



Householders' Options to Protect the Environment Inc.

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HOPE E-news Bulletin 2024 #10 --- October 2024

The following items have been gathered from various e: newsletters received by HOPE in recent times; and/or prepared specifically by HOPE members and supporters. If you have any news to contribute, please forward to office@hopeaustralia.org.au. Deadline for articles is 15th day of the month.

Editorial

Welcome to the October issue of the newsletter! This month covers general topics as well environmental. Firstly, we learn the difference between climate and weather (p2-3) and then about the Cooperative Research Australia (CRA) (p7-8). The role of the Sustainable Agriculture Facilitator (SAF) has been introduced through Australian Governments Climate-Smart Agriculture Program where they are working with stakeholders to encourage the adoption of climate-smart, sustainable farming practices in Southern Queensland (p6). This month also looks at how seaweed is being used to slash methane emissions (p9). Resilient Cities Network (RCN) is discussed as cities increase in number and size, strengthening resilience capabilities to withstand climate-related shocks and stresses is crucial (p10-11). And lastly, following on from Review of "Estimating the Date of Earth Overshoot Day 2023" in the March 2024 edition of the newsletter, is the behavioural crisis driving ecological overshoot (p3-5).

Kind regards,

Nina Stick, Newsletter Editor – HOPE Inc.

2024 Environmental Observances

October

- 2 [World Habitat Day](#)
- 4-10 [World Space Week](#)
- 12 [World Migratory Bird Day](#)
- 16 [World Food Day](#)
- 17
- 31 [World Cities Day](#)

November

- 9 **HOPE AGM; and 1st Ordinary Meeting of new Committee**
- 26 [World Sustainable Transport Day](#)

Your financial support is sought! – <https://www.hopeaustralia.org.au/donations/>

We invite members and supporters to consider making an annual financial contribution to help cover our operating costs of approximately \$20,500 p.a.

Currently, our income is derived from project grants, fund-raising, corporate sponsorship and donations, but falls well short of our requirements.

Your financial support, by way of an annual pledge or donation, will considerably help us to achieve better financial viability.

Of course, if you 'cash in your containers', why not donate those monies to **HOPE Inc** | Member number: C11107170.

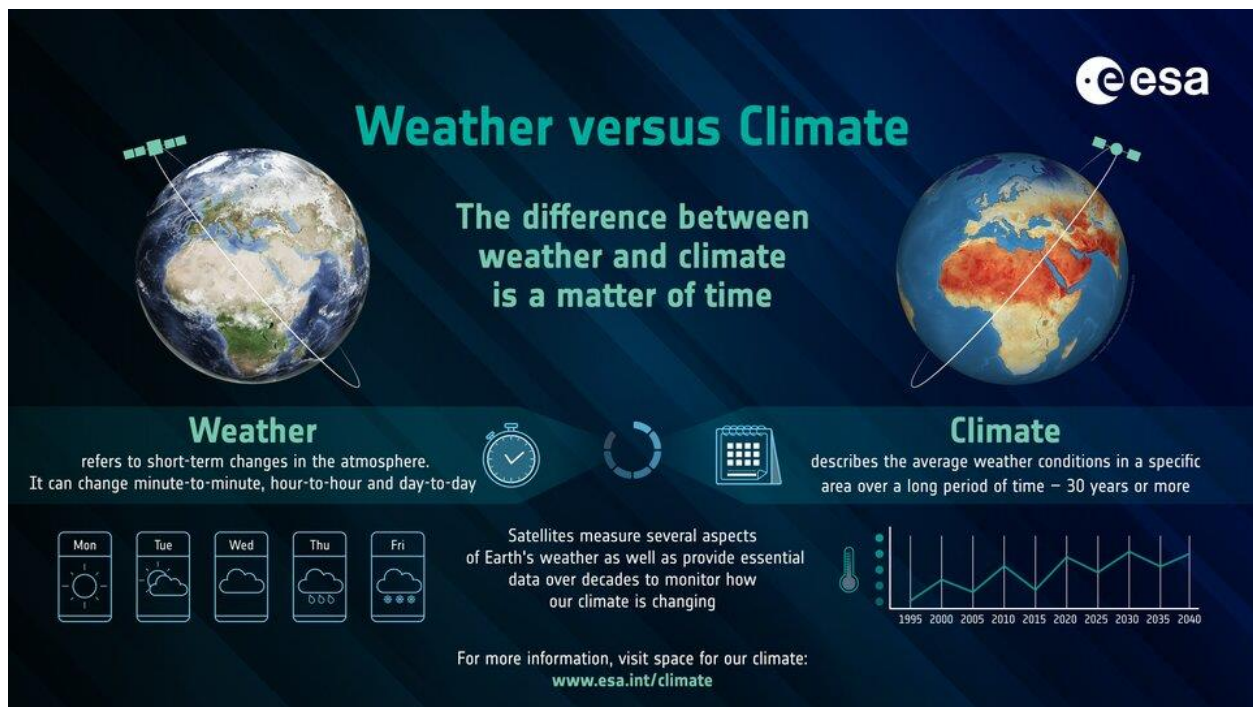
Please help us to continue our efforts in advocating for responsible stewardship of the environment and supports adopting sustainable long-term solutions to the manifold environmental problems facing humanity.

Feature articles

What is the difference between Weather and Climate?

Written by Gabriel Malandu – HOPE researcher Qld.

Picture stepping outside your front door every day to a delightful surprise: one day you're welcomed by radiant sunshine and warmth, the next by a downpour of heavy rain. That is the everyday wonder of weather. Alternatively, when we take a broader perspective, it becomes evident that climate is the primary factor influencing weather patterns over extended periods of time. To determine climatology, it is vital to have a solid understanding of concepts such as weather, climate, climate variability, and climate change, as well as the capacity to differentiate between these concepts.



Retrieved from

https://www.esa.int/Applications/Observing_the_Earth/Space_for_our_climate/Weather_vs_climate_What_s_the_difference

Weather and climate are interconnected. The confusion arises from the close relationship between weather and climate, and this confusion is often emphasised in discussions about the evolving climate (Tomlinson 2017). It is possible to improve both the quality of lifestyle and the ability to predict weather patterns by gaining a grasp of these principles. While weather and climate are notions that are related to one another, they are fundamentally distinct from one another. As an illustration, the term "weather" is used to describe the "state of the atmosphere at a specific point in time and for a given reference" (Ribbe 2020). This is what we see on a regular basis, whether it's every day or every week. It encompasses various weather conditions such as sunshine, rain, clouds, wind, hail, snow, sleet, freezing rain, blizzards, ice storms, and thunderstorms. We typically consider the weather and its impact on our daily lives and activities. The weather has the ability to fluctuate rapidly, transitioning from moment to moment, hour to hour, day to day, and even season to season.

Over a longer period of time, "climate is the synthesis of weather in a particular region" (Ribbe 2020). Climate is considered to be the opposite of weather. Weather is something that is always shifting inside a location, whereas climate is something that determines the overall general weather within the same region, but based on a longer time span.

The concept of climate, on the other hand, is concerned with the more long-term consequences of weather, such as the highs and lows of temperatures. This could therefore result in the requirement of solutions that are more long-term in order to maintain and regulate the extreme weather change that is occurring in a place. In terms of climate change and climate variability, climate change refers to the change in climate that occurs over longer periods of time (often between 30 and 50 years), whereas climatic variability occurs over shorter periods of time (monthly, seasonally, and annually). One of the most important distinctions between climate and climatic variability is the "persistence of anomalous" situations, which refers to the occurrence of phenomena that were formerly uncommon but are now occurring more regularly, or more frequently. according to the World Meteorological Organisation (n.d.)

From "the clothing we wear, the types of homes we build, the amount of food the world can produce, and the amount of water we need to store for consumption" (Ribbe 2020), all of these factors have the potential to directly or indirectly influence the way in which we live. As a result, having an understanding of these principles is advantageous not only to the forecast of weather patterns but also to the quality of lifestyle.

Simply put, grasping the interplay between weather and climate is essential for accurately forecasting weather patterns and improving our overall quality of life. While the relationship between weather and climate can be confusing, they are fundamentally distinct concepts. The weather is the condition of the atmosphere at a particular time and place, including factors like sunshine, rain, wind, and more. On the other hand, climate is the result of combining weather conditions over an extended period in a particular area, which ultimately shapes the overall weather pattern. Climate change, happening over extended periods, involves persistent abnormal situations, requiring long-term solutions to tackle extreme weather changes. Understanding these differences is not only important for predicting the weather, but also for shaping our daily lives. It affects everything from the clothes we choose to wear, to the houses we construct, and the resources we utilise. In the end, this knowledge contributes to a better overall quality of life.

External sources used.

- https://www.researchgate.net/post/Are_current_weather_anomalies_the_effect_of_progressive_global_warming
- <https://wmo.int/topics/climate>
- <https://extension.okstate.edu/fact-sheets/what-is-the-difference-between-weather-and-climate.html>

World scientists' warning: The behavioural crisis driving ecological overshoot

Review written by Karyne Maurmann - HOPE researcher Qld

INTRODUCTION

Modern humans and numerous species face unprecedented existential threats due to anthropogenic impacts that exceed planetary boundaries. The instability spans areas such as biosphere integrity, land system changes, novel entities like plastics, climate change, freshwater changes, and biogeochemical flows. These interconnected threats pose a catastrophic risk to complex life on Earth, with many scientists fearing it may already be too late to avoid irreversible tipping points. These threats are increasingly recognized as symptoms of anthropogenic ecological overshoot—where human consumption outpaces natural replenishment and waste exceeds Earth's processing capacity.

This paper investigates the behavioral drivers behind overshoot, identifying a deeper crisis termed the 'Human Behavioural Crisis.' Current interventions primarily address symptoms (like climate change) rather than the root cause (maladaptive behaviors), which are insufficient for long-term solutions. The authors propose an interdisciplinary response, focusing on changing social norms around reproduction, consumption, and waste. They highlight the need for collaboration between scientists and practitioners of social and behavioral sciences to drive effective large-scale behavioral change. This approach, unique to humans, could help keep human activities within planetary boundaries and ensure a sustainable future. The paper calls for interdisciplinary collaboration to address this behavioral crisis effectively.

SCOPE

This paper addresses the root causes of ecological overshoot, primarily focusing on socially constructed attitudes and behaviors that drive excessive personal consumption, particularly among the wealthy quarter of humanity, responsible for the majority of excess energy and material use. The aspiration for high-end lifestyles by the impoverished half of the global population further exacerbates this issue, risking severe environmental consequences such as increased greenhouse gas emissions and depletion of resources. The paper acknowledges various factors influencing consumption behaviors, including media and marketing manipulation, which promote maladaptive behaviors detrimental to planetary and social health.

The role of population growth in ecological overshoot is also highlighted, particularly the rapid growth of the middle class in developing countries, which is expected to increase per-capita consumption and ecological footprints. The paper critiques the notion of 'green growth' as insufficient, arguing that current economic norms are incompatible with sustainable practices.

Despite numerous scientific warnings over the past decades about the collision between human demands and Earth's regenerative capacity, there has been a lack of substantial action. This paper advocates for an interdisciplinary response to the human behavioral crisis, emphasizing the need for explicit attention and emergency action to prevent a catastrophic future. The authors call for additional research and concrete measures to address hyper-consumption and promote sustainable behaviors to ensure a habitable planet and civilization.

Human behaviour drives overshoot

Human behavior and cultural practices related to consumption and population dynamics are the primary drivers of anthropogenic ecological overshoot. Historically, exponential human population growth was curbed by negative feedback mechanisms such as resource shortages and disease. However, the advent of fossil fuels has allowed humanity to bypass these natural limits, leading to an unprecedented increase in population and consumption. In just over 200 years, the global population surged from 1 billion to 8 billion, and fossil fuel use increased 1300-fold, driving a 100-fold increase in global consumption.

The paper introduces the term 'behavioral crisis' to describe how previously adaptive human behaviors, now exploited by the industrial economy, have led to ecological overshoot. Marketing and economic systems manipulate these innate behaviors—such as seeking pleasure, acquiring resources, and displaying dominance—for financial gain, resulting in excessive consumption and environmental degradation. These maladaptive behaviors, which were once beneficial for survival, now threaten the stability of Earth's ecosystems and the future of complex life. The paper emphasizes the need to address these behavioral drivers to mitigate ecological overshoot and ensure a sustainable future.

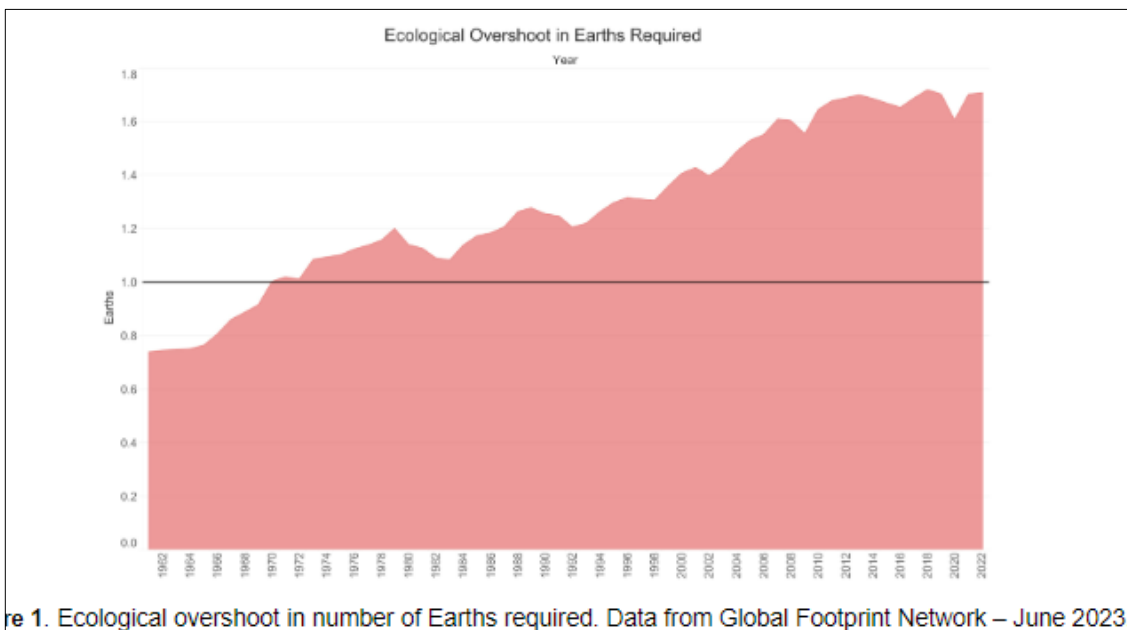


Figure 1. Ecological overshoot in number of Earths required. Data from Global Footprint Network – June 2023.

Drivers of Overshoot Behavior

Human behaviors that contribute to ecological overshoot are heavily influenced by social, economic, and political norms that exploit psychological predispositions. Three critical drivers of this behavioral crisis are economic growth, marketing, and pronatalism.

1. Economic Growth:

Traditional economics measures progress in terms of monetary value and exchange, often neglecting ecological impacts. This has resulted in a disconnection between the economy and the natural environment, fostering the perception that economic growth can occur independently of ecological constraints. Neoliberal economic policies promote unlimited growth, leading to a 100-fold increase in global gross product and a 14-fold increase in per capita income since the early 1800s. This growth has been largely fueled by a 1,402-fold increase in fossil fuel consumption, contributing significantly to environmental degradation.

2. Marketing:

Originally focused on functional product differentiation, marketing has evolved to manipulate psychological triggers, creating new desires that extend beyond basic needs. Influenced by pioneers like Edward Bernays, modern marketing amplifies and diversifies consumer demands, transforming consumption into a reflection of identity and social status. The use of personal data for targeted marketing has further intensified overconsumption and waste. The wealthiest individuals disproportionately contribute to environmental degradation, necessitating substantial reductions in both fossil fuel and material consumption.

3. Pronatalism:

Cultural and institutional pressures—rooted in patriarchy, religion, nationalism, and capitalism—encourage high fertility rates. Pronatalism glorifies motherhood and large families while stigmatizing contraceptive use and child-

free lifestyles. Despite advancements in gender equality, pronatalist values persist, driven by economic and political interests. Media and marketing reinforce these narratives, influencing reproductive decisions. Although some policies have effectively reduced fertility rates, coercive measures often backfire, reinforcing pronatalist norms. Promoting reproductive autonomy and addressing pronatalism are essential for enhancing reproductive rights and ensuring planetary health.

Addressing these drivers is crucial for mitigating ecological overshoot and fostering a sustainable future.

Tackling the Behavioral Crisis

Current interventions to address ecological overshoot often emphasize technological solutions, which may not address the root causes and can sometimes exacerbate the problem. For example, transitioning from fossil fuels to renewable energy requires substantial raw material inputs and may not reduce overall ecological impact. Instead, interventions should focus on transforming human behaviors and social norms. This involves leveraging marketing, media, and entertainment industries to reshape norms around consumption, population, and waste. Marketing principles, such as framing effects, can effectively influence behavior by emphasizing personal benefits rather than sacrifices. Social context and signaling also play significant roles in shaping behaviors and can be harnessed to promote eco-friendly practices.

Repurposing the techniques used by the marketing industry can help reduce consumption and encourage sustainable behaviors. Successful campaigns, like those against drunk driving, demonstrate that behavior change is possible through strategic marketing and advocacy. Furthermore, social network theory suggests that once a belief or value reaches a tipping point (around 25% acceptance), it can rapidly become a widespread norm. A concerted effort using these strategies could accelerate the adoption of sustainable behaviors.

Ethically, the power to influence behavior should not be left to chance or exploited by those with vested interests. It must be guided by natural laws and scientific principles. An interdisciplinary approach is needed to direct and regulate behavior manipulation to align with ecological sustainability, ensuring it serves the collective good and planetary health.

CONCLUSION

Evidence suggests that the ecological overshoot crisis stems from maladaptive human behaviors that have reached unsustainable levels. Focusing solely on resource-intensive interventions, like transitioning to renewable energy, addresses only the symptoms, not the root causes. This approach is not only inadequate but may also exacerbate the problem.

To effectively address ecological overshoot, we must prioritize psychological and behavioral interventions, which are less resource-intensive and potentially more impactful. Key recommendations include:

- 1. Increased Attention:** Recognize the behavioral crisis as a critical point of intervention for addressing ecological overshoot.
- 2. Interdisciplinary Collaboration:** Encourage collaboration between social and behavioral scientists and experts on limits to growth and planetary boundaries.
- 3. Comprehensive Research:** Conduct extensive research to understand the dimensions of the behavioral crisis and develop effective solutions.
- 4. Multidisciplinary Effort:** Initiate a global, emergency, multidisciplinary effort to change consumption, reproduction, and waste norms.
- 5. Ethical Regulation:** Ethically direct, understand, and regulate widespread behavior manipulation to ensure it aligns with ecological sustainability.

Time is of the essence. The degradation of natural systems and the potential for societal breakdown could soon render coherent action impossible. We must act now, using our intact societal systems to shift social norms and address the behavioral crisis, securing a sustainable future for complex life on Earth.

Have you ever thought about your own behavior in relation to the behavioural crisis driving ecological overshoot? It's easy to overlook the impact of our daily choices on the environment, but even small actions add up.

To help you reflect on how your lifestyle affects the planet, why not take a simple test? It's a quick way to see where you stand and what steps you can take to reduce your ecological footprint.

You can access it here: <https://www.footprintcalculator.org/en/quiz/0/food/category>

Queensland article

Sustainable Agriculture Facilitator roles at SQ Landscapes

Mackenzie Leeson – Hope researcher QLD

Sustainable agriculture has become a critical focus in addressing climate challenges, and as part of the Australian Governments Climate-Smart Agriculture Program, the role of the Sustainable Agriculture Facilitator (SAF) has been introduced. With at least one in every region in Australia, the SAF role is designed as a central point of contact, playing a key role in helping farmers, landholders, industry professionals, and community groups navigate the complex and ever-evolving landscape of sustainable agriculture.

I, along with my fellow SAF, Vincent Parisi, work throughout Southern Queensland, working with stakeholders to encourage the adoption of climate-smart, sustainable farming practices. But what does that actually look like in action?

A key function of the SAF is to actively engage and inform local farmers and landholders about climate-resilient agricultural methods. Whether it's promoting best practices in natural resource management, explaining carbon market opportunities, or introducing programs that help reduce emissions, the SAF serves as a vital resource for those seeking to improve their environmental impact on the farm. This role involves sharing relevant government information, policies, and tools, as well as keeping the community updated on training and funding opportunities.



SAFs Vince Parisi and Mackenzie Leeson attending a Cropping for Drought Resilience workshop presented by DAF and UniSQ.

One of the SAF roles greatest aims is to connect people. By facilitating partnerships between farmers, landholders, community groups, and agriculture industries, the SAF helps stakeholders work together on shared

challenges. From connecting farmers who are facing similar hurdles to fostering relationships between extension officers, advisors, and experts in biodiversity or carbon farming, the SAF role aims to ensure that knowledge is shared, and collaboration is encouraged.

Sustainable agriculture is not just about individual practices—it's about community-wide change. The SAF is there to support projects across Southern Queensland's natural resource management (NRM) regions, helping deliver sustainable agriculture outcomes through events, workshops, and communication initiatives. Whether it's bringing people together for community discussions or supporting the delivery of workshops, the SAF makes sure that everyone's voice is heard in the move toward more sustainable farming.

Everything the SAF does ties back to the overarching goal of achieving climate-smart agriculture. Their work supports broader outcomes of the Australian Government's Climate-Smart Agriculture Program, by supporting practices that enhance climate resilience, protect biodiversity, enable nature repair, and contribute to emissions reduction. Ultimately, the SAF serves as a bridge between the agricultural community, industry professionals, and government resources, ensuring that everyone has access to the information, partnerships, and support needed to drive meaningful change in sustainable farming.

This role is not just about agriculture—it's about building a stronger, more resilient future for the environment, rural communities, and Australia as a whole.

For more information on the SAF role, go to [the Australian Governments SAF webpage](#), or [Southern Queensland Landscapes website](#). Also feel free to sign up to [our newsletter](#) to stay updated, or contact either Vince (vincent.parisi@sqlandscapes.org.au) or myself (mackenzie.leeson@sqlandscapes.org.au).

National articles

Cooperative Research Centres (CRC) Program - Cooperative Research Australia (CRA)

Written by Frank Lee, HOPE researcher (NSW)

The Cooperative Research Australia (CRA) was founded by the Australian Government to improve the competitiveness, productivity, and sustainability of Australian industries, research, and communities. The Cooperative Research Centres (CRC) Program, was established in 1990, is administered by the Department of Industry, Science, Energy, and Resources that supports industry-led collaborations between researchers, industry, community, and the public sector. It aims to encourage and facilitate medium to long-term research collaborations to address major challenges facing Australia (1).

Objectives of CRA (5):

- (A) interface between CRC, Government and other stakeholders, which affect CRC Program;
- (B) promote the overall CRC Program;
- (C) provide forum for CRC to share information and experience concerning the operation of CRC;
- (D) promote the provision of financial commitment to CRC through the CRC Program;
- (E) enhance technological capabilities and support research and education through CRC; and
- (F) collaborate and cooperate to strengthen the links between research and its utilisation.

Objectives of CRC Program (2,6):

- (A) **Enhance innovation capacity** that generate new knowledge, technologies, products, and services.
- (B) **Provide solutions to major challenges** facing by industries, communities, and the environment.
- (C) **Build capability** by training researchers and fostering the development of industry-relevant skills.
- (D) **Improve collaboration** between researchers, industry, community, and the public sector.

CRC Funding and Structure

CRC Grants are part of CRC Program that supports industry, research and community in two ways (4):

- CRC grants – supporting medium to long term industry-led collaborations, up to 10 years.
 - CRC Projects grants – supporting short term, industry-led collaborative research, up to 3 years.
- CRC Grants provide funding for collaborations to solve industry identified problems. CRCs must (3,7):
- aim to solve industry identified problems and improve the competitiveness, productivity and sustainability of Australian industries
 - include an industry-focused education and training program, including a PhD program that builds capability and capacity
 - increase research and development (R&D) capacity in small to medium enterprises (SMEs)
 - encourage industry take up of research

Key features of the CRC Program

- (A) **Industry-led collaboration** (8): significant industry participation to align with industry needs.
- (B) **Medium to long-term focus** (9): 3-10 years funding, allowing sustained, collaborative research programs.
- (C) **Multidisciplinary approach** (10): researchers, industry, and other stakeholders from diverse backgrounds to address complex challenges.
- (D) **Commercialization and adoption** (11): to develop and commercialize new technologies, products, and services, as well as facilitate the adoption of research outcomes.
- (E) **Education and training** (12): provide opportunities for the training and development of researchers, professionals, and industry personnel.



CRC Achievements

CRC have been instrumental in fostering industry-research collaborations, leading to significant economic, social and environmental benefits for Australia. Over the years, CRC have catalysed the emergence of more than 144 spin-off companies and nurtured over 7,000 key alumni, substantially contributing to the Australian economy (13). Since its inception in 1990, the CRC program has committed \$4.6 billion in funding to support the establishment of over 221 CRC grants and 76 CRC Projects Grants – a total of 297 collaborations funded over the program's lifetime (15). The evaluation in 2021 found that (16):

- A. the CRC Program is working well and delivering on its objectives
- B. CRCs will generate an estimated \$32.5 billion of economic impacts by 2025
- C. Australia's GDP is estimated to increase by \$5.61 for every dollar of government funding for CRCs since 2005
- D. completed CRC Projects are estimated to return \$7.73 in economic benefit for every dollar of government funding since 2016.
- E. Stakeholders and partners consider the program:
 - I. helps industries in competitiveness, sustainability and productivity
 - II. increases quality and strength of collaboration between industry and research organisations
 - III. improves commercialisation and enhances capability of the research workforce.

CRC Program is becoming an important component of Australia's innovation ecosystem, supporting industry-led collaborations that drive research, commercialization, and the development of industry-relevant skills. The program's focus on addressing major challenges and enhancing Australia's competitiveness, productivity, and sustainability as a key contributor to the economic and social progress.

References:

- 1: Our History (cooperativeresearch.org.au): <https://www.cooperativeresearch.org.au/about/our-history/>
 - 3: Cooperative Research Centres (CRC) Grants – Round 25 | business.gov.au: <https://business.gov.au/Grants-and-Programs/Cooperative-Research-Centres-CRC-Grants>
 - 6: Current Cooperative Research Centres (CRCs) | business.gov.au: <https://business.gov.au/grants-and-programs/cooperative-research-centres-crc-grants/current-cooperative-research-centres-crcs>
 - 5: CRC Program (cooperativeresearch.org.au): <https://www.cooperativeresearch.org.au/resources/about-the-crc-program/>
 - 2: CRA Constitution - May 2023.pdf (cooperativeresearch.org.au): <https://www.cooperativeresearch.org.au/public/189/files/CRA%20Constitution%20-%20May%202023.pdf>
 - 4: Cooperative Research Centres Projects (CRC-P) Grants Round 17 (hainesconsultinggroup.com.au) <https://www.hainesconsultinggroup.com.au/post/cooperative-research-centres-projects-crc-p-grants>
 - 7: Cooperative Research Centres Projects (CRC-P) Grants | business.gov.au: <https://business.gov.au/Grants-and-Programs/Cooperative-Research-Centres-Projects-CRCP-Grants>
 - 8: \$44 million in grants to support industry-led research projects | Department of Industry Science and Resources: <https://www.industry.gov.au/news/44-million-grants-support-industry-led-research-projects>
 - 9: Home - Energy Storage (escrc.com.au): <https://escrc.com.au>
 - 10: CRC Program FAQ (unsw.edu.au): <https://research.unsw.edu.au/sites/default/files/uploads/groups/rso/CRCP%20Fact%20Sheet%20on%20Round%202011%20PDF.pdf>
 - 11: (PDF) Cross-sector Research Collaboration in Australia: The Cooperative Research Centres (CRC) Program at the Crossroads (researchgate.net): https://www.researchgate.net/publication/262567770_Cross-sector_Research_Collaboration_in_Australia_The_Cooperative_Research_Centres_CRC_Program_at_the_Crossroads
 - 12: Briefing: The CRC Contribution to Research Training (crca.asn.au): https://crca.asn.au/wp-content/uploads/2012/12/Research_Training_CRCA_briefing.pdf
 - 13: FINAL 2024 CRA ALUMNI project_web.pdf (cooperativeresearch.org.au): https://www.cooperativeresearch.org.au/public/189/files/FINAL%202024%20CRA%20ALUMNI%20project_web.pdf
 - 14: Pollination Security CRC – The When Bee Foundation: <https://www.whenbeefoundation.org.au/our-work/research-projects/crc/>
 - 15: Cooperative Research Centres Program impact evaluation (industry.gov.au): <https://www.industry.gov.au/sites/default/files/2023-01/cooperative-research-centres-program-impact-evaluation.pdf>
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How CH4 Global is using the power of seaweed to slash livestock methane emissions

The urgency of reducing emissions of methane – a potent greenhouse gas with more than 80 times the warming potential of carbon dioxide over a 20-year period – has never been greater. According to a [report](#) issued in September 2024 by the Global Carbon Project, methane emissions are skyrocketing, with the amount spewed into the atmosphere by human activities jumping nearly 18 per cent in just the last two decades. Livestock farming, particularly cattle production, is a significant contributor to global methane emissions, with the digestive process of ruminant animals accounting for approximately 30 per cent of all human-driven methane emissions.

Enter [CH4 Global](#). Co-founded in 2018 by Australian entrepreneur Steve Meller, PhD, this innovative company has set its sights on solving the livestock methane challenge. CH4 Global's groundbreaking technology targets a key source of methane emissions by harnessing the remarkable properties of a red seaweed called *Asparagopsis*, native to southern Australian waters, to dramatically reduce the methane produced by cattle and sheep.

When incorporated into cattle feed at less than 0.5 per cent of the animals' diet, *Asparagopsis* has been shown to reduce methane emissions from livestock by up to 90 per cent. CH4 Global has developed a proprietary processing system to produce a formulated livestock feed supplement called Methane Tamer™ that preserves the bioactive compounds in *Asparagopsis* responsible for this stunning methane reduction.

The most impactful active ingredients in *Asparagopsis* are the natural bromoform compounds the seaweed produces. When ingested by cattle, these compounds disrupt the enzymes used by methane-producing microbes in the animals' guts, dramatically decreasing the amount of methane the animals burp out.

With its first product for beef feedlot cattle now on the market in Australia and commercial-scale production ramping up, CH4 Global estimates that Methane Tamer™, if adopted for just 10 per cent of beef and dairy cattle globally, would deliver the same climate benefit as taking 100 million fossil fuel-powered cars off the road.



To grow *Asparagopsis* at the scale needed to put a meaningful dent in livestock methane emissions, CH4 Global has developed a novel land-based pond cultivation system. The company is constructing its first EcoPark using this system, at Louth Bay near Port Lincoln in South Australia. Due to be operational in late 2024, the EcoPark will feature some 80 large saltwater ponds for growing *Asparagopsis*, with the capacity to produce enough seaweed to supplement 30,000 cattle per day.

CH4 Global sees the South Australia EcoPark as a replicable model it can deploy worldwide near other major livestock production areas to drive Methane Tamer™ uptake.

Importantly, the company has refined its production processes to enable it to produce Methane Tamer™ cost-effectively so it makes economic sense for farmers to adopt without relying on government subsidies.

By providing beef and dairy producers a turnkey solution for deep, rapid methane reductions, CH4 Global aims to be a catalyst for decarbonising animal agriculture at a globally-relevant scale during this critical decade for climate action. The company's bold mission is to deliver a billion tonnes of CO₂-equivalent emissions reductions over the next decade. With methane's outsized near-term warming impact, that would provide a huge climate boost.

"We have a closing window to bend the climate curve and avert catastrophe," says Dr Meller, CH4 Global's CEO.

"Agriculture, especially livestock farming, can and must be part of the solution. At CH4 Global, we're laser focused on urgently driving uptake of our methane-reducing seaweed technology and building out a global supply chain to enable rapid, full-scale industry adoption this decade, when it matters most."

More information may be found at: <https://ch4global.com/>

International articles

Caring for City Communities: Resilient Cities Network

By Alex White, HOPE researcher Qld



Rising sea levels, urban heat, water shortages, floods, droughts, and extreme weather events are becoming more severe and frequent and the impact of such hazards are felt most acutely in urban areas, where dense populations and complex infrastructure are particularly vulnerable. Marginalised communities often bear the heaviest burden, as existing social inequities limit their ability to effectively prepare for, respond to, and recover from devastating events. This dynamic not only threatens lives and livelihoods but also risks reversing hard-won development gains achieved over recent decades. As cities increase in number and

size, strengthening resilience capabilities to withstand climate-related shocks and stresses is crucial. The Resilient Cities Network (RCN) advances urban resilience through improving their member cities' capacities to handle climate change by developing sustainable energy solutions and ensuring resilient water management.

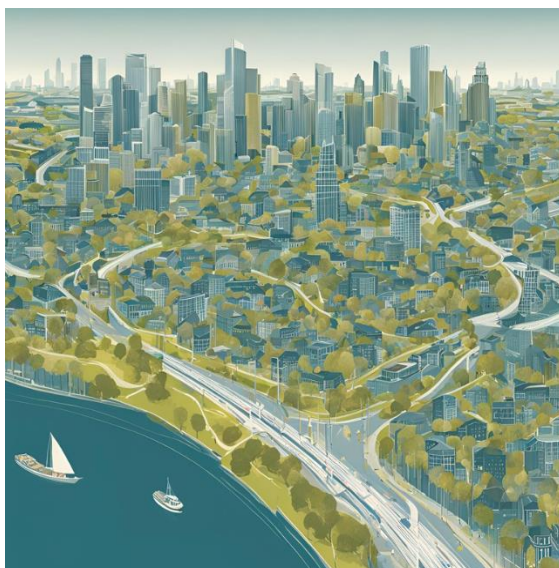


RCN also supports cities to identify risks and vulnerabilities in their waste management systems and improve project preparation to build lasting capacity. RCN works to advance circularity through addressing plastic waste management, developing sustainable food systems and promoting equitable cities by prioritising the poor and vulnerable in decision-making. The impacts of Covid-19 and climate change have already highlighted deep inequities in cities globally, with 1 in 3 urban residents under-served by municipal services. By improving climate, energy and water and waste practices, RCN empowers cities to increase their urban resilience.

Urban Resilience

Urban resilience refers to the ability of a city's systems, businesses, institutions, communities, and individuals to adapt amidst chronic stresses and acute shocks. This is more crucial than ever as cities face increasing challenges from unpredictable events like natural disasters or the extreme weather mentioned, as well as ongoing stresses such as systemic inequality or sea level rise that weaken community resilience over time. RCN helps cities navigate these

challenges, ensuring urban areas are equipped to survive, adapt, and thrive.



RCN supports cities in becoming more resilient to both chronic and acute challenges. The premise is that by fostering a global urban resilience movement, all cities, regardless of size or location, can be better equipped to handle the challenges of the 21st century. With support from their member cities, RCN now brings together global knowledge, practice, partnerships, and funding to empower nearly 100 cities across over 40 countries and improve the well-being of over 220 million urban dwellers.

What is a Member City?

Member cities are cities or local governments that are serious about committing to improving their urban resilience and once part of the RCN, are known as R-Cities. By becoming part of the R-Cities network, participants are provided with:

1. A customised capacity-building training program and advisory on resilience strategies.

2. Technical support to facilitate the development of a holistic Urban Resilience. Strategy and any according project prioritisation and preparation.
3. Support in identifying and training a CRO and Resilience Office team.
4. Access to network services, global communications and all relevant multi-city programs and partnerships.

In order to be considered as a member city, applicants must commit to:

1. Creating a permanent Office of Resilience within city administration.
2. Implementing resilient initiatives from a citywide resilience agenda.
3. Participate in regional and global network activities.

R4C Program

The "Resilience for Communities" (R4C) program is an integral part of RCN. R4C focuses on strategic community selection and engagement, to empower local governments and organisations to enhance their communities' capacity to withstand and adapt to a range of shocks and stressors, beyond just climate-related events. Since its inception, the R4C program has been implemented in cities like Houston and Boston in the United States, Greater Manchester in the United Kingdom, and Melaka in Malaysia.

Community selection for resilience-building is a nuanced process that requires deep understanding of the demographic, socio-economic, and environmental factors contributing to a community's vulnerability and resilience. R4C places a strong emphasis on understanding these factors to tailor interventions that effectively address the unique needs of each community. In light of this, RCN developed a guide for strategic community selection to equip practitioners with the necessary tools to select communities to prioritise for urban resilience investments. This ensures programs have a greater chance of success, communication is transparent, and equity is at the forefront of every decision.

How are communities determined?

RCN adopts a comprehensive methodology for its R4C program, focusing on several key areas:

Engaging Authentically with Communities: Ensuring community voices are integral to solutions developed, therefore promoting local action, and improving government decision-making.

Collecting Data: Leveraging comprehensive data collection to identify challenges and opportunities. The [CRMC tool](#) plays a pivotal role in providing diagnostic support.

Expert Technical Support: Collaborating with expert partners to provide cities with the technical support needed to implement robust strategies, including expertise in areas such as climate resilience, urban planning, and disaster risk reduction.

Recognising and Mitigating Risks: Recognising and mitigating risks faced by vulnerable communities. Building local capacity to enable independent responses to climate threats is a key objective.

Providing Ring-Fenced Project Funding: Resilient Community Impact Funds (RCI Funds) offer dedicated funding for implementing resilience solutions. This ensures chosen projects are supported and executed.

Globally Promoting City Resilience Efforts: Transferring knowledge and providing networking platforms for city leadership. This helps cities learn from each other and apply successful resilience strategies in their own contexts.

The R4C program builds urban resilience through strategic community engagement and comprehensive resilience planning. By focusing on authentic community engagement, data-driven decision-making, expert technical support, risk mitigation, and dedicated funding, R4C helps cities and communities enhance their capacity to withstand and adapt to various shocks and stressors.

If you are interested in becoming a member city, or checking out some of the campaigns being led by Resilient Cities Network, click [here](#) to check out their website.



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Helpful Hints

Helpful Hints: How to Garden at Home

1. Fact sheets and guides on how to grow fruit, veggie and herbs in apartments and homes: <https://www.abc.net.au/gardening/factsheets/>
2. Helpful resources on how to start an organic garden, including what and where to purchase organic gardening supplies: <https://greenharvest.com.au/>
3. Helpful guides on how to start a sustainable garden in your home or community: <https://www.sgaonline.org.au/gardening-tips/>
4. A helpful guide on how to remove weeds on your garden: <https://thankyourgarden.com/complete-guide-to-removing-weeds/>
5. [Factsheet on Weeds \(by Sofija Belajcic – HOPE researcher NSW\)](#)
6. [Info sheet – Companion Planting \(by Inspired by Nature\)](#)
7. [Info sheet – Composting-Is it for you \(by Nathan Henders – HOPE\)](#)
8. [Hints and Tips for the Garden – Care for young trees \(by Green Harvest,2023\)](#)
9. [Hints and Tips for the Garden – Climate zone \(by Green Harvest,2023\)](#)
10. [Hints and Tips for the Garden – Microgreens \(by Green Harvest,2023\)](#)
11. [Hints and Tips for the Garden – Tree pruning \(by Green Harvest,2023\)](#)

Helpful Hints: Live Sustainably at Home

1. Helpful resource on environmentally safe solutions for home, health and garden, with guides on how to make your own environmentally-friendly cleaners: <http://www.itssonatural.com/>
2. Workshop on a step-to-step guide on how to transition to environmentally-friendly skin and hair products: <http://theshoppe.com.au/>
3. Tips on how to choose energy efficient appliances: <https://www.energymatters.com.au/energy-efficiency/>
4. [Helpful Hints – Energy Efficiency at Home by Lili Greer](#)
5. [Article – Earth and Human Achievement Hours](#)
6. [Chart – Understanding Plastic Recycling Codes](#)
7. [HOPE Helpful Hints – Being environmentally-wise around the house](#)
8. [Info sheet – Green Cleaning Chart](#)
9. [Info sheet – The Simpler Way \(A brief outline\)](#)
10. [Buy local and seasonal food — Sustainable living guide](#)