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Dead Aid: Sub-Saharan Africa

With a Ph.D. in Agricultural and Resource Economics from Oregon State University in the USA, Dr. Terry Townsend is a consultant on commodity issues. He is currently working with the African Cotton and Textile Industries Federation (ACTIF). He served as executive director of the International Cotton Advisory Committee (ICAC) and has also worked at the United States Department of Agriculture for five years, analyzing the U.S. cotton industry and editing a magazine devoted to a cross-section of agricultural issues.

Dambisa Moyo, is a Zambian-born international economist and author who analyses the world economy and global affairs. She has worked at The World Bank and Goldman Sachs and currently serves on the boards of several international companies. She argues in her 2009 book, "Dead Aid," that foreign aid undermines economic growth in Africa by distorting incentives.

<http://dambisamoyo.com/publications-articles-videos/books/dead-aid/>

She argues that more than \$1 trillion in development aid has been transferred from rich countries to Africa in the last 50 years, but Africans are worse off because of it. She says that overreliance on aid has trapped developing nations in a vicious circle of aid dependency, corruption, market distortion, and further

poverty, leaving them with nothing but the "need" for more aid.

The international aid industry has studiously ignored her book and its implications. Maybe it's time to pay attention to her.

India versus Sub-Saharan Africa

Consider the contrast in cotton industry performance between India and Sub-Saharan Africa. In the 1990s, yields in both were about equal. Agriculture in both is dominated by hundreds of millions of small-holders, many of whom are illiterate or poorly educated, speaking hundreds of different languages, divided ethnically and geographically, with limited access to technology and mechanisation, and exhibiting a welter of traditional cultures.

India sought and received no foreign aid devoted to improvement of cotton production and yields during the 2000s, and instead launched a Technology Mission on Cotton (TMC) that sought to increase cotton production and improve quality through research, extension, regulation and incentives, all domestically inspired and implemented.

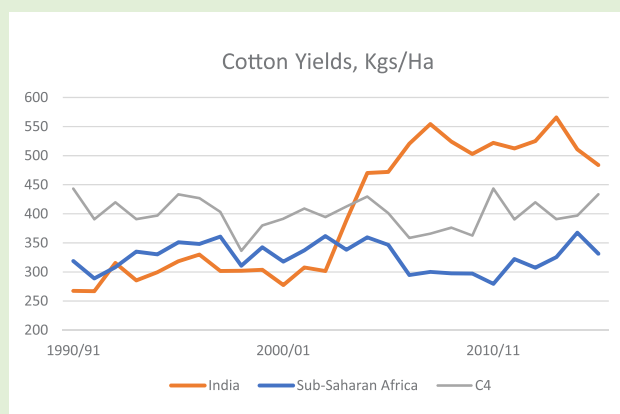
In contrast, Sub-Saharan Africa requested and received millions of dollars in direct cotton-specific development aid, relying on donor-funded projects rather than domestic and regional initiatives.

EXPERT'S Column



Dr. Terry Townsend

And, the result: the average yield across Sub-Saharan Africa of 331 kilograms of lint per hectare in 2015/16 was the same as it had been two decades earlier. In contrast, the Indian yield climbed from about 300 kilograms per hectare in the early 1990s to 480 by 2015/16, after rising to 570 kilograms in 2013/14.



Development Assistance

Nearly \$900 million in donor aid has been spent since 2004 or is committed under current projects in support of the cotton sector of Sub-Saharan Africa.

Cotton has been called a “litmus test” of the commitment of developed countries to the Development Round, and a “poster” for the Doha Development Agenda. Cotton rose to prominence in the Doha Round because the President of Burkina Faso attended a WTO meeting in 2003 (it is unusual for a head of state to attend such a meeting) and demanded that cotton be addressed specifically. In response, member governments of the WTO formed a Subcommittee on Cotton in 2004, and the WTO Secretariat began tracking development assistance provided to Benin, Burkina Faso, Chad and Mali (the C4) and all Sub-Saharan African cotton producing countries.

<https://www.wto.org/english/news_e/news12_e/cdac_29jun12_e.htm#background>

<(WT/CFMC/6/Rev.21)>

As of November 2016, the total value of cotton-specific development assistance provided for 47 African beneficiaries and others that had been completed was \$581 million, of which \$310 million had been targeted at the C4. 175 separate projects were enumerated, including projects supported by the European Commission, France, Germany, Netherlands, Sweden, Denmark, the UK, Japan, Switzerland, the U.S., Brazil, the Common Fund

for Commodities (CFC) with the International Cotton Advisory Committee (ICAC), the Food and Agriculture Organization of the United Nations (FAO), the International Trade Center (ITC), the United Nations Commission on Trade and Development (UNCTAD), the Organisation of Islamic Cooperation (OIC) with the Islamic Development Bank, United Nations Industrial Development Organization (UNIDO), and The World Bank. Projects ranged from support for a conference on GMO cotton, improvements in rural roads serving cotton areas, support for HVI classing, miscellaneous studies, support to producer organisations, support for technical assistance to small-holders, training and capacity building for small-scale farmers, value chain cotton sector support, and approximately 165 more.

In addition to projects already completed, another 29 projects are currently being implemented and 6 projects are in the formulation stage. These additional 35 projects are valued at \$281 million, of which \$151 million are targeted at the C4. Donor countries and organisations supporting ongoing projects include Australia, the European Commission, France, Germany, Netherlands, Sweden, Switzerland, the United States, The World Bank, CFC with the ICAC, FAO, ITC and UNCTAD. Some of the ongoing projects include Ethical cotton production in Kenya, Support income increase of small-holder cotton producers through better quality and access to markets – Phase 2, Improvement of productivity and sustainability of farms in cotton areas, Fair Trade and organic cotton in West Africa, Cotton made in Africa, Initiative Sustainable Trade (IDH): Cotton Value Chain Development, Programme for the development of the cotton sector in Africa, South-South cooperation for the promotion of decent work in cotton-producing countries in Africa and Latin America, Competitiveness and sustainable strengthening of the cotton sector through the reinforcement of cotton farmers’ capacities in the Integrated Production and Pest Management, Zambia: Empowering women in the cotton sector, and about 25 others.

Finally, in addition to cotton-specific projects, both those that have been completed and those that are ongoing, another \$4.1 billion has been committed for agriculture and infrastructure-related development assistance for 31 African beneficiaries and others. These 67 projects are not cotton specific, but they are aimed at general support and improvement of the agricultural

sectors of African countries, of which cotton is an important component. Of the \$4.1 billion in general support to agriculture in Sub-Saharan Africa, \$2.3 billion have been spent in the C4 alone. These projects have been supported by Australia, Canada, Japan, the U.S. and the World Bank. Projects under the category of general support to agriculture include Official development assistance for agriculture, Volunteer sending program to enhance economic and social conditions of poor and marginalised communities – support for sustainable agriculture, Farm Radio International: “Radio for Farmer Value Chain Development” – support for sustainable agriculture, Monitoring and evaluation in agricultural policy, Small-scale irrigation development project, Project for the improvement of the living environment in the southern area of Lusaka, Millennium Challenge Corporation Board, Fostering agricultural productivity in Mali, and 60 more.

According to the ICAC, there are about 900,000 households producing cotton in the C4, meaning that \$461 million in cotton-specific development assistance since 2004 amounted to about \$500 per household, or two to three times annual average cash earnings among rural households. In the rest of Sub-Saharan Africa, there are about 2.6 million households producing cotton in any one year, and the \$401 million in cotton specific development assistance averaged \$154 per household, equal to

Africa, there was again no gain in yields despite all the project spending.

Cotton Made in Africa and BCI

Among the development projects notified by governments in the WTO table, Germany supported the establishment of Cotton made in Africa, and Germany, the Netherlands and Switzerland supported the establishment and growth of BCI. Contributions through 2016 totaled more than \$20 million, and the Netherlands is in the process of approving another tranche of \$18 million through 2020.

Both CmiA and BCI work with farmers to identify best practices and encourage adoption. CmiA is operating in Benin, Burkina Faso, Cameroon, Cote d’Ivoire, Ethiopia, Ghana, Malawi, Mozambique, Tanzania, Uganda, Zambia and Zimbabwe. BCI is operating in Senegal, Mali and Mozambique. Between them, BCI and CmiA accounted for about 450,000 tons of cotton production in 2015/16, representing more than one-third of total production in Sub-Saharan Africa. Both initiatives report that yields rise by about 20% among participating farmers compared to control groups of non-participating farmers. And yet, despite all the spending and all the efforts, all well-conceived and executed, yields in Sub-Saharan Africa did not rise during the past decade.

BCI and CmiA

		Value	Status	Disbursement	Disbursement	Recipients
Germany	CmiA	€ 26,300,000.00	2013-16	€ 16,000,000.00	\$20,408,163	12 countries
Netherlands	BCI	€ 16,500,000.00	2016-20		\$18,150,000	Brazil, China, India, Mali, Pakistan, Tajikistan, Turkey
Switzerland	BCI	\$2,400,000.00	2011-15	\$1,640,000.00	\$1,640,000	Africa, Central Asia, China
Total					\$40,198,163	
Total Completed					\$22,048,163	

about one year of annual average household cash income.

And yet, despite all that spending on all those projects, there was no gain in yields in Sub-Saharan Africa, and while yields in the C4 are higher than in other countries of Sub-Saharan

Organic and Fair Trade Cotton

In a testimony to futility, the WTO table includes 9 projects sponsored by the European Commission, France, Germany, Switzerland, and the United States devoted to expansion of organic and/or Fair Trade cotton in Africa and other countries. The completed projects total

Organic and Fair Trade Cotton Projects in Africa

		Value	Status	Disbursement	Disbursement	Recipients
EUROPEAN COMMISSION	Syprobio - Improvements in incomes and food security of producers through diversified organic production systems	€ 2,959,120.00	2011-14	€ 2,104,260.00	\$2,684,005	Benin, Burkina Faso, Mali
France	Fair trade and organic cotton in West Africa	€ 3,000,000.00	project formulation stage	€ 2,250,000.00	\$2,387,250	West African countries
Switzerland	Value Chain Development of Organic and Fairtrade Cotton	\$6,900,000.00	2013-16	\$4,600,000.00	\$4,600,000	Burkina Faso, Mali, Kyrgyz Republic
European Commission	Compensation Organic and Fairtrade Cotton	€ 600,000.00	2012	€ 540,000.00	\$675,000	Mali
France	Fair trade and organic cotton	€ 4,700,000.00	2008-15	€ 4,700,000.00	\$564,000	West & Central African countries
Germany	Public-Private Partnership for the establishment of Certified Organic Cotton Production	€ 500,000.00	2010-12	€ 50,000.00	\$56,000	Uganda
Germany	Public-Private-Partnership organic cotton certification	€ 300,000.00	2010	€ 250,000.00	\$335,000	Uganda
Switzerland	Value Chain Development of Organic and Fairtrade Cotton in Burkina Faso, phase II	\$2,216,000.00	2008-12	\$2,216,000.00	\$2,216,000	Burkina Faso
United States	Assist in development of organic and Fairtrade cotton	\$8,200,000.00	2013-16	\$8,200,000.00	\$8,200,000	Burkina Faso
Total					\$21,717,255	
Total Completed					\$19,330,005	

\$19.3 million, and there is a new project worth \$2.4 million sponsored by France that is still in the project formulation stage. Certified organic cotton production worldwide was only 112,000 metric tons in 2014, of which about 80% was in India. Production of organic and Fair Trade cotton in Africa might have reached about 30,000 tons in 2016. In other words, development spending on organic and Fair Trade cotton since 2004 totaled about \$600 per ton of organic or Fair Trade cotton produced in 2014.

Implications

Agriculture is complex, and there are always many culprits associated with poor performance. The major factors that affect yields are technology, technology extension to growers, logistics covering the purchase, transportation

and ginning of seed cotton, and input use. While the \$900 million in cotton-specific development aid, and \$4.1 billion in general agricultural improvement development aid, spent in Africa during the past decade was well intended, and it may have achieved many objectives such as women's empowerment or improvements in food security, the aid did not achieve its central objective of cotton sector development. It is time to reflect on whether aid really is Dead Aid as Moyo asserts. The assertions that CmiA and BCI result in production improvements deserve rigorous scrutiny, and the philosophical infatuation by science deniers with organic cotton should end.

(The views expressed in this column are of the author and not that of Cotton Association of India)



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COTTON EXCHANGE MARCHES AHEAD

Madhoo Pavaskar, Rama Pavaskar

Chapter 4 Surveys, Standards & HVI Testing

(Continued from Issue No.48)

Cotton Standards

The Surveyors of the two associations are required to prepare two sets of standards, namely, (a) The Working Standards and (b) The Reference Standards, for various grades of cotton of different growths deliverable against the futures and delivery contracts, and refer the same to the Joint Standards Committee for approval. The standards are thereafter notified to the members as well as to all other associations recognised for regulating trading in n.t.s.d. contracts and the Textile Commissioner. On inspection of the standards, any one of them may prefer an appeal against any standard or standards to the Joint Standards Appeal Committee.

While the Joint Standards Committee comprises 10 members – five chosen by the Board of E.I.C.A. and five by that of SICA, the Joint Standards Appeal Committee consists of 6 persons – three from E.I.C.A. and three from SICA, including the Chairpersons of the two associations. The Appeal Committee has the power to revise the standards appealed against. The unanimous or majority decision of the Joint Standards Appeal Committee is final and binding.

The Working Standards are available for use by the surveyors or umpire in surveys and to the panel of surveyors in appeal and to the Super Appeal Committee for reference, as also to the Boards of E.I.C.A. and other recognised associations for inspection. The Reference Standards are preserved carefully so that with reference to them new Working Standards can be prepared as and when the existing ones have changed from their original condition. The Reference Standards are therefore not allowed to be touched by any one. All the standards are kept in cases and are protected from sunlight and moisture by storing them carefully in a special air-conditioned room at the Cotton Green Building of the Exchange in Sewree.

At present, standards are prepared for as many as 15 commercial varieties of cotton every year, depending on their availability. For each of

the staple cotton varieties, the minimum number of grades for which standards are prepared is six, namely, Extra Superfine, Superfine, Fine, Fully Good, Good to Fully Good and Good. For the non-staple Bengal Deshi, standards are prepared separately for both roller and saw ginned cotton for five grades, namely, Extra Superfine, Fine, Fully Good and Good. In addition, for each of the grades of staple cotton, separate standards are prepared as and when required for various staple lengths ranging from 17 mm to 40mm., with a difference of one mm. in-between two successive staple standards. The actual number of staple standards for each description of staple cotton by variety and grade depends on its range of staple length.



Since the commencement of futures trading in December 1998, standards began to be prepared for the basis variety of the Indian Cotton Contract (of both roller ginned and saw ginned cotton) for four grades, namely Extra Super Fine, Super Fine, Fine and Fully Good. The other two grades are not deliverable against the ICC and hence standards for them are not prepared at present.

Although the Cotton Exchange is now well equipped with the most up-to-date HVI and other instruments in its Cotton Testing Laboratory at Sewree, all the standards except those for the basis variety of ICC are prepared by the traditional 'visual' method by the professional surveyors, as this method is still regarded as fairly trustworthy. May be in the coming years, the standards prepared by the sworn surveyors of the East India Cotton Association for all other varieties also may further be tested by HVI and other instruments in the Cotton Testing Laboratory of the Exchange to ensure their accuracy and reliability, as also to assess changes therein from their original condition.

The cotton standards prepared and maintained by the Cotton Exchange for the past over 75 years have served the requirements of all the cotton interests concerned. There is a good demand from other associations as well as private parties for the

standard boxes prepared by the Exchange. Each box is sold for Rs. 1,000/- to the domestic parties. The cotton standards prepared by the Exchange have also received international recognition, as India emerged as an exporter of cotton during the last two decades. Several overseas cotton trade associations call for Indian cotton standard boxes. Once India develops its cotton export business substantially, one need not be surprised if the cotton standards prepared by the East India Cotton Association attract as much attention of the world cotton community as the Universal Cotton Standards prepared by the United States Department of Agriculture.

Cotton Testing Laboratory

Following the growing use of high speed sophisticated equipment for processing (especially spinning) by the textile mills, it is becoming essential for them to ascertain more precisely the fibre characteristics of cotton they buy in order to minimise the processing costs and maximise the improvements in yarn and fabric quality. Owing to the multiplicity of cotton varieties grown in India and their wide grade and staple differences, the fibre characteristics of different cotton descriptions vary considerably. This is not all. Not infrequently, differences exist even among the different lots of the same description of cotton. In these circumstances, realising that the traditional method of cotton classification by visual inspection was inadequate to measure precisely the different fibre characteristics of cotton, which determine their spinning quality and the end-use product pattern in modern textile mills, the East India Cotton Association established a Cotton Testing and Research Laboratory in 1980-81 at its Cotton Green Building in Sewree with the then known indigenous and imported instruments to supplement the traditional visual method of cotton testing. The Laboratory began functioning from May 15, 1981.

The Laboratory was set up for two main purposes:

- 1) To carry out instrumental test for ascertaining and assessing the various fibre characteristics of cotton; and
- 2) To undertake research on the development of new techniques for improved and more accurate evaluation of cotton fibre quality.

The Laboratory is equipped with the following five major instruments.

- (a) Micronaire and shadow graph to determine the fineness and wall thickness of fibre;

- (b) Digital fibrograph to assess the span length and uniformity ratio of fibre;
- (c) Stelometer to indicate the tenacity of the fibre as measured by bundle strength for zero and 3 mm gauge;
- (d) PZO Projection Microscope to assess the maturity of the fibre; and
- (e) Trash Analyser to measure the trash content in cotton

The Laboratory also provides data on mean length, short-fibre percentage, dispersion percentage as well as floating fibre, and even estimates count strength products.

HVI Testing

During the last decade, the testing of cotton by High Volume Instrument (HVI) system is rapidly replacing the earlier laboratory instruments. While the older generation cotton testing instruments (except digital fibrograph) are mostly mechanical in nature, the HVI system is essentially based on computer designed (robotic) electronic technology with appropriate software for speedy and more accurate results. The HVI system analyses samples of cotton for all the important fibre characteristics at a rate of as many as 160-180 samples per hour. The Bremen Cotton Exchange in Poland was the first to install and demonstrate the utility of the HVI line. Since then there are over 1000 HVI systems in place in more than 60 countries worldwide, and the number is growing from year to year.

Although HVI tests of cotton are fairly comparable in accuracy and precision to those obtained by the traditional laboratory instruments, HVI system is faster than the old generation equipment. With the old instrument line, it takes almost an hour for an operator to determine the span length, micronaire and strength of fibres, as each of these characteristics is measured in that system in succession on separate instruments like digital fibrograph, micronaire and shadow graph and stelometer. Some time could be saved by engaging different operators on each instrument so that even though the time taken for testing each sample may not be reduced, the laboratory can test more samples in a given time by keeping in operation all the instruments simultaneously. Otherwise, with just one operator, two of the three instruments remain idle at any given time. Unlike the old instrument system, however, HVI line measures all the three fibre characteristics in almost a fraction of a minute and needs only one operator.

(To be continued...)

Climate Change and Cotton Production in Modern Farming Systems



ICAC

The Technical Information Section of the ICAC occasionally publishes review articles on topics of future interest to cotton researchers. ICAC has recently published the sixth article in the series, on the topic of Climate Change and Cotton Production in Modern Farming Systems. The ICAC Review Article on Cotton Production Research No. 6 is a 61-page publication produced in collaboration with the CABI. Cotton is grown under temperate, subtropical and tropical production environments, but forthcoming changes due to global warming and climate change poses a grave threat to cotton production all over the world. Cotton is one of the most sensitive crops among field crops and quickly responds to production conditions. Climate change will have direct effects on photosynthesis, water use efficiency and many more aspects of cotton production, but there also will be a number of indirect effects that will have consequential impacts. The current review article focuses on the challenges and opportunities that will emerge as a consequence of climate change and prepares researchers for changes that will be complex and permanent. Under the agreement with the CABI, ICAC cannot provide free access to the publication, other than a limited number of hard copies sent to ICAC members, delegates and coordinating agencies only. However, ICAC has full rights to the summary, which is presented here in English, Arabic and Russian. The subject matter is of high importance for the future and this is the first time that Arabic and Russian translations of the text have been included in the English edition of THE ICAC RECORDER.

French and Spanish translations of the summary are presented in the respective editions of THE ICAC RECORDER. Dr. Mike Bange of Australia is the lead author in the publication, while 11 other researchers from Australia and the USA contributed to the publication. The publication is available from CABI at <http://www.cabi.org/bookshop/book/9781780648903>.

Summary of the ICAC Review Article on Cotton Production Research No. 6

(Climate Change and Cotton Production in Modern Farming Systems)

Bange M.P., Baker J.T., Bauer P.J., Broughton K.J., Constable G.A., Luo Q., Oosterhuis D.M., Osanai Y., Payton P., Tissue, D.T., Reddy K.R. and Singh, B.K.

Worldwide, cotton is already broadly adapted to growing in temperate, sub-tropical, and tropical environments, but growth may be challenged by future climate change. Production may be directly affected by changes in crop photosynthesis and water use due to rising CO₂ and changes in regional temperature patterns. Indirect effects of climate change will likely result from a range of government regulations aimed at climate change mitigation. These impacts will also occur in light of other pressures that will be placed on cotton production systems, such as reductions in land and water availability, rising costs of production, and a decline in trade as a result of competition from other commodities and man-made fiber.

The essence of this review is to:

1. Summarize the impacts and challenges that climate change will have on cotton production in different regions across the world.
2. Compile and summarize climate change impacts on cotton growth and production;
3. Document research and management practices that may help with adaptation relevant to modern cotton farming systems; and
4. Outline research approaches to address climate change.

While there is certainty that future climate change will impact cotton production systems; however, there will be opportunities to adapt. This review begins to provide details for the formation of robust frameworks to evaluate the impact of projected climatic changes, highlight the risks and opportunities with adaptation, and detail the approaches for investment in research.

Major matters that were identified and discussed in the review were:

- Climate change will have both positive and negative effects on cotton. Increased CO₂ may increase yield in well-watered crops, and higher temperatures will extend the length of growing season (especially in current short season areas). However, higher temperatures also have the potential to cause significant fruit loss, lower yields and alter fiber quality, and reduced water use efficiencies. Extreme weather events such as droughts, heatwaves and flooding also pose significant risks to improvements in cotton productivity.

- Research into integrated effects of climate change (temperature, humidity, CO₂, and water stress) on cotton growth, yield and quality will require further investment. This includes the development of cultivars tolerant to abiotic stress (especially for more frequent hot, water-deficit, and waterlogged situations). Some consideration or allowance will be needed in these studies for both cotton cultivars and insect pests that have been naturally selected in rising CO₂ environments.

- Although cotton is already well adapted to hot climates, continued breeding by conventional means as well as applying biotechnology tools and traits will develop cultivars with improved water use efficiency and heat tolerance. Investment in whole-plant and crop physiology will be important to develop robust understanding of the physiological determinants of cotton crop growth and development. Undertaking this research with the involvement of agronomic researchers, extension specialists, crop managers and growers is vital so that achievements can be recognised in the field as quickly as possible.

- The potential for declining availability of water resources under climate change will increase competition for these resources between irrigated cotton production, other crops and environmental uses. These issues emphasise the need for continual improvement in whole farm and crop water use efficiencies and the need for clear information on water availability.

- There will be a need to improve cotton farm resilience by maintaining and increasing cotton profitability through practices that increase both yield and fibre quality, while improving efficiency of resource use (especially energy, water and nitrogen).

- Region-specific effects will need to be assessed thoroughly so that cotton growers can assess likely impacts at the business level. Also, as cotton is a global commodity it will be vital for cotton industries to understand global changes in cotton markets as part of its overall adaptation strategy.

- Simulation models will play a vital role in assessing impacts and adaptation options for future climate change; however, they will require investment in development and their validation for climate change issues. As new forecasted future climate change scenarios are developed there will also need to be used to update and quantify impacts and re-evaluate adaptation options. Crop biophysical modelling should be appropriately linked to economic whole farm/catchment scale modelling efforts. Similar considerations need to be given to cotton decision support tools that utilize day degree functions. It is possible that many systems do not accommodate future predicted extremes associated with climate change (e.g. heatwaves slowing crop development).

- Implementation of whole farm designs that build system resilience through diversity in crops, while increasing soil fertility and protection from erosion through the inclusion of rotation and cover crops will also need further attention.

The review acknowledges that most approaches discussed throughout the review are decidedly production focussed, and recognise that there are other significant efforts to combat 'a changing climate' from other perspectives and scales; policy and catchment scale efforts are some examples. Ultimately, it is a multi-faceted systems-based approach that combines all elements mentioned in the review as well as others that provide the best insurance to harness the change that is occurring, and best allow cotton industries worldwide to adapt. Given that there will be no single solution for all of the challenges raised by climate change and variability, the best adaptation strategy for industry will be to develop more resilient systems. Early implementation of adaptation strategies, particularly in regard to enhancing resilience, has the potential to significantly reduce the negative impacts of climate change now and into the future.

Source: The ICAC Recorder, Vol. XXXIV No.2, June 2016.



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Sr. No.	Growth	Grade Standard	Grade	Staple	Micronaire	Strength /GPT	27th	28th	1st	2nd	3rd	4th
1	P/H/R	ICS-101	Fine	Below 22mm	5.0-7.0	15	9786 (34800)	9786 (34800)	9786 (34800)	9870 (35100)	9870 (35100)	9870 (35100)
2	P/H/R	ICS-201	Fine	Below 22mm	5.0-7.0	15	10067 (35800)	10067 (35800)	10067 (35800)	10151 (36100)	10151 (36100)	10151 (36100)
3	GUJ	ICS-102	Fine	22mm	4.0-6.0	20	8436 (30000)	8436 (30000)	8436 (30000)	8492 (30200)	8492 (30200)	8492 (30200)
4	KAR	ICS-103	Fine	23mm	4.0-5.5	21	9645 (34300)	9645 (34300)	9645 (34300)	9701 (34500)	9701 (34500)	9701 (34500)
5	M/M	ICS-104	Fine	24mm	4.0-5.0	23	10742 (38200)	10742 (38200)	10742 (38200)	10798 (38400)	10798 (38400)	10798 (38400)
6	P/H/R	ICS-202	Fine	26mm	3.5-4.9	26	12317 (43800)	12317 (43800)	12345 (43900)	12457 (44300)	12457 (44300)	12485 (44400)
7	M/M/A	ICS-105	Fine	26mm	3.0-3.4	25	11276 (40100)	11276 (40100)	11220 (39900)	11248 (40000)	11248 (40000)	11276 (40100)
8	M/M/A	ICS-105	Fine	26mm	3.5-4.9	25	11614 (41300)	11614 (41300)	11557 (41100)	11585 (41200)	11585 (41200)	11614 (41300)
9	P/H/R	ICS-105	Fine	27mm	3.5-4.9	26	12485 (44400)	12485 (44400)	12513 (44500)	12626 (44900)	12626 (44900)	12654 (45000)
10	M/M/A	ICS-105	Fine	27mm	3.0-3.4	26	11389 (40500)	11389 (40500)	11332 (40300)	11360 (40400)	11360 (40400)	11389 (40500)
11	M/M/A	ICS-105	Fine	27mm	3.5-4.9	26	11754 (41800)	11754 (41800)	11698 (41600)	11726 (41700)	11726 (41700)	11754 (41800)
12	P/H/R	ICS-105	Fine	28mm	3.5-4.9	27	12570 (44700)	12570 (44700)	12570 (44700)	12654 (45000)	12654 (45000)	12682 (45100)
13	M/M/A	ICS-105	Fine	28mm	3.5-4.9	27	11838 (42100)	11838 (42100)	11782 (41900)	11810 (42000)	11810 (42000)	11838 (42100)
14	GUJ	ICS-105	Fine	28mm	3.5-4.9	27	11923 (42400)	11923 (42400)	11867 (42200)	11895 (42300)	11895 (42300)	11923 (42400)
15	M/M/A/K	ICS-105	Fine	29mm	3.5-4.9	28	11979 (42600)	11979 (42600)	11923 (42400)	11951 (42500)	11951 (42500)	11979 (42600)
16	GUJ	ICS-105	Fine	29mm	3.5-4.9	28	12063 (42900)	12063 (42900)	12007 (42700)	12035 (42800)	12035 (42800)	12063 (42900)
17	M/M/A/K	ICS-105	Fine	30mm	3.5-4.9	29	12204 (43400)	12204 (43400)	12176 (43300)	12204 (43400)	12204 (43400)	12232 (43500)
18	M/M/A/K/T/O	ICS-105	Fine	31mm	3.5-4.9	30	12317 (43800)	12317 (43800)	12317 (43800)	12373 (44000)	12373 (44000)	12401 (44100)
19	A/K/T/O	ICS-106	Fine	32mm	3.5-4.9	31	12485 (44400)	12485 (44400)	12485 (44400)	12541 (44600)	12541 (44600)	12570 (44700)
20	M(P)/K/T	ICS-107	Fine	34mm	3.0-3.8	33	15888 (56500)	15888 (56500)	15888 (56500)	15944 (56700)	15944 (56700)	15944 (56700)

(Note: Figures in bracket indicate prices in Rs./Candy)