Cotton Australia Submission to the National Agricultural Workforce Committee

Executive Summary

Cotton Australia is the peak industry body representing Australia's cotton industry, which includes approximately 1,500 cotton farming and cotton ginning businesses. Our members are situated across 152 regional communities in NSW, Queensland and now into Victoria and Northern Australia.

Cotton Australia would like to acknowledge the Cotton Research and Development Corporation for the valuable contributions they have made to this submission through the funding provided to Dr. Nicole McDonald to undertake her research on workforce development.

Cotton Australia is a member of the National Farmers' Federation, and as such, supports its submission and recommendations to the National Agricultural Workforce Committee.

Notably, 90% of cotton growers are family farms that also grow other crops like sorghum, soybeans, wheat, and also have livestock. While cotton production does vary considerably from season to season (dependent on water/moisture availability), it on average contributes between $1.5 billion and $2.5 billion to the economy annually.

The Australian cotton industry fosters a world-class agricultural industry that's sustainable, valued for its economic and social contributions and produces very high-quality cotton in demand around the globe. In order to further achieve this, we need to attract, develop and retain people that will drive industry competitiveness.

Having skilled and capable people in our industry is one of the keys to Australian cotton's success. The Cotton Research and Development Corporation (CRDC) and Cotton Australia make major annual investments in training, education, scholarships and professional development in order to attract and retain a skilled workforce.

Establishing the first 'Cotton Industry on farm Workforce Strategy[1] led to the creation of AgSkilled, an industry-led vocational training partnership between the NSW Government and the grains and cotton industries. To date, 3,000 cotton and grains growers have participated in 700 training courses across NSW, some of these included cotton pest management, soil health, precision agronomy and workplace health and safety.

Cotton farms are among the leading employers in most locations where the crop is grown. However, it is difficult to know the exact number of people employed by the industry, because most farms are mixed farming systems involving other crops and livestock. Cotton Australia estimates the number of people employed by the cotton industry in a non-drought year is around 12,500 people, not including those employed in agronomy, rural supplies or inputs[2].

The Australian cotton industry's achievements

- Australia has the highest cotton yields in the world, approximately three-times the world average.
- Our research investment has delivered average annual yield increases of 3% per year.
- The use of pesticides has been reduces by more than 95% since 1993.
- Water use efficiency has improved by 48%, which now translates to the cotton industry using almost half as much water to produce a bale of cotton than it was in 1992.

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[1] Cotton Industry On-Farm Workforce Development Strategy – Cotton Australia and Cotton Research and Development Corporation - https://www.crdc.com.au/publications/cotton-industry-farm-workforce-development-strategy
[2] Cotton With A Conscience – Australian Cotton's Story of Social Impact page 10

- The successful delivery of AgSkilled in NSW which saw the development of more than a dozen industry-specific courses, and provided training to more than 3,200 people across over 4,000 places in training
- The cotton industry launched and delivered Cotton Gap in 2017 and 2018. After being postponed delayed for two years due to drought Cotton Gap is back for 2020.
- The industry now has the capacity to trace 100% of Australian cotton from the garment back to the field[3].

Impact of the current drought

- The 2019/2020 Australian cotton crop was the smallest produced in nearly 40 years.
- For the third year in a row, there was no cotton grown in Bourke, NSW.
- Many northern NSW valleys have had no new water allocations due to the lack of rain in the catchments.
- The 2019/2020 crop was grown using carryover water from floods in 2016/17, bore and ground water.
- Growers are resilient and used to managing their operations through volatility. But the relentlessness and severity of this drought is taking its toll. Growers are concerned about the impact on regional towns, businesses, schools and services. They are having to let some valuable and long-serving team members go. When it rains, growers will face difficulty sourcing staff again.
- Excitingly, some regions in South Western Queensland and North Western NSW have been able to harvest water from late summer rainfall and will be looking to bolster their workforce for the upcoming growing season of 2020/2021.

Cotton Industry Workforce Overview

- Industry-wide, Australian cotton farms provide jobs for an estimated 10,740 people. This includes 6,600 full-time permanent staff, swelling to an estimated 12,480 to include part-time, casual, temporary seasonal workers and contractors.
- Post farm-gate, the industry directly employs a further 1,700 people in marketing and export, cotton classing and in 41 regionally based cotton gins.
- The industry also supports more than 220 independent consultants, farm agronomists, sales agronomists, chemical & plant breeding company representatives and R&D personnel[4]

During the next 10 years, what impact will the following changes to agricultural production, processing and distribution have on the workforce:

a. **innovation and technological advancement, including robotics and Artificial Intelligence**
b. **changes to agricultural production—for example, moves to high-value crops and produce, or structural adjustment**
c. **changes in supply chains and distribution of farm produce**
d. **changes in consumer demand—for example, end-to-end supply chain traceability as a development of the 'clean and green' brand, provenance, and the use of more plant-based ingredients?**

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[3] https://cottonaustralia.com.au/assets/general/Publications/Sustainability-Reports/2019-Australian-Cotton-Sustainability-Report-Full-Report-2.pdf
[4] Derived from cotton industry estimates

Innovation and technological advancements have the power to rapidly transform the cotton industry. Both incremental advancements and disruptive technologies have the potential to develop our industry. From on-farm production right through the supply chain there are a multitude of opportunities for the digital revolution.

The 'Precision to Decision' project was commissioned by industry to better understand the value and potential growth opportunities technology presents agriculture. The report predicted the potential economic benefit of the unconstrained transition to digital agriculture and found that of all industries, the cotton industry was identified as a potential high growth sector with a potential 28% increase on current GVP.

The Australian cotton industry is in an era of significant change with rapid advances in technology transforming the way we farm and undertake research. The environment in which we operate also poses challenges, with climate variability and natural capital constraints testing the resilience of our farming systems. It is essential that we maximise the opportunities afforded by the agricultural technology revolution and minimise the disruptions posed by climate variability and natural capital constraints.

To do this, the Australian cotton industry needs to enhance our scientific research capability, acquire new talent and facilitate the local and global exchange of ideas required to strengthen our adaptive capacity. This will ensure we are prepared and ready to respond to the changing environment. Building adaptive capacity will enable the industry to achieve its future vision and allow Australian cotton to innovate and find solutions to existing and new problems – and bring those innovations to the marketplace more rapidly. It will also allow our industry to take a lead role in investing in cotton research and innovation internationally.

Interviews with growers indicate the bigger disruptor to agriculture workforce is climate variability and increasing severity of drought. Variable access to water is a motivating factor for growers to pursue labour replacing technologies such as automated irrigation. These technologies allow growers to avoid the limitations to production that occur due to lack of access to suitably skilled and engaged labour when water availability allows for increased production on farm. Increasing automation allows a smaller, stable on-farm workforce to be retained. While these jobs may require increasing digital literacy, at this stage there is still demand for workers who are willing and able to engage in physical and manual tasks on farm. The jobs consist of the same tasks, but the tools used have changed. Transformational leadership practices from growers can help staff accept new technology and persist in learning the skills required to adapt in their roles. [5]

The cotton industry's strategy for growth relies on anticipating, creating, and responding to consumer demands, which have the potential to increase the competitiveness of the industry. Australia's cotton producing sector has the potential to strengthen its position as a small but significant exporter of a sustainable, authentic, high-quality and consistent product.

Cotton Australia identified the need for sustainable production practices and developed a best management practices program in 1997. The industry's myBMP program is a world-leading voluntary farm and environmental management system which provides self-assessment

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[5] McDonald, N. Understanding and Planning for the Future Cotton Industry Workforce

mechanisms, practical tools and auditing processes to ensure that Australian cotton is produced according to best practice. Currently there is 80% industry involvement in myBMP.

As a benefit to Australian cotton growers, those who are myBMP-certified have the ability to opt-in to the Better Cotton Initiative (BCI). BCI is a global not-for-profit organisation and the largest cotton sustainability programme in the world. BCI exists to make global cotton production better for the environment it grows in, better for the people who produce it, and better for the sector's future. About 20% of cotton produced by Australian cotton growers is sold as BCI cotton, and these growers sometimes receive premiums for this cotton when sold.

As these technologies and demands on the cotton supply chain continue to evolve, so too will the required skillsets of the industry's workforce. Increasingly, multidisciplinary skillsets are required. For example, staff with deep technical knowledge complemented by an understanding of supply chains, relationship management skills, and experience in digital platforms are proving increasingly appealing for employers to hire. Researchers will need to have more on-farm and production experience to increase their understanding of the potential solutions that can be developed to address business needs.

The cotton industry will be expanding into Northern Australia over the next decade. In some northern areas there is already established intensive agriculture, while in others the introduction of intensive agriculture will open up a whole range of new employment opportunities and demand for new skillsets. This will present several key challenges, with the first being the availability of a suitably skilled workforce to fill the available positions. This will then highlight the poor availability of suitably qualified trainers and RTO's due to the remoteness of these areas, the requirement to travel and the inflexibility of the current VET system will raise issues for the upskilling of our workforce.

While the development of the cotton industry across northern Australia is in its infancy, there is very strong grower and investment interest, and it is not overly optimistic that this development could create in excess of 1000 jobs over the next five years.

What impact will climate change and other environmental situations such as severe droughts, severe storms and long fire seasons have on the agricultural workforce?

Climate change is expected to impact Australia's cotton growing regions through higher temperatures, increased evaporation and less frequent but more intense rainfall. All of these have potential negative impacts on the efficient production of cotton. Cotton growers are taking steps to adapt to the impacts of climate change by implementing new practices and adopting new varieties of cotton to make farms more resilient.

The Australian cotton industry has always been at the forefront of research and development and facilitating adaptation. The Australian cotton industry recognises it is operating in an era of significant change, in terms of climate variability, and that this brings opportunities to invest in technologies to enable adaptation. For example, climate variability and increasing energy prices have been key drivers to improving crop production efficiencies.

While cotton production emits only about 0.2% of Australia's greenhouse emissions, the industry is focussed on reducing greenhouse gas emissions, measuring and increasing on-farm carbon storage, and mitigating future effects of climate change[6].

The recent drought has had a devastating impact on the cotton industry. The 2019/20 season was the smallest cotton crop produced in almost 40 years, with only 60,000 hectares planted, compared to the long-term average of 324,000 hectares since 1990[7].

Hectares of Australian cotton planted (year listed is when season finished)
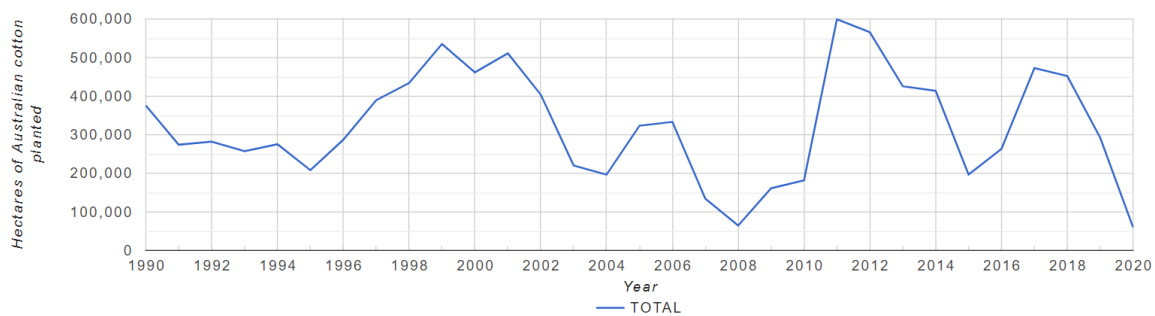
2020 hectares figure an estimate as at January 2020.

[8]

Unfortunately, the drought has impacted the ability of many farm businesses to maintain their workforces. While farmers traditionally maintain their core workforce and hire casual or contract labour to meet peak labour demands (such as planting, irrigating and picking etc), the prolonged drought has reduced seasonal/casual labour opportunities. Anecdotal feedback suggests many farms have also been forced to let go their core staff.

Agriculture is a key employer in many regional communities, and with the impact of the drought so widespread, finding alternate local employment opportunities will be challenging. It is fair to assume many former employers and their families have been forced to relocate to larger regional centres or new regions in search of employment.

With the current conditions appearing to be turning, and with ABARES forecasting a return to average crop production soon, farmers will now face the challenge of attracting employees to meet their labour requirements. A percentage of previously trained employees will be among those who have left the industry, therefore, we can expect a new wave of unskilled industry entrants.

What ways might changing social perceptions of different agricultural activities (for example, perceptions about sustainability, emissions, and animal welfare) affect the agricultural industry and its workforce?

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[6] AUSTRALIAN COTTON'S CONTRIBUTION TO THE SUSTAINABLE DEVELOPMENT GOALS page 20
[7] https://cottonaustralia.com.au/statistics
[8] https://cottonaustralia.com.au/statistics

While the term 'social licence' can seem a vague concept for farmers to deal with, the impact of an industry losing its social licence would be immediate and potentially terminal for the farm businesses involved (Farm Institute, 2018). The cotton industry continues to face social licence challenges around dispelling long-held public misconceptions around our industry and how it operates. While forced practice change in these issues will not lead to the end of agriculture, it could, however, have the potential to shape a very different agricultural sector to what we know today.

Social licence does, however, provide opportunities for the agriculture sector. Industries that anticipate social licence issues have the opportunity to position themselves as drivers of change for good, rather than clinging to practices that have lost public support. Successfully anticipating new markets enabled by social licence-induced change will provide opportunities for those willing to proactively embrace the concept, promote it and embed it within their practices.

Proposals such as the Rural Jobs and Skills Alliance's QASEP submission, Cotton Australia's education initiatives and materials, and its membership of Primary Industries Education Foundation Australia (PIEFA) are all vehicles in which we can promote our industry. The misconstrued and outdated perception of agriculture and farming as not being an attractive career prospect will be further exacerbated by a loss of social licence and misunderstanding of a world-leading industry by students who will form tomorrow's workforce. This will particularly be the case with many potential employees who live in urban areas and are not exposed to the modern cotton industry in their education.

The need to attract the next generation of people (from all backgrounds including STEM, computing/software etc.) proves we must ensure education touchpoints are increased within the curriculum. Currently in the Australian Curriculum there are more than 160 food and fibre content descriptors directly addressing many aspects of production, processing and consumption that is underpinned with the overarching priorities of sustainability and environmental education. We see the need for this number of touch points to markedly increase over time for particularly schools in urban areas of Australia.

To ensure this is achieved, Cotton Australia has an important education program that focusses on the production of teacher and student-focussed materials. These receive in excess of 250,000 hits on the organisation's website annually, proving its worth and relevance to the curriculum. Cotton Australia believes this is an important focus because of the incorrect perception that exists that agriculture is not an attractive career choice.

What impact will societal changes, such as the ageing workforce, low unemployment, low immigration and relocation of regional population (and agricultural, health and education workers) to urban areas, have on the agricultural workforce?

Are there other societal changes that will affect the agricultural industry and its workforce?

The Australian agricultural sector has the highest share of employed persons who are above retirement age, and its labour workers are ageing. About 23% of the sector's workforce is likely to

retire over the next five years (Skills Impact, 2018). Upcoming retirements are likely to bring significant job vacancies across the sector, requiring efforts from employers to refill these skills gaps.

Similarly, the cotton industry's workforce is ageing over time, but remains younger than the national agricultural average, with 63% of cotton growers and ginners under the age of 50 years according to census data from 2011 and 2016.

To further compound the above-mentioned issue, the current COVID-19 pandemic will impact the availability of seasonal workers and backpackers who are commonly relied upon to meet demand during peak labour periods. The federal government has forecast immigration to drop by as much as 85% over the next 18 months as a direct result of the closure of Australia's borders. Among other visas, this will also include temporary work visas and working holiday visas - both of which the cotton and grains industries rely upon to fill temporary workforce shortages.

As mentioned previously, prolonged periods of low crop production results in the loss of our workforce to urban areas, where workers seek more stable employment. History has proven this workforce rarely returns to regional Australia for employment.

What impact does the continuing international corporatisation of agriculture have on labour and jobs?

There has been a trend towards larger farms, amalgamation and corporatisation which does not necessarily translate to a larger workforce (often a decline with increasing advancements and innovation). Larger, more remote broadacre farms like cotton are challenged in attracting workers, and particularly in finding higher-skilled staff. We will continue to use a range of options to assist with recruitment and look for innovative solutions to secure a workforce. Ensuring farm managers are using the best workforce planning/management systems they can (for example, beyond just usual recruitment) will help, but there are other structural barriers that also need to be addressed in the context of an ageing workforce.

Corporate farms within the Australian cotton industry can offer a more structured career pathway and potentially greater opportunity for career progression within a company than smaller and family-owned operations can. Additionally, corporate farms often operate within formal governance structures, may place a higher value on formal skills recognition, and can offer greater opportunity for training.

What are key health and wellbeing considerations for the agricultural workforce? How can health and wellbeing best be maintained and improved?

The cotton industry has begun to assess wellbeing and social capital in cotton growing regions. Social capital – the social connections, support and networks between people that create communities and provide support – is critical to wellbeing, and in particular to resilience during challenging times.

As this is the first time wellbeing in cotton communities has been measured by the industry, it is important to emphasise that more work is needed to understand the context, and the impact drought and other factors are having on cotton growing communities.

The initial data which compares individual farmers to people employed in cotton growing communities shows we need to focus on physical health, where farmers rated far lower than the

comparative group. For mental health, farmers scored 12, and employed people in cotton growing communities scored 12.1 (average score for psychological distress using the Kessler 6 psychological distress scale; measured from 6 (very low distress) to 30 (very high distress))[9]. By examining these metrics, the industry is seeking to better understand where there are opportunities for it to contribute to the broader wellbeing of the communities its members live and work in.

Within the cotton industry, employers and employees alike continually mention the importance of connectedness to family, friends and the wider community whilst working at times on remote properties. Having a reliable and efficient mobile phone and internet service has almost become a pre-requisite for attracting and retaining staff. Some employers are investing in improving these services on their farm for not only their families, but for their workforce because they recognise this is needed to ensure they keep their employees.

What are the key drivers that will influence the size and skill needs of the agricultural workforce in the next decade?

The cotton industry is being influenced by the technology/digital revolution, with greater automation leading to a reduction in on-farm seasonal labour requirements, potentially increasing demand for data management administrative skills, better stability for skilled workers, and improved work conditions.

Farm businesses will increasingly rely on experts and advisors with specialist skills, so the number of contractors providing services to the farm is likely to grow in the next 10 years.

Development and adoption of technology and automation is a key driver. As mentioned previously, technology will continue to change the characteristics of the workforce, the tasks they perform and the skills needed in agriculture. The findings of a recent report by KPMG indicated that 41% of roles in Australian agriculture will be affected by technology within the next 10 years - 30% through automation (e.g. robotics) and 11% through augmentation (e.g. Artificial Intelligence and wearable devices).

There is a continuous need to upskill and learn. The current workforce will need to engage in continuous learning to adapt to the evolving agriculture sector. It is increasingly likely that the workforce will be required to train on the job and continuously update their levels of skills. But, as people with higher educational attainment start to dominate, they will influence/encourage more training and upskilling, inculcating the benefits of a learning culture. This is the shift in the influence of the new way of learning versus the old way of learning that has traditionally dominated agriculture.

An example of technology improvements and how it has reduced the size requirement of a seasonal workforce is the cotton picker. The industry first began with single and two row cotton pickers where the labour force requirements were minimal but the operation was extremely slow. The next stage in the advancement of the cotton picker was the development and wide spread adoption of the 4 row cotton picker with the use of boll buggies attached to tractors requiring a driver, module builders requiring an operator and several ground crew to assist the picking operation. Each cotton

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[9] https://cottonaustralia.com.au/assets/general/Publications/Sustainability-Reports/2019-Australian-Cotton-Sustainability-Report-Full-Report-2.pdf page 27

picker operating could require up to 5 staff to ensure the extremely important final step in the production of the crop continued as smoothly as possible. Nearly 10 years ago, the cotton industry quickly adopted the latest technology in cotton picking with the introduction to the Australian market of the CP690 cotton picker which has made possible non-stop round module harvesting and drastically reducing the labour force requirement.

An example of this reduced demand for labour is as follows: "One producer was excited about the labor savings the on-board round module building system would bring to his operation. He was able to take his existing picking fleet down from six machines to four machines and significantly reduce the support staff that goes along with them. With a traditional fleet, he was running 22 to 24 people on any given day but could likely reduce that number to about seven[10]."

Currently on a cotton farm the last bastion of high labour demand is the irrigation operation. Most of the Australian industry utilises flood irrigation to water the crop, this requires the manual starting and stopping of PVC syphons. This operation has traditionally seen a high influx of seasonal labour to ensure this production operation is completed when required, there are massive yield implications if irrigating is not done on time. A small percentage of the industry has moved to lateral and pivot irrigation systems which only require one operator which can be automated and done remotely. To replace syphon operators and improve efficiency, there are now several examples across the industry where automated flood irrigation systems have been adopted vastly reducing the requirement for a seasonal workforce.

While the labour saving benefits of the CP690 have been embraced, solving workforce attraction issues, the machinery may be a factor contributing to future production challenges. The size and weight of the round bale picker creates soil compaction issues that negatively impact soil health. When this issue sufficiently limits production outputs, a move to smaller autonomous machinery may be a solution that a skilled engineering workforce develops and growers look to adopt. Exactly how the labour requirements associated with picking will change when the next iteration of machinery is developed is yet to be seen.

Automated and robotic tractor technology is in its infancy of development with some examples already operating. This will dramatically change the required skillset of the future workforce and increasing the need for upskilling/retraining of the current workforce.

What factors (e.g. status of the agricultural industry compared to other industries, competitive labour market, workplace conditions, public perceptions of agricultural jobs and industries) impact the pool of talent available to pursue agricultural careers?

How can these factors be mitigated?

Agriculture is a sector that is poorly understood or valued amongst school students as shown in the preliminary data from the soon to be published survey from Primary Industry Education Foundation Australia (PIEFA). From the 1008 secondary school students who responded to the survey, they do not know much about the jobs associated with Food and Fibre production, these jobs generally are not highly regarded by students – lacking recognition as 'good' jobs, aspirational merit and 'fit' with

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[10] https://www.deere.com.au/en/harvesting/cp690-cotton-picker/

students' interests. The data showed that only 7% were extremely likely to consider Food & Fibre related Study and only 5% were extremely likely to consider a career in the Food and Fibre sector.

The data suggests that students (young people) are unaware of the diverse career opportunities offered by agricultural industries. A career in agriculture is assumed to be a farmer or farm labourer (as defined by inaccurate ANZSIC – agricultural job classifications), boring, low paid, and in rural locations or in some cases, preferred careers (e.g. mechanic) are simply not considered in relation to Food & Fibre industries.

Those who consider jobs in Food & Fibre generally have a more informed understanding of the types of jobs available and are very specific in talking about their chosen career, many of them likely to have experience on farm directly or from family connections.

The cotton industry as a whole are keen to address the shortfalls in student understanding and knowledge of agriculture and the growing of cotton to debunk misconceptions and promote the 'dirt to shirt' jobs opportunities from both sides of the farm gate. Cotton Australia's education program remains a core focus of the organisation's work over the past decade, with several key achievements recorded. The value of educating about our industry is immense, with teachers, students and the general public all being the target audiences for our work in this space. Through quality education projects, resources and initiatives we boost understanding of our industry and share the Australian cotton story far and wide. Over this past year, our education program evolved to include working with all sectors to foster productive partnerships that extended our reach and engaged with teachers to support their work with students.

How can agribusinesses and related industries better attract workers?

The 2015-commissioned Workforce Development Strategy for the Australian cotton industry, authored by Agrifood Skills Solutions, concluded the Australian cotton industry outlined the importance of including "provision for liveability and an employee's work-life balance" as a way to attract future employees. Many cotton growers utilise social media and 'word of mouth' to recruit, which has certainly moved away from the traditional sources of recruitment. The cotton industry needs to show how farms are a desirable and rewarding place to work, ensure farm career pathways are clearly articulated, and supports training and upskilling opportunities for employees.

Cotton Australia has just launched the 2020-2021 Cotton Gap program to offer Year 12 students leaving school at the end of this year an opportunity to gain employment for up to a year on a cotton farm. As one of the past Cotton Gap students, Matt Clearwater from Canberra with no prior exposure to the cotton industry says, 'When I started at 'Keytah', I didn't know where I wanted to go career-wise when I left school, apart from wanting to do something in ag. While at 'Keytah', I was exposed to a range of enterprises and potential career paths including cattle, irrigated and dryland cotton, agronomy and winter dryland cropping. I enjoyed agronomy the most and the more I learnt about it, the more I enjoyed it; so, I decided to focus on agronomy.' Matt is now completing his Bachelor of Agriculture and planning to do a Bachelor of Science (Honours) at UNE. This successful story highlights how an opportunity like Cotton Gap can give Year 12 leavers with little or no understanding of agriculture and no family ties in farming an opportunity to discover how they can find an appropriate pathway into further education and the potential for a career in agriculture.

What factors affect entry into the agricultural workforce? How can the agricultural industry achieve greater exposure?

It is also critical that the cotton industry's awareness, education and employment pathways are effective. Promotion of the new career opportunities and pathways offered in the agricultural sector needs to occur. Most importantly, breaking the stereotype of what farming used to be is needed, as is telling the vibrant, exciting story of what today's cotton industry is like with its usage of leading-edge technology and production practices.

Why do people leave the agricultural workforce? How can these factors be mitigated?

As mentioned previously, cotton producing communities that can provide a level of infrastructure such as telecommunications, health, education and childcare are likely to contribute to attracting and retaining skilled people to the industry.

Agriculture in general has seen a migration of workers to the mining industry, as agriculture has been seen as a training ground for future mine workers due to their training in the operation of heavy plant and machinery. Anecdotally, we have seen some staff come back to the cotton industry seeking a better work-life balance. Therefore, the promotion of this aspect will no doubt help in the retention of our workforce.

As mentioned previously, workers have moved to urban areas seeking a greater level of employment security. This has been brought about by prolonged periods of drought in cotton producing regions.

One initiative to keep employees within a region during a drought has been local councils offering employment opportunities. The Drought Communities Program was designed to deliver benefits in targeted drought-affected regions of Australia. The Australian Government provided funding to fund local infrastructure initiatives that provided employment for people whose work opportunities were impacted by drought.

What are the implications if the supply of skilled agricultural workers is insufficient for your sector or business?

Cotton is a crop that responds positively to timely management, and severely penalises its grower through yield loss and quality downgrades when operations are not timely. Access to suitably trained staff is crucial to ensure timely management, and therefore the productivity and profitability of the cotton industry.

For example, the cotton industry employs approximately 6,600 full-time permanent staff, swelling to an estimated 12,480 to include part time, casual, temporary seasonal workers and contractors. If these additional staff and contractors were not available, the implications would be disastrous for the industry.

What skills and knowledge does the agricultural workforce need in the foreseeable future to ensure the ongoing productivity of the agricultural industry given the changes the industry and Australia is experiencing?

One of the most challenging aspects of work in the 21st century is the ever increasing volatility, uncertainty, complexity and ambiguity that surrounds it. Growers are faced with increasingly

complex businesses and multiple competing demands. To avoid burnout and successfully navigate business in these times requires strong business skills and self-managements skills underpinned by soft skills development.

For employees, the linear career is no more. This was certainly evident in the research with some workers having already undergone changes in employment within their first five years in the industry. While young adults will often develop employability skills through tertiary education, an agricultural workforce where tertiary qualifications are not always required may miss out on these opportunities. Indeed, many adults who have relied on continuous work with one employer, may not have developed the adaptability skills to work in a modern agricultural career.

Mega trends of digital disruption and climate variability mean employees career transitions and demands on growers to adapt and adequately respond within their businesses will become increasingly common. Strengthening the workforce's adaptability and transferable skills, (e.g. time management, self-management, and building professional networks), ensures the workforce will be ready for this future and individuals will be able to take increasing ownership of managing a successful career in agriculture. Given the ever-evolving challenges the industry faces due to factors such as structural change, economic cycles, changing markets, and emerging technology, these transferable cross-sector skills are critical for ensuring Australia's cotton workforce can adapt to the ever-changing environment.

As highlighted in the Workforce Development Strategy developed for the Australian cotton industry, the expansion of digital capacities more generally will reinforce the requirement for a smaller pool of more skilled labour with the ability to operate complex systems. Additionally, the adoption of newer production technologies will also result in employees needing to have a greater skills base, as the average number of employees on farm may decrease.

Is the current education and training system for agricultural workers fit for purpose? Are the needs of the agribusiness workforce adequately served by current education and training systems (high school programs, vocational education and training, and higher education)?

What is working? What is not?

Cotton Australia has been involved in the successful delivery of AgSkilled in NSW. Based on these successes, we have pitched for a similar program to be created in Queensland called SmartAg Queensland (further details are available below).

A trend towards bite-sized learnings and more flexible course structures should be encouraged that allow students to train in areas that might not be conventional agricultural subjects but of significant value to their career in agriculture. This will help training to be more relevant to industry requirements and support the current workforce in constantly updating their knowledge. We need to support businesses with the desire to develop the confidence to acquire the capabilities and capacity necessary to transition from the business of today into the business of tomorrow.

How can these systems best meet the needs of the agricultural workforce?

The cotton industry would like to see more genuine and meaningful collaborative efforts from training providers and government to support flexible programs that meet our needs. Our industry would like to play a fundamental role in providing information about the skills that we want for our workforce, as technology continues to change job functions and the required skillsets within our industry.

Additionally, the cotton industry will be able to positively contribute to the appropriate subject matter experts and industry expertise to develop course content and ensure the delivery is relevant. The agriculture sector recognizes that we need to partner with government and the training sector to ensure that our industries have a sustainable and appropriately skilled workforce. Real-life education will need to play a bigger role and therefore industry-based learning will need to be encouraged.

Government will need to ensure that funding and accreditation systems provide appropriate incentives to increase learning flexibility. Increase of funding support for skillsets and micro credentials should be a priority.

The modes of delivery will also need to change. Demand is expected to increase for more flexible, short-form courses that allow workers to acquire the required skills as and when needed (a just-in-time model). Training providers will therefore need to adjust their skills experience and their teaching methods. Demand for online courses is expected to increase (AlphaBeta, 2019) and training providers will need to adjust to a fit-for-purpose learning approach. The training system is not currently fully equipped to deliver the quality and amount of training with the required flexibility.

Australian cotton growers invest heavily in research and development (R&D) through their levy's paid. The CRDC has overseen in excess of $100 million in investment over the last decade to improve best practice and implement change, this needs to be reflected in workforce development models. There needs to be mechanisms in place to ensure the latest advancements in R&D are reflected in course content, also VET staff and trainers are aware of these advancements. Where required, industry can help in identifying experts that can assist the VET systems in the development of courses and their content. By ensuring the latest R&D is reflected in courses and utilised by trainers, industry will value the importance of training more.

What skills and knowledge do business owners need and how can this be best achieved (formal education or informal education and different modes of delivery, for example micro-credentials, online learning, workplace learning)?

The cotton workforce will continue to shrink and will be both smaller and higher-skilled in the future due to numerous reasons, such as automation. Farm scale will continue to increase, and at the same time, the increase in mixed farming operations, including cotton, will require more diverse skillsets among the workforce. This will lead to significant changes in the makeup and requirements of the workforce, as well as the future look of the workforce and the types of jobs that will be needed. Similarly, staff with life-long learning will become invaluable employees.

While our industry values full qualifications, growers prefer incremental learning through a 'bite-sized', life-long learning approach, where acquiring skills and knowledge will result in practice

change in their business. We propose a combination of both accredited and non-accredited training to best meet industry needs.

Short courses tailored to specific subjects and leveraging the latest in research and development are ideal for our growers which can at times be delivered online. Training needs to be delivered flexibly and locally - when and where determined by industry with rural and remote delivery a priority. Leveraging industry expertise, through guest presentations from genuine subject matter experts, will ensure training is relevant and needs-driven.

The cotton and grains industries have piloted the AgSkilled model in New South Wales since 2017, in partnership with the NSW Government. The AgSkilled program focused on these industries as they were the most advanced in understanding their future workforce needs, and had significant industry crossover, with most farmers growing both cotton and grains. Understanding the transferability and mobility of skills within the sector is a critical aspect of this project.

Programs such as AgSkilled are about government and industry learning together the strategies that work best in their sector, and how to be flexible to realise the goal of a skilled and dynamic agricultural workforce in Australia.

What initiatives have worked to raise the status of agribusiness, increase the supply of workers or increase the skills and knowledge of agricultural workers? What factors have contributed to the success of these initiatives?

Cotton Australia have several initiatives to raise the status of our industry, increase the supply of workers and increasing their skills and knowledge with Cotton Gap and AgSkilled being a particular focus. A comprehensive and detailed report on the rationale and achievements of these programs can be found in Appendix 1 and 2.

AgSkilled

AgSkilled seeks to drive the productivity and profitability of New South Wales' cotton, grains, wine, rice and horticulture industries through building capacity and capability around four key pillars: Business, Safety, Production and Technology.

The current AgSkilled program has been extremely successful in underpinning the on farm training needs for grain and cotton crop production throughout NSW, the proposed second program of AgSkilled also encompasses horticulture, thereby ensuring the continued growth recovery of cropping in NSW. In our state's history, never more than now, ensuring food safety and security is vital to our trading partners - AgSkilled is integral to delivering safe and secure food and fibre production throughout NSW. AgSkilled is also integral to the continued recovery of cotton, grain and horticulture production in NSW following recent rain throughout the cropping regions and the bushfires of summer 2019/20. Building strong, robust and resilient regional communities is vital to achieving the economic potential of the cotton, grains and horticultural industries of NSW. The provision of accessible and targeted training opportunities will continue to ensure the strength of regional communities.

The proposed program complements the existing efforts made by NSW's plant based industries to attract and retain skilled and adaptable workforces capable of managing current and future industry challenges.

Cotton Australia Submission to the National Agricultural Workforce Committee

The cotton and grains industries have piloted the AgSkilled model since mid-2017. To date, it has seen the development of more than a dozen industry-specific courses, and provided training to more than 3,200 people across over 4,000 places in training. Training has been delivered flexibly in regional and remote communities or on properties to suit the needs of learners.

Horticulture, wine, and rice are also large employers across NSW, and are industries with unique workforce challenges. As another food and fibre based industry, there is significant crossover between the skills needs of the 5 industries. Horticulture, wine, and rice are natural and logical additions to the expansion of AgSkilled.

Cotton and grains have been heavily impacted by the widespread drought and will need the support of a skilled and capable workforce to recover, and this program will play an essential role in ensuring the recovery of both our industries, and the regional communities in which they operate.

Value & Timeframe: $15 million over three (3) years from 1 July 2020 to 30 June 2023.

Cotton Gap

Cotton gap is a vocational program, aimed at encouraging school leavers to move to a regional area, to be employed on a cotton farm. Cotton Australia launched the Cotton Gap program in 2017 and 2018 to expose school leavers to the careers in the Australian cotton industry. This program has a great fit for the Australian Cotton Industry who traditionally relies on working holiday makers to support the operational level work force. To this end, the concept of an employment period of up to 12 months with an Australian school leaver was well received by cotton producers and the program participants.

Specifically, are you aware of examples of collaboration between employers, education providers and regional communities? Which intermediaries supported these collaborative arrangements?

What existing education, training, workforce or other relevant initiatives can be leveraged to support agribusinesses workforce needs?

Cotton Gap and AgSkilled are a particular focus for the cotton industry, comprehensive and detailed reports on the rationale and achievements of these programs can be found in Appendix 1 and 2.

Whist not currently implemented or funded, Cotton Australia and Queensland Farmers' Federation (QFF), of which Cotton Australia is a member have two proposals currently being considered by the Queensland Government, SmartAg Queensland and QASEP.

SmartAg Queensland proposal

Queensland currently does not have an industry-led workforce training package such as AgSkilled or Smarter, Safer Farms (the Victorian version) therefore, Cotton Australia developed and distributed to the Queensland Government in July 2020 the SmartAg Queensland workforce training proposal, as outlined below:

We requested $5 million from the Queensland Government to upskill Queensland's cotton and grains industries through an industry-led workforce development strategy entitled 'SmartAg Queensland', which will deliver a combination of accredited and non-accredited training.

Proposed Value & Timeframe: $5 million over three (3) years.

We estimate that $5 million could fund between 1,500 and 2,500 individual places in training. However, the actual number could vary considerably depending on the specific courses offered, the delivery modes and the degree of demand for each course.

Queensland Agriculture to Schools Engagement Program (QASEP)

The QASEP proposal addresses both the perceived and real gaps in schools-industry engagement and the need for continuous learning in the workforce. The QFF believe the proposed program will improve the way schools and agricultural industries interact, provide mutually beneficial experience and learning opportunities for students, and deliver the career pathways the sector needs, as well as provide continuous learning for the workforce.

The QASEP proposal provides a pathway for government in partnership with industry to deliver innovative, effective policy that is a critical element to realising a capable, high-performing workforce in our sector. A holistic solution is preferred than a piecemeal approach. QFF seeks support for such a program that breaks barriers between departments and between state and federal government and helps address the workforce and training needs of the sector.

Cotton Industry Leadership Programs

The cotton industry believes in investing in our people knowing that they are our industry's greatest asset. This is evidenced by the heavy investment we make in several leadership programs aimed at entry level, mid-tier and experienced people wanting to boost their skills, and how we help them take their personal leadership skills to another level. Our leadership programs, and the individuals we sponsor to enter other higher-tier programs, have a proven track record of bringing together some of our industry's trailblazers in the spirit of unified growth for the Australian cotton industry.

Australian Future Cotton Leaders

Cotton Australia and the Cotton Research and Development Corporation (CRDC) jointly fund the Australian Future Cotton Leaders Program (AFCLP), which targets emerging leaders from across the cotton supply chain. First run in 2007, the AFCL Program has now seen 92 graduates complete the program and rise to positions such as company directors, board members, advisors to state premiers and Cotton Growers' Association Chairs.

Cotton20 and Irrigation20 Leadership Program

Cotton Australia has developed this program based on feedback from graduates from across the Australian cotton industry's capacity building programs, as well as an independent review of capacity building programs funded by the Cotton Research and Development Corporation. The key goal of this program is to support Australian cotton growers in developing their leadership skills to enable them to communicate and influence industry change. The Cotton20 Leadership Program is a mid-high level leadership program open to cotton growers from across Australia. It is open to growers who hold, or wish to take on, a leadership role in their cotton grower association and/or industry.

TRAIL

Being only a new program, only three members of the cotton industry have participated in TRAIL, which is a cross-sector, challenge-based leadership program for Australia's emerging rural leaders. The program takes diverse people from different occupations, communities and backgrounds and expands their leadership skills. The program includes a challenging four-day outdoor leadership experience, along with numerous workshops, panel sessions and seminars aimed at building and developing leadership skills.

Australian Rural Leadership Program

The Australian Rural Leadership Program (ARLP) is a dynamic, experiential learning program focused on the development of leadership for individuals and collectives who are contributing to the future prosperity of rural and regional Australia. Delivered for almost 30 years, 31 members from across the cotton industry have graduated from the program.

Nuffield

Nuffield Australia Farming Scholarships is a unique program that awards primary producers with a life-changing scholarship to travel overseas and study an agricultural topic of choice. Nuffield has been selecting primary producers for 70 years, and there have now been 14 cotton growers complete the program. Scholars are selected annually on merit as people who are committed and passionate about farming or fishing, are at the leading edge of technology uptake, and are potential future leaders in the industry.

How consistent across agriculture and horticulture is the need for more and targeted immigration to sustainably increase the national agriculture labour pool and support national capability and capacity building?

Cotton Australia fully support the National Farmers Federations in their calling for the introduction of a specific Ag visa.

What should be done in the short (1 year), medium (2 to 3 years) and long term (5 to 10 years) to improve the productivity and resilience of the agribusiness workforce? Of these actions, what are the top 3 priorities?

1. Cotton Australia would like to see the Queensland Government support and fund the SmartAg Queensland Proposal.
2. Open up opportunities for specific industries to develop workforce initiatives tailored to meet the needs of their industry
3. Cotton Australia would like to see better collaboration by VET, RTO's and government departments in the development and delivery of courses that specifically meet our needs. In addition, when identifying skills gaps and workforce requirements government departments need to better liaise with industry. The VET system needs to improve its flexibility in terms of delivery by investigation the use of alternative delivery locations and utilising models that effectively deliver courses in regional areas in a sustainable way. For example, AgSkilled has utilised in excess of 100 locations both on and off farm to successfully deliver training. In addition, the VET system needs to liaise and communicate with the cotton industry in terms of the timing in delivery of courses. VET organisations need to utilise industry experts which

will ensure the content of the training being delivered is both relevant and reflects the last R&D. There is an increasing want by the workforce and employees for training to be delivered with options in partial qualifications or specific skill sets.

4. The cotton industry would like to see regular industry specific training needs analysis to be completed on our industry with our full involvement.

5. Having the ability to identify the true and accurate information around numbers of employees in our workforce, their demographics and insights in the trends of our workforce is vitally important. Like the NFF submission was call for the publishing of a National Agriculture Careers Profile.

6. The information collected by the Australian Bureau of Statistics through the Census and agricultural data does not give the cotton industry an accurate representation of the cotton workforce data. There is a lack of data on agricultural commodities (irrigated versus dryland) diversion of employers and employees, demographics and workforce trends.

7. Review of the 'ANZSIC – agricultural job classifications' to accurately reflect the career diversity in agricultural industries.

8. Cotton Australia has just launched the 2020-2021 Cotton Gap program to offer Year 12 students leaving school at the end of this year an opportunity to gain employment for up to a year on a cotton farm. As Cotton Gap can give Year 12 leavers with little or no understanding of agriculture and no family ties in farming an opportunity to discover how they can find an appropriate pathway into further education and the potential for a career in agriculture.

9. Cotton Australia would like to see an increase in the supply of trained agriculture and design & technology teachers to ensure students are afforded quality programs that focus on academic rigor and elevate the STEM outcomes embedded in across all curriculums.

10. Cotton Australia would like to see Career Advisors upskilled on the available opportunities for students who excel in STEM subjects to consider university degrees related to agriculture such as Agricultural Science or Agribusiness.

11. The amount of touch points on the Cotton Industry identified in the Australian Curriculum needs to be increased. This will improve the understanding of school children on the importance and relevance of Australian agriculture.

12. Cotton Australia is broadly supportive of the National Farmers Federation submission and their priorities to the National Agricultural Workforce Strategy Commission