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ARTICLE (PEER REVIEWED)

What's behind the ag-data logo? An examination of voluntary agricultural data codes of practice

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Abstract

In this article, we analyse agricultural data (ag-data) codes of practice. After the introduction, we examine the emergence of ag-data codes of practice and provides two case studies: the American Farm Bureau's *Privacy and Security Principles for Farm Data* and New Zealand's *Farm Data Code of Practice*. The case studies illustrate that the aims of ag-data codes of practice are inextricably linked to consent, disclosure, transparency and, ultimately, the building of trust. We go on to highlight the commonalities and challenges of ag-data codes of practice. In terms of commonalities, we consider that they are self-regulatory and voluntary; are principle-based; have a communicative function; and have attitude and behaviour change as key objectives. In terms of the challenges of ag-data codes, we argue that the key challenges are the need for an appropriate and agile ag-data normative framework; implementation and evaluation of ag-data codes; issues around trade mark-based logos; and evaluation of ag-data codes of practice. We conclude that while ag-data codes of practice may help change practices and convert complex details about ag-data contracts into something tangible, understandable and useable, it is important for agricultural industries to not hastily or uncritically accept or adopt ag-data codes of practice. There needs to be clear objectives and a clear direction in which stakeholders want to take ag-data practices. Ag-data codes of practice need credible administration, accreditation and monitoring. There also needs to be a way of reviewing and evaluating the codes in a more meaningful way than simple metrics such as the number of members.

Keywords

Agricultural law; data governance; self-regulation; codes of practice

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Introduction

Voluntary agricultural data ('ag-data') codes of practice have emerged since 2014. In part, their emergence is because of the increasing realisation of the potential benefit and value of ag-data, with many decisions and processes along the whole agri-food supply chain - from paddock to plate - being data enabled and data driven.¹ Ag-data is collected and used for many purposes, including improving productivity and profitability. There is a myriad of different data collected from farms: machinery data that improves safety and efficiency of farm machinery; personal data of purchasing and finance history; and agronomic and agricultural data. In this article, our focus is on agricultural data.

Ag-data is collected by sensors on tractors and drones and used for many purposes, including providing multi-spectral imagery, and showing crop health and moisture content. Software can aggregate and deploy ag-data to increase yields, improve farm profitability and sustainability, and ensure regulatory compliance and consumer satisfaction. Further uses of ag-data are found in supply chain logistics and in the ability to better respond to and manage issues such as crop or animal stress. Ag-data can also be linked from farm and packaging to transport and sales; assisting with food safety, healthy and ethical choices and differentiating markets and allocating resources.

While the potential benefit and value of ag-data is immense, a major hurdle to realising the benefits is the tension between those who provide the data (ie, farmers and producers) and those who collect the data (ie, agribusiness and third parties). This tension limits the potential benefits of ag-data because, in large part, it results in problems of access and use of ag-data;² fundamentally, farmers and producers do not trust agribusinesses with their data.³ A study identified that this lack of trust in the way agribusinesses deals with ag-data was identified as a major concern of Australian producers,⁴ with 56 per cent of respondents having no or little trust in agribusiness maintaining the privacy of their data.⁵ Further evidence of a lack of trust between producers and agribusiness was found by the American Farm Bureau Federation, who, in 2016, conducted a survey of over 400 farmers and found, for example, that 77 per cent of those polled were concerned about which entities can access their ag-data.⁶

If digital agriculture and data are to transform agri-food networks, then trust around ag-data access and use needs to be fostered.⁷ To this end, a range of initiatives are currently being investigated and implemented, including education and awareness programs, data co-operatives and other collaborative models.⁸ Most notably, since 2014, voluntary ag-data codes of practice have emerged to not only help develop 'good' ag-data practices but also to build trust in the way ag-data is managed.⁹ Broadly stated, ag-data codes of practice act beyond legal mandates (ie, government legislation) and attempt to both harness the benefits of ag-data and protect producers' privacy and security. More specifically, data codes tend to focus on the

¹ See, for example, Keith Coble, Ashok Mishra, Shannon Ferrell and Terry Griffin, 'Big Data in Agriculture: A Challenge for the Future' (2018) 40(1) *Applied Economic Perspectives and Policy* 79; Sjaak Wolfert, Lan Ge, Cor Verdouw and Marc-Jeroen Bogaardt, 'Big Data in Smart Farming: A Review' (2017) 153 *Agricultural Systems* 69; Andreas Kamilaris, Andreas Kartakoullis, and Francesc Prenafeta-Boldú, 'A Review on the Practice of Big Data Analysis in Agriculture' (2017) 143 *Computers and Electronics in Agriculture* 23.

² See Leanne Wiseman and Jay Sanderson, 'The Legal Dimensions of Digital Agriculture in Australia: An Examination of the Current and Future State of Data Rules Dealing with Ownership, Access, Privacy and Trust' (Griffith University, USC Australia and Cotton Research and Development Corporation, 2017).

³ As the 2018 Facebook and Cambridge Analytica controversy illustrates, trust in the way data is managed is more pronounced in other industries and businesses. See, eg, Owen Bowcott and Alex Hern, 'Facebook and Cambridge Analytica Face Class Action Lawsuit', *The Guardian* (10 April 2018), <<http://www.theguardian.com/news/2018/apr/10/cambridge-analytica-and-facebook-face-class-action-lawsuit>>.

⁴ CSIRO and Cotton Research and Development Corporation, *Rural R&D for Profit 'Precision to Decision, (P2D) project*, <www.crdc.gov.au/precisiontodecisionn>.

⁵ Airong Zhang, Isaac Baker, Emma Jakku and Rick Llewellyn, 'Accelerating Precision Agriculture to Decision Agriculture: The Needs and Drivers for the Present and Future of Digital Agriculture in Australia. A Cross Industries Producer Survey for the Rural R&D for Profit' (Precision to Decision, (P2D) project, CSIRO and Cotton Research and Development Corporation, Australia, 2017) 45, Fig 40.

⁶ American Farm Bureau Federation, *Farm Bureau Survey: Farmers Want to Control Their Own Data* (11 May 2016), <<https://www.fb.org/newsroom/farm-bureau-survey-farmers-want-to-control-their-own-data>>.

⁷ For a discussion of the European Union data protection authorities' technology foresight, see David Barnard-Wills, 'The Technology Foresight Activities of European Union Data Protection Authorities' (2017) 116 *Technological Forecasting and Social Change* 142.

⁸ Wiseman and Sanderson, above n 2, 49-54.

⁹ In relation to big data and agriculture, the term, standards, tends to be used in a technical sense and related more to interoperability and a 'common data vocabulary' than principles; See, eg, *NZ Farm Data Standards*, <<http://www.farmdatastandards.org.nz/>>.

key areas that give rise to mistrust: consent, disclosure and transparency around ag-data practices. For example, under the New Zealand *Farm Data Code of Practice* ('NZ Farm Data Code'), organisations agree to disclose their practices and policies around data rights, data processing and sharing, and data storage and security.¹⁰ In the US, the American Farm Bureau Federation's *Privacy and Security Principles for Farm Data* ('*Principles for Farm Data*') sets out data principles for agricultural technology providers including that 'access and use of farm data should be granted only with the affirmative and explicit consent of the farmer'.¹¹ And the *EU Code on Agricultural Data Sharing by Contractual Agreement* ('EU Code') attempts to define key concepts and sets out general principles for sharing agricultural data including that '[t]he collection, storage and usage of the collected agricultural data can only occur once the data originator has granted their explicit, express and informed permission via contractual arrangement'.¹² Other countries (eg, Australia) are also contemplating the introduction of an ag-data code of practice.¹³

But are ag-data codes of practice a good idea?

The aim of this article is to analyse the effect and usefulness of ag-data codes of practice. The next section examines the emergence of ag-data codes of practice and then discusses two case studies: the American Farm Bureau's *Principles for Farm Data* and New Zealand's *NZ Farm Data Code*. The case studies illustrate that ag-data codes of practice are inextricably linked to consent, disclosure, transparency and, ultimately, the building of trust. The section that follows highlights the commonalities and challenges of ag-data codes of practice. The article concludes with several observations, most notably that while ag-data codes of practice may help change practices and convert complex details about ag-data contracts into something tangible, understandable and useable, it is important not to uncritically accept or hastily adopt ag-data codes of practice. There needs to be clear objectives and a clear direction in which stakeholders want to take ag-data practices. In other words, stakeholders need to be sure about what they are trying - and able - to achieve with their ag-data codes of practice. There also needs to be a way of reviewing and evaluating the codes in a more meaningful way than simple metrics such as the number of members: for example, it is necessary to know something about whether the codes raise awareness and education around data practices, and whether they have encouraged changes in attitudes and behaviour. Ag-data codes need credible administration, accreditation and monitoring. Only with such added safeguards, will ag-data codes of practice have a chance of success.

The emergence of voluntary ag-data codes of practice

One of the key reasons for the emergence of ag-data codes of practice is an increasing recognition of the potential benefit and value of data to agriculture and food production. The potential value of ag-data (and digital technologies more broadly) was uncovered by the Australian Farm Institute in the Accelerating Precision Agriculture to Decision Agriculture P2D research project ('P2D'), with economic modelling indicating that digital agriculture, defined as 'both the collection and analysis of data to improve both on-farm and off-farm decision making leading to better business outcomes', could increase the gross value of Australian agricultural production by '\$20.3 billion (a 25% increase on 2014-15 levels)'.¹⁴ And, at a November 2017 US Senate Hearing into Data-Driven Farming, held in preparation for the next *Farm Bill* being drafted in which several congressmen suggested that legislation regulating ag-data may be necessary, some of the benefits of ag-data were noted:

The collection and analysis of data has enabled farmers to reduce costs through more efficient applications of inputs like fertilizers and pesticides; improve production decisions through enhanced recordkeeping and more accurate yield predictions; and enhance land stewardship and sustainable

¹⁰ Farm Data Accreditation Ltd, *New Zealand Farm Data Code of Practice*, ver 1.1, Cl 4, <http://www.farmdatacode.org.nz/wp-content/uploads/2016/03/Farm-Data-Code-of-Practice-Version-1.1_lowres_singles.pdf>.

¹¹ American Farm Bureau Federation, *Privacy and Security Principles for Farm Data*, <<https://www.fb.org/issues/technology/data-privacy/privacy-and-security-principles-for-farm-data/>>.

¹² Copa-Cogeca et al, *EU Code of Conduct on Agricultural Data Sharing by Contractual Agreement*, 9 <http://www.copa-cogeca.be/img/user/files/EU%20CODE/EU_Code_2018_web_version.pdf>.

¹³ Wiseman and Sanderson, above n 2. In January 2018, the National Farmers' Federation (NFF) supported and endorsed the recommendation for an ag-data code and sought at least A\$250 000 of seed funding from the Australian Government to establish a voluntary Agricultural Data Code of Practice: See National Farmers' Federation (NFF), *National Farmers' Federation Pre-Budget Submission 2018-19*, 22 December 2017, 4-5. In March 2018, the NFF established a working group to progress a draft ag-data code.

¹⁴ Ed Perrett, Richard Heath, Anne Laurie and Lucy Darragh, 'Accelerating Precision Agriculture to Decision Agriculture: Analysis of the Economic Benefit and Strategies for Delivery of Digital Agriculture in Australia' (Australian Farm Institute and Cotton Research and Development Corporation, 2017) 1, 25.

practices by removing inefficiencies in planting, harvesting, water use and the allocation of other resources. With an increasing volume of quality data, in tandem with improved data analysis, data-collecting technology has the potential to drastically increase farm productivity and profitability.¹⁵

The potential value of ag-data is not lost on agribusiness. There has been a proliferation of farm data collection and sharing platforms, such as Farm Mobile, Fieldscripts and AgriPlaces.¹⁶ Such platforms aim to increase the impact of digital agricultural technologies on-farm by enabling better decision making to solve problems faster, better and at greater scale. They also aim to decrease the time and cost associated with data management and enable paperless, safe and secure transactions. Often, this is achieved by automatically collecting, storing and sharing agricultural data (from fields, weather, treatments and so on). The increasing importance and value of ag-data to agri-food networks can be further illustrated by various acquisitions and mergers of agribusinesses. In 2013, for example, Monsanto acquired Climate Corp, a digital agriculture company that aims to 'creat[e] technologies that transform field data into meaningful insights that help farmers sustainably enhance yield potential, improve efficiency, and manage their risk' for \$930 m.¹⁷

While the increasing potential value of ag-data explains some of the scepticism and mistrust between those who provide the data (ie, farmers and producers) and those that collect the data (ie, agribusiness and third parties) there are other contributing factors to the emergence of ag-data codes. The current legal landscape exacerbates the scepticism and mistrust around ag-data; with little or no legislation on the topic.¹⁸ In investigating the benefits and costs of making public and private data more available, Australia's Productivity Commission commented on the complexities of - and gaps in - the legal and regulatory frameworks around data access and use, noting that, in Australia:

Legislation restricting access to data was formulated up to a century ago, and much is no longer fit for purpose. The primary legal impediment to more effective use of data is typically not the Privacy Act, but regulations and guidelines specific to the field in which the data is collected.¹⁹

and:

A wide range of more than 500 secrecy provisions in Commonwealth legislation plus other policies and guidelines impose considerable limitations on the availability and use of identifiable data. While some may remain valid, they are rarely reviewed or modified. Many would no longer be fit for purpose.²⁰

A key consequence of this legislative patchiness and complexity is that the main way in which ag-data is currently governed is through private data contracts or licensing agreements.²¹ Private contracts are complicated for numerous reasons. First, producers often enter many contracts as part of their agricultural businesses; such as with chemical/fertiliser suppliers; broader service providers (eg, telecommunications, sensors, soil testing, drones); agri-technology/agribusiness providers; and third parties and professional advisers (eg, agronomists, advisers). Each of these contracts are likely to have different terms that govern ag-data access and use. The complexity of ag-data contracts is further complicated by the fact that ag-data contracts often link to numerous other contracts and policies, some of which are buried deep on agribusiness' websites. In addition, agribusiness contracts tend to be standard-form contracts that are non-negotiable and presented on a 'take it or leave it' basis. Consequently, there is little consistency and too much complexity with ag-data contracts, with producers often unaware of what can be done with their data. Indeed, a recent survey of producers found that:

- Producers are unaware of the terms of data licences that they are entering. The general lack of discussion of the terms of the data licences at both a broad industry level and at individual points of sale of agricultural technologies contribute to the lack of trust about the management of agricultural data; and

¹⁵ Jerry Moran (Chairman), *Technology in Agriculture: Data-Driven Farming*, United States Senate (14 November 2017), <<https://www.commerce.senate.gov/public/index.cfm/hearings?id=28E4FB56-2F01-4E20-B5A9-47C9A78BDE0D>>.

¹⁶ Arent Van't Spijker, *The New Oil: Using Innovative Business Models to Turn Data into Profit* (Technics Publications, 2014).

¹⁷ Climate Fieldview, *Innovating at the Intersection of Agriculture and Technology*, <<https://www.climate.com/about>>.

¹⁸ A notable exception is the Europe Database Directive, *Directive 96/9/EC of the European Parliament and of the Council of 11 March 1996 on the Legal Protection of Databases*, which harmonised the treatment of databases under copyright law and the separate right for the creators of databases which do not qualify for copyright. Further, the European Union introduced the *General Data Protection Regulation* ('GDPR') in May 2016, which, when it came into effect on 25 May 2018, drastically changed data privacy in the EU, including broadening the definition of personal data and the notion of consent, and empowering data contributors of a right to access data held about them.

¹⁹ Australian Productivity Commission, 'Data Availability and Use' (Inquiry Report No 82, 31 March 2017) 121.

²⁰ *Ibid* 133.

²¹ Wiseman and Sanderson, above n 2.

- Agribusinesses that rely upon standard-form data licences should recognise that they have a responsibility to ensure that their contractual terms are legible, transparent and fair, and they are readily available to contracting parties.²²

More specifically, primary producers are concerned about the lack of clarity and transparency over the terms of the data contracts that govern the access and use of their data. Producers expressed concern about the lack of information they were given about ag-data ownership, control and sharing prior to entering contracts with agribusinesses. The producer survey revealed that 47 per cent of primary producers surveyed say they have no understanding and an additional 27 per cent said they have little understanding of the terms and conditions of data contracts before signing up to a new software or service, particularly where the service is provided online.²³

Taken together, the increased value of ag-data, absence of government legislation, and too much complexity and too little consistency in ag-data contracts has meant that key stakeholders are uncertain and wary about the ways in which ag-data is accessed and used. As already noted in the introduction, a large part of the problem is that producers and farmers do not trust agribusiness with their data, and this, in turn, limits the potential benefits of ag-data by creating bottlenecks and blockages in data flows. To allay some of the scepticism and mistrust between producers and agribusiness ag-data codes of practice have emerged.

Effective voluntary ag-data codes of practice can support government regulation and help fill regulatory gaps.²⁴ By filling in regulatory gaps, voluntary ag-data codes can help improve ag-data governance and practices and, in turn, facilitate the use of ag-data and protect farmers' and producers' security and privacy. Broadly stated, these ag-data codes are aimed at encouraging consistent, consensual and transparent data practices as well as raising awareness around data access and use. Further, ag-data codes of practice may encourage agribusiness to change their data contracts in ways that are fairer to producers, agricultural industries and, ultimately, consumers. Two case studies: the American Farm Bureau Federation's *Privacy and Security Principles for Farm Data* and New Zealand's *Farm Data Code of Practice*, highlight key features of ag-data codes of practice.²⁵

Case study 1: Privacy and security principles for farm data (US)

Established in 2014, the American Farm Bureau Federation's *Privacy and Security Principles for Farm Data* ('*Principles for Farm Data*') sets out core principles around consent and disclosure, and aims to ensure that the ag-data is not misused.²⁶ The voluntary *Principles for Farm Data* also provide companies (referred to as an Ag Tech Provider (ATP)), which collect and analyse farm data, with guidelines when constructing their contracts and technologies. The *Principles for Farm Data* focus on 13 key areas: (i) education; (ii) ownership; (iii) collection, access and control; (iv) notice; (v) transparency and consistency; (vi) choice; (vii) portability; (viii) terms and definitions; (ix) disclosure, use and sale limitation; (x) data retention and availability; (xi) contract termination; (xii) unlawful or anti-competitive activities; and (xiii) liability and security safeguards.

the Ag-Data Transparency Evaluator was launched in 2016 and was based on the *Principles for Farm Data*.²⁷ The Ag-Data Transparency Evaluator is a tool designed to help US farmers understand how their data will be used when they adopt precision agriculture technologies.²⁸ The tool, in which ag technology providers

²² Wiseman and Sanderson, above n 2, 25.

²³ Zhang et al, above n 5. Similar findings by the American Farm Bureau in 2016, with 59% of participants confused about whether their contract allowed agribusiness to use their data to market other services, equipment or inputs back to them, and 54% unsure about whether their contracts allowed data sharing with third parties: American Farm Bureau, above n 6.

²⁴ See, eg, John Ruggie, 'How to Marry Civic Politics and Global Governance' in Andrew Kuper (Ed) *The Impact of Corporations on Global Governance* (N Carnegie Council on Ethics and International Affairs, 2004) 10.

²⁵ A third ag-data code of conduct is the *EU Code of Conduct on Agricultural Data Sharing by Contractual Agreement*, launched in April 2018, <http://www.copa-cogeca.be/img/user/files/EU%20CODE/EU_Code_2018_web_version.pdf>.

²⁶ American Farm Bureau Federation, *Privacy and Security Principles for Farm Data* ('*Principles for Farm Data*'), <<https://www.fb.org/issues/technology/data-privacy/privacy-and-security-principles-for-farm-data/>>.

²⁷ See Janzen AgLaw, *Ag Data Transparent: Information About the Project to Bring Transparency to Ag Data*, <<http://www.aglaw.us/agdatatransparent/>>.

²⁸ The Ag Data Transparency Evaluator is provided free of charge to farmers to view so they can make an informed decision about the approaches taken by businesses to data. The cost of the Ag Data Transparency Evaluator is borne by the technology providers who want to use the Ag Data Transparent Seal and is based on the age of the company and the size and profit that they make; eg, start-up provider (a participant operating for less than four years): US\$2 000; regular provider (a participant that is not a start-up provider or large provider): US\$4 000; large provider (a participant

voluntarily submit their data contracts to a simple 10-question evaluation, was created by the American Farm Bureau Federation²⁹ and is backed by a consortium of farm industry groups, commodity organisations and ag technology providers. The Evaluator allows ATPs to assess themselves against the *Principles for Farm Data* and, in doing so, bring transparency, simplicity and trust into the contracts that govern precision agricultural technologies. The ten questions cover a range of data practices and include what categories of data are collected,³⁰ whether consent is sought before data is shared with third parties, how long data is retained, and what happens to data if the ATP is sold to another company.³¹

Answers to the ten questions, plus the ATP's contracts and policies are submitted to and reviewed by an independent third-party administrator: the law firm of Janzen Agricultural Law LLC,³² with Todd Janzen as the administrator of the project. Once reviewed, the results are posted on a website for farmers and other ag professionals to consult and review. If ATPs receive approval from Janzen Agricultural Law LLC, they can use the 'Ag-Data Transparent' seal. The commonalities and challenges of ag-data codes, including logos and seals, is discussed more fully below, but it is worth noting here that the use of the seal purportedly develops trust in ATPs who are approved to use it. Specifically, the seal informs farmers whether the approach taken by the technology provider is in line with the *Principles for Farm Data* and, perhaps most importantly, it is hoped that the ability to use the seal indicating that the business is Ag-Data Transparent provides an incentive for the agricultural technology providers to review and improve their contractual terms related to ag-data.

Farm Data Code (New Zealand)

Another example of an ag-data code of practice is the New Zealand Farm Data Code of Practice ('*NZ Farm Data Code*'). The *NZ Farm Data Code* was established in 2014 as a 'set of guidelines enabling effective sharing of data within the New Zealand agriculture industry'.³³ Recognising and acknowledging the value of ag-data, as well as the 'farmers' perspective', the introduction to the *NZ Farm Data Code* states:

There is an evolving demand for farming to address areas such as environmental compliance, and improvements to system productivity and profitability. Approaches to address these will ultimately draw together disparate data such as location, soils, climate, livestock feeding, animal genetics and fertiliser applications. From the farmer's perspective any data collected about their land or herd should be kept with due custodianship and should be available for a variety of uses as and when required, all with minimal overhead.³⁴

The *NZ Farm Data Code* targets providers that manage farm data for agribusinesses in New Zealand, and focuses on disclosure of data terms and conditions, with compliant organisations agreeing to:

- Make disclosures to primary producers and other end users about the rights that the parties have in the data, rules and processes for data sharing, about data security and the legal jurisdiction in which data is kept; and
- Implement a set of practices that provide primary producers with confidence that data pertaining to their farming operations is secure, managed according to agreed terms and for agreed purposes, and accessible under appropriate terms and conditions.³⁵

Under the *NZ Farm Data Code*, organisations agree to disclose their practices and policies around data rights, data processing and sharing, and data storage and security. By disclosing this information, it is felt that producers will have more trust and confidence that their farm data is safe and is managed fairly. It is important to note that the scope of the *NZ Farm Data Code* extends to all farm data, which is recognised under the scheme to include non-personal information and personal information.

Implementation of the *NZ Farm Data Code* involves a three-step process. First, agribusinesses conduct a self-audit in which they determine if they comply with the code. To do this, agribusinesses are provided

with annual sales greater than US\$100 million): US\$6 000. See Ag Data Transparent, *FAQs*, <<https://www.agdatatransparent.com/faqs/>>.

²⁹ The American Farm Bureau Federation is backed by a consortium of farm industry groups, commodity organisations and ag-technology providers hoping to bring transparency, simplicity and trust into the contracts that govern precision agricultural technologies.

³⁰ Currently, ATPs are filtered by the type of data they collect: agronomic, land, farm management, machine and weather data

³¹ The 10-questions can be found at <www.agdatatransparent.com/ag-data-10-questions/>.

³² Janzen AgLaw, *Is Your Tech Provider Ag Data Transparent?*, <<http://www.agdatatransparent.com/>>.

³³ Farm Data Accreditation Ltd, above n 10, 4.

³⁴ *Ibid.*

³⁵ *Ibid.*

with a compliance checklist, and must answer various questions drawn from the key topics of the *NZ Farm Data Code*, including disclosure of rights to data, security standards and access to data by third parties.³⁶ Second, agribusiness must provide a statutory declaration to confirm that they are compliant with the *NZ Farm Data Code*. Finally, a review panel carries out an assessment of the application to 'assess the compliance checklist and evidence provided and make a recommendation to (Farm Data Accreditation Ltd)'.³⁷ Farm Data Accreditation Ltd is an independent company that has been established in order to own and operate the *NZ Farm Data Code*.³⁸

Similar to the *Principles for Farm Data*, one of the ways in which compliance with the *NZ Farm Data Code* is communicated to consumers is by displaying the *NZ Farm Data* trade mark.³⁹ An ag-provider that complies with the Code's standards is authorised to display the Code's mark on its website and documents. While the commonalities and challenges of ag-data codes (including logos and seals) is discussed more fully in the next part of the article, it is worth noting here that the main aim of the *NZ Farm Data Code* is to help producers to understand who has the rights to data and how it is used and stored. In so doing, Farm Data Accreditation Ltd hopes that producers will come to trust agribusiness and that this will facilitate the sharing of data within New Zealand agriculture.

Commonalities and challenges of ag-data codes of practice

We begin this section by highlighting the commonalities of ag-data codes of practice; that is, they are self-regulatory and voluntary, they are principle-based, they have a communicative function, and they have attitude and behaviour change as key objectives. We then turn our attention to the challenges of ag-data codes of practice, including the need for an appropriate and agile normative framework; the need for proper implementation and enforcement of ag-data codes; issues around trade mark-based ag-data logos; and evaluation of ag-data codes of practice.

Commonalities of ag-data codes of practice

Self-regulatory, voluntary

Government legislation does not mandate the existence of ag-data codes of practice, nor that agribusinesses sign up to them. In the absence of higher government regulation (ie, legislation) mandating ag-data practices, current ag-data schemes are a form of voluntary self-regulation that rely on the goodwill and social responsibility of industry and agribusiness.⁴⁰ While self-regulation is not a precise concept and is difficult to define, it is generally seen to sit outside government legislation - also known as 'command and control' regulatory measures. For instance, the Australian Government defines self-regulation as '[r]ules and codes of conduct set up to regulate the behaviour of business or community organisations that are put in place and enforced by the industry or sector itself'.⁴¹ More completely, Julia Black describes self-regulation as:

[V]ariouly soft law, collective arrangements that may be non-legal, and/or entail no government involvement, bilateral arrangements between firms and the government, unilateral adoption of standards, the involvement of industry in rule-formation, neo-corporatist arrangements in which the collective shares in the state's authority to make decisions about standards of conduct, monitoring, and enforcement, but in which the relationship with government may vary, and/or in which those other than the persons being regulated may play a role (auditors, stakeholders). Self-regulation can additionally or alternatively mean intra-firm regulation; it can mean private contracting.⁴²

³⁶ The checklist is available at NZ Farm Data Code of Practice, *Become Accredited - Demonstrate Excellence, Provide Assurance*, <www.farmdatacode.org.nz/?page_id=20>.

³⁷ Farm Data Accreditation Ltd, above n 10, 7. Accreditation is reviewed annually. Organisations complete the self-audit and submit the application for renewal of their licence. The cost of the first application is A\$1400 + GST, and then there is an annual Renewal Fee of A\$990 + GST: see, <http://www.farmdatacode.org.nz/?page_id=20>.

³⁸ Farm Data Accreditation Ltd, above n 10, p. 5.

³⁹ The NZ Farm Data Code seal is registered with the NZ Intellectual Property Office as a trade mark (IP Number 101886, accepted 21 May 2015).

⁴⁰ For a discussion of different views of self-regulation, see Robert Baldwin, Martin Cave and Martin Lodge, *Understanding Regulation: Theory, Strategy, and Practice* (Oxford University Press, 2nd ed, 2012) 137-164.

⁴¹ Commonwealth of Australia, Department of the Prime Minister and Cabinet, *The Australian Government Guide to Regulation* (2014) 62.

⁴² Julia Black, 'Decentering Regulation: Understanding the Role of Regulation and Self-Regulation in the "Post-Regulatory" World' (2001) 54(1) *Current Legal Problems* 103, 121.

Ag-data codes of practice are self-regulatory because they are largely designed and implemented by industry-led groups or organisations that are attempting to influence ag-data practices.⁴³ For instance, in the US, the *Principles for Farm Data* were introduced by the American Farm Bureau Federation, an independent, non-governmental organisation governed by farmers, to address the concerns of their farmer constituents. An advantage of industry-led self-regulation is that it ensures the involvement of experts and facilitates sustained relationships between producers and agribusiness. This is, however, not to say that ag-data codes of conduct are not without government support. In New Zealand, the original funding for the *Farm Data Code* came from DairyNZ and the Ministry of Primary Industries (MPI).⁴⁴ Both codes of practices continue to be informed by experts, and industry and non-government organisations.

It is important to remember that voluntary ag-data codes of practice sit alongside and compliment higher government legislation. Perhaps most notably, privacy laws in many countries apply to some data (often referred to as 'personal information') but not others. In Australia, for example, the distinction between personal and non-personal information is an important one to make because under Australia's *Privacy Act 1988* (Cth), a set of Australian Privacy Principles (APPs) exists that applies only to 'personal information'.⁴⁵ The effect of this is that all government entities are required to have privacy policies that comply with the APPs. By contrast, 'non-personal information' is generally governed by the law of contract. On this point, the Productivity Commission states that:

[A] common misperception is that privacy laws - or, indeed, the privacy policies of individual organisations - give individuals ownership over data created by or about them. Privacy legislation, the primary generic tool offering individuals some control, regulates how personal information is collected, used and disclosed.⁴⁶

In the context of ag-data codes of practice, it is important to point out that data such as agronomic (eg, yield, nutrient, soil) and machine data (ie, fuel consumption, engine performance) is often not 'personal information' and is, therefore, not governed by the *Privacy Act 1988* (Cth) and associated privacy policies. It is, instead, governed by the contract that producers enter into with third-party providers and does not have the protections under privacy law. Industry-led self-regulation can be an effective and efficient means of filling the legislative gap around ag-data.

There is a great deal of support for using self-regulation to address governance issues, and codes of practice are used in various areas. For example, codes of conduct are used as tools of governance in a range of areas, including labour rights, sustainability and tourism.⁴⁷ Self-regulatory codes of practice are also consistent with neo-liberalism and the fact that governments are reluctant to legislate; instead seeing many issues as matters for industry or non-governmental organisations.⁴⁸ The *Australian Government Guide to Regulation* suggests that self-regulation is a 'good option where the consequences of market failure are low and the market is likely to move towards an optimal outcome by itself'.⁴⁹ By contrast, highly prescriptive legislation on ag-data is considered difficult, expensive and not something that governments will be quick to introduce.

In Australia, researchers and industry have recommended the establishment of an ag-data code that clearly sets out the principles by which agribusinesses deal with data; for example, the P2D Project, presented to Government in February 2018, indicated significant support for such from the rural sector.⁵⁰ Subsequently,

⁴³ See Baldwin, Cave and Lodge, above n 40; Virginia Haufler, *A Public Role for the Private Sector: Industry Self-regulation in a Global Economy*, (Carnegie Endowment, 2013); Alan Page, 'Self-Regulation and Codes of Practice' (1980) 24(1) *Journal of Business Law* 30.

⁴⁴ The NZ Farm Data Code was originally funded by NZ dairy farmers through Dairy NZ and the Ministry of Primary Industries, as part of the Transforming the Dairy Value Chain PGP Programme. Additional funding was provided by Farm IQ System and the Red Meat Profit Partnership.

⁴⁵ *Privacy Act 1988* (Cth) s 6, which defines 'personal information' as 'information or an opinion about an identified individual, or an individual who is reasonably identifiable: (a) whether the information or opinion is true or not; and (b) whether the information or opinion is recorded in a material form or not'.

⁴⁶ Australian Productivity Commission, above n 19, 53.

⁴⁷ See, eg, Brian Garrod and David Fennell, 'An Analysis of Whalewatching Codes of Conduct' (2004) 31(2) *Annals of Tourism Research*, 334; Ans Kolk and Rob Van Tulder, 'The Effectiveness of Self-Regulation: Corporate Codes of Conduct and Child Labour' (2002) 20(3) *European Management Journal*, 260. For a list of relevant readings on regulation and voluntary codes in environmental law, see Andrew Lawson and Paul Martin, *Essential Readings in Environmental Laws: Topics*, IUCN Academy of Environmental Law, <<http://www.iucnael.org/en/essentials-readings-in-environmental-law-topics>>.

⁴⁸ For example, Colin Scott, 'Private Regulation of the Public Sector: A Neglected Facet of Contemporary Governance' (2002) 29(1) *Journal of Law and Society* 56.

⁴⁹ Commonwealth of Australia, above n 41, 28.

⁵⁰ See Accelerating Precision Agriculture to Decision Agriculture (P2D project), above n 4.

the National Farmers Federation (NFF) adopted and endorsed the recommendations of the P2D research project, particularly those in relation to the need for good governance in ag-data.⁵¹ Significantly, too, an Australian ag-data code is consistent with the Productivity Commission's report, which recommended that codes of practice governing the management of data be developed by a broad range of industry sectors.⁵²

Furthermore, the use of voluntary ag-data codes (as well as certification and logos) sits well with regulatory theory and must be one aspect of a multi-faceted or hybrid approach to encouraging and facilitating good data management practices. Indeed, ag-data management will be more effectively achieved if there is a mixture of both compulsory and voluntary regulation, employed at different levels by interested stakeholders. An umbrella term for this diverse regulation is 'smart regulation'.⁵³ In the context of ag-data management, smart regulation is likely to require a mix of social, legal and economic influences, actors and institutions: ranging from state-driven regulation to market-driven self-regulation by corporations and professional bodies to regulation via third parties, such as public interest groups and farmer organisations.⁵⁴ This multi-faceted approach of smart regulation is consistent with the use of decentralised instruments and standards, each driven by a range of interested stakeholders, as seen in the pursuit of the regulation of challenging ag-data management goals.⁵⁵

It would be a mistake, however, to conclude that voluntary ag-codes of conduct are not without their challenges. Self-regulation is often derided and criticised for being weak and ineffectual. Indeed, Gunningham and Rees note that '[a]ll too often, self-regulation is dismissed as a symbolic sham, or as inherently feeble and ineffective'.⁵⁶ It has also been observed that '[s]elf-regulation is frequently an attempt to deceive the public into believing in the responsibility of the irresponsible industry. Sometimes it is a strategy to give the government an excuse for not doing its job'.⁵⁷ In terms of ag-data codes of practice, therefore, a big part of the criticisms is that the principles contained in the codes are weak and enforcement is either non-existent or ineffective.⁵⁸

Principle-based

A second feature of existing ag-data codes of practice is that they tend to be principle-based and provide a benchmark of what industry regard as 'good' practice in terms of ag-data management. This means that they focus on the outcome of ag-data practices rather than the exact process or actions by which this is to be achieved. So, rather than dictating exactly how agribusiness should manage ag-data, current codes of practice tend to focus on consent, disclosure and transparency. For instance, the *NZ Farm Data Code* focuses on disclosure around, for example, corporate identity, rights to data and data access. In terms of rights to data, the *NZ Farm Data Code* does not impose particular rights but instead requires disclosure on 'what rights the organisation asserts in relation to the data' and 'what rights the primary producer has in relation to the data'.⁵⁹ By contrast, the *Principles for Farm Data* attempt to go further; while the focus is still largely principle-based - around, for example, education, consent and notice - there is a specific assertion, though not enforceable or mandated, in relation to ownership of data:

We believe farmers own information generated on their farming operations. However, it is the responsibility of the farmer to agree upon data use and sharing with the other stakeholders with an economic interest, such as the tenant, landowner, cooperative, owner of the precision agriculture system

⁵¹ National Farmers' Federation, above n 13.

⁵² On 26 June 2017, the Government announced that it would legislate a national Consumer Data Right in 2018 to be introduced sector-by-sector starting with banking, energy and telecommunications.

⁵³ For a discussion of 'smart regulation' and its key requirements and concepts see Robert Baldwin et al, *Understanding Regulation: Theory, Strategy, and Practice* (Oxford University Press, 2012) 265-266, 329-334.

⁵⁴ See Neil Gunningham et al, *Smart Regulation: Designing Environmental Policy* (Oxford University Press, 1998). Although the State remains central to governance and the legitimacy of non-government regulation is predicated on compliance, or at least consistency, with legislative frameworks: see, eg, Stephen Bell and Andrew Hindmoor, *Rethinking Governance: The Centrality of the State in Modern Society* (Cambridge University Press, 2009).

⁵⁵ See, eg, Jason Morrison and Naomi Roht-Arriaza, 'Private and Quasi-Private Standard Setting' in *The Oxford Handbook of International Environmental Law* (Oxford University Press, 2008) 498-528.

⁵⁶ Neil Gunningham and Joseph Rees, 'Industry Self-Regulation: An Institutional Perspective' (1997) 19(4) *Law and Policy* 363.

⁵⁷ John Braithwaite, 'Responsive Regulation in Australia' in Peter Grabosky and John Braithwaite (eds), *Business Regulation and Australia's Future* (Australian Institute of Criminology, 1993) 81, 91.

⁵⁸ The challenge of implementation and enforcement will be taken up again later in this article. For a general discussion of 'soft law' including voluntary codes of conduct, see Christine Chinkin, 'The Challenge of Soft Law: Development and Change in International Law' (1980) *International and Comparative Law Quarterly* 850.

⁵⁹ Farm Data Accreditation Ltd, above n 10, 5-6.

hardware, and/or ATP etc. The farmer contracting with the ATP is responsible for ensuring that only the data they own or have permission to use is included in the account with the ATP.⁶⁰

Because ag-data codes do not prescribe detailed steps that must be complied with but rather set overall objectives that must be achieved, they provide flexibility so that agribusiness can comply with the code in a multitude of ways. According to Black, principle-based governance allows companies to 'be free to find the most efficient way of achieving the outcome required.'⁶¹ Another advantage of principle-based codes is that they can minimise the need for enforcement by making agribusiness aware of the values and objectives behind the codes of practice. Principle-based ag-data codes, therefore, seek to provide an overarching normative framework that develops an awareness of the core goals of the ag-data practices, and in this way guide agribusiness to be more open and forthcoming about their data practices. It is hoped that agribusinesses understand what the code is trying to achieve and what its objectives are, and this understanding encourages agribusiness to change their ag-data practices to comply with the Code. To quote Julia Black again: principles are 'general rules ... (that) are implicitly higher in the implicit or explicit hierarchy of norms than more detailed rules: they express the fundamental obligations that all should observe' and avoid 'reliance on detailed, prescriptive rules and rel[ies] more on high-level, broadly stated rules or principles'.⁶²

In addition to raising awareness of agribusiness, ag-data codes of practice also help raise the awareness of farmers about the importance and potential value of their ag-data and the need to pay attention to terms and conditions related to the management of their data. For example, embodied in the *Principles for Farm Data* is the principle of education, stating that '[g]rower education is valuable to ensure clarity between all parties and stakeholders. Grower organisations and industry should work to develop programs, which help to create educated customers who understand their rights and responsibilities'.⁶³ This brings us to another feature of ag-data codes: they have an important communicative function.

Communicative function

Ag-data codes are used to communicate that a provider's data practices comply with certain principles. For example, the *NZ Farm Data Code* has the explicit aim of offering 'visible credibility' for accredited agribusiness.⁶⁴ The communicative function of ag-data codes may vary in the level of detail that they convey. They may, for example, act as a 'seal of approval' from the accrediting organisation and provide an overarching judgment of the ag-data practices of agribusiness. It is also possible for codes of practice to convey a more precise measure of an agribusiness' ag-data practice by using high, medium and low assessments such as those used in energy and health-star rating schemes. Whatever details they convey, the communicative function of ag-data codes of practice is, in large part, simplification. While complex assessments may underlie accreditation, the accreditation and use of the logo signals that the criteria ag-data management have been met, and it is likely that many who rely on an ag-data logo or mark will not be familiar with their standards and details; yet many producers will engage with ag-data codes of practice based on the reputation of the logo and accrediting process.

The simplification of complex assessments - of contracts, and the communication of this through accreditation and logos - is central to building confidence and trust. Trust is fundamentally about risk and it has been argued that the function of trust is 'the reduction of complexity'.⁶⁵ Indeed, farmers and producers sometimes need assurance that the agribusiness they are dealing with manage their ag-data in ways that cohere with their preferences. Considered from the perspective of complexity and trust, codes of practice and their associated accreditation and logos help convert details about ag-data practices into something tangible, understandable and useable. For example, the *NZ Farm Data Code* 'provides the basis for primary producers ... to have the confidence about those organisations that hold, manage or move data pertaining to their farming operations across as many industry databases as required'.⁶⁶ Farmers and producers can ask themselves a simple question: Is the agribusiness ag-data accredited?

⁶⁰ American Farm Bureau Federation, above n 11.

⁶¹ Julia Black, *Principles Based Regulation: Risks, Challenges and Opportunities* (London School of Economics and Political Science, 2007) 5; Julia Black, 'Forms and Paradoxes of Principles-Based Regulation' (2008) 3(4) *Capital Markets Law Journal* 425.

⁶² *Ibid.*

⁶³ American Farm Bureau Federation, above n 11.

⁶⁴ Farm Data Accreditation Ltd, above n 10, 4.

⁶⁵ Niklas Luhmann, *Trust and Power* (Wiley, 1979). For Luhmann, trust is fundamentally about risk, arguing that a key function of trust is the reduction of complexity. See also David Lewis and Andrew Weigert, 'Trust as a Social Reality' (1985) 63(4) *Social Forces* 967.

⁶⁶ Farm Data Accreditation Ltd, above n 10, 4.

In enabling farmers and producers to know whether an agribusiness is accredited, the communicative function of ag-data codes is principally facilitated through two related processes. First, ag-data codes of practice involve an accreditation process. As noted in the preceding paragraphs, the *NZ Farm Data Code* relies on self-auditing and statutory declaration, and the *Principles for Farm Data* requires the answers to 10-questions and contracts and policies being submitted and reviewed by an independent third-party administrator, the law firm of Janzen Agricultural Law LLC. While the exact process of accreditation varies, what is perhaps most important is that it is the accreditor who reviews and assesses the agribusinesses ag-data contracts and practices. Importantly, then, producers do not need to review and assess all the contracts and documents. This is the point of accreditation: it can create a short cut because producers are assured that the provider's data practices have been reviewed and deemed worthy of accreditation.

The second aspect of the communicative function is the use of ag-data logos and trade marks. Logos and marks are increasingly relevant because consumers rely on them to receive some assurance about the value or quality of goods or services.⁶⁷ More specifically, if accredited, an agribusiness is supplied with a certification of compliance and a licence to use the ag-data logo. The use of the logo or seal acts as a heuristic (ie, a short cut) that communicates to farmers and producers that their ag-data will be managed in a certain way. Detailed principles and specific terms and conditions are complicated and can confuse the audience (ie, farmers and producers) who often want the 'gist' of the code but not the detail. Indeed, research suggests that 'information content may actually hinder persuasion' and 'consumers are annoyed by product claims and actually prefer to make decisions based on less mentally-taxing factors'.⁶⁸ In this way, it is the accreditation and display of the logo that farmers and producers see and can base their decision on.

Changing attitudes and behaviours

Changing attitudes and behaviours around ag-data use are important aspects of the context in which ag-data codes of practice operate. Most importantly, it is hoped that ag-data codes of practice help build awareness about the importance of ag-data, encourage agribusiness to rethink and modify their ag-data practices and, ultimately, develop trust in the way in which ag-data is accessed and used. Indeed, while at the heart of ag-data codes is encouraging consensual data practices and full disclosure and transparency, they can also help organise and change attitudes and behaviours in more prescriptive ways. The *NZ Farm Data Code*, for example, aims to encourage and enable the effective sharing of data within the NZ agricultural industry.⁶⁹

Changing attitudes and behaviours is multidirectional. Through the introduction of industry-led codes of practices, it is hoped that agribusiness can no longer ignore the impact of the way in which they deal with ag-data. More specifically, ag-data codes of practice are targeted at changing attitudes and behaviours around access and use of ag-data. Most notably, for agribusiness, it is hoped that their contracts and dealings with ag-data become more honest and clearer, and that they freely disclose the way in which they deal with ag-data. This, in turn, will facilitate trust around ag-data dealings and encourage the use and sharing of ag-data for the benefit of producers and agricultural industry more broadly. In addition, because of the way in which ag-data codes are being introduced and managed, it is likely that they provide a mechanism to bring together producers, agribusiness, consumers and local communities to work towards informed, consensual and trusting data relationships.

Key challenges for ag-data codes of practice

While ag-data codes of practice are relatively new, and it is too early to fully judge their impact and the difference that these have had on ag-data practices, it is possible to identify some of the key challenges and limits of ag-data codes. Some of these are practical challenges (which go to establishing appropriate principles and accreditation), and others are intrinsic to the nature of self-regulation and go to the implementation and evaluation of codes of practice. While we do not provide an exhaustive exegesis of the challenges facing ag-data codes of practice, our aim here is to begin to establish a framework from which ag-data codes of practice can be thought about, reviewed and assessed. It is hoped that this will assist with the review of current codes of practice and inform the development of new codes. In the remainder of this part of the article we consider: the need for an appropriate and agile ag-data normative framework;

⁶⁷ See, eg, Elizabeth Barham, 'Towards Theory of Values-Based Labelling' (2002) 19(4) *Agriculture and Human Values* 349.

⁶⁸ Sarah Haan, 'The "Persuasion" Route of Law: Advertising and Legal Persuasion' (2000) 100 *Columbia Law Review* 1281, 1305.

⁶⁹ Farm Data Accreditation Ltd, above n 10, 4.

implementation and enforcement of ag-data codes of practice; questions over trade mark-based data logos; and the evaluation of ag-data codes of practice.

The need for an appropriate and agile ag-data normative framework

Voluntary ag-data codes are only as good as the principles underpinning them. Codes of conduct can range from vague pronouncements about recognising the importance of ag-data to more substantive efforts at shaping the way in which ag-data is accessed and used. This means that industry groups and organisations concerned with encouraging certain ag-data practices can, in their ag-data codes, identify and target the most important practices around ag-data, including data collection, storage, processing, sharing and security. In many ways, determining the appropriate principles is a balancing act between what industry hopes to achieve and what agribusiness is willing to accept and 'buy-in' to. As ag-data codes are developed, implemented and reviewed, there are two crucial questions: Who has the legitimacy to design, implement and administer the ag-data code of practice? What, exactly, are appropriate and agile ag-data principles?

The question of who is in the best position to design, implement and administer the ag-data code of practice is of crucial importance. What is evident from scholarship and commentary on voluntary codes is that it is necessary that multiple stakeholders and industries are involved in designing and implementing them.⁷⁰ In terms of ag-data, these stakeholders include not only producer groups but also agribusiness and government agencies and research corporations. These groups have interest in the successful introduction of an ag-data code of practice. Late in 2017, in Australia, the National Farmers Federation ('NFF') put its hand up to be involved in the introduction of an ag-data code for Australian agriculture.⁷¹ As the peak Australian body representing farmers and Australian agriculture, and as a 'leader in the identification, development and achievement of policy outcomes'⁷² the NFF is well placed to coordinate the collaboration needed to design and implement a meaningful and effective ag-data code. The NFF has a direct interest in formalising an ag-data code of practice and ensuring that codes move beyond mere aspirational statements to include verifiable targets and clear procedures for accreditation and monitoring. That said, the NFF does not cover all sectors (for example, fish and seafood) and would, therefore, need to seek the involvement of other organisations.

A fundamental question is whether agribusiness should be trusted to police themselves or whether there is a need for greater oversight.⁷³ It is generally accepted that the body or organisation implementing and administering an ag-data code needs to be independent. Independence is crucial because it can provide credibility and legitimacy in administering, accrediting and monitoring the code. In New Zealand, for example, an independent company, Farm Data Accreditation Limited (FDAL), was established in April 2015 to administer the *NZ Farm Code*.⁷⁴ Despite establishing the FDAL, the *NZ Farm Code* relies heavily on self-audits and statutory declarations by the companies seeking accreditation.⁷⁵ While this is less onerous than external auditing, it is possible that this dilutes the impact of the *NZ Farm Code*, and that this will, ultimately, lead to limited impact of the *NZ Farm Code*. Interestingly, the *EU Code* has been developed by a collaboration of farmer and cooperative groups but also agricultural machinery and fertiliser manufacturers, which also suggest there should be some independent oversight put in place.⁷⁶ Therefore, some external auditing is necessary to check compliance rather than relying on self-declarations or asserting compliance through advertising or other public relations.

In addition to considering who should administer and monitor an ag-data code, having appropriate and agile ag-data principles is clearly crucial to the success of voluntary ag-data codes. While there are competing definitions of 'good' data practices, and there is sometimes a struggle between industry and agribusiness, existing codes tend to focus on three main (related) areas: consent, disclosure and transparency. As noted earlier, existing ag-data codes are generally principle-based and provide a benchmark of what industry regard as 'good' practice in terms of ag-data practices; and, rather than dictating exactly how agribusiness

⁷⁰ See, eg, Dara O'Rourke, 'Multi-Stakeholder Regulation: Privatizing or Socializing Global Labor Standards?' (2006) 34(5) *World Development* 899.

⁷¹ National Farmers' Federation, above n 13.

⁷² National Farmers' Federation, *About NFF* (2018), <<http://www.nff.org.au/aboutus.html>>.

⁷³ See Maki Hatanaka, Carmen Bain and Lawrence Busch, 'Third-Party Certification in the Global Agrifood System' (2005) 30(3) *Food Policy* 354.

⁷⁴ Farm Data Accreditation Ltd, above n 10, p. 5.

⁷⁵ *Ibid.*, p. 7.

⁷⁶ This EU Code of Conduct on Agricultural Data Sharing by Contractual Arrangement agreed by Copa and Cogeca, CEMA, Fertilizers Europe, CEETTAR, CEJA, ECPA, EFFAB, FEFAC, ESA, for details of the organisations affiliated see <<http://www.ceja.eu/1799-2/>>

should manage ag-data, codes tend to focus on consent, disclosure and transparency. Perhaps, though, existing ag-data codes of practice do not go far enough. While there is a focus on clarifying data ownership,⁷⁷ building trust and confidence in ag-data relationships requires more, and:

[F]ocus(ing) on ag-data ownership is rather unhelpful and, in some cases, unnecessary and distracting. Rather than tackle the legal complexities and uncertainties of the way in which the law approaches ownership of data, agricultural industries and their producers would be better served to think about the way in which the agricultural data and the data of their producers is collected, controlled and accessed.⁷⁸

The challenge of determining appropriate standards is exacerbated by different industry and sector interest and involvement. On the one hand, a narrow focus (eg, focusing solely on the grain sector) may help focus attention and makes it easier to establish the most appropriate ag-data principles and practices for the industry or sector; on the other hand, determining an appropriate normative framework is more challenging at a national or whole of agriculture level. Either way, establishing the most appropriate ag-data principles industry groups and organisations requires certainty and clarity about what they are trying and are able to achieve with their ag-data code of practice.

Because ag-data codes operate not just in the gaps of government legislation but also in co-ordination with existing legislation, one of the key considerations when determining the content of ag-data principles is how the principles overlap with existing legislation, particularly those laws dealing with privacy and consumer law. Importantly, ag-data and personal data is not the same thing and, while it might be possible to conflate the two (and treat all data as personal), this kind of approach may not promote trust or, at worst, may mislead producers. Perhaps, too, treating all data as 'personal data' may result in unrealistic expectations for agribusiness. Another consideration when establishing ag-data principles is thinking about how to 'future proof' the principles will be. A good example of this is the introduction of a *Consumer Data Right* in Australia: which will be introduced sector-by-sector, starting with banking, energy and telecommunications in 2018. This will allow consumers and small businesses to obtain a machine-readable copy of their own data or direct it to be shared with a third party.⁷⁹ When implemented in agriculture, this will have a significant impact on the way ag-data is managed and will, therefore, need to be contemplated by ag-data codes of practice. Commenting on the Productivity Commission's recommendations, the Australian Farm Institute's Executive Director, stated:

Clearly, the agricultural sector has the potential to capture significant benefits from the rapid growth in digital technology, and the recommendations made by the Productivity Commission have established a very good framework for the sector to ensure that both productivity and competition benefits are secured. That said, there will need to be detailed discussions about these issues involving a wide cross-section of the industry to ensure that the potential benefits are able to be secured by as many as possible, and that decisions about data rights and access do not create impediments for technology and software developers.⁸⁰

Finally, in reaching agreement on the content of ag-data principles, it is crucial to avoid the watering down of principles. This is important for voluntary codes because lower standards are sometimes the trade-off for increased adoption and compliance, and there may be a tendency to try to accommodate the competing interests of stakeholders. In 2009, Potoski and Prakash examined research on voluntary environmental programs using 'club theory' as an analytical framework. They found that a consistent theme of the contributions was the challenge of balancing standards with attracting members, particularly emphasising that it is difficult, if not impossible, to achieve both stringent standards and high membership.⁸¹

Implementation and enforcement of ag-data codes of practice

Another challenge for ag-data codes is ensuring adequate implementation and enforcement. Like all voluntary programs, ag-data codes depend on participation from industry, agribusiness and producers. Despite the introduction of ag-data codes of practice in the US, New Zealand and more recently, the EU, their implementation remains relatively limited. For instance, while there are 37 companies who have agreed to follow the *Principles for Farm Data Code*; as of 30 July 2018, only 13 companies and their

⁷⁷ See, eg, Shannon Ferrell, *Technology in Agriculture: Data-Driven Farming*, United States Senate (14 November 2017), <<https://www.commerce.senate.gov/public/index.cfm/hearings?id=28E4FB56-2F01-4E20-B5A9-47C9A78BDE0D>>.

⁷⁸ Leanne Wiseman, Jay Sanderson and Lachlan Robb, 'Rethinking Ag Data Ownership' (2018) 15(1) *Farm Policy Journal* 71, p. 72.

⁷⁹ See Australian Productivity Commission, above n 19.

⁸⁰ Mick Keogh, *Data—The New Productivity and Competition Catalyst*, 21 May 2017, <<http://www.farminstitute.org.au/ag-forum/data-the-new-productivity-and-competition-catalyst>>.

⁸¹ Matthew Potoski and Aseem Prakash (eds). *Voluntary Programs: A Club Theory Perspective* (MIT Press, 2009).

products have been certified and granted approval to use the Ag-Data Transparent Seal.⁸² The use of the NZ *Farm Data Code* is also small, with five ag-providers (ie, Gateway Data Services, Farmax, Farm IQ, Greenlea, Apps on Farm) being accredited and able to display the Code's mark.⁸³ As Todd Janzen, the administrator of the Transparency Evaluator, put it in November 2017:

The Ag-Data Transparent effort is great step towards bringing transparency to ag-data contracts between farmers and their technology providers. Wider participation would certainly help the effort, but that is up to the industry. Out of the dozens of ag tech providers with cloud-based platforms on the market today, only nine have completed the certification process. A few companies are in the process of certifying, but uptake could be better.⁸⁴

Part of the difficulty of getting 'buy-in' of ag-data codes of practices is that producers and agribusiness are not yet completely interested in ag-data: with neither producers or agribusiness appreciating the value of ag-data codes and accreditation. It appears that current ag-data codes emerged before sizeable demand from producers and agribusiness. There is, therefore, a need to build value in, and awareness of, voluntary ag-data codes. While the value of ag-data codes remains largely unknown, if done well, ag-data codes and associated accreditation can add value to agribusiness. Highlighting the perceived and actual benefits of accreditation for business, the International Accreditation Forum conducted an empirical study into the benefits of accreditation, finding that 83 per cent of businesses felt that accreditation added value to their organisation; 17 per cent found a 'significant increase' in sales as a 'direct result' of accreditation; 32 per cent indicated a 'minor rise' in sales; and 16 per cent regarded it as important to 'direct customers'.⁸⁵

There are other reasons why 'buy-in' to ag-data codes is limited. If we look at other voluntary codes of practice - for example, Forest Stewardship Council (FSC) - they are most successful when legal and regulatory obligation exists and are consistent with the standards that government and industry are attempting to implement.⁸⁶ As we have noted already, there is little higher legislation on data practices, which raises challenges for the implementation of such schemes. When examining other certification schemes (such as FSC) and regulatory theory (such as 'smart regulation'), it appears that the government must also play a role in the ag-data management and practices. To this end, and as noted above, the Australian Government is currently implementing a consumer data right in Australia.

Pressure to implement voluntary codes come from other sources, and may be in response to pressure from stakeholders or funding bodies who want organisations and businesses to change their practices.⁸⁷ Here it is worth looking to the CGIAR, which, in 2012, implemented a fundamental shift in the way it dealt with intellectual property and data, introducing *Principles on the Management of Intellectual Assets* in 2012 and *Open Access and Data Management Policy* in 2013.⁸⁸ Part of the reason that the CGIAR research centres were motivated to adopt these changes was that they were driven by funders, and the changes in the way in which CGIAR managed intellectual property and data were compliant with donor policies, particularly the Bill and Melinda Gates Foundation Open Data Policy.⁸⁹ A final point worth making is that buy-in may be achieved inconsistently across agribusinesses. For example, it is possible that buy-in will be improved if the cost of purchase is relatively low (ie, software companies) while agribusinesses in which the cost of products or technology is relatively high (such as for tractors and other machinery) may be less inclined to implement ag-data codes of practice.

Despite the challenges of getting buy-in of ag-data codes, there are steps that can be taken to facilitate adoption of ag-data codes. Perhaps one of the most important is ensuring the veracity and legitimacy of the code, as well as those who administer and accredit compliance. Legitimacy is important because, as we showed earlier in the article, accreditation serves as a shorthand for an endorsement; it does not convey detailed or technical information about ag-data practices directly and so producers and agribusiness must

⁸² Ag Data Transparent, *Certified Companies*, <<https://www.agdatatransparent.com/certified/>>.

⁸³ New Zealand Farm Data Code of Practice, Accredited Organisations, <http://www.farmdatacode.org.nz/?page_id=201>.

⁸⁴ Todd Janzen, Technology in Agriculture: Data-Driven Farming, United States Senate (14 November 2017), <<https://www.commerce.senate.gov/public/index.cfm/hearings?id=28E4FB56-2F01-4E20-B5A9-47C9A78BDE0D>>.

⁸⁵ International Accreditation Forum, 'The Value of Accredited Certification: Survey Report' (May 2012).

⁸⁶ See, eg, Tim Bartley, Sebastian Koos, Hiram Samel, Gustavo Setrini and Nik Summers, *Looking Behind the Label: Global Industries and the Conscientious Consumer* (2015, Indiana University Press) 85-111.

⁸⁷ For a discussion of how voluntary programs are often created in response to pressure from stakeholders, see Mary Gugerty, 'Self-Regulation and Voluntary Programs among Non-Profit Organizations' in Matthew Potoski and Aseem Prakash (eds), *Voluntary Programs: A Club Theory Perspective* (MIT Press, 2009) 250.

⁸⁸ CGIAR, Principles on the Management of Intellectual Assets. CGIAR, Open Access and Data Management Policy.

⁸⁹ See Brad Sherman, 'Reconceptualising Intellectual Property to Promote Food Security' in Charles Lawson and Jay Sanderson (eds), *The Intellectual Property and Food Project: From Rewarding Innovation and Creation to Feeding the World* (2016, Routledge) 33-54.

trust the code and accrediting party.⁹⁰ In addition to independence, as ag-codes are developed and reviewed, serious consideration needs to be given to enforcement. Many voluntary codes lack teeth, and any meaningful mechanism for checking and enforcing compliance. As noted above, a significant issue for ag-data codes is that they are a form of self-regulation, and self-regulation is often derided and criticised for being weak and ineffectual. John Braithwaite commented that '[s]elf-regulation is frequently an attempt to deceive the public into believing in the responsibility of the irresponsible industry. Sometimes, it is a strategy to give the government an excuse for not doing its job'.⁹¹ Therefore, it is necessary to have some form of external auditing to check compliance rather than merely relying on self-declarations or public assertions about data practices.

Issues around trade mark-based logos

Another issue for ag-data codes of practice is deciding whether to register an ag-data trade mark. This is an important consideration because of the communicative function of ag-data codes. The law distinguishes different type of trade marks that can be used with an ag-data code; the most relevant being standard trade marks and certification marks.⁹² A standard mark identifies the source of goods or services, while a certification mark represents to a consumer that the goods or services meet standards or quality.⁹³ The difference between standard and certification marks is explained by IP Australia in the following way:

While a standard trade mark is used to distinguish one trader's goods or services from those of another trader, a Certification Trade Mark is used by authorised users to guarantee that the goods or services possess a particular standard. For example, the Australian Made, Australian Grown certification trade mark is used by more than 1700 companies on over 10,000 products sold globally.⁹⁴

In terms of the differences between standard marks and certification marks, there are some observations worth making. Registering an ag-data standard mark will provide more flexibility and be less onerous than a certification mark, with procedures for registering a data certification mark being more demanding than those for a standard mark. While the grant of a standard mark is based on an examination by the national trade mark office of requirements centred on distinctiveness, and potential confusion and deceptiveness, the examination of certification marks consists of an additional stage: the examination of the rules, standards or criteria that govern the use of the certification mark. For example, in the US, a certification mark owner must file an additional description of the certification standards to the US Patent and Trademark Office (USPTO); In the UK, it is the Trade Mark Register who approves the standards and rules associated with certification marks under the *Trade Marks Act 1994* (UK);⁹⁵ and, in Australia, these matters are examined by the Australian Competition and Consumer Commission (ACCC).⁹⁶ Once established, any changes to the standards must also be approved by the same body.

Although often cited as a strength of the certification mark scheme, the need for independent approval of the standards creates an extra layer of complication and bureaucracy. This is perhaps one of the reasons why many of the best-known 'value-based' marks are registered as standard marks, not as certification marks.⁹⁷ This is illustrated '[i]n the case of sustainably grown coffee, for example, numerous third-party certification organizations exist, but many companies—including market leaders such as Starbucks—use conventional trademarks as ecolabels to convey information about their sustainable practices'.⁹⁸

Another potential concern for certification marks is that they are non-discriminatory, so that agribusiness cannot be excluded from the use of a certification mark if their product or service has the required characteristics. This means that it is possible that a certified business might satisfy the standards related to a data mark, though, in a broader sense, may have questionable data practices. If an ag-data certification mark is registered there is little that the mark owner can do about this. In Australia, for example, the

⁹⁰ For a discussion of the connection between standards and trade marks see Margaret Chon, 'Marks of Rectitude' (2009) 77 *Fordham Law Review* 2311.

⁹¹ Braithwaite, above n 57, 91.

⁹² It is also possible to protect unregistered marks and logos through common law passing off or, in the US, as part of unfair competition law.

⁹³ *Trade Marks Act 1995* (Cth), ss 17 and 169 (for definitions of trade marks and certification trade marks respectively).

⁹⁴ IP Australia, *Certification Trade Mark*, <<https://www.ipaustralia.gov.au/trade-marks/understanding-trade-marks/types-of-trade-marks/certification-trade-mark>>.

⁹⁵ *Trade Marks Act 1994* (UK) sch 2.

⁹⁶ *Ibid* ss 173-175; *Trade Marks Regulations 1995* (Cth) Pt 16.

⁹⁷ Barham, above n 67.

⁹⁸ David Adelman and Graeme Austin, 'Trademarks and Private Environmental Governance' (2017) 95 *Notre Dame Law Review* 2.

peculiar situation occurred when the National Heart Foundation Tick - which is registered as a certification mark - was awarded to certain approved McDonald's meals.⁹⁹ This would not necessarily be the case with a standard ag-data mark because it would be the owner (or the licensee) of the mark that would have the discretion to approve or deny the granting of the licence. Therefore, a standard mark might be a better option for ag-data codes, particularly if the administrators might want to dissociate themselves from some companies who might want to, and technically qualify for, ag-data accreditation despite having questionable practices.

Importantly, too, while there is a legal difference between standard and certification marks, the legal distinctions tend to be meaningless for consumers, who view marks and certification marks in the same way. This conflation of standard and certification marks erases any boundary between certification marks in the marketplace. Finally, before deciding to register and use an ag-data logo, it must be acknowledged that the efficacy of logos and trade marks is questionable.¹⁰⁰ Like other voluntary codes, ag-data codes are vulnerable to consumer overload.¹⁰¹ This means that the information conveyed by ag-data code marks is vulnerable to dilution and congestion because ag-data practice is just one aspect of agribusiness, and there will be other messages and logos being used. In addition, and as noted earlier in this article, ag-data codes can include watered down standards in attempt to attract agribusiness members. If not properly designed and implemented, an ag-data logo may fail to have the desired impact, or it may even be viewed negatively, so that it communicates something about the ag-data practices, just not the intended message. As we have noted earlier, the National Heart Foundation logo came to be seen in a negative light and, when displayed on foods, was viewed sceptically and with suspicion.

Evaluation of ag-data codes of practice

What difference are ag-data codes having? There is little doubt that the growing emphasis on ag-data codes of practice is a significant development in the way ag-data is thought about and managed. However, the question of what ag-data codes really achieve remains to be answered. Just because initiatives for setting and accrediting ag-data codes have emerged, it does not mean they have had an impact and persuaded agribusiness to engage in socially desirable ag-data practices. Unfortunately for those looking to introduce, administer or review ag-data codes, there is no simple answer to this question. What is clear, however, is that a clear and thorough review process is required.

To determine the impact of ag-data codes, we recommend that, at the very least, evaluation of ag-data codes occurs at three levels. First, the number of members can be used as a simple metric to determine the adoption of ag-data codes. As we have already highlighted, despite the introduction of ag-data codes of practice in the US and New Zealand, their adoption remains relatively limited.

Significantly, though, membership numbers do not provide a very sophisticated or nuanced evaluative measure. Membership and impact are not the same thing.¹⁰² Although there has been a relatively small uptake of ag-data schemes it does not mean that there has been no impact. Conversely, increasing the number of companies that comply with the standards does not automatically improve the impact or effectiveness of such schemes. Another way to evaluate the impact of ag-data codes is to assess the nature and degree of awareness and understanding of ag-data codes and their principles. For example: ag-data codes may be introduced to help raise awareness about data practices and to, at the very least, get producers to ask questions about the way their data is managed. This needs to be measured and assessed. Gaining understanding of ag-data codes at this level will tell us something of the communicative function of ag-data codes and accreditation, and will require techniques of social science, such as survey research, ethnographic observation and interviews.

⁹⁹ See, eg, Simone Pettigrew et al, 'Tick Tock: Time for a Change?' (2016) 27 *Health Promotion Journal of Australia* 102; Claudine Ryan, 'Healthy Heart Tick is being Retired, so what Worked and What Didn't About our Most Well-Known Food Logo?', *ABC News* (online), 17 December 2015, <<http://www.abc.net.au/news/health/2015-12-11/heart-tick-retires-what-worked-what-didnt/7020732>>.

¹⁰⁰ Dorethée Brécard, 'Consumer Confusion over the Profusion of Eco-Labels: Lessons from a Double Differentiation Model' (2014) 37 *Resource and Energy Economics* 64; Patrick De Pelsmacker, Wimm Janssens, Ellen Sterckx, Caroline Mielants, 'Consumer Preferences for the Marketing of Ethically Labelled Coffee' (2005) 22(5) *International Marketing Review* 512.

¹⁰¹ See, eg, Martin Eppler, and Jeanne Mengis, 'The Concept of Information Overload: A Review of Literature from Organization Science, Accounting, Marketing, MIS, and Related Disciplines', (2004) 20(5) *The Information Society* 325; Vincent-Wayne Mitchell, and Vassilios Papavassiliou, 'Marketing Causes and Implications of Consumer Confusion' (1999) 8(4) *Journal of Product and Brand Management* 319.

¹⁰² Lawrence Friedman, *Impact: How Law Affects Behaviour* (2016, Harvard University Press).

A third form of evaluation relates to attitude and behaviour change. Mere increases in voluntary ag-data membership does not tell us the real impact of ag-data codes. When faced with criticisms about the way they deal with ag-data, agribusinesses may try to improve their image without changing profitable practices. This question was raised in February 2018, when the first major agribusiness, John Deere, was accredited by Ag-Data Transparent and publicly announced that this 'verifies to producers that a technology provider or product is in compliance with specific core principles for ag-data ownership, consent and privacy' and that companies are 'reviewed and verified by an independent third-party administrator to ensure a high standard of transparency, simplicity, and trust in all data contracts and services'.¹⁰³ While this is a step in the right direction the crucial question for evaluation ag-data codes is how, if at all, did John Deere improve its data practices as a result of the American Farm Bureau's *Principles for Farm Data*?

Conclusion

This article examined voluntary ag-data codes of practices. We hope that this will assist stakeholders and governments to think more critically about the role of ag-data codes of practice: most importantly, perhaps, it is important to not uncritically or hastily accept or adopt ag-data codes of practice. It is important to be cautious about taking measures to address issues around the management and use of ag-data - such as introducing an ag-data code of practice - that are politically appealing but that are of little or no use.

There are several strategies that stakeholders can pursue in implementing and evaluating ag-data codes of practice. The first is that ag-data codes must be informed and sustained by clear objectives, and stakeholders must have a clear direction in which they want to take ag-data practices. In other words: stakeholders need to be sure about what they are trying, and able, to achieve with their ag-data codes of practice. Perhaps it is enough to merely raise awareness about ag-data so that farmers and producers understand the potential value of their data and are, therefore, motivated to read their data contracts more carefully and seek clarification and advice about the way their data is accessed and used. The objective of ag-data codes could also be to encourage honest, clear and transparent data contracts so that the terms of conditions around data practices are clearly stated and perhaps summarised for farmers and producers. It is also possible for ag-data codes to have more ambitious, and substantive, objectives and be directed towards encouraging agribusiness to change their ag-data practices (eg, to share data for the benefit of industry). Significantly, when developing the most appropriate and agile data principles - consistent with stakeholder objectives - it is crucial to avoid the watering down of principles for the sake of attracting members. This is important for voluntary codes because there can be a tendency to try to accommodate the competing interests of stakeholders and, subsequently, lower standards are often the trade-off for increased adoption and compliance. Such accommodation and trade-off might help attract more members, but it is also likely to allow members to avoid more substantive and stringent ag-data practices.¹⁰⁴

Another strategy is to ensure independence in accreditation, monitoring and enforcement. While independence is not a goal itself, it is a crucial component of ag-data codes because it provides a mechanism to develop credibility and legitimacy in both the code and those who administer and monitor it. Credibility and legitimacy are crucial because, while the potential benefit and value of ag-data is immense, a major hurdle to realising these benefits is that there is a tension between those who provide the data (ie, farmers and producers) and those that collect the data (ie, agribusiness). This tension limits the potential benefits of ag-data in part because it results in uncertainty and mistrust around accessing and using ag-data.¹⁰⁵ An ag-data code that lacks credibility and legitimacy will do little, if nothing, to reduce this tension nor help ag-data reach its full potential. In addition to independence, as ag-codes are developed and implemented serious consideration needs to be given to enforcement. Many voluntary codes lack teeth, and any meaningful mechanism for checking and enforcing compliance is absent. As noted in Part III(A) of this article, a significant issue for ag-data codes is that they are a form of self-regulation, and self-regulation is often derided and criticised for being weak and ineffectual. This means that some form of external auditing

¹⁰³ John Deere, *John Deere receives Ag Data Transparent seal of approval*, News Release (26 February 2018), <<https://www.deere.com/en/our-company/news-and-announcements/news-releases/2018/agriculture/2018feb26-ag-data-transparent/>>; Emma Cosgrove, 'John Deere Obtains Ag Data Transparent Certification Adding New Fuel to the Slow Burning Cert', *AgFunder News* (1 March 2018), <<https://agfundernews.com/john-deere-obtains-ag-data-transparent-certification.html>>.

¹⁰⁴ See, eg, Potoski and Prakash, above n 81.

¹⁰⁵ See Wiseman and Sanderson, above n 2.

is necessary to check and enforce compliance rather than relying on self-declarations or asserting compliance through advertising, public pronouncements or other self-serving mechanisms.

Finally, it must be acknowledged that the question of what ag-data codes really achieve remains unanswered. Just because initiatives for setting and accrediting ag-data codes have emerged does not mean they have had an impact on ag-data practices or persuaded agribusiness to engage in socially desirable ag-data practices. Unfortunately, for those looking to introduce, administer or review ag-data codes, there is no simple answer to this question. What is clear, however, is that a strong and rigorous review process is required. To determine the impact of ag-data codes, we recommend that, at the very least, evaluation of ag-data codes occurs on a number of levels. As well as simple metrics, such as the number of members, it is crucial to shed light on the nature and degree of awareness of farmers, producers and agribusiness about the importance of ag-data, and to determine if stakeholders have changed their attitudes and behaviours towards ag-data as a consequence the ag-data code of practice.

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