AUSTRALIAN COTTON

AUSTRALIAN COTTON'S CONTRIBUTION TO THE SUSTAINABLE DEVELOPMENT GOALS

17 GOALS TO TRANSFORM OUR WORLD

INTRODUCTION

The 17 Sustainable Development Goals (SDGs) were adopted by world leaders at a United Nations Summit in 2015. These goals, along with their associated targets and indicators provide a framework for the world to transform for the good of its people and the natural environment.

While the Australian cotton industry's global footprint and reach is relatively small, Cotton Australia believes that every individual, organisation, business, government and industry on the planet has a role to play in achieving the SDGs. This document outlines how the Australian cotton industry is contributing towards this important global framework.

Sustainable cotton farming has enormous potential to create change. Its production can help reduce some of the negative environmental impacts of the textile industry and create positive benefits for millions of farmers and their communities.

Cotton Australia has assessed that the Australian cotton industry is contributing to 11 of the 17 Sustainable Development Goals, some to a greater extent than others.

THE GOALS WE CONTRIBUTE TO:

2 ZERO HUNGER	4 QUALITY EDUCATION	5 GENDER EQUALITY	6 CLEAN WATER AND SANITATION
7 AFFORDABLE AND CLEAN ENERGY	8 DECENT WORK AND ECONOMIC GROWTH	9 INDUSTRY, INNOVATION AND INFRASTRUCTURE	12 RESPONSIBLE CONSUMPTION AND PRODUCTION
13 CLIMATE ACTION	14 LIFE BELOW WATER	15 LIFE ON LAND	

Cotton Australia is the Australian cotton industry's peak grower representative body. To develop this document, a number of Australian cotton industry programs, strategies and initiatives were reviewed against the SDGs including:

> Australian cotton myBMP Program, the industry's on-farm cotton certification standard

> Australian cotton industry's research, development and extension investments

> PLANET. PEOPLE. PADDOCK. – the Australian cotton industry's sustainability framework

> Cotton Australia Strategic Plan 2019-2023

> Cotton Research and Development Corporation (CRDC) Strategic RD&E Plan 2018-23.

Please note:
The Australian cotton industry collects a huge amount of data on the issues covered by the SDGs, used to benchmark performance and assess environmental and social impact. While this document does not report specific metrics, these are available for a number of the SDGs.

The myBMP Program is a continuous improvement process that operates across three levels (must do, should do, strive to do). In this document, certification standards from all three levels are included as examples.

COTTON AUSTRALIA

"COTTON AUSTRALIA PROUDLY
SUPPORTS THE UNITED NATIONS
SUSTAINABLE DEVELOPMENT GOALS
AND IS COMMITTED TO PLAYING OUR
ROLE TO HELP ACHIEVE THEM"

Adam Kay, Cotton Australia CEO

AUSTRALIAN COTTON INDUSTRY ORGANISATIONS AND PROGRAMS

There are a number of key organisations and programs within the Australian cotton industry that underpin the industry's environmental, social and economic development, including:

Cotton Australia
Farmer input into decision-making

Cotton Australia provides a united voice for cotton growers across R&D priorities, government policy, stewardship, supply chain marketing and cotton production issues. It also manages the *my*BMP Office and has a team of people helping growers implement the *my*BMP program on farm.

Cotton Research and Development Corporation (CRDC)
Researching ways to improve

The Cotton Research and Development Corporation (CRDC) is a partnership between cotton growers and the Australian Government, investing in world-leading cotton research, development and extension for cotton and its communities.

CottonInfo
Extending research to growers

CottonInfo is the Australian cotton industry's joint extension program, delivered by partners Cotton Australia, Cotton Seed Distributors and CRDC. CottonInfo delivers research outcomes to cotton growers and consultants helping them to take up new innovations and technologies and achieve best practice.

Wincott
Supporting women in cotton

Wincott (Women in Cotton) was established in 2000 to help develop knowledge, opportunities and learning for women involved in any aspect of the Australian cotton industry. The group assists women to achieve personal growth, develop business skills, have influence as community members and support work to protect the natural environment.

*my*BMP
Encouraging best practice

*my*BMP is the Australian cotton industry's cotton certification standard. It is a voluntary farm and environmental management system which provides self-assessment mechanisms, practical tools and auditing processes to ensure Australian cotton is produced according to best practice. The original BMP program began in 1997 and has been regularly reviewed and refined since. Over 400 checklist items are categorised into 10 key modules, or subject areas. 300 of these are audited, and about 100 are aspirational.

PLANET. PEOPLE. PADDOCK
AUSTRALIAN COTTON'S SUSTAINABILITY FRAMEWORK

PLANET. PEOPLE. PADDOCK. is the Australian cotton industry's sustainability framework. It recognises sustainability is integral to the industry's future and provides a path for the entire industry to stay in business. PLANET. PEOPLE. PADDOCK. guides the industry's work to:

> Set sustainability targets in the areas most important to industry and stakeholders.

> Coordinate a whole-of-industry strategy to achieve these targets.

> Engage effectively with stakeholders on actions and progress.

SUSTAINABLE AUSTRALIAN COTTON
PLANET. PEOPLE. PADDOCK.
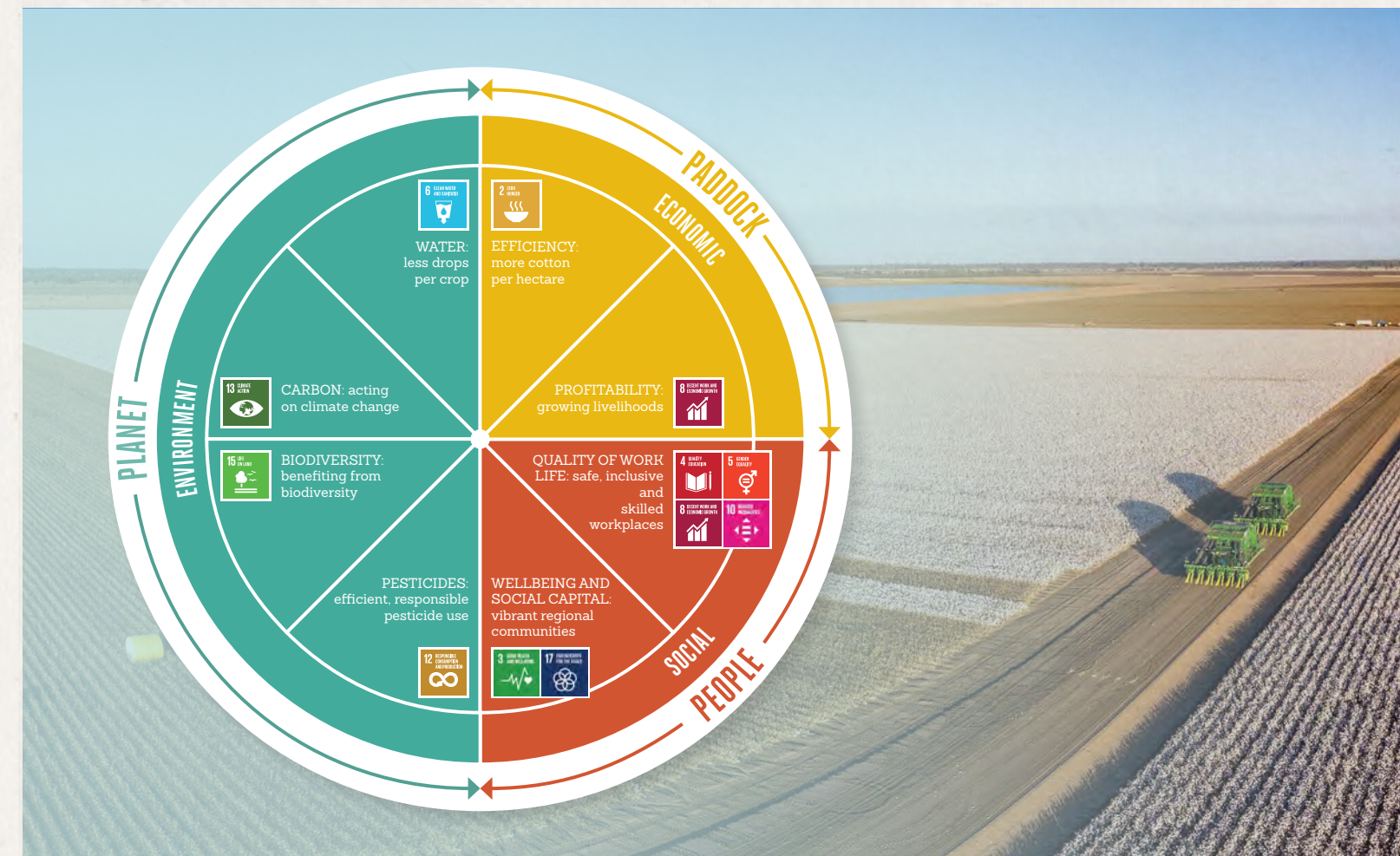
AUSTRALIAN COTTON INDUSTRY'S CONTRIBUTION TO THE SUSTAINABLE DEVELOPMENT GOALS

2 ZERO HUNGER

GOAL 2: END HUNGER, ACHIEVE FOOD SECURITY AND IMPROVED NUTRITION AND PROMOTE SUSTAINABLE AGRICULTURE

While the primary focus of this goal is food, its principles and criteria are highly relevant to fibre crops and the sustainability of agriculture in general. Cotton is both a food and a fibre crop, with cottonseed crushed for cooking oil and used as an important feed for meat production (protein), particularly during drought. Australia's cotton farmers are almost exclusively mixed farmers, growing cotton in rotation with food crops and livestock production.

The principles of sustainable agriculture have been embedded in the Australian cotton industry for over two decades, primarily through ongoing significant investment in research and development and the *my*BMP Program.

It is essential that cotton farming sustainability and value chain competitiveness be improved. Understanding, improving and reporting on cotton's environmental and social footprint, and integrating systems to allow traceability throughout the value chain will help achieve Australian cotton's ambition to be the highest yielding, finest, cleanest and most responsibly produced cotton in the world.

HOW THE AUSTRALIAN COTTON INDUSTRY CONTRIBUTES TO SDG 2

2.3 *By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment*	> 90% of Australia's cotton farms are family owned and operated. > They are highly productive, efficient and profitable family businesses. > The amount of cotton grown per hectare (yield) continues its long-term increase, with research and development continuing to be invested in yield improvement. > Australia's cotton farmers produce yields three times the world average. > Best practice information is reviewed and updated annually in the Australian Cotton Production Manual.

2.4 *By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality*	> *my*BMP (Best Management Practices) program underpins the Australian cotton industry's efforts to balance production, productivity and the health of the natural environment.
	 > 80% of growers are participating in *my*BMP and approx. 20% of the crop is certified (2019-20).
	 > *my*BMP modules particularly addressing this goal include:
	   > Module 2: Energy and Input Efficiency
	   > Module 5: Integrated Pest Management – pests, weeds and diseases
	   > Module 8: Soil Health
	   > Module 9: Sustainable Natural Landscape
	   > Module 10: Water Management
	 > Goal 2 of the CRDC R,D&E Plan 2018-23 is to: "Improve cotton farming sustainability and value chain competitiveness" including by undertaking research on how to improve the most significant components of cotton's environmental footprint, including water and nitrogen management, native vegetation and soil carbon.

2.5 *By 2020, maintain the genetic diversity of seeds, cultivated plants and farmed and domesticated animals and their related wild species, including through soundly managed and diversified seed and plant banks at the national, regional and international levels, and promote access to and fair and equitable sharing of benefits arising from the utilization of genetic resources and associated traditional knowledge, as internationally agreed*	> The Australian cotton industry, through its partnership with the CSIRO, holds cotton germplasm collections at CSIRO Plant Industry in Narrabri, NSW and Canberra, ACT. > The cotton collection in Narrabri is maintaining germplasm under long-term storage, and the CSIRO collection in Canberra is largely dedicated to the long-term storage of indigenous Australian cotton species that have been collected through germplasm explorations over the last few decades. > The collections include cultivars as well as locally developed and introduced germplasm.
2.a *Increase investment, including through enhanced international cooperation, in rural infrastructure, agricultural research and extension services, technology development and plant and livestock gene banks in order to enhance agricultural productive capacity in developing countries, in particular least developed countries*	> While Australia is obviously not a developing country, agricultural research and extension services remain critical to the Australian cotton industry's capacity to contribute to the SDGs. > Each cotton grower pays a compulsory R&D levy on every bale of cotton they grow, with these funds invested annually in research, development and extension to improve cotton production practices. > Goal 3 of the CRDC R,D&E Plan 2018-23 is to "*Build adaptive capacity of the cotton industry*". To do this, the Australian cotton industry needs to enhance scientific research capability, acquire new talent and facilitate the local and global exchange of ideas to ensure it is prepared and ready to respond to a changing environment. > Cotton Australia supports the Rural Development Corporation model and believes it fundamental to the sustainable development of the Australian cotton industry. > A joint venture between CRDC, Cotton Australia and Cotton Seed Distributors funds and supports a team of regional extension officers focused on extending sustainability research to cotton farmers. > There are a number of dedicated cotton rural research farms in the industry including the Australian Cotton Research Institute and the Queensland Department of Agriculture Research farms.
2.b *Correct and prevent trade restrictions and distortions in world agricultural markets, including through the parallel elimination of all forms of agricultural export subsidies and all export measures with equivalent effect, in accordance with the mandate of the Doha Development Round*	> Australia's cotton growers do not receive export subsidies and Cotton Australia does not support government policy that distorts or restricts the world cotton market.

EXAMPLES OF BEST PRACTICES INCLUDED IN *my*BMP THAT CONTRIBUTE TO SDG 2

> Crops are regularly monitored and sampled for pests, weeds and diseases.

> Beneficial insects are conserved on farm, pupae busting, trap cropping and control of weed hosts are used to control pests.

> Workers trained in safe use of pesticides.

> Soil health tests conducted to assess soil nutrients and plan crop requirements.

> Soil organic carbon levels are monitored.

> Minimum tillage practices and crop stubble maintained to maintain soil organic matter and reduce soil erosion.

> Areas at risk of erosion are identified, assessed, recorded and regularly monitored.

> Improve habitat condition for biodiversity through revegetation.

> Irrigation scheduling tools are used to determine when and how much to irrigate.

> Water quality (pH, salinity and sodicity) is known and risks are identified and monitored for ground and surface irrigation water.

GOAL 4: ENSURE INCLUSIVE AND EQUITABLE QUALITY EDUCATION AND PROMOTE LIFELONG LEARNING OPPORTUNITIES FOR ALL

This goal includes the need for equitable access to quality education, training and skills development. The Australian cotton industry has a strong focus on capacity building for cotton farmers and those working in the industry in various roles including agronomy, ginning, classing, research, extension services and marketing. A skilled and trained workforce is essential to the Australian cotton industry's capacity to deliver against the SDGs.

While in the main *myBMP* starts with an on-line self-assessment, the program is also delivered to farmers through one-on-one and group training in sustainable agricultural practices. The program itself also requires training and skills development in a number of areas including the application of pesticides, on-farm safety and managing human resources. Cotton Australia believes this training should be affordable and accessible by all who need it.

The *myBMP* program also encourages family members to participate in workshops. Women and young farmers are well represented at most workshops, with some *myBMP* workshops targeting women only.

HOW THE AUSTRALIAN COTTON INDUSTRY CONTRIBUTES TO SDG 4

4.3 *By 2030, ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university*

4.4 *By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship*

> Cotton Australia works to secure funded and low-cost training opportunities for cotton farmers and other industry personnel, in particular in the areas of:
>> Business
>> Safety
>> Production
>> Technology
> The *myBMP* program delivers one-on-one support and coordinates group training in a number of topics – this is open to all cotton farmers, free of charge.
> The CottonInfo extension program provides free training and capacity building, focused on extending current industry research and development to all cotton farmers -including online resources.
> The industry funds a number of scholarships and programs to foster and promote future leaders, and the next generation of cotton farmers.
> Industry organisation Wincott (Women in Cotton) provides free training to help develop knowledge, opportunities and learning for women involved in any aspect of the Australian cotton industry.
> CRDC provides funding for students undertaking studies or research in cotton at undergraduate and postgraduate levels. This is designed to encourage students to pursue careers in the cotton industry – be it in production or in research.


GOAL 5: ACHIEVE GENDER EQUALITY AND EMPOWER ALL WOMEN AND GIRLS

This goal is about ending discrimination towards women and girls. While most cotton farmers in Australia are traditionally male, there is a substantial number of female farmers running their own cotton farming enterprises and, more often than not, women form an integral part of the family farming team. 23% of cottongrowers are female.

A high proportion of women are engaged in cotton industry roles such as research, extension, agronomy and marketing. Across the industry bodies of Cotton Australia, Cotton Research Development Corporation (CRDC) and CottonInfo, approximately 60% of employees are women.

There is no doubt that while the cotton industry has actively encouraged women to participate at all levels of the industry, it could do more to measure the participation and contributions of women in Australian cotton, and thereby contribute further to this SDG.

Cotton Australia's commitments under the National Farmers' Federation Diversity Pledge include to maintain and improve gender diversity, continue to support women to develop leadership skills and experience and to offer choice for women by offering flexible working conditions and clear career advancement opportunities.
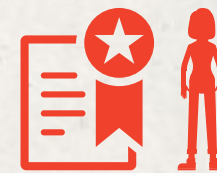
Research shows 88% of women in an industry role and 86% of women on cotton farms have a post-school qualification.

Source: 2019 Australian Cotton Sustainability Report

HOW THE AUSTRALIAN COTTON INDUSTRY CONTRIBUTES TO SDG 5

5.5 *Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life*

> Equal access to industry training and leadership courses and capacity building.
> Actively encourage women to participate in industry organisations at local, regional and industry levels.
> Industry organisation Wincott (Women in Cotton) provides a network for women in cotton, encouraging members to become active participants.
> The cotton industry was a Foundation Partner of the National Farmers' Federation's Diversity in Agriculture Leadership Program in 2018, pledging to support transformational change in the representation of women in Australian agriculture leadership positions.

GOAL 6: ENSURE AVAILABILITY AND SUSTAINABLE MANAGEMENT OF WATER AND SANITATION FOR ALL

Global demand for water for food production will increase due to climate change, population growth and changes in diet, potentially impacting water availability and use. Without water crops will not grow, food and natural fibres would not be produced and regional communities could not thrive. Good water stewardship and the fair and equitable management of water resources is perhaps the Australian cotton industry's greatest ongoing challenge.

Fortunately in Australia water is a highly regulated resource, managed primarily by State Governments under strict licences and rules. These vary from State to State and between water catchments, however basic universal principles apply. The most important is that the basic needs of the environment and critical human requirements must be met before ANY water can be allocated to irrigators. This helps meet SDG6 - ensuring sustainable withdrawals and supply of freshwater to address water scarcity.

Water use efficiency and a drive to grow 'more crop per drop' has been a focus of the Australian cotton industry for decades, delivered through significant investment in research, development, technology and innovation and the *my*BMP (Best Management Practices) program. From 1992 to 2019, there has been a 97% increase in the bales of cotton grown per megalitre (ML) of water (effective rain and irrigation). This equates to a 48% decrease in the water required per bale of cotton. In other words, Australian cotton growers are now:

• using almost half as much water to produce a bale of cotton, compared to 1992

• producing almost twice as much cotton from a ML of water, compared to 1992.

The Australian cotton industry publicly reports on its water use and is developing targets to achieve further gains in water use efficiency.

Water stewardship and water use efficiency will remain a key focus of the Australian cotton industry for decades to come.

Almost 1 in 3 Australian cotton growers with full or part irrigation monitor the quality of groundwater throughout their farm

Source: 2018 CRDC Grower Survey

FARMING PRACTICES

Australia's cotton growers use a range of techniques, technologies and innovations to continually improve water productivity and water use efficiency at farm level. Common on-farm practices include:

> Efficient watering systems such as lateral move sprinklers, automated irrigation and bankless channels.

> Water budgeting and in-field soil moisture probes and canopy sensors to ensure plants are only watered when needed.

> Irrigation scheduling tools are used to determine when and how much to irrigate.

> Recycling systems to collect and re-use water.

> Mulching and stubble retention to retain soil moisture.

> Deepening storages and other methods to reduce evaporation.

> Thermal imaging and electromagnetic surveys to identify leaks in dams, pipes and channels for repair.

> Whole farm water budget is prepared and Irrigation Water Use Index is estimated and recorded.

Cotton growers also contribute to water stewardship outcomes for their broader catchments, for example by managing and restoring wetlands, maintaining riparian zones and controlling invasive species to improve the condition and health of cotton water catchments.

Compared to 1992, producing a bale of irrigated Australian cotton now requires 48% less water and there has been an average 2.5% decline annually in the volume of water used per bale of cotton

HOW THE AUSTRALIAN COTTON INDUSTRY CONTRIBUTES TO SDG 6

6.3 *By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally*

> *my*BMP modules particularly addressing this goal include:
>> Module 5: Integrated Pest Management – insects, weeds and diseases
>> Module 6: Pesticide Management
>> Module 9: Sustainable Natural Landscape
>> Module 10: Water Management
> Australian cotton farmers have reduced insecticide use by 97% since 1992

6.4 *By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity*

> *my*BMP modules particularly addressing this goal include:
>> Module 10: Water Management
> Significant ongoing investment in water use efficiency research, development and technologies to continue to drive water use per bale down
> At farm level Australia's cotton growers invest in technologies including equipment and infrastructure to improve water use efficiency,
> Australia's cotton growers are partnering with governments to deliver infrastructure projects to improve water efficiency in the Murray-Darling Basin

6.6 *By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes*

> *my*BMP modules particularly addressing this goal include:
>> Module 9: Sustainable Natural Landscape
>> Module 10: Water Management

EXAMPLES OF BEST PRACTICES INCLUDED IN *my*BMP THAT CONTRIBUTE TO SDG 6

> 67 individual criteria in the *my*BMP Water Management module covering measurement and benchmarking for decision making, efficient irrigation systems, reducing evaporation and managing tailwater.

> All irrigation tail water is retained on farm or in a shared group water supply scheme.

> Native vegetation buffers are retained and protected in riparian areas.

> Weather conditions are monitored and recorded at the start, during and completion of each pesticide application.

> All farm chemicals are stored securely and a safe distance from sensitive areas (including water bodies and drains), houses, the property boundary and ignition sources.

> Pesticide and fuel storages are bunded to contain spills.

> Maintain habitat features in riparian areas (along waterways) for native wildlife.

> Stabilise riverbanks and waterways to reduce erosion.

## GOAL 7: ENSURE ACCESS TO AFFORDABLE, RELIABLE, SUSTAINABLE AND MODERN ENERGY FOR ALL

For many cotton growers, and for all cotton ginners, electricity is a very significant cost of production. Access to affordable, sustainable energy is therefore critical, particularly as cotton is grown in more remote rural and regional areas with less access to modern infrastructure.

For the Australian cotton production system, energy use efficiency describes the total amount of energy used on farm compared to the amount of production. If energy consumption can be reduced, while production is maintained or increased, energy use efficiency is improved.

This may be one of the fastest and easiest ways to improve profitability, and also reduce greenhouse gas (GHG) emissions to support the industry's sustainability goals, and the SDGs.

The Australian cotton industry is focussed on both energy saving practices such as diesel water pump efficiency and alternative energy sources such as solar, biodiesel, biofuels and wind power.

Substantial research and development investment is being made in this area including in measuring and benchmarking energy use on farm, water pumps and fuel efficiency, tools to measure energy efficiency and the application of alternative energy sources such as solar.
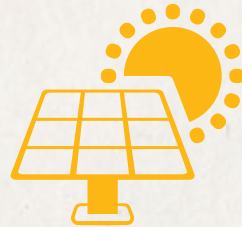
Just over 1 in 4 Australian cotton growers reported using solar energy for farming operations in 2018-19 season"

Source: 2019 CRDC Grower Survey

HOW THE AUSTRALIAN COTTON INDUSTRY CONTRIBUTES TO SDG 7

7.2 *By 2030, increase substantially the share of renewable energy in the global energy mix*

7.3 *By 2030, double the global rate of improvement in energy efficiency*

> *my*BMP modules particularly addressing this goal include:
>> Module 2: Energy and Input Efficiency.
> Cotton Australia continues to lobby state and federal governments, on behalf of Australia's cotton growers, to ensure access to affordable, renewable energy supplies.
> Cotton Australia works to secure grants to investigate appropriate technologies as the national energy grid is transformed from a one to a two way flow – eg microgrids and Stand Alone Power Systems.
> CottonInfo delivery of energy extension targeting the water and energy nexus to enable cotton growers to be part of the energy solution. For example, reduce use & emissions, increase water efficiency, incorporate batteries for storage and install solar infrastructure.

### EXAMPLES OF BEST PRACTICES INCLUDED IN *my*BMP THAT CONTRIBUTE TO SDG 7

> Energy input records are kept for the cotton season including diesel, electricity, petrol, fertiliser and gas.

> Alternative energy sources are being used on the farm.

> Irrigation pump stations are well designed and regular maintenance is undertaken.

> Energy use is measured for each irrigation pump.

> Energy use in tractors is optimised including adjusting tyre pressure and monitoring fuel usage.
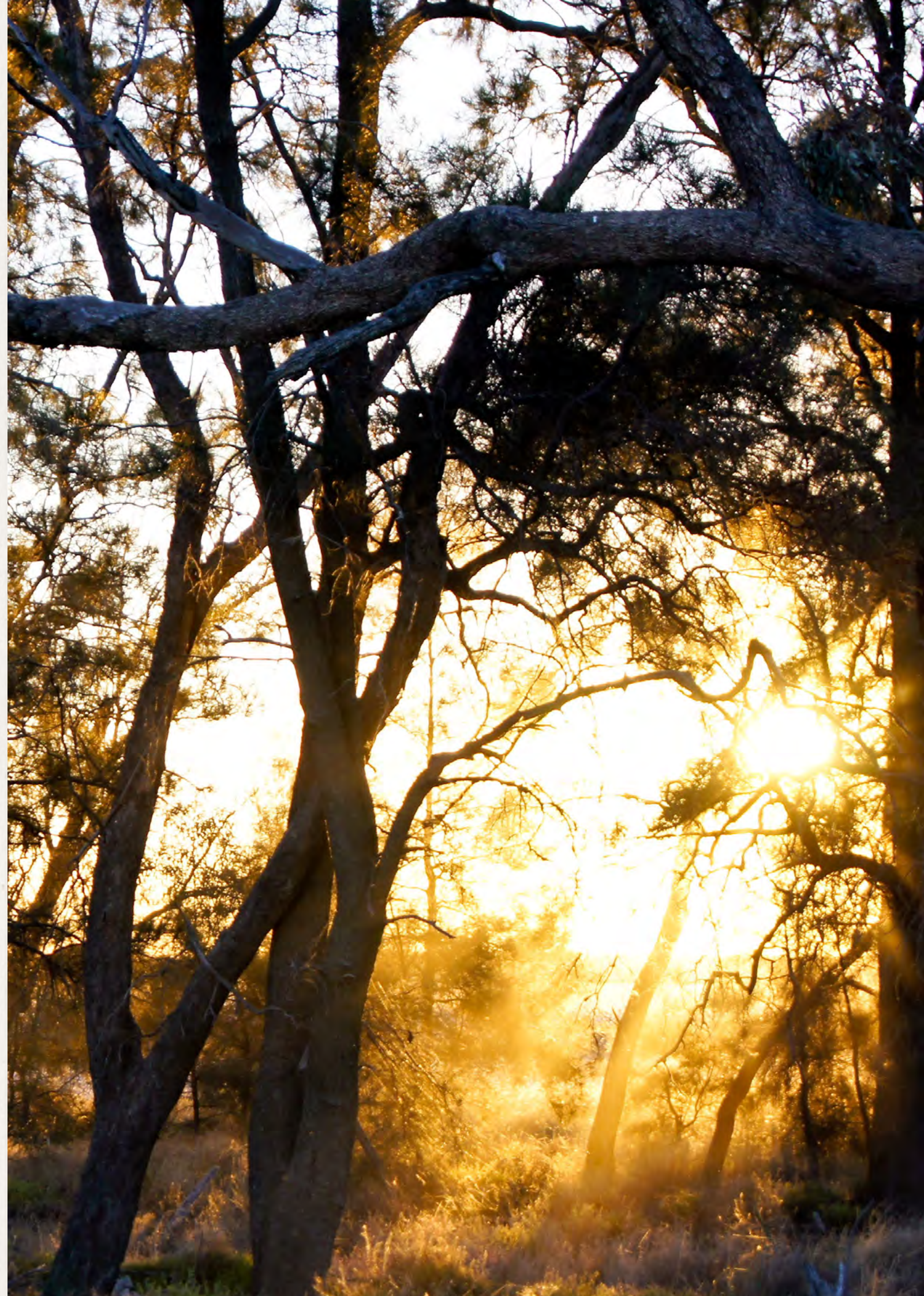
GOAL 8: PROMOTE SUSTAINED, INCLUSIVE AND SUSTAINABLE ECONOMIC GROWTH, FULL AND PRODUCTIVE EMPLOYMENT AND DECENT WORK FOR ALL

Cotton is the crop of choice for many farmers in certain areas of Australia because it provides the best dollar return when compared to other summer crops. A successful and profitable Australian cotton industry plays an important role in ensuring Australia's future economic prosperity – and the sustainability of rural communities.

For this reason, there is a strong industry focus on balancing economic with environmental and social factors, maintaining a safe and skilled workforce and investing in innovations that drive increased productivity and profitability.

Cotton is an important contributor to employment in regional and rural areas and the promotion of safe workplaces and fair and decent work is a key focus of the industry's *my*BMP program, helping farmers understand and respect their legal requirements as well as going beyond these to industry best practice and aspirational practices.

In the 2018 Cotton Grower Survey, almost 90% of growers said that cotton was profitable and consistently their crop of choice. Continuing to improve this profitability is a core focus for CRDC – which is why we continue to invest heavily in work around water management, energy use efficiency and nutrition.

HOW THE AUSTRALIAN COTTON INDUSTRY CONTRIBUTES TO SDG 8

8.2 *Achieve higher levels of economic productivity through diversification, technological upgrading and innovation*	> Australia's cotton growers are highly profitable, with industry data showing irrigated profit per hectare trending upwards over time. Key drivers include high yields and lower expenditure per hectare. > CRDC Goal 1: Increase productivity and profitability on cotton farms, delivered by research investments in: > Optimised farming systems. > Transformative technologies. > Protection from biotic threats and environmental stresses.
8.5 *By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value*	> *my*BMP modules particularly addressing this goal include: > Module 4: Human Resources and Work Health and Safety. > Up to 1,500 Australian cotton farms employ an average of 12,500 full-time, part-time and casual employees per year (not including contractors, agronomists, rural suppliers). > In addition, on-farm contractors and 1,700 employees in marketing and export, cotton classing and in 41 regional gins. > According to the ABS 2016 Census, 23% of Australia's cotton farmers are female. > The proportion of Aboriginal and Torres Strait Islander people involved in growing or ginning cotton was 5.5%, five times higher than the national agricultural average.
8.8 *Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment*	> *my*BMP modules particularly addressing this goal include: > Module 4: Human Resources and Work Health and Safety. > There is no forced or child labour on Australian cotton farms.

EXAMPLES OF BEST PRACTICES INCLUDED IN *my*BMP THAT CONTRIBUTE TO SDG 8

> If labour hire services are used to source workers, only licenced providers are engaged.

> Individuals have freely chosen to be employed and are above the minimum legal working age.

> Job descriptions are written for all positions.

> Employees are employed under the appropriate legal instrument, award or agreement.

> Employees are provided with a contract of employment.

> Employee records are maintained and kept for seven years.

> Dispute management and employment termination process are in place.

> A work health safety policy is in place.

> Workplace hazards and workplace situations that may cause risk are identified, assessed, controlled and reviewed regularly.

> Safety induction provided to all workers.

GOAL 9: BUILD RESILIENT INFRASTRUCTURE, PROMOTE INCLUSIVE AND SUSTAINABLE INDUSTRIALIZATION AND FOSTER INNOVATION

The intent of this goal is to introduce and promote new technologies, facilitate international trade and enable the efficient use of resources – with investment in research and development and communication infrastructure identified as a key to success.

These issues are pertinent to the Australian cotton industry which is located in more remote, regional areas of Australia that sometimes don't have adequate services such as roads, rail and telecommunications. Despite being a developed country there is a strong need to invest in infrastructure, innovation and technology to support sustainable, traceable Australian cotton. Investments are made by governments, on-farm by individual cotton growers and by the industry's research and development bodies, in particular the Cotton Research and Development Corporation (CRDC).

91% of growers used autosteer for most machinery operations, with 64% using traction control systems for most machinery operations

Source: 2019 CRDC Grower Survey

HOW THE AUSTRALIAN COTTON INDUSTRY CONTRIBUTES TO SDG 9

9.4 *By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes*	> At farm level Australia's cotton growers invest in technologies including equipment and infrastructure to improve water use efficiency, provide solar and other alternative energy sources and improve telecommunications services. > Goal 1 of the CRDC R,D&E Plan 2018-23 is to: "Increase productivity and profitability on cotton farms", delivered by research investments in: 　> Optimised farming systems. 　> Transformative technologies. 　> Protection from biotic threats and environmental stresses. > Australia's cotton growers are partnering with governments to deliver infrastructure projects to improve water efficiency in the Murray-Darling Basin. > Cotton Australia actively lobbies government at all levels to provide necessary on and off-farm technologies and infrastructure to support the Australian cotton industry.
9.5 *Enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, in particular developing countries, including, by 2030, encouraging innovation and substantially increasing the number of research and development workers per 1 million people and public and private research and development spending*	> While Australia is obviously not a developing country, research and development is critical to the Australian cotton industry's capacity to contribute to the SDGs. > Each cotton grower pays a compulsory levy on every bale of cotton they grow, with these funds invested annually in research, development and extension to improve cotton production practices and drive innovation. > Goal 3 of the CRDC R,D&E Plan 2018-23 is to "Build adaptive capacity of the cotton industry". To do this, the Australian cotton industry needs to enhance its scientific research capability, acquire new talent and facilitate the local and global exchange of ideas to ensure we are prepared and ready to respond to a changing environment. > Cotton Australia supports the Rural Development Corporation model, and believes it fundamental to the sustainable development of the Australian cotton industry.

GOAL 12: ENSURE SUSTAINABLE CONSUMPTION AND PRODUCTION PATTERNS

According to the UN, "should the global population reach 9.6 billion by 2050, the equivalent of almost three planets could be required to provide the natural resources needed to sustain current lifestyles." These lifestyles include the fibres we use to make the clothes we wear. Textile waste has become a major environmental problem, a problem that begins with the raw materials used to make those products. The promotion of renewable, recyclable, biodegradable natural fibres such as cotton will be key to fashion and textile businesses moving towards circularity.

The Australian cotton industry has been on a path of "producing more with less" for almost three decades. Pesticide use, water use and land use per bale of cotton have all significantly reduced over time, meaning that we're growing more cotton in Australia with fewer natural resources than ever before. From farm to gin to port and beyond, the industry must continue to look for new ways to reduce material waste.

Compared to 1992, producing a bale of irrigated Australian cotton now requires 97% less pesticides, 48% less water and 33% less land

HOW THE AUSTRALIAN COTTON INDUSTRY CONTRIBUTES TO SDG 12

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12.2 *By 2030, achieve the sustainable management and efficient use of natural resources*	> All 10 modules of the industry's *my*BMP (Best Management Practices) program contribute. > Approximately $25 million invested in research, development and extension largely focused on sustainable cotton production. > Cotton Australia promoting the use of strong, long-lasting, biodegradable, renewable, recyclable natural cotton fibres to end users and customers.
12.4 *By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment*	> *my*BMP modules particularly addressing this goal include: > Module 1: Biosecurity > Module 5: IPM – insects, weeds and diseases > Module 6: Pesticide Management > Module 7: Petrochemical Storage and Handling > Module 8: Soil Health > Since 1992 the amount of insecticides used to grow a bale of Australian cotton has fallen by 97%
12.5 *By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse*	> CRDC supported the Global Cotton Lifecycle Assessment, undertaken by Cotton Incorporated and other research around waste and the recyclability of cotton. > Cotton Australia involved in a number of projects around circular economy and textile waste. > At cotton gin level, reuse and composting of gin trash and recycling of round-bale plastic wrap.
12.6 *Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle*	> Australian cotton industry committed to producing a Sustainability Report every five years (most recent in 2019). > The industry conducts full, independent environmental audits of the entire industry every 10 years with recommendations incorporated into a number of industry programs.
12.7 *Promote public procurement practices that are sustainable, in accordance with national policies and priorities*	> Cotton Australia working with government procurement offices and suppliers to produce products made from 100% sustainable Australian cotton.
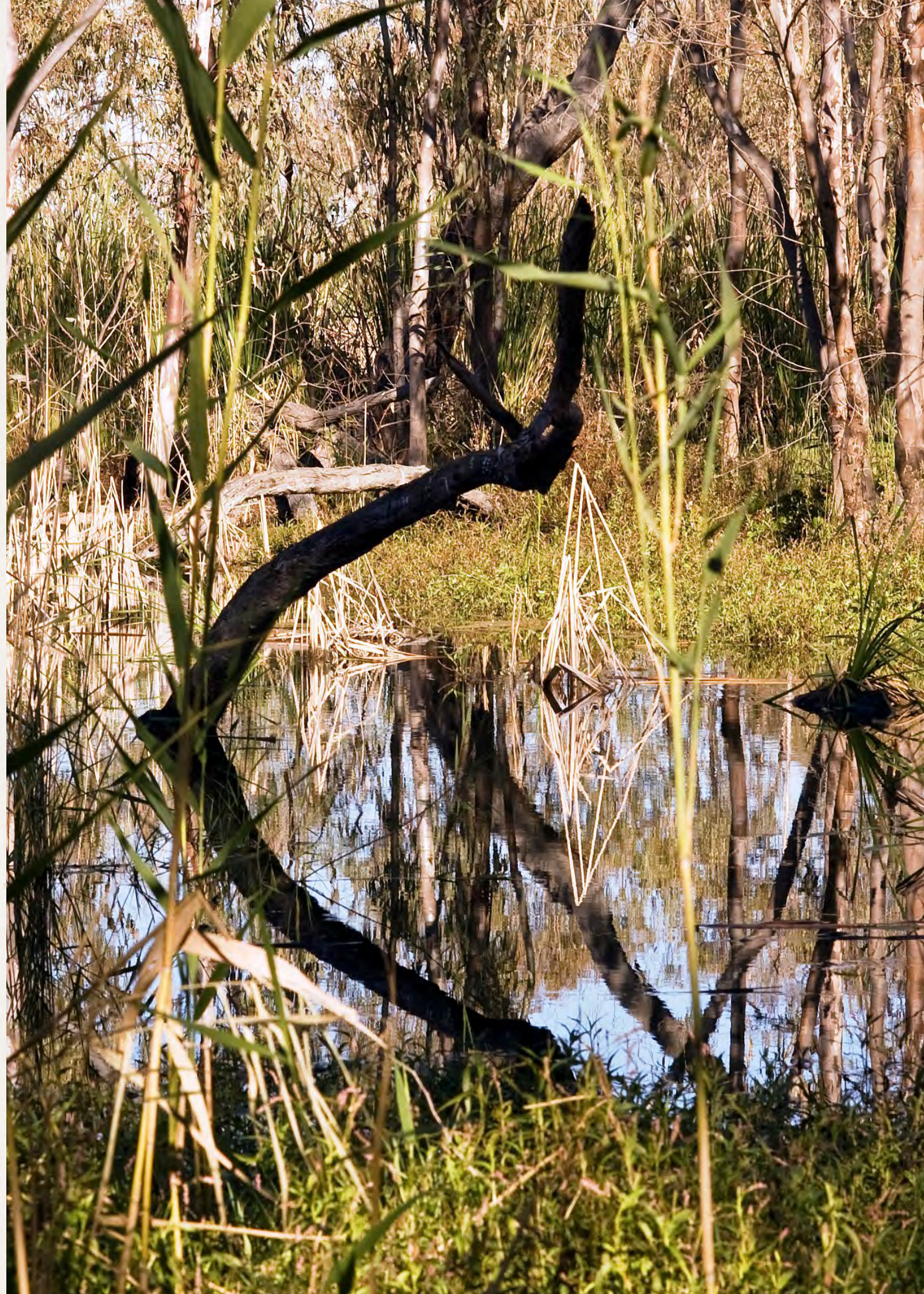
GOAL 13: TAKE URGENT ACTION TO COMBAT CLIMATE CHANGE AND ITS IMPACTS

Climate change is a global issue that affects everyone, everywhere. Climate change is expected to impact Australia's cotton growing regions via higher temperatures, increased evaporation and less frequent but more intense rainfall. All of these have potential negative impacts on the efficient production of cotton.

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

HOW THE AUSTRALIAN COTTON INDUSTRY CONTRIBUTES TO SDG 13

13.1 *Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries*

13.2 *Integrate climate change measures into national policies, strategies and planning*

> *myBMP* modules particularly addressing this goal include:
>> Module 2: Energy and input efficiency
>> Module 5: IPM – insects, weeds and diseases
>> Module 9: Sustainable Natural Landscape
>> Module 10: Water management
> Research and development investments, particularly in the areas of:
>> Understanding how climate change may impact on cotton plant growth
>> Benchmarking and measuring whole farm carbon footprint
>> Nitrogen use efficiency
>> Energy efficiency and alternative sources
>> Water use efficiency
>> Breeding new cotton varieties and investing in soil carbon research
> CottonInfo extension team assisting with farmer understanding of forecasting and weather analysis tools to make better decisions, assess climate risk and prepare for extreme climatic events.

EXAMPLES OF BEST PRACTICES INCLUDED IN *my*BMP THAT CONTRIBUTE TO SDG 13

> Farm energy use is monitored including diesel, electricity, petrol, fertiliser and gas.
> Alternative energy sources are being used on the farm.
> Seasonal forecasting and multi-week weather models are used to prepare the farm for high energy demands.
> A nutrient budget (N, P, K) is prepared to calculate fertiliser requirements based on measured inputs and outputs.
> In crop monitoring used to assess nutrient levels and adjust fertiliser inputs.

> Variable rate fertiliser application practices are adopted.
> Crop rotation systems including nitrogen fixing legumes are adopted where practical.
> Soil organic carbon levels are monitored.
> Minimum tillage practices and crop stubble are maintained to maintain soil organic matter.
> Understand different sources of carbon sequestration and emissions across the whole farm.

GOAL 14: CONSERVE AND SUSTAINABLY USE THE OCEANS, SEAS AND MARINE RESOURCES

While most regions in the Australian cotton industry are not located directly adjacent to oceans, the minimisation and containment of pesticides, nutrients, soil and other products on the farm that could impact on waterways is a key focus. Since 1992 Australian cotton farmers have reduced pesticide use by 97%, significantly reducing impact on waterways.

Cotton Australia also believes it has a role to play in:

> promoting and encouraging the use of biodegradable natural fibres like cotton as an alternative to synthetics that shed microplastic pollution and negatively impact on marine environments globally.
> helping business understand cotton's place in circular business models for textiles, that in turn will help achieve this SDG.

Cotton Incorporated in the U.S and Australia's Cotton Research and Development Corporation funded a two-year study to test the degradation rates of four fibre types: cotton, rayon, polyester and a cotton/polyester blend. The results were clear: cotton degrades faster than rayon and the blend, while polyester hardly degrades at all.

HOW THE AUSTRALIAN COTTON INDUSTRY CONTRIBUTES TO SDG 14

14.1 *By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution*

> Promote and encourage the use of biodegradable, renewable, recyclable natural fibres to end users.
> Research into microfibre pollution.
> It is a requirement of *myBMP* that all irrigation tail water is retained on farm or in a shared group water supply scheme.

15 LIFE ON LAND

GOAL 15: SUSTAINABLY MANAGE FORESTS, COMBAT DESERTIFICATION, HALT AND REVERSE LAND DEGRADATION, HALT BIODIVERSITY LOSS

Measuring, preserving and improving biodiversity on farm and in cotton landscapes is an important focus of the Australian cotton industry and an area with room for improvement. Biodiversity can provide a range of "ecosystem services" including natural pest control and pollination, controlling erosion, storing carbon and enhancing water retention.

Major threats to biodiversity on Australian cotton farms are invasive species, habitat loss and land degradation, with all of these issues addressed by *my*BMP and significant investment through the cotton R&D and CottonInfo programs.

HOW THE AUSTRALIAN COTTON INDUSTRY CONTRIBUTES TO SDG 15

15.1 *By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements*	> *my*BMP modules particularly addressing this goal include: > Module 6: Sustainable Natural Landscape > Module 9: Soil health > Module 10: Water management
15.3 *By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world*	> *my*BMP modules particularly addressing this goal include: > Module 6: Sustainable Natural Landscape > Module 9: Soil health
15.5 *Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species*	> Industry research has benchmarked and mapped biodiversity assets across cotton landscapes and identified priority management actions for the restoration of threatened and iconic species within cotton landscapes. > *my*BMP modules particularly addressing this goal include: > Module 6: Sustainable Natural Landscape > Module 9: Soil health > Module 10: Water management
15.8 *By 2020, introduce measures to prevent the introduction and significantly reduce the impact of invasive alien species on land and water ecosystems and control or eradicate the priority species*	> *my*BMP modules particularly addressing this goal include: > Module 1: Biosecurity > Module 5: Integrated Pest Management (pests, weeds and diseases) > Module 6: Sustainable Natural Landscape > Cotton Australia helps to manage potential incursions through biosecurity plans and strategies.

EXAMPLES OF BEST PRACTICES INCLUDED IN *my*BMP THAT CONTRIBUTE TO SDG 15

> A whole farm plan exists which considers the management of natural resources on farm and in the surrounding landscape as part of the overall management of the farm.

> Habitat condition for biodiversity is improved through revegetation techniques that increase the size, connectivity and diversity of native vegetation on farm.

> Assess and monitor the condition of on-farm native vegetation.

> Practices are in place to protect remnant native vegetation from negative impacts such as spray drift.

> Maintain or create new native vegetation using revegetation or natural regeneration that connects existing patches of vegetation.

> Maintain or restore natural wetland and billabongs and enhance artificial ones.

> Exclude stock from natural riverbanks and waterways.

> Maintain habitat features in riparian areas for native wildlife (hollows in trees, large logs, soil cracks).

> Crops are monitored for weeds after each herbicide application.

> "Come Clean Go Clean" farm hygiene practices are in place to limit spread of weeds and diseases.
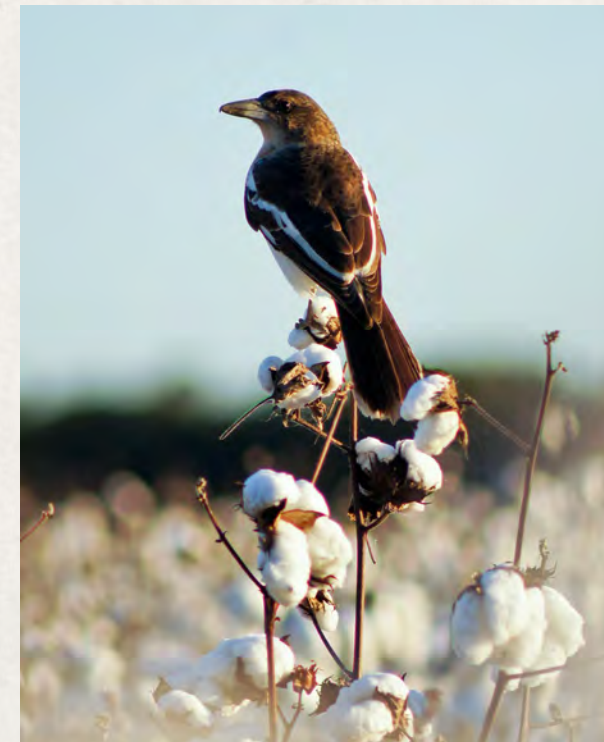
In 2019, 50% of growers had actively encouraged natural regeneration in the past year, and 70% undertook weed control of natural areas

Source: 2019 CRDC Grower Survey

AUSTRALIAN
COTTON