

BLUEPRINT FOR IMPACT

Regenerating agriculture across the Great Barrier Reef catchments



Prepared for Sustainable Table by Tanya Massy, 2020

We wish to acknowledge the multiple Traditional Owners of the land and sea areas across which we have been working, and pay our respects to their resilience, stewardship and deep knowledge of country, and their leaders past, present and emerging.

We also wish to acknowledge that words are insufficient to support the ongoing struggle for truth telling and justice by our first nations people.

That it is beyond time for deep listening, solidarity and active support, and this shapes our intention, and attention, in developing this work.

EXECUTIVE SUMMARY

Agricultural systems are the dominant form of human land use globally, positioning farmers as our most critical frontline managers, given they work across the largest interface between humans and the ecological processes that enable life in all its forms.

At local to global scales, the evidence is overwhelming that this agricultural interface is ailing at a systems level: our food and land use systems are estimated to generate 'hidden' environmental, health and poverty costs at almost \$12 trillion a year, a cost which exceeds (by at least \$2 trillion) the market value these systems produce (Food and Land Use Coalition 2019).

A range of those 'hidden costs' have become key drivers in pushing our planet beyond a 'safe operating space' for humanity (Rockstrom 2009). Examination of the nine planetary earth systems processes that serve to maintain conditions for human life on earth, has revealed that agriculture is a major player in pushing five of those systems to, and beyond, the brink (Steffen et al. 2015). From climate change to biodiversity loss, freshwater use to cycles of nitrogen and phosphorus, agriculture is there as a key driver, front and centre.

All of these dynamics are playing out at an ecosystem level across the world's largest living organism, the Great Barrier Reef, where agriculture accounts for 80% of land use across the Reef catchments and interacts with the reef ecosystem in complex and multifaceted ways.

The imperative for change across these scales is stark, the how is less clear and it is on this difficult, and critical, question that this report is focused:

How can we transition our agricultural systems to be Reef regenerative?

What investment is required to make an agricultural shift beyond sustaining the status quo to playing a leading role in healing and restoring the damage that has been done?

We are dealing with complex issues, across intricate and rapidly evolving systems so the answers are not clearcut, nor certain. Instead we have worked to identify emerging pathways that chart a course towards that transition, through consultation with 55 stakeholders, along with research into efforts to chart these transitions elsewhere.

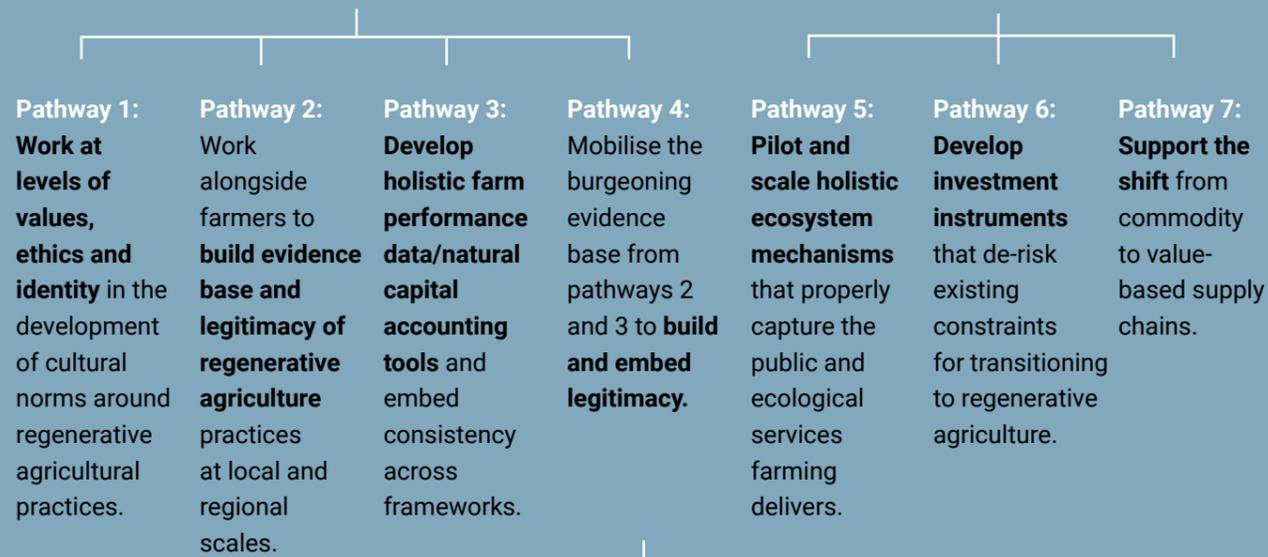
Through this process we have identified seven emerging pathways for transitioning agriculture across the Reef catchments, and five underpinning principles for investing across them as outlined overleaf:

EMERGING PATHWAYS TO TRANSITION



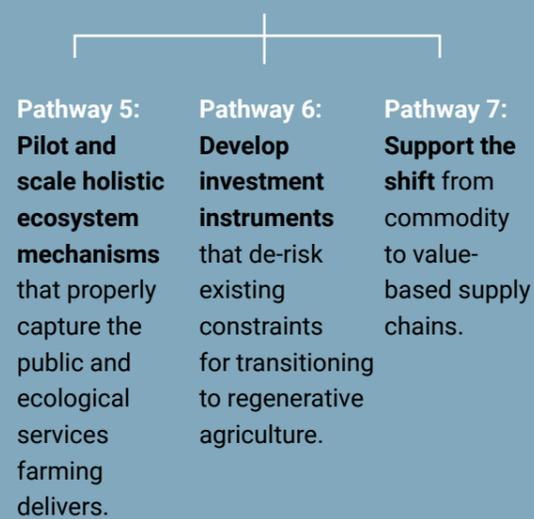
1 Knowledge & Culture

Develop the knowledge and evidence for the experiential, cultural, scientific and institutional legitimacy required across all parts of the system, to enable and scale regenerative agriculture transitions:



2 Economic Drivers

Working to alter the economic forces which constrain, incentivise and shape what is possible in practice, culture and behaviours at a farm, catchment, regional and industry level across agricultural systems:



Investment Principles across pathways



The identification of these pathways has been informed by vital lessons from elsewhere, including the imperative of taking a systems lens to agricultural transitions, recognising that there are multiple economic, political and socio-ecological structures that constrain or enable changes at an individual farm or industry level.

We're also learning from research and practice the necessity of extending our understanding of the way farming, and conceptions of agriculture itself, are tied up with history, identity and culture in deep and complex ways.

Our work has been shaped by the national and global context in which this research has been conducted, against a backdrop of drought and a relentless summer of catastrophic bushfires across Australia, a third mass coral bleaching event in five years across the Great Barrier Reef and the onset of the COVID-19 pandemic. The devastating and far-reaching impacts of these crises are still unfolding, and serve as stark feedback that our systems are failing.

Once in 100 year shocks are now occurring more and more frequently, at a rate that is expected to increase and intensify (Madav et al. 2017; Climate Council 2017).

These major disruptions (particularly COVID-19 in recent months) have also allowed us to acknowledge that decentralised and diverse local and regional food systems are critical for resilience when these shocks unfold. As the sturdy old SWOT quadrant (Strengths, Weakness, Opportunities, Threats) reminds us, within and beside crisis and threat lies opportunity.

So it is, as throughout history, that crises ask of us big and probing questions.

What can and will we do on the side of life?

How will we face up to the threats, and the opportunities, facing the Great Barrier Reef and the farming communities alongside it?

Are we capable of discarding political badges, divisions and status quo agendas to urgently chart a path towards regeneration, resilience and renewal?

Many already are doing so, and their work and 'seven generations' thinking informs our own.

"The Peacemaker taught us about the Seven Generations.

He said, when you sit in council for the welfare of the people, you must not think of yourself or of your family, not even of your generation.

He said, 'make your decisions on behalf of the Seven Generations coming, so that they may enjoy what you have today.'

Oren Lyons, Faithkeeper, Onondaga Nation (UNDP: 2020)

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INTRODUCTION

“If things are black and white then you’re too far away.”

Mark Gallagher, Wadda Farms, 2020 Interview.

In late 2019 Sustainable Table (funded by the Morris Family Foundation and Bloomberg Philanthropies Vibrant Oceans Initiative) embarked on research to develop an investment strategy to support a transition to more regenerative agricultural systems in the Great Barrier Reef Catchment (GBR) areas.

The overarching intent of this work is to identify the diverse pathways which are or have the potential to transition agricultural systems to be enhancers, regenerators and protectors of the world’s largest living organism - the Great Barrier Reef.

To be clear from the outset, identifying pathways of change across socio-ecological systems as complex as the multiple farming systems and communities that stretch across the Reef catchments is not a simple proposition, and it would take many years of research and practice to arrive at conclusive answers. Hence what we put forward here is a blueprint not of clear-cut solutions but of pathways to transition, informed directly by actors on the ground. A blueprint comfortable with the ambiguity which necessarily accompanies complex systems.

In the words of a North Queensland banana farmer we yarned with:

“If things are black and white then you’re too far away.”

Mark Gallagher, Wadda Farms, 2020 Interview.

The rest of this introductory section is focused on providing context for this work by briefly outlining:

- The drivers of this work
- The broader context, and challenges, of enabling transitions and transformation in agricultural systems.

The objectives of our research in forming this blueprint are to:



1.

Develop understanding of the unique role that philanthropy and finance can play in a funding environment with a long and complex history



2.

Gain awareness of existing activity across those pathways of change in need of investment (shovel ready), as well as other initiatives that may require incubation



3.

Gain awareness of emerging pathways of transition with the potential to change agricultural activities at a systems level



4.

Build relationships and lines of communication across and between the philanthropic and investment sector and practitioners on the ground in the Reef catchments

RESEARCH METHODOLOGY

The research for this blueprint was conducted over two phases from November 2019 through to September 2020.

Phase 1 involved the development of a preliminary report through desktop research and conversations with key stakeholders over a six week period from November 2019-January 2020. This preliminary report was sent out for review ahead of a planned stakeholder workshop in Townsville scheduled for late March 2020. This workshop, which was intended to provide a collaborative forum for feedback and prioritising of investment pathways was cancelled due to COVID-19.

Phase 2 therefore focused on digging deeper into the initial findings of Phase 1 through a series of one-on-one interviews with previously consulted and additional stakeholders in lieu of the Townsville workshop, and extending the desktop research to cover pertinent themes across regenerative agriculture, transitions, systems change and innovative investment and funding models.

As mentioned earlier, it would take many years of research and practice to arrive at conclusive findings for any element of these complex socio-ecological systems. We therefore want to emphasise and acknowledge that there are gaps across the research we are presenting here with some key industry stakeholders not directly consulted due to constraints imposed by time, COVID-19 and other factors.

To summarise: we couldn't speak with everyone, but we spoke with as many folk as we could to ensure we were capturing perspectives and activities right across the agricultural system, as displayed to the right in our stakeholder interview and consultation map:

Systems map: stakeholders consulted

Farmers and industry bodies

Canegrowers
GrowCom
Herbert Cane Productivity Services
Farmers : 8 horticulture and 4 graziers
Sugar Research Australia
Fertiliser Australia

Education/capcaity building

Regeneration International
Regenerate Earth
Qld Government Enhanced Extension Services
Regenerative Agriculture Alliance / Southern Cross University
Resource Consulting Services
RegenAg
Soil, Land Food.
Meridian Agriculture
Farmers for Climate Action
Central Highlands Resources Uses Planning Cooperative

Enviro NGOs

Australian Marine Conservation Society
World Wildlife Fund
Greening Australia
The Nature Conservancy
Odonata

NRMS and research orgs

Evidn
Terrain NRM
North Qld Dry Tropics
Reef & Rainforest Research Centre
Reef Catchments NRM
CSIRO
NRM Regions Qld
ANU
ClimateWorks

Funding and natural capital

NAB
GreenCollar
Land to Market
Indigenous Land & Sea Corporation
Impact Ag
Cultivate Farms
Great Barrier Reef Foundation
Climate Adaptation and Resilience Division, Federal Department of Agriculture, Water and the Environment

Supply chains

Food Connect
Open Food Network

THE DRIVERS OF THE WORK

It is now widely recognised that the Great Barrier Reef, 'one of the most distinctive and complex ecosystems in the world' (Deloitte 2017) is being pushed to its limits of survival by climate change and a range of multiple interconnected stresses which include coral bleaching, increasingly frequent extreme weather events, and water quality challenges.

Estimated to have an economic, social and icon asset value of \$56 billion, the annual employment provided by the GBR is more than most of Australia's major banks and many corporates, while its ecological and cultural value is immeasurable, particularly for the more than 70 Aboriginal and Torres Strait Islander Traditional Owner clan groups in the region whose relationship with the reef spans upwards of 60,000 years (ibid).

Alongside this natural wonder of the world, across six natural resource management areas and 35 catchments which span from the Burnett-Mary region right up to the tip of Cape York, operates a diverse array of agricultural enterprises and associated industries.

"We sit between rainforest and the reef so it's a very sensitive area, and a lot of our growers try their hardest to make change to lessen our impact and have invested a lot of money to do so."

Lawrence Di Bella, Sugarcane Farmer and Herbert Cane Productivity Services Manager, 2020 Interview.

Agriculture accounts for approximately 80% of land use in Reef catchments and interacts with the reef ecosystem in complex and multifaceted ways as outlined in the infographic on the following page (adapted from Figure 3: Reef 2050 Water Quality Improvement Plan: State of Queensland 2018).

It is important to note at the outset of this discussion that we agree that 'global warming and the climate change it drives is the most serious and pervasive threat to the Reef', a threat being exacerbated by more localised sources including run-off from 'agricultural, urban and industrial activities' (Commonwealth of Australia 2020).

Without a consolidated global effort to halt the escalating heating of our planet at our current trajectory to a 2°C rise in average global temperatures, the collapse of warm water tropical reefs around the world, including the Great Barrier Reef is 'almost certain' (Climate Council 2018). As a significant player in escalating climate change, the ask of agriculture is therefore twofold - to play a role in climate mitigation, and to support ecosystem protection and regeneration across the Reef itself.

This double ask mirrors, at an ecosystem level, the questions being asked of our global food and land use systems at an unprecedented point in human history.

Can agriculture play a role in regeneration?

What is needed to support and enable farming systems to play their part in reversing the accelerating decline of earth's natural support systems?

Questions which, in turn, point to an imperative for investment in pathways to resolving this urgent, global question at local community, industry and regional scales across one of the most precious ecosystems on earth.



Climate change

is predicted to increase the intensity of rainfall, floods and tropical cyclones which severely impact marine water quality and ecosystems.

Agriculture

is the main source of excess nutrients, pesticides and fine sediments that flow from the land to the Reef.



Ground cover

stabilises soil, preventing erosion, which causes sediment flows to the Reef.

Clearing

of coastal and riparian vegetation contributes to erosion, especially of streambanks.



Wetlands

connect catchments to the reef, reducing the impact of floods and helping to filter run-off.

Pesticides

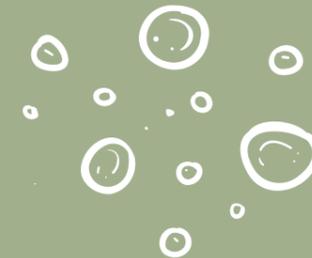
pose a risk to seagrass and wetlands and restrict coral growth.

Sediment

blocks light to and smothers corals and seagrass, also restricting growth.

Nutrients

are linked to outbreaks of the Crown of Thorns starfish, and algae blooms.



Seagrass meadows

are the primary food source for dugongs and green turtles and are negatively impacted by sediment levels.

Good water quality

supports the recovery of coral from bleaching and other impacts.



AGRICULTURE & REGENERATION

“We are on a journey to make a meaningful difference through Regenerative Agriculture, which we define as agriculture that protects and intentionally enhances natural resources and farming communities.”

(General Mills 2020).

Regenerative agriculture refers to systems approaches to farming which go beyond minimising and reducing negative impacts to ‘restoring, improving and enhancing the biological vitality, carrying capacity and ecosystem services’ of landscapes (Electris et. al 2019). In other parts of the world the language of agro-ecology is used for farming systems of this nature, but in the USA and Australia the term regenerative agriculture has gained traction (Open Food Network 2020). As a holistic approach to farming systems, the realm of regeneration is often extended ‘beyond environmental outcomes to include enhanced human communities’ (Burgess et al. 2010: 8; see also General Mills 2020 and Regenerative Organic 2020).

There are a few important points we want to make at the outset in relation to the use of the term regenerative agriculture in this report:

We are not positioning regenerative agriculture in opposition to industrial farming methods which have been dominant globally for the past 50 years (Burgess et al. 2019).

Rather we situate it as part of the continuing evolutionary development of agricultural systems with long historical roots spanning cultures and continents.

The pathway to achieving that outcome is context specific, and will vary across ecosystems, farming systems, and individual farmers which is why many, including us, avoid applying a prescriptive definition.

To enable landscapes to renew themselves, a suite of broad farming practices are generally considered to enable the regenerative farming outcomes (practices which continue to evolve and adapt in the hands of farmers across diverse landscapes), these include:

- avoiding/minimising tillage
- eliminating bare soil
- fostering plant diversity
- encouraging/enabling water percolation into the soil
- integrating livestock and cropping

(Burgess et al 2019: 6)

AGRICULTURE & REGENERATION CONTINUED...

The ever evolving concept and practices of regenerative farming have received increased attention in recent years in tandem with a growing awareness of the impact of industrial agriculture on our socio-ecological systems.

This impact globally is usefully illustrated using the concept of planetary boundaries introduced by Rockstrom in 2009, and revised by Steffen et al. in 2015 (See also Campell 2017). A rapidly developing body of scientific research has identified nine planetary boundaries which represent earth systems processes that maintain a 'safe operating space for humanity' on planet earth (Rockstrom 2009).

Each of these boundaries are briefly displayed to the right, along with the role agriculture is playing as the significant driver in crossing two of those boundaries (biogeochemical flows and biosphere integrity) and pushing three others into the high risk zone (land use change, freshwater use, and climate change) (Information adapted from Campbell et al. 2017).

The flip side of this large ecological footprint is given their impact and scale, agricultural systems can help drive the urgent task of ecological regeneration, both in the Reef catchments and at a national and global scale.

This is because agricultural practices which regenerate soil health, enable carbon sequestration, enhance hydrological cycles and foster biodiversity are capable of delivering significant impact in the race to pull planet earth back within the 'safe operating space' of our planetary boundaries (See OFN 2020 for a reference list of pertinent research including Bossio et al. 2020; Trivedi et al. 2017; Liang et al. 2019; De Stegano & Jacobson 2018; Biodiversity for a Liveable Climate 2018).

Research indicates that soil carbon represents 25% of the potential of natural climate solutions, of which 40% is protecting existing soil carbon and 60% rebuilding depleted soils, a key focus of regenerative agricultural systems (Bossio et. al. 2020).

“There are at least twenty different practices that constitute regenerative agriculture in its fullest scope and when all of these practices are added together, it represents by far the single greatest solution to the climate crisis.”

Paul Hawken, Founder: Project Drawdown (Cook, 2019)



ENABLING A TRANSITION

“Farmers want to be good, we have pride, we want to be the most efficient, to build a legacy for our kids, to be seen by the world as being good environmental stewards so I think tapping into that pride and really identifying those drivers and supporting these innovation networks is really the key.”

Fiona George, Vanilla Farmer and Basin Coordinator (Tully) for the MIP, Terrain NRM, 2020 interview.

Our vast ecological challenges are being met by an evolving body of knowledge and practice focused on how to transition agricultural systems to more regenerative pathways (IPES-Food 2016, Gosnell 2019, Iles 2020, Open Food Network 2020, Food and Land Use Coalition 2019, Biovision Foundation 2019). This field of knowledge is rapidly developing and below we provide a brief overview of some of the key principles drawn from our research to date which provide the framework for this document.

A systems approach

There has been a historical trend of attempting to change farming practices solely through the provision of education and information, informed by the preconception that a farmers lack of knowledge is the cause of negative environmental outcomes, and that the solution is to provide ‘the missing knowledge’ from credible, scientific experts ‘and thereby correct their misconceptions and gaps’ (Calo 2018).

This knowledge-deficit model of intervention fails to take a systems view that positions farmers as agents in complex socio-ecological, economic and political systems which both inform and determine their decisions and actions as ecosystem managers. This also applies to the attempted use of other single levers of change such as regulation or economic incentives. To put it simply, educating farmers about the positive benefits of changing a particular farming practice will be ineffective if there are, for example, capital, labor, cultural or family constraints that prevent them from being able to implement that change, and vice versa.

Taking a systems view of the many factors involved in a farmer changing practice leads to a deeper realm of work beyond mere practice change, education, outreach or policy mechanisms. Instead it demands a consideration of ‘subjective, nonmaterial factors associated with culture, values, ethics, identity, and emotion that operate at individual, household and community scales and interact with regional, national and global processes.’ (Gosnell et al. 2019).

Taking a broader systems lens also prevents the over simplified and damaging blame-game that positions farmers as stand alone actors whose lack of knowledge about (or care for) the natural environment leads to perverse ecological outcomes, and that the sole means of fixing the problem lies within their power, a blaming that has been so damaging in relation to farming communities in the Reef catchments.

“When people think about enabling behaviour change they tend to default to three or four levers:

Education - give them science and facts.

Legislation - make it law.

Funding - pay them, or

Punishment - persecute them.

Although there is some evidence suggesting these levers can be useful in changing behaviour, they are often not as powerful as people think. Even in the presence of a very compelling set of incentives, there are often other psychological restraining forces present that shape people’s attitudes and decisions beyond these four levers.”

John Pickering, Chief Behaviour Change Scientist and Director of the Canechanger initiative, 2020 interview.

“I said let’s write all the changes that cane farmers are experiencing up on a board and we came up with 25 things, and I then asked how many of those are cane farmers in control of?”

And we worked out that 75% are outside their control...

I could see there was this big burden on the group (of farmers) - these guys were getting beaten round the head with a stick.”

David Hardwick, Agroecologist and Educator, 2020 interview.

Bridging the divide

One of the biggest challenges facing a transition to regenerative agricultural practices is the binary divide that has developed between aspects of the regenerative and conventional agricultural fields of knowledge and practice. Interviews for this research echoed a trend we have seen more broadly in Australia of an ‘us versus them’ oppositional stance that has unfortunately created some divisiveness across farming communities.

There are many factors at play in these dynamics including the strength of paradigms on either side and a framing of the conversation as a black and white fight for legitimacy and virtue. Some of this division is inevitable given the different worldviews involved and vested interests at stake, but there is an urgent need to find a different framework for this conversation, starting from the recognition that common goals underpin all sides of the divide: supporting healthy and resilient ecosystems and farming communities in the face of increasing pressures.

“When we think about the issues of sustainability (human, physical and financial) the industry has become tribal.

Each tribe has its own war cry.

Each tribe believes it is on the right path.

Somehow we need to develop some thinking which brings these tribes together to look for the common ground and build on it. If we don't do that we will create an even greater divide as has happened in the global heating debate.”

Mike Stephens, Director & Senior Consultant, Meridian Agriculture, 2020 correspondence.

Addressing lock-ins and legitimacy

Building on the importance of taking a systems approach is the increasing understanding that shifting to regenerative farming outcomes at local, regional, national and international scales is constrained by socio-ecological and political-economic ‘lock-ins’ which make any move to change extremely difficult, if not impossible for individual farmers and their broader industries (Iles 2020, IPES-Food 2016, Biovision Foundation 2019).

Research by the International Panel of Experts on Sustainable Food Systems has led to the identification of 8 key lock-in cycles which need to be addressed to

enable a transition in agriculture (2016), work that has been extended and adapted to the Australian setting by Iles (2020).

We set out a few of these key lock-ins below to illustrate the multi-faceted complexity of attempting to transition agricultural systems in Australia.

As Iles states, ‘even innovations that are mature in terms of practice, knowledge and networks in places elsewhere, can founder under these circumstances’ (2020) but evidence shows that disrupting these lock-ins is possible, and is already underway in parts of the Reef catchments.

Key lock-ins which must be addressed to enable transition of agricultural systems in Australia:



Scientific & Technological Paradigms

Unquestioned legitimacy historically given to reductionist, compartmentalised science and technological paradigms over other forms of knowledge and practice.



Neoliberal agricultural policies & institutions

Export, productivist orientation which preferences bigger farms, constrains options for operating outside the system and renders farmers vulnerable to global shocks which affect longer supply chains (i.e. COVID-19).



Concentration of power

Increasing industry consolidation by major powers, particularly supermarkets, reduces power of farmers to negotiate or find new markets.



Environmental/ climate developments

Increasing risk and pressures from accelerating climate impacts and land degradation reduces the natural and financial resource base of farmers for innovation and adaptation.



Path dependency

The significant financial, structural and relational investments required for industrial farming systems makes it increasingly difficult for farmers to change their current path.

(Adapted from IPES-Food 2016 & Iles 2020)



SEEDING A TRANSITION

Previous and contemporary work in transitioning agricultural systems, along with broader activity in the energy and sustainability transition field have delineated some of the pathways to transition for agricultural and food systems, which are outlined below along with their status in relation to the Reef catchments based on our research to date:

The development of niches

Support of regenerative farming practices through pilots and research on individual farms and immediate local scales allows knowledge and practice to be developed, tested and matured and supportive social networks and local legitimacy to grow.



State of play in Reef catchments

Innovative regenerative niches across farming practices have evolved right up and down the GBR catchment regions across grazing and cane/horticulture by farmers, extension workers, educators, NGOs and industry – these regenerative niches are ripe for support and development.

Powerful actors working within the system

Seeding a transition doesn't only occur in niches, powerful and trusted actors within the dominant agricultural system can play an important role in catalysing or accelerating a transition- usually this requires a destabilising environment and/or courageous leadership to challenge ideological, political and economic pressures.



State of play in Reef catchments

There are trusted organisations who are playing this role across the agricultural industries including NRM groups, education and extension bodies. There are others working to transition industries to deliver greater environmental benefits who may not align with the language of regenerative agriculture but are aiming for similar outcomes. These represent powerful opportunities for collaboration to strengthen and scale transitions.

“Farmers want to be good, we have pride, we want to be the most efficient, to build a legacy for our kids, to be seen by the world as being good environmental stewards so I think tapping into that pride and really identifying those drivers and supporting these innovation networks is really the key and that is what I would like to see going forward.”

Fiona George, Vanilla Farmer and Basin Coordinator (Tully) for the MIP, Terrain NRM, 2020 interview.

“There is a core group of farmers really pioneering regenerative farming and they are world leading and that’s where the Regenerative Cane Network has kind of evolved from and it’s growing into a really powerful grassroots organisation. Those farmers are driving ahead so I focus on where the water is flowing because they are pulling the other guys along.”

David Hardwick, Agroecologist and Educator, 2020 interview.





KEY PATHWAYS IDENTIFIED FOR SCALING A TRANSITION INCLUDE:

Crises

Socio-ecological, political and economic crises can destabilise the unquestioned legitimacy and scaffolding of dominant forms of agriculture and provide openings for transitional pathways.



State of play in Reef catchments

Agriculture in the GBR catchments is facing, if not a crisis, then significant challenges in relation to impacts of climate change, as well as increasing pressure around water quality outcomes and declining terms of trade.

Effective regenerative/agroecological practices

Effective agro-ecological/regenerative practices that are proven to work with local conditions and be environmentally and economically beneficial.



State of play in Reef catchments

Regenerative practices are being implemented in the broader catchments but not to a widespread extent across each localised region. There is an urgent need to trial, develop and prove these practices at local and regional scales, to provide data and feedback loops for growers at the farm scale, and to challenge some of the reductionist paradigms which may be seeking to disprove rather than develop regenerative methods.

Social organisation and learning processes

Particularly farmer to farmer knowledge sharing and other ways of bringing people together for ongoing learning and action play a vital role in scaling agroecological transitions across regions.



State of play in Reef catchments

In development on different levels and scales from bottom-up farmer networks and groups to learning processes facilitated by industry, extension and education actors. Again some of these may not be deploying regenerative agricultural methods but are working towards similar goals, creating strong partnership opportunities.

The presence of external supports and allies

With the social, financial, political capital required to support the development, proving and legitimacy of regenerative farming methods are a critical factor in transition pathways.



State of play in Reef catchments

There is tremendous opportunity, given the global status of the Reef, to work with external allies to support transitions. Actors in the space are facing constraints due to the lack of perceived legitimacy and evidence base for regenerative farming to justify support from powerful political and financial sources.

Supportive policies

Government policies and policy-making institutions are powerful influences of agricultural systems, and have the leverage to create openings for regenerative agricultural practices, if they choose to use it.



State of play in Reef catchments

Significant government activity in the space with a focus on achieving water quality and climate resilience outcomes. There is opportunity to leverage this with stronger perceived legitimacy and imperative for regenerative agriculture, but this faces constraints due to dominant paradigms and the conventional/regenerative divide.

Mobilising discourses across disconnected domains

Growing the visibility, appetite for and legitimacy of regenerative and agroecological practices through initiatives and communication activities which avoid 'closed niches' and build solidarity, identity and collaboration across farming communities, industry stakeholders and the broader public is a critical overarching piece of transitional work.



State of play in Reef catchments

This mobilising of discourse, communication and collaboration is urgently needed to clarify the what and how of regenerative farming practices and to build an inclusive rather than divisive dialogue across farming communities. We need to draw together and amplify disparate activities in the communication space being delivered by various actors in the system.

Insights from the field

On crises:

“There has been investment, government work, laws and we’re still way way behind on the targets of pollution reduction and farm practice change so despite all the things that have happened, and we don’t like talking about this, but right now it is failing badly ... We have done some good things but we are way behind where we need to be to look after the reef.”

Sean Hoobin, Science and Planning Manager Reef Aid, Greening Australia:2020 interview.

On building knowledge and evidence:

“I think the regenerative ag’ thing – if it was broken down into the bits and pieces of what that actually means that would be a bit more palatable.

Makes it less ideological and more practical”

Scott Wallace, Hort 360 Manager: Growcom, 2020 interview.

So I think we need to be really careful about language and how regenerative agriculture is packaged and promoted”

Danielle Skojac, Principal Researcher - Sugar Research Australia, 2020 interview.

On social organisation and learning:

“People need to be comfortable and resilient. Forcing change will make farmers bunker down. That is why we are working peer to peer”

Niall Conner, Queensland Government Enhanced Extension Services, 2019 interview.

“Farmers listen to farmers and that’s why field days are so effective. They get out in the paddock, seeing what’s happening for themselves, within their own catchment.”

Lorraine Gordon, Director of Strategic Projects, Farming Together and the Regenerative Agriculture Alliance, 2020 interview.

On mobilising discourse:

“Some people dislike the term regenerative, some people dislike the term sustainability and some people hate the term climate change. It does make it really hard but that’s also the beauty of farming - everyone has their own different ways and the only way we overcome these challenges is not having these blanket approaches. It’s not about right and wrong.”

Dr. Aysha Fleming, Senior Research Scientist: CSIRO, 2020 conversation

SOLUTIONS

Having outlined some background and context for our work, the rest of this report now turns to look ahead – at solutions, at the *what* and *how* of charting multiple pathways to a regenerative transition.

“There are at least twenty different practices that constitute regenerative agriculture in its fullest scope and when all of these practices are added together, it represents by far the single greatest solution to the climate crisis.”

Paul Hawken, Founder: Project Drawdown (Cook, 2019)

EMERGING PATHWAYS TO TRANSITION

Our desktop and primary research has enabled us to identify seven key emerging pathways to transition in which investment is required, grouped under two overarching themes. These pathways draw on learnings from transitioning food and agricultural systems outlined earlier, including the importance of scaling innovative niches, systematically working to dismantle lock-ins, and mobilising discourse and collaboration across disconnected domains. We emphasise the word emerging due to the complex and ever-evolving dynamism of socio-ecological systems. An overview of these pathways is outlined overleaf, along with underpinning investment principles.

EMERGING PATHWAYS TO TRANSITION



1 Knowledge & Culture

Develop the knowledge and evidence for the experiential, cultural, scientific and institutional legitimacy required across all parts of the system, to enable and scale regenerative agriculture transitions:



2 Economic Drivers

Working to alter the economic forces which constrain, incentivise and shape what is possible in practice, culture and behaviours at a farm, catchment, regional and industry level across agricultural systems:

Pathway 1:	Pathway 2:	Pathway 3:	Pathway 4:	Pathway 5:	Pathway 6:	Pathway 7:
Work at levels of values, ethics and identity in the development of cultural norms around regenerative agricultural practices.	Work alongside farmers to build evidence base and legitimacy of regenerative agriculture practices at local and regional scales.	Develop holistic farm performance data/natural capital accounting tools and embed consistency across frameworks.	Mobilise the burgeoning evidence base from pathways 2 and 3 to build and embed legitimacy.	Pilot and scale holistic ecosystem mechanisms that properly capture the public and ecological services farming delivers.	Develop investment instruments that de-risk existing constraints for transitioning to regenerative agriculture.	Support the shift from commodity to value-based supply chains.

Investment Principles across pathways

A systems approach to investment	Play an active role as external allies	Enable legitimacy & anchoring	Develop a specific investment program with Traditional Owners	Occupy the unique role of catalytic capital
<ul style="list-style-type: none"> Long-term funding relationships Embrace complexity and uncertainty Support diverse activities across pathways Match scale of the challenge with ambition and scale of investment 	<ul style="list-style-type: none"> Advocacy to political institutional actors Enable collaboration Broker market access and development Capacity building 	<ul style="list-style-type: none"> Prioritise strengthening evidence base Strategic partnerships and bridge building between innovative niches and powerful industry actors Mobilise dialogue across disconnected domains 	<ul style="list-style-type: none"> Designed with and by Traditional Owners and key partners across priority needs 	<ul style="list-style-type: none"> Prioritise pilots, innovation, proving to scale and scaling of innovative niches

1: KNOWLEDGE & CULTURE

“I’ve personally been working on reef issues within cane, and agriculture more generally, for 15 years..and I’m no water quality scientist or reef expert but I fundamentally believe that people are going to drive the change and if we don’t respect that then we’re never going to get water quality improvements”

Dan Galligan, CEO Canegrowers, 2020 interview.

The broad arc of Theme 1 spans routes of transition focused on developing the knowledge and data base, and the scaffolding for the experiential, cultural, scientific and institutional legitimacy required across all parts of the system, from the paddock to the science lab to the inner city boardroom, to enable and scale regenerative agriculture transitions.

Our research points to the need for investment in key pathways of transition within this theme including:

Pathway 1	Various existing and potential initiatives include
 <p>Working at levels of culture, values, ethics, and identity through initiatives which span peer networks, communities of practice, family and social learning, farmer-led visioning and reflection and the development of cultural norms around regenerative agricultural practices.</p>	<ul style="list-style-type: none"> • Work strongly aligned with regenerative agricultural values and practices • Others not deploying regenerative agricultural concepts but working at deeper levels of culture and peer networks to achieve sustainable environmental and economic farming outcomes. • Work by and with Indigenous Traditional Owner groups to maintain and restore Traditional Ecological Knowledge to inform regenerative agricultural systems.

Example: Regenerative Cane Network

The Regenerative Cane Farming Network was initiated by a group of regenerative farmers who came together to organise the inaugural 2019 Regenerative Cane Farming Forum, together with Soil, Land, Food, which was attended by 120 farmers. The grassroots, farmer-driven organisation focuses on farmer-to-farmer learning and capacity building, and plans to extend their work through regional workshops, applied research activities and communications platforms.



“The big mistake that a lot of people make with regenerative agriculture or any practice change is to promote the practice change and it doesn’t work very well - you don’t get sustainable change unless you bring the hearts and minds with you.”

Terry McCosker, Director, Resource Consulting Services: 2020 interview.

“The biggest problem with Indigenous natural resource management is we don’t have access to our land, and then our knowledge is also not being passed down if we haven’t got the land to go out and teach on.”

Richard Sporne, Indigenous Engagement Coordinator, Greening Australia: 2020 interview.

1: KNOWLEDGE & CULTURE CONTINUED

Pathway 2 Various existing and potential initiatives include



Work alongside farmers to build evidence base and legitimacy of regenerative agriculture practices at local scales.

- On farm and demonstration plot research trials and data collection across grazing, cane and horticulture.
- This farmer-led and/or informed research is vital in light of some of the paradigm and reductionist scientific lock-ins that can dominate traditional research institutions and agendas, making them ill-equipped to holistically research regenerative and agro-ecological farming systems (Gosnell et al. 2020).

Example: Herbert Cane Productivity Services Ltd (HCPSL)

HCPSL services 580 cane grower members in the Herbert region, with a mission to facilitate an increase in productivity, profitability and sustainability within the Herbert sugarcane industry by providing agronomic and technical services and applied research. HCPSL (with internal and external SRA funding) employs a Soil Health Officer whose role is to work alongside growers to support the trialling and development of regenerative farming practices. In 2019 this program of work enabled an expansion of mixed and rotational crops across fallow areas in the region from 1-3% to over 25%. HCPSL are focused on building the applied evidence base for regenerative cane farming practices at a regional level.

Pathway 3 Various existing and potential initiatives include



Work alongside farmers and industry to develop holistic farm performance data/natural capital accounting tools capable of providing rapid feedback to farmers on the economic and environmental impacts of their farming practice at a farm and paddock scale.

- Mobilise the growing local and regionally specific evidence base, and from further afield, advocate and work collaboratively with key stakeholders to create and embed enabling mechanisms for regenerative practices across research, policy, industry, finance, and markets.
- There is considerable potential to develop broad collaboration and buy in across these stakeholders given common interests across farming and environmental outcomes, but careful strategic work will be required to avoid divisiveness.

Example: Expanding RCS's profit probe farm management tool

The RCS business analysis and benchmarking tool, ProfitProbe™, uses management accounting processes to expose the strengths and issues within an agricultural business. It is used by a wide range of farming enterprises to guide decision making and business management. RCS are working in partnership with researchers in the natural capital accounting space to expand the tool to include an ecological balance sheet that can track the impact of farming practices on a farm's natural resource base. They are also working with researchers at CQU to integrate a farmer wellbeing index into the ProfitProbe tool, including correlations of wellbeing with business productivity and profitability.

Example: Project 25

A research partnership funded by the Tropical Water Quality Hub of the Australian Government's National Environmental Science Programme (NESP) between farmers and scientists to achieve detailed sub catchment-scale monitoring of water quality in the Russell-Mulgrave river catchment. The program involves the use of both scientific and citizen science monitoring approaches to deliver robust and real time feedback loops to enable farmers to directly link their management activities with water quality conditions.

"I was looking at the practice-adoption literature and economics and we have researched whether farmers don't value the environment, or whether they don't like change, or whether they are prepared to risk the environment to increase profits. But what we haven't done is this: what tools and services do they need to help them optimise environmental, social and financial performance?"

Sue Ogilvy ANU, 2020 interview.

"Farmers are getting real time feedback, they can actually tell when something is happening, and that putting so much fertiliser isn't giving them an outcome and it's farmers telling other farmers, not an advisory committee. Often it's downstream farmers telling the upstream farmers 'this has just run off your plant cane and I'm picking that up in my sensor' and that changes the debate and actually pushes the agenda much much faster than anything we could do."

Sheriden Morris, Managing Director Reef and Rainforest Research Catchment, discussing Project 25, 2020 interview.

Pathway 4 Mobilise this evidence base to build the legitimacy of associated practices at community, industry, scientific and government levels.



Example: California's agri-environmental partnerships

Over the past 17 years, 32 partnerships across over 500 farmers, 92 public scientists and agricultural organisations in California have become the main avenue for the facilitation of regenerative strategies to protect land resources, reduce chemical use and reduce input costs.

The best known example of this is Biologically Integrated Orchard Systems (BIOS) farmer-initiated partnership that brought farmers together with scientists, entomologists and university researchers to develop a holistic farming systems approach with tools for farmers to view interactions between components on farm and impacts on productivity and ecology resulting in dramatic reductions in agrochemical use. (Warner, 2006).

"From a scientific point of view, I believe we need a lot more measurement around the impacts some of these regenerative practices are having on soil health, production and profitability... even if we do identify what the best practices are for improving soil health, there will still be challenges in tailoring them to individual farming situations and biophysical conditions."

Danielle Skocaj, Principal Researcher – Sugar Research Australia: 2020 interview.

2: ECONOMIC DRIVERS

“If there’s a buck in it, people will listen”.

Lawrence Di Bella, Sugarcane Farmer and Herbert Cane Productivity Services Manager, 2020 Interview.

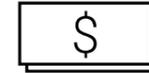
Theme 2 encompasses initiatives working to alter the economic forces which constrain, incentivise and shape what is possible in the practices and behaviours at a farm, regional and industry level across agricultural systems.

“Money is often the most important factor for decision-making on a farm or ranch. Most producers work on razor thin margins and can’t take the financial risk of trying something new”

Philip Taylor, (Mad Agriculture 2020).

Our research points to the need for investment in key transitional pathways across this theme including:

Pathway 5



Developing and scaling holistic ecosystem service markets which are farmer and industry informed to properly account and pay for the public services farming delivers and incentivise regenerative ecological management practices.

Various existing and potential initiatives include

- The piloting and launch September 2020 of Reef Credits, the Queensland Land Restoration Fund (investing \$500 million in state carbon farming projects) and activities at a federal level including the Agriculture Biodiversity Stewardship Pilot Program and Farm Biodiversity Pilot Scheme.
- Further investment is required to confirm and reach consensus of existing science, fill research gaps, achieve broader endorsement of methodologies and operationalise accessible and affordable measurement tools for farmers and industry.
- Risks were identified in terms of the lack of holism in some of the ecosystem credit schemes - i.e. it is possible to allocate two acres for biodiversity credits on a farm without significantly shifting the overall ecological impact of a farming system.

Example: Reef Credits

The Reef Credit Scheme is designed to operate similarly to other voluntary and compliance ecosystem service markets around the world. The scheme is designed to enable land managers to undertake projects that improve water quality through changes in land management to generate a tradeable unit of pollutant reduction or ‘Reef Credit’. A Reef Credit represents a quantifiable volume of nutrient, pesticide or sediment prevented from entering the Great Barrier Reef catchment.

The relative value of pollutant reduction from nutrient, sediment or pesticide is set using the Reef-wide pollution reduction targets described in the Reef 2050 Water Quality Improvement Plan (2018).

“Leaving one or two acres of land and getting paid for some biodiversity aspect is just bullshit...it’s not fixing the problem.

How are you increasing your biodiversity on your farm and what does it mean to the whole farming system?

If it is not adding to the value of farm health, soil health – it’s not fixing the problem.”

Frank Sciacca, Pacific Coast Eco Bananas, 2020 interview.



2: ECONOMIC DRIVERS CONTINUED

Pathway 6	Various existing and potential initiatives include
<div style="border: 1px solid black; padding: 5px; display: inline-block; margin-bottom: 10px;">\$</div> <p>The development and piloting of investment instruments and funds that de-risk or remove constraints for transitioning to regenerative agricultural practices and support ongoing innovation and practice development on farms.</p>	<ul style="list-style-type: none"> • Those outlined in Pathway 5 focused on developing the ecosystem service measurement methodologies and markets. • Gaps have been identified in terms of: <ol style="list-style-type: none"> a) Initiatives to pilot transition finance schemes with existing methodologies to prove, test and adapt to the region b) Financial support for cutting-edge regenerative farmers to continue to test, develop and push the envelope c) Holistic approaches to finance schemes that work across other levers of change (i.e. knowledge and culture) d) Collaborating with major financial institutions (i.e. agribusiness banks and insurance) to build supportive/ enabling structures for regenerative farming across their operations

Example: The Perennial Fund

An initiative of American non-profit Mad Agriculture, the Perennial Fund (PF) is taking a holistic approach to creating the financial levers capable of supporting farmers transitioning to regenerative agriculture. The fund (launching in October 2020) will work alongside farmers with a system of change to connect growers with low cost and free capital, know-how, and markets to remove many of the key barriers of transition. Billed as an ‘alternative bank for farmers’ the fund is structured to ensure that the success of Mad Agriculture, partners, and the farmers are one and the same. The PF is structured so that the loans it disburses are repaid only after the farm is operating profitably. If the PF team cannot help each farmer to return 150% the initial investment over 10 years, the debt will be forgiven.

“I imagine a future where farmers are able and are incentivised to report and collect key natural capital metrics and demonstrate improvement over time. So there’s support coming from their banks in terms of favourable interest rates, their insurers in terms of products they’re able to access and markets in terms of premiums for their products ... that doesn’t exist today so there is a bit of market building work to be done.”

James Bentley, Manager - Natural Value, National Australia Bank: 2020 interview.

“Because you’re on the leading edge all the time you get to the point where assistance becomes less, the focus tends to be on bringing lower hanging fruit up to a certain standard, so it does make it challenging.

We tread water for a period of time, but if there was investment then we have the capability to continue to innovate something that can be an encouragement and an example to not only the banana but other industries.

I think in general it is from innovators that “Best Practice” in any industry is created.”

Mark Gallagher, Wadda Bananas, 2020 interview.

Pathway 7	Various existing and potential initiatives include
<div style="border: 1px solid black; padding: 5px; display: inline-block; margin-bottom: 10px;">\$</div> <p>Support the shift from commodity to value based supply chains through the development and piloting of collaborative partnerships across farmers, industry, community and corporations to develop markets and mechanisms which account for the ecological and social outcomes of agricultural production and help shift the focus from productivity to profitability.</p>	<ul style="list-style-type: none"> • Work across the horticulture and grazing industries at individual business (i.e. Rainforest Bounty, Pacific Coast Eco Bananas and Wadda Bananas) and industry levels needing investment and support in terms of knowledge, infrastructure and measurement tools. • A significant gap and opportunity exists in terms of brokering partnership deals with ‘market shaping’ buyers of farm produce from the Reef catchments to secure price premiums, and in supporting market infrastructure for ‘reef safe’ products.

Example: Rainforest Bounty

Rainforest Bounty is a rainforest fruit farming business producing food and personal care ingredients and products. They have trialed and proven their regenerative orchard techniques over 20 years and are now working with other landholders in the region to support them in establishing orchards in order to expand their production volumes. The business is facing increasing demand for its products from major international companies, and is seeking support to develop their infrastructure and capacity to meet this demand. They are also working with local indigenous Traditional Owner groups to explore opportunities to facilitate land access and fruit and seedstock production enterprises as part of expanding their supply chain.

Example: General Mills

In 2019, General Mills, one of the world’s largest food companies, committed to advancing regenerative agriculture practices on 1 million acres of farmland by 2030. The company is partnering with organic and conventional farmers, suppliers and trusted farm advisors in key growing regions to drive the adoption of regenerative agriculture practices across their supply chain. They are measuring their impact across five key goals: economic resilience in farming communities, soil health, water (utilisation and quality), above ground biodiversity and cow and herd wellbeing. They have activated three pilots across Northern America to commence the transition.

“A really big part of any program to shift farmers into the regenerative agriculture space is the consumer has to be a part of that conversation because they’re the ones who drive demand. There is opportunity if there is demand. In order to get demand we need consumer awareness to make the link.”

Kym Kruse, Co-Founding Director, RegenAg, 2020 interview.

“Offering certainty around price and volumes is a really great enabler to farmers to not have to put as much pressure on their farm, but to also give them confidence to go down a diversified route once they have the trust we are not going to go chase that cheaper option elsewhere.”

Rob Pekin, CEO Food Connect, 2020 interview.

“Farmers addressing both water quality and climate are addressing the two biggest threats to the reef... We definitely want to partner with key organisations in promoting those farmers we work with as reef safe and bringing a collection of people together across farmers, tourism and industry associations to drive market commitments and change.”

Sean Hoobin, Science and Planning Manager Reef Aid, Greening Australia, 2020 interview.

“One of the challenges is that each of the frameworks has been developed for a very specific purpose and I can see a farmer going ‘well I will meet that framework here, and then there’s that one here but there’s another one doing this so do I need to collect separate information for each?’

And at the same time investors are looking for consistency and wondering which of the many frameworks is the most appropriate to use.

We need to be ensuring that the frameworks are cost effective because otherwise the measurement and reporting requirements put on farmers would be pretty astronomical and consistent to ensure they can be embedded within decision making across the system.”

Stephanie Russo, Director, Financing Solutions for Nature, Department of Agriculture and Water Resources, 2020 interview.

INVESTING FOR IMPACT

After outlining emerging pathways to transition and some priority investment needs, it is time to turn our attention to core underpinning principles to ensure effective investment that is capable of supporting, enabling and scaling the innovative and vital activities which are developing across sectors and scales.

Investing in systems change as active allies

Investing in systems change requires a different mindset of (and framework for) funders and investors, one that matches the 'long term, uncertain and complex nature of systems change' (Ashoka et al. 2020). We are drawing on some of the key emerging lessons from financing systems change to guide our thinking for this blueprint including:

- **Pathways to systems change are iterative and uncertain:** Investors need to be comfortable with supporting evolving routes to systems change, and not just already well defined and proven projects.
- **Systems change takes time, well beyond the standard one to three year funding cycles:** Long term investment and funding frameworks are vital.
- **Changing a system is not monocausal:** Support diverse pathways to change as well as collaboration across the system.
- **Ambition is required:** 'Make investments commensurate with the speed and scale of the threats and opportunities facing us. We must make the impossible possible' (Taylor 2019).
- **Systems change happens at varying speeds:** It can be useful to think in terms of incremental, transitional and transformational change and to remember that there is no straight, quick road to transformation.

Philanthropic and investment actors are part of the system, and need to expand their strategies to reflect their role as active and powerful allies for change.

Critical questions need to be asked to guide this work including: if there is low to minimal appetite for risk in a funding environment, how will innovation be fostered?

This active expansion looks beyond the provision of funds, for a critical role can be played by the sector in enabling and building collaboration, brokering market access and development, undertaking political and institutional advocacy, and enabling direct capacity building of key stakeholders.

“One of the challenges is you go to X and they’re funding water quality, you go to Y and they’re funding carbon, you go to Z and they’re focusing on wetlands - they’ve all got their little bits and no one is quite doing it in an integrated fashion so I think that’s one of the pieces that is missing right now.”

Sean Hoobin, Science and Planning Manager Reef Aid, Greening Australia, 2020 interview.

“The word innovation these days doesn’t mean innovation - it is innovation that has been proven for the last three to five years ... only provide funding to innovate if it is proven. We have lost our sense of what innovation means and how to understand the risk but still fund... It’s taken the innovation out of innovation.”

Katrina Dent, CEO Reef Catchments, 2020 interview.

“Government is generally able to fund programs and projects for three to five years. The challenges we are tackling need investment of 10 years or longer to make sustainable changes and improvements.”

Stewart Christie, CEO Terrain NRM, 2019 interview.

Prioritise the unique role of catalytic capital

There are a range of significant federal and state government funding activities to address the challenges facing the Reef from land based activities, with a particular focus on water quality outcomes, along with a range of other philanthropic and financial investments from other sources.

Our conversations with stakeholders on the ground, and wider literature in the field points to a significant need for innovative finance mechanisms which can step into the space of risk and uncertainty with greater freedom than government funding constrained by its necessary layers of oversight and political accountability.

“Philanthropy is the most precious form of capital so it has to be deployed in the most strategic of ways... It can play this really critical role in innovative investments because it has the capacity to go first, to be prepared to take risks and doesn’t need a return threshold.”

Jane Hutchinson, Executive Director Strategy and Innovation, The Nature Conservancy, 2020 interview.

These innovative forms of finance can provide the catalytic capital which is urgently needed to enable the testing, development and proving of initiatives with systems change potential so they can, in turn, gain the legitimacy required to be scaled up and supported by the more traditional and necessarily risk-averse funding sources.

Build legitimacy to anchor regenerative agriculture

Building legitimacy has been identified as one of the key elements in accelerating transformations to sustainable food systems and in the broader transitions and systems change literature (Biovision Foundation 2019, Mier y Teran Cacho et al. 2018). Key strategies for doing so include building an evidence base and developing strategic partnerships that help establish credibility (Biovision Foundation 2019).

Our research in relation to the Reef catchments points to a need for the development of a diverse evidence base that spans the vast biophysical differences across the Reef catchments by working with the innovative niches and researchers already developing, piloting and demonstrating what is possible. This needs to be accompanied by a strategically inclusive approach to building legitimacy with key partners across various agricultural industries through collaboration and mobilising narratives.

Legitimacy is needed to then enable the anchoring of regenerative farming systems through becoming embedded in policy and practice, and to have the support of social, political, economic and institutional structures for sustained transformation (ibid). This kind of anchoring can only occur with strong frameworks of trust and collaboration across farming systems, and with a farmer-informed approach to each intervention and area of work.

“I would say what is needed is evidence...so that we can look and say yes if you do this and this then you will achieve X. With the science you can then get other scientists on board, and donors/investors are more likely to look and say ‘well if CSIRO say that’s a solution we believe it’ .”

Robert Speed, Director of Water Quality, Great Barrier Reef Foundation, 2020 interview.

Develop a specific investment program with Traditional Owners

“Coral reef science on the Great Barrier Reef only started at the beginning of the 20th century ... so we really don't have a very long period of scientific understanding of the reef.

Indigenous people have been around for an awful lot longer than scientists, and they have a much longer history and a much deeper and different understanding of how the reef works.”

David Wachenfeld, Chief Scientist, Great Barrier Reef Marine Park Authority (Podger, 2008).

There is a growing body of evidence that recognizing Indigenous peoples rights to land, benefit sharing and institutions is essential to meeting local and global conservation goals' (Garnett et al. 2018). While Indigenous peoples make up less than five percent of the total human population, the land areas they manage or hold tenure over supports approximately 80 percent of global biodiversity (Raygorodetsky 2018).

More than 70 Aboriginal and Torres Strait Island Traditional Owner (TO) groups span the Reef catchments, and have evolved Traditional Ecological Knowledge systems over upwards of 60,000 years in enabling healthy and resilient land and sea country. They possess significant private and native title interests across the region and are engaged in a range of cultural management, agricultural and land and sea-based livelihood initiatives.

Our broader research scope for this blueprint precluded us from conducting the in-depth research required to do justice to the breadth and complexity of TO activities across the region. However this preliminary research underscores the imperative of any investment strategy aiming to achieve regenerative ecological outcomes in the reef having an explicit focus on working alongside Indigenous peoples to support their ongoing stewardship of land and sea country, on their terms.

Our research indicates that there are critical opportunities to leverage the significant work underway in this realm by a range of organisations and funding bodies ranging from individual TO groups and landholders through to the Indigenous Land and Sea Corporation and the Great Barrier Reef Foundation to support regenerative ecosystem outcomes for and by TO groups.

Making this work an explicit focus of the blueprint is a vital component of regenerating our farming systems and relationships with land and sea. Acknowledging that 'agriculture is not neutral, but like medicine and science, it is involved in the racialized oppression of settler-colonial history...' allows those of us within the agricultural sector to avoid 'repeating colonial logics' (Mayes 2018) which include omitting first peoples from the history and ongoing trajectory of Australian agriculture, let alone leading or setting the agenda for conversations such as these.

“Speaking about my mob we have no engagement with regards to looking after the Barrier Reef yet we sit across rivers that flow out to it. I was just driving out with my grandfather and uncle and they were naming all these creeks that had water in them growing up and some of them are storylines for my people.”

Richard Sporne, Indigenous Engagement Coordinator, Greening Australia, 2020 interview.

“We know that forever and a day Traditional Owners have had a massive attachment to the Reef. We have a real opportunity through our work to support them to manage and protect their land and sea country on their terms. And if we can partner with other funders we will be able to leverage greater impact.”

Mark Denning, Eastern Divisional Manager, Indigenous Land and Sea Corporation, 2020 interview.

While Indigenous peoples make up less than five percent of the total human population, the land areas they manage or hold tenure over supports approximately 80 percent of global biodiversity

(Raygorodetsky 2018).

Image: Greg Nelson ACS

IN CONCLUSION

“It takes a lot of work and a lot of years.”

Frank Sciacca, Pacific Coast Eco Bananas, 2020 interview.

Complexity.

A ticking clock.

An ecosystem on the brink.

We could leave it there in terms of key gleanings from the deep listening and conversations we’ve undertaken over the last several months. But we’d be missing the key currents which have flowed across encounters with folk up and down the Reef catchments.

Currents of innovation and resilience in extreme and rapidly changing ecological and economic conditions.

Of collective and individual learning, research and practice that pushes the boundaries of what is known, and ‘the way things are done around here’.

A strong current we hope we have captured in all the preceding words is this: transitioning agriculture across the region is undoubtedly a monumental task, but it is already underway, for ‘systems change begins with individuals who have a deep understanding of a problem and a vision for changing it’ (Ashoka et al. 2020). We spoke to many such individuals along our conversational journey.

There is work happening on the ground that needs to be amplified, and some work to be seeded.

There are deep structures and divides that need to be shifted, and a collective of folk with the ideas, know-how and passion to shift them. There’s a local to global appetite for regeneration, and the potential to focus a significant portion of that energy around the Great Barrier Reef.

It’s going to take ‘the village’.

It’s going to take investment.

It’s going to take a lot of work, and a lot of time.

So let’s get to work.



It’s going to take ‘the village’.

It’s going to take investment.

It’s going to take a lot of work, and a lot of time.

So let’s get to work.

GLOSSARY

Carbon sequestration	Refers to the long-term storage of carbon in plants, soils, geologic formations, and the ocean. It occurs both naturally and as a result of human activities and usually refers to the storage of carbon that has the immediate potential to become carbon dioxide gas. (Adapted from Selin, 2011).
Catalytic capital	Forms of finance and investment which 'accept disproportionate risk and/or concessionary return to generate positive impact and enable third-party investment that otherwise would not be possible'. It plays a critical role in filling funding gaps that conventional finance is unable to supply. (Tideline 2019).
Industrial agriculture	Industrial forms of agriculture are generally characterized by 'monocultures, genetically uniform varieties, intensive use of external inputs, maximization of yield from a single or limited number of products, and production of large volumes of homogenous products typically within long value chains' (Oakland Institute 2017).
Lock-ins	Powerful technological, economic, political, cultural and institutional feedback loops which act as constraints on the ability of an existing system to change because of incentives that keep actors 'locked in' to current ways of thinking and doing, and keep reforms and new innovations 'locked out'.
Natural Capital Accounting	An overarching term covering 'efforts to develop accounting frameworks to provide a systematic way to measure and report on stocks and flows of natural capital. Its underlying premise is that since the environment is important to society and the economy, it should be recognised as an asset that must be maintained and managed, and its contributions (services) be better integrated into commonly used economic accounting frameworks' (United Nations). Natural Capital Accounting covers 'accounting for individual environmental assets or resources (such as water, minerals, energy, timber, fish), as well as accounting for ecosystem assets (e.g. forests; wetlands), biodiversity and ecosystem services' (ibid).
NRM organisations	'Australia has 56 regional natural resource management (NRM) organisations. They are a mix of government agencies and non-government organisations (NGOs) that get national priorities for natural resource management delivered on the ground' (NRM Regions Australia).
Reductionist	Can be defined as an approach to 'analysing and describing a complex phenomenon in terms of its simple or fundamental constituents' i.e. studying data in isolation from components of a highly integrated and complex system, rather than looking at the whole (Oxford English Dictionary).
Reef catchments	The areas of land from which the Great Barrier Reef receives runoff. The area covers 35 catchments which drain 424 000 kilometres up and down the coast of Queensland. The catchments are 'largely rural and dominated by summer monsoonal rains and occasional cyclones delivering sediments, nutrients and pesticides to the inshore and sometimes offshore portions of the reef'(Queensland Government).

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About the author

Tanya Massy is a writer and lifelong apprentice of farming who has worked across urban, rural and remote communities to reconnect people, food and country. Her academic background spans Community Development and Indigenous Studies, with a Masters in Agricultural Science.

She is in the early stages of a PhD exploring the interface between regenerative agricultural practices and Indigenous Traditional Ecological Knowledge.

Tanya's heart is very much grounded in the soils of her family farm, Severn Park, near Cooma, NSW, where she is working alongside her family to regenerate the land.

The Massy family were recently profiled on [Australian Story](#).



Image: Vanessa Gorman

About Sustainable Table

Founded in 2009, Sustainable Table is a not-for-profit organisation working to build a food system that is fair, healthy, humane and good for the environment.

The way our food is grown, manufactured and distributed is causing serious damage to our environment, farmers, animals, communities and health. With more than 30% of our personal eco-footprint embodied in the food that we buy, it has never been more important to educate ourselves and our children about where our food comes from.

At Sustainable Table, we are working to build an engaged community of people who want to learn about, connect with, and build upon the resilience and regenerative capacity of our food system.

By designing challenging and creative events and campaigns; running [Mt Martha Farmers' Market](#); delivering [Ripe for Change](#) – a place-based collaborative funding model that supports food-system innovation; and sharing stories and [educational content](#), Sustainable Table is empowering people to overcome today's environmental challenges, one meal at a time.

sustainabletable.org.au



Sustainable Table and the Morris Family Foundation are working on an investment strategy using the Blueprint for Impact as the framework for action. To learn more about how you can be involved and use capital to advance regenerative agriculture in Queensland and Australia, please get in touch at info@sustainabletable.org.au or info@morrisfamilyfoundation.org.au



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