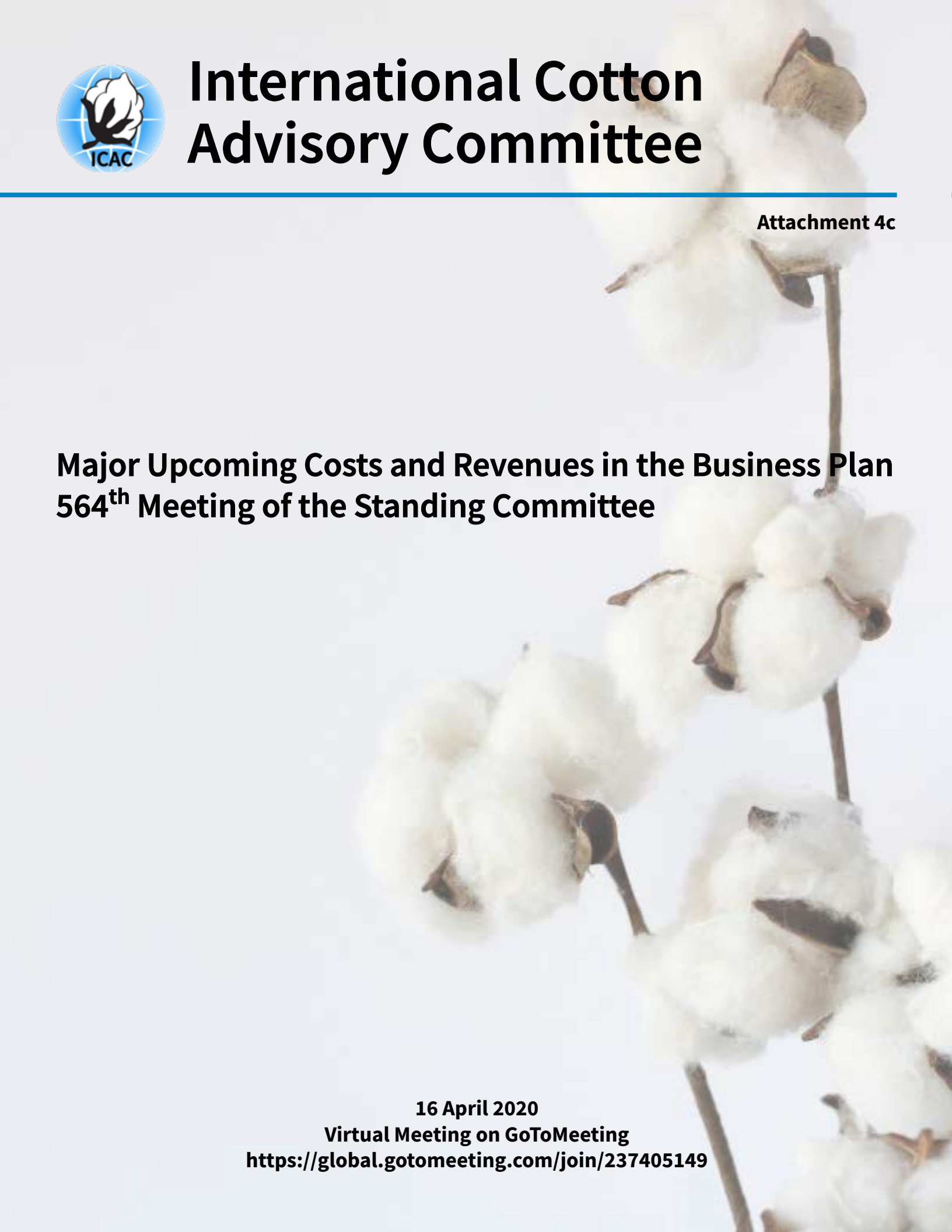
International Cotton Advisory Committee

Attachment 4c

Major Upcoming Costs and Revenues in the Business Plan
564th Meeting of the Standing Committee



16 April 2020
Virtual Meeting on GoToMeeting
https://global.gotomeeting.com/join/237405149

INTERNATIONAL COTTON
ADVISORY COMMITTEE

1629 K Street NW, Suite 702,
Washington, DC 20006, USA

Attachment 4c. to SC 564
16 April 2020

For Information

Report on ICAC Project Finances and Value Added to ICAC Members

Introduction

At the 562nd meeting of the Standing Committee held on the 14th November 2019, the Chair of the Standing Committee, Ms Maha Zakaria, requested that the Executive Director give an overview of the projects the ICAC was involved with and a breakdown of the finances associated with these projects and the added value they brought to ICAC members.
This report provides an overview of the two ongoing ICAC projects and the breakdown of the finances associated with each of them.

Recommendation

For information only but it is requested that ICAC members strongly encourage funders to support the ICAC in its applications for projects, especially with funders in their own countries.

INTERNATIONAL COTTON ADVISORY COMMITTEE

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Report on ICAC Project Finances and Value Added to ICAC Members

Introduction

At the 562nd meeting of the Standing Committee held on the 14th November 2019, the Chair of the Standing Committee, Ms Maha Zakaria, requested that the Executive Director give an overview of the projects the ICAC was involved with and a breakdown of the finances associated with these projects and the added value they brought to ICAC members.

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ICAC Projects Overview

Developing and maintaining a sound, sustainable world cotton economy is one of the major policy objectives of the ICAC. The world cotton industry has achieved great progress over the past 30 years by introducing new advanced technologies and better management practices. As a result, world average yields almost doubled between 1980/81 and 2017/18 reaching 808 kg/ha. However, this progress has not been evenly shared by many of the producing countries, especially in the developing world. While yields in Australia, Brazil and China are reaching 1700 – 2000 kg/ha, average yields in Africa have been stagnant at about 370 kg/ha and in India yields have hovered at around 500 gk/ha during the past decade, even though adequate sunlight, rainfall and fertile soils in these countries could result in higher yields. Critical analysis of farm management practices shows the need for the evaluation and development of the production systems to achieve higher yields and increase the input-use efficiency of water and nutrients to the crop, including plant architecture, soil health management and ecological engineering for pest management.

Cotton production remains an intensive agricultural commodity in terms of production inputs, e.g. energy, water, fertilizers and pesticides. New production practices and technologies offer opportunities for improving the environmental economic and social impacts of sustainable global cotton production. Managing the adoption of such innovations for optimal outcomes will require investment in research and farmer education.

Current production practices in a number of developing countries are lagging behind and need to be more environmentally, economically and socially sustainable to alleviate environmental pressures, improve water use efficiency, protect biodiversity, increase farm incomes, reduce poverty, protect human health and aid food security. Best Production Practices aim for high yields through sustainable practices. Crop management strategies are designed to ensure that cotton plants are provided with a healthy soil substrate, adequate sunshine, adequate heat, adequate water and

optimum proportion of nutrients as per the crop demand, while the plants are protected from extreme weather conditions, weed competition, insect pests, diseases and other pests. Both ICAC projects aim to achieve increased yields through sustainable practices as their basis.

The Projects

1. Virtual Reality Project – Seeing is Believing

The virtual reality (VR) training funded by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) or the German Corporation for International Co-operation will cover all the above aspects in two modules that emphasize best practices for sustainable cotton production and eco-friendly crop protection.

Module-1 will focus on integrated pest management and

Module-2 will deal with best crop production practices for high yields and good fibre quality;

The project is designed to help to achieve better yields, quality and volumes of output and will lead to reduced cost of production and better revenues for cotton producers, traders, ginners, merchants and governments benefiting a sound, sustainable cotton economy.

Cotton yields at 350 kg/ha in Africa are the lowest in the world. Low yields are due to two major reasons:

1. Conventional agronomy that leads to poor nutrient and water use-efficiency and
2. Significant economic losses caused by insect pests and diseases due to inefficient and ineffective plant protection practices.

The average cotton yield of Africa has not increased over the past 40 years despite strong efforts made by private agencies, governments and international organizations. Thus far, attempts have been made to transfer agricultural technologies to the small-scale farmers, who are mostly illiterate in the widely scattered remote areas, using conventional methods such as ‘lab to land trainings’, ‘field visit trainings’, ‘technology demonstration farms’ and ‘farmer field school’ approaches which are conducted within the villages and do not appear to have achieved a break-through.

New communication technologies such as mobile applications (Apps) which empower even illiterate farmers to personally conduct a scientific diagnosis and virtual reality (VR) technologies that allow virtual visits to the best farms in the world, have not been used as yet in Africa in agricultural extension programmes.
The ICAC global expertise and technical knowledge on global best practices of cotton production can be converted into simple training modules using the Virtual

Reality (VR) technology to enable virtual visits of African farmers into the best cotton fields in the world and virtually observe season-long global best practices within a few hours. Thus, the virtual reality modules will obviate the need for African farmers to physically visit advanced countries and the need for extension specialists to conduct season-long trainings and undertake cumbersome multiple-visit educational programmes.

Module 1 - Identifying and Managing Pests and Diseases

The objective of this module is to create and provide VR content on pests and diseases to equip the farmer with better and more realistic content to combat pests and disease effectively. Training programmes on pest and disease management can be conducted any time of the year by walking farmers into fields that are infested with insects and diseases to show them best eco-friendly management practices. Environmental impacts associated with the improper use of pesticides include contamination of drinking water, loss of biodiversity, long-term persistence in soils, loss of ecosystem services, reducing populations of pollinating insects and air pollution.

Cotton farmers in the developing world often apply pesticides with back-pack sprayers and often without adequate protective equipment, thus increasing exposure and harming human health.

Integrated Pest Management has its foundations in naturally occurring biological control of pests and diseases. IPM can succeed well when natural ecosystems and diversity are conserved and augmented.

This module is designed to show the importance of naturally occurring biological control of insect pests; harmful effects of insecticides, excessive irrigation and nitrogen use and best practices of pest management with production practices, cropping systems, resistant varieties, nutrient management, pheromones, light traps, trap crops, biopesticides, biological control and selective insecticides
The IPM module will combine 360 VR with 3D macro photography featuring three films (5-10 minutes each).

Module 2 - Growing Cotton Efficiently – Increasing Yields and Quality

Through the VR training modules, farmers will be informed and trained by showing them efficient cotton growing methods using stunning and extremely ritualistic 3D imagery. By showing farmers, key production personnel and decision makers more efficient and productive ways of producing cotton, farmers will have better knowledge and practices to increase yields and quality.

Farmers will be able to understand the value of compact-short-statured plants, zero-monopodial type, short season (140-150 days), pest and disease management, quality fibre evaluation, and conservation-tillage practices that can help enhance their yields and income.

The best practices module will guide farmers on crop production technologies that aim to optimize inputs (water and nutrients); to harness natural resources such as heat and light through proper agronomy and to use plant growth regulators to realise the best harvest index (higher lint yield v/s low plant biomass) while conserving soil health, biodiversity and ecosystems.

The Best Practices module will feature three movies (5-10 minutes each) on best production practices, techniques to improve nutrient-use-efficiency and management of plant architecture and canopy to improve the source-sink relationship.

The members of the project team are;

Project Management – Kai Hughes, Executive Director, ICAC

Subject Matter Experts to provide expertise and content:

Yields and Quality - Dr Keshav Kranthi, Head of Technical Information, ICAC
Sustainability – Lorena Ruiz, Economist, ICAC
Pest Management - Dr Sandhya Kranthi
Project Accountant – Alex Preston
VR Coordinator - Yener Boztas
Director – Sean Davison
Producer - Pamie Wikstrom
Director of Photography - Ashley Meneely

2. The Soil and Plant Health App

Overview

The Soil and Plant Health App is designed to benefit all stakeholders of the cotton sector. It is a diagnostic and educational tool that benefits illiterate farmers and experts as well. The primary users of the App are farmers, field extension staff of private and Government agencies, agri-input dealers and organisations that work for the cotton farmer. Cotton offers a path out of poverty for both families and countries. Unlike perishable or readily consumable crops, cotton reliably generates income allowing farmers to invest in their children's education and in family's health.
For countries such as Pakistan, India, Uzbekistan and China cotton also provides employment as these countries transit from rural to industrial economies. Unfortunately, rural education often lags behind that of cities. ICAC estimates that at least 35% of cotton farmers are illiterate in India (the world's largest cotton producer). With little to no safety net their need to access agricultural science that stabilizes yield and income is intense.

The direct customers for the ICAC Soil and Plant Health App are these illiterate cotton farmers around the world who want to create a stable supply of income generating high quality fibre. The indirect customers are the downstream industry

reliant on that fibre stream: gins, textile mills, garment manufacturers and countries with strong textile employment.

Soil and Plant Health Development Team are;

Dr Keshav Kranthi – ICAC
Dr Sandhya Kranthi – ICAC
Lorena Ruiz – ICAC Economist
Dr Kater Hake – Cotton Incorporated

Added Value to Members

It should be recognized that both these projects bring added value to Members through an increase in yields, a decrease in inputs such as fertilizer and pesticides and increased employability associated with a growing cotton industry and its related by products.

The attached spreadsheet highlights the potential added value to each ICAC member in Africa and Asia just through doubling the yields. In Africa this equates to $1.8 billion additional income and in Asia $7.5 billion.

With the soil and plant health app there is an additional value that cannot be measured in monetary terms. Many small farm holders in Africa and Asia are illiterate and therefore are unable to access learning and information on cotton. The App is designed to talk to farmers so it makes this information accessible through videos and animations. For the first time illiterate farmers can get access to knowledge through a smart phone.

Finances

The Virtual Reality project has been funded by GIZ to the amount of 1,233,186 Euros. The duration of the project is from 1 July 2019 to 31 January 2021 – a total of 19 months. Of this amount 107,042 Euros is allocated to ICAC staff as detailed above and 12,210 is allocated to administrative charges incurred by the ICAC, thus making a total of 119,252 Euros credited to the Business plan over the total period and 75,316 Euros accredited for the 2019/20 financial year.
The Soil and Plant Health App is funded by Cotton Incorporated. The first stage is funded on a 'as required' basis to build the concept App. Salaries of ICAC staff or administrative charges were not included. For the second stage which includes an AI and voice recognition component, proposals will be forwarded to potential funders and will include an ICAC staff salary component and administrative charge.

Summary

Projects are a key source of revenue for the ICAC and allow the ICAC to build expert teams to support ICAC staff. It also enables the organisation to increase its visibility

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and reputation and deliver badly needed projects to ICAC members at no or little cost to that member country.

ICAC members are strongly urged to encourage funders to support the ICAC in its applications for projects, especially with funders in their own countries.

Kai Hughes
Executive Director

12 April 2020

POTENTIAL ADDITIONAL VALUE FOR ICAC MEMBERS IN AFRICA, INDIA & PAKISTAN

	ICAC Member Country	Area ('000 ha)	Lint Yield (kg/ha)	Current Lint Production ('000 tonnes)	Current Value of Lint Production 2019/20* (Million US$)	Potential Lint Yield (Kg/ha)	Potential Lint Production ('000 tonnes)	Additional Lint Production ('000 tonnes)	Additional Value of Lint Production (Million US$)
AFRICA	Burkina Faso	735	283	208	336	566	416	208	336
	Cameroon	250	559	140	226	780	195	55	89
	Chad	248	298	74	120	597	148	74	120
	Cote d'Ivoire	426	514	219	354	780	332	113	183
	Kenya	25	220	6	9	440	11	6	9
	Mali	782	390	305	493	780	610	305	493
	Mozambique	124	223	28	45	445	55	28	45
	Nigeria	250	205	51	83	409	102	51	83
	South Africa	43	891	39	63	na	na	na	na
	Tanzania	441	247	109	176	494	218	109	176
	Togo	180	311	56	91	622	112	56	91
	Uganda	89	416	37	60	780	69	32	52
	Zimbabwe	212	292	62	100	585	124	62	100
	Total	**3 805**	**350**	**1 332**	**2 155**	**636**	**2 393**	**1 099**	**1 778**

	ICAC Member Country	Area ('000 ha)	Lint Yield (kg/ha)	Current Lint Production ('000 tonnes)	Current Value of Lint Production 2019/20* (Million US$)	Potential Lint Yield (Kg/ha)	Potential Lint Production ('000 tonnes)	Additional Lint Production ('000 tonnes)	Additional Value of Lint Production (Million US$)
ASIA	India	12 700	472	6 000	9 704	780	9 906	3 906	6 317
	Pakistan	2 631	502	1 320	2 135	780	2 052	732	1 184
	Total	**15 331**	**477**	**7 320**	**11 839**	780	**11 958**	**4 638**	**7 501**

Source: *ICAC*
Note: *as of 7 April, 2020, the average price for the Cotlook A Index for the 2019/20 season is 73.36 cents per pound*

	Non-Member Countries in Africa	Area ('000 ha)	Lint Yield (kg/ha)	Current Lint Production ('000 tonnes)	Current Value of Lint Production 2019/20* (Million US$)	Potential Lint Yield (Kg/ha)	Potential Lint Production ('000 tonnes)	Additional Lint Production ('000 tonnes)	Additional Value of Lint Production (Million US$)
AFRICA	Benin	700	450	315	509	780	546	231	374
	Ethiopia	82	741	60	98	780	64	3	5
	Malawi	85	249	21	34	498	42	21	34
	Senegal	20	255	5	8	510	10	5	8
	Sudan	180	722	130	210	780	140	10	17
	Zambia	118	393	46	75	785	93	46	75
	Non-Member Countries in Africa	**1 185**	**488**	**578**	**935**	**756**	**895**	**317**	**513**

Source: *ICAC*
Note: *as of 7 April, 2020, the average price for the Cotlook A Index for the 2019/20 season is 73.36 cents per pound*