

# SUSTAINABILITY FRAMEWORK REPORT 2020





Australian Eggs is a member owned not-for-profit company providing research & development, marketing and industry information services. Working together with the egg industry and the Australian Government, Australian Eggs strives to deliver value to industry and the public by investing in programs that increase consumption and ensure industry sustainability. Programs are funded through statutory levies and Australian government funds for the purposes of approved R&D.

# SUSTAINABILITY FRAMEWORK REPORT 2020

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# Introduction

This report completes the second annual cycle of the Australian Egg Industry Sustainability Framework.

The process was commenced in April 2018 to provide for productive engagement with the Australian community and to guide ongoing industry improvement.

A key aspect of the Sustainability Framework was the CSIRO community research process, which was conducted this year between July and October. The CSIRO community survey process was undertaken to inform the egg industry of community attitudes and identify pathways to building greater community trust.

The Sustainability Framework process has been enormously successful from the egg industry's perspective, and hopefully from a community perspective as well.

By engaging directly with a large representative sample of Australians, the egg industry has been able to decouple important sustainability issues from the media cycle and obtain a much clearer sense of mainstream community expectations.

The drivers of community trust and acceptance of the egg industry identified by the CSIRO research has set a challenge for the industry to work towards, increasing its contributions and minimising its impacts.

Through this Report, Australian Eggs seeks to demonstrate how the egg industry is responding to that challenge.



# Highlights



## FOOD SAFETY

Protecting against new food safety challenges



## WELFARE AND VALUES

Understanding the role of the community in assessing welfare



## CARBON FOOTPRINT

Measuring and managing the carbon footprint of the industry



## NUTRITION

Exploring the role of eggs in addressing malnutrition and obesity



## RISK ASSESSMENT TOOL

Empowering egg farmers to mitigate risk



## ANIMAL HUSBANDRY

Better trained farm workers for better welfare outcomes



## WASTE MANAGEMENT

Engage with the public on farming practices

# Sustainability Framework process

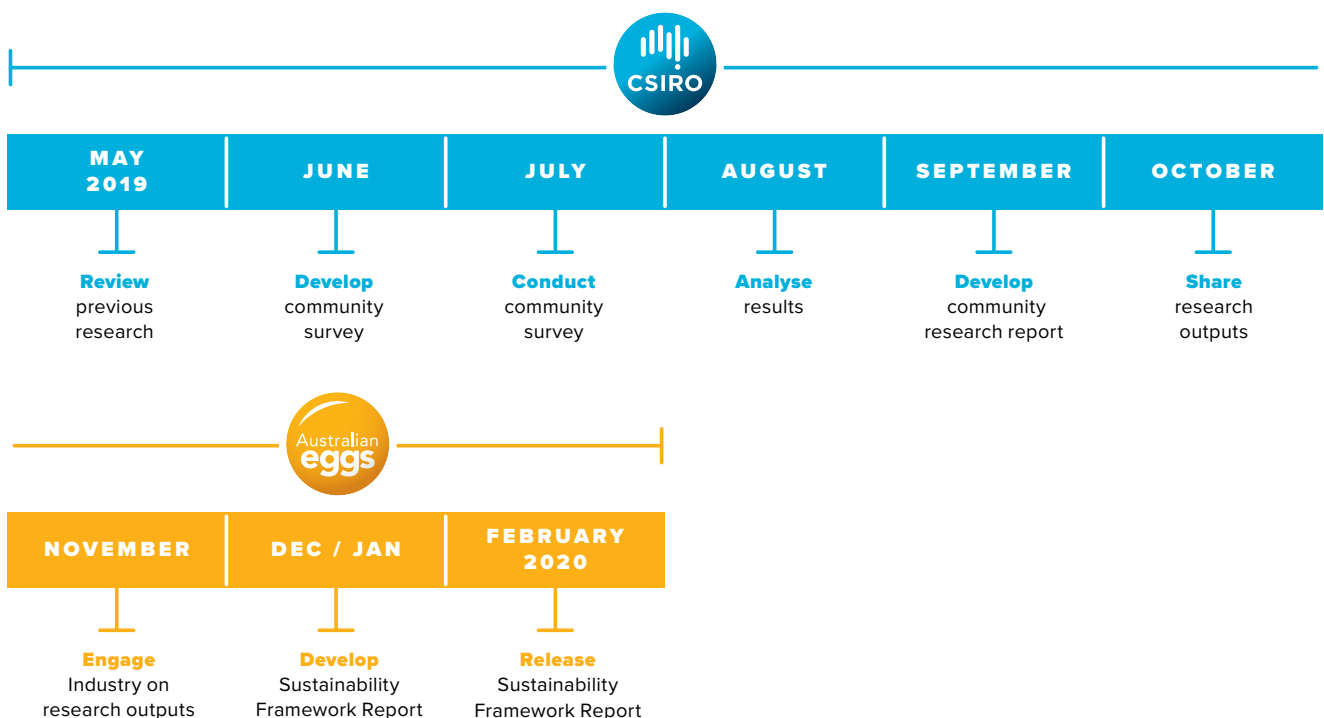
The Sustainability Framework seeks to give meaning to the Australian egg industry’s objective of farming eggs for Australians in a manner which is socially, environmentally and economically responsible.

The process is driven by independent social science research conducted by the CSIRO. Working with the CSIRO, Australian Eggs developed an annual cycle of activity to ensure that the process was effective and transparent. Full details of these steps are available on the Australian Eggs website and an outline is provided below.

The CSIRO research program will be undertaken for a period of three years, from 2018 to 2021. The first year of the Sustainability Framework process has been very productive, allowing the egg industry to identify priority issues for the community and chart a course to align with community expectations. In each subsequent year of CSIRO research conducted, there is an opportunity to build on the insights already provided, as well as repeating elements of the research to track industry performance.

Sustainability Framework process involves:

- tracking of public views on the impacts and contributions of the egg industry to identify issues of interest to the public;
- engagement with the public on issues of interest;
- demonstrating how the egg industry is addressing issues of interest; and
- transparent reporting of industry progress in key areas.





# Industry Committee

Australian Eggs has undertaken the Australian Egg Industry Sustainability Framework as a service to the industry.

As Australian Eggs is not an egg farming business or a representative body for egg farmers, the Sustainability Framework process has been conducted with the involvement and guidance of egg farmers.

The Sustainability Industry Consultative Committee comprises a group of prominent egg farmers with representatives from large and small egg farmers from each State. The ICC receives briefings on the proposed research methodology of the CSIRO and provides input and feedback to Australian Eggs in the preparation of the Sustainability Framework report.

**Members of the Sustainability ICC are as follows:**

**Paul Pace**, Pace Farm, NSW

**Greg Quinn**, McLean Farms, QLD

**Anne Andary**, Days Eggs, SA

**Ian Wilson**, Bodalla Eggs, WA

**Phil Szepe**, Kinross Farm, VIC

**Melinda Hashimoto**, Egg Farmers of Australia

As the national peak representative body, Egg Farmers of Australia has played a critical role in the Sustainability Framework process, participating in the planning phases, as well as facilitating the process of disseminating the CSIRO research findings to egg farmers and other stakeholders. This includes building an understanding of the process and engaging egg farmers on the action that needs to be taken at a farm level to build community trust.

***‘The Sustainability Framework process is valued by egg farmers and strongly supported. All egg farmers want to drive the sustainability of their industry, and this process provides a good line of sight on community views and what needs to be done to align with them.’***

MELINDA HASHIMOTO –  
EGG FARMERS OF AUSTRALIA.



# Egg industry sustainability



There has been an explosion of community interest in sustainability over the last few years.

While there has always been a large section of the community engaged by sustainability issues, interest in how our societies can better manage present and future challenges is now mainstream. The Sustainability Framework process was commenced to reflect a commitment by the egg industry to contribute to this process.

The global plan for action on sustainability issues is captured in the United Nations Sustainable Development Goals.

The Sustainability Framework process provides a meaningful link between the broad ambitions of the SDGs and action that can be taken by the egg industry with guidance from the priorities of the Australian community.

The process involves informed consideration of issues that:

- are important to the public;
- reflect the impacts and contributions of the Australian egg industry;
- can be progressed by egg farmers; and
- are of interest to a range of industry stakeholders

The Australian Egg Industry Sustainability Framework links to the Sustainable Development Goals in the following areas:

- Zero Hunger
- Good Health and Well Being
- Affordable and Clean Energy
- Decent Work and Economic Growth
- Industry, Innovation and Infrastructure
- Responsible Consumption and Production
- Climate Action; and
- Life On Land





The goal of zero hunger flows from the fact that extreme hunger and malnutrition remain a huge barrier to development in many countries with hundreds of millions of people chronically undernourished. Even in a developed country like Australia, food insecurity and malnutrition pose major and growing threats.

The egg industry has the capacity to contribute in a number of respects: as a provider of an affordable and secure food source, as a accessible source of high quality nutrition and a driver of the agricultural productivity required to meet future challenges.



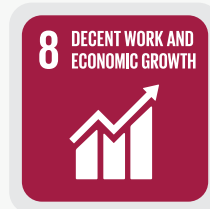
The goal of affordable and clean energy recognises the impact of fossil fuel use on the environment and the need to move towards cleaner and more efficient energy sources.

The egg industry can contribute to this process by investing in renewable energy and examining feed as the main driver of the carbon foot print of the industry to obtain efficiencies. There are also opportunities to explore waste management choices to provide better crop fertiliser options and abate carbon generated in other supply chains.



The goal of good health reflects that health is essential to the lives of people. Through a range of connected issues such as resource availability, threats to the environment and the spread of disease, health outcomes need to be improved substantially.

The egg industry has the capacity to directly improve human health outcomes by delivering essential nutrients to nourish the Australian community and providing an accessible substitute for less healthy food sources. The egg industry can also play an important role in the management of disease through the responsible use of animal anti-biotics to limit anti-microbial resistance.



The goal of decent work and economic growth seeks to promote sustained economic growth, higher levels of productivity and technological innovation through entrepreneurship and job creation.

The egg industry is a major employer and has a strong focus on productivity. By consistently investing in infrastructure and technology the industry can show leadership on working conditions and productivity, while contributing to the growth of the economy.



The goal of industry, innovation and infrastructure reflects the important role industry will have in delivering all elements of sustainability. Industries that invest in infrastructure and innovation will drive lasting solutions to both economic and environmental challenges, such as providing new jobs and promoting energy efficiency, as well as contributing to important social issues like animal welfare.

The egg industry is well positioned to deliver sustainable growth. Technology is available to ensure an efficient supply chain with relatively low environmental impact can be established. The industry is also committed to investments in innovation to constantly improve outcomes.



The goal of climate action recognises the nature and extent of change to the climate and the impact that it is having globally. Efforts to reduce carbon release are a critical part of limiting global warming and its threat to our societies.

The egg industry can contribute to the ambitious collective action called for by increasingly moving towards an even lower-carbon supply chain. This will require improvements on renewable energy use, inputs and waste management and there are clear opportunities to progress this.



The goal of responsible consumption and production reflects the need to use shared natural resources responsibly and manage waste to achieve sustainable outcomes.

As part of the agriculture sector, the egg industry is a major user of energy and water, and there are opportunities to improve monitoring and management of these resources.

The industry can also contribute to reduction in food waste by enhancing systems to capture egg product that cannot be sold to consumers.



The goal of life on land relates to the importance of the natural environment and biodiversity in supporting global food and water security and climate change mitigation.

The egg industry uses land and resources and can contribute to improvements in ensuring clean air and water, as well as reduced pressure on natural habitats.

# About the egg industry



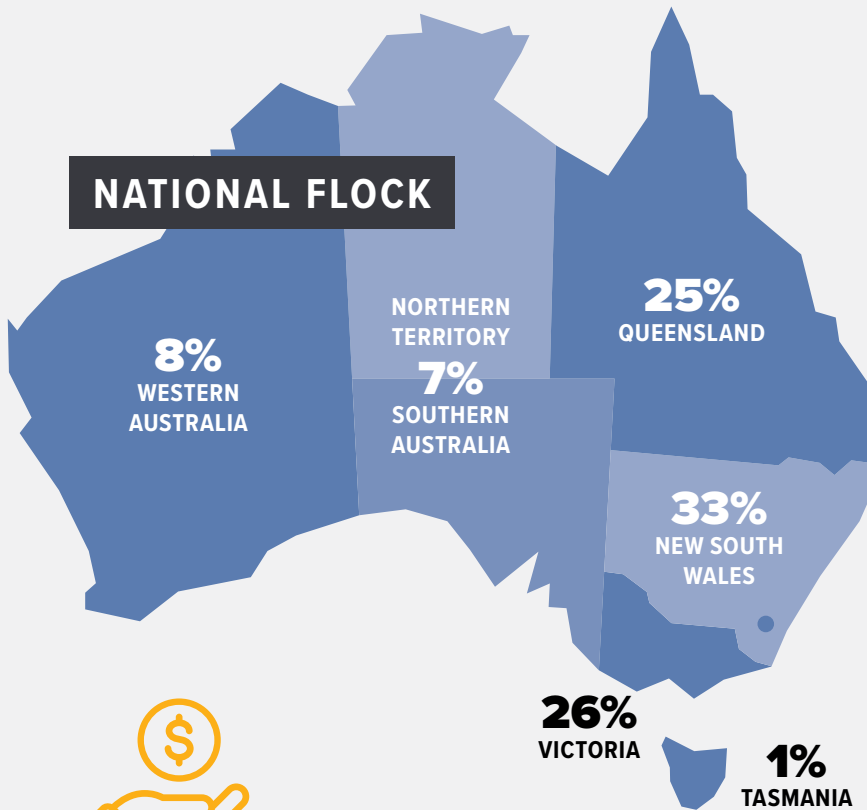
AUSTRALIANS EAT  
**17.2 MILLION**  
EGGS EVERY DAY



**277**  
EGG FARMING  
BUSINESSES



**21 MILLION**  
LAYING HEN NATIONAL FLOCK



**\$1.8 BILLION**  
EGG INDUSTRY



**SOURCE OF NUTRITION**  
An egg contains 11 different vitamins and nutrients packed into only 300 kilojoules



**AFFORDABLE PROTEIN**  
Low cost and high quality protein source

**247 EGGS**  
CONSUMPTION  
PER PERSON PER YEAR

## SUPERMARKET CATEGORIES



## FOOD SERVICES

- FOOD MANUFACTURING
- INSTITUTIONAL
- HOSPITALITY



# CSIRO research outputs

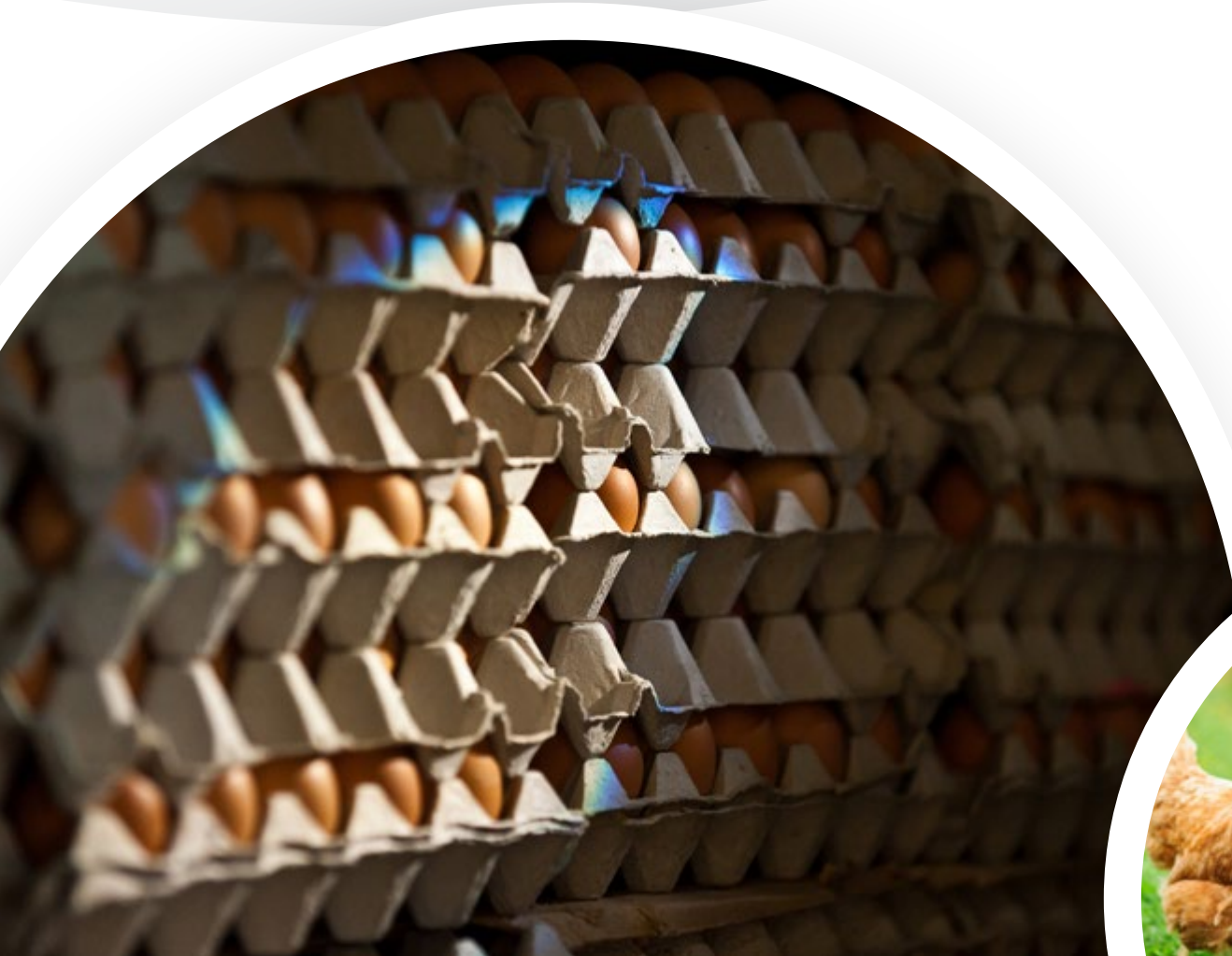
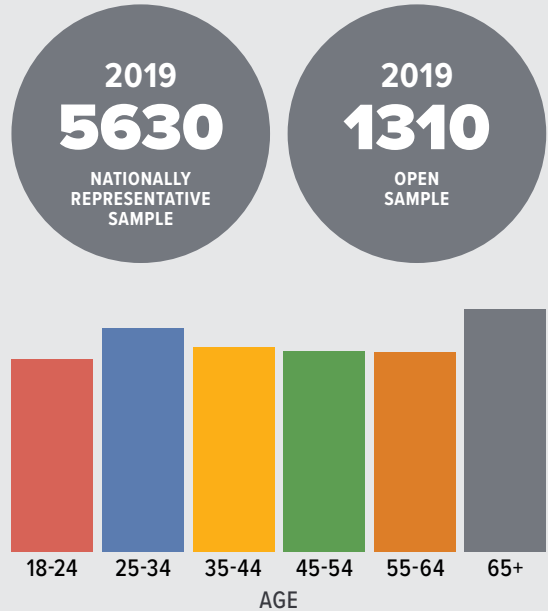
The CSIRO conducted a national survey of Australian community attitudes in 2018 and reported on the findings of this work in October 2018.

The process was repeated in 2019 with two main goals:

- Provide a 12-month comparison on key measures included in the 2018 survey to evaluate any change in community attitudes; and
- Explore in more detail issues that the 2018 survey showed us were important to the Australian community.

In 2019, the CSIRO collected data from 5,630 Australians as part of a nationally representative sample and 1,310 Australians via an open call public web link. The results were published in October 2019.

## SURVEY DEMOGRAPHICS



**Key findings****57%****of Australians expressed higher levels of trust in the egg industry, up from 53% in 2018.**

Trust and acceptance among the Australian public has improved in the last 12 months.

**83%****of Australians rely on eggs as an important staple food.**

Recognition of the egg industry as contributing to food security of Australians decreased while remaining very high.

**64%****of Australians agreed the industry was prepared to change its practices in response to community concerns.**

More Australians saw the egg industry as prepared to make changes to align with community expectations.

**93%****of Australians care about the welfare of hens.**

Animal welfare remains a priority issue for the industry with participants in the representative sample feeling that egg farmers need to do more to improve their living conditions.

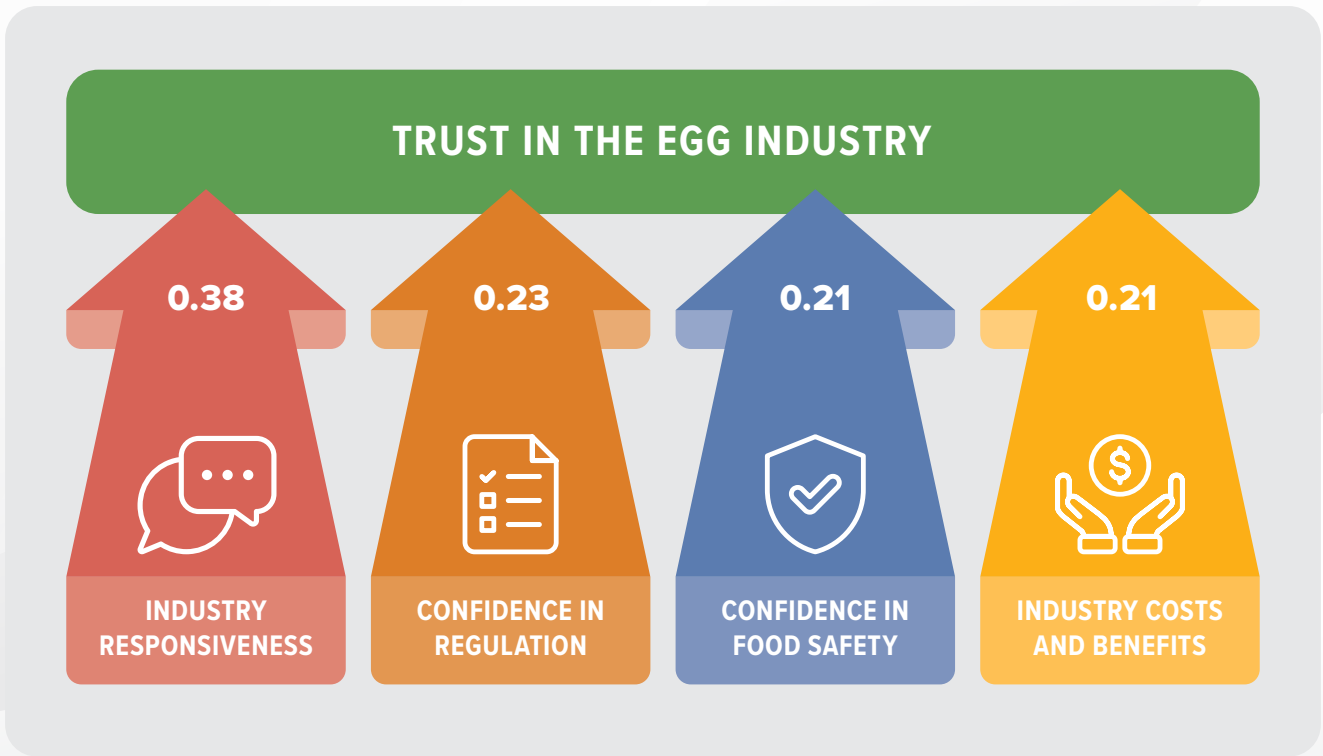
**76%****of Australians felt that egg farming was lower in environmental impact than other industries.**

Perceptions have shifted on the environmental aspects of sustainability in the egg industry, with a substantial increase in the number of Australians who believe egg farming is a good use of land and has a lower environmental impact than other agricultural industries.

**88%****of Australians see eggs as an important source of nutrition in the Australian diet.**

Awareness of the nutritional benefits of eggs remained high.





### Drivers of trust

The drivers of trust from 2018 were confirmed with an additional driver, confidence in food safety, contributing significantly to trust and acceptance of the egg industry.

The values of arrows in the graphic are called beta weights and represent the relative strength of each relationship: a higher number means that pathway is stronger than one with a lower number.

The practical impact of the CSIRO findings are that the egg industry must demonstrate:

- responsiveness to community sentiment by working to maintain contributions and minimise impacts;
- the manner in which the egg industry is regulated and support the development of appropriate regulation;
- the steps taken to ensure the safety of eggs; and
- the level of contributions and impacts to enable the community to form views.







# Lives of people

Contributing to the Australian community through the provision of a nutritious, staple food.







## Food safety

Food safety is critical in egg production and is the primary focus of egg farmers. Community confidence in food safety was recognised in the CSIRO research findings as a driver of community trust in the egg industry, making it clear that unless the industry can produce eggs that are safe and are recognised as safe, then it cannot be sustainable.

Community recognition of the strict food safety standards applied in the egg industry increased in the 2019 CSIRO research findings, despite there being a number of food safety incidents in early 2019. These cases related to a form of *Salmonella* that is not usually present in Australia, *Salmonella* Enteritidis (SE). This is likely to reflect an awareness of the food safety regulatory regime, along with the strong response to the incidents by government and industry, to ensure that impacted products were removed from shelves and the public informed of how to avoid the risks. It seems it's not so much whether things go wrong, but how you respond to them.

The threat of SE is unavoidable as it is common in other countries, and the level of travel and shipping to Australia makes introduction inevitable from time to time. The objective is to ensure that systems are in place so that if egg farms do have contact with SE, it can be eradicated quickly and kept out of the food system.

Across 2019, the egg industry developed a work program to ensure that the industry and community will be better protected from the new threat to biosecurity and food safety posed by SE. This includes work on response plans and steps for the decontamination of farms to ensure Australia can remain free from SE. These steps are very practical and relate to controlling movements of people and pests on farms to prevent SE being introduced, and constant disinfecting of equipment to ensure bacteria do not have the right conditions to grow.

The industry is also investing in research to develop longer term solutions just in case SE was to become common in Australia in the future. Other countries such as the United Kingdom have used vaccines, the heat treatment of feed and strict traceability to manage SE effectively. The Australian industry is taking steps to draw on this experience to ensure it has effective solutions to maintain the safety of eggs.





## Nutrition

The greatest positive contribution of the egg industry is the provision of an accessible food staple that meets the nutritional needs of the community. Eggs are not new and have long been recognised as a healthy source of nutrition, but the contribution eggs can make to community health outcomes is not static.

As we continue to learn more about human nutritional needs, new contexts emerge in which eggs can provide benefits. Most recently the egg industry has been considering the importance of choline, a nutrient for which deficiency is very common. New scientific research indicates that choline plays an important role in brain and spinal chord development which is critical during pregnancy, childhood and potentially, cognitive decline in the elderly.

Not all foods contain choline and eggs (particularly egg yolks) are a good source, containing around double the choline levels of other common foods in the Australian diet. As a new issue, many aspects of choline are not fully understood and the Australian egg industry is investing in further research to bring clarity to choline requirements and how eggs could contribute in improving health outcomes.

The industry has also been exploring how it can contribute to emerging health issues such as malnutrition. Given the abundance of healthy food in Australia it is surprising and concerning that malnutrition is increasing. This involves a large number of Australians that do not enjoy food security, as well as those that overconsume high energy foods that lack vitamins and nutrients, often translating to obesity or being overweight.

The egg industry is exploring the role eggs can play in addressing malnutrition by testing the extent to which eggs can reduce overeating through satiety, the sensation of being satisfied or 'full'. This research will take a sample of obese Australians and introduce the regular consumption of eggs to the diet over a six month period. It is hoped the results will confirm multiple benefits in the form of improved nutrition levels and body composition.



Outside on the range, a variety of structures are provided for the hens to use, including shade tents and trees. The hens usually congregate around these as it provides cover and makes them feel safe.

This research will also build on the understanding of the role eggs can play in maintaining healthy vitamin D levels. An updated nutritional profile of eggs in 2018 found that eggs contain higher levels of Vitamin D than previously understood. By testing vitamin D levels before and after the trial, this research will provide insights on the extent to which dietary vitamin D is absorbed and can alleviate vitamin D deficiency.

## Transparency

The egg industry is shaped by consumer choice. Where there is demand for a category of eggs, egg farmers will produce them to the volume required. Where there is not, egg farmers are not able to risk their livelihoods by pushing on regardless. The substantial growth in free range egg production over the last 15 years has been a remarkable achievement by the industry but it is largely consumer driven.





The most important aspect of consumer choice is that it must be informed. While most consumers do not have the time to investigate how products are produced, community trust and the long term sustainability of the egg industry depends upon accurate information on industry practices being readily available.

The egg industry has shared information on the nature of egg farming for many years and the key aspects of cage, barn and free range production systems are generally well understood. However, the explosion in available information through social media and smartphone use has reset expectations as to the level of information that should be available to the community. Corporate approaches that focus exclusively on positive aspects are seen as inadequate.

The egg industry has sought to respond to this by providing higher levels of transparency on farming practices through more engaging mediums. Most recently, the industry has invested in a virtual reality egg farming experience which is available in the form of a 3D virtual reality experience, as well

as a more accessible video format for desktops and smart phone use.

The VR 'experience' allows the user to select aspects of the farm to explore and move the camera focus on areas of interest. The effect is that the public is provided with a good sense of how egg farming works, and the industry has an additional engagement tool to build community understanding of the practicalities of farming.

Importantly, this approach provides a comprehensive overview of egg farms, providing insights into the broader context of egg farming as well as the nature of laying sheds and the living conditions of hens, which cannot be easily accessed by the public for biosecurity reasons. This includes intensive cage, barn and free range farming systems that supply the majority of the eggs required to meet consumer demand, bridging the gap between community interest and understanding as to where their food comes from.

# Hen welfare

Farming in a manner that aligns with community expectations and delivers substantive animal welfare outcomes and ongoing improvement.







## Animal husbandry

The CSIRO research findings again confirmed hen welfare is highly important to the community and that the community sees a positive obligation for the industry to improve welfare outcomes over time.

Hen welfare is much discussed in the media but not always well understood. While hen natural behaviours and the advantages and disadvantages of different egg farming systems are important issues of focus, they are not always the most important drivers of welfare. From a practical perspective, this will always be the manner in which hens are cared for, referred to as animal husbandry. Animal husbandry is the process of understanding animal needs, ensuring systems are in place to meet them, constantly monitoring for problems and fixing them as soon as possible.

This process is largely taken for granted by the community and rightly so. The community expects farmers to be capable of caring for animals and egg farmers pride themselves on their ability to do so. However, there will always be a practical challenge in ensuring consistent outcomes across the industry in all circumstances, including new and inexperienced farm workers or extreme events such as natural disasters.

In response, the egg industry has invested in a new welfare and husbandry training program to meet this challenge. The program covers all aspects of husbandry including a focus on monitoring, so that farm managers and workers have the skills to identify and manage issues as they arise.

The program also provides an opportunity to ensure farm managers and workers have a good understanding of contemporary animal welfare principles. A large part of animal husbandry is attitudinal, and the program seeks to embed a broad understanding of welfare and the community perspective that egg farms should be looking for and implementing improvements wherever possible.





## Welfare improvement

Beyond good animal husbandry, the egg industry must look for opportunities to improve. This means being prepared to critically review current practices and being open to change. Often substantial change will not be practical immediately, but the process of consistently experimenting and introducing small improvements is still important.

In examining current farming practices, the egg industry is spoilt for choice on areas that could be improved. The substantial growth in barn and free range farming systems over the last 15 years has presented new challenges, as these systems are less controlled than cage systems and significantly more complex to manage.

Most recently, the industry has identified smothering as a significant welfare issue that requires improvement. Smothering is a natural hen behaviour which occurs when hens seek to flock or move to an area very quickly and through weight of numbers, crush one another to the point of injury or death.

The concern with smothering is that we do not understand enough about why it occurs. There are often clear triggers for smothering events such as a predator or loud thunder that instils a sense of panic in a flock. Other times there are no observable reasons, with hens seemingly taking an interest in an area of the farm and continuing to congregate to the point of smothering.

To progress this, the industry is investing in research that will build a better understanding of smothering. A comprehensive study involving observation of 80 flocks and analysis of production data will seek to identify the factors associated with smothering events, including the impact of farming systems, weather conditions, timing, light and the presence of stressors. This research will conclude shortly and allow future testing of interventions to prevent or minimise smotherers, providing improved management practice and welfare outcomes.







## Community Values

The CSIRO research findings confirmed community views on the importance of animal welfare, but the community was less united on the importance of price in purchasing decisions and whether improvements in welfare would require increases in price. This range of views across the community has driven conjecture in relation to hen welfare, which has often involved perspectives based on different concepts of welfare.

Over the last two years the egg industry has explored the relationship between hen natural behaviours as the key emerging welfare issue and community perceptions on welfare issues. This began with obtaining expert guidance on animal welfare frameworks which confirmed the emergence of two accepted frameworks for welfare assessment. These cover how a hen is coping from a biological perspective and the hens capacity to experience positive and negative affective states.

The report also identified that the application of these frameworks required the application of values. Values are the moral or ethical judgments required by individuals where there are gaps in available knowledge. As they are subjective in nature, values may always be questioned by others but always remain a matter of perspective.

The concept of values in welfare was explored through further research that identified important values-based questions arising from welfare science,

such as whether it was better for a hen to be safe from predators and disease or have the freedom to access a range. It is through questions of this nature that the strong divergent views on egg production systems amongst the community can be understood, as different perspectives will influence the purchase of eggs farmed in cages or alternative systems.

Most recently, the egg industry has invested in research to test the application of values by the community. Through focus groups and community surveys a clearer picture has emerged through which perceptions on hen welfare can be understood.

The findings show that welfare is complex and that people will struggle with that complexity, often having to deal with difficult trade-offs. The research shows individuals will place different emphasis on particular aspects of welfare which reflects the subjective nature of values-based issues. The fact there is no one right answer is insightful to both the industry and the community in considering welfare issues.





# Environmental impact

Preserving natural resources by minimising resource use and the long term impacts on environmental systems.





## CO<sub>2</sub> Carbon footprint

Increased community interest and concern about the planetary impact of our societies has reframed expectations around the carbon footprint of industries. Climate variability, substantial population growth and the significant amount of atmospheric carbon produced by the food system is driving all agricultural industries to examine their carbon footprint and how this could be improved over time.

The egg industry has an initial advantage in this regard as it already enjoys a relatively low carbon footprint, the lowest of common animal protein sources and comparable to some plant-based foods.

Feed production is the biggest user of energy in the production of an egg, with around 75 percent of total energy coming from off-farm processes such as planting, harvesting and transportation of grain. Because of this, improvements in the ability of hens to convert feed grain into eggs are resulting in significant energy savings.

A hen today consumes five percent less feed than a hen 20 years ago but lays an extra 38 more eggs per year. Across Australia's national flock of 21 million hens, the feed and emissions savings are 42,000 tonnes less grain and 30,000 tonnes of carbon abatement.

As a predominantly intensive industry, egg farming is highly efficient and involves limited waste,

as eggs that are not suitable for retail sale can be converted to liquid egg products for use in food service and manufacturing. The CSIRO research findings indicated recognition of these benefits by the community, as awareness of environmental impacts has increased.

While this is a good start, the scale of the global challenge calls for substantial improvement and the Australian egg industry needs to be part of that process. To progress this, the industry is investing in research to more definitively assess the carbon footprint of egg farming and supply. This will create a benchmark for comparison purposes, and provide information to the community to enable choices to be made to influence outcomes on carbon production.

The research will also explore mitigation strategies to reduce the carbon produced through the egg supply chain, as well as opportunities to offset carbon such as vegetation or carbon sequestration in manure. This will assist in identifying a path towards carbon reduction and potentially, the viability of carbon neutral egg production. This presents an exciting opportunity for the industry, as well as ensuring egg production can remain relatively low impact as other industries surge forward through improvement.







## Renewables

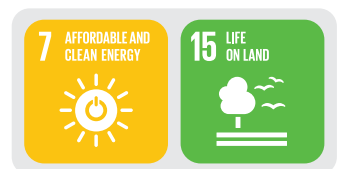
Egg farming uses a significant amount of electricity as air-conditioned sheds are required to ensure hens are safe from Australia’s harsh climate. Solar energy works well for the egg industry as energy production mirrors the energy load from cooling systems across the day.

As electricity costs have increased over the past decade, some larger egg farms have successfully implemented large scale solar projects to both lower their energy costs and improve environmental outcomes. More recently, improvements in solar panel efficiency and significant reductions in costs have enabled a broader range of solar applications without the need for subsidies, including households and smaller businesses.

The challenge is that small to medium egg farms often lack the resources to pursue opportunities of this nature. This is for the very practical reason

that the headcount required to investigate and analyse the viability of solar energy are not usually available.

To bridge this gap, the egg industry has invested in a solar energy tool to identify options and guide consideration. The tool uses renewable energy expertise and details of commercial offering to work through the viability of solar power system installation and identify the benefits and payback period for each egg farming business. It is intended that this process will accelerate the adoption of renewable energy in the egg industry, and simultaneously enhance the economic viability of the industry.







## Waste management

One of the most exciting opportunities to reduce the environmental impact of the egg industry relates to one of the least glamorous aspects. Chicken manure is a problem on farm and needs to be removed to manage flock health. Once off farm it is a potential resource as it remains rich in nutrients and a useful input for fertilising plant-based agriculture.

By replacing the use of chemical fertiliser, organic fertiliser can make a significant contribution to reducing the carbon foot-print of the agriculture sector. As agriculture industries explore ways to improve environmental outcomes, demand and interest in organic fertiliser has increased substantially presenting new opportunities to animal industries.

There have been a number of factors complicating the use of manure as fertiliser, including food safety concerns in higher value horticulture applications. This safety issue can be overcome by composting manure in which the combustion process reduces the presence of harmful bacteria. However, the most valuable element of manure, nitrogen, can be lost through composting and converted to green house gases such as methane and ammonia.

Adding carbon rich material such as wood by-products will reduce the loss of nitrogen and emissions but can impact the economic viability of fertiliser supply. In response to increased demand for organic fertiliser, the egg industry has invested in research to improve the viability of the composting process. A range of wood chip inclusion rates were tested to reveal the optimal amount, a carbon to nitrogen ratio of 21:1.

This knowledge has significantly improved the economic viability of manure composting, and will ensure that a broader range of egg farms are able to profitably invest in composting processes and increase the replacement of chemical fertilisers with organic products.



# Economic viability

Having the economic resilience to profitably deliver outcomes of value to the community.







## Egg farm profitability

Egg farm profitability has not been advanced significantly in the last 12 months. The drought in the Eastern states has had a devastating impact on the agriculture sector, including the egg industry. 2019 was the second year of comprehensive drought with severe drought conditions present for much longer in regions such as central Queensland.

The key impact of drought is the felt by egg farmers in the cost of feed. Feed grain represents 65% of the variable cost of egg farms and with harvest volumes well below capacity, prices have almost doubled. This cost increase has predominantly been borne by egg farmers.

As eggs are a staple food item, there is considerable retail pressure to maintain their affordability by keeping prices low, and the market power enjoyed by the major supermarket chains has ensured that this was possible. The outcome is that it has not been possible to pass through the cost increases arising from the drought.

This dynamic represents a major challenge for the egg industry going forward. Ensuring the sustainability of the industry requires a long

term view, and the preparedness to make investments to both maintain standards and improve. This is very difficult when the money isn't there, and confidence in the future is undermined by circumstances beyond the control of egg farmers. That said, droughts are not new and the economic resilience required to withstand this period has been an aspect of farming for some time.

A more positive aspect of egg farm profitability is the extent to which the industry has grown. Despite the drought, the egg industry increased capacity in the last twelve months with egg consumption per capita increasing from 245 eggs per person per year to 247. This translates to 17.2 millions eggs consumed each day and demonstrates that:

- consumer demand remains strong;
- the long term trend of consumption growth is likely to continue; and
- industry will need to be economically viable to ensure investments in egg production capacity are made to meet this demand.







## ! Risk management

Egg farmers face substantial risks in operating their businesses. While the market is volume driven with relatively low margins, the risk of supply or demand disruption arising from incidents at an individual business or industry level is real and must be managed.

Risk arises in a range of contexts from minor to catastrophic. While market risks are regularly realised as customers move business around, the loss of a major customer can be a huge impact where an egg farm has expanded capacity to meet that customer's needs, including through borrowed funds.

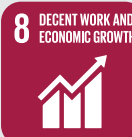
Production risks such as biosecurity can give rise to challenges that are capable of being resolved, such as a production disease in a flock that is treatable. In extreme circumstances, they can also threaten the viability of the whole business.

A good example of this is the *Salmonella enteritidis* incidents that occurred in early 2019. For those farms impacted, the outcome was devastating as swift action by authorities required flocks to be euthanised to protect public health. The flock is the key asset of an egg farming business and for some egg farms this was catastrophic, forcing them to exit the industry. The Sustainability Framework process has forced the industry to engage on how risks can be better managed. This is not a natural process as most management steps have taken place at an individual farm level and are confidential to each business.

In response, the industry has invested in tools to assist egg farming businesses to manage risk. This takes the form of an egg farmer self-assessment sustainability tool which has been developed to focus egg farmers on key business risks, provide an assessment framework and identify actions to avoid or mitigate risks.

Often the action required will be quite obvious to identify and difficult to implement, due to conflicting pressures. The sustainability assessment tool is intended to guide the thinking of egg farmers so that through their own analysis in their own circumstances, the benefits of action to mitigate risks become clearer.

The egg industry has also invested in a new virtual reality biosecurity awareness experience that gets farm workers to identify biosecurity risks as they perform crucial tasks on an animated, virtual farm. By creating a standardised training platform, all farm workers are assessed equally and directed to the best available resources where improvement is needed. Some of the required tasks include disinfecting a vehicle, walking through a laying shed looking for potential contaminants, and changing clothing and footwear at different entry points around the farm.







**Australian Egg Industry  
Sustainability Framework**

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