% Area)

5	95	5	95
Zero Tillage	Disc Plough	Chisel Plough	Conventional Tillage

Use of Cotton stalks (% Use)

80	15	0	5
Burnt in Fields	Used as Firewood	Ploughed Back	Stacked on Bunds

Weeding Method (%)

98	2	100	0
Hand	Machine	Hand Picked	Machine Picked

Harvesting Method (%)

STRUCTURE OF COTTON RESEARCH

The British colonial administration promoted cotton cultivation during the early 1940s and 1950s in Tanzania. Two research and development (R&D) stations on cotton were established at Uki-riguru (1932) and Ilonga (1949) to serve the needs of the main cotton growing areas in Tanzania, commonly referred as, western cotton growing areas (WCGA) and eastern cotton growing areas (ECGA). The western cotton growing area, or the Lake Zone encompasses four administrative regions namely Mwanza, Shinyanga, Kagera and Mara. Cash crops include cotton, coffee and sunflower. The Tanzanian Agriculture Research Institute (TARI), Uki-riguru undertakes cotton research in the Lake Zone. The Agriculture Research Institute, Uki-riguru concentrates mainly on cotton, cassava, sweet potatoes, maize, and rice. The Ilonga Agricultural Research institute is located in Morogoro Region, Eastern Cotton Growing Area and mainly deals with cotton, rain legumes, low land maize, sorghum and millet. Other research

carried out at the Institute includes projects that deal with socio-economics and soil fertility.



INSECTS, PATHOGENS & WEEDS

INSECT PESTS / INSECTICIDES
EASTERN
EARLY-SEASON
<i>Empoasca spp., Frankliniella spp., Aphis gossypii</i>
MID-SEASON
<i>Helicoverpa armigera, Pectinophora gossypiella</i> <i>Dysdercus spp., Empoasca spp., Oxycarenus spp.</i>
INSECTICIDES
Lambdacyhalothrin 5% EC
Profenofos 720 EC
Imidacloprid + lambdacyhalothrin
Chlorpyrifos + Cypermethrin
Imidacloprid + Cypermethrin
Abamectin 20% EC

DISEASES / PATHOGENS
EASTERN
DISEASES / PATHOGENS
<i>Xanthomonas malvacearum, Verticillium wilt</i> <i>Rhizoctonia solani, Ramularia spp.</i>
CHEMICAL CONTROL
Bronocot

INSECT PESTS / INSECTICIDES
WESTERN
EARLY-SEASON
<i>Aphis gossypii, Thrips tabaci, Bemisia tabaci</i>
MID-SEASON
<i>Helicoverpa armigera, Pectinophora gossypiella</i> <i>Dysdercus spp., Empoasca spp., Oxycarenus spp.</i>
INSECTICIDES
Lambdacyhalothrin 5% EC
Profenofos 720 EC
Imidacloprid + lambdacyhalothrin
Chlorpyrifos + Cypermethrin
Imidacloprid + Cypermethrin
Abamectin 20% EC

DISEASES / PATHOGENS
WESTERN
DISEASES / PATHOGENS
<i>Fusarium oxysporum, Xanthomonas campestris</i> <i>Alternaria macrospora</i>
CHEMICAL CONTROL
Bronopol

WEEDS / HERBICIDES
EASTERN
NARROW-LEAF WEEDS
<i>Cyperus rotundus, Cynodon dactylon</i> <i>Trichodesma zeylanicum</i> <i>Brachiaria spp.</i> <i>Panicum maximum</i>
BROAD-LEAF WEEDS
<i>Boerhavia diffusa, Bidens pilosa</i> <i>Commelina benghalensis</i> <i>Galinsoga parviflora, Mexican marigold</i>
HERBICIDES
Glyphosate

WEEDS / HERBICIDES
WESTERN
NARROW-LEAF WEEDS
<i>Kyllinga spp., Cynodon dactylon, Digitaria spp.</i> <i>Rottboellia spp., Brachiaria brizantha</i>
BROAD-LEAF WEEDS
<i>Euphorbia hirta, Commelina benghalensis</i> <i>Ageratum conyzoides, Bidens pilosa</i>

WEATHER 2019-2020

Heat Units (DD₆₀) -Geita



Rainfall (mm) -Geita



Heat Units (DD₆₀) -Simiyu



Rainfall (mm) -Simiyu



COST OF CULTIVATION US\$/Hectare

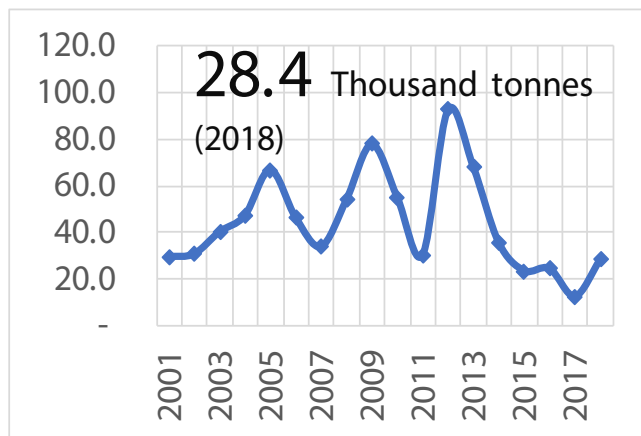
INPUTS	Quantity (Kg/Ha)	Operations per season	Total cost /Ha
Non-GM seeds	10 Kg	1	7.39
Biotech/GM seeds	25 Kg	0	7.06
NPK+Other	0	0	0
Insecticides	10	4	21.7
Herbicides	0	0	0
Fungicides	0	0	0
Growth regulators	0	0	0
Defoliant	0	0	0
Manure	7500	tri-annual	48.9
Others (please specify)	0	0	0.0
MANPOWER / LABOUR	Wages per person	Persons per operation	Total cost per hectare
Land preparation /tillage etc.,	28.3	2	56.5
Sowing	4.3	5	21.7
Fertiliser / manure application	3.0	5	15.2
Irrigation	0.0	0	0.0
Thinning	2.2	5	10.9
Weeding	4.3	5	21.7
Hoeing	0.0	0	0.0
Pesticide application	2.2	5	10.9
Defoliant application	0.0		0.0
Picking / harvesting	2.2	35	76.1
Stalk cutting & removal	2.2	6	13.0
Transportation /unloading etc.,	2.2	4	8.7
Ginning cost per 100 Kg	5.7	1	58.0
Others (please specify)	0	0	0.0
MACHINERY /ANIMALS etc.	Cost per Operation	Number of Operations	Total cost per hectare
Tractors	54.3	1	54.3
Implements & tools	0	0	0.0
Electric / Diesel pumps etc.,	0	0	0.0
Electricity / Diesel etc.,	0	0	0.0
Harvesting machines	0	0	0.0
Hoeing / Tillage machinery etc.,	0	0	0.0
Bullocks /Buffaloes	0	0	0.0
Land rent	0	0	0.0
MARKET VALUE	Yield Kg/per hectare	Market value per 100 Kg	Value per hectare
Seed cotton	750	0.52	391
Ginning % (output)	37	0.00	0
Lint (fibre)	278	1.46	405
Seed	450	0.22	98
COST OF CULTIVATION			374
NET RETURNS (SEED-COTTON)			17
NET RETURNS (SEED + LINT)			70

TRADE DATA

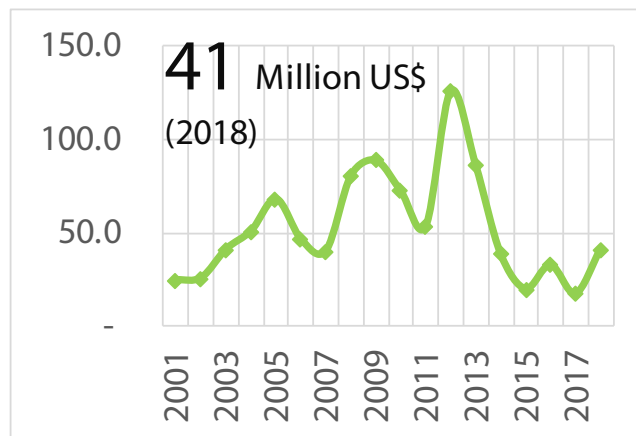


COTTON FIBRE EXPORT DATA

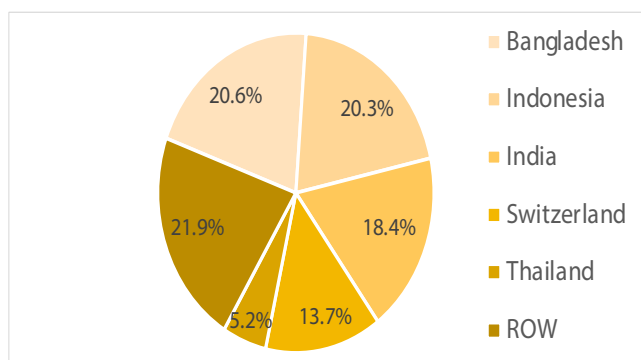
Quantity



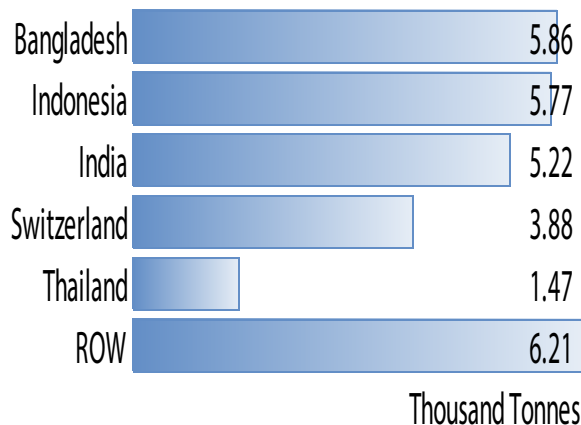
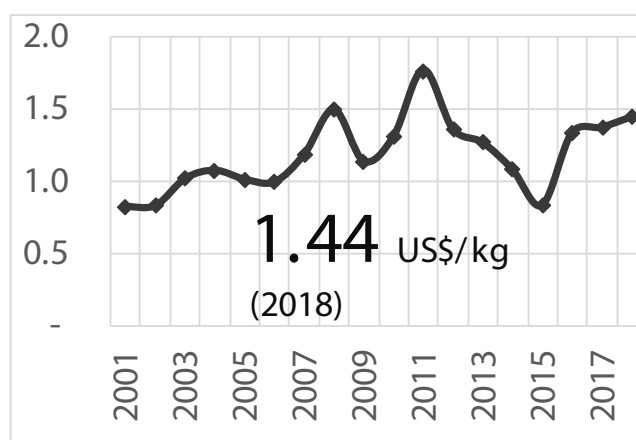
Value



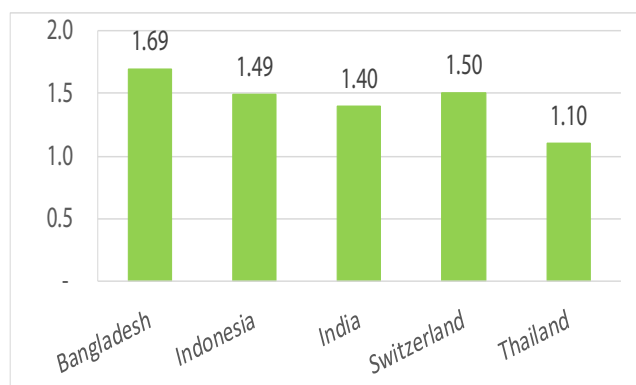
Market Share by Country



Average Price: US\$/Kg

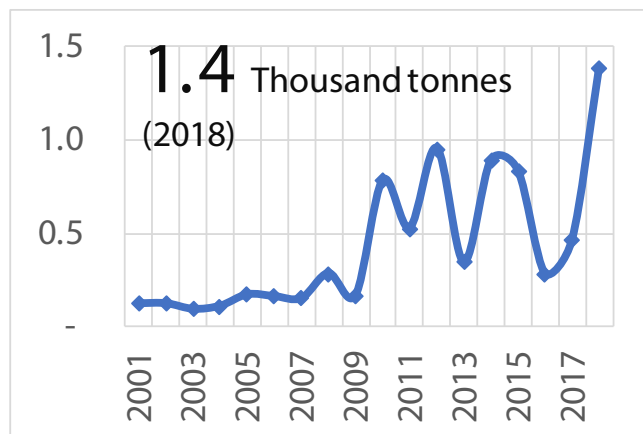


Average Price by Country 2018: US\$/Kg

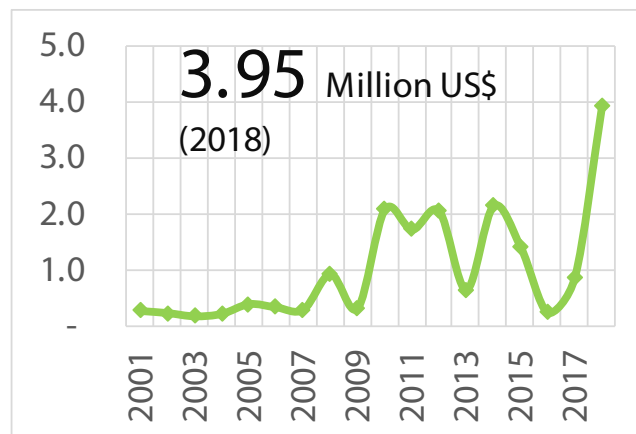


COTTON YARN IMPORT DATA

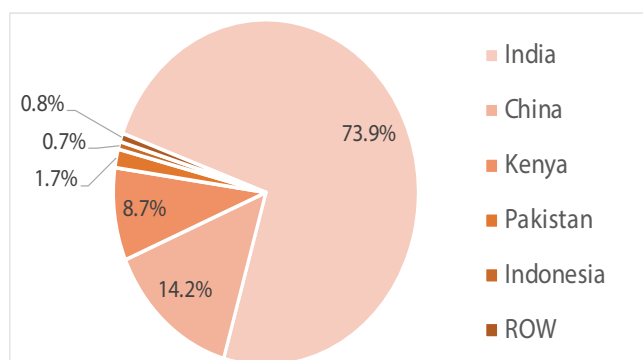
Quantity



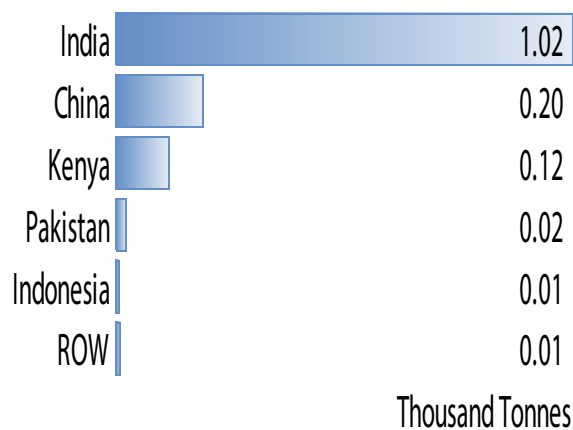
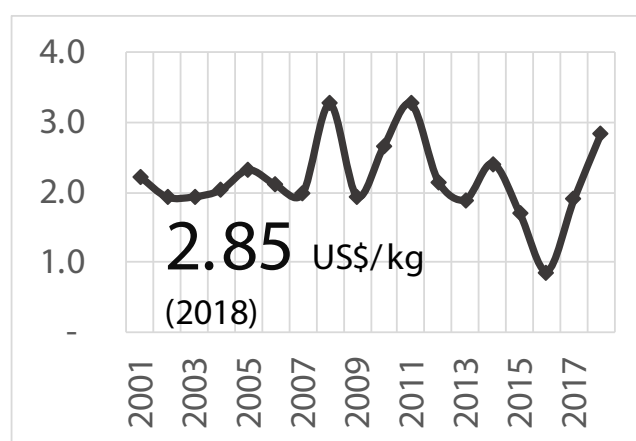
Value



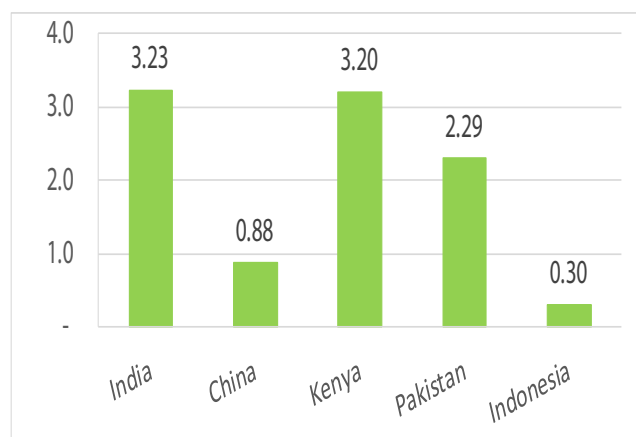
Market Share by Country



Average Price: US\$/Kg

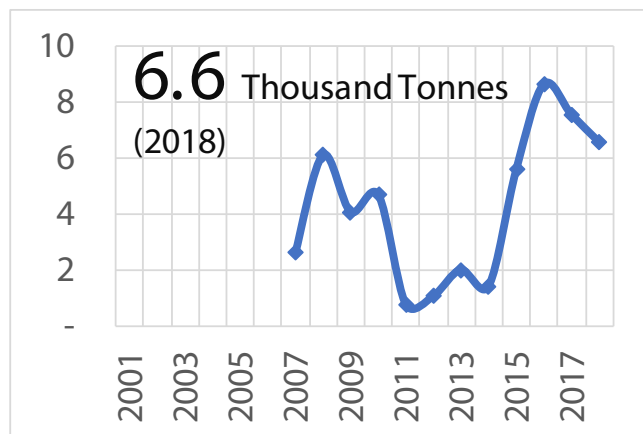


Average Price by Country 2018: US\$/Kg

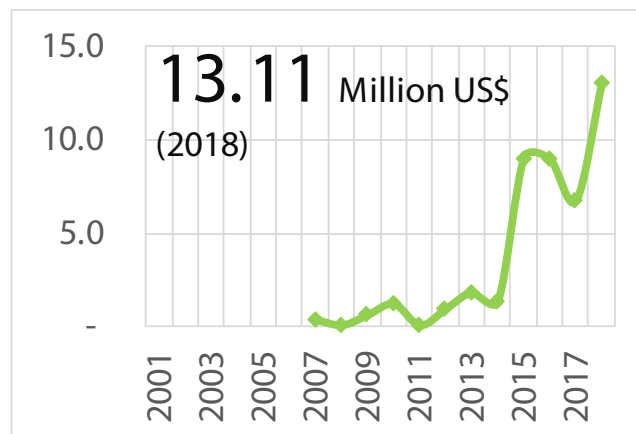


COTTON YARN EXPORT DATA

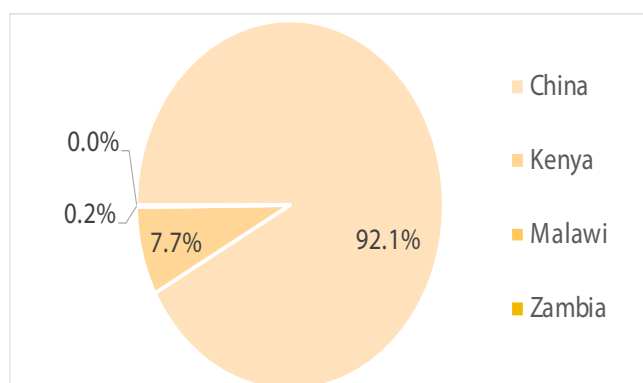
Quantity



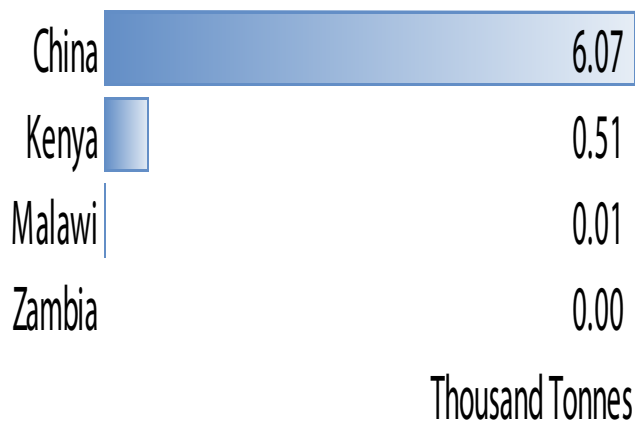
Value



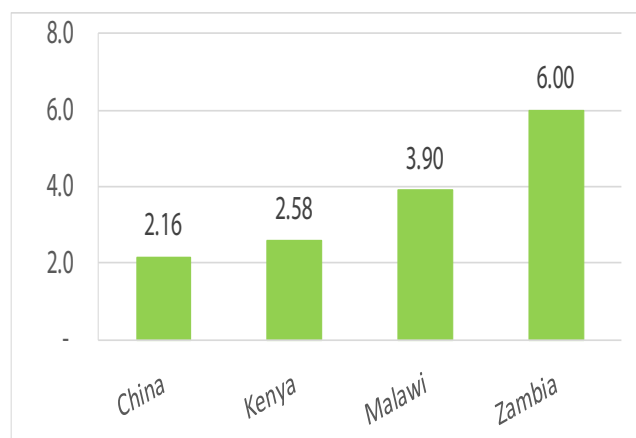
Market Share by Country



Average Price: US\$/Kg

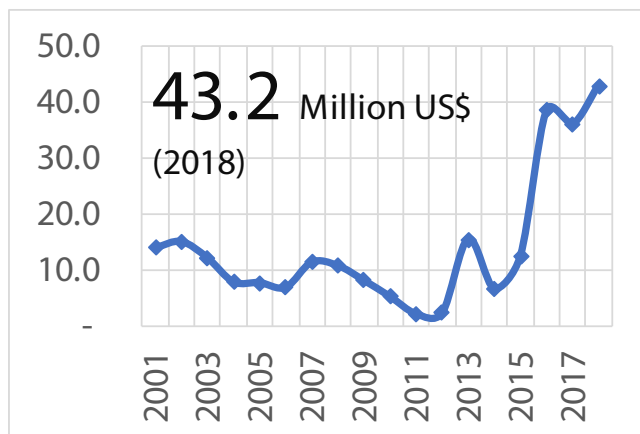


Average Price by Country 2018: US\$/Kg

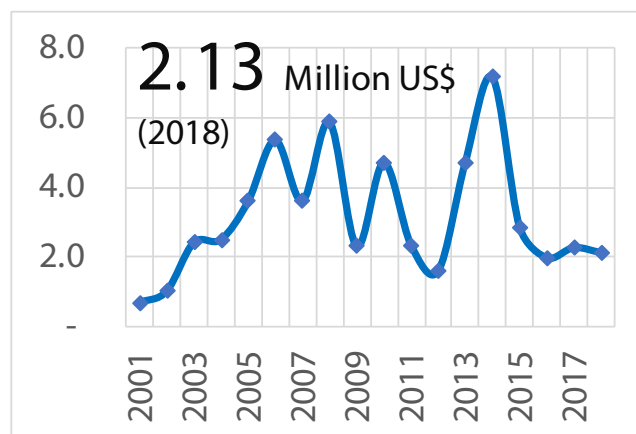


COTTON FABRIC TRADE DATA

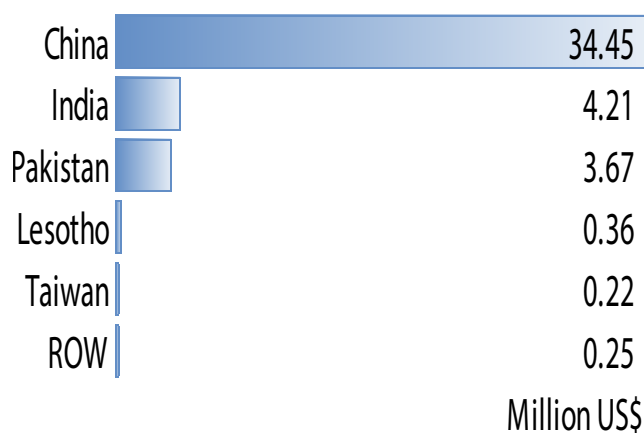
Woven Cotton Fabric Imports



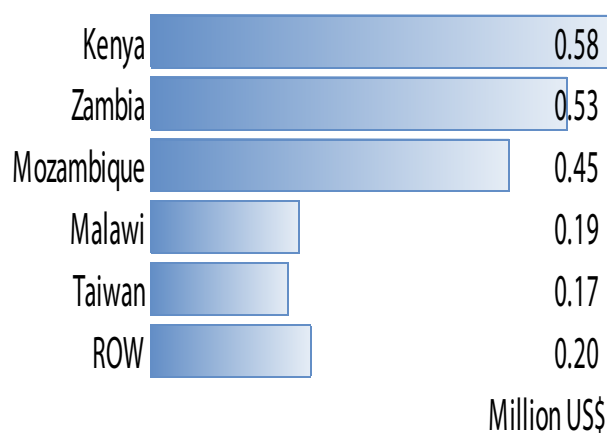
Woven Cotton Fabric Exports



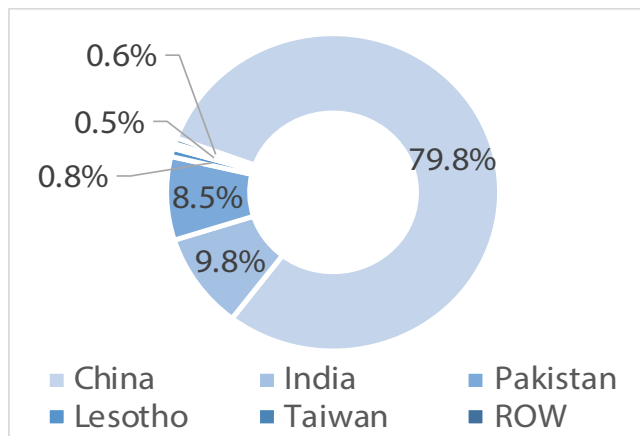
Imports by Country



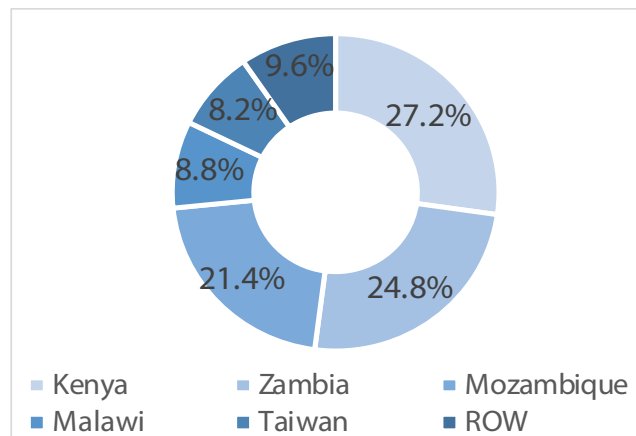
Exports by Country



Market Share Imports by Country - 2018 Woven Cotton Fabric

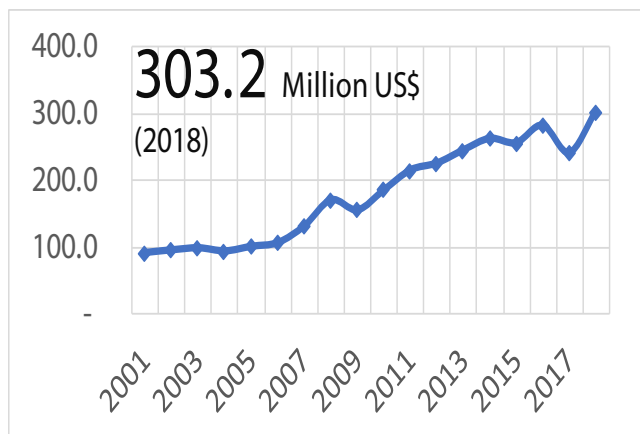


Market Share Exports by Country - 2018 Woven Cotton Fabric

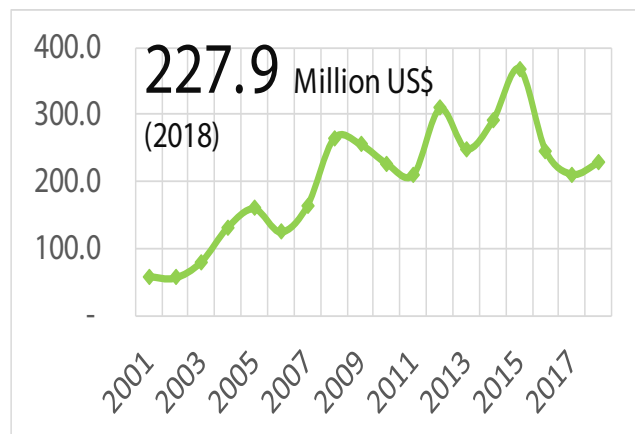


TEXTILE & APPAREL TRADE DATA

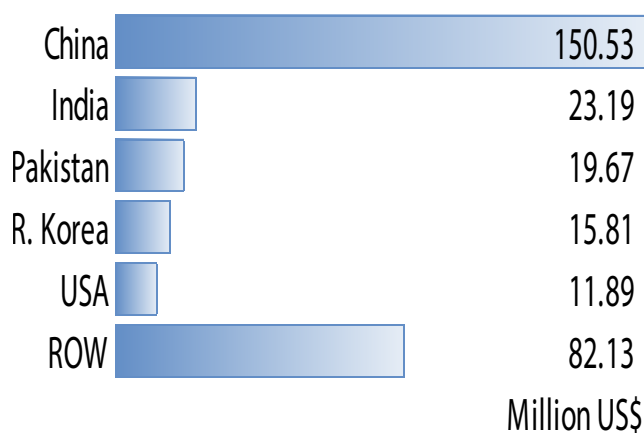
Imports



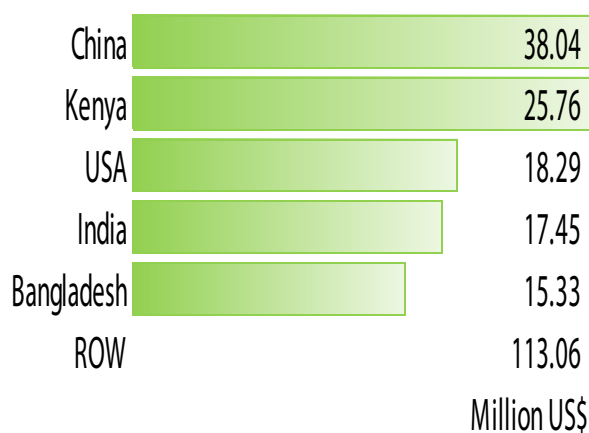
Exports



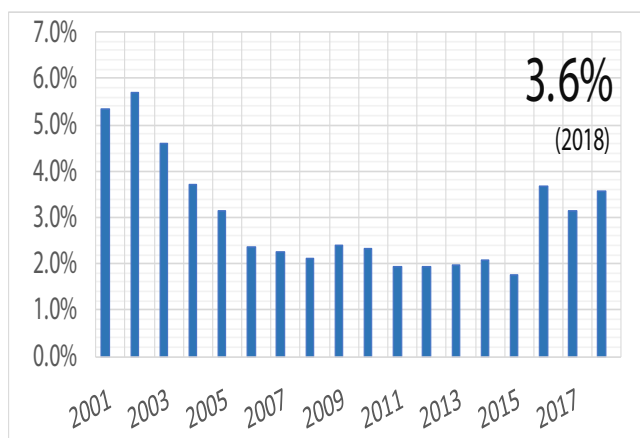
Imports by Country - 2018



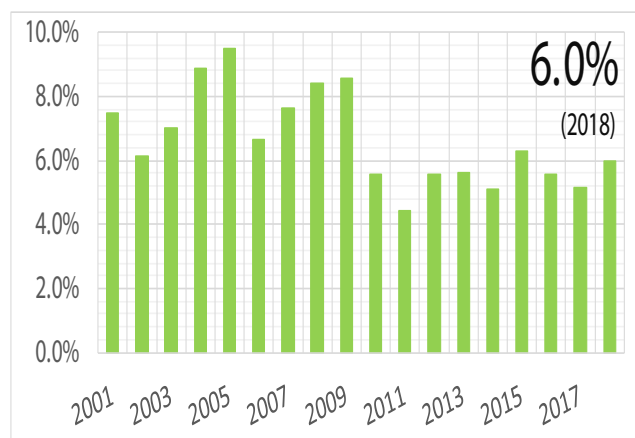
Exports by Country - 2018



T&A Imports Share in Overall Imports

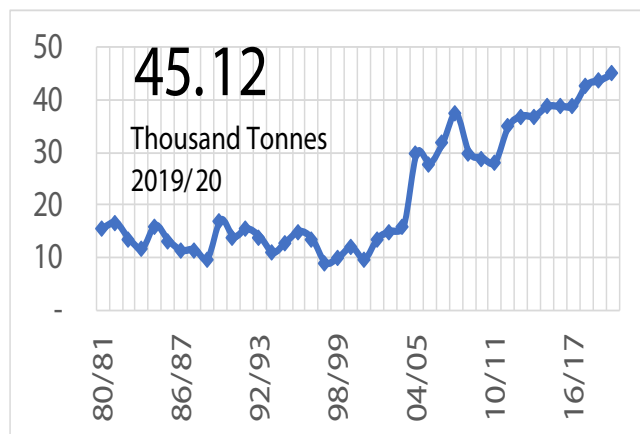


T&A Exports Share in Overall Exports

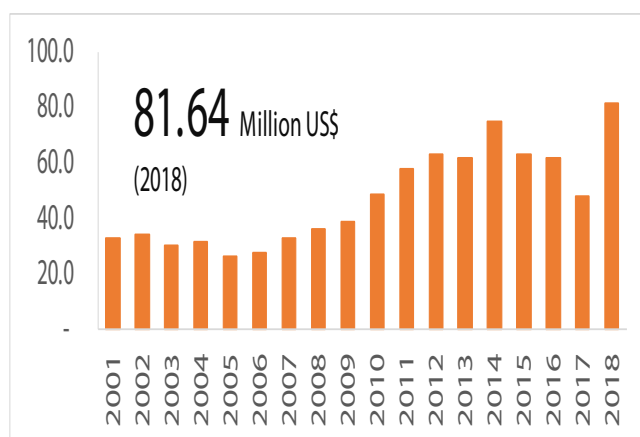


COMPOSITION OF THE TEXTILE & APPAREL INDUSTRY

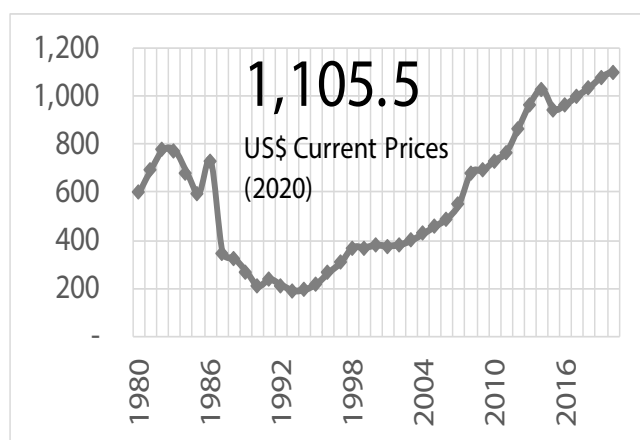
Cotton Mill Use



Imports - Worn Clothing & Articles



GDP per capita



Employment

200,000

Textile & Apparel Sector

Spinning Machinery

280,000

Short-Staple Spindles

Weaving Machinery

5,000

Shuttle Looms

150

Shuttle-less Looms

Organic Cotton Produced in 2018/19

5,281 tonnes

Better Cotton+CmiA Produced in 2018/19

15,246 tonnes

No. Textiles & Apparel Factories

10





Basic Data 2020



Arable Area

2,650

'000 Hectares

Cotton Area

181

'000 Hectares

Production

59

'000 Tonnes

Lint Yield

327

Kg/Hectare

Consumption

0

'000 Tonnes

Lint Exports

56

'000 Tonnes

Farmers

138,580

Male

Farmers

14,072

Female

NUMBER OF FARMERS

	Men	Women
Savanes	53,471	2,246
Kara	31,547	1,020
Centrale	4,731	321
Plateaux Nord	20,152	2,472
Plateaux Sud	20,184	6,680
Maritime	8,495	1,333
Total	138,580	14,072

PRODUCTION 2020

		Area '000 Ha	Yield Kg/Ha	Production '000 Tonnes
1	Plateaux Nord	28	373	10
1	Plateaux Sud	31	251	8
2	Savanes	59	339	20
3	Kara	43	352	15
	Centrale	5	353	2
	Maritime	15	276	4
	National	181	327	59

VARIETIES AND FIBRE TRAITS

	Release Year	% Area	Ginning %	Length UHML mm	Strength g/tex	Mic
STAM 129 A	1999-20	99%	41%	28.9	30.2	4.5
STAM 190	2017-18	1%	43%	28.9	30.5	4.1

WATER

Rainwater & Irrigation water (mm)

1,168	679	0	0
Total Rainfall	Effective Rainfall	No. of Irrigations	Irrigation Water/Ha

Methods of Irrigation (% Area)

0	0	0	0
Flood	Furrow	Sprinkler	Drip

Rainfed Area (%) & Water Used /Kg Lint

100	0	0	20,738
Rainfed % Area	Irrigation Billion L	Irrigation L/Kg Lint	Rainwater L/Kg Lint

SEEDS & PLANTING

Seeds Used for Sowing (%)

Centrale & Others	100	0	100	0
Plateaux Nord	100	0	93	7
Plateaux Sud	100	0	96	4
Maritime	100	0	99	1
National	100	0	98	2
	Fuzzy Seeds	Delinted	Chemical Treated	Untreated

Planting Method (%)

Seed Source (%)

National	100	0	100	0
	Manual	Machine	Local	Imported

TILLAGE, STALKS-USE WEEDING & HARVESTING

Tillage Methods (% Area)

Savanes	69	27	62	31
Kara	47	21	27	53
Centrale	7	2	2	93
Plateaux Nord	19	0	1	81
Plateaux Sud	22	0	1	78
Maritime	27	0	0	73
National	43	14	27	57
	Zero Tillage	Disc Plough	Chisel Plough	Conventional Tillage

Use of Cotton stalks (% Use)

National	55	15	5	25
	Burnt in Fields	Used as Firewood	Ploughed Back	Stacked on Bunds

Weeding Method (%)

Harvest Method (%)

National	94	6	100	0
	Hand	Machine	Hand Picked	Machine Picked

SEEDS & PLANTING

Use of Cotton Seeds (% Use)

National	70	15	15	0
	Crushed for Oil	Direct Cattle-Feed	Used for Sowing	wasted

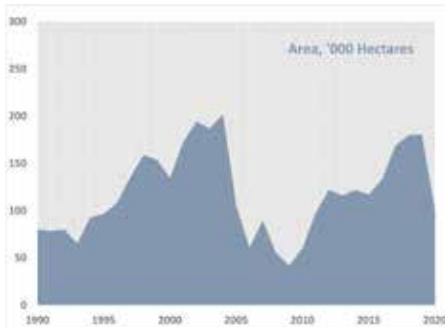
Seed Rate, Spacing & Plant Population/Ha

National	47.5	80	30	41,667
	Seed Rate Kg/Ha	Between Rows cm	Within Row cm	Population/ Ha

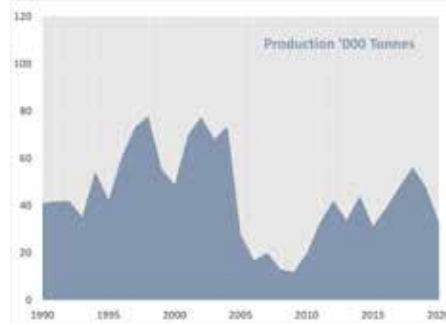


PRODUCTION

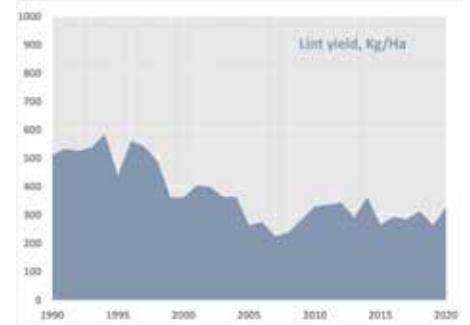
Cotton Area '000 Hectares



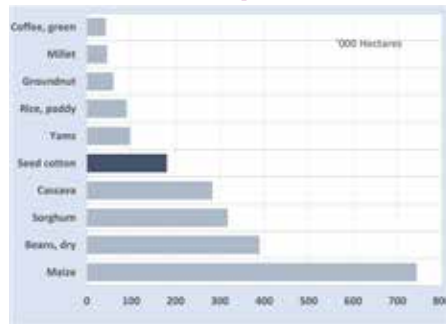
Production '000 Tonnes



Lint Yield Kg/Ha



Area of Crops '000 Ha



COMPETING CROPS

Yam

Cowpea

Corn

ROTATION CROPS

Yam

Cowpea

Corn

FERTILISERS

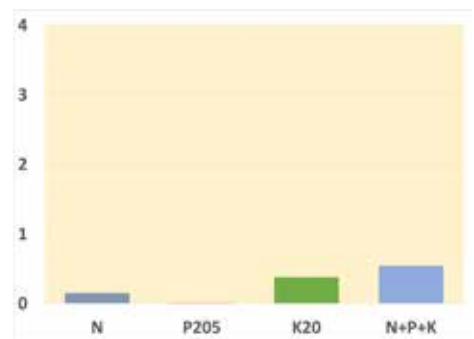
Fertiliser (NPK) use Kg/Hectare



Fertiliser (NPK) use per Kg Lint



Fertiliser (NPK) use '000 Tons



INSECTS, PATHOGENS & WEEDS

INSECT PESTS / INSECTICIDES

EARLY-SEASON

Jacobiella facialis, *Aphis gossypii*
Helicoverpa armigera, *Earias spp.*
Polyphagotarsonemus latus

MID-SEASON

Helicoverpa armigera
Pectinophora gossypiella
Thaumatotibia leucotreta
Aphis gossypii
Haritalodes derogata

INSECTICIDES

Emacot 19EC, Emir 88EC
Lambdocal P 315EC

DISEASES / PATHOGENS

DISEASES / PATHOGENS

Fusarium oxysporum
Xanthomonas campestris
Macrophomina phaseolina
Verticillium dahliae

CHEMICAL CONTROL

Caltho C 50WS

WEEDS / HERBICIDES

NARROW-LEAF WEEDS

Cynodon dactylon, *Cyperus rotundus*
Imperata cylindrica, *Digitaria spp.*
Paspalum spp.

BROAD-LEAF WEEDS

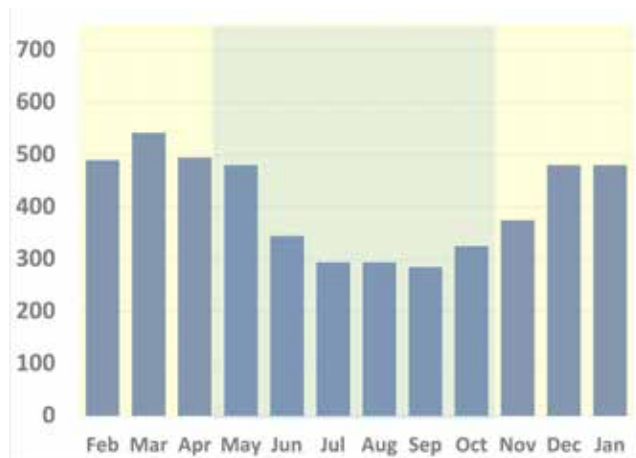
Commelina benghalensis
Ageratum conyzoides
Tridax procumbens
Euphorbia spp.
Amaranthus spp.

HERBICIDES

Callifore G 560EC
Kalach 360SL, Tempra 80%WP

WEATHER 2019-2020

Heat Units (DD₆₀) -Plateaux



Rainfall (mm) -Plateaux



Heat Units (DD₆₀) -Savanes



Rainfall (mm) -Savanes



STRUCTURE OF COTTON RESEARCH

Cotton research is conducted in Agricultural research institutions and science departments of Universities. The Togolese institute of agronomic research (Institut Togolais de Recherche Agronomique) and the School of

Agronomy (Ecole Supérieure d'Agronomie) are specialised in crop sciences. The Directorate of Plant Protection (Direction de la Protection des Végétaux) deals with pest and disease control and conduct research on all

crops including cotton. Cotton research is conducted as dissertation in the two Universities: University of Lomé (Université de Lomé) and University of Kara (Université de Kara).



COST OF CULTIVATION US\$/Hectare

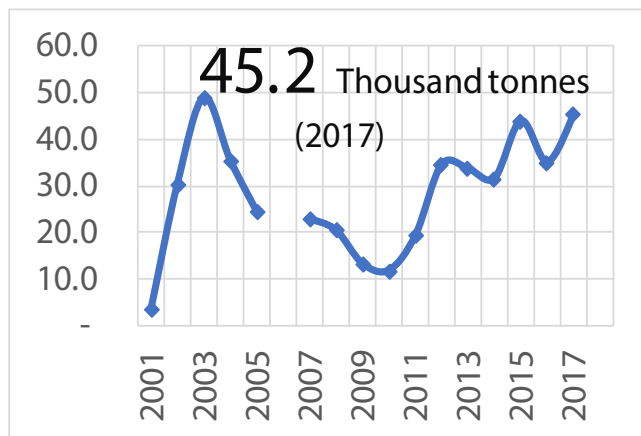
INPUTS	Quantity (Kg/Ha)	Operations per season	Total cost /Ha
Non-GM seeds	55	1	0
Biotech/GM seeds			
NPK+Other	250	1	113.4
Insecticides	3.17	1	27.9
Herbicides	3.75	2	19.9
Fungicides			
Growth regulators			
Defoliants			
Manure			
Others (please specify)			
MANPOWER / LABOUR	Wages per person	Persons per operation	Total cost per hectare
Land preparation /tillage etc.,	1.7	16	27.6
Sowing	2.1	10	20.7
Fertiliser / manure application	1.7	4	6.9
Irrigation		N/A	
Thinning	1.0	10	10.3
Weeding	1.7	16	27.6
Hoeing	1.7	16	27.6
Pesticide application	2.6	6	15.5
Defoliator application			
Picking / harvesting	1.7	20	34.5
Stalk cutting & removal			
Transportation /unloading etc.,	1.7	6	10.3
Ginning cost per 100 Kg			90.00
Others (please specify)	0.0	0	0.00
MACHINERY /ANIMALS etc.	Cost per Operation	Number of Operations	Total cost per hectare
Tractors			
Implements & tools			
Electric / Diesel pumps etc.,			
Electricity / Diesel etc.,			
Harvesting machines			
Hoeing / Tillage machinery etc.,	30000	1	51.7
Bullocks /Buffaloes	15000	1	25.9
Land rent	10000	1	17.2
MARKET VALUE	Yield Kg/per hectare	Market value per 100 Kg	Value per hectare
Seed cotton	646	0.46	295
Ginning % (output)	41	0.00	0
Lint (fibre)	267	1.75	467
Seed	336	0.12	41
COST OF CULTIVATION			420
NET RETURNS (SEED-COTTON)			-125
NET RETURNS (SEED + LINT)			28

TRADE DATA

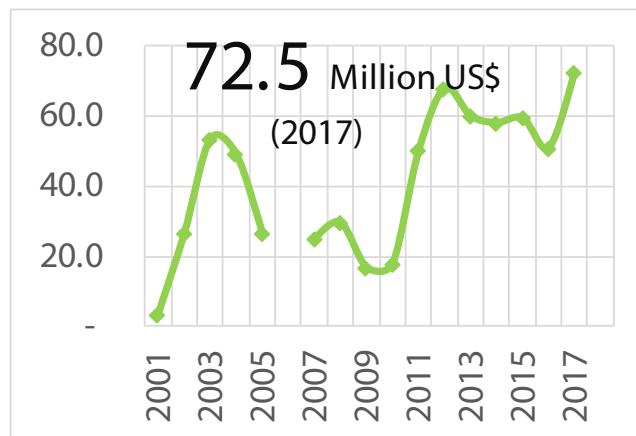


COTTON FIBRE EXPORT DATA

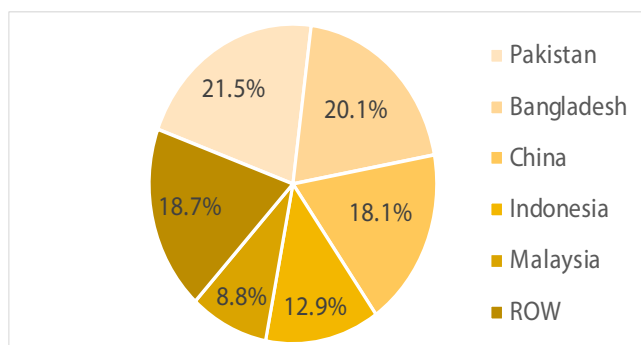
Quantity



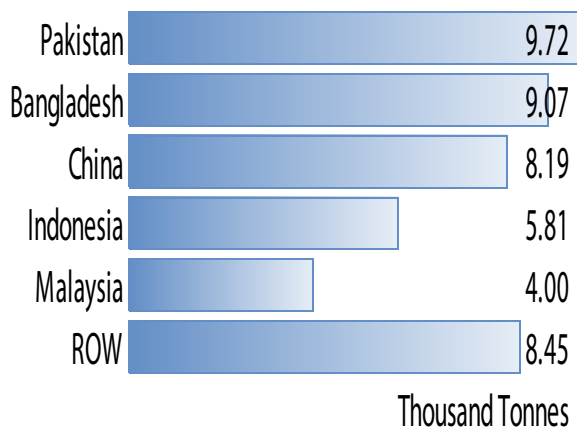
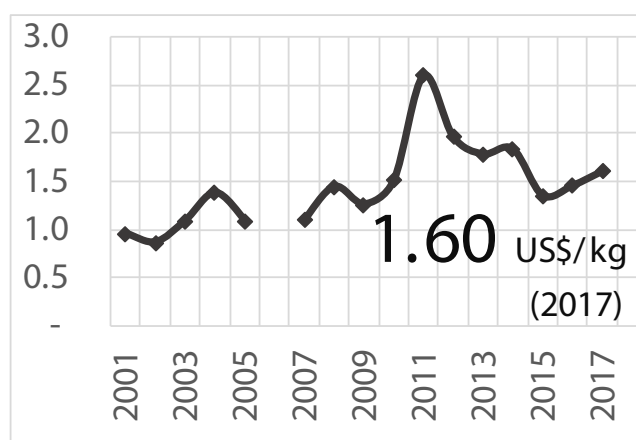
Value



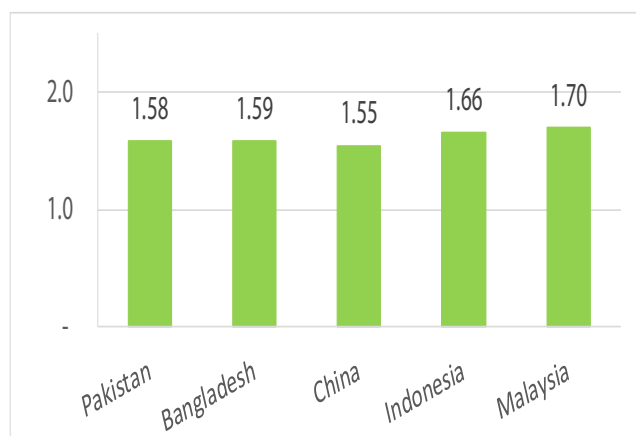
Market Share by Country



Average Price: US\$/Kg

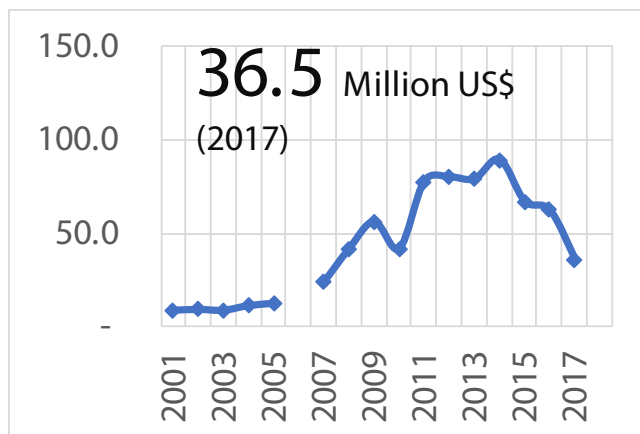


Average Price by Country 2017: US\$/Kg

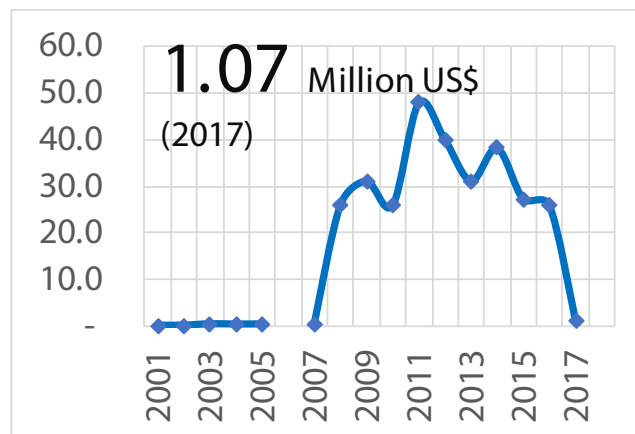


COTTON FABRIC TRADE DATA

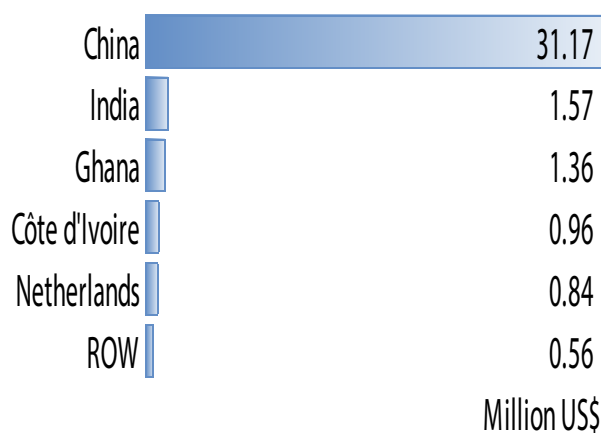
Woven Cotton Fabric Imports



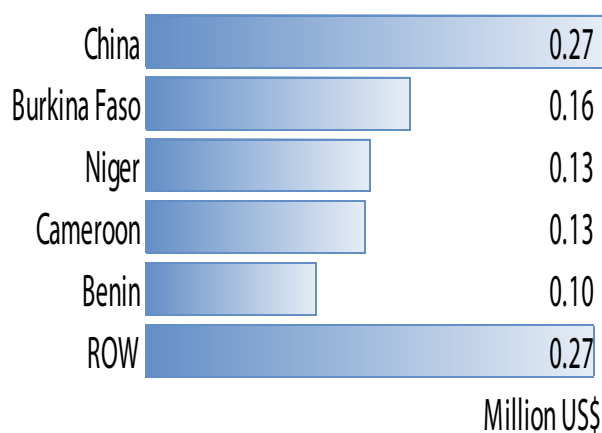
Woven Cotton Fabric Exports



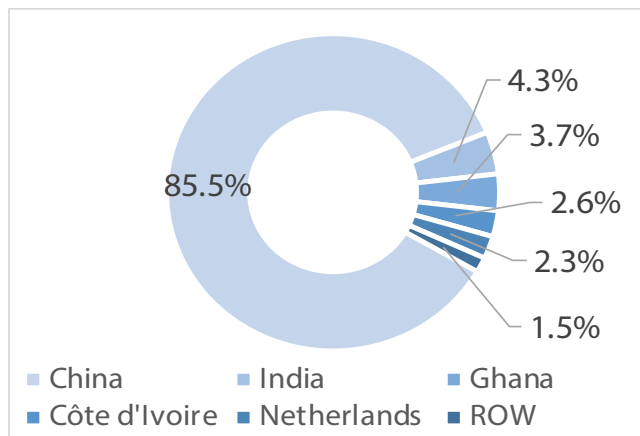
Imports by Country - 2017



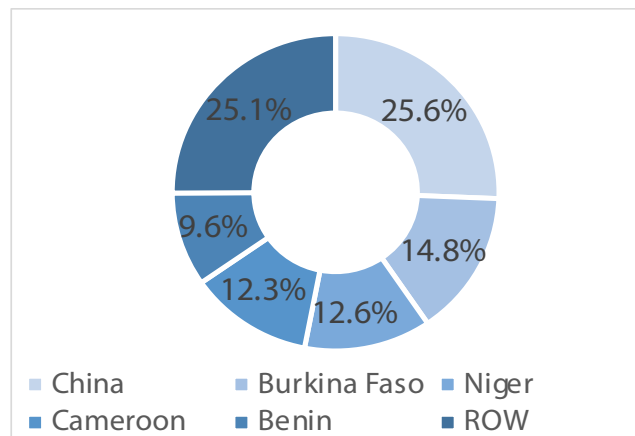
Exports by Country - 2017



Market Share Imports by Country - 2017 Woven Cotton Fabric

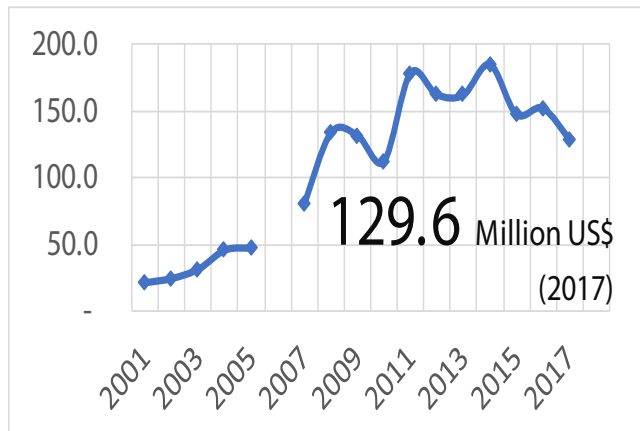


Market Share Exports by Country - 2017 Woven Cotton Fabric

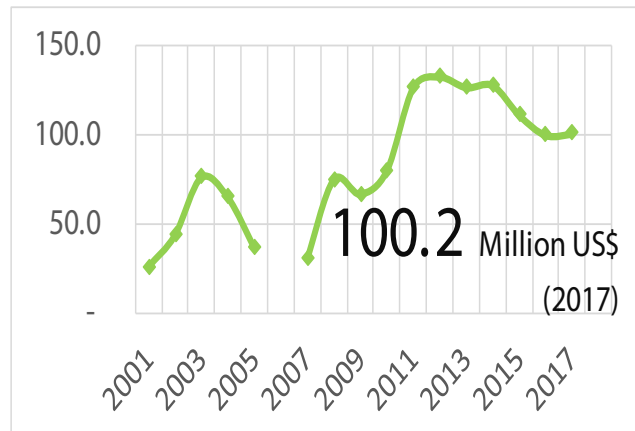


TEXTILE & APPAREL TRADE DATA

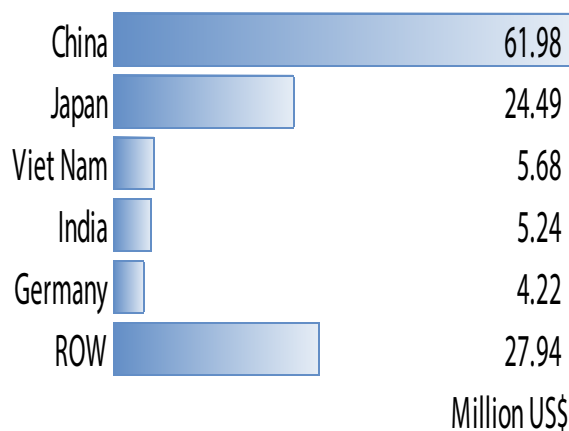
Imports



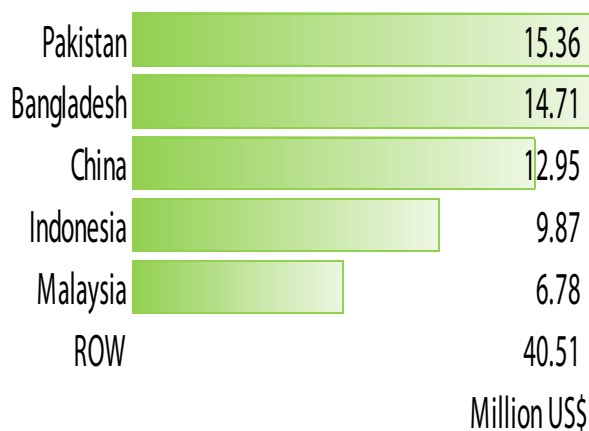
Exports



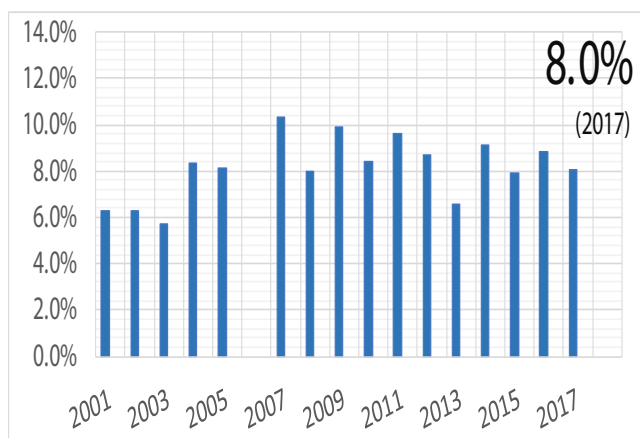
Imports by Country - 2017



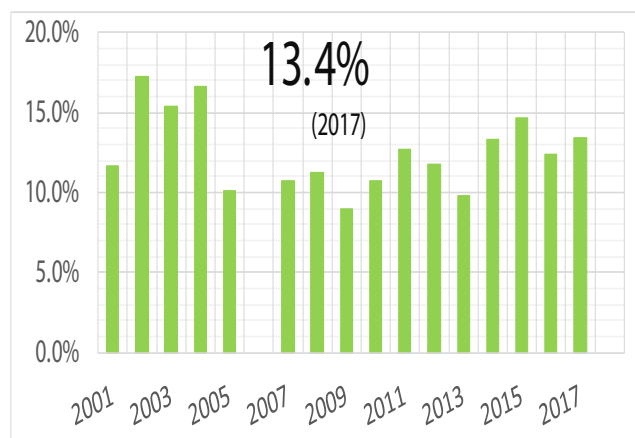
Exports by Country - 2017



T&A Imports Share in Overall Imports

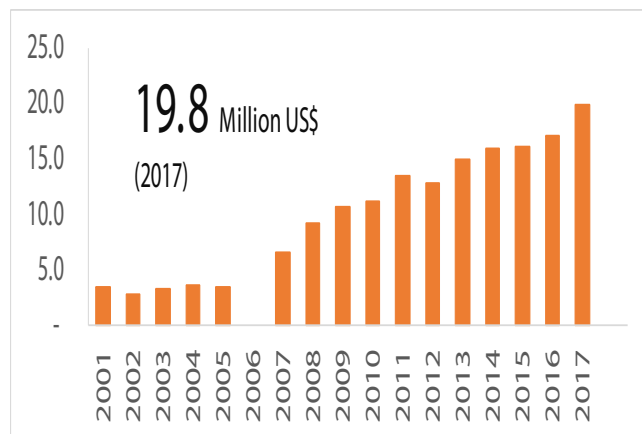


T&A Exports Share in Overall Exports



COMPOSITION OF THE TEXTILE & APPAREL INDUSTRY

Imports - Worn Clothing & Articles



Spinning Machinery

5,000

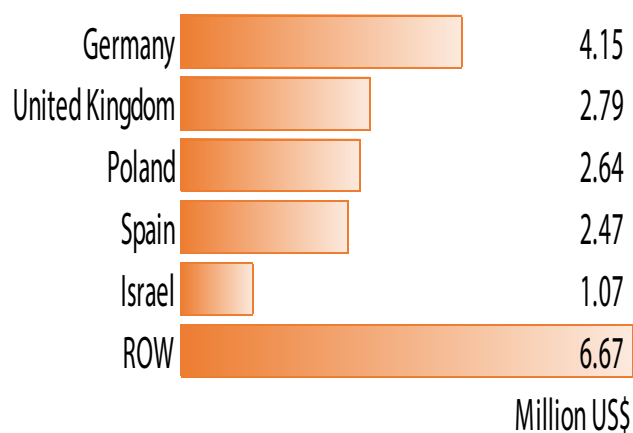
Short-Staple Spindles

Weaving Machinery

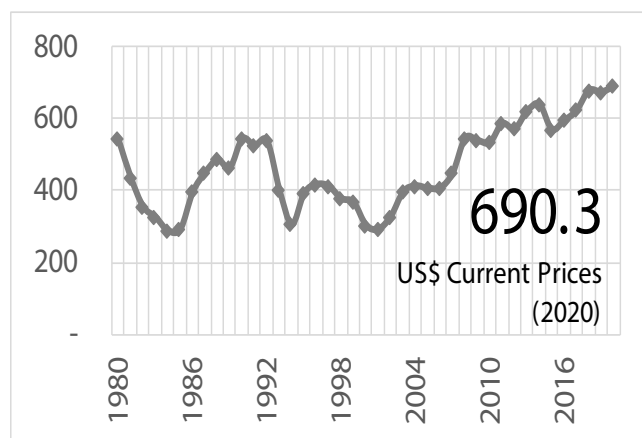
20

Shuttle-less Looms

Imports by Country



GDP per capita





Basic Data 2020



Arable Area

19,723

'000 Hectares

Cotton Area

478

'000 Hectares

Consumption

0

'000 Tonnes

Lint Exports

56

'000 Tonnes

Production

814

'000 Tonnes

Lint Yield

1,703

Kg/Hectare

Farmers

70,201

Male

Farmers

21,000

Female

PRODUCTION 2020

		Area '000 Ha	Yield Kg/Ha	Production '000 Tonnes
1	Gap Region	290	1,553	450
2	Aegean	89	2026	180
3	Cukurova	95	1858	177
	National	478	1,703	814

NUMBER OF FARMERS

	Men	Women
GAP	40,452	12,100
Aegean	16,188	4,883
Cukurova	12,732	3,808
Others	699	209
Total	70,201	21000

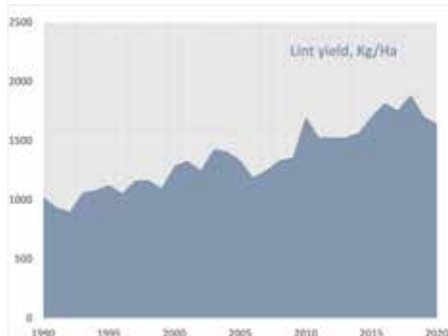


PRODUCTION

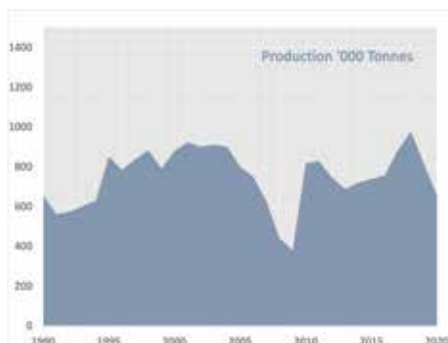
Cotton Area '000 Hectares



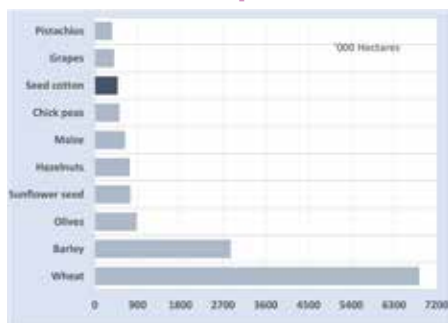
Lint Yield Kg/Ha



Production '000 Tonnes

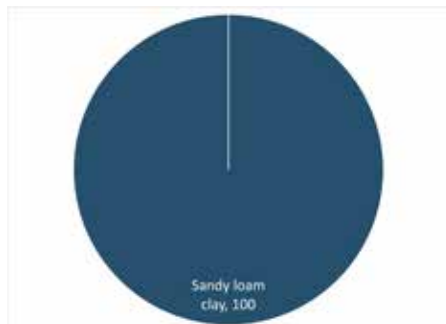


Area of Crops '000 Ha

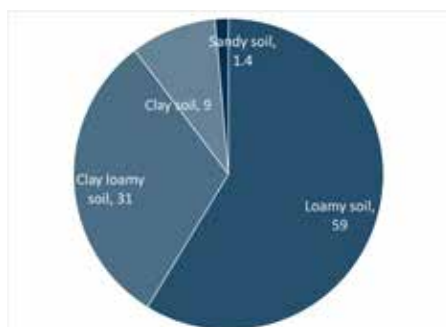


SOILS

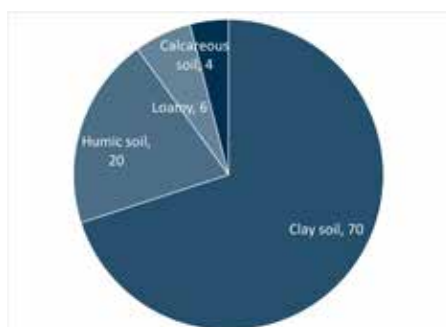
Soil Types -Adana



Soil Types -Aegean

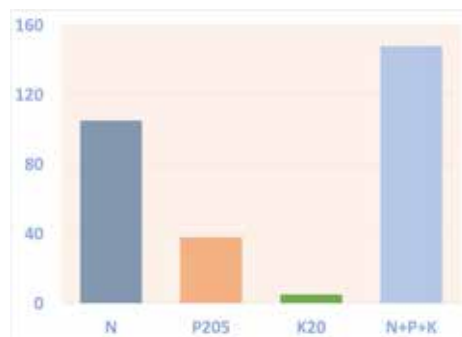


Soil Types -GAP



FERTILISERS

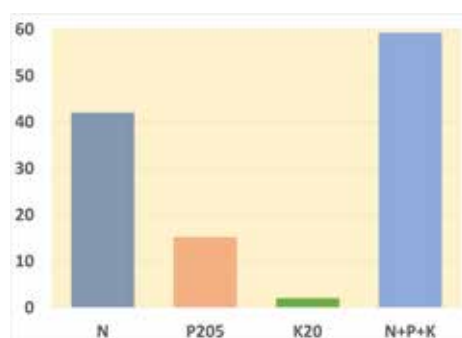
Fertiliser (NPK) use Kg/Hectare



Fertiliser (NPK) use per Kg Lint



Fertiliser (NPK) use '000 Tons



COMPETING CROPS

Aegean	Adana	Gap Region (Sanliurfa)
Wheat	Wheat	Cotton
Clover	Clover	Wheat
Corn	Corn	Lentil
	Vetch	

ROTATION CROPS

Aegean	Adana	Gap Region (Sanliurfa)
Wheat	Wheat	Cotton
Clover	Clover	Wheat
Corn	Corn	Lentil
	Vetch	



WATER

Rainwater & Irrigation water (mm)

Aegean	648	409	5	423
Cukurova	726	459	6	385
Gap	459	289	7	480
National	650	428	6	449
	Total Rainfall	Effective Rainfall	No. of Irrigations	Irrigation Water/Ha

Methods of Irrigation (% Area)

Aegean	35	45	4	16
Cukurova	0	85	1	14
Gap	0	70	22	8
National	6	69	14	11
	Flood	Furrow	Sprinkler	Drip

Rainfed Area (%) & Water Used /Kg Lint

Aegean	0	376	2,088	2,020
Cukurova	0	367	2,073	2,471
Gap	4	1,335	2,967	1,860
National	2	2,078	2,575	2,513
	Rainfed % Area	Irrigation Billion L	Irrigation L/Kg Lint	Rainwater L/Kg Lint

SEEDS & PLANTING

Seeds Used for Sowing (%)

GAP	30	70	30	70
Aegean	2	98	0	100
Cukurova	1	99	0	100
Others	20	80	0	100
National	19	80	18	81
	Fuzzy Seeds	Delinted	Chemical Treated	Untreated

Planting Method (%)

Seed Source (%)

GAP	1	99	78	22
Aegean	0	100	48	52
Cukurova	0	100	80	20
National	1	99	73	27
	Manual	Machine	Local	Imported

TILLAGE, STALKS-USE WEEDING & HARVESTING

Use of Cotton stalks (% Use)

GAP	0	42	54	4
Aegean	0	0	100	0
Cukurova	0	42	58	0
Others	0	100	0	0
National	0	35	63	2
	Burnt in Fields	Used as Firewood	Ploughed Back	Stacked on Bunds

Tillage Methods (% Area)

GAP (South-east Turkey)	0	29	48	100
Aegean	1	42	32	99
Cukurova	0	30	20	100
Others	0	0	100	100
National	0.2	31	39.8	100
	Zero Tillage	Disc Plough	Chisel Plough	Conventional Tillage

Weeding Method (%)

Harvest Method (%)

GAP	7	65	28	100	
Aegean	6	53	41	100	0
Cukurova	37	48	15	100	0
Others	10	90	0	100	0
National	12	60	28	100	0
	Hand	Machine	Herbicide	Hand	Machine

SEEDS & PLANTING

Use of Cotton Seeds (% Use)

GAP	54	14	15	17
Aegean	57	26	16	1
Cukurova	35	28	35	2
Others	80	0	20	0
National	51	19	19	11
	Crushed for Oil	Direct Cattle-Feed	Used for Sowing	wasted

Seed Rate, Spacing & Plant Population/Ha

National	25	70	10	142,857
	Seed Rate Kg/Ha	Between Rows cm	Within Row cm	Population/Ha

VARIETIES AND FIBRE TRAITS

	Release Year	% Area	Ginning %	Length UHML mm	Strength g/tex	Mic
Varieties in Aegean						
Gloria	2010	40	41-43		33-35	3.9-4.2
Lima		15	44-46		32-36	4.3-4.8
May 455		15	44-46		32-35	4.4-4.8
May 498	2015	15	42-43		30-32	4.6-4.8
Lidya	2012	8	40-42		32-38	4.0-4.8
Claudia	2010	7	44-46		32-34	3.9-4.3
Varieties in Cukurova						
Carisma	2013	35	42-44		30-32	4.4-4.9
DP-332	2012	30	44-46		35-39	4.3-4.8
Lima		15	44-46		32-36	4.3-4.8
BA-119	2002	10	41-43		31-33	4.4-4.6
SG-125	1999	5	42-43		32-34	4.3-4.8
Flash	2008	3	40-42		31-35	4.6-4.9
Gloria	2010	2	41-43		33-35	3.9-4.2
Varieties in GAP						
Candia	2008	20	44-46		33-35	4.0-4.3
Fiona		20	44-46		33-35	4.0-4.5
ST 468	2006	20	44-45		34-36	4.2-4.4
Lima		20	44-46		32-36	4.3-4.8
BA-440	2015	10	42-44		31-33	4.6-4.9
DP-332	2011	10	44-46		35-39	4.3-4.8



INSECTS, PATHOGENS & WEEDS

INSECT PESTS / INSECTICIDES
AEGEAN
EARLY-SEASON
<i>Aphis gossypii</i>
<i>Thrips tabaci</i> , <i>Agrotis</i>
<i>Tetranychus urticae</i>
MID-SEASON
<i>Helicoverpa armigera</i>
<i>Spodoptera littoralis</i>
<i>Spodoptera exigua</i>
<i>Bemisia tabaci</i>
<i>Tetranychus urticae</i>
INSECTICIDES
Acetamiprid, Bifenthrin, Buprofezin,
Chlorantraniliprole, Cypermethrin, Dimethoate
Emamectin Benzoate, Flonicamid, Indoxacarb
Lambda-cyhalothrin, Spinosad, Spirotetramat

DISEASES / PATHOGENS
AEGEAN
<i>Rhizoctonia solani</i>
<i>Fusarium spp.</i> , <i>Pythium spp.</i>
<i>Verticillium dahliae</i>
CHEMICAL CONTROL
Carboxim+Thiram

WEEDS / HERBICIDES
AEGEAN
NARROW-LEAF WEEDS
<i>Cyperus rotundus</i> , <i>Setaria verticillata</i>
<i>Sorghum halepense</i> , <i>Cynodon dactylon</i>
<i>Digitaria sanguinalis</i>
BROAD-LEAF WEEDS
<i>Solanum nigrum</i> , <i>Portulaca oleracea</i>
<i>Convolvulus arvensis</i> , <i>Amaranthus albus</i>
<i>Datura stramonium</i>
HERBICIDES
Pendimethalin
Trifloxysulfuran sodium 75%
Stomp 330 EC, Envoke 75G

INSECT PESTS / INSECTICIDES
ADANA
EARLY-SEASON
<i>Thrips tabaci</i>
<i>Aphis gossypii</i>
<i>Empoasca decipiens</i>
MID-SEASON
<i>Tetranychus cinnabarinus</i>
<i>Helicoverpa armigera</i>
<i>Spodoptera exigua</i>
<i>Spodoptera littoralis</i>
<i>Bemisia tabaci</i>
INSECTICIDES
Acetamiprid, Bifenthrin, Buprofezin,
Chlorantraniliprole, Cypermethrin, Dimethoate
Emamectin Benzoate, Flonicamid, Indoxacarb
Lambda-cyhalothrin, Spinosad, Spirotetramat

DISEASES / PATHOGENS
ADANA
<i>Seedling rot</i>
<i>Verticillium wilt</i>
CHEMICAL CONTROL
Carboxim+Thiram, Chloroneb
Azoxystrobn+metalaxyl-M+Fludioxanil

WEEDS / HERBICIDES
ADANA
NARROW-LEAF WEEDS
<i>Avena fatua</i> , <i>Cyperus rotundus</i>
<i>Sorghum halepense</i> , <i>Echinochloa spp.</i>
<i>Cynodon dactylon</i>
BROAD-LEAF WEEDS
<i>Xanthium strumarium</i> , <i>Amaranthus spp.</i>
<i>Solanum nigrum</i> , <i>Portulaca oleracea</i>
<i>Convolvulus arvensis</i>
HERBICIDES
Benfluralin 6 WG
Pendimethalin 330 g/l
Prometryne 550 g/l

INSECT PESTS / INSECTICIDES
GAP SANLIURFA
EARLY-SEASON
<i>Thrips tabaci</i> , <i>Aphis gossypii</i>
<i>Spodoptera exigua</i>
<i>Tetranychus spp.</i> , <i>Agrotis</i>
MID-SEASON
<i>Helicoverpa armigera</i>
<i>Empoasca decipiens</i>
<i>Bemisia tabaci</i>
<i>Lygus spp.</i>
<i>Earias insulana</i>
INSECTICIDES
Acetamiprid, Bifenthrin, Buprofezin,
Chlorantraniliprole, Cypermethrin, Dimethoate
Emamectin Benzoate, Flonicamid, Indoxacarb
Lambda-cyhalothrin, Spinosad, Spirotetramat

DISEASES / PATHOGENS
GAP SANLIURFA
<i>Damping off</i>
<i>Verticillium wilt</i>
<i>Xanthomonas campestris</i>
CHEMICAL CONTROL
Carboxim+Thiram
Mancozeb 60% WP

WEEDS / HERBICIDES
GAP SANLIURFA
NARROW-LEAF WEEDS
<i>Sorghum halepense</i> , <i>Cynodon dactylon</i>
<i>Cyperus rotundus</i> , <i>Echinochloa colonum</i>
<i>Setaria verticillata</i>
BROAD-LEAF WEEDS
<i>Xanthium strumarium</i> , <i>Convolvulus arvensis</i>
<i>Physalis lanceifolia</i> , <i>Amaranthus albus</i>
<i>Chenopodium album</i>
HERBICIDES
Stomp Extra
Bonaflan
Targa Super

STRUCTURE OF COTTON RESEARCH

The Ministry has many research institutes. The Cotton Research Station, Nazilli, Aydin is the primary mono crop multidisciplinary research institute. The Ministry of Food, Agriculture and Livestock-MFAL is the main state organisation involved in agriculture and rural development in Turkey. The Ministry coordinates and implements the agricultural R&D activities through the General Directorate of Agricultural Research and Policy-GDARP. The General Directorate of Agricultural Research and Policy is the headquarter of the national agricultural research system and responsible for determining national research strategy, setting up research priorities and allocating available financial resources to the programs and assisting the government in developing agricultural policy. Other main contributors in cotton research are universities, the Scientific and Technological Research Council-TUBITAK, Scientific Research Project Coordination Department of Universities and the private sector companies. General Directorate of Exports, Ministry of Economy, Ankara supports cotton research.

ment of Universities and the private sector companies. General Directorate of Exports, Ministry of Economy, Ankara supports cotton research.



WEATHER 2019-2020

Heat Units (DD₆₀) -Aegean



Rainfall (mm) -Aegean



Heat Units (DD₆₀) -Cukurova



Rainfall (mm) -Cukurova



Heat Units (DD₆₀) -GAP



Rainfall (mm) -GAP



COST OF CULTIVATION US\$/Hectare

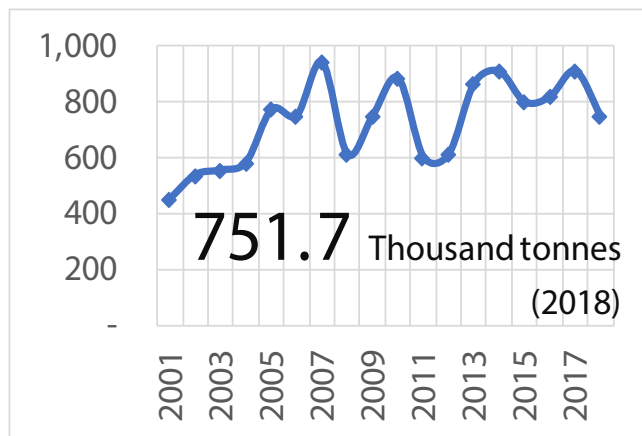
INPUTS	Quantity (Kg/Ha)	Operations per season	Total cost /Ha
Non-GM seeds	20	1	18.9
Biotech/GM seeds			0.0
NPK+Other	650	3	236.4
Insecticides		4	177.3
Herbicides		1	59.1
Fungicides		1	11.8
Growth regulators		2	35.5
Defoliants		1	11.8
Manure	0	0	0.0
Others (please specify)	0	0	0.0
MANPOWER / LABOUR	Wages per person	Persons per operation	Total cost per hectare
Land preparation /tillage etc.,	17.7	1	17.7
Sowing	29.6	1	29.6
Fertiliser / manure application	11.8	1	11.8
Irrigation	11.8	1	11.8
Thinning	11.8	10	118.2
Weeding	5.9	5	29.6
Hoeing	17.7	10	177.3
Pesticide application	17.7	1	17.7
Defoliator application	17.7	1	17.7
Picking / harvesting	11.8	3	35.5
Stalk cutting & removal	8.9	1	8.9
Transportation /unloading etc.,	11.8	1	11.8
Ginning cost per 100 Kg	17.7	1	140.0
Others (please specify)	0	0	0.0
MACHINERY /ANIMALS etc.	Cost per Operation	Number of Operations	Total cost per hectare
Tractors	11.8	15	177.3
Implements & tools	14.8	10	147.8
Electric / Diesel pumps etc.,	23.6	5	118.2
Electricity / Diesel etc.,	29.6	5	147.8
Harvesting machines	35.5	1	35.5
Hoeing / Tillage machinery etc.,	17.7	2	35.5
Bullocks /Buffaloes	11.8	1	11.8
Land rent	53.2	1	53.2
MARKET VALUE	Yield Kg/per hectare	Market value per 100 Kg	Value per hectare
Seed cotton	4492	0.6	2785.0
Ginning % (output)	39		
Lint (fibre)	1742	1.7	2926.6
Seed	2750	0.3	770.0
COST OF CULTIVATION			1677
NET RETURNS (SEED-COTTON)			1108
NET RETURNS (SEED + LINT)			1880

TRADE DATA

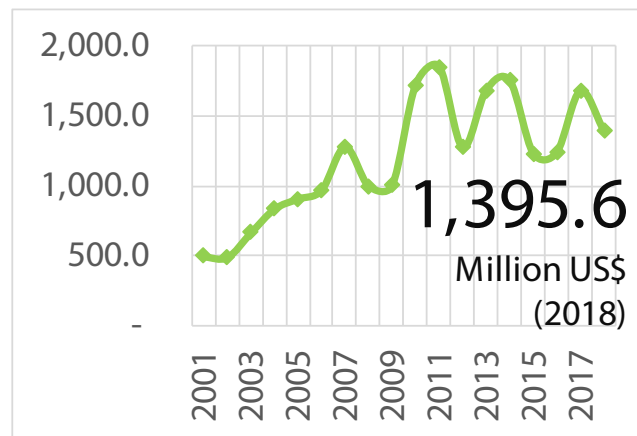


COTTON FIBRE IMPORT DATA

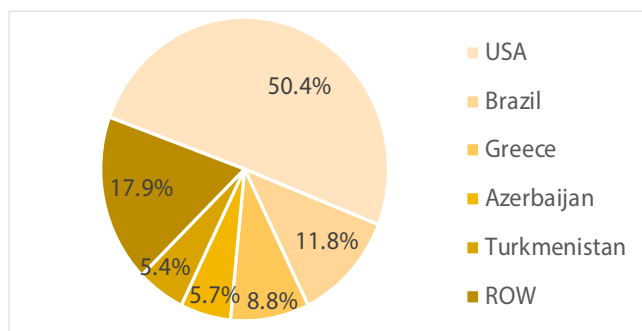
Quantity



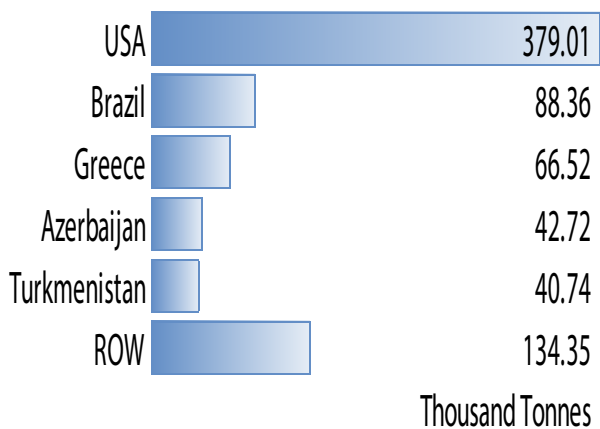
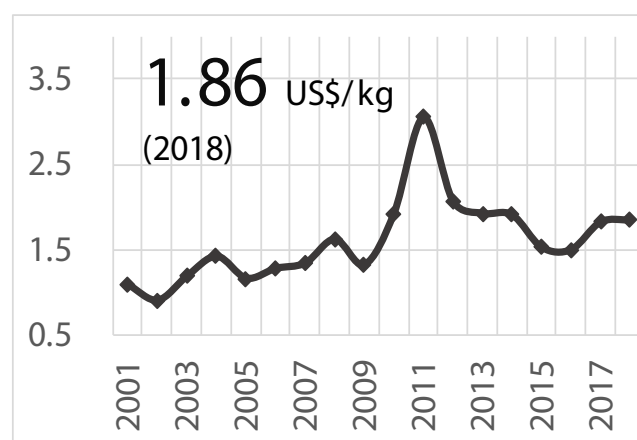
Value



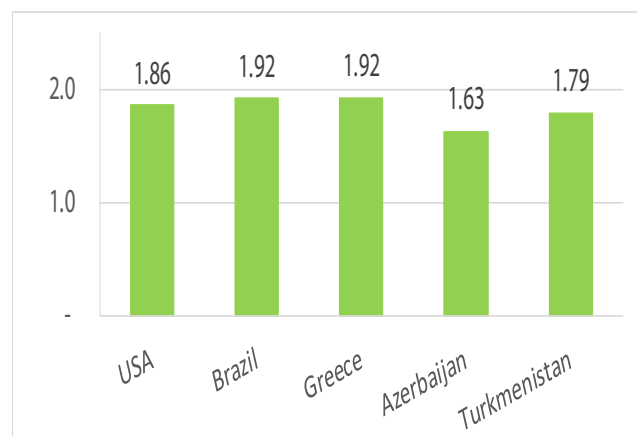
Market Share by Country



Average Price: US\$/Kg

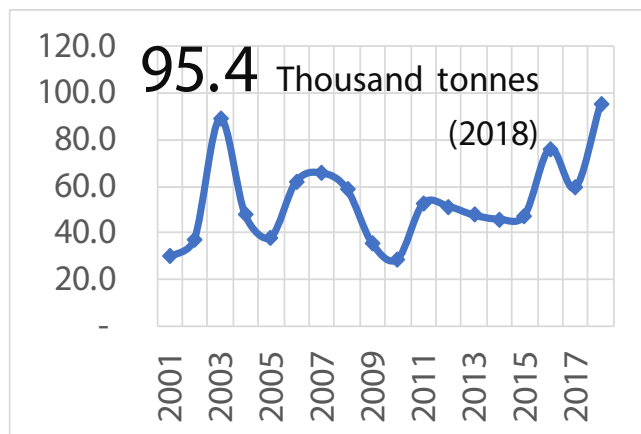


Average Price by Country 2018: US\$/Kg

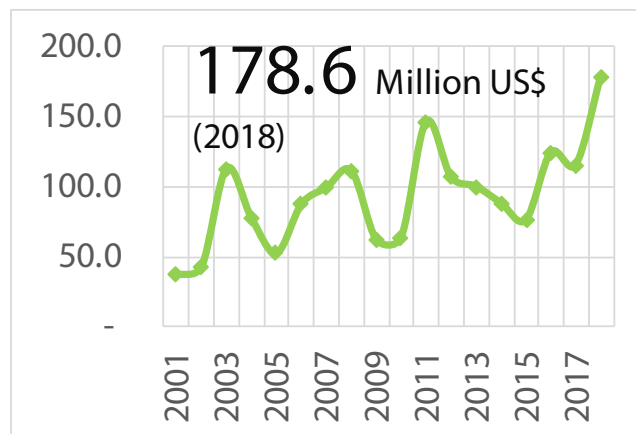


COTTON FIBRE EXPORT DATA

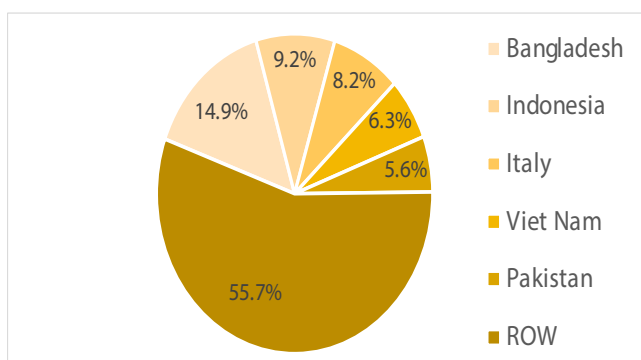
Quantity



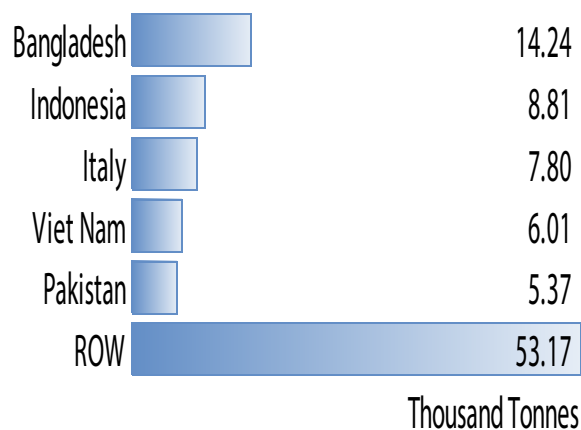
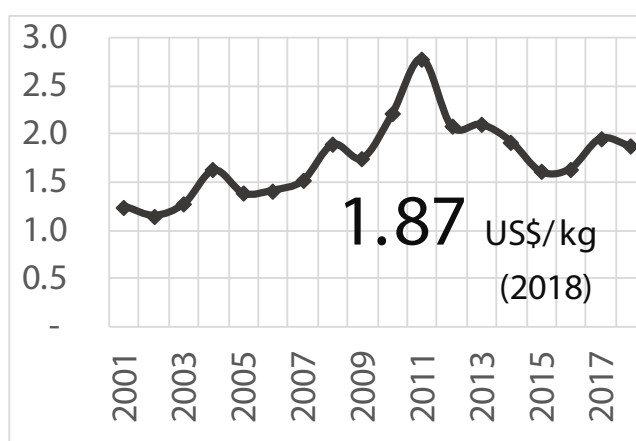
Value



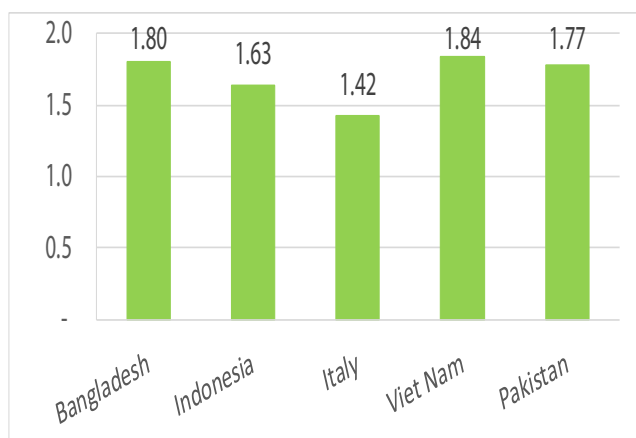
Market Share by Country



Average Price: US\$/Kg

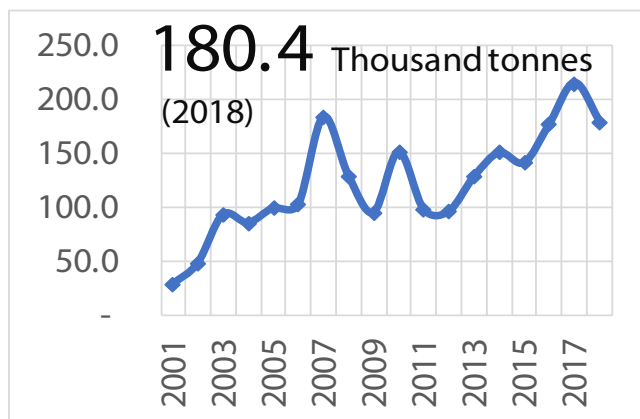


Average Price by Country 2018: US\$/Kg

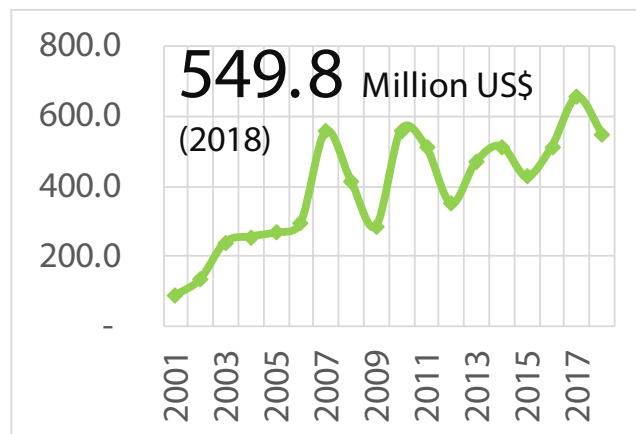


COTTON YARN IMPORT DATA

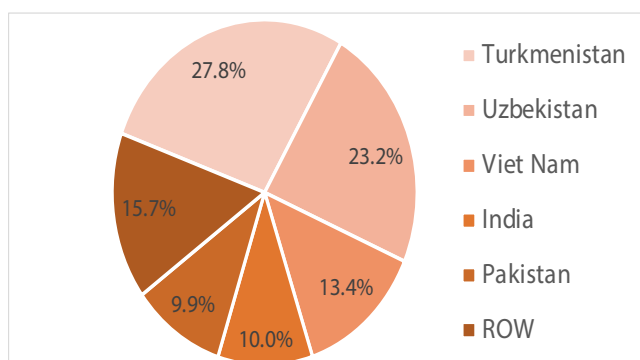
Quantity



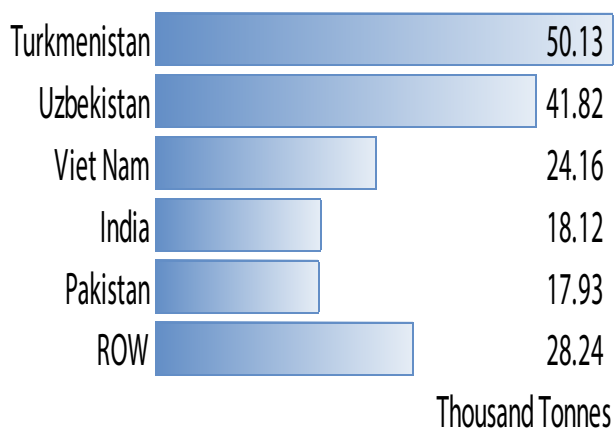
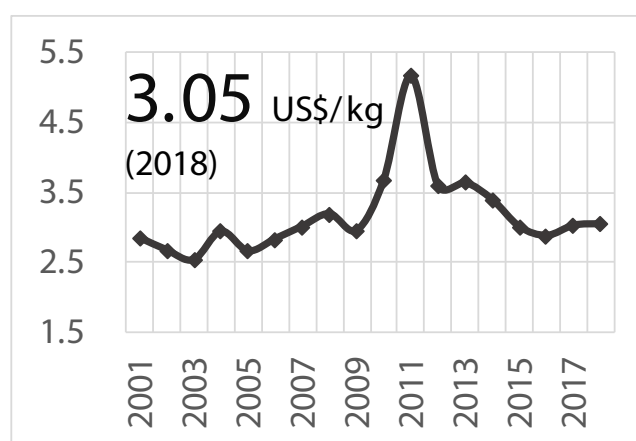
Value



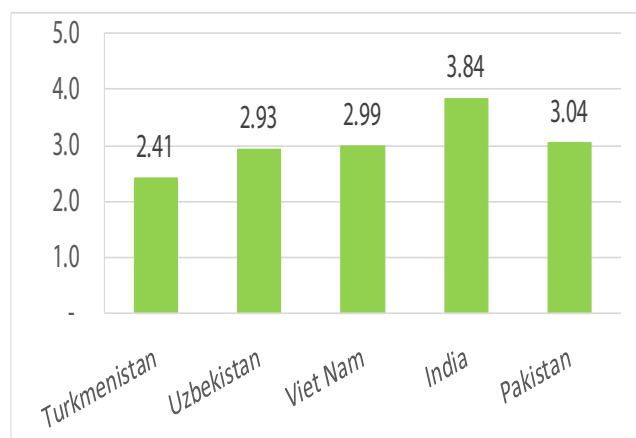
Market Share by Country



Average Price: US\$/Kg

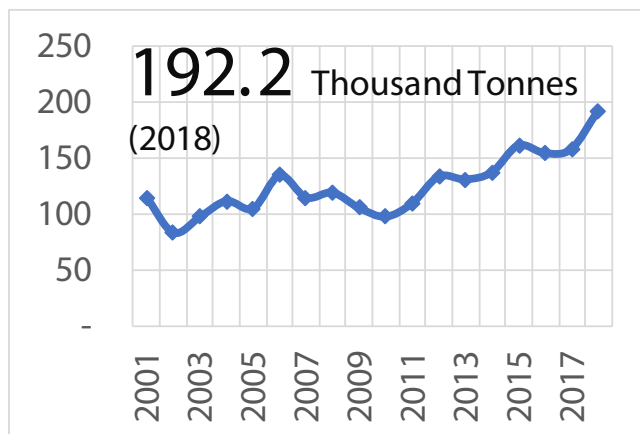


Average Price by Country 2018: US\$/Kg

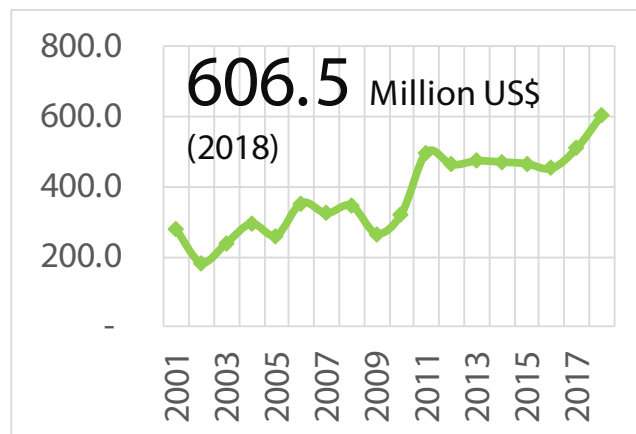


COTTON YARN EXPORT DATA

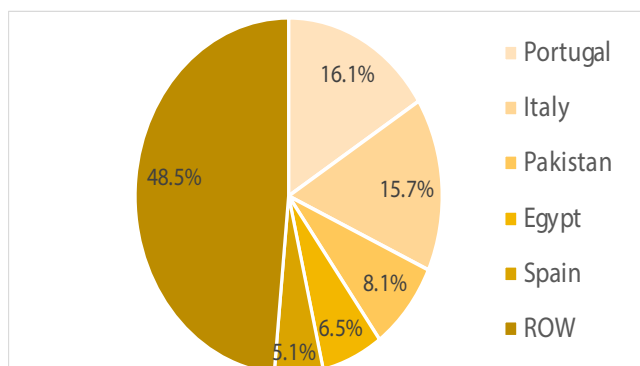
Quantity



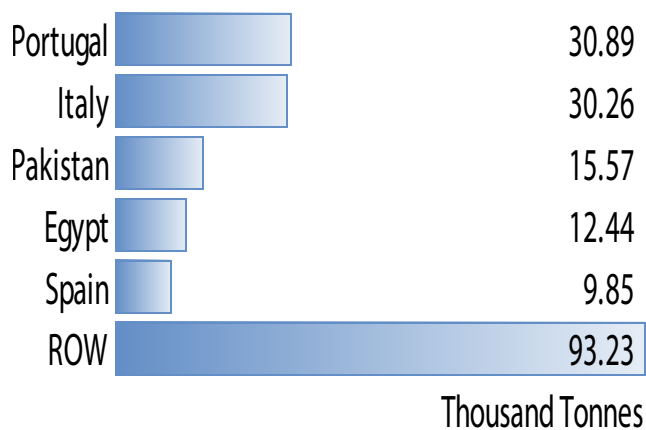
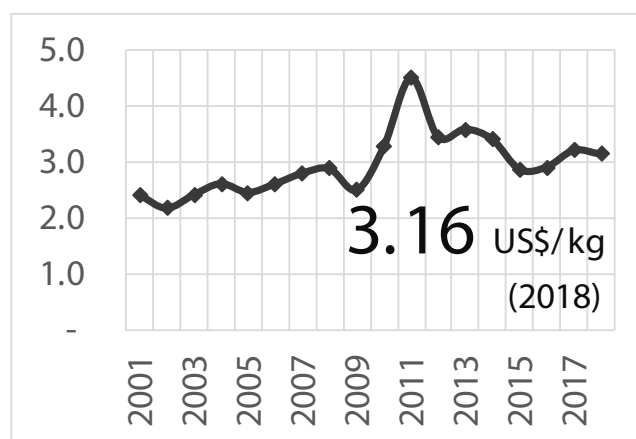
Value



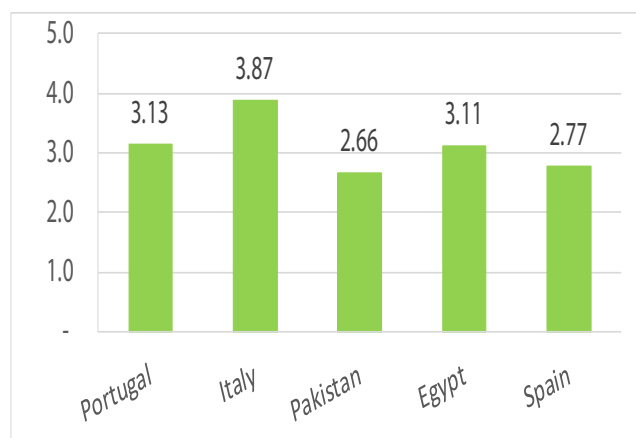
Market Share by Country



Average Price: US\$/Kg

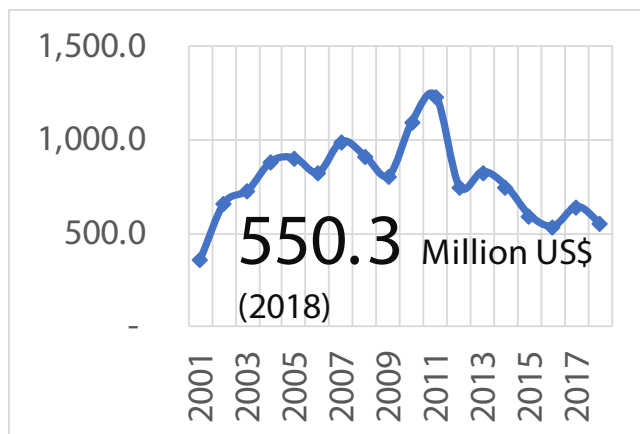


Average Price by Country 2018: US\$/Kg

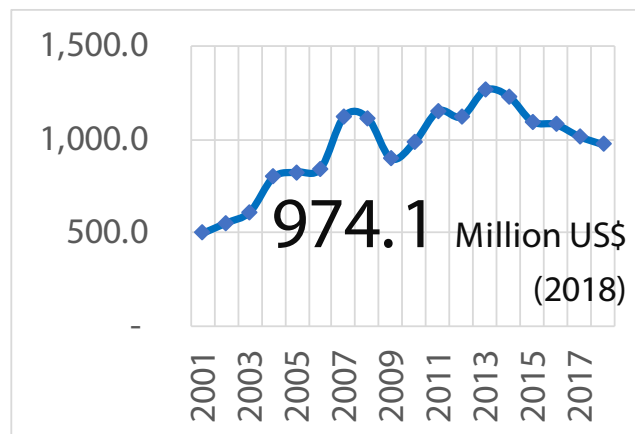


COTTON FABRIC TRADE DATA

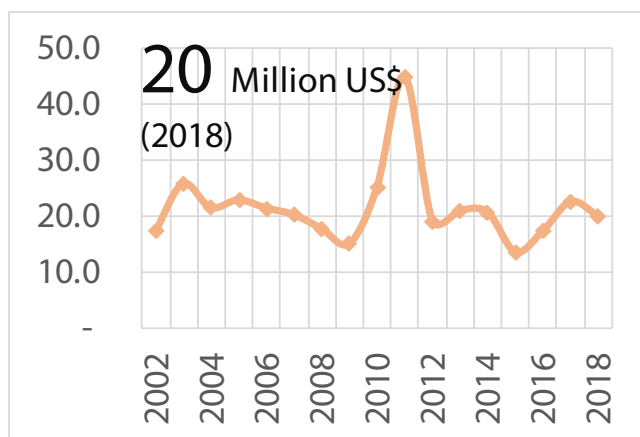
Woven Cotton Fabric Imports



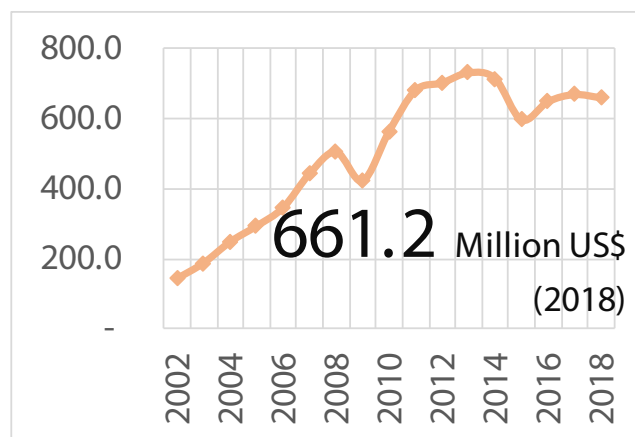
Woven Cotton Fabric Exports



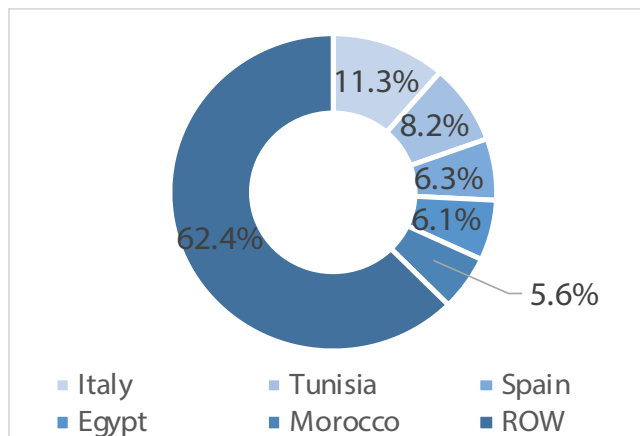
Knitted Cotton Fabric Imports



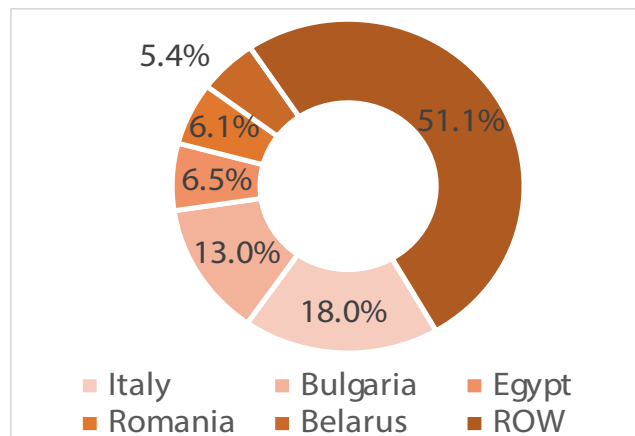
Knitted Cotton Fabric Exports



Market Share Exports by Country - 2018 Woven Cotton Fabric

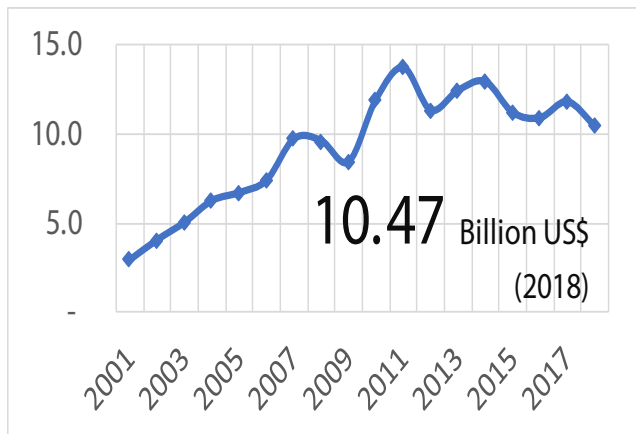


Market Share Exports by Country - 2018 Knitted Cotton Fabric

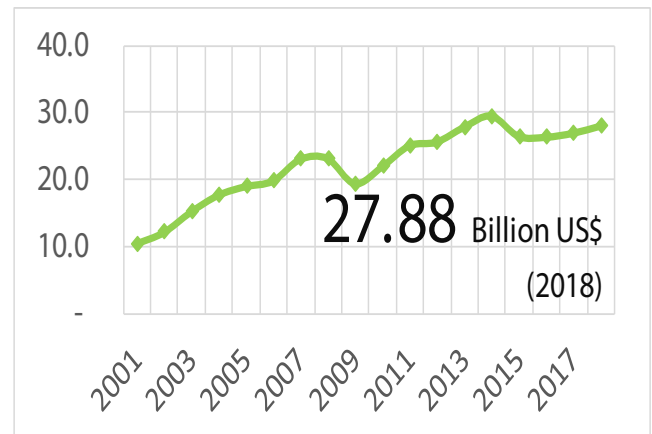


TEXTILE & APPAREL TRADE DATA

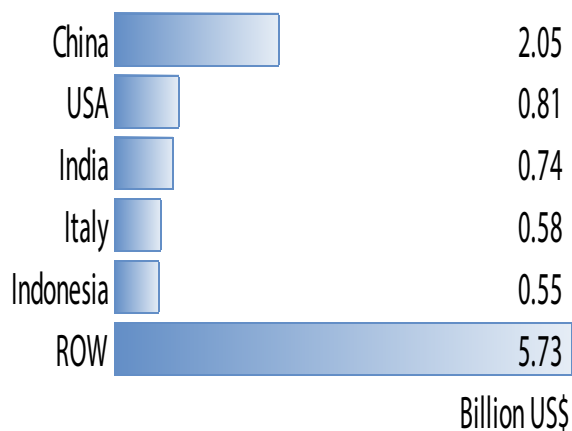
Imports



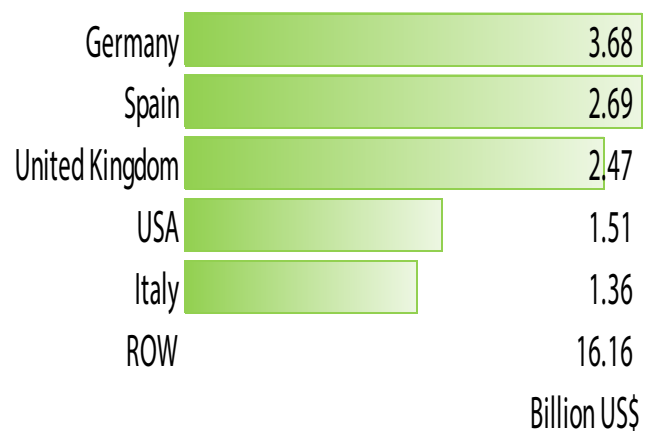
Exports



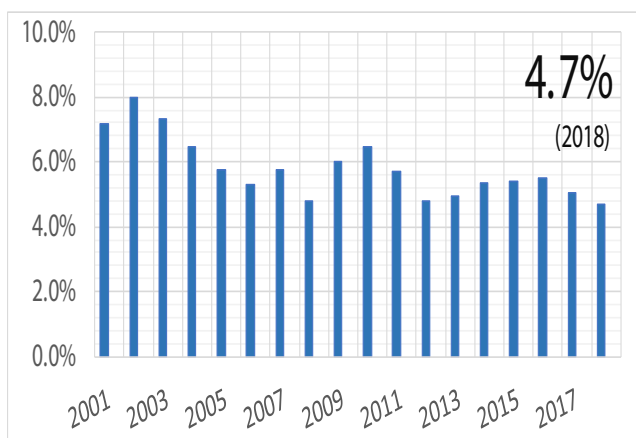
Imports by Country - 2018



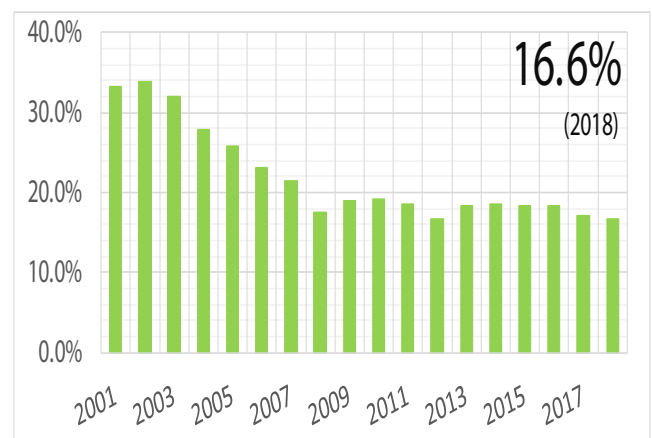
Exports by Country - 2018



T&A Imports Share in Overall Imports

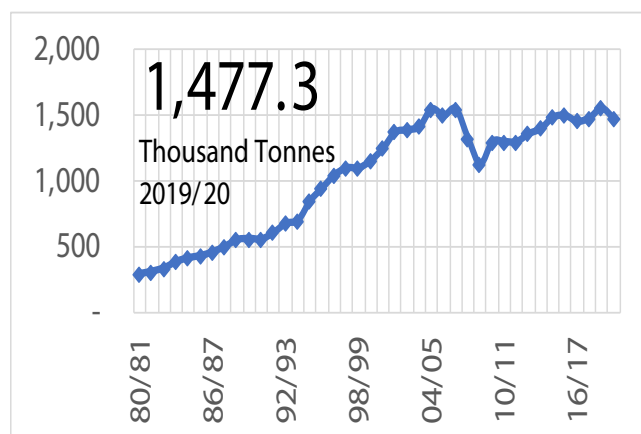


T&A Exports Share in Overall Exports

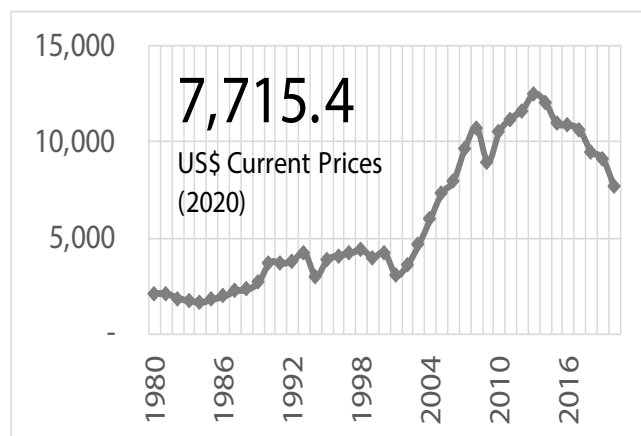


COMPOSITION OF THE TEXTILE & APPAREL INDUSTRY

Cotton Mill Use



GDP per capita



No. Companies & Factories

Preparation & Spinning	1,346
Weaving	2,819
Textile Finishing	1,468
Knitted & Crochet Fabrics	918

Employment

1,670,000

Textile & Apparel Sector

Spinning Machinery

31,500 **800,000**

Air-Jet Spindles

Open-End

7,800,000

Short-Staple Spindles

Weaving Machinery

20,000 **49,000**

Shuttle Looms

Shuttle-less Looms

BCI Cotton Produced in 2018/19

53,000 tonnes

Organic Cotton Produced in 2018/19

22,839 tonnes



TURKMENISTAN

Data on the Cotton Sector



Basic Data 2020



Arable Area

1,940

'000 Hectares

Cotton Area

545

'000 Hectares

Production

201

'000 Tonnes

Lint Yield

369

Kg/Hectare

PRODUCTION 2020

		Area '000 Ha	Yield Kg/Ha	Production '000 Tonnes
1	Mary Velayats	167	357	60
2	Lebap	152	378	58
3	Dashoguz	120	367	44
4	Ahal	106	375	40
National		545	369	201

Consumption

1,529

'000 Tonnes

Lint Exports

88

'000 Tonnes

Farmers

120,662

Male

Farmers

0

Female



ICAC COTTON DATA BOOK 2021

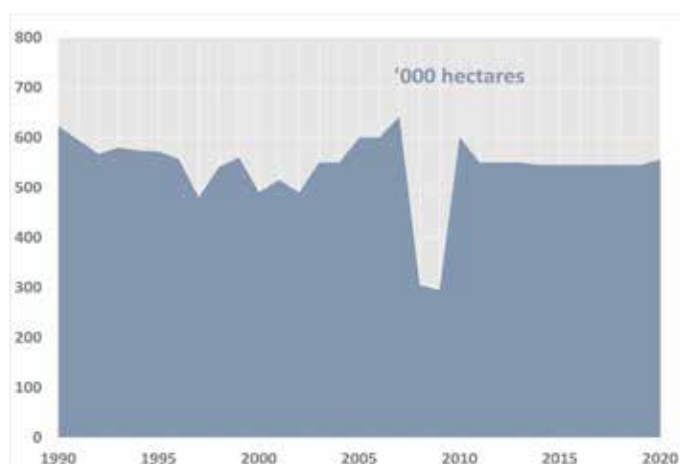
Tillage Methods % Area

	Zero Tillage	Disc Plough	Chisel Plough	Conventional Tillage
National	0	100	0	100

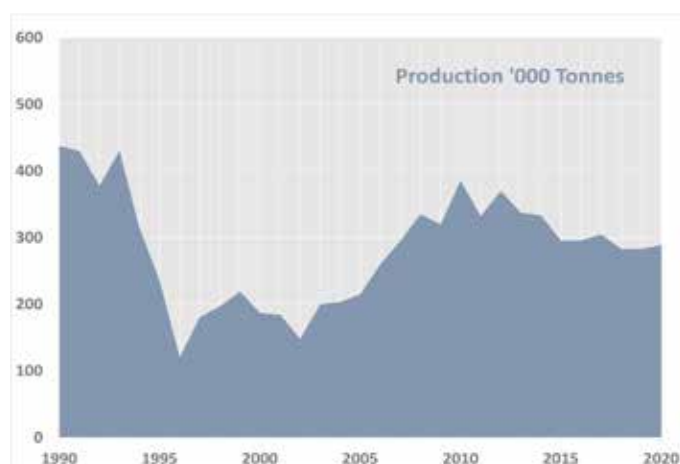
VARIETIES AND FIBRE TRAITS

	Release Year	% Area	Ginning %	Length UHML mm	Strength g/tex	Mic
Yoloten-7		44		27.0	90.0 PSI	4.3
S-2606		12		27.0	90.0 PSI	4.3
S-4727		11		27.0	90.0 PSI	4.3
133		10		27.0	90.0 PSI	4.3
Serdar		7		27.0	90.0 PSI	4.3
Dashoguz-120		6		27.0	90.0 PSI	4.3
Yoloten-14		3		32.5	110.0 PSI	3.3-4.0
9871		2				3.3-4.0

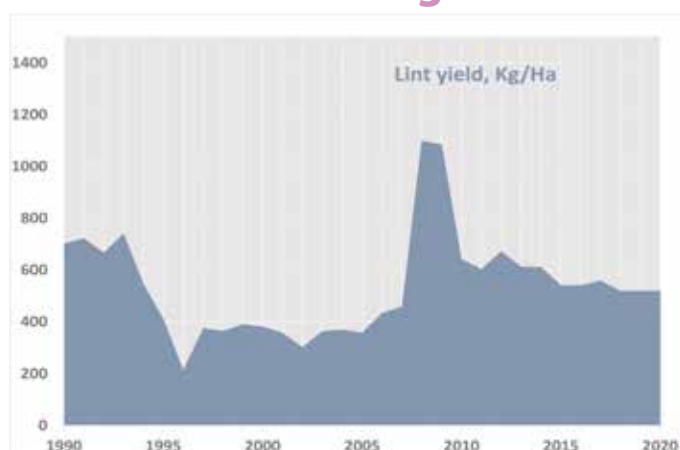
Cotton Area '000 Hectares



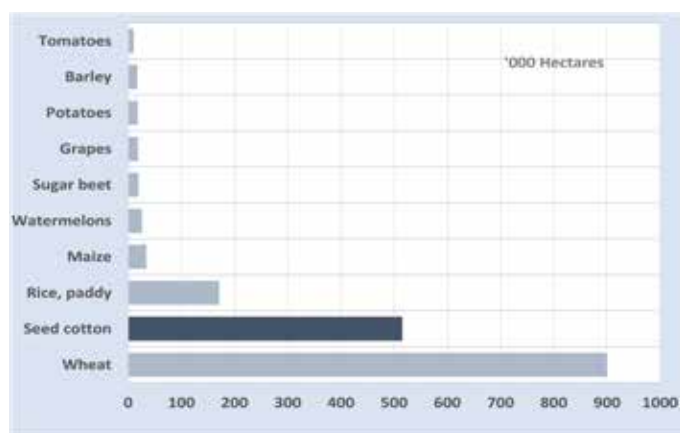
Production '000 Tonnes



Lint Yield Kg/Ha



Area of Crops '000 Ha



WATER

Rainwater & Irrigation water (mm)			
240	149	8	560
Total Rainfall	Effective Rainfall	No. of Irrigations	Irrigation Water/Ha

Rainfed Area (%) & Water Used /Kg Lint			
10	2,747	13,696	4,056
Rainfed % Area	Irrigation Billion L	Irrigation L/Kg Lint	Rainwater L/Kg Lint

Methods of Irrigation (% Area)			
0	100	0	0
Flood	Furrow	Sprinkler	Drip

STRUCTURE OF COTTON RESEARCH

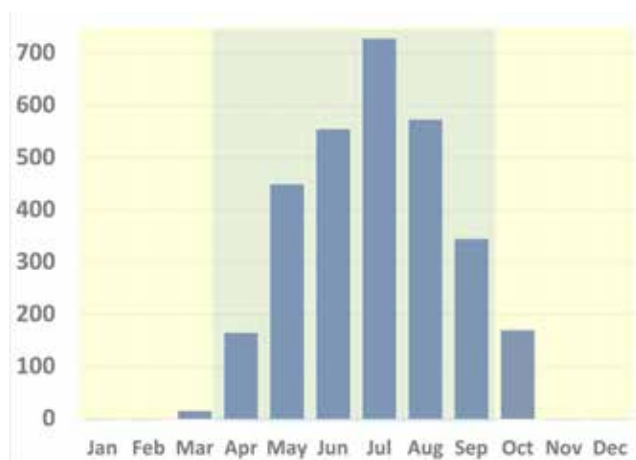
The Turkmen Agricultural University at Asgabat, (Turkmen: S.A.Nyýazow adyndaky Türkmen oba hojalyk Uniwersiteti) was established in 1930 as Mikhail Kalinin Agricultural Institute until 1998, after which it was upgraded to a University and named after Turmenistan's first President, Mr. Niyazov. It is the largest higher

education institution in agriculture in Turkmenistan. This university only provides studies in the fields of agriculture. It houses the main centre of research on cotton. The university consists of 16 departments, including the Department of Ruhnama and the Department of Computer Technology near the rector of the university. The

main departments are: agricultural machinery, irrigation and hydraulic engineering, cotton, graining, live-stock and processing of agricultural products. The Turkmen State Agricultural Institute in Daşoguz also conducts research on cotton.

WEATHER 2019-2020

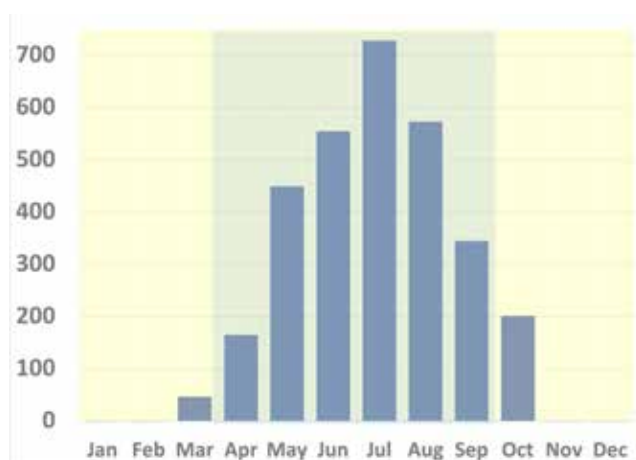
Heat Units (DD₆₀) -Lebap



Rainfall (mm) -Lebap



Heat Units (DD₆₀) -Mary-Velayats



Rainfall (mm) -Mary-Velayats

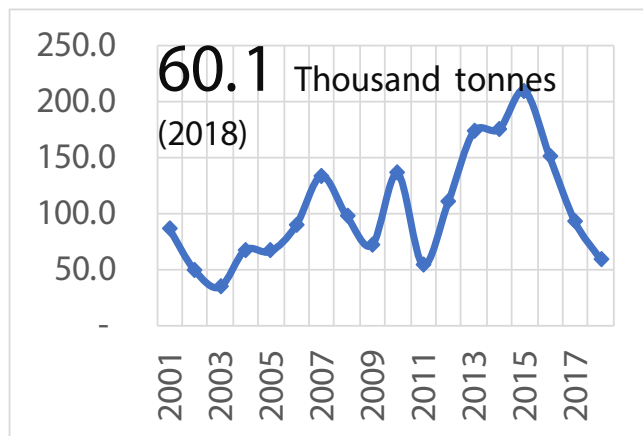


TRADE DATA

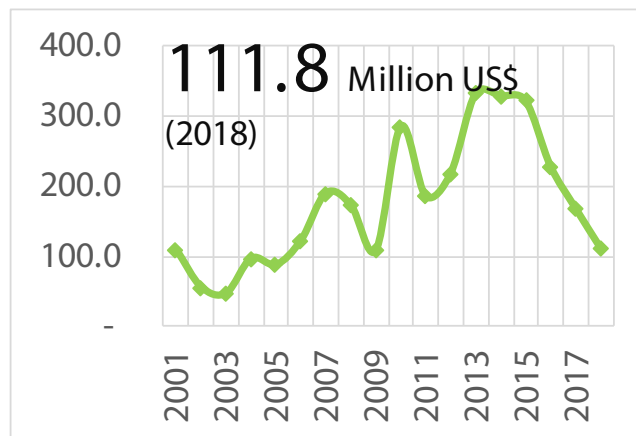


COTTON FIBRE EXPORT DATA

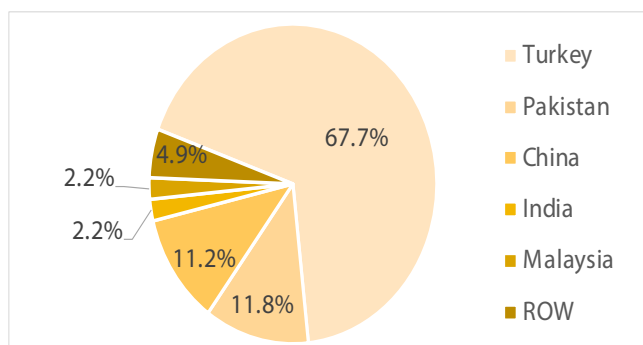
Quantity



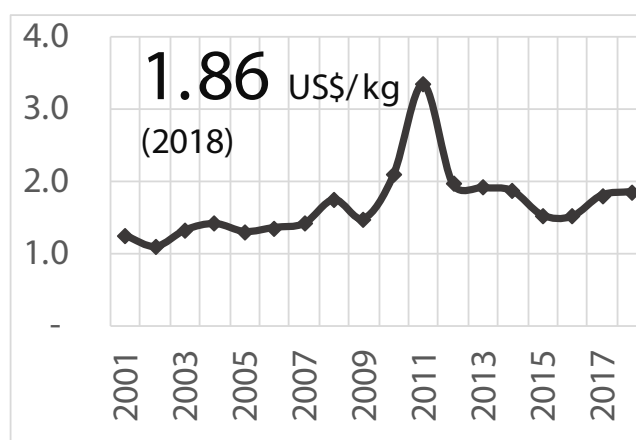
Value



Market Share by Country



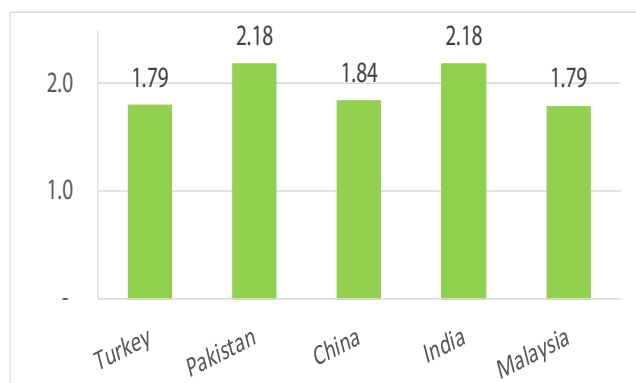
Average Price: US\$/Kg



Turkey	40.74
Pakistan	7.08
China	6.75
India	1.31
Malaysia	1.30
ROW	2.97

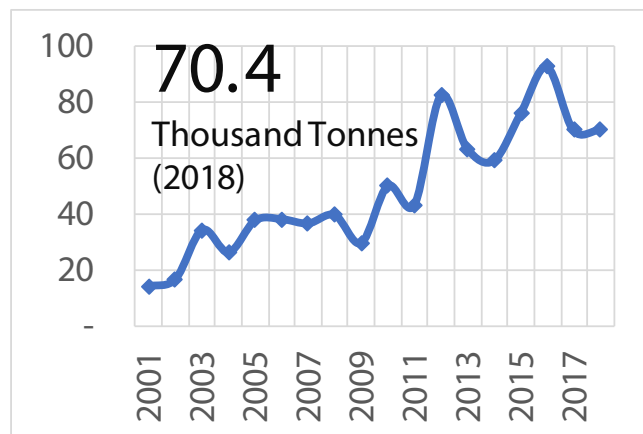
Thousand Tonnes

Average Price by Country 2018: US\$/Kg

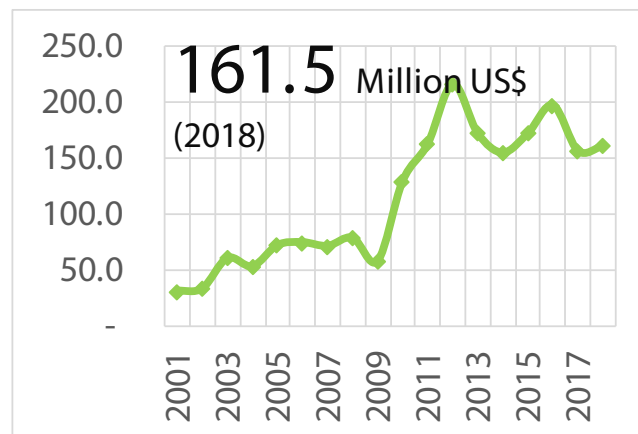


COTTON YARN EXPORT DATA

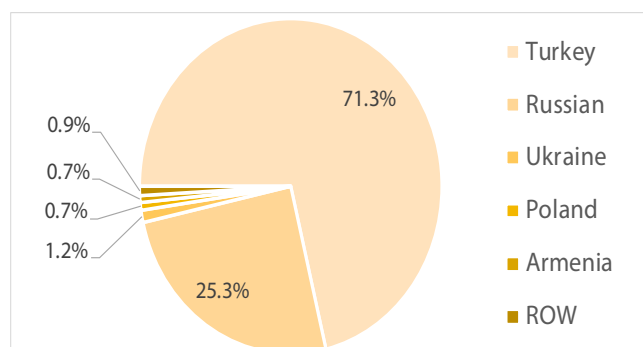
Quantity



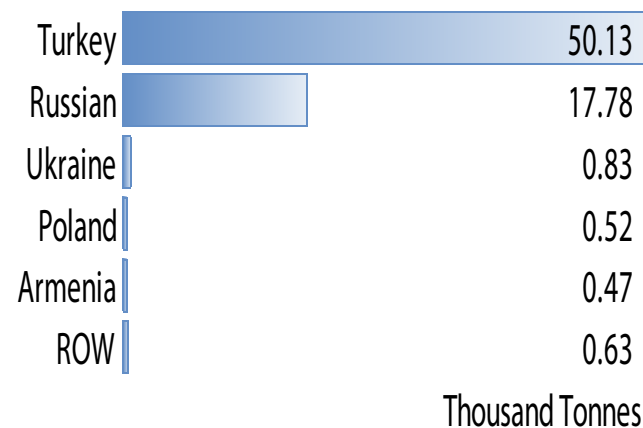
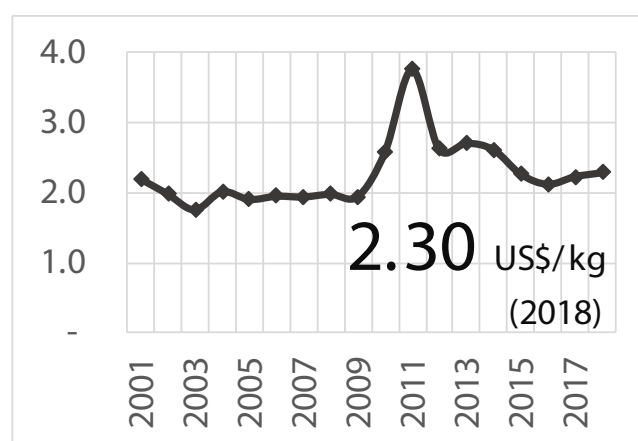
Value



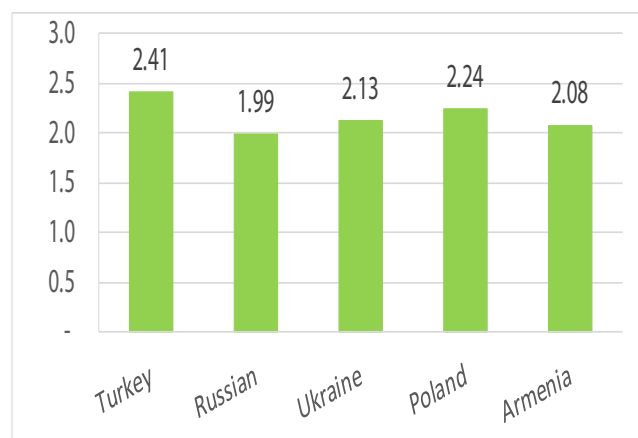
Market Share by Country



Average Price: US\$/Kg

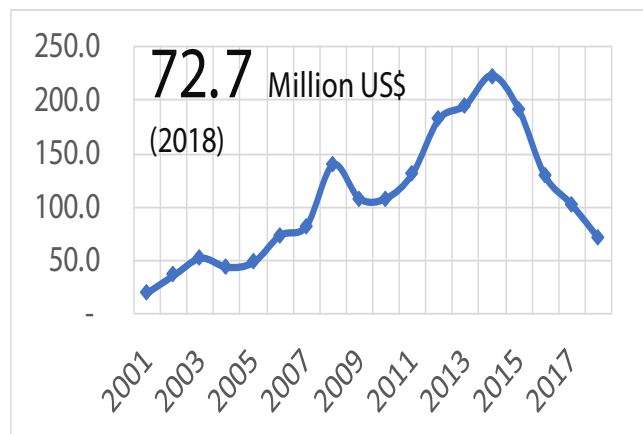


Average Price by Country 2018: US\$/Kg

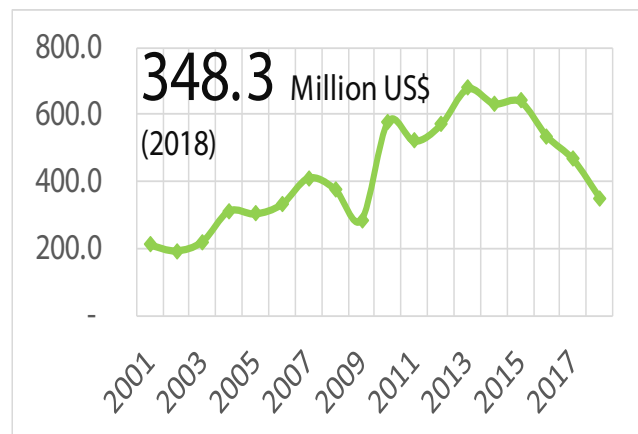


TEXTILE & APPAREL TRADE DATA

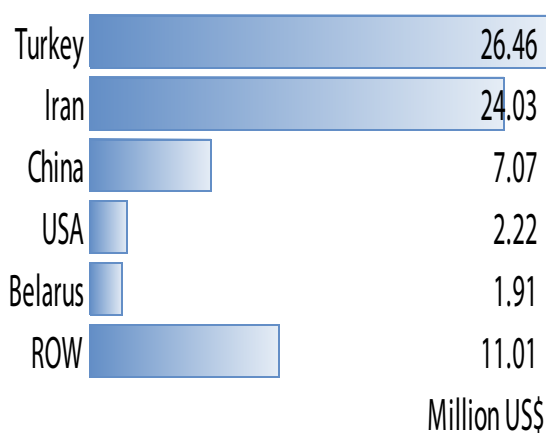
Imports



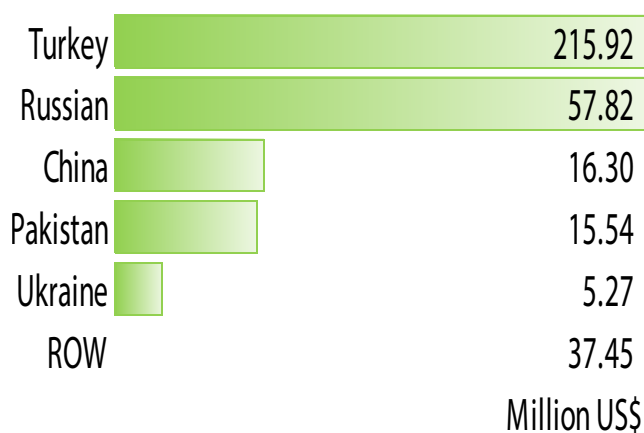
Exports



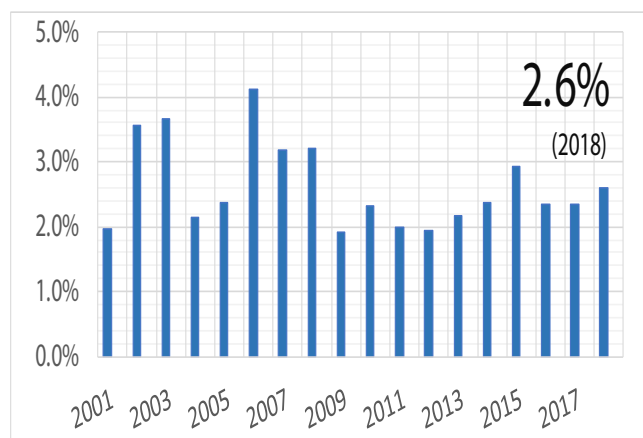
Imports by Country - 2018



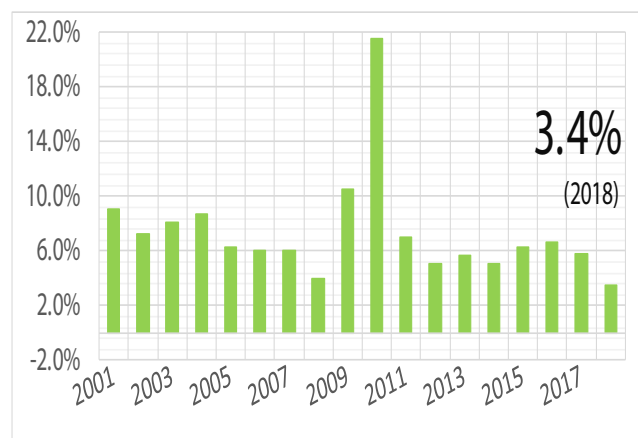
Exports by Country - 2018



T&A Imports Share in Overall Imports

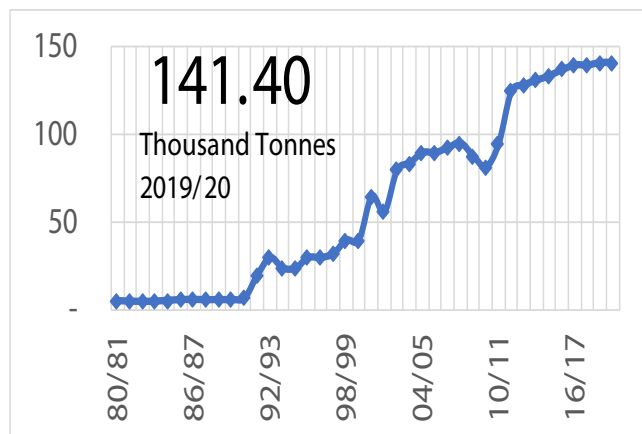


T&A Exports Share in Overall Exports



COMPOSITION OF THE TEXTILE & APPAREL INDUSTRY

Cotton Mill Use



Spinning Machinery

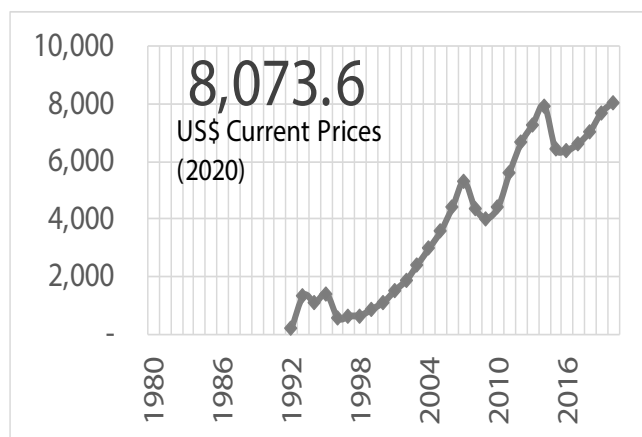
106,000

Open-End

678,000

Short-Staple Spindles

GDP per capita



Weaving Machinery

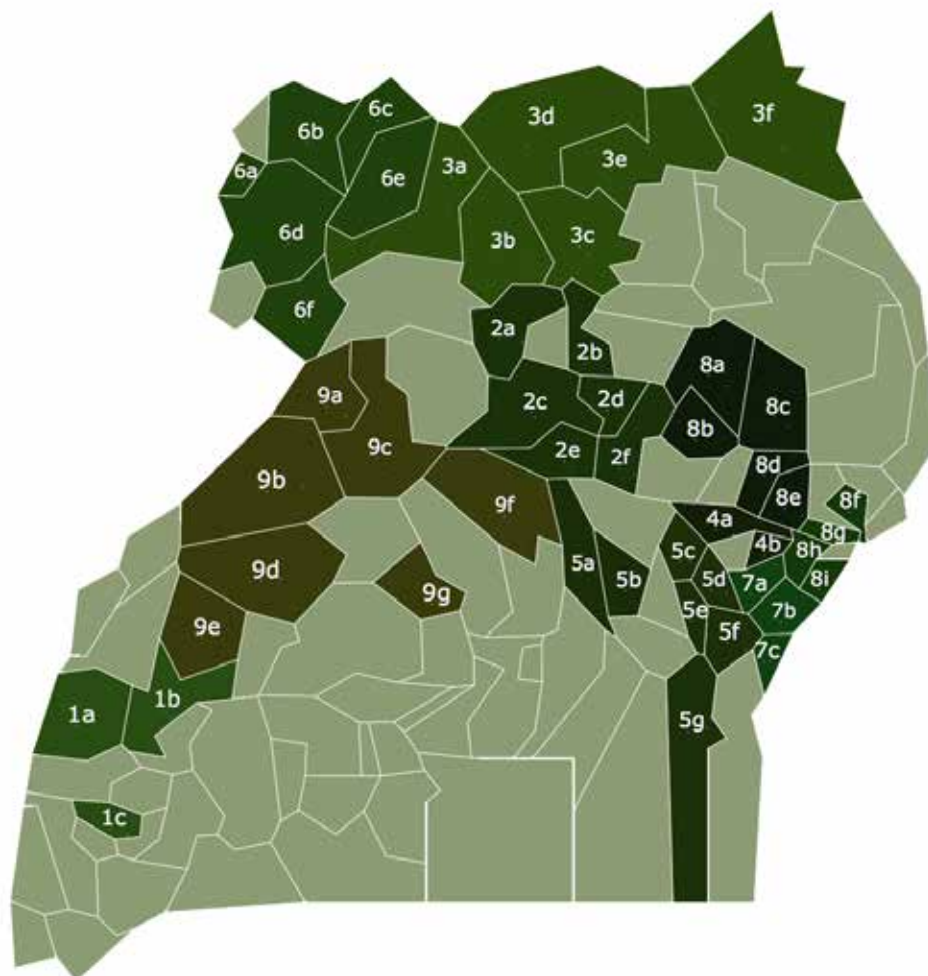
1,000

Shuttle-less Looms





Basic Data 2020



Arable Area

6,900

'000 Hectares

Cotton Area

90

'000 Hectares

Consumption

4

'000 Tonnes

Lint Exports

39

'000 Tonnes

Production

32

'000 Tonnes

Lint Yield

357

Kg/Hectare

Farmers

73,900

Male

Farmers

73,200

Female



PRODUCTION 2020

		Area '000 Ha	Yield Kg/Ha	Production '000 Tonnes
1	Northern	45	360	16
2	West Nile	13	350	4
3	Kazinga Channel	12	365	4
4	North East	14	300	4
5	South East	6	339	2
6	Mid-West & Central	3	454	1
	National	90	357	32

NUMBER OF FARMERS

	Men	Women
Northern	22,500	15,000
West Nile	17,000	14,000
Kazinga Channel	10,000	18,700
North Eastern	14,400	17,000
South Eastern	6,000	5,000
Mid-West & Central	4,000	3,500
Total	73,900	73,200

TILLAGE & STALKS-USE

Tillage Methods (% Area)

Northern	46	3	50	54
West Nile	8	5	86	92
Kazinga Channel	64	35	0	36
North Eastern Region	15	5	79	85
South Eastern Region	10	1	88	90
Mid-West & Central	20	1	78	80
National	36	8	57	66
	Zero Tillage	Disc Plough	Chisel Plough	Conventional Tillage

Use of Cotton stalks (% Use)

Northern	60	20	10	10
West Nile	15	60	10	15
Kazinga Channel	60	30	5	5
North Eastern	10	60	10	20
South Eastern	15	65	10	10
Mid-West & Central	15	65	10	10
National	43	37	9	9
	Burnt in Fields	Used as Firewood	Ploughed Back	Stacked on Bunds

SEEDS & PLANTING

Seeds Used for Sowing (%)

National	0	100	100	0
	Fuzzy Seeds	Delinted	Chemical Treated	Untreated

Planting Method (%)

National	100	0	100	0
	Manual	Machine	Local	Imported

Seed Source (%)

National	100	0	100	0
	Manual	Machine	Local	Imported

Seed Rate, Spacing & Plant Population/Ha

National	8	90	30	37,057
National	6	90	45	24,691
	Seed Rate Kg/Ha	Between Rows cm	Within Row cm	Population/Ha

Use of Cotton Seeds (% Use)

Northern	95	0	5	0
West Nile	99	0	1	0
Kazinga Channel	94	0	6	0
North Eastern	99	0	1	0
South Eastern	99	0	1	0
Mid-West & Central	97	0	3	0
National	98	0	3	0
	Crushed for Oil	Direct Cattle-Feed	Used for Sowing	wasted

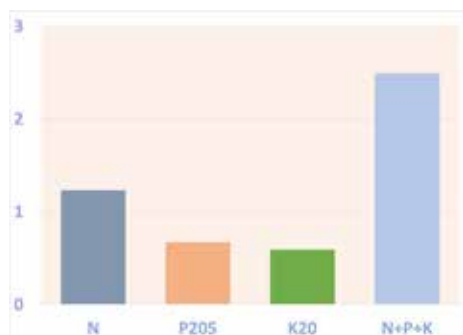


VARIETIES AND FIBRE TRAITS

	Release Year	% Area	Ginning %	Length UHML mm	Strength g/tex	Mic
BPA2015A	2015		41	28 - 30	29 - 33	3,7 - 4,6
SZ9314	1993		42	28 - 31	29 - 33	3,7 - 4,6
CRIMS1	1998		42	28 - 30	29 - 33	3,7 - 4,6
QM301	2010		42	28 - 30	29 - 33	3,7 - 4,6

FERTILISERS

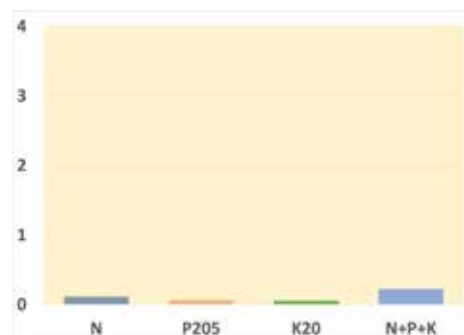
Fertiliser (NPK) use Kg/Hectare



Fertiliser (NPK) use per Kg Lint

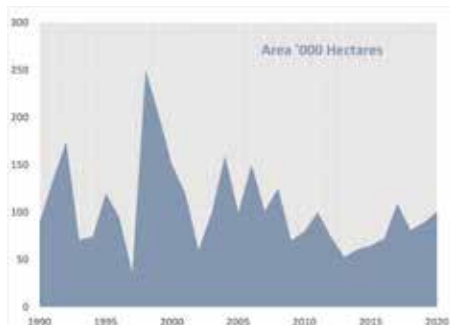


Fertiliser (NPK) use '000 Tons

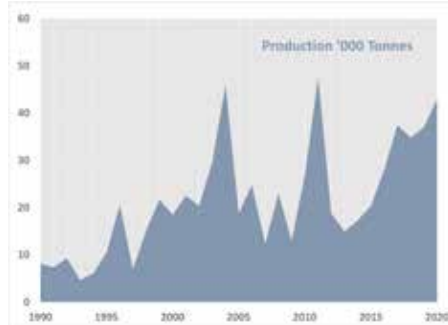


PRODUCTION

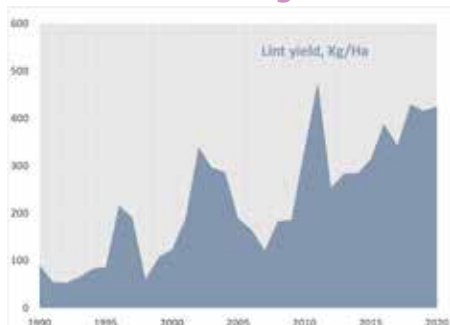
Cotton Area '000 Hectares



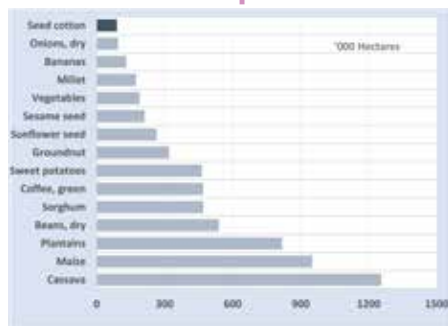
Production '000 Tonnes



Lint Yield Kg/Ha

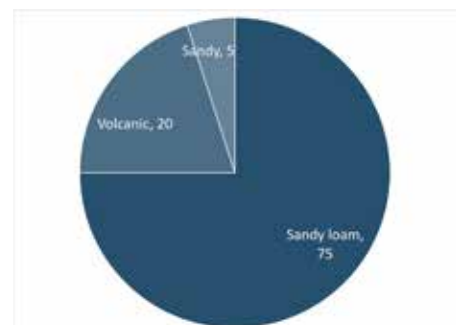


Area of Crops '000 Ha



SOILS

Soil Types -GAP



COMPETING CROPS

Corn
Sorghum
Legumes
Millet

ROTATION CROPS

Corn
Sorghum
Legumes
Millet



WEEDING & HARVESTING

Weeding Method (%) Harvest Method (%)

National	99	0	100	0
	Hand	Machine	Hand Picked	Machine Picked

INSECT PESTS / INSECTICIDES

EARLY-SEASON

Aphis gossypii, *Taylorilygus spp.*

Empoasca spp., *Pseudoplusia spp.*

Tetranychus cinnabarinus

MID-SEASON

Helicoverpa spp., *Dysdercus spp.*

Aphis gossypii, *Tetranychus urticae*

Bemisia tabaci

INSECTICIDES

Dimethoate 40 EC, Clethodium 26.4 EC

Profenofos 400g/l + Cypermethrin 40g/l EC

Emamectin and Abamectin 3EC

Acetamiprid 150g/l, Methomyl 40 SP

DISEASES / PATHOGENS

Bacterial blight

Verticillium wilt

Fusarium wilt

CHEMICAL CONTROL

Thiamethoxam 362 FS

Bronocot 12%

WATER

Rainwater & Irrigation water (mm)

1,320	838	0	0
Total Rainfall	Effective Rainfall	No. of Irrigations	Irrigation Water/Ha

Methods of Irrigation (% Area)

0	0	0	0
Flood	Furrow	Sprinkler	Drip

Rainfed Area (%) & Water Used /Kg Lint

100	0	0	23,466
Rainfed % Area	Irrigation Billion L	Irrigation L/Kg Lint	Rainwater L/Kg Lint

WEEDS / HERBICIDES

NARROW-LEAF WEEDS

Cynodon spp.

Cyperus spp.

Digitaria spp.

Cyperaceae spp.

Panicum spp.

BROAD-LEAF WEEDS

Amaranthus spp.

Solanum spp.

Bidens pilosa

Commelina benghalensis

Oxalis latifolia

HERBICIDES

Glyphosate

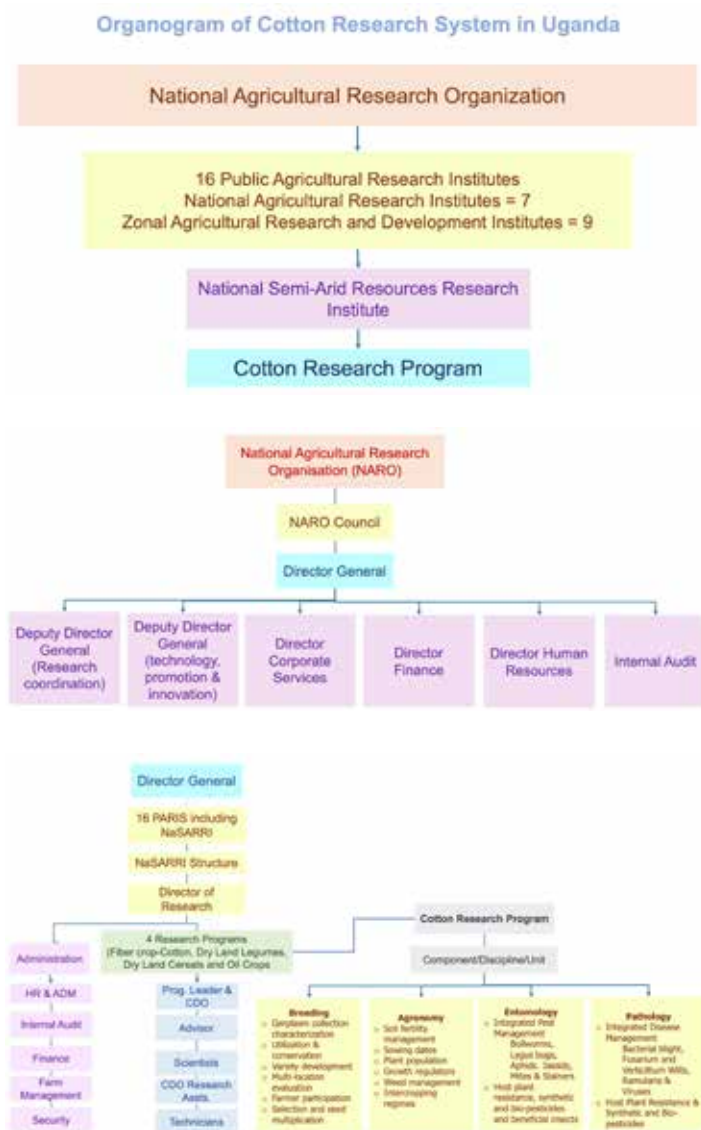


STRUCTURE OF COTTON RESEARCH

RESEARCH ORGANOGRAMS

The Cotton Development Organisation (CDO) plays a crucial role in cotton R&D in Uganda. The National Agricultural Research Organisation (NARO) is an apex body in the National Agricultural Research Systems (NARS). It is a public institution under the Ministry of Agriculture, Animal Industry and Fisheries (MAAIF). National Semi-Arid Resources Research Institute (NaSARRI) is located 300 km North –East of the Capital Kampala in Serere District. It has a mandate to conduct mainstream research for the development of cotton production technologies for NARO. The NaSARRI also undertakes research on major staple food crops, which are produced in the farming systems in rotation with cotton. These include; Dry land cereals; millet, pearl- millet and sorghum, Oil crops; groundnuts, sesame and sunflower and dry land legumes; cowpeas and pigeon peas. Services research activities include designing animal traction implements and oxen training, socio-economics and marketing and managing agricultural research information.

The Cotton Development Organisation (CDO) initiated a Cotton Research Unit in 2013 by employing research staff to augment the NARO's efforts in cotton research. The unit presently comprises one full time cotton breeder, (now a Technical Advisor to CDO) and four Research Assistants on Breeding and seed multiplication, Agronomy, Entomology and Pathology. The unit team works in tandem and complementarity with the NARO cotton research team and is based at NaSARRI. Research on cotton at the universities is focused on basic research usually with academic importance. Cotton research is also supported by the Cotton Development Organisation (CDO), which is the Government's Regulatory Agency on the Cotton Industry.



WEATHER 2019-2020

Heat Units (DD₆₀) -Northern Region



Rainfall (mm) -Northern Region



COST OF CULTIVATION US\$/Hectare

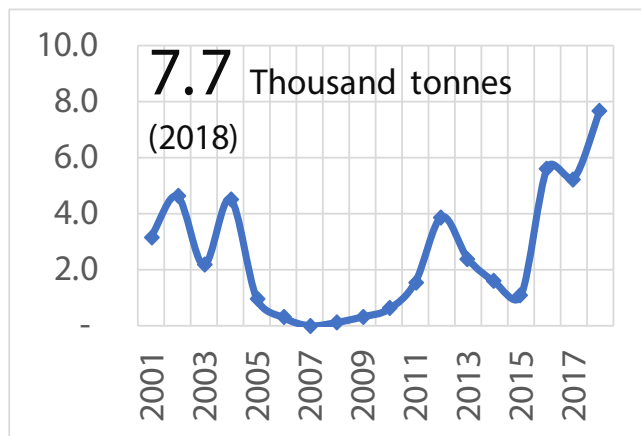
INPUTS	Quantity (Kg/Ha)	Operations per season	Total cost /Ha
Non-GM seeds	8	1	8
Biotech/GM seeds	Nil		
NPK+Other			
Insecticides	8 units	3	28
Herbicides			
Fungicides	24mls	1	4.44
Growth regulators			
Defoliants			
Manure			
Others (please specify)			
MANPOWER / LABOUR	Wages per person	Persons per operation	Total cost per hectare
Land preparation /tillage etc.,	10	2	27
Sowing	10	1	30
Fertiliser / manure application			
Irrigation			
Thinning	5	1	15
Weeding	10	3	45
Hoeing			
Pesticide application	5	4	40
Defoliator application			
Picking / harvesting	5	2	172
Stalk cutting & removal	5	1	40
Transportation /unloading etc.,	5	2	15
Ginning cost per 100 Kg			50
Others (please specify)			
MACHINERY /ANIMALS etc.	Cost per Operation	Number of Operations	Total cost per hectare
Tractors			
Implements & tools			
Electric / Diesel pumps etc.,			
Electricity / Diesel etc.,			
Harvesting machines			
Hoeing / Tillage machinery etc.,			
Bullocks /Buffaloes			
Land rent			
MARKET VALUE			
Seed cotton	860	0.56	481.6
Ginning % (output)	42		0
Lint (fibre)	361	1.69	610.09
Seed	498	0.16	79.68
COST OF CULTIVATION			425
NET RETURNS (SEED-COTTON)			56
NET RETURNS (SEED + LINT)			214

TRADE DATA

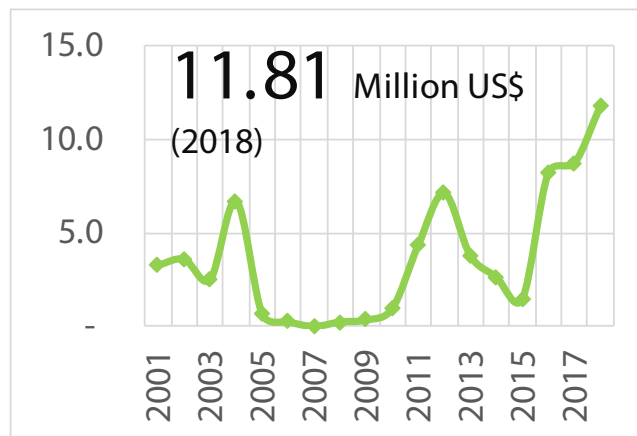


COTTON FIBRE EXPORT DATA

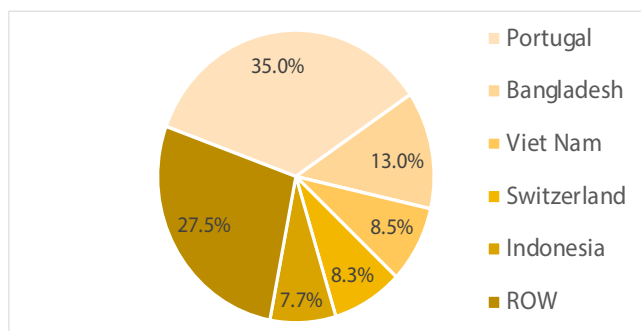
Quantity



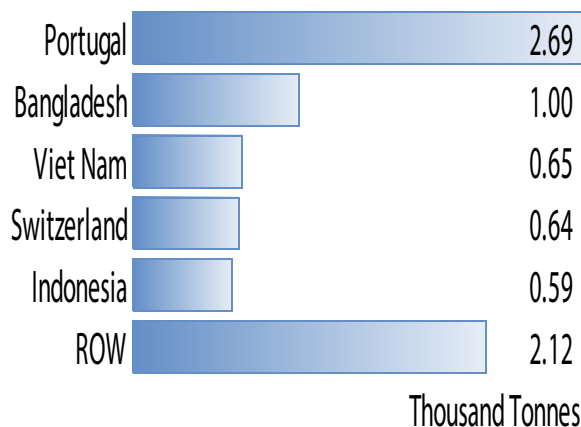
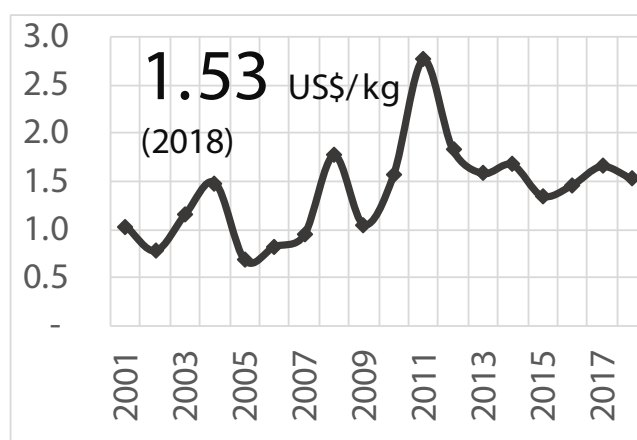
Value



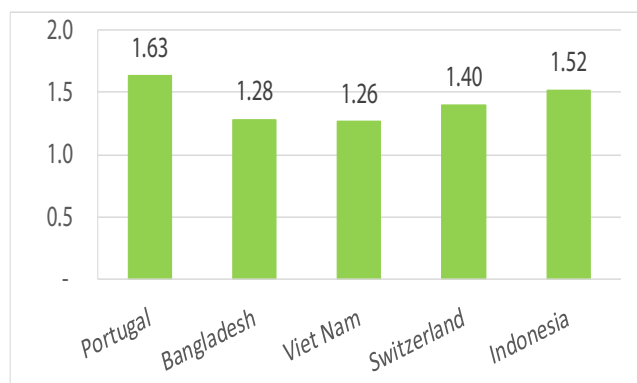
Market Share by Country



Average Price: US\$/Kg

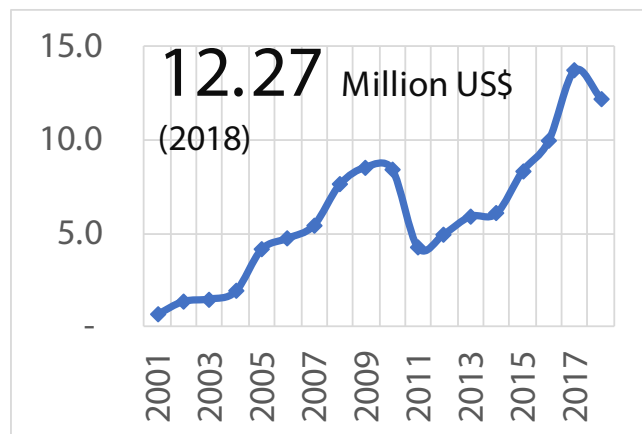


Average Price by Country 2018: US\$/Kg

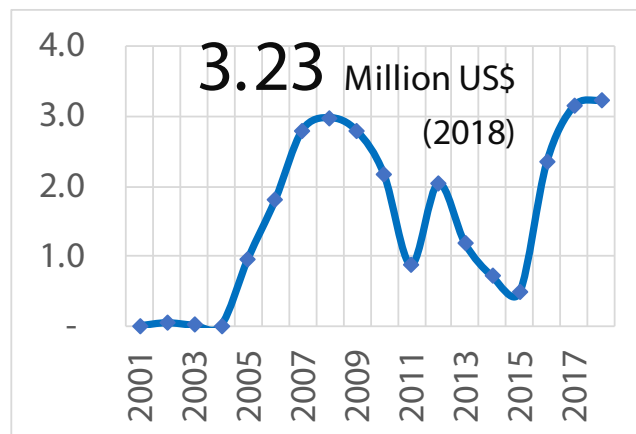


COTTON FABRIC TRADE DATA

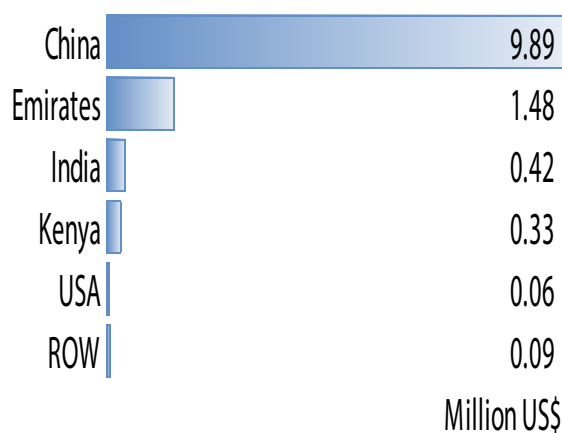
Woven Cotton Fabric Imports



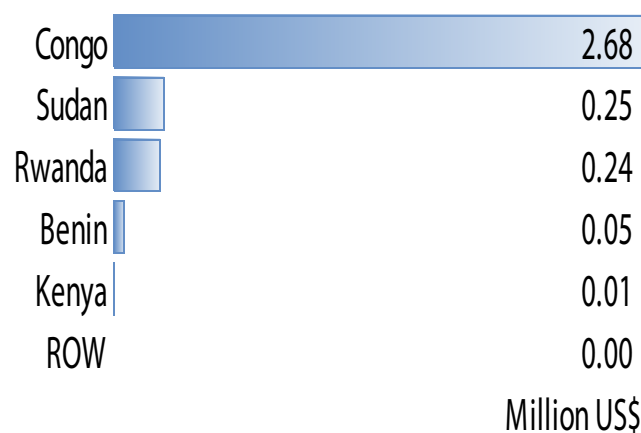
Woven Cotton Fabric Exports



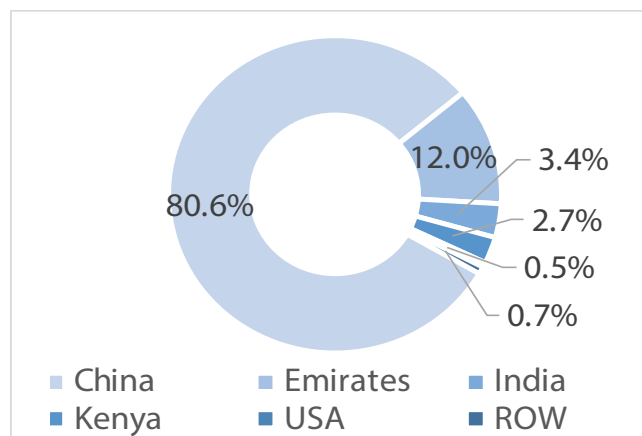
Knitted Cotton Fabric Imports



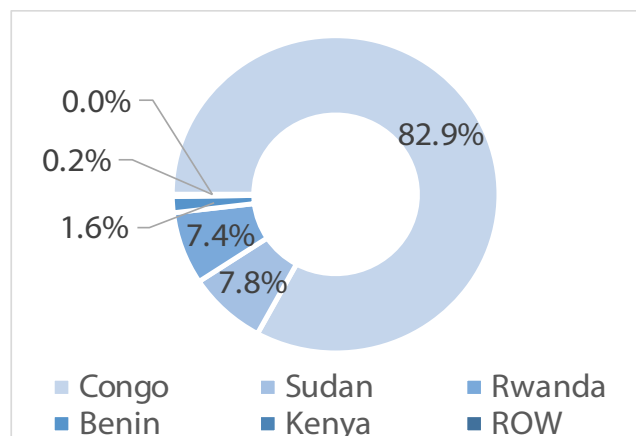
Knitted Cotton Fabric Exports



Market Share Imports by Country - 2018 Woven Cotton Fabric

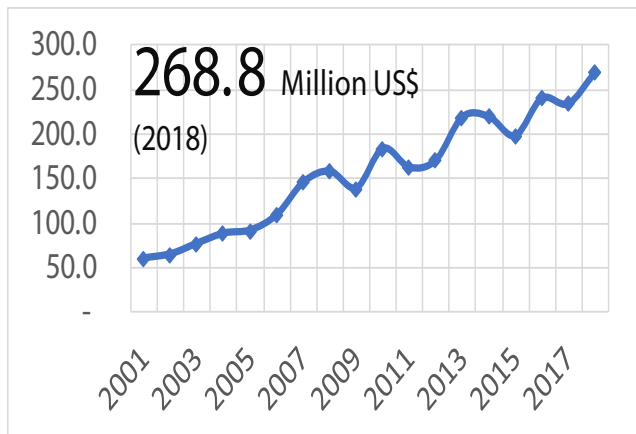


Market Share Exports by Country - 2018 Woven Cotton Fabric

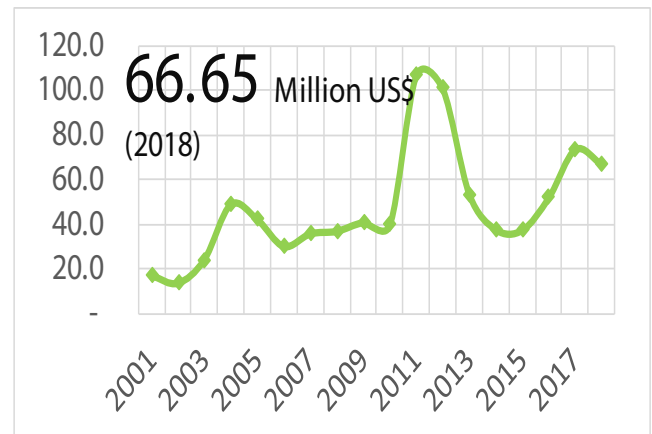


TEXTILE & APPAREL TRADE DATA

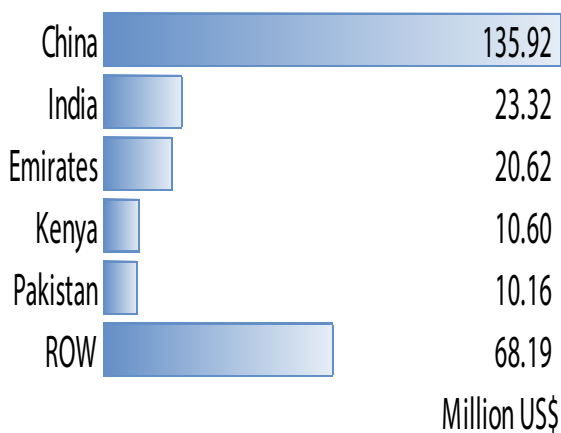
Imports



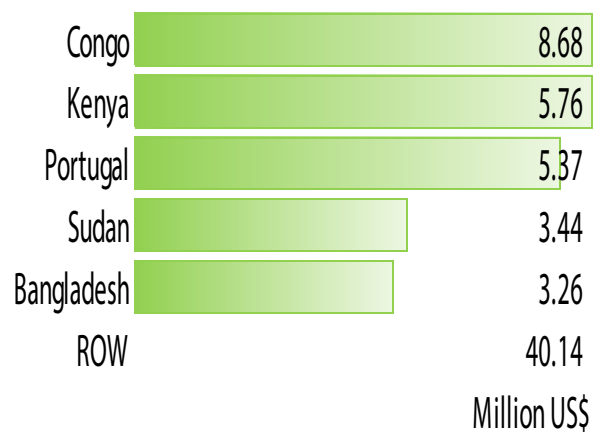
Exports



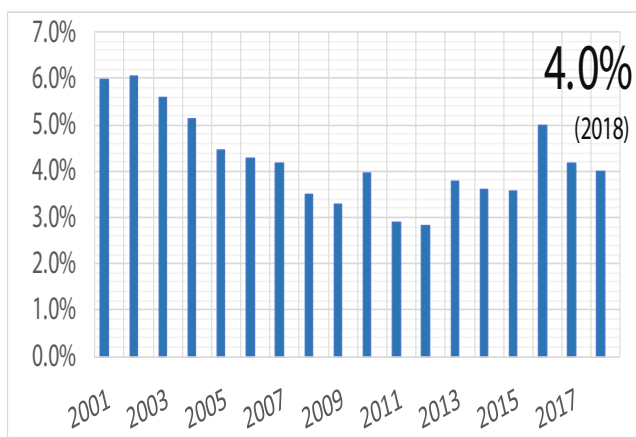
Imports by Country - 2018



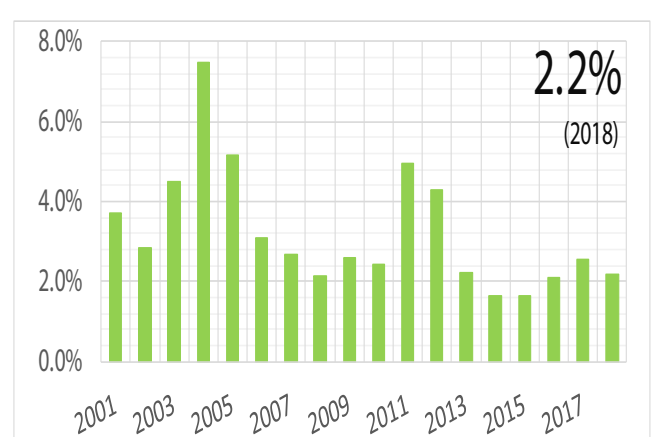
Exports by Country - 2018



T&A Imports Share in Overall Imports

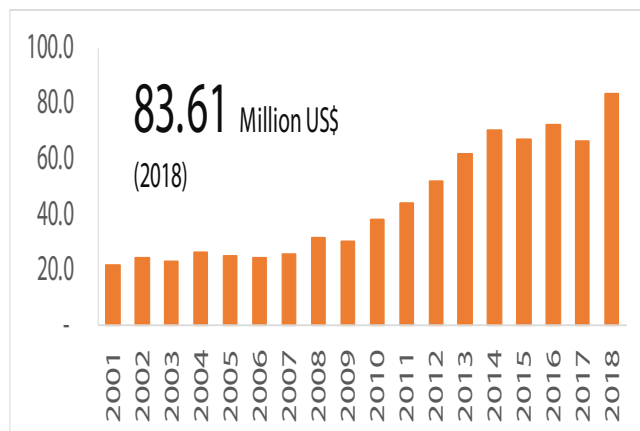


T&A Exports Share in Overall Exports

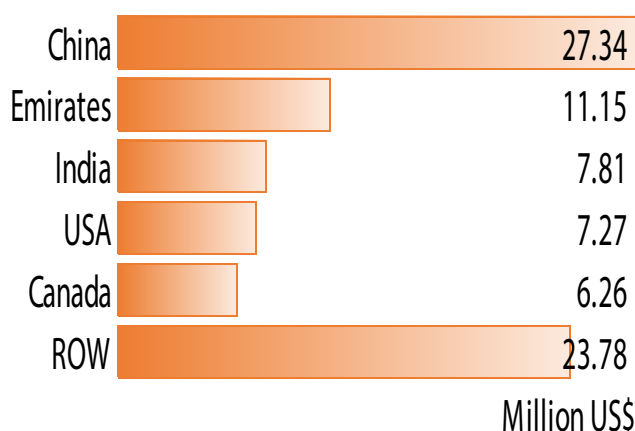


COMPOSITION OF THE TEXTILE & APPAREL INDUSTRY

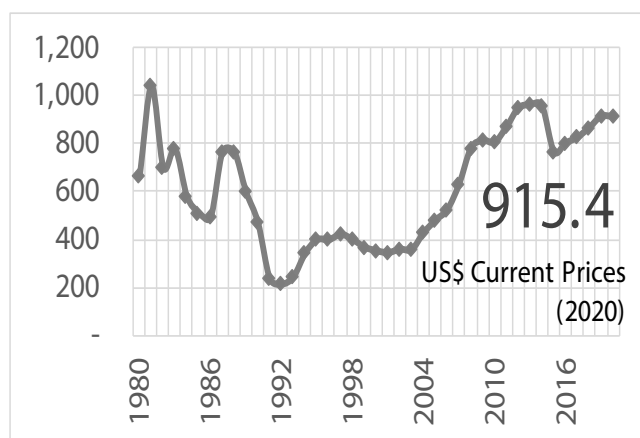
Imports - Worn Clothing & Articles



Imports by Country



GDP per capita



Spinning Machinery

1,200

Open-End

25,000

Short-Staple Spindles

Weaving Machinery

1,000

Shuttle Looms

120

Shuttle-less Looms

Better Cotton+CmiA Produced in
2018/19

1,333 tonnes

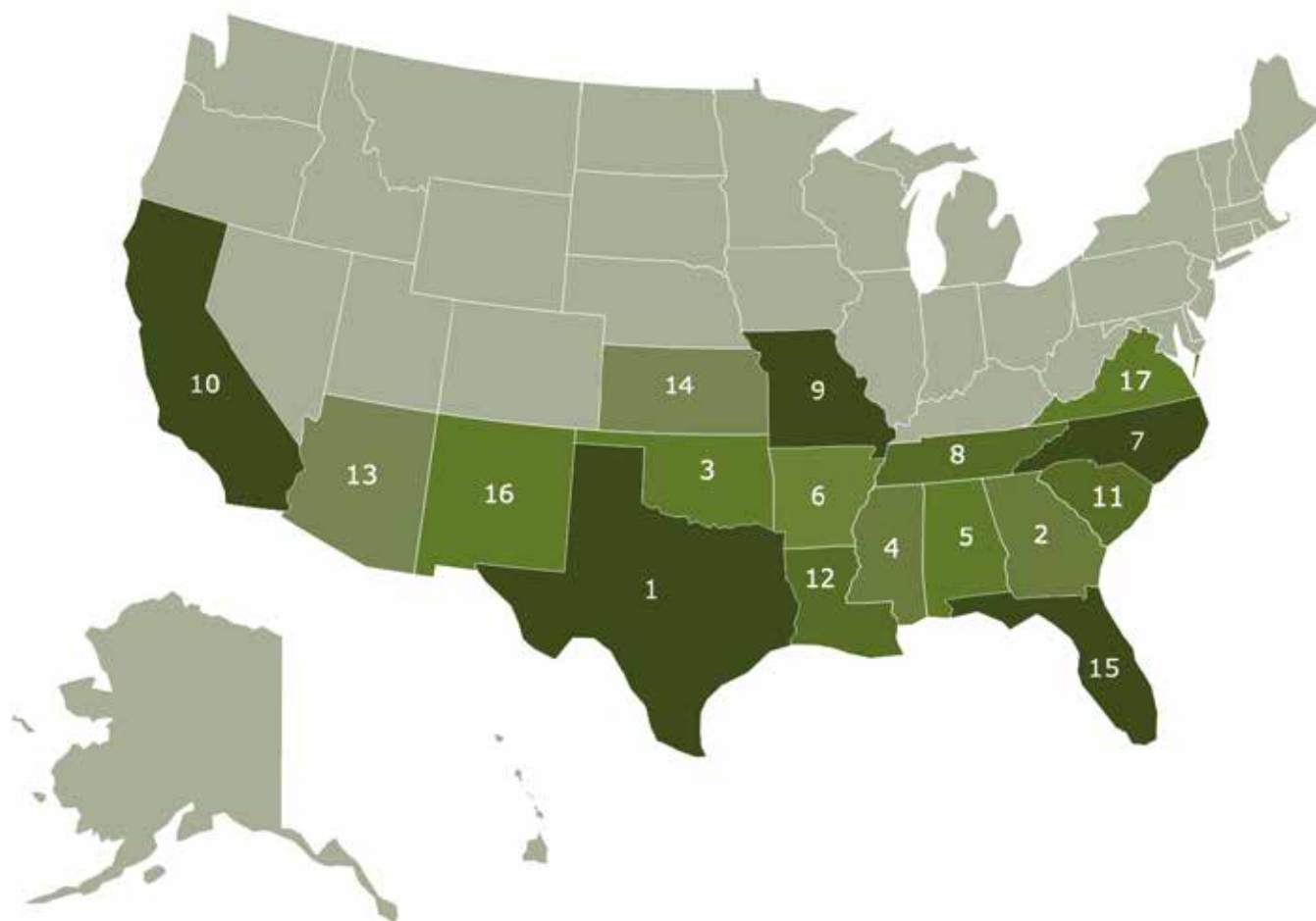
Organic Cotton Produced in
2018/19

2,581 tonnes





Basic Data 2020



PRODUCTION 2020

		Area	Yield	Production					
		'000 Ha	Kg/Ha	'000 Tonnes					
1	Texas	1571	767	1205	9	Missouri	116	1281	149
2	Georgia	482	993	479	10	California	75	1842	139
3	Oklahoma	186	786	146	11	South Carolina	75	898	67
4	Mississippi	213	1208	257	12	Louisiana	67	1104	74
5	Alabama	180	885	159	13	Arizona	52	1312	69
6	Arkansas	211	1320	278	14	Kansas	79	877	69
7	North Carolina	138	850	117	16	Virginia	32	865	28
8	Tennessee	111	1194	133	17	New Mexico	19	1053	20
					National	3646	949	3459	



GENERAL DATA

Arable Area 157,737 '000 Hectares	Cotton Area 3,646 '000 Hectares	Consumption 501 '000 Tonnes	Lint Exports 3,375 '000 Tonnes
Production 3,459 '000 Tonnes	Lint Yield 949 Kg/Hectare	Farmers 6,806 Male	Farmers 1,297 Female

VARIETIES AND FIBRE TRAITS

	% Area	Ginning %	Length UHML mm	Strength g/ tex	Mic
DP 1646 B2XF	21.35	43	31	30.3	4.2
NG 5711 B3XF	6.62	39.8	29	29.5	4.8
PHY 400 W3FE	5.07	44	29.7	31.4	4.2
NG 4936 B3XF	4.8	39.4	27.9	30	4.1
PHY 350 W3FE	4.26	41	30.1	30.3	5
NG 4545 B2XF	3.15	39.5	27.7	29.4	4.1
NG 3406 B2XF	2.08	38.3	29.2	28.8	2.8
DP 1845 B3XF	1.96	40.6	30.7	30.5	4.5
NG 3930 B3XF	1.82	42.4	29.8	30.2	4.3
NG 3500 XF	1.76	36.3	28.7	30.7	4
ST 5600 B2XF	1.72	42.9	29.5	30.3	4.5
DP 1820 B3XF	1.64	44	30.6	31.9	4.6
DP 1840 B3XF	1.58	43.3	30	30.2	4
DP 1948 B3XF	1.58	41.4	30.9	33.3	3.8
PHY 444 WRF	1.51	42	32.5	31	3.9
DP 1549 B2XF	1.5	36.7	27.9	27.6	3.1
ST 5707 B2XF	1.47	41.7	30.2	29	4.5
DP 1725 B2XF	1.45	45	29.3	30.4	4.9
DP 1518 B2XF	1.35	42	29.8	28.2	4.5
PHY 480 W3FE	0.6	41	28.8	29.7	4.4



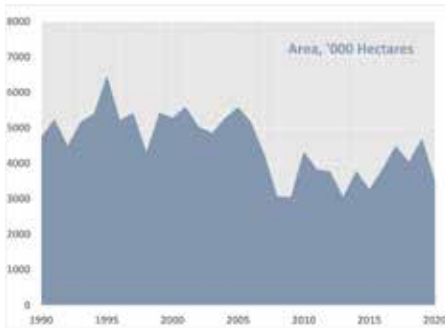
VARIETIES % AREA

	US	Southeast	South Central	Southwest	Far West
VARIETIES					
DP 1646 B2XF	21.35%	33.83%	46.88%	10.73%	13.14%
NG 5711 B3XF	6.62%	19.24%	1.82%	3.84%	2.60%
PHY 400 W3FE	5.07%	1.83%	7.45%	5.56%	3.59%
NG 4936 B3XF	4.80%	6.71%	9.82%	2.91%	2.59%
PHY 350 W3FE	4.26%	3.01%	1.00%	5.67%	-
NG 4545 B2XF	3.15%	-	-	5.07%	1.62%
NG 3406 B2XF	2.08%	0.04%	0.01%	3.36%	0.14%
DP 1845 B3XF	1.96%	-	0.31%	3.10%	-
NG 3930 B3XF	1.82%	0.32%	0.02%	2.80%	1.48%
NG 3500 XF	1.76%	-	-	2.87%	-
ST 5600 B2XF	1.72%	0.52%	0.48%	2.48%	0.67%
DP 1820 B3XF	1.64%	-	-	2.66%	0.49%
PHY 480 W3FE	1.60%	0.55%	-	2.43%	-
DP 1840 B3XF	1.58%	6.11%	-	0.55%	-
DP 1948 B3XF	1.58%	-	-	2.57%	-
PHY 444 WRF	1.51%	0.21%	0.07%	2.36%	-
DP 1549 B2XF	1.50%	-	-	2.03%	13.51%
ST 5707 B2XF	1.47%	-	-	2.38%	-
DP 1725 B2XF	1.45%	1.35%	7.09%	0.02%	0.49%
DP 1518 B2XF	1.35%	0.02%	8.29%	-	-
BRANDS					
Deltapine	36.89%	49.62%	65.44%	25.31%	31.85%
Americot	28.10%	32.71%	13.69%	30.59%	21.04%
Phytogen	19.51%	9.76%	11.94%	24.81%	17.01%
BASF-Stoneville	5.57%	6.15%	3.88%	5.64%	11.79%
BASF-FiberMax	4.87%	-	-	7.60%	10.25%
ALL-TEX/DYNA-GRO	3.50%	0.85%	2.51%	4.59%	5.29%
CROPLAN	1.29%	0.79%	2.24%	1.24%	-
Miscellaneous	0.26%	0.11%	0.29%	0.22%	2.76%
Seed Source Genetics	*	0.01%	-	-	-

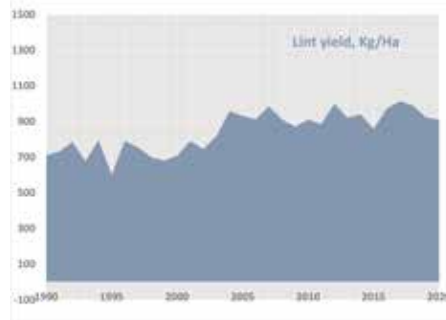


PRODUCTION

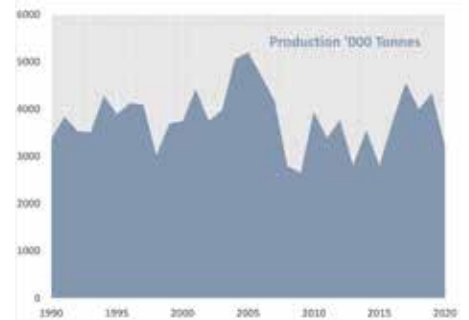
Cotton Area '000 Hectares



Lint Yield Kg/Ha



Production '000 Tonnes

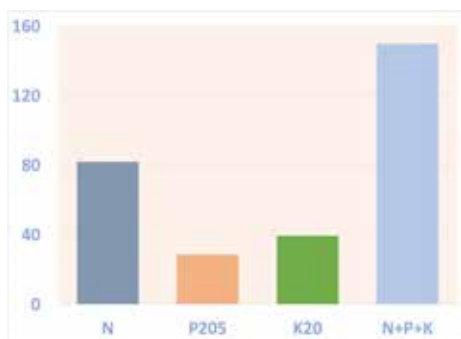


INSECTS, PATHOGENS & WEEDS

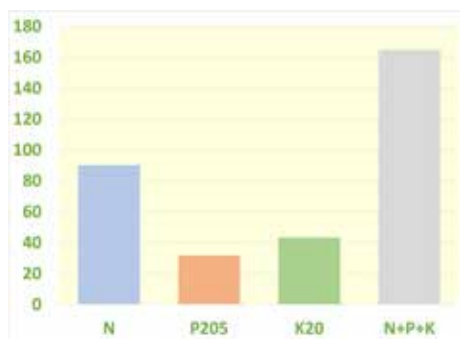
INSECT PESTS / INSECTICIDES	INSECT PESTS / INSECTICIDES	INSECT PESTS / INSECTICIDES	INSECT PESTS / INSECTICIDES
MID-SOUTH	SOUTH-EAST	FAR-WEST	SOUTH-WEST
EARLY-SEASON	EARLY-SEASON	EARLY-SEASON	EARLY-SEASON
<i>Plant bugs</i>	<i>Acrostermum hilare</i>	<i>Plant bugs</i>	<i>Thrips tabaci</i>
<i>Thrips tabaci</i>	<i>Nezara viridula</i>	<i>Acrostermum hilare</i>	<i>Pseudatomoscelis seriatus</i>
	<i>Euschistus servus</i>	<i>Nezara viridula</i>	<i>Halticus bractatus</i>
	<i>Thrips tabaci</i>	<i>Bemisia tabaci</i>	
MID-SEASON	MID-SEASON	MID-SEASON	MID-SEASON
<i>Plant bugs</i>	<i>Acrostermum hilare</i>	<i>Plant bugs</i>	<i>Pseudatomoscelis seriatus</i>
<i>Thrips tabaci</i>	<i>Nezara viridula</i>	<i>Acrostermum hilare</i>	<i>Plant bugs</i>
<i>Tetranychus urticae</i>	<i>Thrips tabaci</i>	<i>Nezara viridula</i>	
		<i>Bemisia tabaci</i>	
INSECTICIDES	INSECTICIDES	INSECTICIDES	INSECTICIDES
Spinosad	Spinosad	Spinosad	Spinosad
Dimethoate	Dimethoate	Dimethoate	Dimethoate
Spromesifen	Spromesifen	Spromesifen	Spromesifen
Lambda-cyhalothrin	Lambda-cyhalothrin	Lambda-cyhalothrin	Lambda-cyhalothrin
Chlorpyrifos	Chlorpyrifos	Chlorpyrifos	Chlorpyrifos
Imidacloprid	Imidacloprid	Imidacloprid	Imidacloprid
Buprofezin	Buprofezin	Buprofezin	Buprofezin
Methomyl	Methomyl	Methomyl	Methomyl
Flonicamid	Flonicamid	Flonicamid	Flonicamid
Acetamiprid	Acetamiprid	Acetamiprid	Acetamiprid
DISEASES / PATHOGENS	DISEASES / PATHOGENS	DISEASES / PATHOGENS	DISEASES / PATHOGENS
MID SOUTH	SOUTH EAST	FAR WEST	SOUTH WEST
<i>Seedling disease</i>	<i>Root knot nematode</i>	<i>Fusarium wilt</i>	<i>Seedling disease</i>
<i>Reniform nematode</i>	<i>Seedling disease</i>	<i>Verticillium wilt</i>	<i>Verticillium wilt</i>
<i>Bacterial blight</i>	<i>Target spot</i>	<i>Root knot nematode</i>	<i>Root knot nematode</i>
CHEMICAL CONTROL	CHEMICAL CONTROL	CHEMICAL CONTROL	CHEMICAL CONTROL
Pyraclostrobin	Pyraclostrobin	Pyraclostrobin	Pyraclostrobin
Ridomil	Ridomil	Ridomil	Ridomil
Azoxystrobin	Azoxystrobin	Azoxystrobin	Azoxystrobin
WEEDS / HERBICIDES	WEEDS / HERBICIDES	WEEDS / HERBICIDES	WEEDS / HERBICIDES
MID SOUTH	SOUTH EAST	FAR WEST	SOUTH WEST
NARROW-LEAF WEEDS	NARROW-LEAF WEEDS	NARROW-LEAF WEEDS	NARROW-LEAF WEEDS
<i>Lolium multiflorum</i>	<i>Digitaria sanguinalis</i>	<i>Echinochloa crus-galli</i>	<i>Digitaria sanguinalis</i>
<i>Echinochloa crus-galli</i>	<i>Panicum texanum</i>	<i>Digitaria sanguinalis</i>	<i>Panicum texanum</i>
<i>Sorghum halepense, Eleusine indica</i>		<i>Sorghum halepense</i>	<i>Sorghum halepense</i>
BROAD-LEAF WEEDS	BROAD-LEAF WEEDS	BROAD-LEAF WEEDS	BROAD-LEAF WEEDS
<i>Palmer amaranth</i>	<i>Palmer amaranth</i>	<i>Solanum nigrum</i>	<i>Palmer amaranth</i>
<i>Ipomoea spp.</i>	<i>Senna obtusifolia</i>	<i>Palmer amaranth</i>	<i>Kochia scoparia</i>
<i>Conyza canadensis</i>	<i>Ipomoea spp.</i>	<i>Ipomoea spp.</i>	<i>Harpagophytum procumbens</i>
HERBICIDES	HERBICIDES	HERBICIDES	HERBICIDES
Glyphosate	Glyphosate	Glyphosate	Glyphosate
Glufosinate	Glufosinate	Glufosinate	Glufosinate
Trifluralin	Trifluralin	Trifluralin	Trifluralin
Pendimethalin	Pendimethalin	Pendimethalin	Pendimethalin
Prometryn	Prometryn	Prometryn	Prometryn

FERTILISERS

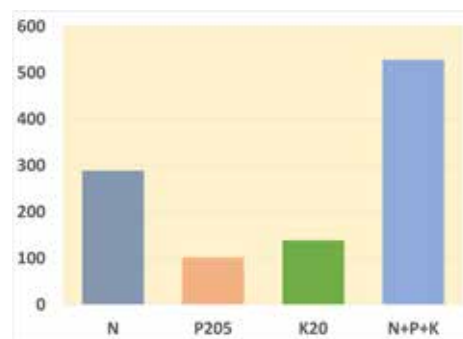
Fertiliser (NPK) use Kg/Hectare



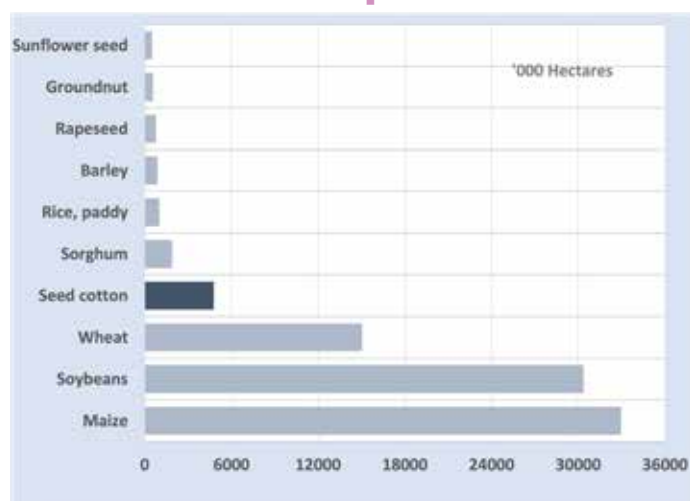
Fertiliser (NPK) use per Kg Lint



Fertiliser (NPK) use '000 Tons



Area of Crops '000 Ha



COTTON RESEARCH

Cotton research in the USA is mainly conducted at Universities, Cotton Research Station, Texas, and Private Laboratories. Research is supported by institutional funding, external sources, the United States Department of Agriculture and the Cotton Incorporated.

The following universities and institutions conduct projects on cotton research:

1. Auburn University, Alabama
2. University of Arkansas
3. University of Arkansas Cooperative Extension Service
4. University of Arizona
5. University of California, Davis
6. Georgia Cotton Commission
7. Auburn University
8. Louisiana State University Agricultural Centre
9. University of Missouri
10. Delta Council
11. Mississippi State University
12. Mississippi Farm Bureau Federation
13. North Carolina State University
14. NC Foundation for Soil & Water Conservation, Inc.
15. New Mexico State University
16. Oklahoma State University
17. Clemson University
18. Tennessee Farm Bureau Federation
19. University of Tennessee
20. Texas A&M AgriLife
21. Virginia Polytechnic Institute and State University
22. Texas Cotton Ginners' Association
23. Texas Tech University

CROPPING SYSTEMS

COMPETING CROPS

Delta	Southeast
Soybean	Soybean
Corn	Corn
	Peanuts

West	Southwest
Alfalfa	Wheat
Corn	Corn
	Sorghum

ROTATION CROPS

Delta	Southeast
Soybean	Soybean
Corn	Corn
	Peanuts

West	Southwest
Alfalfa	Wheat
Corn	Corn
Tree crops	Sorghum



SEEDS & PLANTING

Seeds Used for Sowing (%)

0	100	100	0
Fuzzy Seeds	Delinted	Chemical Treated	Untreated

Use of Cotton Seeds (% Use)

34	66	0	0
Crushed for Oil	Direct Cattle-Feed	Used for Sowing	wasted

Planting Method (%)

0	100	100	0
Manual	Machine	Local	Imported

Seed Source (%)

Seed Rate, Spacing & Plant Population/Ha

12	90	10	111,111
Seed Rate Kg/Ha	Between Rows cm	Within Row cm	Plant Population/ Ha

WATER

Methods of Irrigation (% Area)

Alabama	0	11	89	0
Arizona	0	95	5	0
Arkansas	0	89	11	0
California	0	92	0	8
Georgia	0	0	100	0
Kansas	0	0	100	0
Louisiana	0	0	100	0
Mississippi	0	61	39	0
Missouri	0	91	9	0
New Mexico	0	50	50	0
North Carolina	0	0	100	0
Oklahoma	0	43	57	0
South Carolina	0	0	100	0
Tennessee	0	0	100	0
Texas	0	17	83	0
Virginia	0	0	100	0
National	0	37	60	3
	Flood	Furrow	Sprinkler	Drip

Rainfed Area (%) & Water Used /Kg Lint

Alabama	89	29	182	6,880
Arizona	5	698	10,153	503
Arkansas	20	516	1,856	3,875
California	1	728	5,246	1,889
Georgia	64	313	653	4,772
Kansas	73	45	656	6,168
Louisiana	82	15	198	6,138
Mississippi	66	110	429	4,613
Missouri	35	137	922	4,186
New Mexico	18	65	3,310	1,298
North Carolina	97	6	49	5,070
Oklahoma	79	141	963	5,489
South Carolina	86	23	342	6,157
Tennessee	93	7	51	4,663
Texas	63	1,968	1,633	5,277
Virginia	100	0	3	6,908
National	63	4,772	1,428	4,807
	Rainfed % Area	Irrigation Billion L	Irrigation L/Kg Lint	Rainwater L/Kg Lint

Rainwater & Irrigation water (mm)

Alabama	1,501	609	5	152
Arizona	201	66	12	1401
Arkansas	1,225	512	8	305
California	451	348	12	975
Georgia	1,166	474	6	183
Kansas	926	541	7	213
Louisiana	1,541	678	4	122
Mississippi	1,375	557	5	152
Missouri	1,257	536	6	183
New Mexico	247	137	9	427
North Carolina	997	431	4	122
Oklahoma	788	432	8	366
South Carolina	1,193	553	7	213
Tennessee	1,411	557	3	91
Texas	868	405	8	335
Virginia	980	597	2	61
National	770	574	7	361
	Total Rainfall	Effective Rainfall	No. of Irrigations	Irrigation Water/Ha

TILLAGE, STALKS-USE, WEEDING & HARVESTING

Tillage Methods (% Area)

45	35	65	55
Zero Tillage	Disc Plough	Chisel Plough	Conventional Tillage

Use of Cotton stalks (% Use)

0	0	100	0
Burnt in Fields	Used as Firewood	Ploughed Back	Stacked on Bunds

Weeding Method (%)

Harvesting Method (%)

0	100	0	100
Hand	Herbicide	Hand Picked	Machine Picked

WEATHER 2019-2020

Heat Units (DD₆₀) -Texas



Rainfall (mm) -Texas



WEATHER 2019-2020

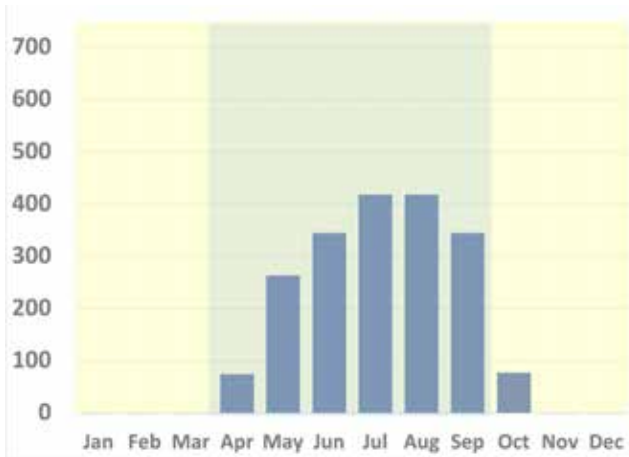
Heat Units (DD₆₀) -Alabama



Rainfall (mm) -Alabama



Heat Units (DD₆₀) -Arkansas



Rainfall (mm) -Arkansas



Heat Units (DD₆₀) -California



Rainfall (mm) -California



WEATHER 2019-2020

Heat Units (DD₆₀) -Georgia



Rainfall (mm) -Georgia



Heat Units (DD₆₀) -Mississippi



Rainfall (mm) -Mississippi



Heat Units (DD₆₀) -Missouri

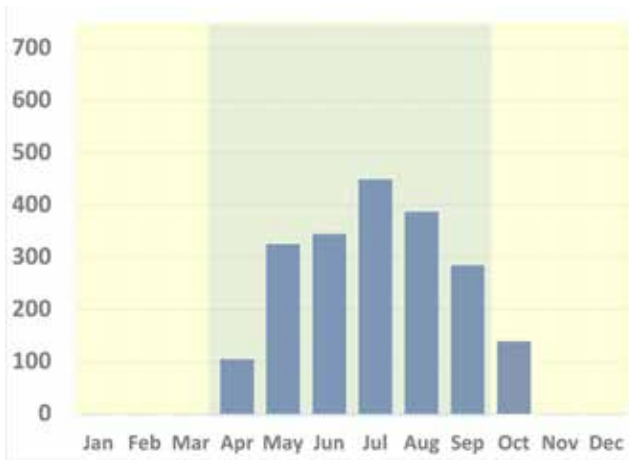


Rainfall (mm) -Missouri



WEATHER 2019-2020

Heat Units (DD₆₀) -North Carolina



Rainfall (mm) -North Carolina



Heat Units (DD₆₀) -Oklahoma



Rainfall (mm) -Oklahoma



Heat Units (DD₆₀) -Tennessee



Rainfall (mm) -Tennessee



COST OF CULTIVATION US\$/Hectare

INPUTS	National	Southern Seaboard	Prairie Gateway	Mississippi Portal	Heart-land	Fruitful Rim
Operating costs						
Seed	167	218	115	236	237	198
Fertilizer	147	289	54	223	187	206
Chemicals	160	225	84	265	253	228
Custom services	47	59	23	93	73	78
Fuel, lube, and electricity	120	109	115	106	151	215
Repairs	128	134	110	142	202	171
Ginning	269	322	142	494	660	370
Purchased irrigation water	7	0	0	1	0	91
Interest on operating inputs	11	14	7	16	18	16
Total, operating costs	1,055	1,371	650	1,577	1,781	1,573
Allocated overhead						
Hired labor	47	41	36	52	97	106
Opportunity cost of unpaid labor	104	83	129	63	109	86
Capital recovery of machine	399	427	336	456	603	533
Opportunity cost of land	190	218	102	316	305	394
Taxes and insurance	28	25	25	32	31	38
General farm overhead	37	36	29	45	40	86
Total, allocated overhead	805	832	657	963	1,185	1,243
Costs listed						
Total, costs listed	1,860	2,203	1,307	2,540	2,966	2,815
Supporting information						
Yield (Kg per planted Ha)	779	1,039	483	1,242	1,295	811
Price(US\$ per Kg)	1.34	1.36	1.25	1.34	1.30	1.76
Cottonseed yield (Kg/Ha)	1,259	1,681	781	2,011	2,095	1,313
Cottonseed price (US\$ per Kg)	0.18	0.13	0.18	0.18	0.20	0.29
Production practices						
Dryland (percent of acres)	68	75	72	52	16	46
Irrigated (percent of acres)	32	25	28	48	84	54
Gross value of production						
Primary product cotton lint	1,047	1,420	607	1,671	1,685	1,431
Secondary product cottonseed	222	222	138	355	416	376
Total, gross value of production	1,269	1,642	745	2,026	2,100	1,807
Net Returns (operating costs)						
Production cost less ginning	786	1,049	508	1,083	1,121	1,203
Net returns on seed cotton	483	593	237	943	980	604
Net returns on Lint	214	271	95	449	320	234

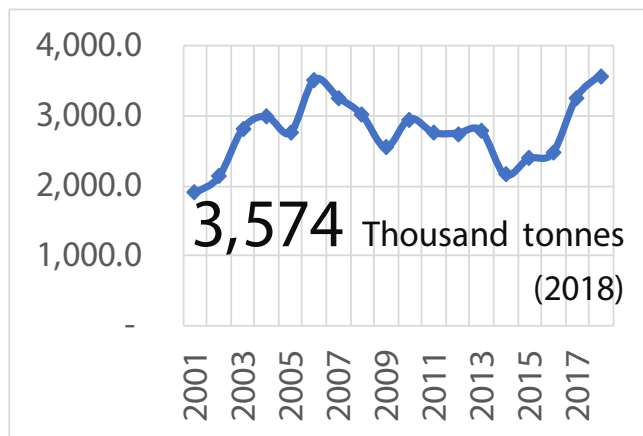


TRADE DATA

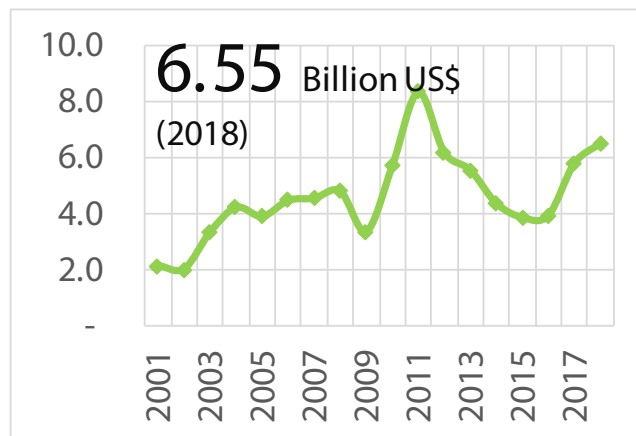


COTTON FIBRE EXPORT DATA

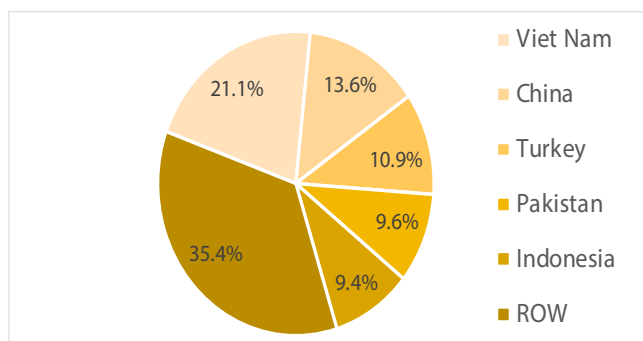
Quantity



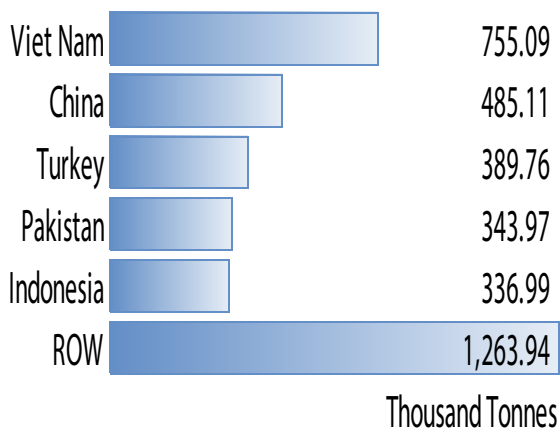
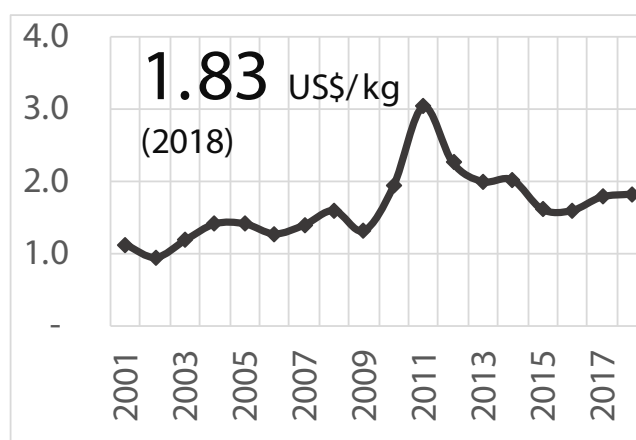
Value



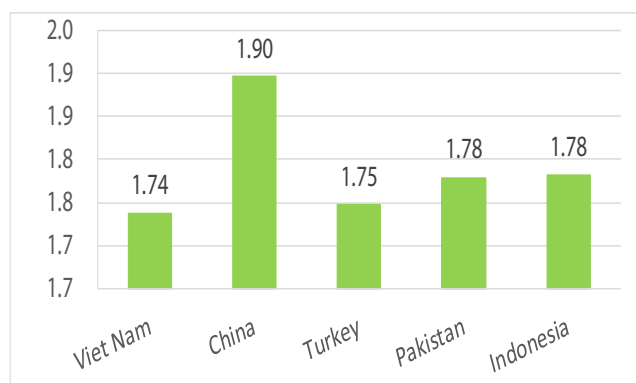
Market Share by Country



Average Price: US\$/Kg

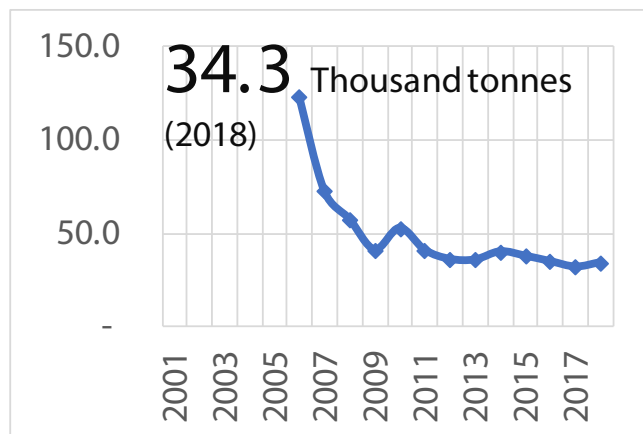


Average Price by Country 2018: US\$/Kg

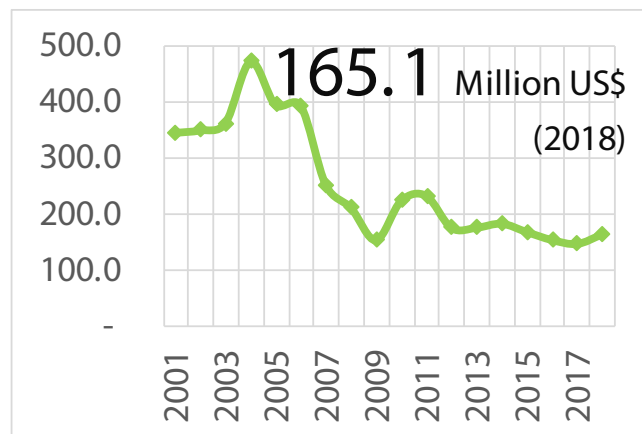


COTTON YARN IMPORT DATA

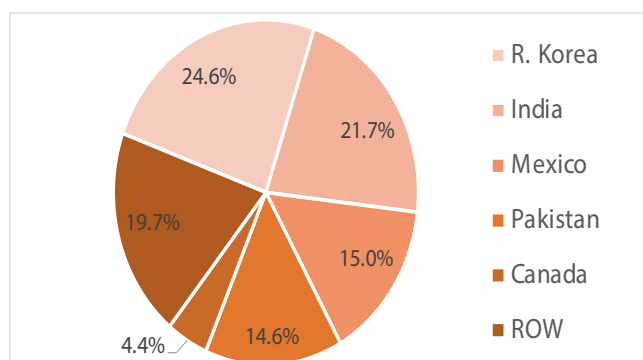
Quantity



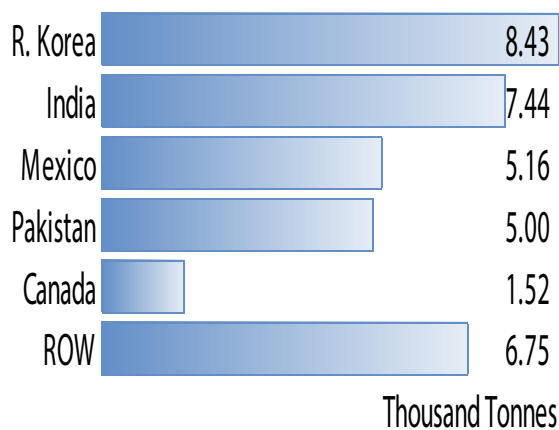
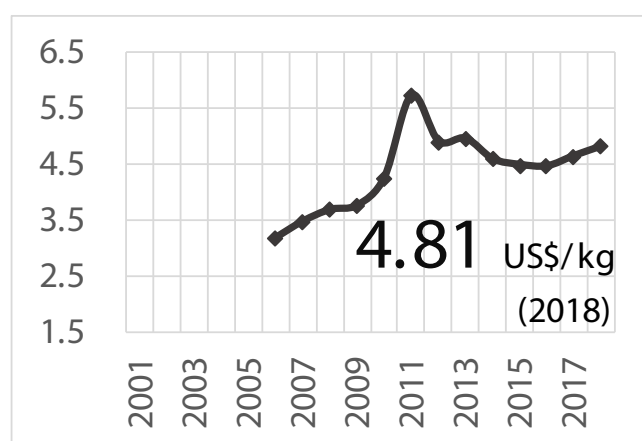
Value



Market Share by Country



Average Price: US\$/Kg

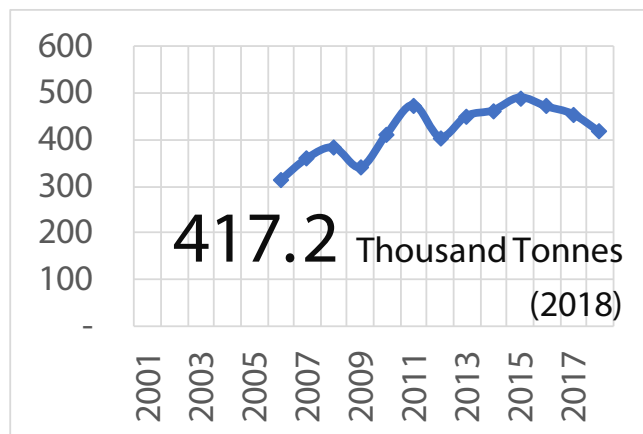


Average Price by Country 2018: US\$/Kg

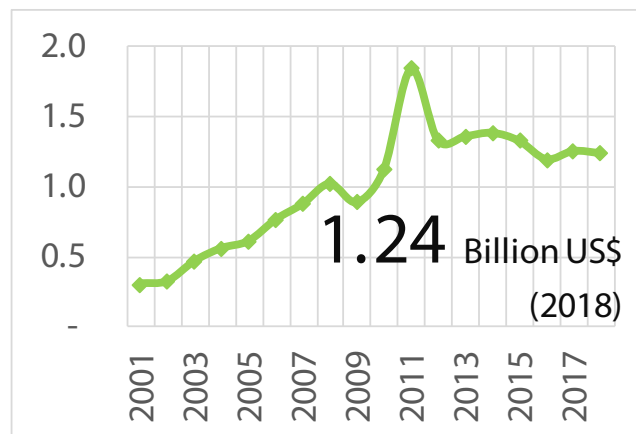


COTTON YARN EXPORT DATA

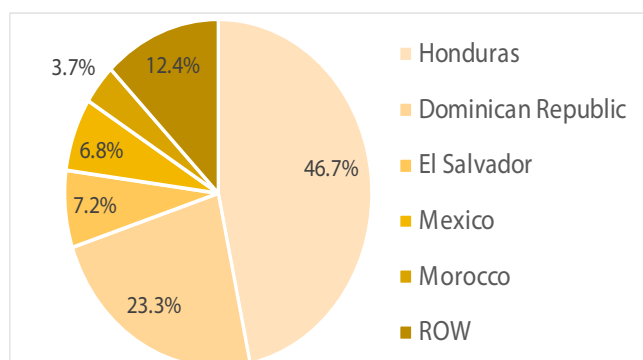
Quantity



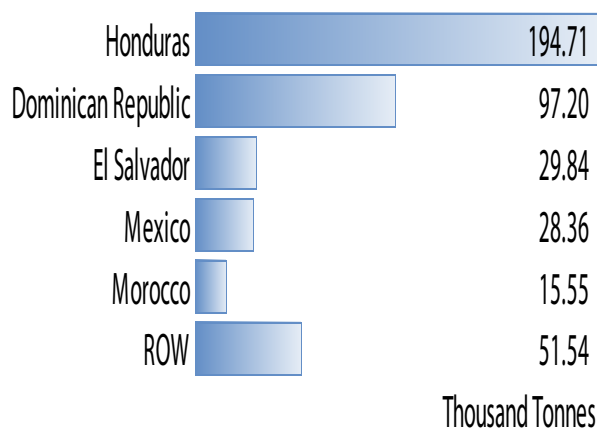
Value



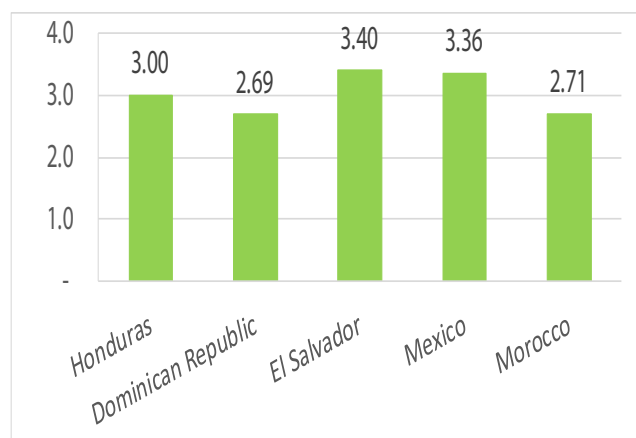
Market Share by Country



Average Price: US\$/Kg

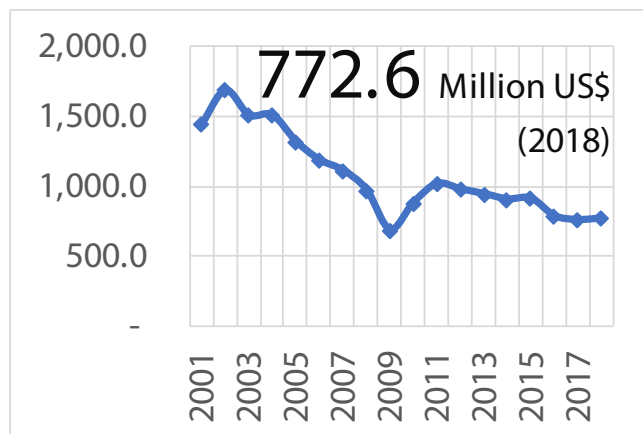


Average Price by Country 2018: US\$/Kg

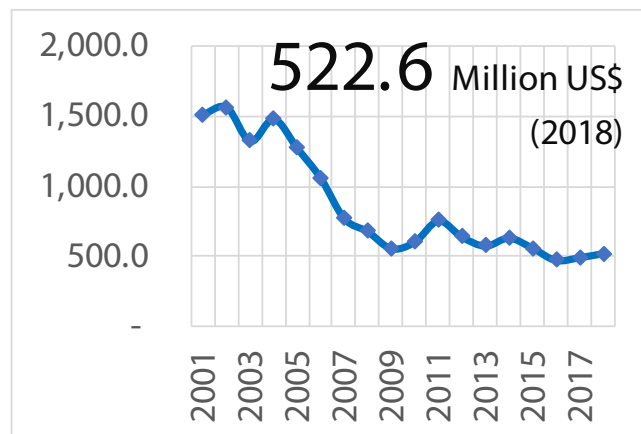


COTTON FABRIC TRADE DATA

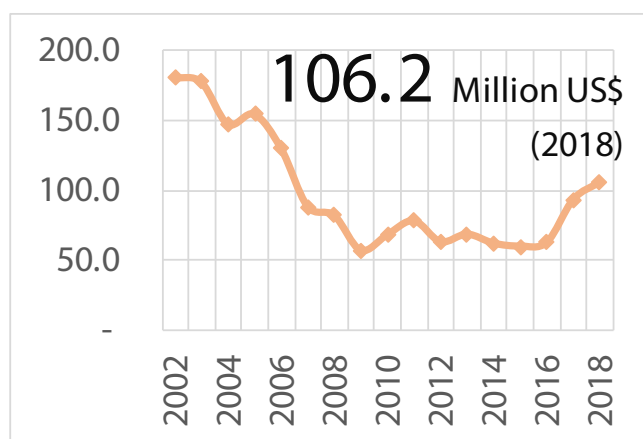
Woven Cotton Fabric Imports



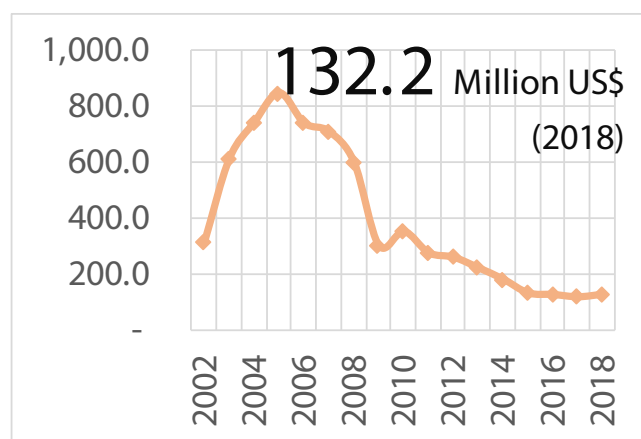
Woven Cotton Fabric Exports



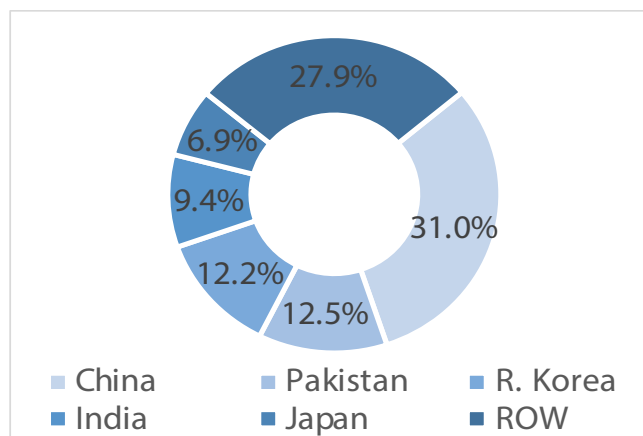
Knitted Cotton Fabric Imports



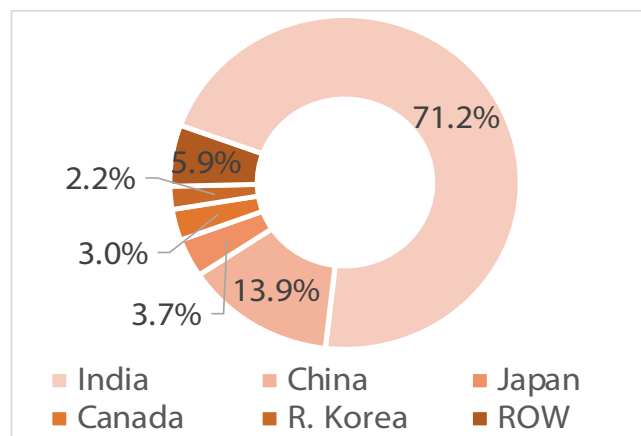
Knitted Cotton Fabric Exports



Market Share Imports by Country - 2018 Woven Cotton Fabric

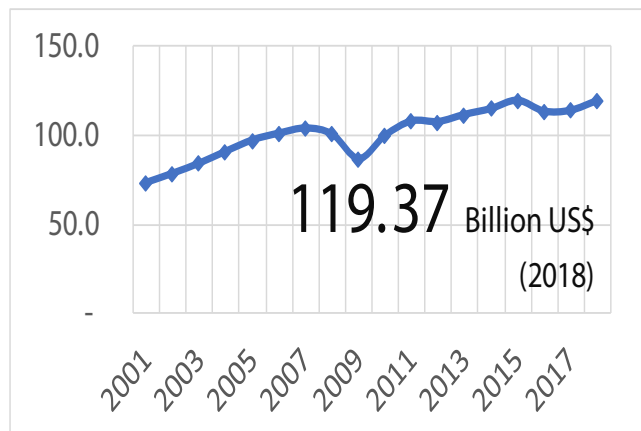


Market Share Imports by Country - 2018 Knitted Cotton Fabric

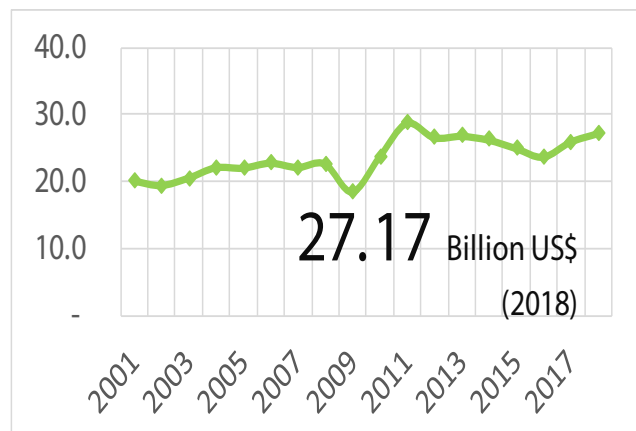


TEXTILE & APPAREL TRADE DATA

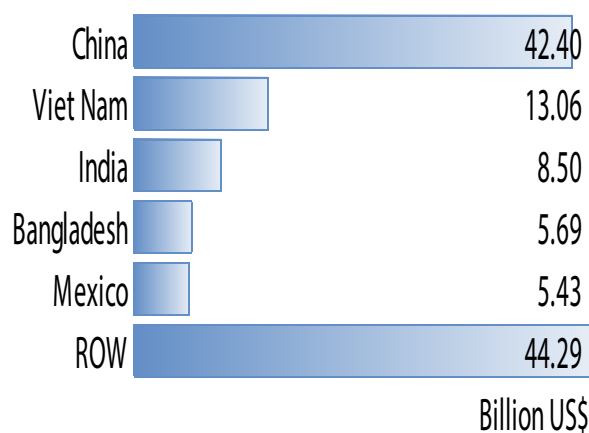
Imports



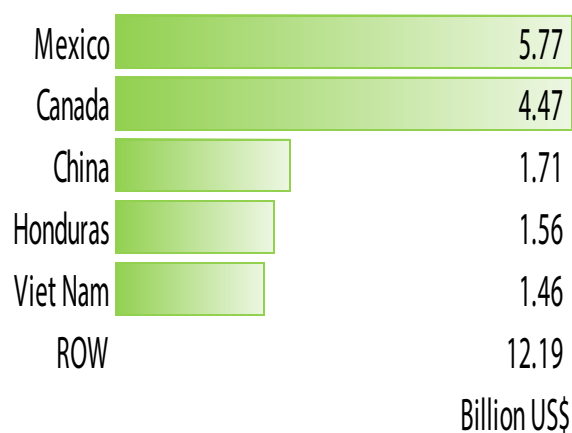
Exports



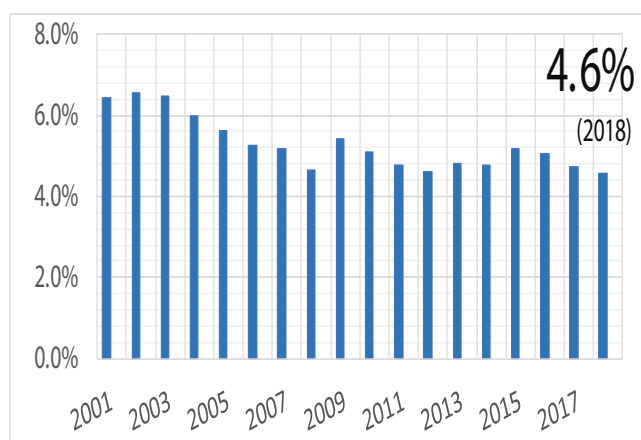
Imports by Country - 2018



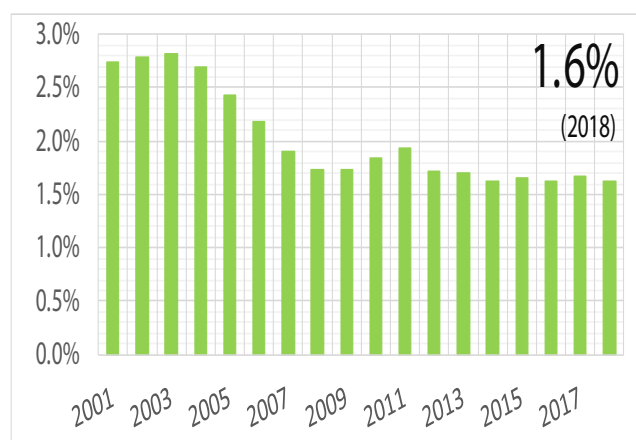
Exports by Country - 2018



T&A Imports Share in Overall Imports

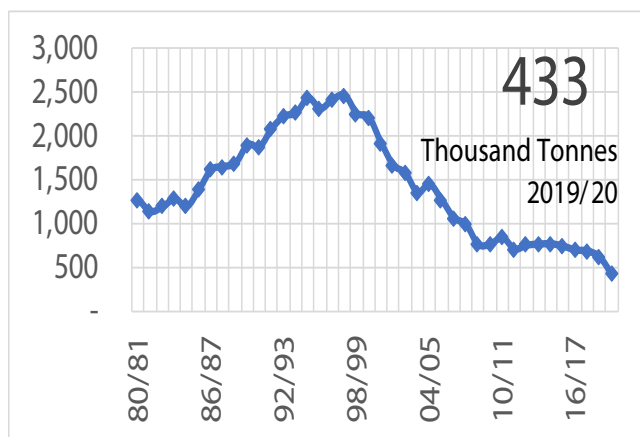


T&A Exports Share in Overall Exports

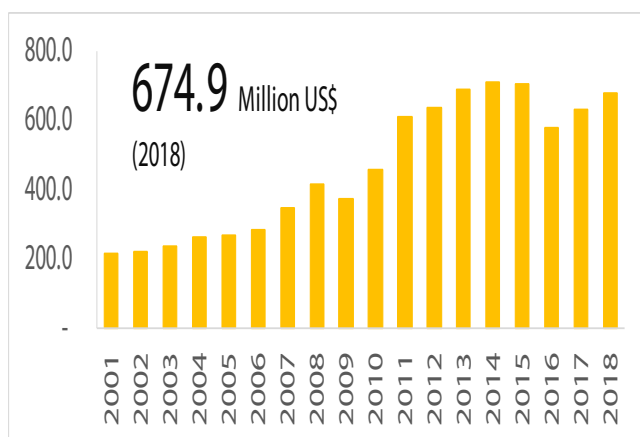


COMPOSITION OF THE TEXTILE & APPAREL INDUSTRY

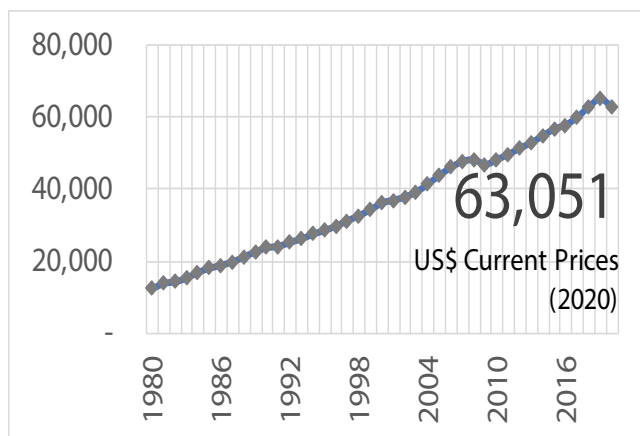
Cotton Mill Use



Exports - Worn Clothing & Articles



GDP per capita



Employment

594,147

Textile & Apparel Sector

Spinning Machinery

11,000 **397,000**

Air-Jet Spindles

Open-End

4,300,000

Short-Staple Spindles

Weaving Machinery

20,900 **39,500**

Shuttle Looms

Shuttle-less Looms

Better Cotton Produced in 2018/19

309,000 tonnes

Organic Cotton Produced in 2018/19

5,165 tonnes

E3 Cotton Produced in 2018/19

160,754 tonnes





PRODUCTION 2020

		Area '000 Ha	Yield Kg/Ha	Production '000 Tonnes
1	Kashkadar	136	524	71
2	Bukhara	98	603	59
3	Syrdarya	73	500	36
4	Syrkhandar	74	588	44
5	Ferghana	82	542	45
6	Dzhizak	78	500	39

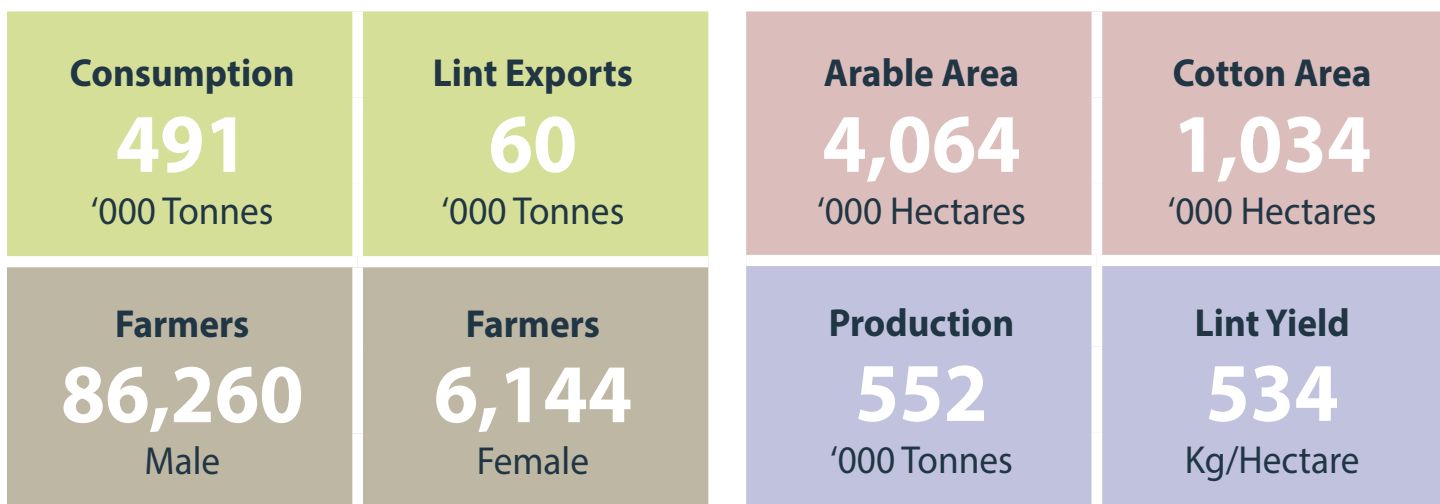
7	Karakalpak	86	404	35
8	Khorezm	83	555	46
9	Andizhan	79	564	45
10	Tashkent	73	560	41
11	Samarkhand	76	508	38
12	Namangam	63	565	36
13	Navoi	33	541	18
National		1034	534	552

VARIETIES AND FIBRE TRAITS

	Release Year	% Area	Ginning %	Length UHML mm	Strength g/tex	Mic
Sultan		18.58		28.2	31.7	4.7
Bukhara-102		12.24		28.7	30.4	4.5
Namangan-77		6.09		32.2	31.1	4.6
An-Boyovut-2		5.55		28.2	30.4	4.7
Andijan-35		5.30		28.2	32.1	4.8
Omad-27		2.06		29.0	33.1	4.5
C-4727		3.79				
Porloq-1		1.03		29.0	32.1	4.6
Porloq-4		2.39				
Andijan-36		2.55				
Khorezm-150		3.72		28.7	34.2	4.7
Khorezm-127		2.71		28.7	34.3	4.8
Boshqakhramon		0.90				
Andijan-37		0.45				
Chimbay-5018		0.40				
C-8286		1.62		28.4	35.1	4.8
C-8290		3.03				
Namangan-34		0.50				
Bukhara-6		9.00		31.2	31.5	4.6
Bukhara-8		6.65		30.2	31.5	4.6
Bukhara-10(Sardor)		2.44		28.7	31.2	4.5
C-6524		7.30		28.4	32.4	4.7
Kelajak		0.18				
C-8294		0.43				
UzPITI-201		0.16				
UzPITI-202		0.01				
UzPITI-103		0.17				
Surkhan-14		0.50				
Surkhan-16		0.16				
Termez-102		0.03				
Gulistan		0.06				

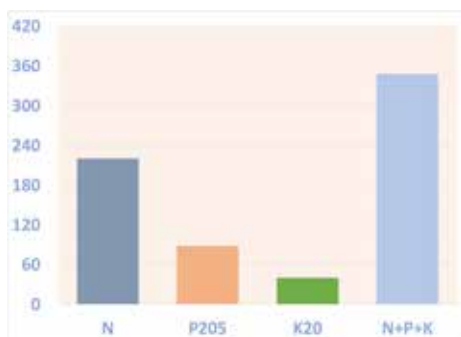


GENERAL DATA

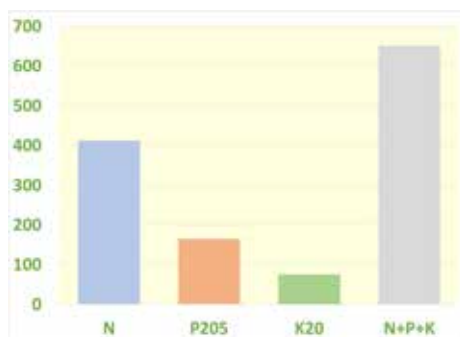


FERTILISERS

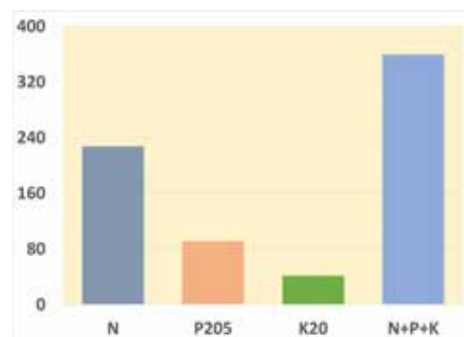
Fertiliser (NPK) use Kg/Hectare



Fertiliser (NPK) use per Kg Lint

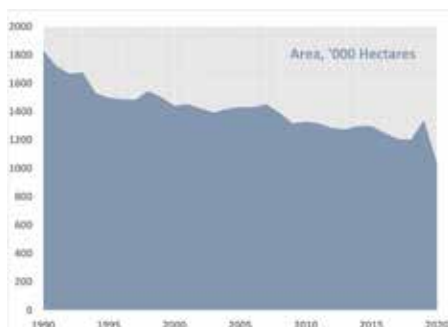


Fertiliser (NPK) use '000 Tons

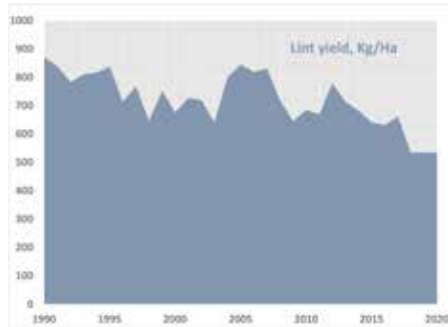


PRODUCTION

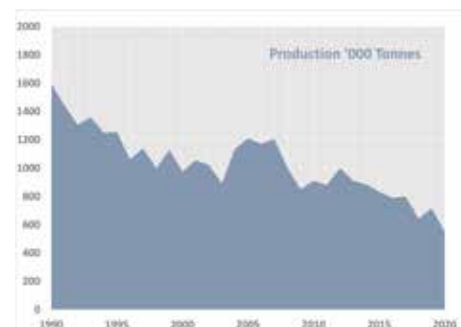
Cotton Area '000 Hectares



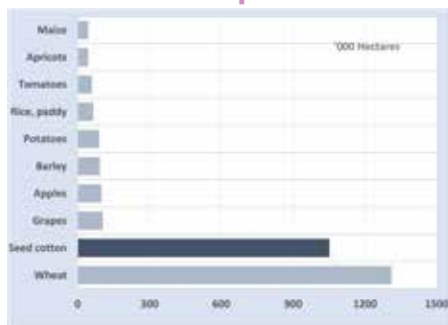
Lint Yield Kg/Ha



Production '000 Tonnes



Area of Crops '000 Ha



COMPETING CROPS



ROTATION CROPS



INSECT PESTS / INSECTICIDES

EARLY-SEASON

Aphids, Thrips, Bemisia tabaci

MID-SEASON

Spider mites, Agrotis spp.

Alfalfa plant bug, Helicoverpa armigera

Spodoptera exigua

INSECTICIDES

Buprofezin, Fipronil, Indoxacarb

Lambda-cyhalothrin, Fenvalerate

Imidacloprid, Dimethoate, Acetamiprid

Cypermethrin+chlorpyrifos

Deltamethrin (Pyrethroids)

WATER

Rainfed Area (%) & Water Used /Kg Lint

Kashkadar	0	938	13,164	3,339
Bukhara	0	627	10,609	1,823
Syrdarya	0	432	11,929	3,283
Syrkhandar	0	530	12,155	2,975
Ferghana	0	496	11,141	2,029
Dzhizak	0	515	13,199	2,960
Karakalpak	0	537	15,384	4,304
Khorezm	0	513	11,173	3,244
Andizhan	0	486	10,845	3,898
Tashkent	0	423	10,360	5,180
Sa-markhand	0	465	12,118	6,502
Naman-gam	0	391	10,903	3,717
Navoi	0	212	12,008	3,510
National	0	6,564	11,892	4,284
	Rainfed % Area	Irrigation Billion L	Irrigation L/Kg Lint	Rainwater L/Kg Lint

NUMBER OF FARMERS

	Men	Women
Kashkadar	12,315	597
Bukhara	4,963	369
Syrdarya	3,467	116
Syrkhandar	5,698	341
Ferghana	8,987	371
Dzhizak	7,833	430
Karakalpak	5,005	322
Khorezm	2,372	332
Andizhan	7,284	112
Tashkent	8,656	2,234
Samarkhand	1,1740	357
Namangam	5,351	424
Navoi	2,589	139
Total	8,6260	6,144

WATER

Rainwater & Irrigation water (mm)

Kashkadar	285	175	3	690
Bukhara	157	110	3	640
Syrdarya	265	164	3	596
Syrkhandar	324	175	3	715
Ferghana	165	110	3	604
Dzhizak	280	148	3	660
Karakalpak	290	174	3	622
Khorezm	280	180	3	620
Andizhan	384	220	3	612
Tashkent	415	290	3	580
Sa-markhand	550	330	3	615
Naman-gam	348	210	3	616
Navoi	310	190	3	650
National	315	229	3	635
	Total Rainfall	Effective Rainfall	No. of Irrigations	Irrigation Water/Ha

WATER

Methods of Irrigation (% Area)

Kashkadar	97	0	0	3
Bukhara	96	0	0	4
Syrdarya	97	0	0	3
Syrkhandar	97	0	0	3
Ferghana	96	2	0	2
Dzhizak	90	3	0	7
Karakalpak	99	0	0	1
Khorezm	98	0	0	2
Andizhan	98	0	0	2
Tashkent	99	0	0	1
Sa-markhand	91	0	0	9
Naman-gam	98	0	0	2
Navoi	94	0	0	6
National	96	0	0	3
	Flood	Furrow	Sprinkler	Drip



TILLAGE, STALKS-USE WEEDING & HARVESTING

Tillage Methods (% Area)

0	100	0	100
Zero Tillage	Disc Plough	Chisel Plough	Conventional Tillage

Use of Cotton stalks (% Use)

0	0	35	65
Burnt in Fields	Used as Firewood	Ploughed Back	Stacked on Bunds

Weeding Method (%)

Harvesting Method (%)

0	100	90	10
Hand	Machine	Hand Picked	Machine Picked

COTTON RESEARCH

The following institutions undertake research on cotton.

1. Cotton Breeding, Seed Production and Agrotechnologies Research Institute, Tashkent and its scientific and experimental Stations
2. Institute of Genetics and Experimental Biology of Plants
3. Karakalpakstan Agricultural Scientific Institute
4. Scientific Research Institute of Plants
5. Tashkent State Agrarian University
6. Andijan Agricultural Institute
7. Centre for Genomics and Bioinformatics

Funding for research is provided through the annual government budget, foreign grants, business contracts and

SEEDS & PLANTING

Seeds Used for Sowing (%)

73	27	73	27
Fuzzy Seeds	Delinted	Chemical Treated	Untreated

Planting Method (%)

Seed Source (%)

0	100	100	0
Manual	Machine	Local	Imported

Use of Cotton Seeds (% Use)

92	0	8	0
Crushed for Oil	Direct Cattle-Feed	Used for Sowing	wasted

Seed Rate, Spacing & Plant Population/Ha

50	60	6.5	256,410
40	76	7.5	175,439
35	90	10	111,111
Seed Rate Kg/Ha	Between Rows cm	Within Row cm	Plant Population/ Ha

other sources. The coordinating committee coordinates all research projects for science and technology development under the cabinet of ministers, Ministry of Agriculture and Water Resources, the Academy of Sciences of the Republic of Uzbekistan and the Uzbek Scientific Production Centre of Agriculture.

WEATHER 2019-2020

Heat Units (DD60) -Kashkadar



Rainfall (mm) -Kashkadar

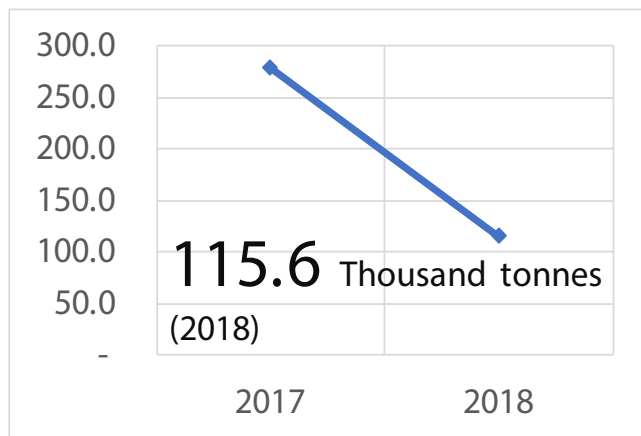


COST OF CULTIVATION US\$/Hectare

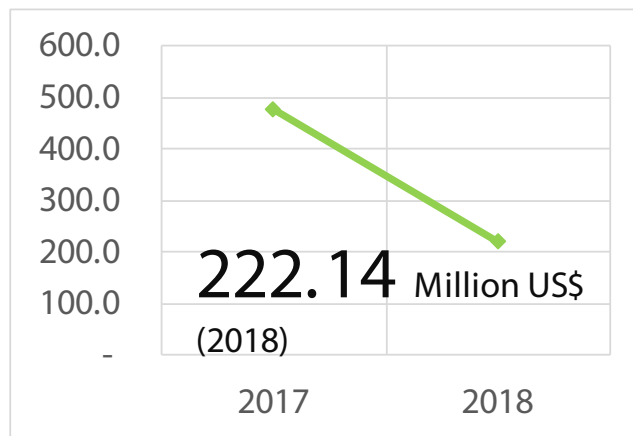
INPUTS	Quantity (Kg/Ha)	Operations per season	Total cost /Ha
Non-GM seeds			44
Biotech/GM seeds			
NPK+Other			180
Insecticides			30
Herbicides			
Fungicides			
Growth regulators			
Defoliants			25
Manure			
Others (please specify)			30
MANPOWER / LABOUR	Wages per person	Persons per operation	Total cost per hectare
Land preparation /tillage etc.,	15	8	120
Sowing	15	2	30
Fertiliser / manure application	15	4	60
Irrigation	15	2	30
Thinning	15	1	20
Weeding	15	6	90
Hoeing	15	2	30
Pesticide application	15	4	60
Defoliator application	15	1	20
Picking / harvesting	15	15	220
Stalk cutting & removal	15	5	75
Transportation /unloading etc.,	15	3	40
Ginning cost per 100 Kg			120
Others (please specify)			
MACHINERY /ANIMALS etc.	Cost per Operation	Number of Operations	Total cost per hectare
Tractors			200
Implements & tools			
Electric / Diesel pumps etc.,			60
Electricity / Diesel etc.,			
Harvesting machines			
Hoeing / Tillage machinery etc.,			40
Bullocks /Buffaloes			
Land rent			
MARKET VALUE	Yield Kg/per hectare	Market value per 100 Kg	Value per hectare
Seed cotton	2580	0.58	1496
Ginning % (output)	30.3		
Lint (fibre)	782	1.6	1251
Seed	1790	0.2	358
COST OF CULTIVATION			1073
NET RETURNS (SEED-COTTON)			423
NET RETURNS (SEED + LINT)			348

COTTON FIBRE EXPORT DATA

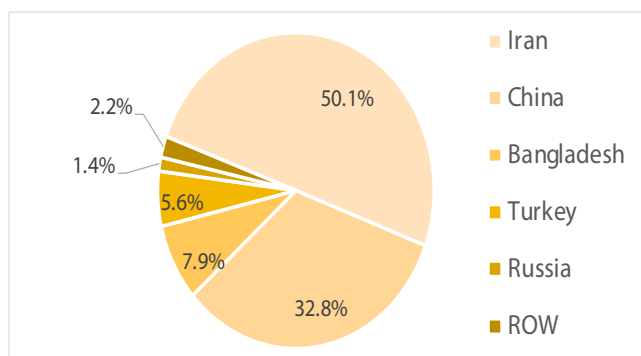
Quantity



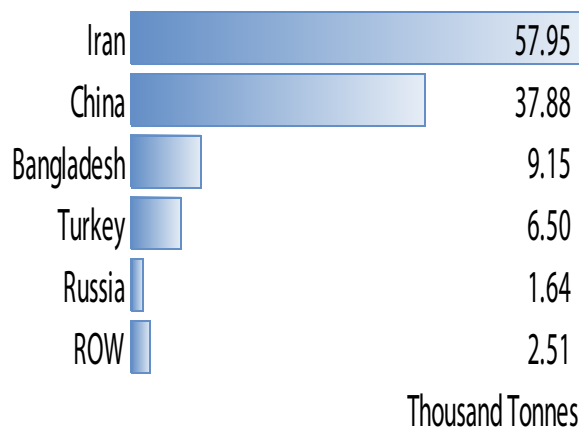
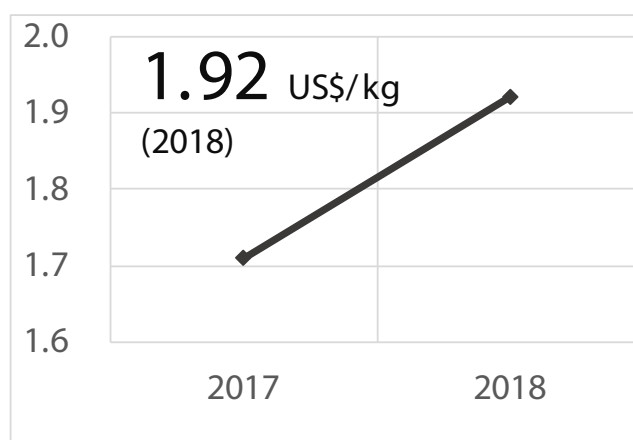
Value



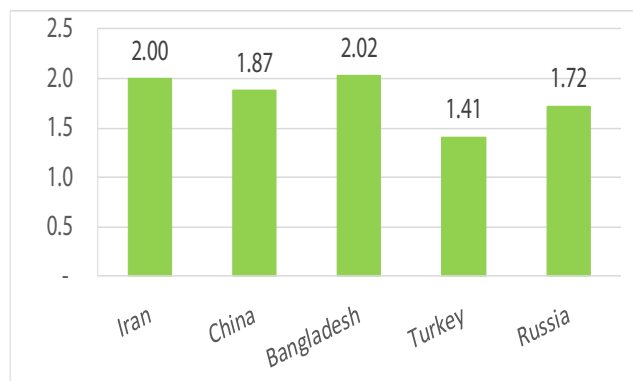
Market Share by Country



Average Price: US\$/Kg

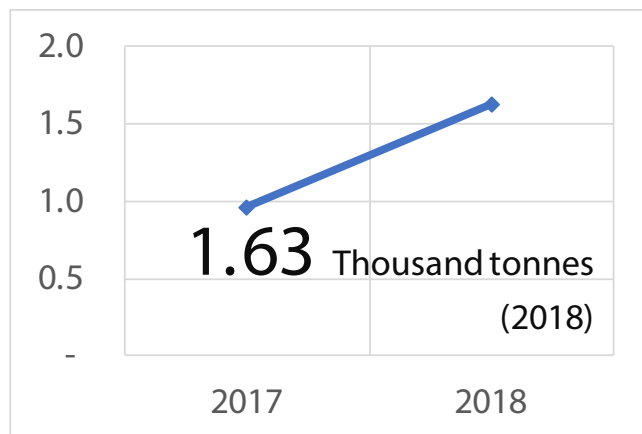


Average Price by Country 2018: US\$/Kg

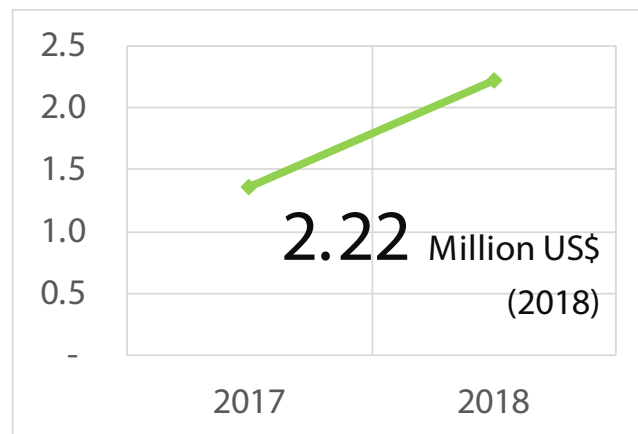


COTTON YARN IMPORT DATA

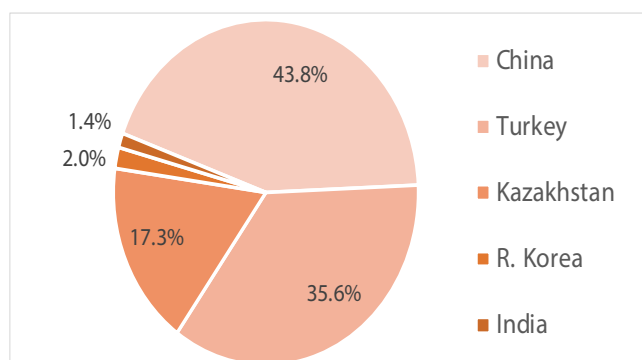
Quantity



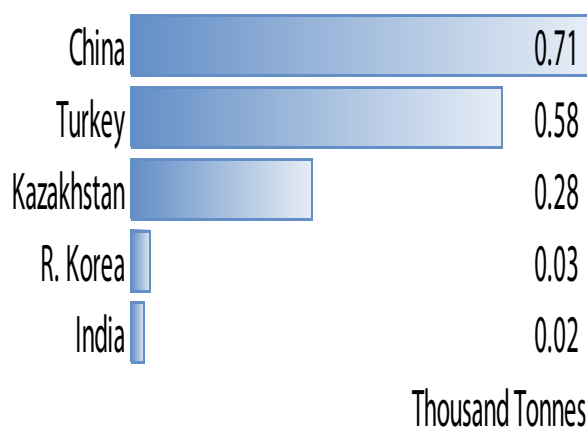
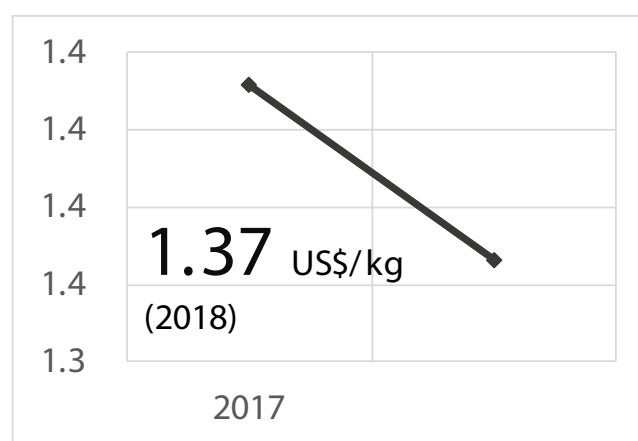
Value



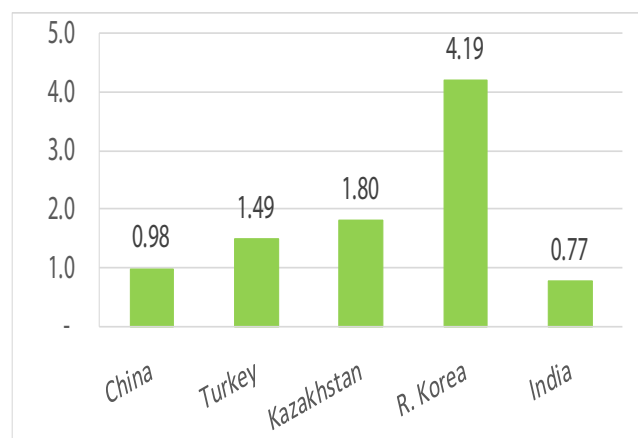
Market Share by Country



Average Price: US\$/Kg

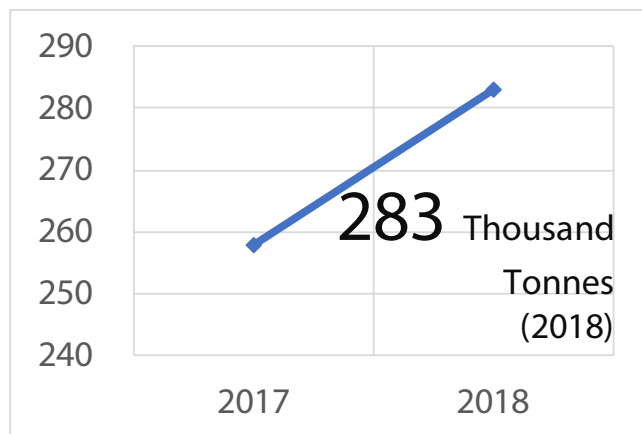


Average Price by Country 2018: US\$/Kg

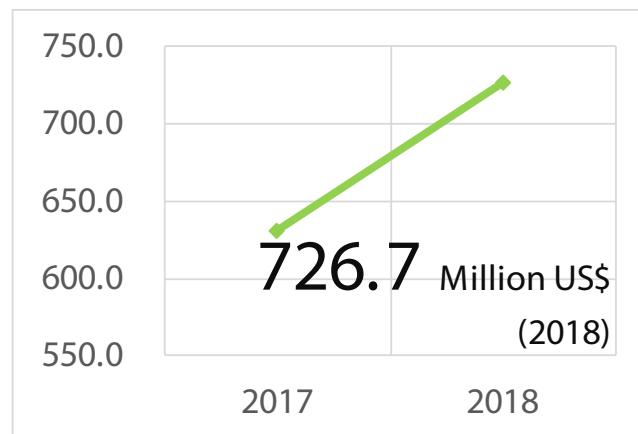


COTTON YARN EXPORT DATA

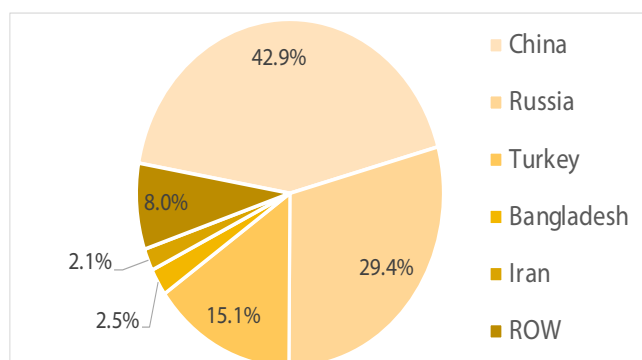
Quantity



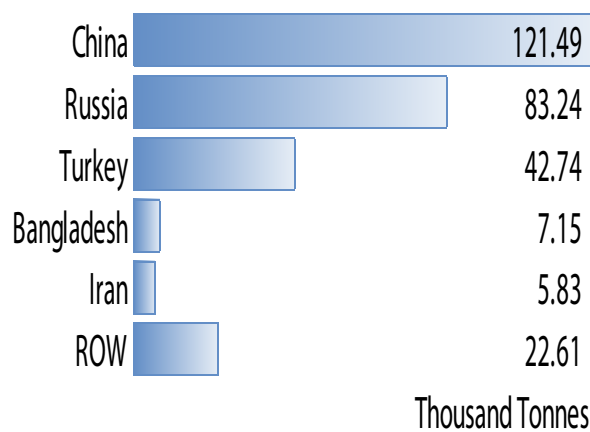
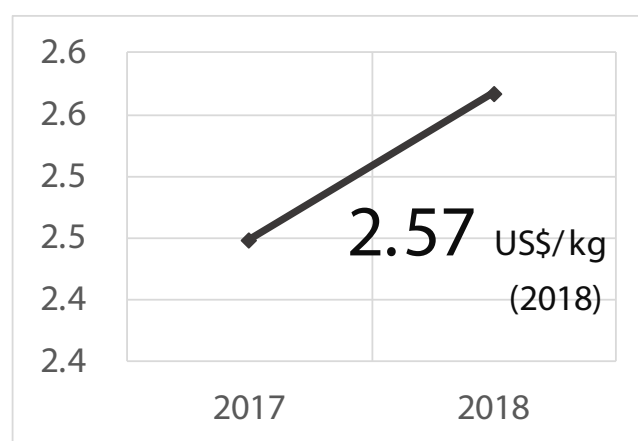
Value



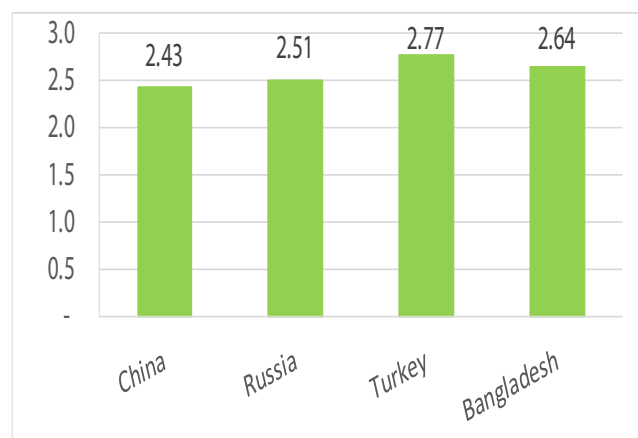
Market Share by Country



Average Price: US\$/Kg

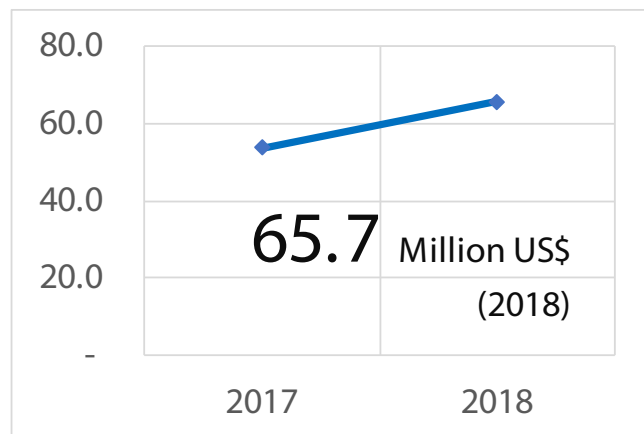


Average Price by Country 2018: US\$/Kg

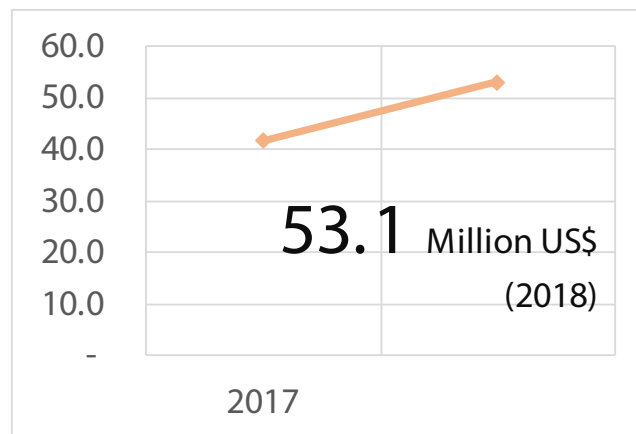


COTTON FABRIC TRADE DATA

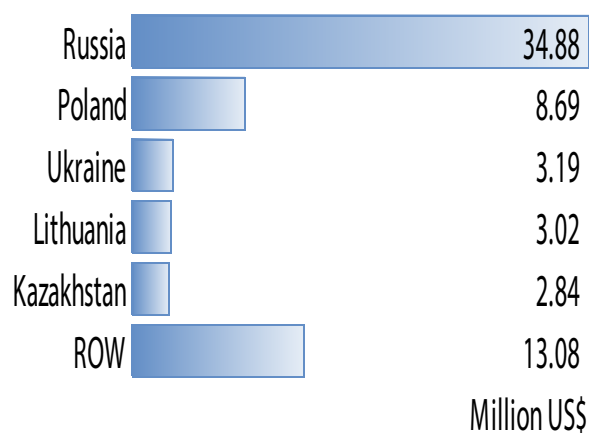
Woven Cotton Fabric Exports



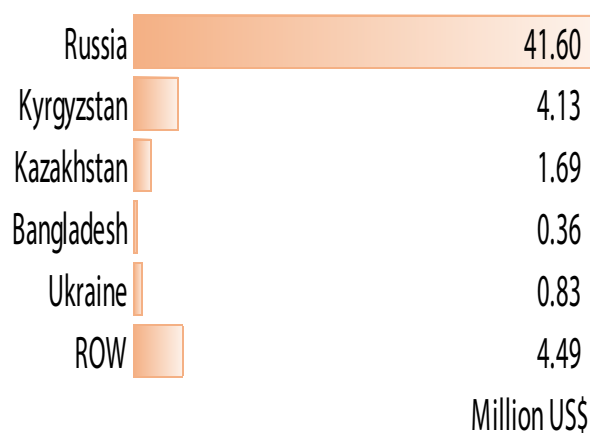
Knitted Cotton Fabric Exports



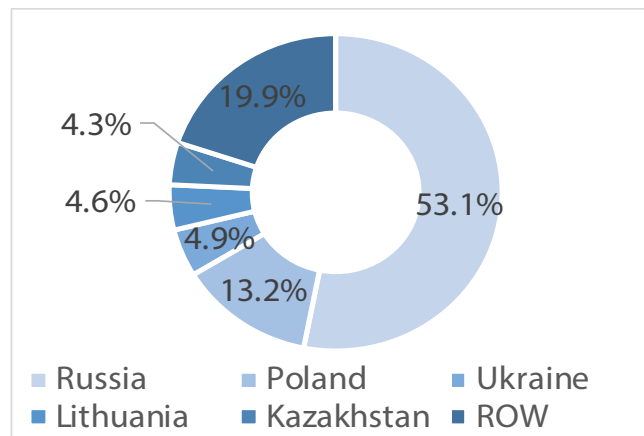
Imports by Country - 2018



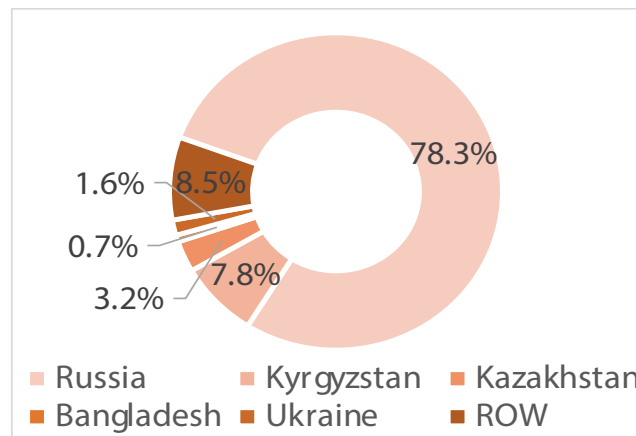
Exports by Country - 2018



Market Share Imports by Country - 2018 Woven Cotton Fabric

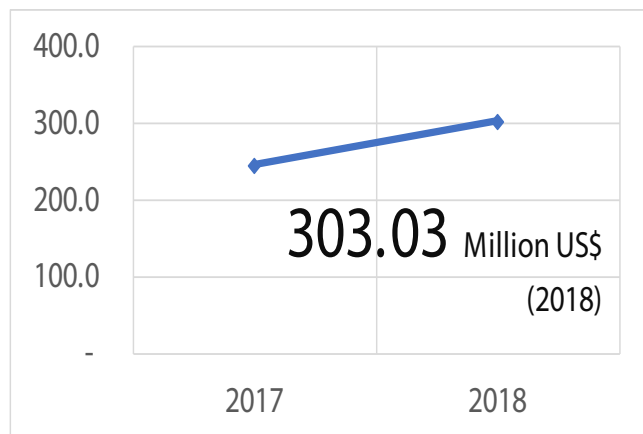


Market Share Exports by Country - 2018 Knitted Cotton Fabric

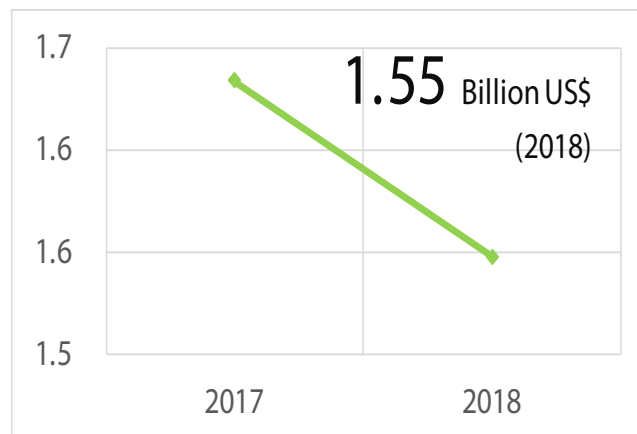


TEXTILE & APPAREL TRADE DATA

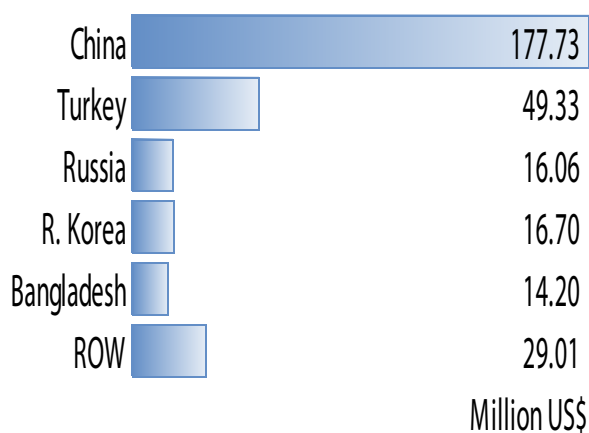
Imports



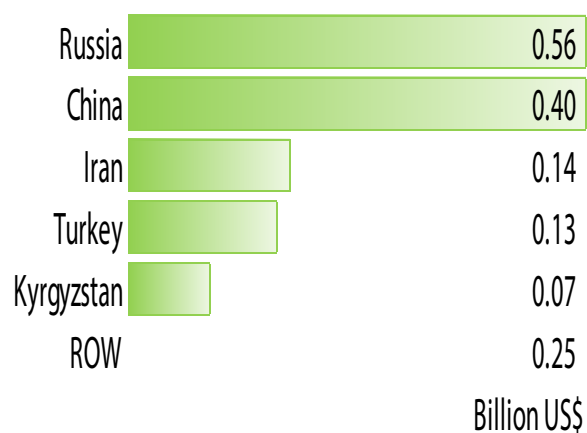
Exports



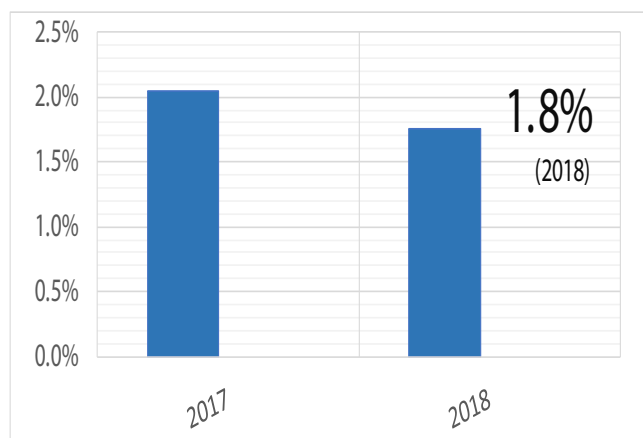
Imports by Country - 2018



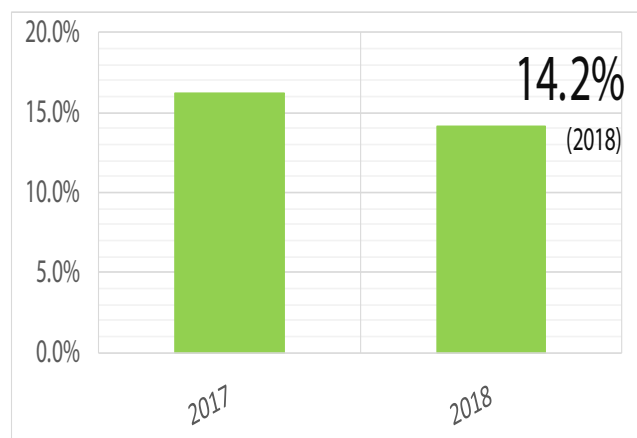
Exports by Country - 2018



T&A Imports Share in Overall Imports

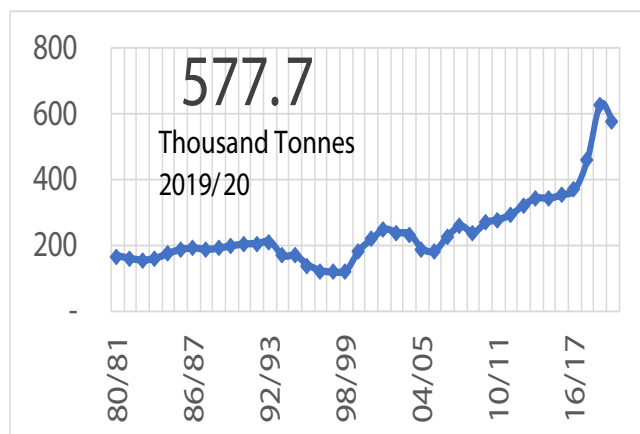


T&A Exports Share in Overall Exports

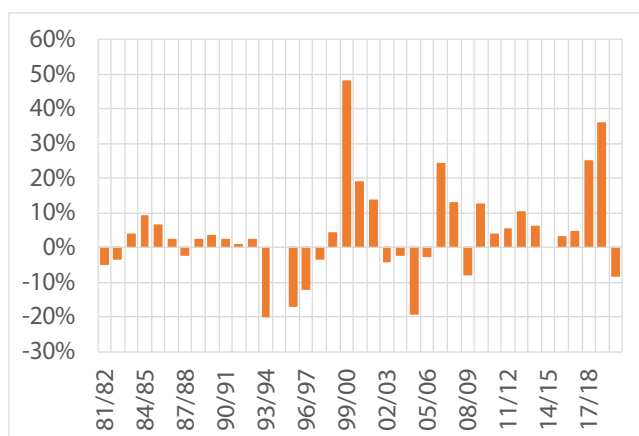


COMPOSITION OF THE TEXTILE & APPAREL INDUSTRY

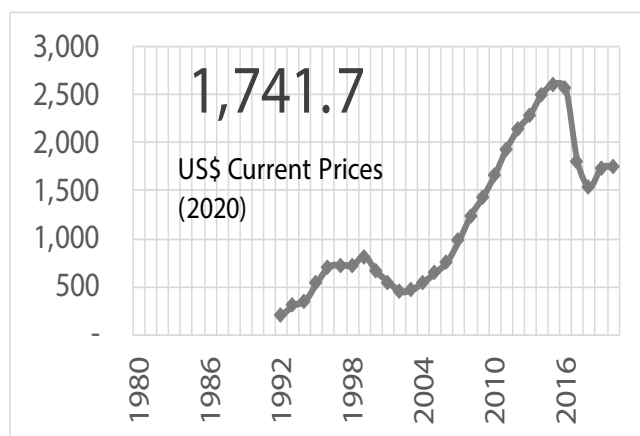
Cotton Mill Use



Mill Use - Annual Variation %



GDP per capita



Spinning Machinery

490 **190,000**
Air-Jet Spindles Open-End
3,000,000
Short-Staple Spindles

Weaving Machinery

130 **1,600**
Shuttle Looms Shuttle-less Looms

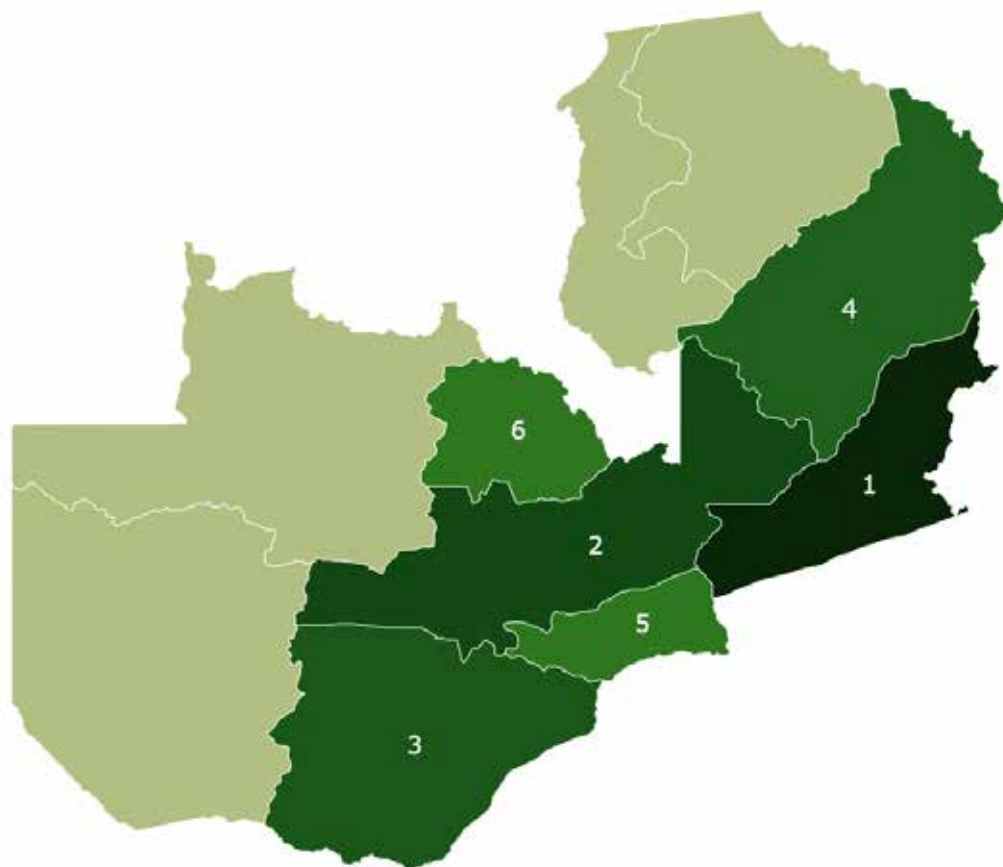
No. Textile Factories

7,000





Basic Data 2020



Arable Area

3,800

'000 Hectares

Cotton Area

313

'000 Hectares

Production

59

'000 Tonnes

Lint Yield

189

Kg/Hectare

Consumption

2

'000 Tonnes

Lint Exports

26

'000 Tonnes

Farmers

283,944

Male

Farmers

40,631

Female

PRODUCTION 2020

		Area '000 Ha	Yield Kg/Ha	Production '000 Tonnes
1	Eastern	174	154	27
2	Central	88	251	22
3	Southern	51	201	10
	National	313	189	59



TILLAGE METHODS

Tillage Methods (% Area)

Eastern	15	10	0	85
Central	10	10	0	90
Southern	25	10	5	75
National	17	10	3	83
	Zero Tillage	Disc Plough	Chisel Plough	Conventional Tillage

SEEDS & PLANTING

Seeds Used for Sowing (%)

Eastern	46	6	100	0
Central	37	0	100	0
Southern	17	0	100	0
National	39	3	100	0
	Fuzzy Seeds	Delinted	Chemical Treated	Untreated

Planting Method (%)

Seed Source (%)

National	100	0	100	0
	Manual	Machine	Local	Imported

Use of Cotton Seeds (% Use)

80	4	15	1
Crushed for Oil	Direct Cattle-Feed	Used for Sowing	wasted

Seed Rate, Spacing & Plant Population/Ha

15	90	30	37,037
Seed Rate Kg/Ha	Between Rows cm	Within Row cm	Plant Population/ Ha

STRUCTURE OF COTTON RESEARCH

The Cotton Development Trust (CDT) Magoye, Mazabuka is responsible for research on cotton. CDT is an initiative of the government with the private sector. An autonomous board of trustees under the Ministry of Agriculture governs the CDT. All though the CDT is mandated to carry out all research, the private sector is also at liberty to conduct independent research. Funds for cotton research come from government grants through the Ministry of Agriculture, cotton sector funds (a portion of cotton levies goes towards research), royalties, donations and contributions.

WATER

Rainwater & Irrigation water (mm)

Eastern	1,450	896	0	0
Central	1,225	731	0	0
Southern			0	0
National			0	0
	Total Rainfall	Effective Rainfall	No. of Irrigations	Irrigation Water/Ha

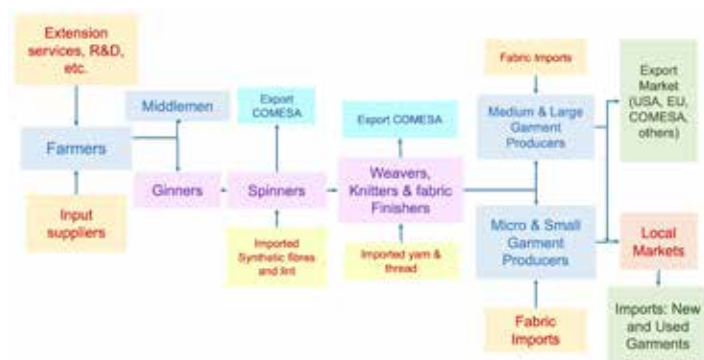
Methods of Irrigation (% Area)

National	0	0	0	0
	Flood	Furrow	Sprinkler	Drip

Rainfed Area (%) & Water Used /Kg Lint

Eastern	100	0	0	58,121
Central	100	0	0	29,110
Southern	100	0	0	0
National	100	0	0	42,314
	Rainfed % Area	Irrigation Billion L	Irrigation L/Kg Lint	Rainwater L/Kg Lint

COTTON ORGANOGRAMS

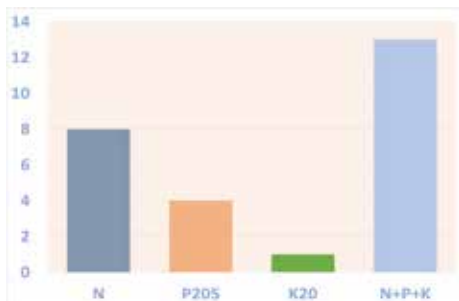


VARIETIES AND FIBRE TRAITS

	Release Year	% Area	Ginning %	Length UHML mm	Strength g/tex	Mic
Chureza	1987	56	40.7	28.9	24.3	4.3
CDT II	2005	26	42.4	29.5	24.8	4.2
CDTV	2010	18	45.6	30.1	24.3	4.1

FERTILISERS

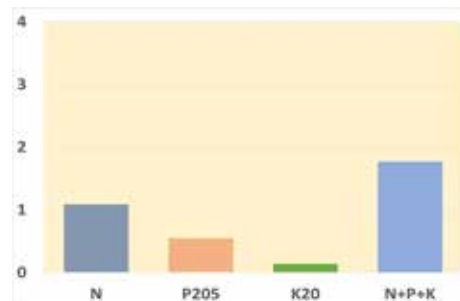
Fertiliser (NPK) use Kg/Hectare



Fertiliser (NPK) use per Kg Lint

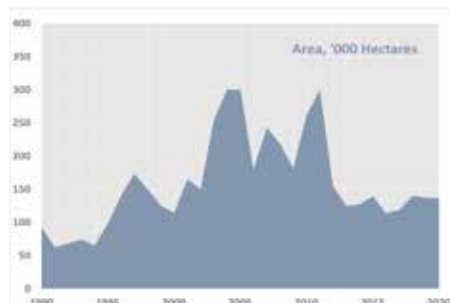


Fertiliser (NPK) use '000 Tons

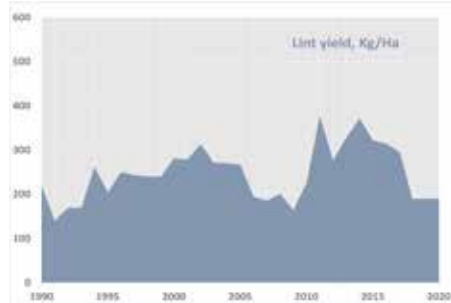


PRODUCTION

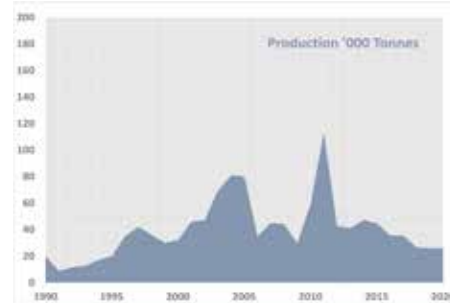
Cotton Area '000 Hectares



Lint Yield Kg/Ha

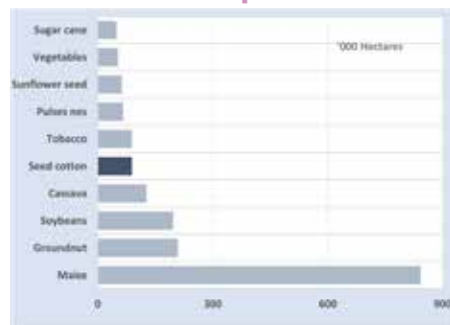


Production '000 Tonnes

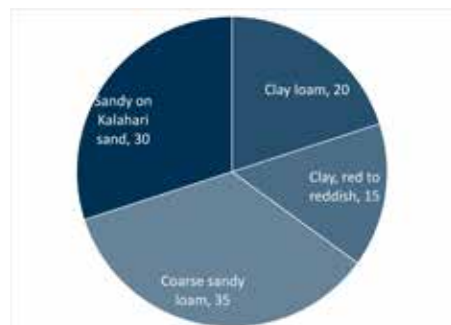


SOILS

Area of Crops '000 Ha



Soil Types



COMPETING CROPS

Region 1
Corn
Cowpea
Peanuts

ROTATION CROPS

Region 1
Corn
Cowpea
Peanuts

COTTON STALKS-USE, WEEDING & HARVESTING

Use of Cotton stalks (% Use)

National	90	3	1	6
	Burnt in Fields	Used as Firewood	Ploughed Back	Stacked on Bunds

Weeding Method (%)

100	65
Hand	Machine

Harvesting Method (%)

100	0
Hand Picked	Machine Picked

WEATHER 2019-2020

Heat Units (DD₆₀) -Central



Rainfall (mm) -Central



Heat Units (DD₆₀) -Eastern



Rainfall (mm) -Eastern



INSECTS, PATHOGENS & WEEDS

INSECT PESTS / INSECTICIDES

EARLY-SEASON

Aphis gossypii, *Bemisia tabaci*
Empoasca spp.

MID-SEASON

Diparopsis castanea
Helicoverpa armigera
Earias insulana, *Earias biplaga*
Dysdercus spp.

INSECTICIDES

Acetamiprid 200 SI
Lambda-Cyhalothrin 50 EC
Cypermethrin
Endosulfan
Deltamethrin
Fenvalerate

DISEASES / PATHOGENS

Rhizoctonia
Xanthomonas malvacearum
Fusarium
Verticillium

Cotton leaf curl virus

CHEMICAL CONTROL

Metaxyl, Thiram
Thiram

WEEDS / HERBICIDES

NARROW-LEAF WEEDS

Eleusine indica
Brachiaria deflexa
Cynodon dactylon
Chloris pilosa
Rhynchelytrum repens

BROAD-LEAF WEEDS

Bidens pilosa
Trianthema portulacastrum
Borreria scabra
Hibiscus asper
Euphorbia hirta

HERBICIDES

Glyphosate 360, Pantera
Dual magnum 960 EC, Paraquat



COST OF CULTIVATION US\$/Hectare

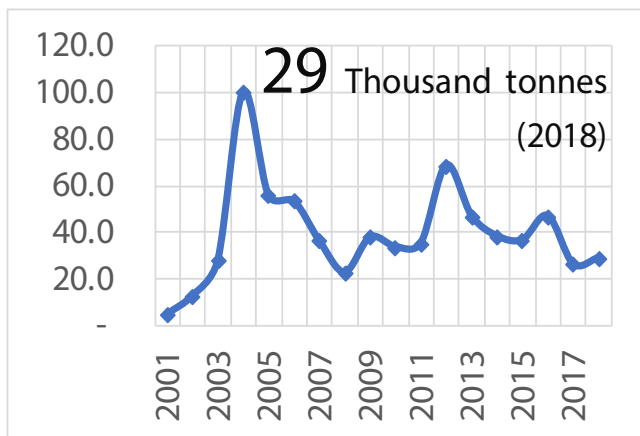
INPUTS	Quantity (Kg/Ha)	Operations per season	Total cost /Ha
Non-GM seeds	25kg Fuzzy	1	2
Biotech/GM seeds	Nil		0
NPK+Other	1kg Boron	3	3
Insecticides	2	4	8
Herbicides	2	1	8
Fungicides	Nil		0
Growth regulators	Nil		0
Defoliants	Nil		0
Manure	Nil		0
Others (please specify)			0
MANPOWER / LABOUR	Wages per person	Persons per operation	Total cost per hectare
Land preparation /tillage etc.,	1.6	3.0	5
Sowing	1.6	2.0	3
Fertiliser / manure application	0.0		0
Irrigation	0.0		0
Thinning	1.6	2.0	3
Weeding	1.6	3.0	5
Hoeing	0.0		0
Pesticide application	1.6	3.0	5
Defoliator application	0.0		0
Picking / harvesting	1.6	4.0	6
Stalk cutting & removal	1.6	3.0	5
Transportation /unloading etc.,	1.6	2.0	3
Ginning cost per 100 Kg	1.6		35
Others (please specify)			0
MACHINERY /ANIMALS etc.	Cost per Operation	Number of Operations	Total cost per hectare
Tractors			0
Implements & tools			0
Electric / Diesel pumps etc.,			0
Electricity / Diesel etc.,			0
Harvesting machines			0
Hoeing / Tillage machinery etc.,			0
Bullocks /Buffaloes			0
Land rent			0
MARKET VALUE	Yield Kg/per hectare	Market value per 100 Kg	Value per hectare
Seed cotton	640	0.20	131
Ginning % (output)	35	0.00	0
Lint (fibre)	224	1.60	358
Seed	410	0.15	62
COST OF CULTIVATION			56
NET RETURNS (SEED-COTTON)			75
NET RETURNS (SEED + LINT)			329

TRADE DATA

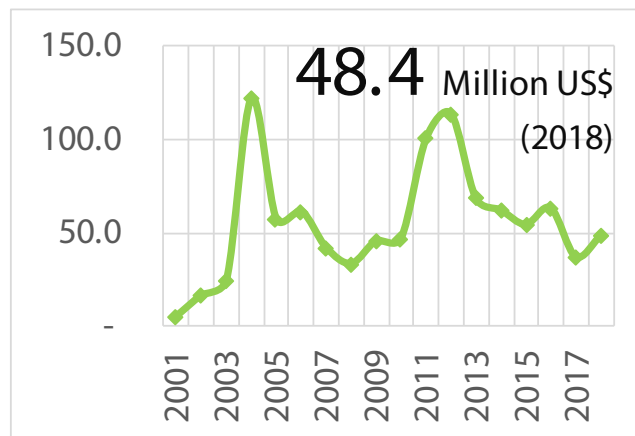


COTTON FIBRE EXPORT DATA

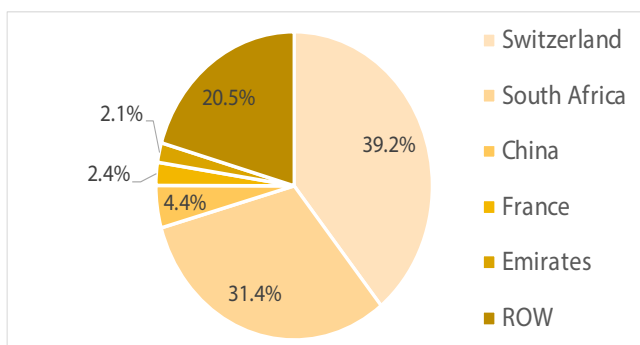
Quantity



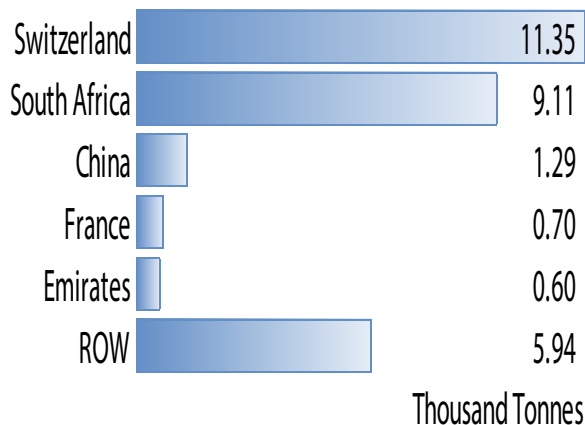
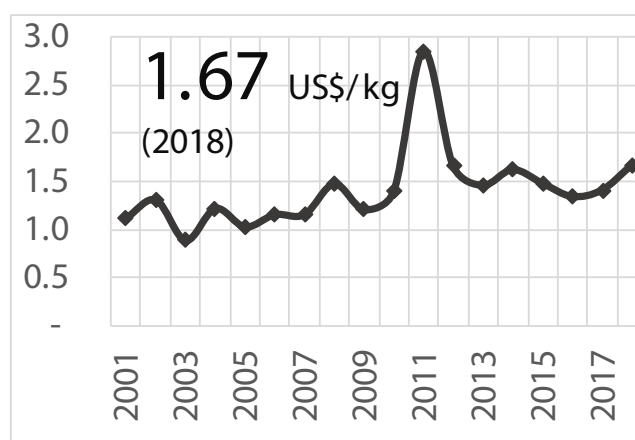
Value



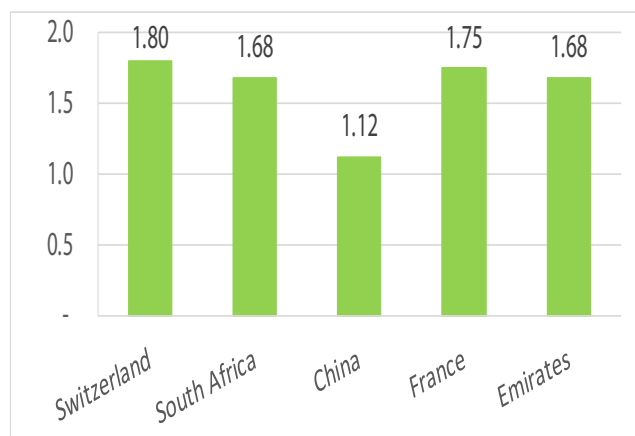
Market Share by Country



Average Price: US\$/Kg

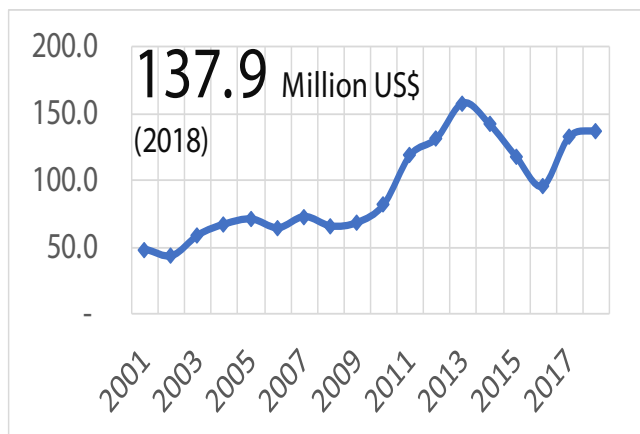


Average Price by Country 2018: US\$/Kg

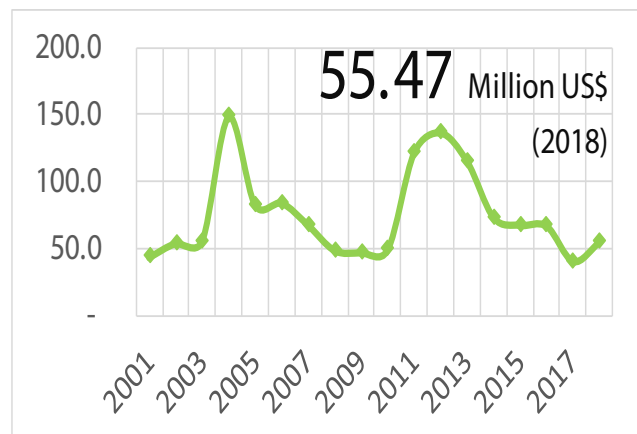


TEXTILE & APPAREL TRADE DATA

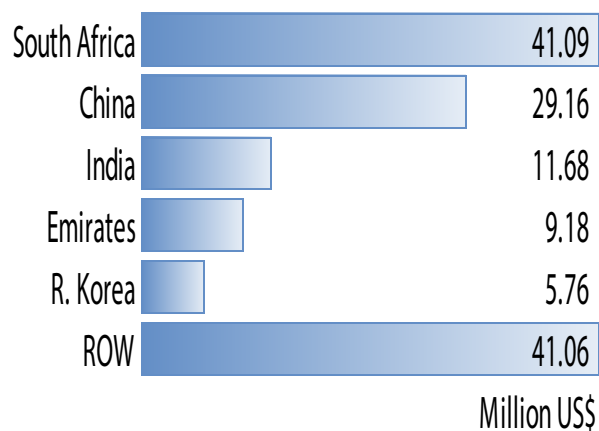
Imports



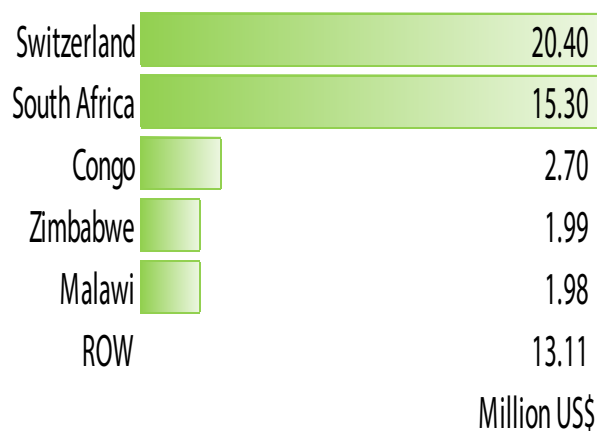
Exports



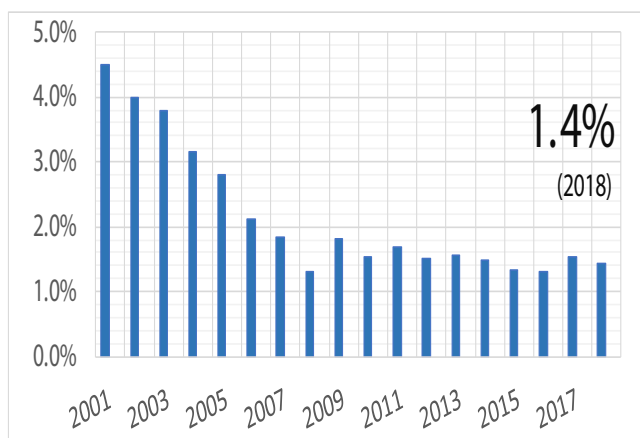
Imports by Country - 2018



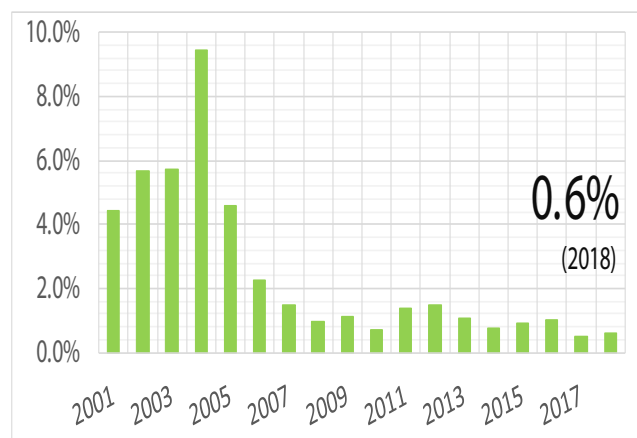
Exports by Country - 2018



T&A Imports Share in Overall Imports

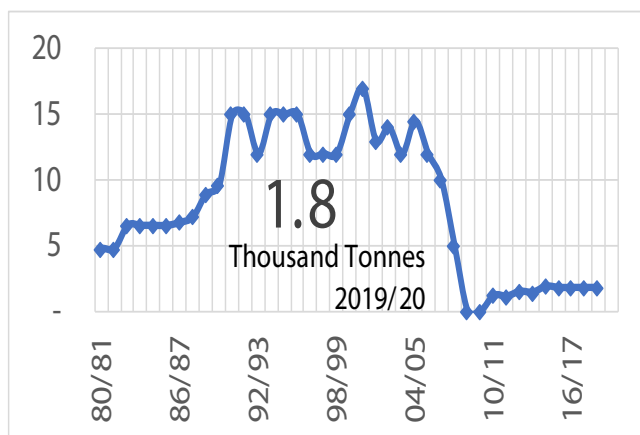


T&A Exports Share in Overall Exports



COMPOSITION OF THE TEXTILE & APPAREL INDUSTRY

Cotton Mill Use



Employment

670

Textile Sector

Spinning Machinery

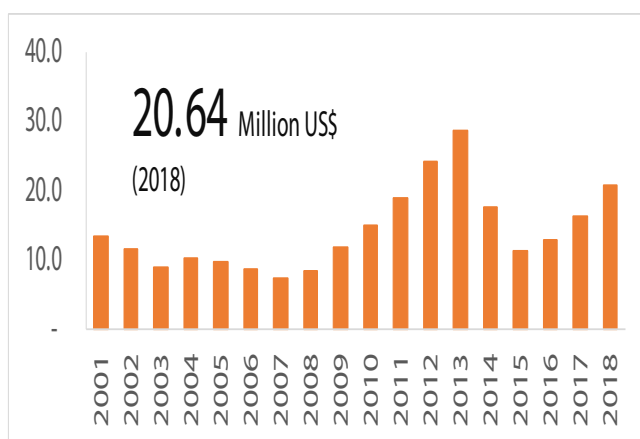
2,500

Open-End

30,000

Short-Staple Spindles

Imports - Worn Clothing & Articles



Weaving Machinery

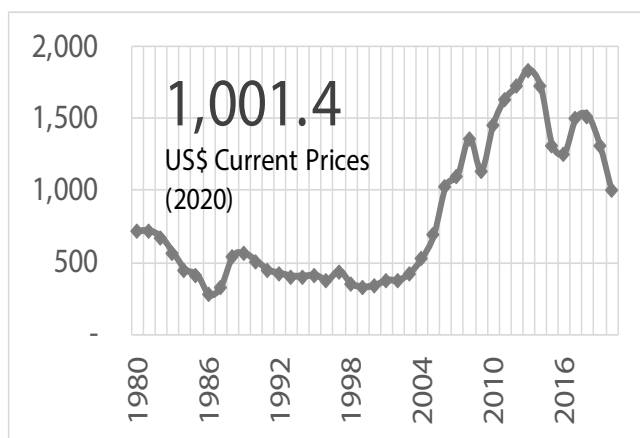
1,000

Shuttle Looms

160

Shuttle-less Looms

GDP per capita



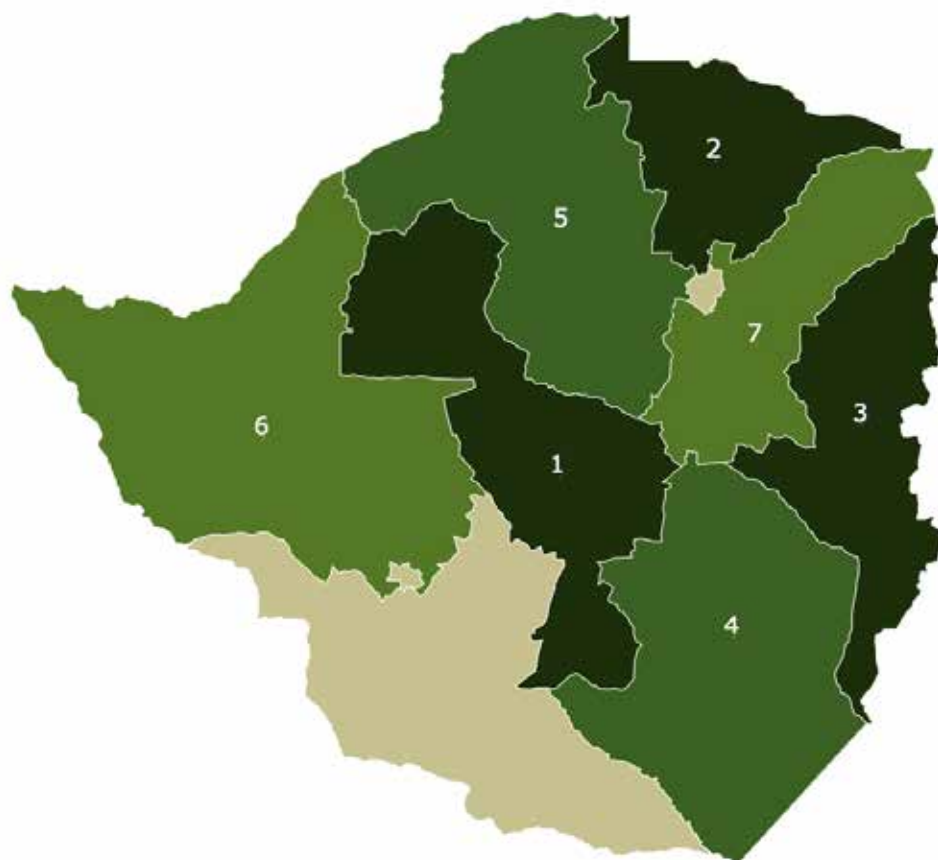
Better Cotton+CmiA Produced in
2018/19

24,279 tonnes





Basic Data 2020



Farmers

440

Female

Farmers

4400

Male

PRODUCTION 2020

		Area '000 Ha	Yield Kg/Ha	Production '000 Tonnes
1	Midlands	94	210	20
2	Mashonaland	32	211	7
3	Manicaland	14	192	3
4	Masvingo	15	218	3
5	Mashonaland-West	10	180	2
6	Mashonaland-East	11	198	2
7	Others	10	209	2
	National	186	207	38

Arable Area

4,000

'000 Hectares

Cotton Area

449

'000 Hectares

Production

295

'000 Tonnes

Lint Yield

657

Kg/Hectare

Consumption

135

'000 Tonnes

Lint Exports

102

'000 Tonnes



VARIETIES AND FIBRE TRAITS

	Release Year	% Area	Ginning %	Length UHML mm	Strength g/tex	Mic
SZ 9314	1992	100	41.0	29.0	31.2	4.1

TILLAGE, STALKS-USE WEEDING & HARVESTING

Tillage Methods (% Area)

4	99	1	96
Zero Tillage	Disc Plough	Chisel Plough	Conventional Tillage

Use of Cotton stalks (% Use)

95	5	0	0
Burnt in Fields	Used as Firewood	Ploughed Back	Stacked on Bunds

Weeding Method (%)

100	5
Hand	Herbicide

Harvesting Method (%)

100	0
Hand Picked	Machine Picked

SEEDS & PLANTING

Seeds Used for Sowing (%)

0	100	100	0
Fuzzy Seeds	Delinted	Chemical Treated	Untreated

Planting Method (%)

99	1
Manual	Machine

Seed Source (%)

100	0
Local	Imported

Use of Cotton Seeds (% Use)

80	4	15	1
Crushed for Oil	Direct Cattle-Feed	Used for Sowing	wasted

Seed Rate, Spacing & Plant Population/Ha

25	100	30	33,333
Seed Rate Kg/Ha	Between Rows cm	Within Row cm	Plant Population/ Ha

WATER

Rainwater & Irrigation water (mm)

980	510	0	0
Total Rainfall	Effective Rainfall	No. of Irrigations	Irrigation Water/Ha

Methods of Irrigation (% Area)

2	0	0	0
Flood	Furrow	Sprinkler	Drip

Rainfed Area (%) & Water Used /Kg Lint

100	0	0	24,638
Rainfed % Area	Irrigation Billion L	Irrigation L/Kg Lint	Rainwater L/Kg Lint

INSECTS, PATHOGENS & WEEDS

INSECT PESTS / INSECTICIDES

EARLY-SEASON

Aphis gossypii, *Empoasca* spp

Phenococcus spp., *Diparopsis castanea*

MID-SEASON

Phenacoccus sp., *Diparopsis castanea*

Helicoverpa armigera, *Earias biplaga*

Pectinophora gossypiella

INSECTICIDES

Carbaryl 85% WP, Lambda-cyhalothrin 5 EC

Imidacloprid T 45 WS, Carbosulfan 25% EC

Thiodicarb 375SC, Fenvalerate 20EC, Amitraz 20EC

Tetradifon 8EC, Triazophos 40EC

DISEASES / PATHOGENS

Fusarium, *Verticillium*, *Xanthomonas*

WEEDS / HERBICIDES

NARROW-LEAF WEEDS

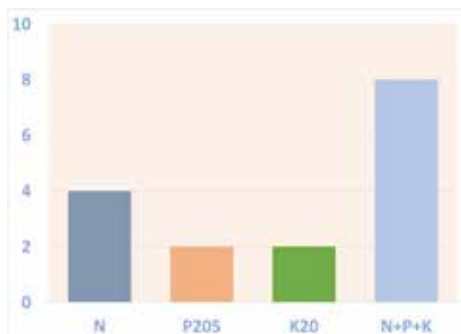
Elymus repens, *Cyperus* spp., *Eleusine indica*

Black jack



FERTILISERS

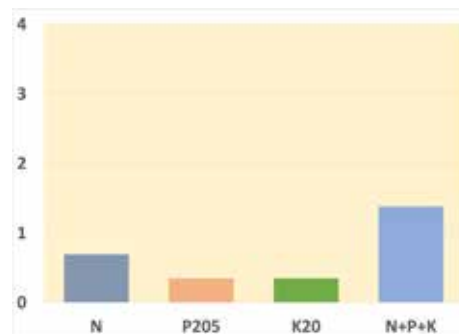
Fertiliser (NPK) use Kg/Hectare



Fertiliser (NPK) use per Kg Lint

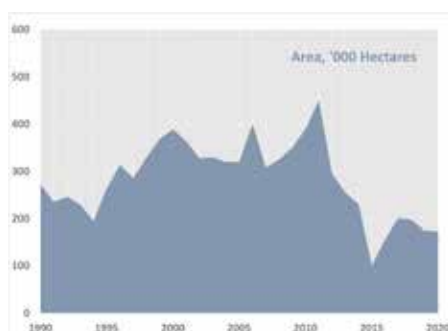


Fertiliser (NPK) use '000 Tons

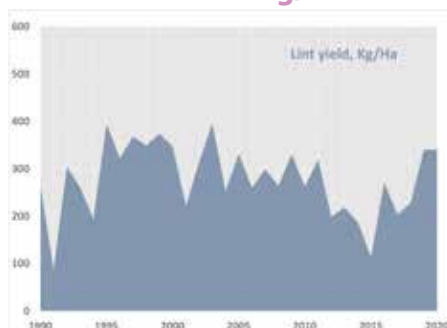


PRODUCTION

Cotton Area '000 Hectares



Lint Yield Kg/Ha

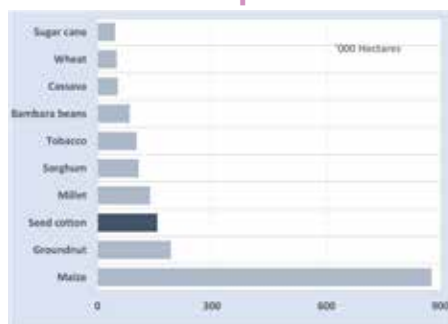


Production '000 Tonnes

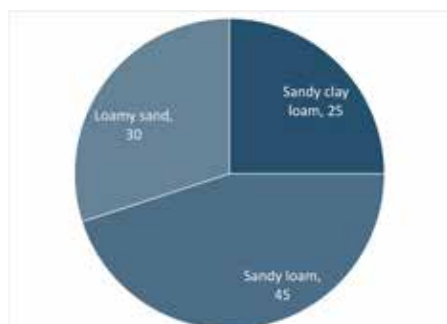


SOILS

Area of Crops '000 Ha



Soil Types



COMPETING CROPS

National
Corn
Peanuts

ROTATION CROPS

National
Corn
Peanuts

STRUCTURE OF COTTON RESEARCH

The Cotton Research Institute (CRI), under the Government of Zimbabwe is responsible for cotton research. The CRI functions under the Crops Research Division of the Department of Research and Specialist Services (DR&SS) in the Ministry of Lands, Agriculture, and Rural Resettlement. The CRI was established in 1925 to provide research-based technologies that promote viable and sustainable cotton production in Zimbabwe. It has been supporting the cotton industry with high value locally adapted cotton varieties. All cotton varieties that were grown in Zimbabwe up until around 2007 were developed only at CRI. In 2007, QUTON released its first variety. Since independence the CRI released 18 cotton varieties.



WEATHER 2019-2020

Heat Units (DD₆₀) -Mashonaland-Central



Rainfall (mm) -Mashonaland-Central



Heat Units (DD₆₀) -Midlands



Rainfall (mm) -Midlands



Heat Units (DD₆₀) -Cordoba

Rainfall (mm) -Cordoba

COST OF CULTIVATION US\$/Hectare

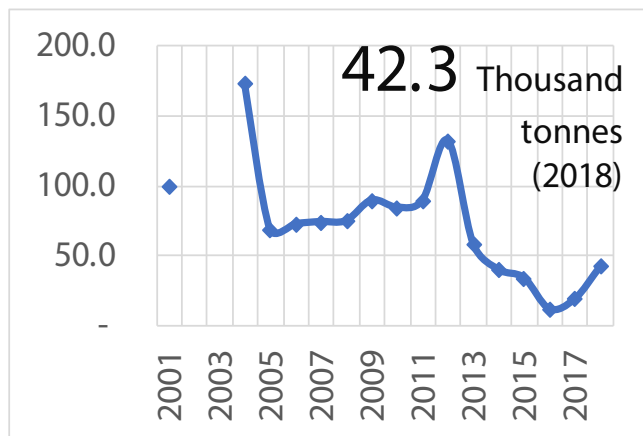
INPUTS	Quantity (Kg/Ha)	Operations per season	Total cost /Ha
Non-GM seeds	20		30
Biotech/GM seeds			
NPK+Other		1	5
Insecticides		8	50
Herbicides		2	20
Fungicides		1	1
Growth regulators			
Defoliants			
Manure			
Others (please specify)			
MANPOWER / LABOUR	Wages per person	Persons per operation	Total cost per hectare
Land preparation /tillage etc.,	1	2	2.4
Sowing	5	1	12
Fertiliser / manure application	5	2	12
Irrigation			0
Thinning	5	1	12
Weeding	10	3	24
Hoeing	10	1	24
Pesticide application	2	8	4.8
Defoliator application			0
Picking / harvesting	9	2	21.6
Stalk cutting & removal	1	1	2.4
Transportation /unloading etc.,			0
Ginning cost per 100 Kg			36
Others (please specify)			
MACHINERY /ANIMALS etc.	Cost per Operation	Number of Operations	Total cost per hectare
Tractors	62	Less frequent	
Implements & tools	49	Less frequent	
Electric / Diesel pumps etc.,			
Electricity / Diesel etc.,	28	Less frequent	
Harvesting machines			
Hoeing / Tillage machinery etc.,			20
Bullocks /Buffaloes	5	5	30
Land rent			
MARKET VALUE	Yield Kg/per hectare	Market value per 100 Kg	Value per hectare
Seed cotton	580	0.58	336.4
Ginning % (output)	41		
Lint (fibre)	232	1.6	371.2
Seed	295	0.38	112.1
COST OF CULTIVATION			271
NET RETURNS (SEED-COTTON)			65
NET RETURNS (SEED + LINT)			176

TRADE DATA

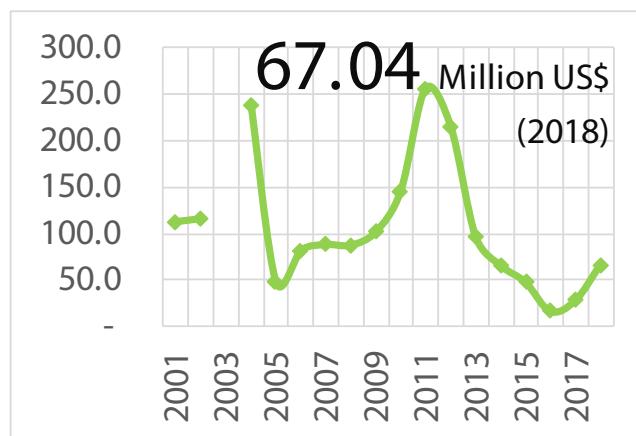


COTTON FIBRE EXPORT DATA

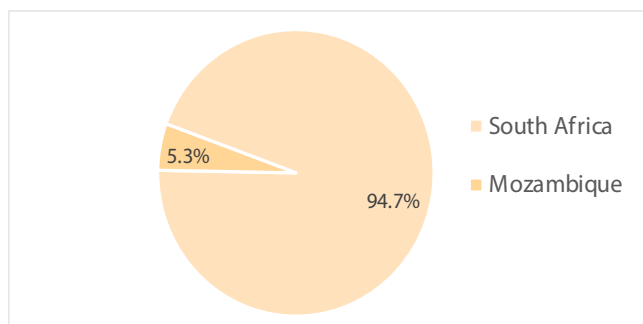
Quantity



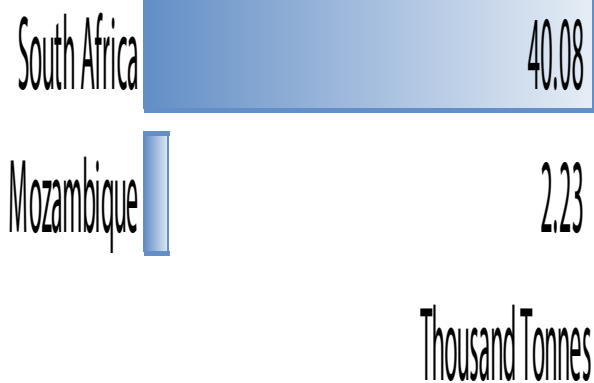
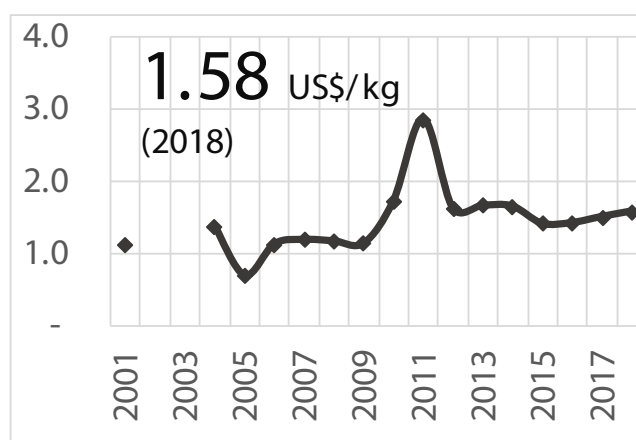
Value



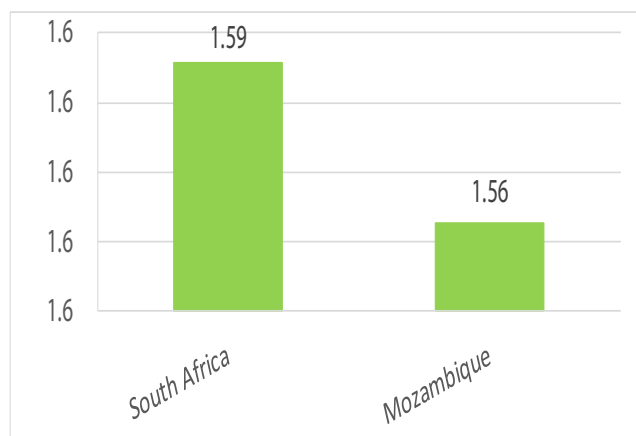
Market Share by Country



Average Price: US\$/Kg

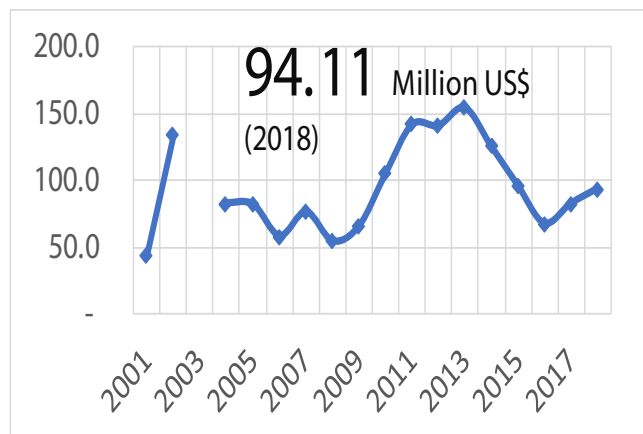


Average Price by Country 2018: US\$/Kg

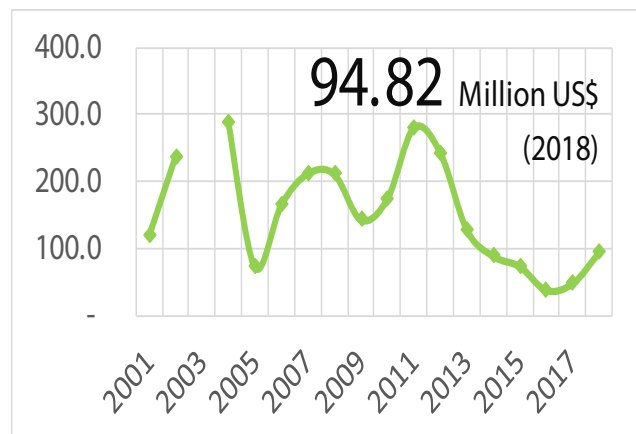


TEXTILE & APPAREL TRADE DATA

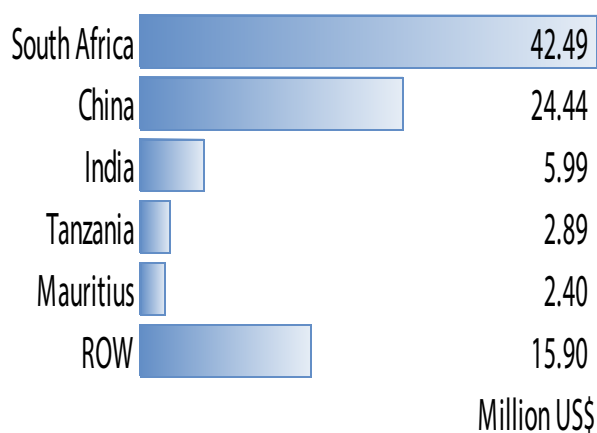
Imports



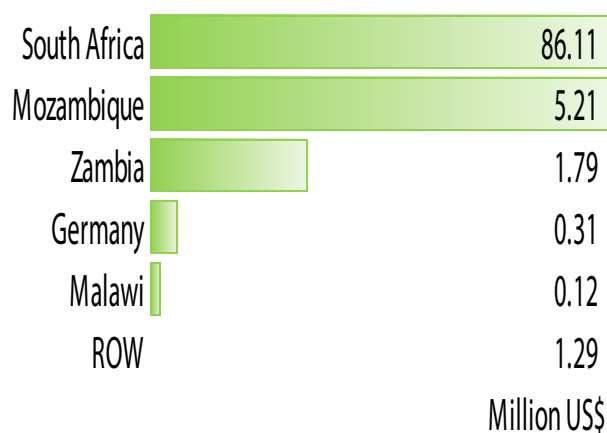
Exports



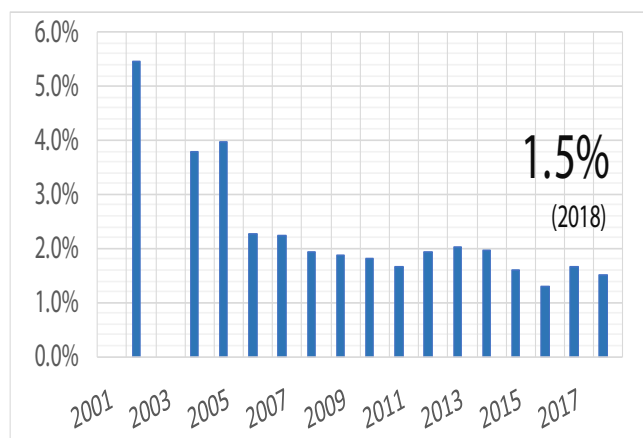
Imports by Country - 2018



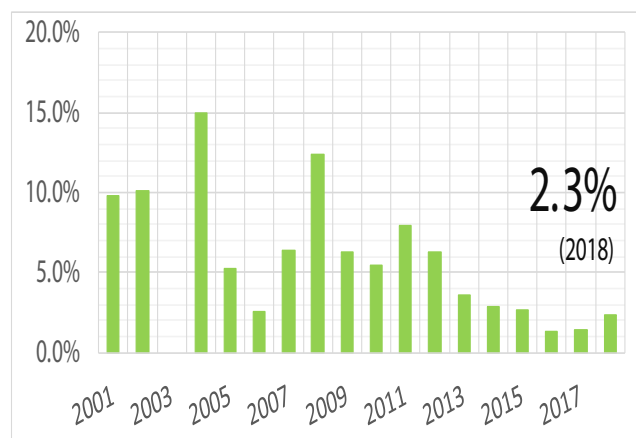
Exports by Country - 2018



T&A Imports Share in Overall Imports

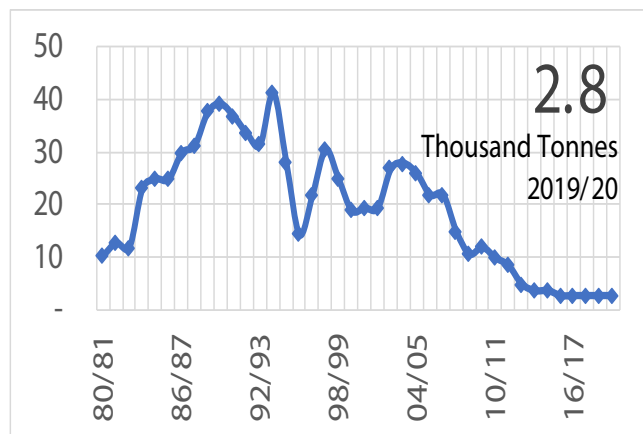


T&A Exports Share in Overall Exports

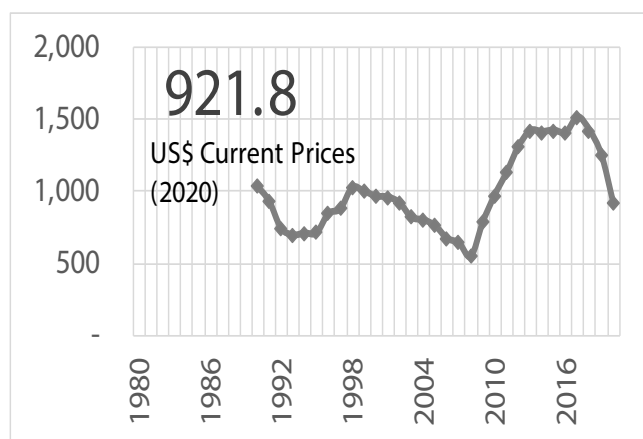


COMPOSITION OF THE TEXTILE & APPAREL INDUSTRY

Cotton Mill Use



GDP per capita



Employment

6,800

Textile & Apparel Sector

Spinning Machinery

7,400

Open-End

50,000

Short-Staple Spindles

Weaving Machinery

300

Shuttle Looms

510

Shuttle-less Looms





ANNEXURES

Annexure-1 SCIENTIFIC NAMES OF INSECTS

Scientific Name	Common Name	Scientific Name	Common Name
<i>Acrosternum hilare</i> (Say)	Green stink bug	<i>Frankliniella schultzei</i> (Trybom)	Common blossom Thrips
<i>Acyrtosiphon gossypii</i> (Mordvilko)	Melon aphid	<i>Halictus bractatus</i> (Say)	Garden flea-hopper
<i>Adelphocoris lineolatus</i> binotatus (Wagner)	Alfalfa plant bug	<i>Haritalodes derogata</i> (Fabricius)	Cotton leaf-roller
<i>Adelphocoris taeniophorus</i> (Reuter)	Cotton plant bug	<i>Helicoverpa armigera</i> (Hubner)	Cotton bollworm
<i>Agrotis ipsilon</i> (Hufnagel)	Black cutworm	<i>Helicoverpa punctigera</i> (Wallengren)	Australian bollworm
<i>Agrotis segetum</i> (Denis & Schiffermuller)	Turnip moth	<i>Helicoverpa zea</i> (Boddie)	Corn earworm
<i>Alabama argillacea</i> (Hübner)	Cotton leaf worm	<i>Heliothis virescens</i> (F.)	Tobacco budworm
<i>Aleurodicus dispersus</i> (Russel)	Spiralling whitefly	<i>Horcias nobilellus</i> (Berg)	Cotton bug
<i>Amrasca biguttula</i> (Ishida)	Indian cotton Jassid	<i>Jacobiella facialis</i> (Jacobi)	Potato leaf-hopper
<i>Amrasca devastans</i> (Distant)	Indian cotton Jassid	<i>Lygus rugulipennis</i> (Poppius)	European tarnished-bug
<i>Anomis flava</i> (Fabricius)	Cotton semi-looper	<i>Maconellicoccus hirsutus</i> (Green)	Hibiscus mealy-bug
<i>Anthonomus grandis</i> (Boheman)	Mexican cotton boll weevil	<i>Nezara viridula</i> (L.)	Southern green stink-bug
<i>Aphis gossypii</i> (Glover)	Cotton aphid	<i>Oxycarenus hyalinipennis</i> (Costa)	Cotton seed-bug
<i>Atarsocoris brachiariae</i> (Becker)	Soil bug	<i>Pectinophora gossypiella</i> (Saunders)	Pink bollworm
<i>Bemisia argentifolii</i> (Bellows & Perring)	Silver-leaf whitefly	<i>Phenacoccus solenopsis</i> (Tinsley)	Cotton mealy-bug
<i>Bemisia tabaci</i> (Gennadius)	Sweet-potato whitefly	<i>Polyphagotarsonemus latus</i> (Banks)	Broad mite
<i>Caliothrips impurus</i> (Priesner)	African cotton Thrips	<i>Poppiocapsidea biseratense</i> (Distant)	Mirid bug
<i>Creontiades dilutus</i> (Stål)	Green mirid	<i>Pseudatomoscelis seriatus</i> (Reuter)	Cotton flea-hopper
<i>Creontiades pallidus</i> (Rambur)	Cotton shredder-bug	<i>Pyrophorus spp.</i>	Click beetles
<i>Cryptophlebia leucotreta</i> (Meyr.)	False codling moth	<i>Sacadodes pyralis</i> (Dyar)	Trinidad bollworm
<i>Cyclocephala borealis</i> (Arrow)	Northern masked chafer	<i>Spodoptera eridania</i> (Cramer)	Southern armyworm
<i>Cyclocephala lurida</i> (Bland)	Southern masked chafer	<i>Spodoptera exigua</i> (Hübner)	Beet armyworm
<i>Diparopsis castanea</i> (Hamps)	Red bollworm	<i>Spodoptera frugiperda</i> (J.E. Smith)	Fall armyworm
<i>Diparopsis watersi</i> (Roths.)	Sudan bollworm	<i>Spodoptera latifascia</i> (Walker)	Armyworm
<i>Dysdercus chaquensis</i> (Freiberg)	Cotton Stainer	<i>Spodoptera littoralis</i> (Boisduval)	African cotton leaf-worm
<i>Dysdercus cingulatus</i> (Fabricius)	Red cotton bug	<i>Spodoptera litura</i> (Fabricius)	Oriental leaf-worm
<i>Dysdercus nigrofasciatus</i> (Stål.)	Cotton Stainer bug	<i>Spodoptera sunia</i> (Guenee)	Costa Rican armyworm
<i>Dysdercus superstitionis</i> (Fabricius)	Cotton Stainer	<i>Sylepta derogata</i> (Fabricius)	Cotton leaf-roller
<i>Dysdercus suturellus</i> (Herrich-Schaeffer)	Red bug	<i>Tetranychus cinnabarinus</i> (Boisd)	Carmine spider mite
<i>Dysdercus volkeri</i> (Schmidt)	Cotton Stainer	<i>Tetranychus lintearius</i> (Dufour)	Gorse spider mite
<i>Earias biplaga</i> (Walker)	Spiny bollworm	<i>Tetranychus ludeni</i> (Zacher)	Spider mite
<i>Earias insulana</i> (Boisduval)	Egyptian bollworm	<i>Tetranychus telarius</i> (L.)	Red spider mite
<i>Earias vittella</i> (Fabricius)	Spotted bollworm	<i>Tetranychus turkestanii</i> (Ugarov-Nikolskii)	Strawberry spider mite
<i>Empoasca decipiens</i> (Paoli)	Leaf-hopper	<i>Tetranychus urticae</i> (Koch.)	Two-spotted spider mite
<i>Empoasca facialis</i> (Bedford)	Potato leaf-hopper	<i>Thaumotobia leucotreta</i> (Meyrick)	False codling moth
<i>Empoasca lybica</i> (De Berg.)	Cotton Jassid	<i>Thrips imagines</i> (Bagnali)	Plague Thrips
<i>Euschistus servus</i> (Say)	Brown stink-bug	<i>Thrips palmi</i> (Karny)	Melon Thrips
<i>Eutinobothrus brasiliensis</i> (Hambleton)	Cotton root borer	<i>Thrips tabaci</i> (Lindeman)	Onion Thrips
<i>Ferrisia virgata</i> (Cockerell)	Striped mealy bug	<i>Trialeurodes vaporariorum</i> (Westwood)	Greenhouse whitefly
<i>Frankliniella occidentalis</i> (Pergande)	Western flower Thrips	<i>Zonocerus elegans</i> (Thunberg)	Elegant grasshopper
<i>Frankliniella paucispinosa</i> (Moulton)	Thrips		



Annexure-2 BOTANICAL NAMES OF WEEDS

Botanical name	Common name	Botanical name	Common name
<i>Abutilon indicum</i> (L.) Sweet.	Country mallow	<i>Corchorus tridens</i> (L.)	Wild jute
<i>Abutilon theophrasti</i> (Medik)	Velvet weed	<i>Cucumis melo</i> (L.)	Musk melon
<i>Acalypha australis</i> (L.)	Asian copperleaf	<i>Cyanotis axillaris</i> (Roem. & Schult. F.)	Spreading dayflower
<i>Acalypha indica</i> (L.)	Indian copperleaf	<i>Cynanchum acutum</i> (L.)	Swallow wort
<i>Acanthospermum hispidum</i> (DC.)	Bristly starbur	<i>Cynodon dactylon</i> (L.) Pers.	Bermuda grass
<i>Acrachne verticillata</i> (Roxb.) Lindl.	Goose-grass	<i>Cynodon plectostachyus</i> (K. Schum.)	African stargrass
<i>Ageratum conyzoides</i> (L.)	Goat weed	<i>Cyperus esculantus</i> (L.)	Tiger nutsedge
<i>Alhagi camelorum</i> (Fisch.)	Camel-thorn	<i>Cyperus rotundus</i> (L.)	Purple nutsedge
<i>Amaranthus albus</i> (L.)	Tumble weed	<i>Cyperus sphaclatus</i> (Rottb.)	Roadside flatsedge
<i>Amaranthus ascendens</i> (Loisel.)	Amaranth weed	<i>Dactyloctenium aegyptium</i> (L.) Willd.	Crowfoot grass
<i>Amaranthus dubius</i> (Mart. Ex. Thell.)	Spleen amaranth	<i>Datura innoxia</i> (Mill.)	Indian apple
<i>Amaranthus muricatus</i> (Gillies ex. Moq)	African amaranth	<i>Datura stramonium</i> (L.)	Devil's snare
<i>Amaranthus retroflexus</i> (L.)	Retro-flexus amaranth	<i>Digera arvensis</i> (Forssk.)	False amaranth
<i>Amaranthus spinosus</i> (L.)	Spiny pigweed	<i>Digera muricata</i> (L.) Mart.	False amaranth
<i>Amaranthus viridis</i> (Hook.F.)	Slender amaranth	<i>Digitaria argillacea</i> (Hitchc. & Chase)	Tropical crabgrass
<i>Avena fatua</i> (L.)	Wild oat	<i>Digitaria ciliaris</i> (Retz.) Koeler	Southern crabgrass
<i>Bidens pilosa</i> (L.)	Spanish needles	<i>Digitaria horizontalis</i> (Willd.)	Jamaican grabgrass
<i>Boerhavia diffusa</i> (L.)	Red spiderling	<i>Digitaria insularis</i> (L.) Fedde	Sourgrass
<i>Borreria scabra</i> (Schumach. & Thonn.)	Karadeka	<i>Digitaria marginata</i> (Link) Stapf	Crabgrass
<i>Brachiaria brizantha</i> (Hochst. ex A. Rich.)	Palisade grass	<i>Digitaria sanguinalis</i> (L.) Scop.	Large crabgrass
<i>Brachiaria deflexa</i> (Schumach.) Robyns	Annual brachiaria	<i>Dinebra retroflexa</i> (Vahl) Panzer.	Viper grass
<i>Brachiaria lata</i> (Schumach.) CE Hubbard	Signal grass	<i>Dismostachia bipinnata</i> (L.) Stapf	Salt reed-grass
<i>Brachiaria plantaginea</i> (Link) Hitchc.	Plantain signal grass	<i>Echinochloa colona</i> (L.) Link.	Jungle grass
<i>Brachiaria reptans</i> (Gard. & Hubb.)	Running grass	<i>Echinochloa colonum</i> (L.)	Jungle rice
<i>Bromus tectorum</i> (L.)	Drooping brome	<i>Echinochloa crusgalli</i> (L.) Beauv.	Barnyard grass
<i>Bulbostylis barbata</i> (Rottb.) C.B.Clarke.	Water grass	<i>Eclipta alba</i> (L.) Hassk.	False daisy
<i>Capsella bursapastoris</i> (Medic.)	Shepherd's purse	<i>Eleusine indica</i> (L.) Gaertner.	Goose-grass
<i>Cassia occidentalis</i> (L.) Link.	Coffee senna	<i>Elymus repens</i> (L.) Gould	Couch grass
<i>Cassia tora</i> (L.) Roxb.	Sickle pod	<i>Elytrigia repens</i> (L.) Desv. ex Nevski	Quack-grass
<i>Celosia argentea</i> (L.)	cock's comb	<i>Eragrotis amabilis</i> (L.) Wight & Arn. ex Nees	Bunch grass
<i>Cenchrus brownii</i> (Roem. & Schult.)	Slimbristle sandbur	<i>Euphorbia geniculata</i> (Orteg.)	Wild poinsettia
<i>Cenchrus echinatus</i> (L.)	Southern sandbur	<i>Euphorbia granulata</i> (Forssk.)	Mad woman's milk
<i>Chenopodium album</i> (L.)	Common lambsquarter	<i>Euphorbia heterophylla</i> (L.)	Fire plant
<i>Chloris barbata</i> (Sw.)	Purple chloris	<i>Euphorbia hirta</i> (L.)	Asthma herb
<i>Chloris pilosa</i> (Schumach.)	Goats beard	<i>Galinsoga parviflora</i> (Cav.)	Gallant soldier
<i>Chloris truncate</i> (R.Br.)	Australian fingergrass	<i>Gomphrena perennis</i> (L.)	Amaranth
<i>Chloris virgata</i> (Sw.)	Feather fingergrass	<i>Harpagophytum procumbens</i> (DC.)	Devil's claw
<i>Chromolaena odorata</i> (King & H. Rob.)	Siam weed	<i>Hibiscus asper</i> (Hook.fil.)	Bush roselle
<i>Chrysopogon aciculatus</i> (Retz.) Trin.	Lesser spear grass	<i>Hibiscus trionium</i> (L.)	Flower of an hour
<i>Cirsium arvense</i> (L.) Scop.	Canada thistle	<i>Imperata cylindrica</i> (L.) Raeusch.	Cogon grass
<i>Cleome gynandra</i> (L.)	African spider flower	<i>Ipomea eriocarpa</i> (R.Br. Brown)	Tiny morning glory
<i>Commelina benghalensis</i> (L.)	Tropical spiderwort	<i>Ipomea grandiflora</i> (L. fil.)	Blue morning glory
<i>Commelina diffusa</i> (L.)	Climbing dayflower	<i>Ipomea kordofana</i> (T. Kotschy)	Sudan morning glory
<i>Convolvulus arvensis</i> (L.)	Field bindweed	<i>Ipomea nil</i> (L.) Roth	Ivy morning glory
<i>Conyza bonariensis</i> (L.) Cronq.	Asthma weed	<i>Ipomoea eriocarpa</i> (R.Br.)	Morning glory
<i>Conyza Canadensis</i> (L.) Cronq.	Canadian horseweed	<i>Ipomoea purpurea</i> (L.) Roth	Morning glory



Annexure-2 BOTANICAL NAMES OF WEEDS

Botanical name	Common name
<i>Kallstroemia maxima</i> (L.) Hook. & Arn.	Big caltrop
<i>Kochia scoparia</i> (L.) Schrad.	Ragweed
<i>Lantana camara</i> (L.)	Wild sage
<i>Leptochloa filiformis</i> (J.Presl.)	Sprangle-top
<i>Leptochloa virgata</i> (E.Fourn.)	Tropic sprangle-top
<i>Lolium multiflorum</i> (Lam.)	Italian ryegrass
<i>Lolium perenne</i> (Terrell)	Perennial ryegrass
<i>Malvastrum coromandelianum</i> (L.) Garcke.	Spine seeded false-mellow
<i>Mikania cordata</i> (Burm.f.) B.L.Rob.	Heartleaf hempvine
<i>Mimosa invisa</i> (C. Mart.)	Giant sensitive plant
<i>Mimosa pudica</i> (L.)	Sensitive plant
<i>Mitracarpus villosus</i> (Sw.) DC.	Tropica girdle-pod
<i>Mukia maderaspatana</i> (L.) Roem.	Madras pea pumpkin
<i>Oxalis latifolia</i> (Kunth)	Broadleaf wood-sorrel
<i>Oxygonum sinuatum</i> (Meisn.) Dammer	Kindri
<i>Panicum fasciculatum</i> (Schutz)	Switchg-rass
<i>Panicum maximum</i> (Jacq.)	Guinea grass
<i>Panicum repens</i> (L.)	Torpedo grass
<i>Panicum texanum</i> (Buckley)	Common millet
<i>Parthenium hysterophorus</i> (L.)	Congress grass
<i>Paspalum orbiculare</i> (G.Forst.)	Crown-grass
<i>Pennisetum pedicellatum</i> (Trin.)	Deenanath grass
<i>Physalis lanceifolia</i> (L.)	Ground cherry
<i>Portulaca oleracea</i> (L.)	Common purse-lane
<i>Rhynchelytrum repens</i> (Willd.) C.E.Hubb.	Natal grass
<i>Rhynchosia minima</i> (L.) DC.	Jumby-bean
<i>Rottboellia cochinchinensis</i> (Lour.) W.D. Clayton.	Itch grass

Botanical name	Common name
<i>Rottboellia exaltata</i> (L.) L.f.	Itch grass
<i>Rumex retroflexus</i> (Lag. ex Schult. & Schult.f.)	Patience dock
<i>Saccharum spontaneum</i> (L.)	Wild sugarcane
<i>Schkuhria pinnata</i> (Lam.) Kuntze ex Thell.	Pinnate false thread leaf
<i>Senna obtusifolia</i> (L.) H.S.Irwin & Barneby	Sickle-pod
<i>Setaria geniculata</i> (P.Beauv.)	Bristle grass
<i>Setaria verticillata</i> (P.Beauv.)	Bristly foxtail
<i>Setaria viridis</i> (L.) P. Beauv.	Green foxtail
<i>Sida rhombifolia</i> (L.)	Arrow-leaf sida
<i>Sida spinosa</i> (L.)	Prickly fan-petals
<i>Solanum nigrum</i> (L.)	Black nightshade
<i>Sonchus arvensis</i> (L.)	Perennial sow-thistle
<i>Sonchus oleraceus</i> (L.)	Smooth sow-thistle
<i>Sorghum arundinaceum</i> (Desv.) Stapf	Wild sorghum
<i>Sorghum halapense</i> (L.) Pers.	Johnson grass
<i>Sorghum vulgare</i> (L.) Eaton & Wright	Broom-corn
<i>Sphaeralcea bonariensis</i> (Cav.) Griseb.	Latin globe-mallow
<i>Stachytarpheta angustifolia</i> (Mill.) Vahl	Devil's coach whip
<i>Striga hermonthica</i> (Delile) Benth.	Purple witch-weed
<i>Trianthema monogyna</i> (L.)	Desert horse purse-lane
<i>Trianthema portulacastrum</i> (L.)	horse pulse-lane
<i>Tribulus terrestris</i> (L.)	Puncture vine
<i>Trichodesma zeylanicum</i> (Burm f.) R. Br.	Camel bush
<i>Tridax procumbens</i> (L.)	Coat-buttons
<i>Urochloa panicoides</i> (P.Beauv.)	Signal-grass
<i>Vernonia galamensis</i> (Cass.) Less.	Iron-weed
<i>Xanthium strumarium</i> (L.)	Common cocklebur

Annexure-3 SCIENTIFIC NAMES OF PATHOGENS

Scientific Name	Common Name
<i>Phytophthora capsici</i> (Leonian)	Boll rot
<i>Alternaria gossypina</i> (Thüm.)	Leaf spot
<i>Alternaria macrospora</i> (Zimm.)	Leaf spot
<i>Alternaria alternata</i> (Keissl.); Synonym: <i>Alternaria tenuis</i>	Leaf spot
<i>Fusarium oxysporum</i> f.sp. <i>Vasinfectedum</i> (W.C. Snyder & H.N. Hansen)	Fusarium wilt
<i>Botryosphaeria rhodina</i> (Berk. & M.A. Curtis); Synonym: <i>Diplodia gossypina</i>	Canker
<i>Macrophomina phaseolina</i> (Tassi) Goid.	Seedling blight/rot
<i>Myrothecium roridum</i> (Tode)	Leaf spot
<i>Phakopsora gossypii</i> (Lagerh.) Hirats.	Cotton rust

Scientific Name	Common Name
<i>Pythium ultimum</i> (Trow)	Damping off / Root rot
<i>Mycosphaerella areola</i> (Ehrlich & F.A. Wolf); Synonym: <i>Ramularia areola</i>	Areola mildew
<i>Rhizoctonia bataticola</i> (Taubenh.)	Dry root rot
<i>Rhizoctonia solani</i> (J. G. Kühn)	Stem / root rot
<i>Sclerotinia sclerotiorum</i> (De Bary)	Stem / root rot
<i>Verticillium dahliae</i> (Kleb.)	Verticillium wilt
<i>Xanthomonas campestris</i> (Pammel) Dowson	Bacterial blight
<i>Xanthomonas malvacearum</i> (E. F. Smith) Dowson	Bacterial blight
<i>Xanthomonas axonopodis</i> (Hasse)	Bacterial Canker



Annexure-4. BALE SHAPE & SIZE (ICAC Bale Survey 2008)

Country	Bale Name/Type	Bale Dimension (cm)			Bale Weight (Kg)		
		Length	Width	Depth	Gross	Net	Range
Argentina	A	105	80	50	202	200	195-205
	B	137	77	47	240	238	230-250
	C	140	80	50	240	238	230-250
Australia	High Density	104-107	54-56	86	228-230	227	150-250
	Universal Density	137	56	86	228	227	155-240
Bangladesh	Hydraulic Cotton Bale	125	65	83	142	140	140-142
Cameroon	20x41	110	95	52	218		190-230
	20x54	137	85	52	227		200-245
China (Mainland)	I	137-143	52-53	70-85	230	228.3	217-237
	III	78.5-80.0	52-53	52-53	87	85.8	80-90
Colombia	Standard	136	51	88	227	225	203-236
	Pony	110	55	100	225	223	210-230
Egypt	Steam Pressed	130	60	86	325	322	310-322
	Hydraulic Pressed	140	98	86	450	440	310-480
	Universal	140	55	80	225	222	220-240
Ethiopia	Bonda	100	85	50	188	185	180-220
India	High Density (Metal Strips)	122	53	53	170	167.5	160-180
	High Density (Plastic Strips)	107	60	60	170	169.4	160-180
Iran	Cotton bale	135	55	70	155	150	150-205
	Cotton bale	135	55	70	210	205	150-205
Israel	Standard	140	53	88	236.5	235	230-240
Kenya	Rectangular (Nyanza Gineries)	130	182	68	185	182	180-182
	Kitui Ginnery (Kitui Gineries)	134	105	85	188	186.5	184-197
Mozambique	Standard Mozambique Bale	140	60	90	202	200	180-230
Myanmar	Middle Class/Universal Density						
	Export Bale	114.3	50.8	50.8	169.3	163.3	163-166
	Domestic Bale	119.4	50.8	50.8	166.7	163.3	163-166
Senegal	20x41x38	107	97	53		218	218-245
	20x54x27	140	71	53		218	218-245
South Africa	Cotton Lint	135	52	80	208	206	200-215
	Cotton Lint	107	53	95	212	210	200-220
Spain	Euro	145	75	50	216	212	205-235
	Euro	140	90	55	220	218	205-235



Annexure-4. BALE SHAPE & SIZE (ICAC Bale Survey 2008)

Country	Bale Name/Type	Bale Dimension (cm)			Bale Weight (Kg)		
		Length	Width	Depth	Gross	Net	Range
Sudan	Hydraulic Press	94	77.5	65	178	175	168-175
Togo	Cotton Fiber	107	53	97		221	155-305
Turkey	Pressed Tied (Roller gin)	95	65	105	Mini.		
	Pressed Tied (Saw gin)	Optional	Optional	Optional	Mini. 190		
Uganda	Standard	106	53	78-95	187	185	180-195
USA	Gin Universal Density – GUD	137-140	51-53	£84 or £71 at bale tie		226.8	Tare weight range is 0.91-3.63
	Gin Standard Density - GSD	137-140	51-53	£84 or £71 at bale tie		226.8	Tare weight range is 0.91-3.63
Vietnam	Kien Bong	137	71	51	222	220	220
	Fiber Bale	145	75	50	228	225	223-275
Zimbabwe	Universal	234	54	77	225	222	215-230
	High Density	224	54	72	220	217	200-217
	Standard	220	51	72	210	208	198-208

Annexure-5. GLOBAL CROP PROTECTION PESTICIDE MARKET 2017 TO 2019

	Global pesticide sales all crops US\$ million			Global pesticide sales on cotton US\$ million			% Share of cotton		
	2017	2018	2019	2017	2018	2019	2017	2018	2019
Global CP sales	57,003	60,304	59,827	2,540	2,910	2,820	4.46	4.83	4.71
Herbicide sales	25,160	26,563	26,175	609.6	727.5	761.4	2.42	2.74	2.91
Insecticide sales	14,060	15,121	15,146	1,473.2	1,629.6	1,551	10.48	10.78	10.24
Fungicide sales	15,739	16,473	16,356	152.4	189.15	169.2	0.97	1.15	1.03
Other pesticide sales	2,044	2,148	2,150	304.8	363.75	338.4	14.91	16.93	15.74



Annexure-6. Pesticide use ('000 Tonnes) in agriculture in cotton growing countries

2018 Data (FAO)	Insecticides	Herbicides	Fungicides Etc.,	Others	Total Pesticides
China					1,773,689
USA	65,771	255,826	24,040	62,142	407,779
Brazil	60,607	234,384	59,124	23,061	377,176
Argentina	3,747	161,502	3,427	4,252	172,928
Russian Fed.	10,198	34,532	26,164	5,475	76,369
Australia	14,196	43,789	4,544	887	63,416
Spain	6,488	16,593	38,067	195	61,343
Turkey	16,069	14,794	23,047	6,110	60,020
India	20,619	6,335	13,055	18,151	58,160
Mexico	12,991	11,552	28,601	0	53,144
Malaysia	3,547	37,452	3,021	95	44,115
Colombia	5,188		7,214	25,371	37,773
South Africa	6,158	9,469	8,928	2,302	26,857
Myanmar	4,249	6,925	4,023	129	15,326
Bangladesh	2,184	1,195	11,758	7	15,144
Kazakhstan	528	11,051	1,074	405	13,058
Greece	2,258	2,714	2,014	2,946	9,932
Turkmenistan	1,294	680	7,738	0	9,712
Egypt	3,199	1,245	3,599	1	8,044
Iran	1,756	1,564	1,100	2,421	6,841
Israel	525	1,381	2,843	1,344	6,093
Ethiopia	638	3,110	377	3	4,128
Sudan	654	1,668	84	63	2,469
Malawi	575	1,180	420	183	2,358
Zimbabwe	1,092	549	360	184	2,185
Zambia	476	250	328	616	1,670
Indonesia	929	354	224	90	1,597
Kenya	303	562	711	2	1,578
Cameroon	243	417	705	8	1,373
Togo	522	709	19	43	1,293
Burkina Faso	186	657	0	0	843
Mozambique	200	442	122	5	769
Kyrgyzstan	165	400	43	-1	607
Azerbaijan	169	59	276	39	543
Tajikistan	70	70	68	57	265
Côte d'Ivoire	75	10	8	0	93
Uganda	42	8	38	0	88
Chad	42		0	0	42
Cen. Afr. Rep.	22	0	0	1	23
Niger	21		0	0	21
Mali	3			1	4
Pakistan	0	0	0	1	1
Tanzania	1	0	0	0	1
Global (all countries)	400,266	1,216,330	530,095	3,749,332	5,896,023

Annexure-7. Global distribution of *Bt* cotton varieties & hybrids

Rank	Country	ICAC Data Yield (Kg/Ha)	USDA Data Yield (Kg/Ha)	Cultivar	Plant density per hectare
1	Australia	1,905	2,071	Bt-variety	111,000
2	China	1,864	1,879	Bt-variety	166,667
3	Brazil	1,771	1,803	Bt-variety	166,667
4	*Israel	1,693	1,611	Non-GM Variety	111,000
5	Turkey	1,641	1,645	Non-GM Variety	142,857
6	Mexico	1,584	1,524	Bt-variety	133,333
7	*Venezuela	1,234	1,234	Non-GM Variety	111,000
8	Greece	1,121	1,256	Non-GM Variety	173,611
9	*Bulgaria	1,089	1,089	Non-GM Variety	111,000
10	Spain	1,041	1,001	Non-GM Variety	111,000
11	South Africa	1006	953	Bt-variety	111,111
12	*Syria	973	1,132	Non-GM Variety	111,000
13	United States	950	950	Bt-variety	111,111
14	*Kyrgyzstan	855	1,089	Non-GM Variety	111,000
15	*Colombia	847	980	Bt-variety	96,154
16	*Peru	819	1,089	Non-GM Variety	133,333
17	Iran	816	708	Non-GM Variety	71,429
18	*Bangladesh	772	705	Non-GM Variety	24,691
19	Sudan	772	653	Bt-hybrid (Indian)	25,000
20	Egypt	763	748	Non-GM Variety	66,667
21	Uzbekistan	755	755	Non-Bt Variety	175,439
22	Ethiopia	741	637	Bt-hybrid (Indian)	46,000
23	Azerbaijan	677	742	Non-GM Variety	111,111
24	Kazakhstan	669	521	Non-GM Variety	38,000
25	Argentina	657	700	Bt-variety	71,429
26	*Ecuador	653	653	Non-GM Variety	58,000
27	*Viet Nam	653	653	Non-GM Variety	44,444
28	Tajikistan	640	640	Non-GM Variety	37,037
29	Myanmar	634	644	Bt-variety	37,037
30	*Korea	630	630	Bt-variety	37,037
31	Pakistan	610	550	Bt-variety	44,444
32	Cameroon	560	523	Non-GM Variety	41,666
33	Benin	516	469	Non-GM Variety	31,250
34	Côte D'ivoire	508	496	Non-GM Variety	41,666
35	India	487	486	Bt-hybrid	18,519

*Cotton acreage in these countries is less than 50,000 hectares