



FARMING TOGETHER AT SOUTHERN CROSS UNIVERSITY

NOVEMBER 2020

# GROWING AGRICULTURE IN THE TWEED



**COMMISSIONED BY**

THE TWEED VALLEY PRODUCTIVE LAND USE PROJECT STEERING  
COMMITTEE

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## Document review and authorisation

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### Disclaimer

Farming Together as part of Southern Cross University has prepared this report for the benefit of the Tweed Valley Productive Land Use Working Group (the 'Working Group') as agreed on 16 September 2020. Farmer Together has not been engaged to act, and has not acted, as advisor to any other party on this matter. Accordingly, Farmer Together makes no representations as to the appropriateness, accuracy or completeness of the report for any other party's purposes. Specifically, where information that was collected from farmers and others during the course of the project are reproduced in the report, the information has not been verified for accuracy or completeness or for any other purpose.

### Acknowledgment

Farming Together would like to acknowledge the significant contributions made by all who participated and shared their perspectives in identifying agricultural opportunities in the Tweed. We greatly appreciate your time to talk with us on the phone, online, and attending an online workshop. It has been very clear that the people engaged in the region care deeply about the future of agriculture, the people and land in Tweed. It has been a great privilege for us to undertake this project. We can see the exciting opportunities for Agriculture in the Tweed and the passionate and visionary support by people in the sector, taking agriculture forward over the years and decades ahead.

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## Executive Summary

This report sought to highlight opportunities for growing agriculture in the Tweed Region. To achieve this, initially the barriers and enablers for adoption of opportunities were identified, followed by showcasing 12 case studies of best practice exemplars under three pillars: diversification and innovation; intensification; and sustainable and regenerative practices. Finally, an implementation strategy was developed based on the identified opportunities within each pillar.

To undertake this scope of work, a desktop review and analysis of survey data was undertaken, combined with semi-structured interviews, consultations and an online workshop with landholders. Data sources included government reports, interviews from Farming Together Program's nation-wide network of farmers, and consultative feedback from the Tweed Valley Productive Land Use Project (TVPLUP) Working Group and Tweed region farmers and landholders identified by the Working Group as 'champions'.

This report is presented in four parts:

1. **Section 1** provides an introduction to the report, and an outline of the methodological approach.
2. **Section 2** is a situational analysis of the current agricultural trends in the Tweed Region. It further identifies the drivers of change and opportunities for growing agriculture in the Tweed region.
3. **Section 3** outlines twelve case studies that showcase best practice examples of these agricultural opportunities for farmers in the Tweed Region.
4. **Section 4:** is divided into two sections:
  - **Part A** is an implementation model for farmers, landholders and community members to guide them in developing and actioning the concepts presented in the case studies.
  - **Part B** is the implementation recommendations for the region and outlines six strategies for helping create the right enabling conditions to enact desired changes.

While it is outside of the scope of the report to provide conclusions, it is evident that a standalone report is not enough to catalyse change. However, the opportunities identified in this report show great promise for landholders in the Tweed, and the case studies and implementation plan offer inspiration and support for the adoption of opportunities by farmers, landholders and other community members. It is recommended that further work is needed to transition these ideas into action. The TVPLUP Working Group is commended for recognising this need through the proposed workshop for the Tweed Agricultural Industry planned for early 2021. This workshop provides an apt starting point for this transformation process to occur for the Tweed region.



# Growing Agriculture in the Tweed

*At a glance*



15 Drivers of Change



12 Opportunities



12 Case Studies

## The implementation strategy

10 Steps-to-Success  
6 Recommendations

Endless advice

*Start where you are at.  
Bring everyone along the  
journey with you.  
Do the work!*

Deborah Bogenhuber,  
Out of the Box, 2020

## EXECUTIVE SUMMARY

Overall, the report identified 15 drivers for change for agriculture in the Tweed region. From this, 12 opportunities for Growing Agriculture in the Tweed region are provided under the three pillars of diversification and innovation; intensification; and sustainable and regenerative practices.

The report then showcases 12 case studies spread across each of the three pillars that serve as relevant and practical examples of opportunities for growing agriculture in the Tweed that could be achieved by Tweed farmers, landholders and community members, including the main barriers and enablers for adoption.

Finally, an implementation strategy for farmers, landholders and community champions to action opportunities is provided. It includes the 10 steps-to-success and 6 strategic recommendations for initiatives that could be implemented at the community or regional level to help grow agriculture in the Tweed.

The report includes countless pieces of advice from farmers, for farmers: the most powerful avenue for learning.

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# ABOUT THE FARMING TOGETHER PROGRAM



## **STRONG FOUNDATIONS, GROWING REGIONS**

The Farming Together Program (FTP) began in 2016, boasting a new knowledge mobilisation model to support the growth of small-scale primary producers through deep partnerships with other primary producers, universities, peak bodies, expert agri-consultants, lead support agencies, and the Commonwealth Department of Agriculture and Water Resources. FTP's impact on the agricultural co-operative landscape has been unprecedented and continues to frame co-operation and collaboration among primary producer groups nationwide. Testament to its impact, Southern Cross University (SCU) won two national engagement awards for the game-changing program: The 2019 BHERT (Business Higher Education Round Table) Awards for Outstanding Collaboration in Community Engagement category and the 2019 Australian Financial Review (AFR) Higher Education Award for Industry Engagement. It is through the authentic relationships we have developed with farmers, fishers and foresters over the years combined with our deep respect for agriculture in this country that we have the honour, privilege and desire to share primary producers stories to inspire others.

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# SECTION 1.0 INTRODUCTION AND CONTEXT

## ABOUT THE GROWING AGRICULTURE IN THE TWEED INITIATIVE



The report is based upon three founding pillars:

- Diversification and Innovation,
- Intensification, and
- Sustainable and Regenerative Practice.

The pillars provide direction, focus and a deeper understanding of the factors that contribute to a productive agricultural future for the Tweed Region.

## 1.1 Project Background

The Growing Agriculture in the Tweed Initiative is part of the Tweed Valley Productive Land Use Project (TVPLUP) which was established by the Cross-Agency Coordination Working Group<sup>1</sup> to identify and promote agriculture and food development opportunities in association with the new hospital<sup>2</sup>, and to facilitate agricultural opportunities throughout the broader Tweed LGA. Specifically, TVPLUP is identifying, developing and coordinating the implementation of agricultural industry development and sustainable regional productive land use growth opportunities.

The Working Group engaged Farming Together, a farming advisory service associated with Southern Cross University, to help deliver the Growing Agriculture in the Tweed initiative. Farming Together undertook a Case Study Analysis to identify agricultural growth opportunities for the Tweed region. This report presents economic opportunities that demonstrate best practice and potential, including how the findings from the case studies could be applied in the Tweed region.

This report further identifies drivers for change for Tweed rural landholders and highlights the barriers and constraints that landholders may face in realising these prospects. The report draws on twelve case studies to illustrate the application of such opportunities and to profile successful strategies for overcoming challenges. The opportunities and case studies are represented in each of the three pillars:

- **Diversification and Innovation,**
- **Intensification, and**
- **Sustainable and Regenerative Practice.**

## 1.2 Definition of the Three Pillars

The TVPLUP Working Group identified three pillars to underpin the 12 case studies to ensure diversity of relevant options for landholders (see Figure 1).

The pillars were predominantly derived from discussions of the Working Group and are based on known success stories across the region and the state on how productivity has been increased, particularly on smaller holdings. There is considerable research available on global trends towards intensification and recognition of how diversification can reduce profitability risks for landowners.

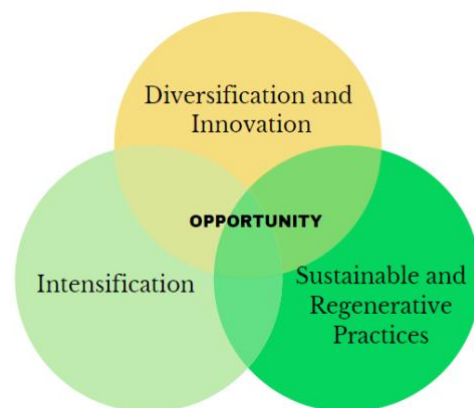


Figure 1 The Three Pillars

1 The Tweed Valley Hospital Cross Agency Coordination Committee was convened in May 2018 to ensure effective whole-of-government planning and communication around both the Tweed Valley Hospital and the wider Tweed Health and Education Precinct.

2 The NSW Government has committed \$673.2 million for the Tweed Valley Hospital Development. This includes a new state-of-the-art hospital on a greenfield site on Cudgen Road, Kingscliff in the Tweed Local Government Area (LGA). The 19-hectare site chosen for the hospital was previously zoned a combination of RU1 Primary Production and R1 General Residential land.



The pillars provide direction, focus and a deeper understanding of the factors that contribute to a productive agricultural future for the Tweed Region.

### 1.2.1 Diversification and Innovation

There are many definitions for **diversification** however they all have a similar premise as ‘the addition of another stream of farm-based income to supplement the existing source/s’.<sup>3</sup> This can be via the reallocation of some of the farm’s resource including land, capital, paid labour or equipment into new activities which could include, for example, a new crop, provision of services, value adding, or agri-tourism.<sup>4</sup>

The concept of **innovation** has been defined by the Australian Government as:

...the implementation of a new or significantly improved product (good or service), process, new marketing method or a new organisational method in business practices, workplace organisation or external relations.<sup>5</sup>

Australian primary producers are known to be innovative by nature and necessity and have demonstrated their resilience, consistently perform better compared to other sectors of the economy.<sup>6</sup> The Australian primary producer’s proven capacity to adapt and innovate has meant that agriculture is one of

Australia’s most innovative and efficient industries.<sup>7</sup>

Innovation in agriculture has traditionally orbited around the adoption of technology, equipment and products by farmers. There is a growing awareness that ‘agricultural innovation will need to evolve to respond to new challenges and address future opportunities’<sup>8</sup> as is the case for many traditional industries. Innovation in agriculture will need to extend and expand to new technologies, enhanced farm management and improved business models. To enable these changes in innovation to occur, and transitions and transformations to take place, ‘collaboration is a key success factor’.<sup>9</sup>

### 1.2.2 Intensification

Agricultural **intensification** can be defined as ‘an increase in agricultural production per unit of inputs (which may be labour, land, time, fertilizer, seed, feed or cash)’.<sup>10</sup> Agricultural intensification typically involves the process of producing more with less; focusing on either increasing the volume of production, or maintaining levels of production by using inputs more efficiently. Often this type of agriculture utilises industrial methods of production aimed to increase yield.

Intensification has traditionally focused on increasing yield delivery however more recently it has also considered the health of the

3 R. Medhurst, & R. Segrave, ‘Why Do Farming Families Diversify?’ *Australian Government Publication: Rural Industries Research and Development Corporation*, (2007).

4 Tweed Shire Council, ‘Tweed Sustainable Agriculture Strategy v1.1’, (2016).

5 Working Party of National Experts on Scientific and Technology Indicators, ‘The Measurement of Scientific and Technological Activities: Guidelines for Collecting and Interpreting Innovation Data: Oslo Manual, Third Edition’, *Organisation for Economic Co-operation and Development*, (2005), <<https://stats.oecd.org/glossary/detail.asp?ID=6865#:~:text=An%20innovation%20is%20the%20implementation,workplace%20organisation%20or%20external%20relations>> [accessed 10 Dec 2020]

6 Ernst & Young, ‘Agricultural Innovation – A National Approach to Grow Australia’s Future’, (2019)

<<https://www.agriculture.gov.au/sites/default/files/sitecollectiondocuments/agriculture-food/innovation/full-report-agricultural-innovation.PDF>> [accessed 30 Nov. 2020]

7 Peter Langridge, ‘Agriculture in Australia: growing more than our farming future’, *The Conversation*, 15 July, 2014, <<https://theconversation.com/agriculture-in-australia-growing-more-than-our-farming-future-22843>> [accessed 30 Nov. 2020]

8 Ernst & Young, (2019)

9 Ernst & Young, (2019)

10 Food and Agriculture Organisation of the United Nations, ‘The ethics of sustainable agricultural intensification’, (2004), <<http://www.fao.org/3/j0902e/j0902e03.htm#:~:text=Agricultural%20intensification%20can%20be%20technically,seed%2C%20feed%20or%20cash>> [accessed 30 Nov. 2020]

land and ecosystem services more broadly.<sup>11</sup> There is a growing interest in how land-use intensification is ‘ensuring food security demands while, at the same time, safeguarding remaining ecosystems and biodiversity [which] is a critical challenge we face in the 21st century (Sustainable Development Goals 2, 12 and 15)’.<sup>12</sup> This research suggests moving toward ecological or sustainable intensification solutions that espouse a more holistic view of agriculture that extends beyond the ‘efficiencies of a single input into a single field in a single season to consideration of efficiencies of whole systems over decades’.<sup>13</sup>

### 1.2.3 Sustainable and Regenerative practices

**Sustainable agriculture**, as defined by the Tweed Council’s Sustainable Agriculture Strategy, is:

farming within the land’s capability, to conserve natural resources such as soil and water that are essential for productive and viable agriculture without causing permanent damage... Sustainable agriculture is good for the environment, profitable and socially responsible.<sup>14</sup>

This definition is based on the 1997 Natural Heritage Trust of Australia Act.<sup>15</sup> Sustainable farming requires production of high-quality

produce in reasonable quantities to ensure profitability and conserve natural resources to ensure environmental protection.

A similar concept to sustainable agriculture, but not interchangeable, is the concept of **regenerative agriculture**. Regenerative agriculture also draws from an underlying philosophy of working harmoniously with the land and offers an alternative method for producing food and fibre. As a concept, it was introduced in the 1980s by Robert Rodale, head of the Rodale Institute<sup>16</sup>. The premise of regenerative agriculture is a “move beyond sustainable” to leave the land in better condition than which it was found.<sup>17</sup>

Explained further, regenerative agriculture has a focus on,

enhancing and restoring resilient systems supported by functional ecosystem processes and healthy, organic soils capable of producing a full suite of ecosystem services, among them soil carbon sequestration and improved soil water retention.<sup>18</sup>

Regenerative agriculture aims to work with whole systems on a longer-than-a-single-season timescale to support productive and profitable agricultural production to address the challenges currently impacting the farming industry.

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11 M. E. Dornbush, & A. C. von Haden, ‘Intensified agroecosystems and their effects on soil biodiversity and soil functions’, *Soil Health and Intensification of Agroecosystems*, Academic Press, (2017), pp. 173-193.

12 F. Zabel, R. Delzeit, J. Schneider, et al., ‘Global impacts of future cropland expansion and intensification on agricultural markets and biodiversity’, *Nat Commun* **10**, 2844 (2019). <https://doi.org/10.1038/s41467-019-10775-z>

13 Z. Hochman, P.S. Carberry, M.J. Robertson, D.S. Gaydon, L.W. Bell, & P.C. McIntosh, ‘Prospects for ecological intensification of Australian agriculture’, *European Journal of Agronomy*, **44**, (2013), 109-123.

14 Tweed Shire Council. ‘Tweed Sustainable Agriculture Strategy’, (2016), p.2 and p.4.

15 Commonwealth Consolidated Acts, ‘Natural Heritage Trust of Australia Act 1997 – SECT 16 Meaning of sustainable agriculture’ < [http://www.austlii.edu.au/cgi-bin/viewdoc/au/legis/cth/consol\\_act/nhtaaa1997371/s16.html](http://www.austlii.edu.au/cgi-bin/viewdoc/au/legis/cth/consol_act/nhtaaa1997371/s16.html) > [accessed 2 Dec 2020]

16 Robert Rodale, ‘The original principles of regenerative agriculture’, *The Rodale Institute*, <https://rodaleinstitute.org/blog/original-principles-of-regenerative-agriculture/> [accessed 2 Dec 2020]

17 Charles Massy. ‘Call of the Reed Warbler: A new agriculture, a new Earth’. *University of Queensland Press*. (2017).

18 H. Gosnell, N. Gill, & M. Voyer, ‘Transformational adaptation on the farm: Processes of change and persistence in transitions to ‘climate-smart’ regenerative agriculture’, *Global Environmental Change*, (59, 101965, 2019).

## 1.3 Scope of Project

### 1.3.1 Process for project completion

This project was commissioned by the TVPLUP to research and identify the following key points (see Figure 2):

1. Opportunities within each of the three pillars (Diversification and innovation; Intensification; and Sustainable and regenerative practices).
2. Twelve case studies spread across each of the three pillars that serve as relevant and practical examples of opportunities for growing agriculture in the Tweed that could be achieved by Tweed farmers, landholders and community members. Within the case studies:
  - a. the barriers for adoption of opportunities are outlined, and
  - b. the enablers to overcome the barriers for adopting the suggested opportunities are presented.
3. An implementation strategy for actioning opportunities.



Figure 2 The Scope and Process for this Project

### 1.3.2 Key questions

The key questions addressed were:

- What is the current economic, environmental and community picture of the Tweed region?
- What are the future projections for the region, e.g., population growth, density, consumer trends?
- What are the drivers of change for agriculture in the Tweed region?
- What are the economic opportunities for growing agriculture in the Tweed region?
- What are the barriers and constraints that landholders face in realising these opportunities?
- Which 12 cases studies are most suited for showcasing best practice examples of these opportunities under the three pillars:
  - Diversification and innovation,
  - Intensification, and
  - Sustainable and regenerative practices?
- What kind of approaches and strategies are likely to engage farmers to implement identified opportunities?

## 1.4 Project Approach

To address the key questions outlined above, and achieve the objectives of this initiative, a desktop review and analysis of survey data was undertaken, combined with semi-structured interviews, consultations and an online workshop with landholders.

Data sources included government reports and plans, interviews from farmers providing case studies, and consultative feedback from the Working Group and Tweed region farmers and landholders identified by the Working Group as 'champions'. See **Error! Reference source not found.**

*Table 1 Data Sources*

Source	Total population	Contribution to the project
TVPLUP Working Group	8 stakeholders from 7 key organisations in the region <sup>19</sup>	<ul style="list-style-type: none"> <li>Background information including contextual and situational data,</li> <li>Provide contacts of champions in the region, and</li> <li>Give direct feedback on the draft case study analysis report.</li> </ul>
Tweed Champion landholders and farmers	19 Champions provided by the PSC	<ul style="list-style-type: none"> <li>Provide direct feedback on the draft case studies through presentation at a workshop.</li> </ul>
Farmers, fishers and foresters providing case study information	12 Case Studies	<ul style="list-style-type: none"> <li>The case studies offered targeted examples of best practice in agriculture relevant to growing agriculture in the Tweed.</li> </ul>

### Consultation with the TVPLUP Working Group

During the course of this project, weekly meetings were established between the Business Development Manager (North Coast Branch), Department of Regional NSW, and the Farming Together Program Manager and Project Coordinator. These meetings facilitated regular project progress reporting and enabled questions to be addressed promptly. Further to this, the Farming Together team sought required information and clarification via email.

Two formal presentations were conducted by Farming Together which included the draft report and final report to the TVPLUP Working Group. Written feedback from submission of

the final report was also provided before submission.

### Case studies

The key opportunities for growing agriculture in the Tweed were used by Farming Together to identify twelve exemplar case studies showcasing the implementation of these identified opportunities in other locations. This was achieved through reaching out to the Farming Together national network of over 30,000 farmers.

To develop the case studies, documents relating to the concepts of the successful farmers (including media and other supporting material) were reviewed to ensure relevance

<sup>19</sup> The Working Group consisted of representatives from the following organisations: Regional NSW, TAFE NSW, Department of Primary Industries, Tweed Shire Council, Health Infrastructure, Local Land Services and Training Services NSW.

and compatibility with the Tweed region. Following this, one or two members of each identified farmer group were interviewed, and comprehensive case studies were formulated.

### **Workshop with Landholders and Farmers**

A ninety-minute workshop was held with the Tweed Landholders and Farmers who were identified by the TVPLUP Working Group as “champions of the region”. During the workshop, landholders and farmers were presented with the selected cases studies and provided opportunity to comment and discuss their interest in implementing a similar approach. Drivers and enablers for implementation were also explored and addressed.

### **1.5 Report Structure and Outline**

The report is structured in four parts, plus an appendix (the farmer booklet):

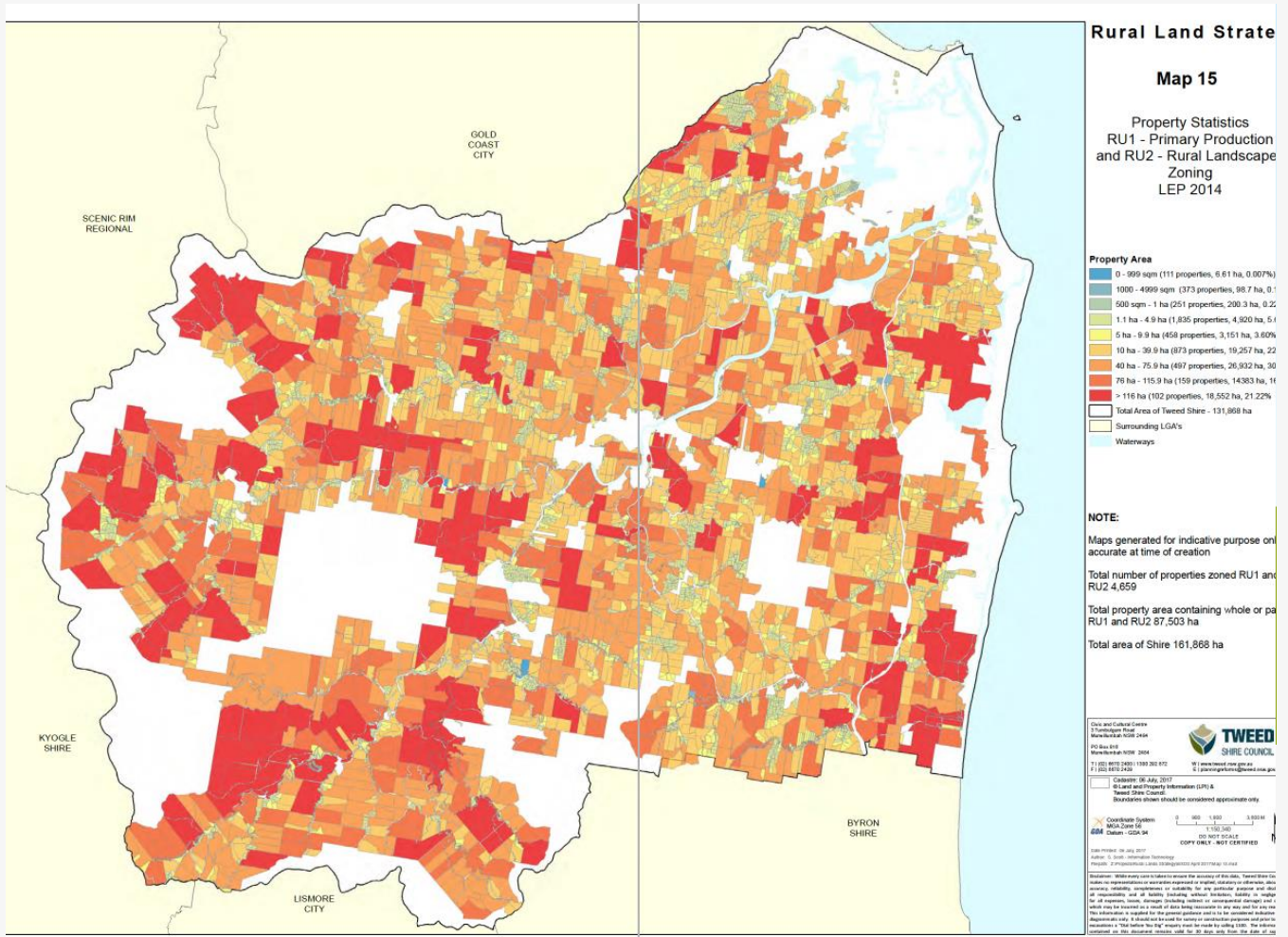
- **Section 1** provides an introduction to the report, and an outline of the methodological approach.
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- **Section 3** outlines twelve case studies that showcase best practice examples of these agricultural opportunities for farmers in the Tweed Region.
- **Section 4:** is divided into two sections:
  - **Part A** is an implementation model for farmers, landholders and community members to guide them in developing and actioning the concepts presented in the case studies.
  - **Part B** is the implementation recommendations for the region and outlines six strategies for helping create the right enabling conditions to enact desired changes.

- **Appendix (The Tweed Farmer Booklet):**

Contextualised, designed and written for farmers, the standalone booklet showcases the case studies and takes farmers through a step-by-step process of planning and implementing a concept from a case study.

# SECTION 2.0 SITUATIONAL ANALYSIS

## PROFILE OF THE TWEED REGION, THE DRIVERS FOR CHANGE AND OPPORTUNITIES FOR AGRICULTURE

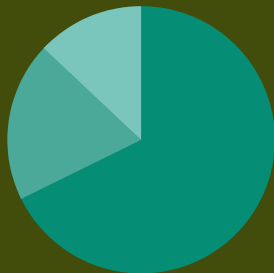


The Tweed Shire Local Government Area (LGA), or Tweed region, is located in the Northern Rivers region of New South Wales, Australia and is bounded by South-East Queensland in the north, Byron and Lismore to the south, and Kyogle Shires to the west. The closest major city is Brisbane 100km to the north.

# TWEED SHIRE LAND SIZE, LAND USE, COMPOSITION

## RURAL PROPERTIES IN THE TWEED REGION (RU1 + RU2 ZONING)

Rural Properties (>40 ha)  
13%



Rural Properties (10 - 40 ha)  
19.3%

Rural Properties (<10 ha)  
67.7%

## LAND USE

Land use in the Tweed Region primarily includes national parks, rural land, residential and rural residential growth and some commercial/ industrial use. While there is a mix of land use in the Tweed Region, the majority of land (by area) is used for agriculture.

Tweed Shire covers

# 130,918 hectares

# 66.8%

of the area is  
designated as rural  
(RU1 & RU2 zoning)

Grazing or grassland



# 48 666 ha

Cropping

# 8 957 ha

Horticulture

# 4 448 ha

Waterbodies  
& features



# 3 420 ha

Urban and  
residential  
land use



# 903 ha

## 2.1 Landscape and Population Demographics and Trends

A recent population boom has meant rural land use in the Tweed has significantly changed over the last decade with ongoing pressure to move away from traditional agricultural uses.<sup>20</sup> For example, the number of dwellings in the region is expected to increase by 39 per cent between 2016 – 2041<sup>21</sup> with some of this development inevitably occurring on rural land.

Currently, the main urban areas in the Tweed region are located in north-east corner (Tweed Heads), and Murwillumbah, with several smaller townships scattered across the region. Districts such as Cobaki-Piggabeen, Mid-coast and Casuarina and Terranora areas are predicted to experience significant population growth between 2016-2041.<sup>22</sup> Much of this growth is likely to be concentrated in the new urban release areas of Cobaki Lakes, Kings Forest and Dunloe Park.<sup>23</sup>

To access the original figures used in the infographic, see the Rural Land Strategy, Final Report 2020<sup>24</sup> and id community for the Tweed Shire.<sup>25</sup>

20 Tweed Shire Council's Planning Reform Unit, *Draft Rural Land Strategy* (2018). <<https://www.yoursaytweed.com.au/re-exhibition/RS/widgts/231774/faqs#:~:text=Rural%20land%20use%20in%20the%20Tweed%20has%20changed,to%20change%20land%20uses%20and%20develop%20rural%20land>> [accessed 9 Dec 2020].

21 .idcommunity, *Tweed Shire Council: Population, households and dwellings*. <<https://forecast.id.com.au/tweed/population-households-dwellings>> [accessed 9 Dec 2020]

22 .idcommunity, *Tweed Shire Council: Population, households and dwellings*.

23 Tweed Shire Council, 'Local Strategic Planning Statement – 2020', (2020), <<https://www.tweed.nsw.gov.au/Controls/Planning/Documents/Local%20Strategic%20Planning%20Statement%202020.pdf>> [accessed 9 Dec 2020]

24 Tweed Shire Council, 'Rural Land Strategy 2020 – 2036 – The future of rural land in Tweed Shire', (2020), pp. 110 – 117 & pp. 158 – 159.

25 .idcommunity, *Tweed Shire: About the profile areas*. <<https://profile.id.com.au/tweed/about>> [accessed 9 Dec 2020]

“ Tweed’s most important and productive agricultural land occurs on the rich red volcanic soils of the Cudgen plateau and the alluvial soils of the coastal floodplain... Today, agriculture is conducted predominantly on small farms, with the majority of rural land holdings being less than 40 hectares. ”

## Climate

Tweed is known for its fertile soils, warm and temperate climate, consistent rainfall and the temperature ranges from averages of 14°C in July to 25°C in January<sup>26</sup> making it a popular and prosperous region for agricultural production that supports a diversity of crops,<sup>27</sup> and one of NSW's most diverse production regions.<sup>28</sup>

It is predicted that the on the current trajectory Tweed climate will increase in temperature and become drier over time. This heightens the likelihood of heat waves, extreme winds and fire risk. At the same time, there is also potential for seasonal increases in extreme rainfall events.<sup>29</sup> It is acknowledged that the Tweed natural and built environment, infrastructure, communities and their livelihoods are vulnerable to climate change impacts'.<sup>30</sup>

## Population and Age Structure in the Tweed Region

In 2020, the population of the Tweed Shire is 97,277<sup>31</sup> with a population density of 0.74 persons per hectare.<sup>32</sup> The Tweed region has the fastest growing population on the NSW North Coast.<sup>33</sup> In the Tweed Shire, the median age of the population is 47 years, with those in the 50 plus age group currently accounting for approximately 42 per cent of the total population. The population of the Tweed Shire is expected to continue to grow between 0.9 and 1.2 per cent per annum.<sup>34 35 36</sup>

## Employment

In 2018/19, Tweed Shire contributed 0.8 per cent to New South Wales' employment,<sup>37</sup> With the three largest employment sectors in 2018/2019 being: Retail trade (17.2%), Health Care and Social Assistance (16.5%) and Accommodation and Food Services (10.6%), collectively accounting for 44.2 per cent of the local workers.<sup>38</sup> In 2016, Agriculture was 12<sup>th</sup> out of 20 industries in the Tweed region in terms of number of people employed<sup>39</sup> and accounted for 3.1 per cent of the full-time equivalent employment.<sup>40</sup>

26 Climate-Data, 'Tweed Heads Climate Australia', (2020) <<https://en.climate-data.org/oceania/australia/new-south-wales/tweed-heads-6732/>> [accessed 9 Dec 2020].

27 Tweed Shire Council, 'Tweed Sustainable Agriculture Strategy v1.1', (2016).

28 Tweed Shire Council, 'Local Strategic Planning Statement – 2020', (2020).

29 Tweed Shire Council, 'Rural Land Strategy - Issues Summary', (2020), p. 13.

30 Tweed Shire Council, 'Climate Change', (2020), <<https://www.tweed.nsw.gov.au/ClimateChange/>> [accessed 9 Dec 2020]

31 .idcommunity, 'Tweed Shire Council: population forecast', (2020), <<https://forecast.id.com.au/tweed/>> [accessed 9 Dec 2020]

32 .idcommunity, 'Tweed Shire Council: social atlas', (2020) <<https://atlas.id.com.au/tweed/>> [accessed 9 Dec 2020]

33 Tweed Shire Council, 'Local Strategic Planning Statement – 2020', (2020).

34 .idcommunity, 'Tweed Shire Council: social atlas'.

35 Australian Bureau of Statistics, 'Tweed (A) LGA', (2019), <[https://itt.abs.gov.au/itt/r.jsp?RegionSummary&region=17550&dataset=ABS\\_REGIONAL\\_LGA2019&maplayerid=LGA2018&geoconcept=LGA\\_2019&datasetASGS=ABS\\_REGIONAL\\_ASGS2016&datasetLGA=ABS\\_REGIONAL\\_LGA2019&regionLGA=LGA\\_2019&regionASGS=ASGS\\_2016](https://itt.abs.gov.au/itt/r.jsp?RegionSummary&region=17550&dataset=ABS_REGIONAL_LGA2019&maplayerid=LGA2018&geoconcept=LGA_2019&datasetASGS=ABS_REGIONAL_ASGS2016&datasetLGA=ABS_REGIONAL_LGA2019&regionLGA=LGA_2019&regionASGS=ASGS_2016)> [accessed 9 Dec 2020]

36 D. Nyachio. 'Tweed Shire Council Background Briefing Report Demographic and Economic profile of Tweed Shire', (2015).

37 .idcommunity, 'Tweed Shire Council: economic profile', <<https://economy.id.com.au/tweed/industry-sector-analysis/>> [accessed 9 Dec 2020]

38 .idcommunity, 'Tweed Shire Council: economic profile', <<http://economy.id.com.au/tweed/employment-by-industry/>> [accessed 9 Dec 2020]

39 <http://economy.id.com.au/tweed/employment-by-industry>

40 Tweed Shire Council, 'Local Strategic Planning Statement – 2020', (2020).

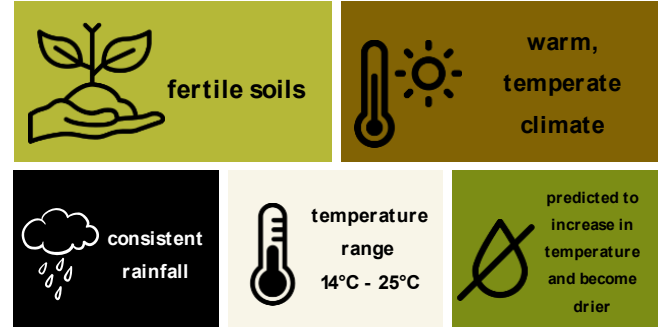
# Climate, Population Demographics and Employment



## Climate

“Any future changes in climate may result in a number of impacts on the Tweed's rural land. Changed weather patterns, storm frequency and severity, flooding behaviour, the reliability of the local water supply and rising sea levels all have the capacity to affect rural communities and the natural and built rural environments.”

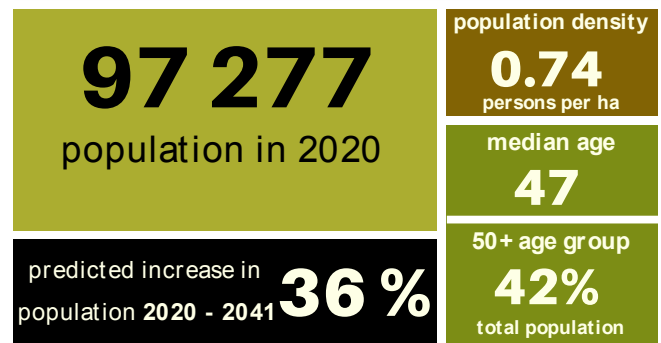
Rural Land Use, Issues Summary, 2020



## Population Demographics

“The Tweed region area has the fastest growing population on the NSW North Coast.”

Tweed Shire Council, Local Strategic Planning Statement, 2020



## Employment

“Over the decade between 2008/ 09 - 2018/ 19, Tweed employment in agriculture (including farming, fishing and forestry) remained relatively stable, while other industries such as health care and social assistance, and retail trade have seen notable growth in full-time employment numbers. The construction industry has seen the most significant downward trend.”

Tweed Shire Council, Atlas ID, 2020





## 2.2 Economic Activity in the Tweed Shire

### *Tweed Shire Registered Business by Industry*

An analysis of registered businesses in 2019, has shown that construction businesses represent the largest industry with over 1600 businesses, followed by professional services (843 businesses), real estate services (733 businesses) and then, agriculture (594 businesses). Agriculture and real estate services have seen the greatest drop in the number of business between 2018-2019, both industries losing 11 businesses in the region in 12 months. This was similarly reflected in the year prior, with the loss of 10 businesses between 2017 – 2018.<sup>41</sup>

Tweed Shire's Gross Regional Product was \$3.75B in the year ending June 2019, growing 1.7 per cent since the previous year and represents 0.62 per cent of NSW's GSP (Gross State Product).<sup>42</sup>

In 2018/2109 Rental, Hiring and Real Estate Services had the largest total sales (output) by industry, generating \$1.18B<sup>43</sup>, and Agriculture was ranked 10<sup>th</sup> out of 19 with \$249M of total sales.

In terms of industry increasing the value of its inputs, "value-added" is an indication of

business productivity. In 2018/19 in Tweed Shire, Health Care and Social Assistance most productive industry, generating \$397M in 2018/19.<sup>44</sup> Agriculture was ranked 14 out of 19 at \$105.7M.

At \$249M (2018/19) total sales (output) of the regional total of \$6.52B output,<sup>45</sup> agriculture is a diverse and material contributor to the economy in the Tweed Shire.<sup>46</sup> Of this production, 30 per cent of the State's bananas and sugarcane and 10 per cent of the State's tropical fruit were produced in the Tweed Shire.

In 2015/16, sugar was valued at just over \$13M and represented 32 per cent of total agricultural production for the region.<sup>47 48</sup> This was an increase of 28 per cent in production from 2005/06.<sup>49</sup> Despite this increase in production, this figure represents a decrease in value as in 2010/11 it was \$30.7M.

The second most valuable commodity is cattle at 19 per cent of total agricultural production for the region in 2015/16, up from 12 per cent in 2005/06. Following cattle, "other" vegetables were the third largest contributor to agricultural production for the region at 18 per cent up from 7 per cent in 2005/06.<sup>50</sup>

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41 .idcommunity, 'Tweed Shire Council: economic profile', <<https://economy.id.com.au/tweed/number-of-businesses-by-industry>> [accessed 9 Dec 2020]

42 .idcommunity, 'Tweed Shire Council: economic profile', <<http://economy.id.com.au/tweed>> [accessed 9 Dec 2020]

43 .idcommunity, 'Tweed Shire Council: economic profile', <<https://economy.id.com.au/tweed/output-by-industry>> [accessed 9 Dec 2020]

44 .idcommunity, 'Tweed Shire Council: economic profile', <<https://economy.id.com.au/tweed/value-add-by-industry>> [accessed 9 Dec 2020]

45 .idcommunity, 'Tweed Shire Council: economic profile', <<https://economy.id.com.au/tweed/output-by-industry>> [accessed 9 Dec 2020]

46 .idcommunity, 'Tweed Shire Council: economic profile',

<<http://economy.id.com.au/tweed/value-of-agriculture?Indkey=23001&IGBMID=50>> [accessed 9 Dec 2020]

47 .idcommunity, 'Tweed Shire Council: economic profile', <<https://economy.id.com.au/tweed/value-of-agriculture>> [accessed 9 Dec 2020]

48 Australian Bureau Statistics, 'Agriculture', <<https://www.abs.gov.au/statistics/industry/agriculture>> [accessed 9 Dec 2020]

49 Tweed Shire Council, 'Tweed Sustainable Agriculture Strategy v1.1', (2016).

50 .idcommunity, 'Tweed Shire Council: economic profile', <<https://economy.id.com.au/tweed/value-of-agriculture>> [accessed 9 Dec 2020]



## KEY ISSUES DRIVING CHANGE IN AGRICULTURE IN THE TWEED

This section draws on the results of desktop research into the issues driving change in agriculture in the Tweed region. A number of reports were consulted (as footnoted) along with an analysis of the feedback and contributions from landholders at the Tweed Landholders workshop held in October 2019. Through this comprehensive research process, fourteen key drivers of change for agriculture in the Tweed region were identified. The drivers are highly interconnected, forming an integrated network to represent the region. This section discusses these drivers in greater depth.

The drivers of change detailed in this section of the report:

1. Viability of small farms
2. Land use conflict
3. Population growth
4. Ageing workforce
5. Young and new farmers
6. Infrastructure to facilitate agriculture: transport and water
7. Council rates
8. Values of land
9. Invasive weeds and pests
10. Intensive agriculture
11. Future employment opportunities for agriculture
12. Changing consumer preference
13. Incoming 'tree and sea changers'
14. Climate impact
15. Impacts of COVID-19

### 2.1.1 Viability of small farms

In order to offset increasingly unfavourable terms of trade, agricultural business need to double in size every 20 years.<sup>51</sup> Most productivity growth in farming is obtained through economies of scale via increasing farm size. In regions like the Tweed, direct land-purchase to increase scale presents challenges due to increasing land prices pushed up by: the growing population, encroaching urbanisation and “tree-changers” seeking a lifestyle change to live on the prospective target agricultural land. These factors mean that scaling up an agricultural business through increased farm size may not be an option for many primary producers. The Tweed farmers and growers in this situation must find other ways to remain profitable.

For example, for some farmers, mechanisation or intensification in horticulture, dairy and sugarcane provide that opportunity in the region. However, with a strong push for more sustainable agriculture in the region<sup>52</sup>, some intensification practices, such as high chemical use, may need to be reconsidered, thus innovation and adaptability in intensive agriculture will be required. Additionally, intensive farming located next to lifestyle blocks and urban areas can cause ongoing tension and land use conflict issues, as intensive practices such as using loud

machinery or chemical sprays can be considered undesirable for lifestyle landholders. This issue is addressed in greater detail in section 2.1.2 *Land use conflict* however, it is noted that the ‘Right to Farm’ is policy in NSW and land use conflicts are an issue of shared obligations.<sup>53</sup>

With just over eighty per cent of rural properties in the Tweed region measuring less than 40 hectares in size, there is a significant number of smaller farms in the region. Smaller farms are not able to compete with their larger counterparts on yield (that is, units of production per hectare), therefore these farmers tend to be more diverse in their practices.<sup>54</sup> This diversity of practices is seen to enhance the triple bottom line, therefore contributing significant value to their communities.<sup>55</sup> Smaller farms often need to supplement farm income with additional sources.<sup>56</sup> For example, agritourism or with secondary employment.<sup>57</sup>

Across Australia we are seeing a number of trends. Firstly, while Australia is still dominated by smaller farms, the number of farms is in decline while the size of farms is increasing due to amalgamation.<sup>58</sup> <sup>59</sup> There is also a decrease in the area of land that is under agricultural production.<sup>60</sup>

### 2.1.2 Land use conflict

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51 Michael Buxton, Amaya Alvarez, Andrew Butt, Stephen Farrell, and Danny O'Neill. 'Planning sustainable futures for Melbourne's peri-urban region', (School of Global Studies, Social Science and Planning, RMIT University, 2008), <http://pugrc.vic.gov.au/wp-content/uploads/2014/11/Planning-Sustainable-Futures-for-Melbournes-Peri-urban-Region.pdf> [accessed 9 Dec 2020]

52 Tweed Shire Council, 'Tweed Sustainability Agriculture Strategy v1.1', (2016).

53 Department of Primary Industries, 'Right to Farm Policy', (n.d.), <<https://www.dpi.nsw.gov.au/agriculture/lup/legislation-and-policy/right-to-farm-policy>> [accessed 9 Dec 2020]

54 Carole Hollier and Michael Reid, 'Smalls Farms: Valued contributors to healthy rural communities', (Rural Industries Research Development Corporation, Australian Government, 2007) <<https://www.agrifutures.com.au/wp-content/uploads/publications/07-187.pdf>> [accessed 9 Dec 2020]

55 Carole Hollier and Michael Reid, 'Smalls Farms: Valued contributors to healthy rural communities', (2007).

56 Productivity Commission, 'Trends in Australian Agriculture, Research Paper', (2007).

57 John Gladigau, 'Collaborate to survive and thrive', (Nuffield Australia Farming Scholars, 2007), <<https://farmingtogether.com.au/wp-content/uploads/2017/04/collab.pdf>> [accessed 9 Dec 2020]

58 Productivity Commission, 'Trends in Australian Agriculture', Research Paper, (Commonwealth of Australia, Canberra, 2005), <<https://www.pc.gov.au/research/completed/agriculture/agriculture.pdf>> [accessed 9 Dec 2020]

59 Mark Skilbeck, 'Australian agriculture faces a future of increased corporatisation and foreign ownership of farms and the agribusiness value chain', *Contemporary Issues in Rural Australia*, <<https://marcusoldham.vic.edu.au/wp-content/uploads/2018/03/201601MOC-CSA-Corporatisation-and-Foreign-Ownership-by-Mark-Skilbeck.pdf>> [accessed 9 Dec 2020]

60 Productivity Commission, 'Trends in Australian Agriculture', (2007).

There is increasing competition between high-quality agricultural land for production and demand for the expansion of residential development in the Tweed and other non-agricultural uses.<sup>61</sup> The number of dwellings in the region is expected to increase by 39 per cent between 2016 – 2041<sup>62</sup> while at the same time, the use of land for agricultural purposes is decreasing. This is also due to the increase in rural land purchase by people seeking lifestyle opportunities without needing to farm the land for income.

The motivation for owning rural land plays an important factor in determining the perception and use of agricultural land. Furthermore, it enables a greater understanding of the potential conflicts of land use. The differing motivations for owning rural land in the Tweed can be categorised as:

- 1. Industrial farms:** Commercially orientated with a focus on productivity and profitability. Either large scale or high levels of intensification. Often highly mechanised and drawing on large scale inputs. Can focus on growing one (or a few) commodities in higher volume.
- 2. Productive Farms:** Tend to be smaller and / or less intensively focused than their industrial counterparts but still strongly dependent on farm income. They may however have to supplement this income off-farm because they lack scale or a sufficient level of intensification.
- 3. Lifestyle Farms:** For enjoyment of the rural lifestyle; not reliant on income. Often these farms have a conservation or amenity focus rather than a high productivity focus.
- 4. Lifestyle blocks:** For the enjoyment of space and the rural lifestyle. These

owners don't have an interest in agricultural production and may or may not have an interest in land conservation.

The differing motivations for being on the land has the potential to result in conflict. For example, an issue could arise between a new resident on a lifestyle block seeking serenity and clean living where the neighbouring property is a high intensity farming business where large, noisy machinery may be used, or spray drift a concern. These differences in land use practices create tensions and conflicts which do not contribute to a cohesive and harmonious community and impact on agricultural production.

The diversity of motivations for land use in the Tweed region is likely to continue as increasing land prices encourage more people who seek lifestyle farms and blocks to settle. This creates a misalignment between community expectations of rural living and the necessary reality of agricultural production.

### 2.1.3 Population growth

The Tweed region is experiencing significant population growth, having the fastest growing population on the NSW North Coast.<sup>63</sup> There are pressures meeting the needs of the growing population such as balancing the necessary amenities and services and maintaining agricultural land creating a push-pull effect. For example, with more people moving into the area, and urban sprawling occurring there will be an opportunity to meet an increase in demand for food through local production but less agricultural land to produce it on.

### 2.1.4 Ageing workforce

According to the Australian Bureau of Statistics' Agricultural Commodities Survey (2018 – 2019), the age of the average farmer is

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61 Tweed Shire Council, 'Tweed Sustainability Agriculture Strategy v1.1', (2016).

62 .idcommunity, 'Tweed Shire Council: population forecast', <<https://forecast.id.com.au/tweed/population-households-dwellings>> [accessed 9 Dec 2020]

63 Tweed Shire Council, 'Local Strategic Planning Statement – 2020', (2020),

<https://www.tweed.nsw.gov.au/Controls/Planning/Documents/Local%20Strategic%20Planning%20Statement%202020.pdf> [accessed 9 Dec 2020]

58.<sup>64</sup> This is approximately a decade older than the average age of the workforce in Australia and means that there is a significantly ageing population employed in agriculture in Australia. The industry has a relatively old workforce (41 per cent are aged 55 years or older).<sup>65</sup>

In addition to an ageing agricultural workforce nationally, the Tweed region has a growing older population. By 2040, it is predicted that Tweed residents in the 50 plus age group will still constitute approximately 40 per cent of the population.<sup>66</sup> <sup>67</sup> With fewer young people to work on agricultural business in the Tweed, and a national shift away from children taking over the family farm,<sup>68</sup> older farmers are coming to retirement age with no succession plan.

Cumulatively, the rising cost of farmland, the challenge of remaining profitable, the growing ageing population, and the lack of a young workforce (farming and otherwise) means some farmers are selling their agricultural land as lifestyle farms for development, resulting in reduced availability of land for primary production.

### 2.1.5 Young and new farmers

Research suggests there is a revitalisation in the interest of an agricultural career by young people and also those who are older but do not come from farming backgrounds. Many of these new generation agricultural pioneers are

motivated by global food security and the impacts of climate change and are looking for alternative ways to produce food ethically and sustainability. This results in a low ecological footprint through supplying local communities with fresh seasonal food and by activating the landscape to an improved and productive condition.

One of the barriers for new farmers is locating and accessing available and affordable farmland. This is highlighted in the Tweed where land values exceed agricultural production values due to increased development. With the average capital value of farms in Australia at \$3.3 million<sup>69</sup> the financial barriers for new and young farmers are substantial. This means that young and new farmers are limited from bringing their new skills and ideas into farming in the Tweed unless important entry barriers such as the cost of rural land are addressed.<sup>70</sup>

The cost of rural land is often beyond the reach of people seeking a future in agriculture and development pressure can further increase the cost and decrease the availability of agricultural land.

### 2.1.6 Infrastructure to facilitate agriculture – transport and water

Infrastructure including roads, energy, water treatment, irrigation modernisation and mobile phone coverage are known to impact the capacity and competitiveness of the Australian agri-food sector.<sup>71</sup> At the

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64 Australian Bureau of Statistics, 'Agricultural Commodities, Australia', (2020), <<https://www.abs.gov.au/statistics/industry/agriculture/agricultural-commodities-australia/latest-release>> [accessed 9 Dec 2020]

65 National Skills Commission, 'Agriculture, Forestry and Fishing', (Australian Government, n.d.), <<https://australianjobs.employment.gov.au/jobs-industry/agriculture-forestry-and-fishing>> [accessed 9 Dec 2020]

66 .idcommunity, 'Tweed Shire Council: community profile', <<https://profile.id.com.au/tweed/service-age-groups>> [accessed 9 Dec 2020]

67 Australian Bureau of Statistics, 'Agricultural Commodities, Australia', (2020), <<https://www.abs.gov.au/statistics/industry/agriculture/agricultural-commodities-australia/latest-release>> [accessed 9 Dec 2020]

68 Neil Barr, 'New entrants to Australian agricultural industries: where are all the young farmers', *The Rural Industries Research and Development Corporation (RIRDC)*, (Australian Government, 2014),

<[https://www.researchgate.net/publication/278030128\\_New\\_Entrants\\_to\\_Australian\\_Agricultural\\_Industries\\_Where\\_are\\_the\\_young\\_farmers](https://www.researchgate.net/publication/278030128_New_Entrants_to_Australian_Agricultural_Industries_Where_are_the_young_farmers)> [accessed 9 Dec 2020]

69 Australian Farm Institute, 'Farmers are getting older but it's not a problem', (n.d.),

<<https://www.farminstitute.org.au/farmers-are-getting-older-but-its-not-a-problem/>> [accessed 9 Dec 2020]

70 Tweed Shire Council, 'Tweed Sustainability Agriculture Strategy v1.1', (2016).

71 David McKinna, & C. Wall, 'Agribusiness briefing paper for Loddon Mallee: Ten driving forces in agri-food impacting Loddon Mallee', *Loddon Mallee Regional Development Committee*,

Landholders workshop held on 31 October 2019, infrastructure concerns centred around road and water availability made up a significant number of issues that were identified as affecting agriculture in the region. These concerns are listed in Table 2.

*Table 2 Infrastructure concerns from landholders*

<b>Roads/access (roadworks)</b>	<b>Traffic</b>
<b>Mud on road</b>	<b>Transport</b>
<b>Roads will not cope – no budget for roads</b>	<b>Water shortages</b>
<b>Access to farms from higher traffic volumes</b>	<b>Water (old infrastructure)</b>

For many agricultural businesses, transport costs make up a significant percentage of farm gate costs at around 20 per cent.<sup>72</sup> Having good access to quality roads and an efficient road network is important for all industries, especially for the transport of live and perishable goods.

The significant growth predicted in the region will require effective planning to include roads capable of supporting agricultural activities (i.e., moving heavy machinery between farms or large trucks moving produce/livestock), while also managing roads utilised by both industry and residents.

### *Water*

Water is a critical component for many agricultural producers; especially those with intensive production who rely on irrigation water on-demand, such as horticulture and dairy – both important industries in the Tweed Region. Water is also an essential service for other community members, and with the

growing population predicted and the associated development required, there will be increasing demand for infrastructure services. Development may also change the natural waterways and influence water catchment. Forecast changes to more erratic rainfall patterns may also affect agricultural demand on the water infrastructure.

Storage and reticulation systems will need to be large, efficient and effective to meet the increasing demand placed on them.

### *2.1.7 Council rates*

From the landholders workshop, council rates were identified as a key issue and area of concern for Tweed landholders. While it could be argued that council rates are too excessive for farmers, it is evident that only part of council rates are linked to land value (Ad Valorem component). This contribution has a 'minimum rate to ensure a fair contribution to all ratepayers'.<sup>73</sup> Furthermore, primary producers are eligible for a rate reduction through the Farmland Rated property scheme.

As stated on the council website,

An increase in land value does not necessarily mean an increase in rates (Council does not receive more money because land values increase). Some people may pay more or less on their rates depending on the change in value of their land relative to changes in land values across the Tweed.<sup>74</sup>

Farming Together found no evidence of the council rates being a *key driver* influencing land use decision-making, however, it is raised here to acknowledge that this is an important issue for the Tweed region to be aware of. All matters regarding council rates are encouraged to continue to be communicated

(2014), <http://www.loddonmallee.com.au/pdf/10%20driving%20forces%20in%20Agrifood.pdf> [accessed 9 Dec 2020]  
72 Commonwealth of Australia, 'Australian Government's Agricultural Competitiveness White Paper', (Australian Government, 2015),

[https://www.agriculture.gov.au/sites/default/files/documents/ag-competitiveness-white-paper\\_0.pdf](https://www.agriculture.gov.au/sites/default/files/documents/ag-competitiveness-white-paper_0.pdf) [accessed 9 Dec 2020]  
73 Tweed Shire Council, 'Land Valuations', (n.d.), <https://www.tweed.nsw.gov.au/LandValuations>, [accessed 9 Dec 2020]  
74 Tweed Shire Council, 'Land Valuations', (n.d.).

clearly, professionally and respectfully between all parties.

### 2.1.8 Land value

The Tweed Region is marketed as ‘the perfect location for your business and a desirable lifestyle destination’.<sup>75</sup> Tweed is a regional city located on a main transport corridor, with a temperate to subtropical climate and close to beaches, and offers a work-life balanced, or a scenic relaxed retirement, lifestyle. Tweed is a desirable location to live and becoming more so, as demonstrated by the increasing change in population between 2020 – 2041, with a predicted 36 per cent increase in demand for land to meet that growth. As more people move into the area there is greater demand for housing, commercial, industrial and rural land uses. This appears to be having an effect on the value of land across the region.

According to report released by the acting Valuer General on 1 July 2018, the overall land value has increased in the North Coast region, which encompasses the Tweed Shire, since 2017.<sup>76</sup> Overall residential land values across the region increased by 8.7 per cent. Byron and Tweed recorded the strongest increases at 10.5 per cent and 10.6 per cent respectively. This trend is predicted to continue and has been accelerated by COVID-19 as people look for alternative places to live outside of high density cities.

In terms of agricultural land, the replacement of land with the potential for agriculture by lifestyle farms and blocks and residential development are seeing the amenity value of the land outstrip the farming value as there is increased demand with capped and or diminishing supply.

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75 Tweed Shire Council, ‘Business and Lifestyle Destination’, (n.d.), <<https://www.tweed.nsw.gov.au/Business/LifestyleDestination>> [accessed 9 Dec 2020]

76 NSW Government, ‘1 July 2018 Land Values published for the North Coast Region’, (8 January 2019), <[https://www.valuergeneral.nsw.gov.au/data/assets/pdf\\_file/0010/220699/1\\_July\\_2018\\_land\\_values\\_published\\_for\\_the\\_North\\_Coast\\_region.pdf](https://www.valuergeneral.nsw.gov.au/data/assets/pdf_file/0010/220699/1_July_2018_land_values_published_for_the_North_Coast_region.pdf)> [accessed 9 Dec 2020]

### 2.1.9 Invasive weeds and pests

Invasive weeds and pests contribute to loss of yield and contamination of products in agriculture. In Australia, loss by agricultural businesses to weeds is estimated to be \$4 billion annually.<sup>77</sup>

Issues related to weed and pest problems have been attributed to many causes such as lack of knowledge of land management including weed control and naively introducing domestic animals and exotic plants. In the Tweed, this issue may arise due to the increased number of new and inexperienced land and animal managers in the region.

If the land is not managed effectively including proper weed control, weeds can spread to neighbouring properties and be almost impossible and cost prohibitive to eradicate. Domestic animals such as dogs that turn wild can kill livestock and also limit choices of livestock available to farmers for fear of losing stock. Other invasive animals in the Tweed region include foxes, cats, Indian Myna birds, rabbits and cane toads.<sup>78</sup>

The cost to farmland and the natural environment, in terms of economic as well as environmental impact can be significant and sometimes irreversible.

### 2.1.10 Intensive agriculture

Intensive farming can create opportunities for greater productivity and efficiency for some agricultural industries in the Tweed. However, at the same time, some of the associated practices can cause conflict with neighbours and the surrounding community, due to conflicting expectation of land uses and core

77 Jack Sinden, Randall Jones, Susie Hester, Doreen Odom, Cheryl Kalisch, Rosemary James, Oscar Cacho, and Garry Griffith. ‘The economic impact of weeds in Australia’, *Technical Series 8* (2004). <<https://www.infra.cbd.int/financial/values/australia-economicweeds.pdf>> [accessed 9 Dec 2020]

78 Tweed Shire Council, ‘Managing Impacts of Invasive Animals’, (n.d.), <<https://www.tweed.nsw.gov.au/PestManagement>> [accessed 9 Dec 2020]

values that underpin decision making and action.

Additionally, intensive agriculture is being encouraged to develop more innovative and sustainable practices in line with the Tweed Council's Sustainable Agriculture Strategy<sup>79</sup> and intensive farming systems are being supported to adapt. There are already changes being seen in different industries. For example:

'The sugar industry using modified floodgates for tidal flushing and revegetating cane drains to manage acid sulfate soils, while controlling aquatic weeds and improving fish habitat'.<sup>80</sup>

'Dairies improving their effluent management to retain valuable nutrients, enhancing soil and pasture health and reducing the costs of applying inorganic fertilisers'.<sup>81</sup>

Continued adaptation within intensive agricultural production will be required in order to maintain profitability, and maintain social license to operate.

### 2.1.11 Future employment opportunities for agriculture

Compared to the general Australian workforce, a high proportion of those employed in Australia agriculture are self-employed and family members.<sup>82</sup> This includes 37 per cent of

those employed being the owner / manager of a business,<sup>83</sup> and almost 60 per cent of the workforce as either owners or family members.<sup>84</sup>

Agriculture is a significant employer, particularly in regional areas where it covers 82 per cent of rural employment,<sup>85</sup> but also nationally where it accounts for 2.9 per cent of the national workforce.<sup>86</sup> In 2020, Agriculture employs approximately 354,500 persons.<sup>87</sup>

The projected growth rate of employment in agriculture in Australia between 2019 - 2024 is -1.2 per cent.<sup>88</sup> This predicted decreasing trend in the number of people employed in agriculture is primarily due to technological advancements and the shift to a service fuelled economy as advancement of other sectors occurs. For example, it is expected that by 2025 there will be some fully automated vegetable farms in Australia.<sup>89</sup>

In the agricultural sector, Tweed Shire contributed 1.3 per cent to NSW employment and further represented 16.5 per cent of Northern Rivers' employment.<sup>90</sup> Despite the Tweed region having relatively higher uptake of employment in agriculture than the NSW state average, and as important as it has been to the Tweed economic base, going forward it is likely that employment in agriculture in the region will follow the national trend with fewer people required to work on farms due to

79 Tweed Shire Council, 'Tweed Sustainability Agriculture Strategy v1.1', (2016).

80 Tweed Shire Council, 'Tweed Sustainability Agriculture Strategy v1.1', (2016).

81 Tweed Shire Council, 'Tweed Sustainable Agriculture Strategy v1.1', (2016), p.9.

82 Productivity Commission, 'Trends in Australian Agriculture', Research Paper, *Commonwealth of Australia* (Canberra, 2005).

83 Department of Agriculture, Water and the Environment, 'Australian Bureau of Agricultural and Resource Economics and Science', (n.d.), <<https://www.agriculture.gov.au/abares>> [accessed 9 Dec 2020]

84 Bill Binks, Nyree Stenekes, Heleen Kruger & Robert Kancans, 'Snapshot of Australia's Agricultural Workforce', *Department of Agriculture, Water and the Environment*, (Issue 3, 2018), p. 2, <<https://www.agriculture.gov.au/abares/publications/insights/snapshot-of-australias-agricultural-workforce>> [accessed 10 Dec 2020]

85 Bill Binks, Nyree Stenekes, Heleen Kruger & Robert Kancans, 'Snapshot of Australia's Agricultural Workforce', *Department of Agriculture, Water and the Environment*, (Issue 3, 2018).

86 Labour Market Information Portal, 'Agriculture, Forestry and Fishing', *Australian Government*, (n.d.), <<https://lmip.gov.au/default.aspx?LMIP/GainInsights/IndustryInformation/AgricultureForestryandFishing>> [accessed 9 Dec 2020]

87 Labour Market Information Portal, 'Agriculture, Forestry and Fishing', *Australian Government*, (n.d.).

88 Labour Market Information Portal, 'Agriculture, Forestry and Fishing', *Australian Government*, (n.d.), <<https://lmip.gov.au/default.aspx?LMIP/GainInsights/IndustryInformation/AgricultureForestryandFishing>> [accessed 9 Dec 2020]

89 Queensland Country Life, 'Automated farms the future', (30 Dec 2015),

<<http://www.queenslandcountrylife.com.au/story/3629450/automated-farms-the-future/>> [accessed 10 Dec 2020]

90 .idcommunity, 'Tweed Shire Council: economic profile', (n.d.), <<https://economy.id.com.au/tweed/industry-sector-analysis?indkeyNieir=23000&BMID=52>> [accessed 10 Dec 2020]



technological innovation<sup>91</sup>, other productivity gains and the growth of other sectors such as services. In the five years to May 2023, projected regional employment growth rate in Agriculture, forestry and fishing in the Richmond-Tweed region is expected to decrease by 3.1%.<sup>92</sup> Also predicted is a shift in the type of work required; it will move towards a more highly skilled and qualified workforce.<sup>93</sup>

#### 2.1.12 Incoming 'tree and sea changers'

With the increase in population and influx of new people to the Tweed region so too comes the prospect of new values, customs, expectations, ideas, socioeconomic diversity and varied lifestyle preferences. This creates the potential for conflict (as discussed previously with land use priorities) but can also deliver opportunities. These could be through tapping into new sources of knowledge and skills, and or funds to invest in community initiatives. Many newcomers will be seeking a strong sense of community and looking for opportunity to join and or build those communities.

#### 2.1.13 Changing consumer preference

There is a growing awareness and interest in ethical and sustainable food production, as well as low food miles, freshness, provenance, quality, and the health properties of food.<sup>94</sup> This interest in part translates to a growing

desire to purchase seasonal and local produce. This agenda is being driven by consumers and businesses (e.g., chefs and restaurants). However, the main barrier that exists is the purchase price. Consumers are still motivated by cost and smaller growers cannot compete on price with larger competitors. A study surveying local restaurants within the Sunshine Coast and Gympie regions in 2011 found a mismatch between restaurateur and chefs commitment to buying local food (74 per cent of respondents) with their inconsistent buying behaviour.<sup>96</sup> It is assumed there's a similar scenario in the Tweed region, and it is assumed that higher prices from smaller producers plays a role.

#### 2.1.14 Changing climate

Australia is the driest inhabited continent with low soil quality and is subject to volatile climatic events.<sup>97</sup> In Australian agriculture output variability is greater than business / production output in any other sector of the Australian economy.<sup>98</sup> Predicted are more extreme changes in weather patterns with more erratic rainfall patterns and more frequent and extensive droughts. 'Climate change is expected to increase the frequency and severity of existing climate-related risks to a range of Tweed's assets and activities'.<sup>99</sup> The changes, that are detailed on the Tweed Shire Council website,<sup>100</sup> are likely to effect

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91 Productivity Commission, 'Trends in Australian Agriculture', Research Paper, *Commonwealth of Australia* (Canberra, 2005).

92 Labour Market Information Portal, 'Employment Projections', *Australian Government*, (n.d.),

<<https://lmip.gov.au/default.aspx?LMIP/GainInsights/EmploymentProjections>> [accessed 10 Dec 2020]

93 Commonwealth of Australia, 'Australian Government's Agricultural Competitiveness White Paper', (Australian Government, 2015),

<[https://www.agriculture.gov.au/sites/default/files/documents/ag-competitiveness-white-paper\\_0.pdf](https://www.agriculture.gov.au/sites/default/files/documents/ag-competitiveness-white-paper_0.pdf)> [accessed 9 Dec 2020]

94 Els Kamphof, 'Consumer trends are dictating our food future', *The Land*, (30 May 2017),

<<https://www.theland.com.au/story/4689503/consumers-rule-roost/>> [accessed 10 Dec 2020]

95 Dimi Kyriakou, 'Consumers changing their food preferences', *Ausveg*, (n.d.), <<https://ausveg.com.au/media-releases/consumers-changing-their-food-preferences/>>

[accessed 10 Dec 2020]

96 A. Lawrence, & L. Cheung, 'Food Futures: Creating local food connections: A survey of local restaurants within the Sunshine Coast and Gympie regions', *Maroochydoore, Queensland: Queensland Government Regional Services*, (2011).

97 S. M. Langridge, E. H. Hartge, R. Clark, K. Arkema, G.M. Verutes, E.E. Praher, ... & M. Ruckelshaus, 'Key lessons for incorporating natural infrastructure into regional climate adaptation planning', *Ocean & Coastal Management*, (95, 2014) pp. 189-197.

98 Tom Jackson, Steve Hatfield-Dodds & Kirk Zammit, 'Snapshot of Australian Agriculture 2020', *Australian Government Department of Agriculture, Water and the Environment*, (2020), <<https://www.agriculture.gov.au/abares/publications/insights/snapshot-of-australian-agriculture-2020>> [accessed 10 Dec 2020]

99 Tweed Shire Council, 'Climate Change', (2019) <<https://www.tweed.nsw.gov.au/ClimateChange>> [accessed 10 Dec 2020]

100 Tweed Shire Council, 'Climate Change', (2019) <<https://www.tweed.nsw.gov.au/ClimateChange>> [accessed 10 Dec 2020]

agriculture in the Tweed including what can be grown and produced in the region. Moreover, the 'Tweed's wildlife, waterways, coastlines, utilities, infrastructure, businesses and communities are vulnerable to the impacts of climate change'.<sup>101</sup> As climate affects almost all aspects of food production, the region must find ways to build resilience to the changing climate and the associated impacts.

At this time, there is also a noticeable shift and growth in consumer interest towards sustainable, ethical and regenerative production.<sup>102</sup> These factors contribute to the economic and environmental opportunity where sustainable and regenerative agriculture production approaches are considered.

#### 2.1.15 Impacts of COVID-19

Whilst many constraints have been experienced by industry and communities, the pandemic has reinforced some of the shifts in community attitude and practice identified in table 3 (see the following section) as opportunities. These include a focus on:

- Reliance on and support for local production and industry.
- Building stronger local relationships and communities.
- Secure supply chains and food and water resources.
- A cleaner environment.
- Innovation.
- Corporate responsibility.

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101 Tweed Shire Council, 'Climate Change', (2019) <<https://www.tweed.nsw.gov.au/ClimateChange>> [accessed 10 Dec 2020]

102 Ros Sambell, Lesley Andrew, Stephanie Godrich, Justin Wolfgang, Dieter Vandenbroeck, Katie Stubley, Nick Rose, Lenore Newman, Pierre Horwitz, and Amanda Devine, 'Local Challenges and Successes Associated with Transitioning to

Sustainable Food System Practices for a West Australian Context: Multi-Sector Stakeholder Perceptions', *International journal of environmental research and public health*, (16:11, 2019), <<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6603997/>> [accessed 10 Dec 2020]

## 2.2 Opportunities

The twelve opportunities for farmers, landholder and champions to grow agriculture in the Tweed presented below were identified through analysis of reports, websites, articles and Tweed landholder workshop findings. Table 3 outlines the opportunities with a description, implementation examples, a relevant case study, and the pillar under which this opportunity is explored.

The aim for this report was to present relevant case studies exemplars that offer inspiration for farmers, landholder and champions in the Tweed region which can be implemented immediately. There may be other opportunities which offer potential however, due to the lengthy and difficult barriers identified that would need to be overcome, they have not been included. The opportunities are presented in no particular order and numbered for ease of reference.

*Table 3 Opportunities for Tweed farmers, landholders and champions*

Opportunity	Description	Implementation Examples	Related case-study	Pillars
<b>2.2.1 Making productive and underutilised land available for agriculture</b>	<p>There is a significant amount of agricultural land held by landowners that is not utilised for agricultural production in the Tweed Shire.</p> <p>There are several strategies that could be adopted for making use of this land in order to grow more food for the local community and also manage land more sustainably.</p> <p>If this previously used land is managed productively and sustainably/ regeneratively, the region can benefit from greater production levels and more sustainable management of land.</p>	<p>Farmers leasing land from landholders to use productively and increase scale of production.</p> <p>New farmers leasing unused land so they can start farming.</p> <p>Share farming arrangements between farmers and landholders.</p>	<p>Deborah Bogenhuber, <i>Food Next Door</i></p> <p>Mick Green &amp; Rachel Ward, <i>Bundalong &amp; Eastbourn</i></p>	<p>Innovation and diversification</p> <p>Sustainable and regenerative practices</p>

<p><b>2.2.2 Creating economies of scale through collaborative arrangements</b></p>	<p>For many agricultural businesses in the Tweed profitability is a concern because businesses lack the scale necessary.</p> <p>Combining farms and other business in the supply chain through various collaborative models/structures include share farming, leasing, a company structure, or cooperative can help farmers create the scale whilst still retaining ownership and control of their farm.</p>	<p>Share farming, leasing, company structure or co-operative.</p> <p>Increasing productivity and or profitability by reducing input costs by e.g., bulk purchasing, sharing equipment, collective marketing and increasing scale of production by accessing more land while retaining ownership and control of individual farms.</p>	<p>Doriana Mangili, <i>Sweeter Banana Co-operative</i></p> <p>John Gladigau and Robin Schafer, <i>Bulla Burra</i></p>	<p>Innovation and diversification</p>
<p><b>2.2.3 Adopting sustainable and regenerative farming principles and practices</b></p>	<p>Sustainable and regenerative principles and practices offer farmers, landholders, and regions great economic, environmental and community opportunities</p> <p>Sustainable and regenerative agriculture are gaining mainstream attention and hold promise for increased profitability for farmers (through securing premium prices), diverse revenue streams (through, for example carbon farming combined with beef production), and an increased likelihood of successful farm transfer to the next generation as the landscape retains its vitality.</p>	<p>A network of new and experienced farmers working together to adopt new principles and practices.</p> <p>Collective business model to market under the same regenerative and or sustainable “brand”.</p>	<p>Tony Hill, <i>Land to Market</i></p> <p>Deborah Bogenhuber, <i>Food Next Door</i></p> <p>Mick Green &amp; Rachel Ward, <i>Bundalong &amp; Eastbourn</i></p> <p>Lorraine Gordon, <i>Moffat Falls</i></p>	<p>Sustainable and regenerative practices</p> <p>Innovation and diversification</p>
<p><b>2.2.4 Creating a point of difference in the marketplace</b></p>	<p>In order to stand out, the Tweed region which is known for its natural beauty and clean and green image has the opportunity to differentiate itself in the marketplace and</p>	<p>At the farm, product, or regional level creating brand that differentiates itself in the marketplace.</p>	<p>Tony Hill, <i>Land to Market</i></p> <p>Doriana Mangili, <i>Sweeter Banana Co-operative</i></p>	<p>Sustainable and regenerative practices</p> <p>Innovation and diversification</p>

	secure supply contract and a better return at the farm gate.	Building a collective network to market point of difference and ensure sufficient supply		
<b>2.2.5 Tapping into emerging markets e.g., carbon farming</b>	The Tweed region at the forefront of new and emerging markets.	Forming a carbon cooperative to create scale and impact across the region.	Lorraine Gordon, <i>Moffat Falls</i>	Sustainable and regenerative practices
<b>2.2.6 Value adding</b>	Working together with other producers and those in the supply chain to innovate and enhance profit margins. By working together with people in the industry and with those who could complement the industry it can spark creative ways to add value not previously identified. Alternatively, bringing together many minds can provide the necessary skills, knowledge and other resources (such as investment) to be able to implement value adding endeavours.	For example, turn waste products into something of value, or enhance profit margins of some products.	Doriana Mangili, <i>Sweeter Banana Co-operative</i>	Innovation and diversification
<b>2.2.7 Vertical integration e.g., packing and processing</b>	Opportunities exist for producers to take greater control of the supply chain via grower owned cooperative business .	A cooperative or other farmer owned and operated collective entity enabling farmers to pool their resources, skills and knowledge and tap into new ways to return more to the farmer.	Doriana Mangili, <i>Sweeter Banana Co-operative</i>  Stuart Crosthwaite, <i>Mountain Milk Co-operative</i>	Innovation and diversification  Intensification
<b>2.2.8 Community supported agriculture and agriculture</b>	Communities generally are starting to show more of an interest in where their food comes from and how it is produced. As a result, there is a willingness from consumers	Farmers leasing land from landholders to use for agriculture to increase their scale of	Deborah Bogenhuber, <i>Food Next Door</i>	Sustainable and regenerative practices

<p><b>supporting community</b></p>	<p>and business to invest in supporting local farmers.</p>	<p>production to produce food for the local community.</p> <p>Models where the community co-invest in agricultural production through annual subscription for food.</p> <p>Development of a local food procurement policy for large community facilities e.g., hospitals.</p>	<p>Katie and Hugh Finlay, <i>Harcourt Organic Farming Co-operative</i></p> <p>Deborah Novak, <i>Clarence Valley Food Inc.</i></p>	<p>Innovation and diversification</p>
<p><b>2.2.9 Tapping into changing consumer preferences</b></p>	<p>Changing consumer food production interests provides an avenue to tap into and take advantage of consumer buying preferences.</p> <p>Create a stronger local market by meeting consumer preferences for local, fresh, sustainable produce especially those produced with environmental stewardship, animal welfare and social equity values underpinning production</p>	<p>Cooperative of farmers producing verified regenerative and or sustainable produce.</p> <p>Collectively create a brand that educates consumers and meets the needs of changing consumer preferences.</p>	<p>Lorraine Gordon, <i>Moffat Falls</i></p> <p>Mick Green &amp; Rachel Ward, <i>Bundalong &amp; Eastbourn</i></p>	<p>Sustainable and regenerative practices</p>
<p><b>2.2.10 Getting young farmers farming</b></p>	<p>Help young and or new farmers access land, skills and or knowledge and support and share their new farming ideas via land-leasing, succession planning, support networks and mentoring programs.</p>	<p>Implementing innovative succession planning models to get new farmers farming and retain existing farmland and tap into decades of experience.</p> <p>Establishing a new farmer mentoring program.</p>	<p>Katie and Hugh Finlay, <i>Harcourt Organic Farming Co-operative</i></p>	<p>Innovation and diversification</p>

<p><b>2.2.11 Increasing efficient use of resources in agricultural practice</b></p>	<p>Intensive agriculture provides a viable approach for smaller scale farms to be profitable. However, with shared land uses and the Tweed having a sustainable agriculture focus, intensive agriculture will need to continue to find ways to be innovative that enable productivity for profitability and sustainability practices that put minimal impact on the earth. One approach is looking at ways to use water more efficiently.</p>	<p>Implement more efficient farming practices utilising increased technological innovations.</p> <p>Transition to and adopt sustainable and regenerative principles and practices.</p>	<p>Stuart Pettigrew, <i>Ag Dynamics</i></p>	<p>Intensification</p> <p>Sustainable and regenerative practices</p>
<p><b>2.2.12 Diversifying income streams e.g., diversifying production, agri-tourism, education</b></p>	<p>Through the reallocation of some of a farm's productive resources into new activities farmers can increase their income, and build resilience into the business model by having diverse income streams.</p> <p>This diversification can be at an individual level (e.g., agritourism or offering mentoring or training) or a community regional level e.g., food festival or food trail.</p>	<p>Add Agri-tourism initiatives to your business.</p> <p>Grow new and or additional crops.</p> <p>Use your skills and or knowledge to educate others.</p>	<p>Robbie Commens, <i>2 Tonne Enterprises</i></p> <p>Mick Green &amp; Rachel Ward, <i>Bundalong &amp; Eastbourn</i></p> <p>Lorraine Gordon, <i>Moffat Falls</i></p>	<p>Innovation and diversification</p>

# THE MECHANISM IS COLLABORATION

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We consider that in many cases the underlying mechanism for growing agriculture in the Tweed is through collaboration. The presentation of the case studies emphasises the success of working together with eight of the twelve case studies depicting various collaborative models and structures.

Collaboration is, at its most basic level, two or more people or organisations working together towards a common goal. The key value in collaboration is that it can achieve more than each could do on their own. Collaboration is seen to be the response needed because, as the world grows ever more interconnected, fast paced and complex, challenges and opportunities are too big and or too messy to be effectively solved or delivered alone. It is widely argued that working more closely together via collective working approaches (such as through the use of collaborative practices and business models) enacts the most viable, productive and sustainable mechanisms. Furthermore, this enables continuing evolution and adaption to address agriculture's challenges and leverage its opportunities as knowledge, needs and conditions change.[1]

As a result, the need for collaboration has never been more pressing. With growing ecological and economic uncertainty, along with the unpredictable nature of our daily lives, the power and importance of collaboration is being recognised. With this, we are now seeing more calls from those seeking collaboration for smarter, more effective, efficient and connected ways of farming.

Underpinned by network governance principles of shared decision-making and power[2] and enacted through collaborative practices grounded in strong personal relationships and collective behaviours, collaborative project networks can mobilise resources, provide access to new expertise, and offer flexibility to realise innovative solutions to complex problems and opportunities and are particularly suited to tasks that are non-routine.[3]

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[1] National Farmers Federation, '2030 Roadmap: Australian Agriculture's Plan for a \$100 Billion Industry', (2018).

[2] Joseph Alutto, 'Final Report of the AACSB International Impact of Research Task Force', The Association to Advance Collegiate Schools of Business, (2008).

[3] Stephan Manning and Joerg Sydow. 'Projects, paths, and practices: Sustaining and leveraging project-based relationships.' *Industrial and Corporate Change*, (20, 5, 2011). pp. 1369-1402.



# SECTION 3.0 CASE STUDIES

## TWELVE AUSTRALIAN AGRICULTURAL CASE STUDIES

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This section provides a high-level overview of twelve case studies which showcase opportunities for landholders and farmers to grow agriculture in the Tweed. These cases target concepts which do not appear to have significant barriers that would prevent them from being implemented immediately. The concepts are outlined in Table 4.

While there are a number of significant prospects to grow agriculture in the Tweed we have highlighted twelve case study exemplars that could be immediately implemented in the region i.e., those that do not face significant barriers.

Table 4 Cases study pillars, concepts and additional resources

Name of business / organisation	Leader / Champion	Concept / s	Additional Resources
<b>Pillar: Innovation &amp; Diversification</b>			
1. Sweeter Banana Co-operative	Doriana Mangili	Marketing the point of difference Vertical integration Value adding Succession through leasing	<a href="http://www.sweeterbanana.com/">http://www.sweeterbanana.com/</a> <a href="https://www.facebook.com/SweeterBananaCarnarvon/">https://www.facebook.com/SweeterBananaCarnarvon/</a>
2. Food Next Door	Deb Bogenhuber	Utilising unused land through co-operative ventures Migrant farmer support networks Community food box supply	<a href="http://www.foodnextdoor.org.au">www.foodnextdoor.org.au</a> <a href="https://outoftheboxsunraysia.com.au/">https://outoftheboxsunraysia.com.au/</a> <a href="https://www.facebook.com/foodnextdoorcoop/">https://www.facebook.com/foodnextdoorcoop/</a>
3. Harcourt Organic Farming Co-operative	Katie and Hugh Finlay	Succession through leasing Marketing co-operative	<a href="https://hofcoop.com.au/">https://hofcoop.com.au/</a> <a href="https://www.facebook.com/HarcourtOrganicFarmingCoop/">https://www.facebook.com/HarcourtOrganicFarmingCoop/</a>
4. Bulla Burra Farms	John Gladigou & Robin Schaefer	Neighbor collaborative business Company structure between neighboring farms Creating multiple income streams	<a href="https://www.facebook.com/BullaBurra/">https://www.facebook.com/BullaBurra/</a>

		Succession planning Retaining the heritage of the family farm	
5. Clarence Valley Food Inc.	Debrah Novak	Building capacity and economies of scale through local large-scale community resource (e.g., hospitals, correctional centres)	<a href="https://clarencevalleyfood.com/">https://clarencevalleyfood.com/</a> <a href="https://www.facebook.com/groups/543678682643855/">https://www.facebook.com/groups/543678682643855/</a>
Pillar: Intensification			
6. 2 Tonne Enterprises	Robbie Commens	Diversification with macadamia on low level flood plains	<a href="https://www.2te.com.au/">https://www.2te.com.au/</a> <a href="https://www.facebook.com/2-Tonne-Enterprises-106186537894128/">https://www.facebook.com/2-Tonne-Enterprises-106186537894128/</a>
7. Mountain Milk	Stuart Crosthwaite	Collectively generating great value and securing a stronger future for farmers with a co-op	<a href="https://www.mountainmilkcoop.com.au/">https://www.mountainmilkcoop.com.au/</a> <a href="https://www.facebook.com/Mountain-Milk-Co-Operative-2001545013438538/">https://www.facebook.com/Mountain-Milk-Co-Operative-2001545013438538/</a>
8. Ag Dynamics	Stuart Pettigrew	Utilising unused land through improved resource efficiency	<a href="http://www.agdynamics.com.au/">http://www.agdynamics.com.au/</a>
Pillar: Regenerative & Sustainable Agriculture			

9. Southern Blue Regenerative	Glen Chapman	Regenerative agriculture on-farm education	<a href="https://www.southernblue.com.au/">https://www.southernblue.com.au/</a>
10. Land to Market	Tony Hill	Farmer led co-operative for ecological outcome verification and niche marketing	<a href="https://landtomarket.com.au/">https://landtomarket.com.au/</a>
11. Bundalong & Eastbourne	Mick Green & Rachel Ward	Neighbouring “Own, Lease, Manage” arrangements	<a href="https://www.facebook.com/GreenFarmRuralContracting/">https://www.facebook.com/GreenFarmRuralContracting/</a>
12. Moffat Falls	Lorraine Gordon	Carbon farming co-operative – creating additional income streams from regenerative agricultural practice	<a href="https://moffatfalls.com.au/">https://moffatfalls.com.au/</a>

## ADDITIONAL OPPORTUNITES AND RESOURCES

**Judy & Charlie Hocking with Jeremy Collins:** Retiring Farmers | New & Young Farmers

<https://www.queenslandcountrylife.com.au/story/5784792/cultivating-farm-opportunities-for-the-next-generation/#!>

**Emma-Kate Rose:** Food Connect | Community Supporting Agriculture

<https://foodconnect.com.au/>

<https://www.buzzsprout.com/978904/5345680-episode-14-food-connect-with-emma-kate-rose-and-morag-gamble>

**Richard Symes:** ABC Honey | Producer Cooperative

<https://www.abchoney.com.au/>

<https://youtu.be/RMGvvV2hlfA>

**Sally Ruljancich:** PromCoast | Paddock to plate collective

<https://www.promcoastfoodcollective.com.au/>

<https://www.facebook.com/promcoastfoodcollective/>

**Bill Hoffman:** Hoffman's Beef Benchmarking | Producers sharing data to enhance profitability

<https://farmingtogether.com.au/farming-together-data-group-adds-up-for-beef-farmers/>

<https://www.theland.com.au/story/4410743/keen-weaner-producers-warned-dont-lose-focus/>

<https://www.beefcentral.com/production/revolutionary-change-through-mentoring-for-young-victorian-producers/>

**Brian Wehlberg:** Inside Outside Management (Regenerative Farming) | Holistic Decision making

<https://www.insideoutsidemgt.com.au/>

<https://www.theland.com.au/story/6415973/energy-in-regenerated-landscape/>

**Bart Buston:** Fair Fish South Australia | Community Supported Fishery

<https://fairfishsa.com.au/>

<https://www.adelaidenow.com.au/messenger/west-beaches/new-fair-fish-app-and-website-will-allow-people-to-buy-seafood-online-thanks-to-federal-grant-through-wildcatch-fisheries/news-story/c41065707848add9a38a0ad68d677f3>

# SECTION 4.0 IMPLEMENTING OPPORTUNITIES

## A GUIDE TO IMPLEMENTATION



**Part A:** An implementation model for farmers

**Part B:** The implementation recommendations for the Tweed region.

This section of the report is in two parts:

**Part A:** An implementation model for farmers, and

**Part B:** The implementation recommendations for the region.

First, we present Part A which is the *Implementation Model for Farmers* that articulates the steps and thus, the process for end-users to capitalise on the opportunities in the Tweed. This is mindful of the drivers of change presented in this report in Section 2.

The *Implementation Model for Farmers* is a process developed by the Farming Together from the findings of this study and from extensive experience in facilitation and education. This process also stems from former success by similar agricultural stakeholders nation-wide. This model can help Tweed farmers realise a means and process by which they can capture relevant opportunities for growing agriculture in the Tweed region.

The Implementation Plan is a step-by-step guide to help farmers, landholders and other Tweed champions through the stages of planning and implementing a project.

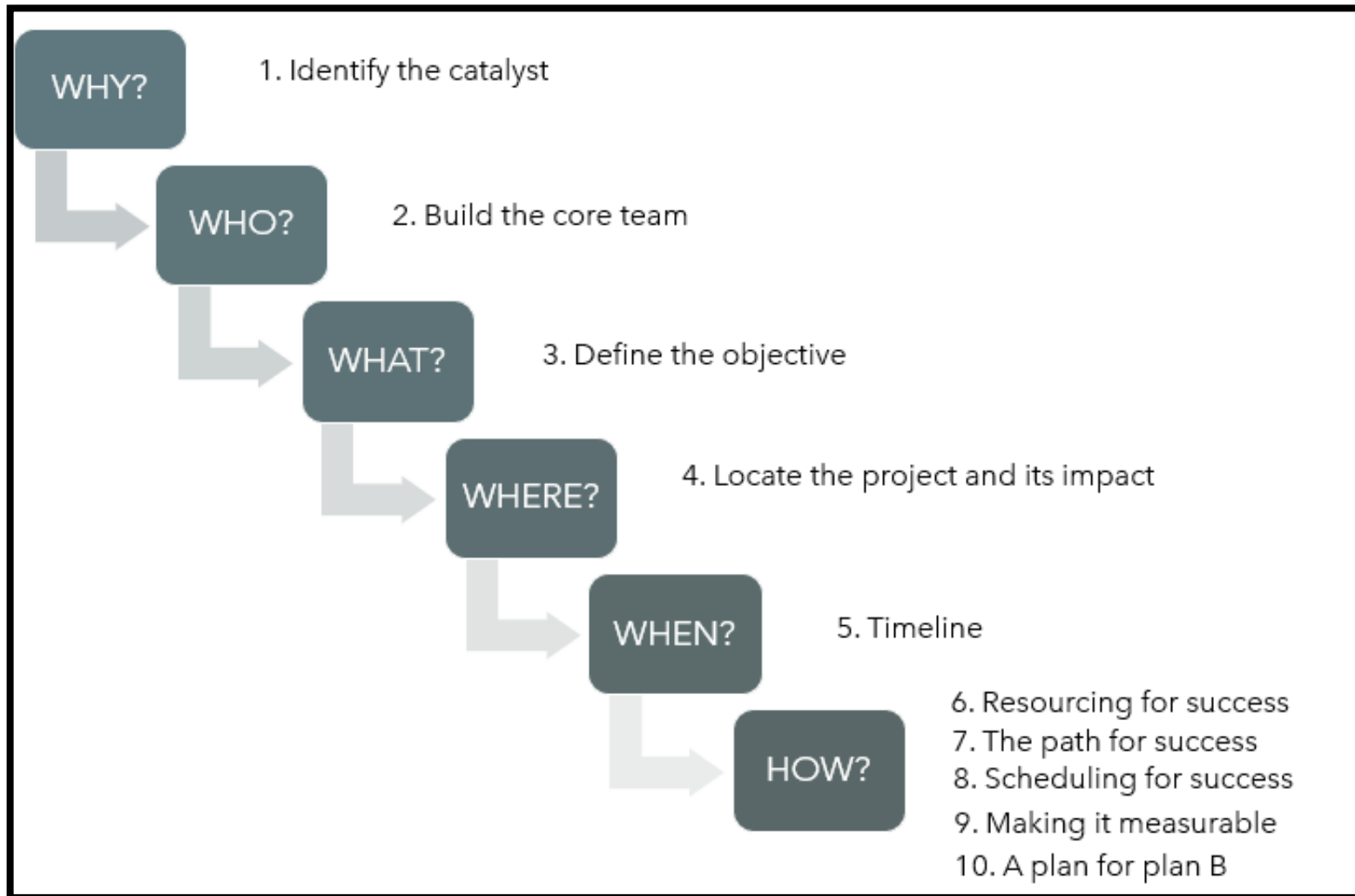
Part B is the *Implementation Recommendations for the Region* outlining six strategic recommendations for initiatives that could be implemented at the community or regional level to support desired change. Part B has been written in the context of recognising the important role organisations, agencies and government can play in facilitating desired changes in the community by creating the right enabling conditions.

#### 4.1 Part A: Implementation Model for Farmers: including landholders and other Tweed champions

The development of this implementation plan was based on the in-depth learnings from the 500 farmers, fishers and foresters who implemented collaborative projects to grow their business during the 2016 - 2018 Farming Together Pilot Program.

The *Implementation Model* takes the reader through the steps which clarify a concept, develop a project plan and implement that plan with confidence.

An overview of the steps with the implementation plan is provided in Figure 3. The detailed Implementation Model can be found in separate booklet accompanying this report called The Tweed Farmer Booklet.



*Figure 3 Stages in the implementation model*



## 4.2 Part B: Implementation Recommendations for the Region

In light of the primary and secondary research we have conducted as outlined in this report, we provide six strategic recommendations for initiatives that could be implemented at the community or regional level to help grow agriculture in the Tweed.

Recommendation		Justification	Examples
1	Provide seed funding to support uptake of ideas presented in this report.	Encourage immediate action from farmers and landholders, providing the capital often required in these projects.	Seed grant program.
			Micro loans initiative.
2	Help identify potential productive land that new and young farmers or farmers looking to scale up can use.	Expedite land matching processes and avoid potential landholder conflict from uninterested landholders.	Create a register of landholders and exiting farmers looking to share their land and new and young and looking to access land.
3	Capture and disseminate knowledge, skills and stories of industry champions.	Build awareness in the region and build a story to attract investors and or funders.	Champions of Agriculture in the Tweed.
4	Develop local food marketing and branding initiatives.	Help create a market for local produce.	Marketing campaigns that link the consumer with the producer.
5	Build knowledge, skills and networks of young and new farmers.	Create self-sustaining networks of new and young with experienced and older farmers to enable knowledge sharing through the extensive knowledge and skills of experienced farmers to demonstrate value and utilisation. Provide skill development opportunities to support growth and diversification.	Mentoring program for young and new farmers by experienced and older farmers.
6	Connect farmers practicing and interested in regenerative and sustainable agriculture.	Build a culture of sustainable and regenerative agriculture in the Tweed.	Establish and facilitate a sustainable and regenerative practice network.

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