



Manaaki Whenua  
Landcare Research



# **New Zealand's monitoring frameworks for agricultural sustainability and assurance**

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# **‘Think piece’ on Regenerative Agriculture in Aotearoa New Zealand: project overview and statement of purpose**

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Find the full project overview, white paper and topic reports at [ourlandandwater.nz/regenag](https://ourlandandwater.nz/regenag) and [www.landcareresearch.co.nz/publications/regenag](http://www.landcareresearch.co.nz/publications/regenag)

This report is one of a series of topic reports written as part of a ‘think piece’ project on Regenerative Agriculture (RA) in Aotearoa New Zealand (NZ). This think piece aims to provide a framework that can be used to develop a scientific evidence base and research questions specific to RA. It is the result of a large collaborative effort across the New Zealand agri-food system over the course of 6 months in 2020 that included representatives of the research community, farming industry bodies, farmers and RA practitioners, consultants, governmental organisations, and the social/environmental entrepreneurial sector.

The think piece outputs included this series of topic reports and a white paper providing a high-level summary of the context and main outcomes from each topic report. All topic reports have been peer-reviewed by at least one named topic expert and the relevant research portfolio leader within MWLR.

## **Foreword from the project leads**

Regenerative Agriculture (RA) is emerging as a grassroot-led movement that extends far beyond the farmgate. Underpinning the movement is a vision of agriculture that regenerates the natural world while producing ‘nutrient-dense’ food and providing farmers with good livelihoods. There are a growing number of farmers, NGOs, governmental institutions, and big corporations backing RA as a solution to many of the systemic challenges faced by humanity, including climate change, food system disfunction, biodiversity loss and human health (to name a few). It has now become a movement. Momentum is building at all levels of the food supply and value chain. Now is an exciting time for scientists and practitioners to work together towards a better understanding of RA, and what benefits may or not arise from the adoption of RA in NZ.

RA’s definitions are fluid and numerous – and vary depending on places and cultures. The lack of a crystal-clear definition makes it a challenging study subject. RA is not a ‘thing’ that can be put in a clearly defined experimental box nor be dissected methodically. In a way, RA calls for a more prominent acknowledgement of the diversity and creativity that is characteristic of farming – a call for reclaiming farming not only as a skilled profession but also as an art, constantly evolving and adapting, based on a multitude of theoretical and practical expertise.

RA research can similarly enact itself as a braided river of interlinked disciplines and knowledge types, spanning all aspects of health (planet, people, and economy) – where curiosity and open-mindedness prevail. The intent for this think piece was to explore and demonstrate what this braided river could look like in the context of a short-term (6 month) research project. It is with this intent that Sam Lang and Gwen Grelet have initially approached the many collaborators that contributed to this series of topic reports – for all bringing their unique knowledge, expertise, values and worldviews or perspectives on the topic of RA.

### **How was the work stream of this think piece organised?**

The project's structure was jointly designed by a project steering committee comprised of the two project leads (Dr Gwen Grelet<sup>1</sup> and Sam Lang<sup>2</sup>; a representative of the New Zealand Ministry for Primary Industries (Sustainable Food and Fibre Futures lead Jeremy Pos); OLW's Director (Dr Ken Taylor and then Dr Jenny Webster-Brown), chief scientist (Professor Rich McDowell), and Kaihāpai Māori (Naomi Aporo); NEXT's environmental director (Jan Hania); and MWLR's General Manager Science and knowledge translation (Graham Sevicke-Jones). OLW's science theme leader for the programme 'Incentives for change' (Dr Bill Kaye-Blake) oversaw the project from start to completion.

The work stream was modular and essentially inspired by theories underpinning agent-based modelling (Gilbert 2008) that have been developed to study coupled human and nature systems, by which the actions and interactions of multiple actors within a complex system are implicitly recognised as being autonomous, and characterised by unique traits (e.g. methodological approaches, world views, values, goals, etc.) while interacting with each other through prescribed rules (An 2012).

Multiple working groups were formed, each deliberately including a single type of actor (e.g. researchers and technical experts only or regenerative practitioners only) or as wide a variety of actors as possible (e.g. representatives of multiple professions within an agricultural sector). The groups were tasked with making specific contributions to the think piece. While the tasks performed by each group were prescribed by the project lead researchers, each group had a high level of autonomy in the manner it chose to assemble, operate, and deliver its contribution to the think piece. Typically, the groups deployed methods such as literature and website reviews, online focus groups, online workshops, thematic analyses, and iterative feedback between groups as time permitted (given the short duration of the project).

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<sup>1</sup> Senior scientist at MWLR, with a background in soil ecology and plant ecophysiology - appointed as an unpaid member of Quorum Sense board of governors and part-time seconded to Toha Foundry while the think piece was being completed

<sup>2</sup> Sheep & beef farmer, independent social researcher, and project extension manager for Quorum Sense

# New Zealand's monitoring frameworks for agricultural sustainability and assurance

*Contract Report: LC3954-7*

Charles N Merfield

*The BHU Future Farming Centre*

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**Addendum August 2021.** Many sustainability frameworks are undergoing significant changes, often at considerable speed. Between the time of writing in October 2020, and the publication of this report, a number of the reviewed frameworks had undertaken significant updates and upgrades. This review should therefore be considered to provide a snapshot of the frameworks at the time of writing and should **not** be considered to provide current information at the time of publication or reading of the report.

## 1 Introduction

The overall aim of this report is to provide the reader with a general understanding of agricultural sustainability frameworks, using examples from Aotearoa- New Zealand (NZ). This is in the context of the current interest in Regenerative Agriculture (RA) in NZ and discussions within RA about the need, or lack of need, to develop systems to prove the provenance of regenerative farm products and a framework to describe what regenerative practices involve. The report **makes no attempt** to be a detailed and comprehensive analysis of the different systems, as this would require orders of magnitude greater resources than were available and also access to non-public information.

The wider context of this report is the desire in NZ to move agricultural and horticultural production from commodity to higher value markets, often based on achieving higher prices for production attributes (e.g. minimising climate change impacts) rather than only for product attributes (e.g. taste). It is clearly impossible for a consumer, especially an overseas consumer, to determine production attributes (climate impact) from product attributes (taste) as there is likely to be no link between the two. Sustainability frameworks therefore aim to provide the necessary verified credibility to the final consumer and the marketing and distribution channels that supply them, to achieve higher prices (Saunders et al. 2016). The reverse of this is consumers are increasingly avoiding purchases where they consider the production attributes do not align with their personal values on issues such as sustainability, animal welfare, good labour practices, etc. (Saunders et al. 2016). Agricultural and horticultural sustainability assessment frameworks are therefore a vital tool for both market access and to achieve premium prices.

However, not all sustainability assessment frameworks are equal. There is a wide range of variation among them in all their aspects, e.g. what issues they cover (e.g. greenhouse gases, animal welfare, worker rights) their rigour, reliability, independence, transparency, and many other measures. There are also different general approaches used by the different frameworks, principally input- vs outcomes-based frameworks and fixed benchmark vs continual improvement frameworks. There are pros and cons to these different approaches. This report therefore undertakes a high-level review and analysis of a range of NZ and overseas sustainability assurance frameworks to determine which sustainability areas they cover, and how. To achieve this, they have been compared against two global schemes for appraising sustainability assessment frameworks:

- Sustainability Assessment of Food and Agriculture (SAFA)
- ISEAL Alliance

SAFA was developed by the Food and Agriculture Organisation (FAO) of the United Nations.<sup>1</sup> It took 5 years of extensive participatory development,<sup>2</sup> and it is a comprehensive and universal framework for sustainability assessment in agriculture, and for benchmarking other frameworks.

ISEAL is “the global membership organisation for ambitious, collaborative and transparent sustainability systems”.<sup>3</sup> It was founded in 2002 as the International Social and Environmental Accreditation and Labelling (ISEAL) Alliance by some of the largest voluntary sustainability standards (VSS) organizations, including the Forest Stewardship Council, Fairtrade International, the Marine Stewardship Council, and the International Federation of Organic Agriculture Movements (IFOAM) (Paiement 2017). It is registered as a not-for-profit organisation in the United Kingdom.

The two systems are highly complementary. SAFA can be described as focused on the ‘what’, i.e. what aspects of sustainability are measured, while ISEAL can be described as focusing on the ‘how’, i.e. how things are measured, and the credibility, impact, efficacy, efficiency, and accuracy of the assessment system.

It must also be understood that all these standards are fundamentally voluntary in a legal sense, in that they are produced and run by non-governmental organisations (NGOs) such as companies, industry bodies, not-for-profits, etc. These frameworks are therefore in addition to governmental regulatory systems (laws), e.g. food safety, animal welfare, worker rights, etc., that operate within a country, and, also the government-to-government and multilateral agreements on trade that cover issues such as biosecurity, product quality and safety attributes, etc. These voluntary frameworks therefore aim to go above and beyond the baseline legal requirements of their legislature and the countries to which they are exporting.

## 1.1 SAFA

SAFA has four main divisions, called ‘dimensions of sustainability’:

- Good governance
- Environmental integrity
- Economic resilience
- Social well-being

These are then successively divided into ‘themes’, ‘sub-themes’, and finally ‘indicators’, the last being the measurable criteria for sustainability performance. The level of themes is used for the comparison with the industry frameworks, as this is commensurate with this high-level review, as opposed to a detailed analysis. The four dimensions and their themes are described below.

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<sup>1</sup> [www.fao.org/nr/sustainability/sustainability-assessments-safa/en/](http://www.fao.org/nr/sustainability/sustainability-assessments-safa/en/)

<sup>2</sup> [www.fao.org/fileadmin/templates/nr/sustainability\\_pathways/docs/SAFA\\_History10.9.14.pdf](http://www.fao.org/fileadmin/templates/nr/sustainability_pathways/docs/SAFA_History10.9.14.pdf)

<sup>3</sup> [www.isealalliance.org/](http://www.isealalliance.org/)

### 1.1.1 SAFA dimensions and themes

This section extracts, verbatim, from the SAFA guidelines<sup>4</sup> the descriptions for the four dimensions and the goals of each dimension's themes. These are then used as the template against which to compare the primary industries' sustainability assessment frameworks.

### 1.1.2 Sustainability dimension G: good governance

Governance is the process of making and implementing decisions, be it in the environmental, economic or social spheres. Unless good governance is seriously considered, sustainability will remain a mirage. For SAFA, this includes the aspects of corporate ethics, accountability, participation, rule of law, and holistic management.

<i>Theme</i>	<i>Goal</i>
G1 Corporate ethics	The enterprise has explicit, publicly available sustainability objectives and effective means of implementation and verification, as well as of identification and proactive addressing of major sustainability challenges.
G2 Accountability	The enterprise assumes full responsibility for its business behaviour, and regularly, transparently, and publicly reports on its sustainability performance.
G3 Participation	All stakeholders substantially affected by the enterprise's activities are identified, empowered, and invited to share decision making on activities impacting their lives and having major environmental impacts.
G4 Rule of law	The enterprise is uncompromisingly committed to fairness, legitimacy, and protection of the rule of law, including the explicit rejection of extortion and corruption and of the use of resources that are under legal dispute, whose use contradicts international agreements, or which are considered illegitimate by affected stakeholders. Moreover, enterprises will proactively work to improve the protections offered to the environment, vulnerable workers, and communities by seeking to strengthen applicable laws and codes in concert with affected stakeholders.
G5 Holistic management	Production and procurement are managed, and accounting is done, with equal consideration of all dimensions of sustainability and of the trade-offs and synergies linking them

### 1.1.3 Sustainability dimension E: environmental Integrity

As human activities are passing tipping points, or crossing planetary boundaries, protecting the integrity of the Earth's system is a precondition of any development. Environmental integrity consists of maintaining life support systems essential for human survival by minimising negative environmental impacts and fostering positive impacts. In SAFA, the following themes of environmental sustainability are addressed: atmosphere, water, land, materials and energy, biodiversity, and animal welfare.

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<sup>4</sup> [www.fao.org/3/a-i3957e.pdf](http://www.fao.org/3/a-i3957e.pdf)

<i>Theme</i>	<i>Goal</i>
E1 Atmosphere	The enterprise's actions contain greenhouse gases to the extent possible and do not release quantities of ozone-depleting substances and air pollutants that would be detrimental to the health of ecosystems, plants, animals or humans.
E2 Water	Freshwater withdrawal and use do not hinder the functioning of natural water cycles, and activities do not contribute to water pollution that would impair the health of humans, plants, and animal communities.
E3 Land	No land is lost due to surface sealing or mismanagement of arable lands and pastures, and soil fertility is preserved and enhanced.
E4 Biodiversity	The areas under agriculture, forestry, and fisheries are managed sustainably, ensuring conservation of all forms of biodiversity.
E5 Materials and energy	Damage to ecosystems and contribution to resource scarcity resulting from non-renewable material extraction, non-renewable energy use and waste disposal are minimised through economical and efficient use, consequent reuse and recycling/recovery and safe disposal.
E6 Animal welfare	Animals are kept in such conditions that they can express their natural behaviour and are free from hunger, thirst, discomfort, pain, disease, and other distress.

#### **1.1.4 Sustainability dimension C: economic resilience**

In a world dominated by shocks, SAFA focuses on economic resilience more than on economic development. Economic activity involves the use of labour, natural resources, and capital to produce goods and services to satisfy people's needs. The following themes are covered by the economic dimension of SAFA: investment, vulnerability, product safety and quality, and local economy.

<i>Theme</i>	<i>Goal</i>
C1 Investment	Through its investments, the enterprise enhances its sustainability performance and contributes to sustainable development at the community, regional, national or international levels.
C2 Vulnerability	The enterprise's production, supply, and marketing are resilient in the face of environmental variability, economic volatility, and social change.
C3 Product quality and information	Any contamination of produce with potentially harmful substances is avoided, and nutritional quality and traceability of all produce are clearly stated.
C4 Local economy	Through production, employment, procurement, marketing, and investments in infrastructure, the enterprise contributes to sustainable local value creation.

#### **1.1.5 Sustainability dimension S: social well-being**

Social sustainability is about the satisfaction of basic human needs and the provision of the right and the freedom to satisfy one's aspirations for a better life. This applies as long as the fulfilment of one's needs does not compromise the ability of others, or of future generations, to do the same. In SAFA, social well-being covers the following themes: decent livelihood, fair trading practices, labour rights, equity, human health and safety, and cultural diversity.

<i>Theme</i>	<i>Goal</i>
S1 Decent livelihood	The enterprise provides assets, capabilities and activities that increase the livelihood security of all personnel and the local community in which it operates.
S2 Fair trading practices	Fair trading practices provide suppliers and buyers with prices that reflect the true cost of the entire process of sustaining a regenerative ecological system, including support for right livelihood for primary producers, their families, and employees.
S3 Labour rights	The enterprise provides regular employment that is fully compliant with national law and international agreements on contractual arrangements, labour, and social security.
S4 Equity	The enterprise pursues a strict equity and non-discrimination policy and pro-actively supports vulnerable groups.
S5 Human safety and health	The work environment is safe, hygienic, and healthy and caters to the satisfaction of human needs, such as clean water, food, accommodation, and sanitary installations.
S6 Cultural diversity	The enterprise respects the intellectual property rights of indigenous communities and the rights of all stakeholders to choose their lifestyle, production and consumption patterns.

## 1.2 ISEAL

The structure of the ISEAL system is based on over-arching 'Credibility Principles' under which sit three 'Codes of Good Practice':<sup>5</sup>

- Assurance Code of Good Practice
- Impacts Code of Good Practice
- Standard-Setting Code of Good Practice

The "Ten ISEAL Credibility Principles" were published in 2013 as the result of a year-long global consultation with contributions from more than 400 stakeholders on five continents.<sup>6,7</sup> They were:

- 1 Sustainability
- 2 Improvement
- 3 Relevance
- 4 Rigour
- 5 Engagement
- 6 Impartiality
- 7 Transparency
- 8 Accessibility
- 9 Truthfulness
- 10 Efficiency

<sup>5</sup> [www.isealalliance.org/defining-credible-practice/iseal-codes-good-practice](http://www.isealalliance.org/defining-credible-practice/iseal-codes-good-practice)

<sup>6</sup> [www.isealalliance.org/sites/default/files/resource/2017-11/ISEAL\\_Credibility\\_Principles.pdf](http://www.isealalliance.org/sites/default/files/resource/2017-11/ISEAL_Credibility_Principles.pdf)

<sup>7</sup> [www.isealalliance.org/sites/default/files/resource/2019-06/ISEAL\\_Impacts\\_Code\\_Version\\_2.0.pdf](http://www.isealalliance.org/sites/default/files/resource/2019-06/ISEAL_Impacts_Code_Version_2.0.pdf)

In June 2021 (during the review process for this paper) the first update (Version 2) to the Credibility Principles was released after another extensive consultation exercise,<sup>8</sup> they are now:<sup>9</sup>

## **1. Sustainability impacts**

A credible sustainability system makes a difference where it matters. A credible sustainability system has a clear purpose to drive positive social, environmental, and economic impacts and to eliminate or remediate negative impacts. It defines and clearly communicates its scope, its specific sustainability objectives, and its strategies for achieving these objectives (its theory of change). The system focuses on the significant sustainability impacts in its scope. It seeks to address the root causes of sustainability issues and deliver wider or systemic impacts. It reflects current scientific evidence and international norms when relevant. It is adapted to local or sector-specific conditions where this helps improve impact.

## **2. Collaboration**

A credible sustainability system works with others to create change. A credible sustainability system identifies governments, businesses, and civil society organisations, including other sustainability systems, that are working towards shared sustainability objectives. It actively seeks alignment and respectfully pursues collaboration with others. It establishes partnerships and shares learnings to improve its efficiency and its direct or systemic impacts.

## **3. Value creation**

A credible sustainability system adds value. A credible sustainability system strives to create value that fairly rewards the effort and resources that it takes for users to participate in the system. It has a viable business model, and it operates efficiently, minimising costs for users and reaching more users by reducing other barriers to access. It supports users to implement its tools, and it empowers users by demonstrating a clear business case for participating in its system.

## **4. Measurable progress**

A credible sustainability system can demonstrate the difference it is making. A credible sustainability system has tools that are relevant to achieving its sustainability objectives, and these tools allow progress towards objectives to be measured over time. It collects and analyses the data it needs to measure, understand, and demonstrate the progress its users are making towards these objectives.

## **5. Stakeholder engagement**

A credible sustainability system listens and learns. A credible sustainability system is inclusive and non-discriminatory. It empowers stakeholders to participate in decisions and hold the system to account. It involves a balanced and diverse group of stakeholders in decisions that will affect them. It strives to understand the context and perspectives of stakeholders who have been under-engaged or under-represented, and it creates

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<sup>8</sup> [www.isealalliance.org/credibility-principles-consultation](http://www.isealalliance.org/credibility-principles-consultation)

<sup>9</sup> [www.isealalliance.org/defining-credible-practice/iseal-credibility-principles](http://www.isealalliance.org/defining-credible-practice/iseal-credibility-principles)

opportunities to ensure their participation in decision-making. It provides clear and transparent feedback on stakeholder input and concerns. It has fair, impartial, and accessible mechanisms for resolving complaints and conflicts.

## **6. Transparency**

A credible sustainability system earns trust by being open and honest. A credible sustainability system makes important information publicly available and easily accessible, while protecting confidential and private information. It enables stakeholders to understand and evaluate the system's processes, decision-making, results, and impacts. Stakeholders have the information they need to actively participate in decisions or raise concerns.

## **7. Impartiality**

A credible sustainability system is impartial. A credible sustainability system identifies and avoids or mitigates conflicts of interest throughout its governance and operations, particularly when it comes to assessing its users' performance. Transparency and stakeholder engagement help ensure the system's integrity can be trusted.

## **8. Reliability**

A credible sustainability system provides trustworthy assessments of users' performance. A credible sustainability system designs its tools so that these can be consistently implemented and assessed. It ensures assessments of users' sustainability performance are competent and accurate, and that these assessments support any claims it allows users to make.

## **9. Truthfulness**

A credible sustainability system's claims and communications can be trusted. A credible sustainability system substantiates its claims. Any claims the system or its users make are clear, relevant, and can be checked. They enable customers and other stakeholders to make informed choices. The scope and design of the system is accurately reflected in any claims, ensuring these are not misleading. Claims about sustainability impacts are backed up with data and evidence that are publicly available.

## **10. Continual improvement**

A credible sustainability system keeps improving. A credible sustainability system regularly reviews its objectives, its strategies, and the performance of its tools and system. It evaluates the impacts and outcomes of its activities. It applies the lessons learned to improve. It responds to new evidence, stakeholder input, and external changes, adapting its strategies to improve its impacts and remain fit for purpose.

This is considered to be a significant update of the Principles, as a number of Principles have been renamed and re-ordered, and three of the new Principles – 3. Relevance, 4. Rigour, and 8. Accessibility – do not cleanly map to a single one of the Version 1 Principles.

The way in which each sustainability assessment framework was accessed and then assessed against both SAFA and ISEAL is detailed below.

## **2 Framework analysis**

### **2.1 Accessing frameworks and transparency**

Based on the authors' and their colleagues' existing knowledge, a range of New Zealand primary production sustainability frameworks were identified, most of them being primary sector (e.g. crop, livestock) based. Next, a further internet search was made for non-sector, primary industry sustainability initiatives, both in New Zealand and overseas. This produced the list of frameworks that has been analysed in this paper. The list is not considered exhaustive, however; rather, the main aim was to have a good representation of different types of frameworks across different sectors to illustrate the diversity of systems and their approaches.

The frameworks included in this analysis are mostly those that are readily available in the public domain (e.g. can be downloaded for free from a website). To have credibility, it is considered that any sustainability assessment framework should be publicly available, without cost, to anyone, such as a customer, journalist, union representative, scientist, etc., so that they can verify for themselves what the framework contains, i.e. meet the ISEAL transparency Credibility Principle. Ideally, the accreditation forms/templates and audit/assessment procedures used to assess producers, processors, retailers, etc., are also freely available, so members of the public can also check the integrity and rigour of the whole accreditation system. It is recognised that some parts of assessment systems, e.g. audit guidelines and checklists, may need to be kept private to avoid those people/organisations being inspected from being able to game the inspection system, and private and confidential information needs to be kept private. Only when all the framework and the majority of the accreditation system documents (excluding private and confidential information) are freely and publicly available is the assessment system considered to be fully transparent and therefore fully rigorous as per the ISEAL Credibility Principles.

For a number of assessment frameworks, only limited information was publicly available. A brief overview of those frameworks is provided, but they were excluded from the comparison with SAFA and ISEAL.

### **2.2 Fixed benchmark vs continual improvement, and input vs outcome-focused frameworks**

Assessment frameworks differ in two main ways: first, is if they use a 'fixed benchmark' or a 'continual improvement' approach; and second, whether the framework focuses on controlling 'inputs', i.e. how the farming is done, or focuses on outcomes, i.e. if the objectives were achieved. While most frameworks tend to use one approach or the other, some use a blended approach, particularly where there are non-negotiable minimum requirements, for example: to comply with legal requirements; animal welfare issues such as mulesing, and dehorning adult cattle; human welfare issues such as slavery; and land & water management issues, e.g. dumping pollutants directly into waterways.

Fixed benchmark standards give the binary option of either succeed or fail (often referred to as a 'bar', as in the bar on a hurdle over which an athlete is required to jump). With

continual improvement, as the name indicates, the producer is expected to improve their performance year on year, though often with quite a low 'floor' of performance that is sufficient to achieve the standard.

Linked to this is whether the frameworks are focused on inputs, how the farming was done (e.g. limiting the range of agrichemicals that can be used or specifying the maximum amount of nitrogen fertiliser used) vs outcomes focused (e.g. if agrichemical residues are below a specified amount, or if the amount of nitrogen leaching is below a given threshold). Benchmark standards often tend to use an input control approach, whereas continual improvement systems tend to use outcome-focused measurements.

There appears to be a trend to move from benchmark/input approaches to continual improvement/outcome-based systems, with older standards tending to use a fixed benchmark and newer ones tending to use continual improvement. SAFA uses continual improvement and outcomes-based approaches.

### **2.3 Direct vs indirect outcomes**

Frameworks also differ in terms of whether their outcomes are the result of 'direct' or 'indirect' effects of their requirements. An example of a direct outcome is the SAFA system: for example, Theme E4 specifically addresses biodiversity and requires deliberate efforts to identify (monitor) where the production system could be affecting biodiversity and put in place concrete actions to both reduce negative impacts and increase positive impacts. In comparison, an example of indirect outcomes is organic agriculture: scientific surveys often find that organic farms have higher levels of biodiversity (Tuomisto et al. 2012; Tuck et al. 2014), and while organic standards have high-level aims with regard to biodiversity, they do not have any sections that specifically and concretely address it, as SAFA does. The biodiversity benefits of organic agriculture therefore are an indirect outcome of parts of the standards that address other issues. For example, agrichemical pesticides/xenobiocides are widely considered to be partly responsible for the decline in biodiversity, and therefore organic agriculture's broad prohibition on xenobiocides has improved biodiversity as an indirect potential outcome, but it is not guaranteed (i.e. it is possible for an organic farm to have lower levels of biodiversity that the standards are unable to identify or address). Directly addressing a sustainability issue, through identification, monitoring, and changing management practices, is considered to be superior than indirect outcomes.

### **2.4 Framework analysis methodology**

In most instances the framework/standards could be downloaded as a single document (e.g. PDF), and where this was the case, they were read in their entirety. Then, for each framework, a general description (e.g. area of focus, the main aims, etc.) are given and a brief history provided as background context.

The framework was then compared against the textual description for each of the SAFA dimensions' themes (described above) to identify how well they achieved the SAFA theme. This was based on the initial reading through of the framework, re-reading relevant sections, and using keyword text searches of the downloaded document. In a number of instances, a

framework failed to match any of the themes in a dimension (mostly for governance and social), in which case, for clarity and brevity, the themes were removed from the comparison and the dimension as a whole was compared.

For the ISEAL Credibility Principles, the full descriptions of each Principle in the Credibility Principles document<sup>10</sup> were used for the comparison. The framework document and other publicly available information, mostly the website was electronically and manually searched for relevant information. Non-public sources, e.g. Facebook, Instagram, etc., were not reviewed, as these are private communication systems that cannot be fully accessed without membership and are not considered public information sources.

The ISEAL analysis is much more subjective than the SAFA comparison, as the latter undertakes a simple textual check if a particular SAFA dimension and theme has a corresponding equivalent in the framework's documentation. The ISEAL Credibility Principles are much more focused on processes and therefore a simple comparison of texts is often not possible, and unless a framework explicitly states how it is meeting the Credibility Principles, it is often not possible to determine if they are being met or not, without extensive investigations and using non-publicly available information, which is beyond the scope of this report. An initial assessment was made if there was sufficient information available to compare against all ten Credibility Principles, if not, then the lack of information is stated, if there was sufficient information, a comparison against all ten Credibility Principles was made.

The frameworks are assessed in alphabetical order.

### **3 Frameworks**

#### **3.1 Calm The Farm**

Calm the Farm<sup>11</sup> is a novel investment platform whereby farmers wishing to convert to RA are able to access transition funding through a contractual commitment to undertake regenerative management principles on a farm. A key part of the approach is a comprehensive data collection system that verifies proof of action, as well as outcome metrics from the transition, and measures progress towards goals, with the farmer maintaining ownership of the data. The aim of the system is both to confirm to Calm the Farm that the farmer is meeting their contractual agreement, and to provide the farmer with valuable management information.

There are two main parts to data collection: farmer observation and physical measurements. The farmer records their observations of how they and their farm are transitioning to regenerative approaches, and at the same time a range of physical measurements are made (e.g. soil, biodiversity, animal health, and welfare). These measurements aim to provide valuable information to the farmer to improve their management. Initial funds are released

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<sup>10</sup> [www.isealalliance.org/sites/default/files/resource/2021-06/ISEAL-Credibility-Principles-V2-2021\\_EN\\_ISEAL\\_June-21.pdf](http://www.isealalliance.org/sites/default/files/resource/2021-06/ISEAL-Credibility-Principles-V2-2021_EN_ISEAL_June-21.pdf)

<sup>11</sup> [www.calmthefarm.nz](http://www.calmthefarm.nz)

upon submission of the data proving that the agreed changes have been made. Further funds are released if measurements show that progress continues to be made and includes improved ecosystem processes.

Participating farmers gain a number of benefits, including:

- access to the network of New Zealand's best regenerative farm advisors
- a range of Calm the Farm financial products
- being part of a larger group of farmers wanting to work together to achieve a supply chain, or an ecological outcome in their catchment area.

The assessment framework is currently in development, and while Calm the Farm were happy to supply some of the work that has mostly been completed, the framework has yet to be finalised so it was considered inappropriate to undertake a comparison against either SAFA or ISEAL.

### **3.2 DairyNZ: Dairy Tomorrow**

DairyNZ's Dairy Tomorrow<sup>12</sup> strategy is 'focussed on the key challenges and opportunities that face the dairy sector today – and importantly, into the future'. It has six key commitments:

- We will protect and nurture the environment for future generations.
- We will build the world's most competitive and resilient dairy farming businesses.
- We will produce the highest quality and most valued dairy nutrition.
- We will be world leading in on-farm animal care.
- We will build great workplaces for New Zealand's most talented Workforce.
- We will help grow vibrant and prosperous communities.

The strategy was still in development at the time of writing, and while DairyNZ were happy to supply some of the work that has mostly been completed, the whole programme has yet to be finalised, so is incomplete. Dairy Tomorrow is also more of a strategy and guidance for dairy farmers and organisations to develop their own programmes, rather than an assessment system per se. It was therefore considered inappropriate to undertake a comparison for both SAFA and ISEAL.

### **3.3 Savory Institute: Ecological Outcome Verification**

Ecological Outcome Verification (EOV) was created by the Savory Institute,<sup>13</sup> founded by Allan Savory, who developed holistic management (Merfield 2020). Holistic management is a grazing management approach based on Savory's observations in the 1960s while working as a wildlife biologist in his native Southern Rhodesia. He was concerned about increasing desertification and worked to understand the problem within an environmental framework.

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<sup>12</sup> [www.dairytomorrow.co.nz](http://www.dairytomorrow.co.nz)

<sup>13</sup> [www.savory.global](http://www.savory.global)

Savory's analysis was that the loss of the large, freely moving herds of herbivores had significantly degraded ecosystem processes. He then promoted the idea that grazing should be done by high-density herds that are rapidly moved from one piece of pasture to the next, imitating the way large herds of grazing animals on the savannah and temperate grasslands naturally behave. The aim is to repair the damage done by 'set stocking' grazing management, rebuild soil health (particularly soil organic matter / carbon to address the climate crisis), resilience, productivity, and farming viability (Merfield 2020). Holistic management is used across the world, and is promoted by the Savory Institute, which owns the trademark for the term 'holistic management'.

EOV was developed as an assessment framework to support the Savory Institute's Land to Market programme, which aims to connect buyers directly to farms and ranches using holistic management:

EOV was developed in collaboration with leading soil scientists, ecologists, agronomists, and an extensive network of regenerative land managers around the world. EOV is a practical and scalable soil and landscape assessment methodology that tracks outcomes in biodiversity, soil health, and ecosystem function (water cycle, mineral cycle, energy flow and community dynamics). EOV applies to grassland environments, including natural and planted grasslands, as well as grassland mixed with crop and/or forest areas. Farms and ranches demonstrating positively trending outcomes in land regeneration through EOV are entered into a 'Verified Regenerative Supplier Roster', from which participating buyers, brands, retailers and end consumers can access products or services that have been produced on a verified regenerative land base.<sup>14</sup>

The whole system is controlled by the Savory Institute, and they also hold the 'roster' that allows buyers and sellers to contact each other.

EOV has three 'strategic pillars' that underpin the 'ethos' of the system:

- 'Outcomes based' – EOV is explicit that it is an outcome- not input-based system
- 'Contextually relevant' – EOV is working across a wide range of bioregions ecoregions, and ecosystems, and therefore explicitly acknowledges that the EOV needs to be tailored to the farm's particular ecosystem
- 'Farmer first', which states that the system is there to help farmers learn, rather than being a controlling or punitive-type system, clearly making it a continual improvement approach.

The standards were not currently available through the website when this report was written, and a request for them was not answered, but Version 1.0, published in August 2018, was found via a websearch<sup>14</sup> so this has been used for the comparison. However, at the time of peer review, the Version 3.0 standards are currently available.<sup>15</sup> These were used for the ISEAL comparison.

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<sup>14</sup> [https://savory.global/wp-content/uploads/2018/08/0828\\_EOVDoc.pdf](https://savory.global/wp-content/uploads/2018/08/0828_EOVDoc.pdf)

<sup>15</sup> [savory.global/wp-content/uploads/2021/07/EOV-chapter-1-v3.pdf](https://savory.global/wp-content/uploads/2021/07/EOV-chapter-1-v3.pdf)

<i>Good governance</i>	Governance	EOV does not cover governance.
<i>Environmental integrity</i>	E1 Atmosphere	EOV does not cover E1
	E2 Water	EOV does not cover E2
	E3 Land	EOV is highly focused on land, particularly soil health, and ensuring it improves, and while it does not cover issues such as land sealing, it meets and exceeds SAFA for soil health
	E4 Biodiversity	EOV is highly focused on biodiversity, primarily through measuring vegetation and ensuring plant diversity and health improve, and therefore exceeds SAFA
	E5 Materials and energy	EOV does not cover E5
	E6 Animal welfare	EOV does not cover E6
<i>Economic resilience</i>	Economics	EOV does not cover economics
<i>Social well-being</i>	Social	EOV does not cover social well-being

### 3.3.1 ISEAL

EOV does not explicitly use the ISEAL Credibility Principles framework, but it does provide information on its website and the EOV Chapter 1 - Summary document<sup>15</sup>. It was considered enough information was available for a basic analysis.

#### 1. Sustainability impacts

EOV is focused on on-farm sustainability/ecological impacts/outcomes. It also directly states that it is location specific.

#### 2. Collaboration

EOV is focused on connecting farmers & ranchers with like-minded organisations and consumers that wish to purchase EOV certified products. It does not, however, achieve the broader aims of ISEAL collaboration.

#### 3. Value creation

EOV has a focus on value creation in terms of allowing farmers and ranchers to try to monetise the changes they are making to their land management. While EOV is not clear on how well the business model is working from the available information, does clearly support users to implement its tools and has a 'farmer first' focus.

#### **4. Measurable progress**

There is insufficient information to determine if the EOV system itself (rather than the participating farmers and ranchers) is making measurable progress.

#### **5. Stakeholder engagement**

There appears to be stakeholder engagement in terms of farmer/ranch-holder engagement as the process is led and contributed to by 'Savory Global Network Hubs', which are on-the-ground farmer hubs, with input from scientists. Information from the data being collected is claimed to be being used as part of the ongoing development. However, there is limited information to indicate the level of wider stakeholder engagement.

#### **6. Transparency**

The transparency of EOV is limited. During the writing of this document, it was not possible to get a copy of the EOV Chapter 1 summary document that explains the system, though at the time of revision this had changed, as noted above. However, the available document<sup>15</sup>, states it is "Chapter 1", which indicates there is a considerable amount of documentation that is relevant but not publicly available. Although the fuller concept of transparency in this ISEAL Principle is not met, the Wider Savory Institute does achieve platinum level in the Candid (guidestar.org) rating system.<sup>16</sup>

#### **7. Impartiality**

It is difficult to determine the impartiality of EOV. Fundamentally, EOV is owned by the Savory Institute, which is privately owned.

#### **8. Reliability**

The reliability of EOV appears to be high, in that the on-the-ground ecological assessment is rigorous and therefore reliable, and a range of quality assurance systems are in place.

#### **9. Truthfulness**

EOV should be able to achieve a good level of truthfulness as it is based on scientifically based and repeatably made measures of ecosystem health, which are collated centrally. However, these data are not currently publicly available.

#### **10. Continual improvement**

While there is no formal description of a continual improvement system for EOV, the website and documentation appear to be regularly updated and it is claimed that data and lessons from the first years of the programme are being used to refine and improve the system.

At its heart the EOV system is designed for permanent grazing systems, mostly in ecosystems where grass (i.e. not forest) is the natural final successional vegetation type. It is less, or not, suited to other farming systems (e.g. cropping). It uses a suite of scientifically

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<sup>16</sup> [www.guidestar.org/profile/45-4134319](http://www.guidestar.org/profile/45-4134319)

valid techniques to measure vegetation and soil health over both the short and long term, and nothing else. These techniques have been selected to give a strong, scientifically based measurement of overall ecosystem health. EOVS is therefore a highly specialised/focused assessment framework, but within that focus it is considered one of the more rigorous assessments of ecosystem sustainability.

### **3.4 New Zealand Farm Assurance Programme (NZFAP) and NZFAP Plus**

The New Zealand Farm Assurance Programme (NZFAP) was originally developed by the Red Meat Profit Partnership (RMPP), which was a joint initiative between the New Zealand red meat sector and the Ministry for Primary Industries (MPI). It is now owned and managed by New Zealand Farm Assurance Incorporated (NZFAI) to provide some level of independence from the industry, although it is still owned and ultimately controlled by the industry. It is also accredited to ISO standard ISO/IEC17065 by JAS-NZ (The Joint Accreditation System of Australia and New Zealand).

In this section the publicly available framework, NZFAP is analysed. Please note that a new standard, NZFAP Plus, is currently under development; additional information about the new programme is provided at the end of this section.

NZFAP covers the on-farm audit and certification of sheep, beef, and deer production systems, and is focused on practical farm-level issues, particularly food safety, traceability, proof of origin and animal health, safety, and welfare. Each component of the standards has a compulsory component, 'Requirements', e.g. relating to legal obligations and customer requirements, as well as 'Recommendations', which are a view to the future to allow leading producers to aim higher, but which are not compulsory. NZFAP is therefore considered a fixed benchmark system rather than continual improvement (see section 'Fixed benchmark vs continual improvement and input vs outcome focused frameworks').

The standards are divided into the following sections:

- origin, traceability, and farm inputs
- security and food safety
- animal health, welfare, and production management
- environment and sustainability
- deer-specific standards
- farm to processor.

Most NZFAP documents are publicly available on the website homepage<sup>17</sup> except audit checklist and guidelines for auditors, which should be private, as discussed in the section 'Accessing frameworks and transparency'. NZFAP was the only assessment framework aside from Regenerative Organic Certification (ROC) where this was the case.

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<sup>17</sup> [www.nzfap.com](http://www.nzfap.com)

<i>Good governance</i>	Governance	There are very few governance requirements in NZFAP, as most of the standards are benchmarks that need to be achieved and therefore governance derives from the standards, not the land manager. There are some recommendations for creating plans (e.g. environmental management plan), which are based on continuous improvement, and therefore give scope for self-directed governance. However, compared with the concept of governance in SAFA, NZFAP is highly limited.
<i>Environmental integrity</i>	E1–E5 Environment	Section 5 'Environment and sustainability' is the key relevant part of the standards regarding general environmental integrity. Requirements are focused on legal compliance, identifying key environmental and hazardous areas, and correct waste management practices.  Recommendations are to have an environmental plan, which includes avoiding soil damage (erosion, pugging), maintaining 'soil fertility', best practice fertiliser use (including soil nutrient testing), and protecting waterways through minimising fertiliser runoff, stock damage to banks, and stock exclusion from waterways. Supporting biodiversity is encouraged, as is prevention of leaks and overflow from fuel storage.  Overall the standards, with regard to general environmental considerations, are limited compared with the depth and breadth of SAFA standards, and have a tendency to use legislation as the minimum requirement rather than setting a higher bar than what the law requires.
	E6 Animal welfare	The NZFAP standards are almost entirely focused on E6 – Animal welfare, and they meet or considerably exceed all the indicators within this theme: E 6.1.1 Animal Health Practices, E 6.1.2 Animal Health, E 6.2.1 Humane Animal Handling Practices, E 6.2.2 Appropriate Animal Husbandry, and E 6.2.3 Freedom from Stress. This is commensurate with the main aim of NZFAP, which is good animal husbandry.
<i>Economic resilience</i>	Economics	Beyond the general aim of NZFAP of maintaining New Zealand's marketing and reputational advantage for its meat and wool products, there are limited economic components to NZFAP, particularly compared with the depth and breadth of SAFA. However, C3 product quality and information is important part of NZFAP, and a key aim is to assure the end-customer of the credentials of NZ red meat, so the wider aim of the framework is to maintain profitability for farmers.
<i>Social well-being</i>	Social	There are no social well-being components in NZFAP. There are limited requirements for and recommendations relating to staff training to ensure compliance to NZFAP and good animal welfare.

NZFAP is therefore almost entirely focused on animal health and welfare, and is considerably more detailed and extensive than SAFA E6. There are limited requirements and recommendations for other environmental aspects (i.e. E1–E5), and a considerable number of these are specifically aimed at issues relating to livestock husbandry (e.g. keeping stock out of waterways rather than wider environmental issues). The governance, economics, and social dimensions are mostly absent as these are outside the aims of NZFAP. These are addressed by other aspects of the red meat sector quality assurance framework and the new NZFAP Plus.

### **3.4.1 ISEAL**

There is considered to be sufficient information on NZFAP for a comparison with the ISEAL Credibility Principles to be undertaken.

#### **1. Sustainability impacts**

With NZFAP having a clear focus on food safety, traceability, proof of origin, and animal health, safety- and welfare-specific requirements for environmental sustainability are limited, but within the areas covered, there are positive drivers of animal welfare and product safety.

#### **2. Collaboration**

While there is strong buy-in from a large proportion of industry organisations / companies, this is less clear regarding working with external organisations, the exceptions being the NZ governments' Ministry for Primary Industries and the auditing company AsureQuality – Kaitiaki Kai who provide ISO/IEC17065 certification.

#### **3. Value creation**

A core function of NZFAP is the protection and then creation of increased value for the participating farmers through maintaining product value and credibility in the eyes of final customers.

#### **4. Measurable progress**

It is not possible to determine from the publicly available documents if 'measurable progress' is being achieved.

#### **5. Stakeholder engagement**

There is limited public information on stakeholder engagement for NZFAP. The new NZFAP Plus system has been through a pilot evaluation with farmers both to determine the achievability, costs, and benefits of the draft standard, and to provide insight into successful implementation and roll-out of NZFAP Plus with farmers.

#### **6. Transparency**

NZFAP is the best of the frameworks reviewed in this report, making most documentation publicly available and easily findable on the NZFAP website. However, the rest of the system is not so transparent. For example, it is not made clear that New Zealand Farm Assurance Incorporated, which runs NZFAP, is not fully independent as it is ultimately controlled by industry bodies.

#### **7. Impartiality**

A third-party agency, currently AsureQuality, is used for the audit process, which provides a high level of impartiality to the audit process itself. There is little information on the rest of

the system, e.g. governance, so it is not possible to judge the impartiality of the rest of the system.

## **8. Reliability**

The use of published standards and of a credible third party to undertake audits provides trustworthy assessments of user's performance.

## **9. Truthfulness**

While it has not been possible to determine the claims being made in the marketplace by NZFAP and whether they can be substantiated by the standards and audit, as noted above, the standards are public and clear in their intension and the audit system is robust, so it is possible to determine that each user is achieving the standards as required.

## **10. Continual improvement**

As the NZFAP system will be superseded by the significantly expanded NZFAP Plus system, there is clearly an understanding in the NZ red meat industry of the need to improve the FAP system. However, there is no information on either NZFAP or NZFAP Plus regarding an internal continual review and improvement system as described in the ISEAL Credibility Principles.

### **3.4.2 NZFAP Plus**

Since 2019 the RMPP has developed a new sustainable farming standard call NZFAP Plus, which covers:

- People: including employment, health & safety, training, and well-being
- Natural resource management: including water, land, climate, and biodiversity and
- Biosecurity: farms need to identify, manage and minimise key biosecurity risks.

The draft standard is in the last stages of finalisation and is available to download.<sup>18</sup> It has also been piloted with approximately 40 farmers across New Zealand. The NZ Roundtable for Sustainable Beef also initialised the standard in a recent proof of concept project that tests sustainability credentials at both the farm level and processor level although the processor standard has not been published.

### **3.5 New Zealand Merino Company: ZQ and ZQ<sup>RX</sup>**

The New Zealand Merino Company Ltd (NZM) is a marketing and innovation company that drives value through innovation and brand story, creating consumer demand for merino brands at retail. The NZM business model aims to ensure long-term security of supply and price for both brands and wool growers.

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<sup>18</sup> [www.rmpp.co.nz/nzfap-plus-reports/](http://www.rmpp.co.nz/nzfap-plus-reports/)

A key part of NZM's business model is ZQ, an assurance standard owned and operated by NZM and independently audited. ZQ was established in 2006 to provide a marque of integrity for New Zealand merino growers committed to the ethical production of wool. At the time it was the only ethical wool programme in the world and was based on the premise that not all wool is created equal. ZQ grower accreditation can be gained by selected merino, mid-micron, and strong wool growers from around the world who meet ZQ fibre quality, animal welfare, care for the environment, and social responsibility standards. ZQ is itself audited to the ISO/IEC 17065:2012 standard, which is a conformity assessment standard that covers the requirements for bodies certifying products, processes, and services (i.e. the auditing process rather than the framework).

ZQ<sup>RX</sup> is a system designed by NZM to drive the regenerative transformation of business, starting with their own leading growers. This is implemented on-farm by supporting growers to benchmark their business and accelerate small, meaningful actions that have the power to solve big global challenges.

ZQ<sup>RX</sup> represents a journey of continuous improvement across animals, environment, and people.

**Animals:**

- health
- behaviour
- nutrition
- physical environment
- mental state.

**Environment:**

- biodiversity
- waste
- water
- climate
- land.

**People:**

- staff & contractors
- health & wellness
- diversity & inclusion
- education
- community.

The ZQ and ZQ<sup>RX</sup> standards were not available from the website,<sup>19</sup> and were not supplied after being requested, although the website shows images of a framework document showing a version number of 4.2. No formal comparison with SAFA or ISEAL is therefore

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<sup>19</sup> [www.discoverzq.com/](http://www.discoverzq.com/)

possible, but due to the inability to access source documentation the system clearly lacks transparency.

### 3.6 Organic certification

Organic agriculture was the first agricultural systems to develop an assessment framework (called 'certification') in the early 1970s in the UK and USA. The first standards were more a set of principles than rules, but quickly evolved into highly detailed and often prescriptive requirements. They also evolved from purely private agreements between producers and certification organisations to government-controlled systems in countries such as the USA, Canada, EU, and Japan.

In parallel with the government-to-government systems, the International Federation of Organic Agricultural Movements (IFOAM) facilitates an international harmonisation system for private /non-government certification systems. By the early 2000s the previously rapid evolution of the framework slowed, such that change become incremental until the 2010s, at which point standards were considered mature, and changes now are mostly minor improvements, corrections, and clarifications. As far as is known, all organic standards (some 600 globally) are publicly available and all are fixed benchmark, input-focused systems.

In 2015 a detailed comparison was undertaken for the New Zealand Sustainability Dashboard<sup>20</sup> project between organic standards and SAFA, using the IFOAM standards, at the indicator level using a five-point scale (Merfield et al. 2015; Merfield 2015). That analysis is used as the basis for the analysis below, and the average percentage score for each dimension is also presented.

<b>Good governance</b>	<b><i>Organic standards achieved a score of 31% against SAFA standards in the comparison by Merfield et al. (2015) and Merfield (2015).</i></b>	
	G1 Corporate ethics	There are limited requirements in organic standards relating to corporate ethics, and where there are, they are mostly a result of other aspects of standards rather than a deliberate objective.
	G2 Accountability	Organic certification forces organic operators to be accountable, but there are no requirements for making information public, nor do standards require the operator to fully own their accountability (i.e. accountability is passive rather than active).
	G3 Participation	There is limited recognition within standards regarding stakeholders.
	G4 Rule of law	Standards are explicit that they are subservient to the rule of law, but there is little coverage of going beyond the requirements of law in the areas of workers and communities.
	G5 Holistic management	Organic standards require an operator to have a management plan to provide information to the certification agency (auditor) as part of the audit process, but this is considerably below the proactive requirements and breadth of SAFA.

<sup>20</sup> [www.sustainablewellbeing.nz/nzsd](http://www.sustainablewellbeing.nz/nzsd)

<b>Environmental integrity</b>	<b>Organic standards achieved a score of 45% against SAFA standards in the comparison by Merfield et al. (2015) and Merfield (2015).</b>	
E1 Atmosphere	There are no explicit requirements in the standards for addressing GHGs and other atmospheric pollutants, but standards do prohibit the use of synthetic nitrogen fertilisers, which have a significant climate impact, from both manufacture and use. This has a considerable positive climate-heating impact, even if it is an indirect outcome. No other GHGs or atmospheric pollutants are directly addressed in the standards, and any benefits come from the ancillary effect of prohibiting xenobiotic compounds.	
E2 Water	The main requirement of organic standards for water is that water used in organic production must not contain any materials prohibited by the standards, principally xenobiocides. There is very little in the standards about protecting water, either abstraction or post-use.	
E3 Land	The foundational issue of organic agriculture is soil health, and there are a considerable number of required practices that improve soil health. However, there is limited to no control of tillage, no prohibitions on soil sealing, and no monitoring of soil health. Organic standards therefore only achieve a middle ranking for E3.	
E4 Biodiversity	The aim of organic agriculture is to have positive effects on biodiversity, but there are few measures in the standards that specifically address and have biodiversity protection as a key aim. Instead, biodiversity benefits occur as an indirect outcome of the control of specific practices (e.g. prohibition of xenobiocides), while other practices that could benefit biodiversity (e.g. restrictions on fossil fuel use) are not covered. Standards could therefore do more to directly address biodiversity.	
E5 Materials and energy	Organic standards are limited with regard to materials and energy, both extraction and post-use.	
E6 Animal welfare	Organic standards are particularly strong on animal welfare and exceed SAFA in a number of instances.	
<b>Economic resilience</b>	<b>Organic standards achieved a score of 35% against SAFA standards in the comparison by Merfield et al. (2015) and Merfield (2015).</b>	
C1 Investment	Organic standards are weak in the area of investment, and, where requirements are met, it is mostly a passive result of meeting other aspects of the standards rather than having been deliberately planned.	
C2 Vulnerability	As above, but standards are even weaker than for C1.	
C3 Product quality and information	Organic standards are particularly strong with regard to product quality, as xenobiotic materials are prohibited in both food production and processing, plus a key foundation of organic agriculture is whole and healthy food. Organic agriculture also has a robust traceability system back to the producer. Organic standards therefore meet or exceed SAFA in this theme.	
C4 Local economy	There are no requirements in organic standards relating to local economy.	

<b>Social well-being</b>		<b>Organic standards achieved a score of 30% against SAFA standards in the comparison by Merfield et al. (2015) and Merfield (2015).</b>
S1 Decent livelihood	There is nothing in organic standards that addresses any of the decent livelihood indicators.	
S2 Fair trading practices	As above.	
S3 Labour rights	Organic standards have an average score with regard to labour rights, because they only require compliance with local laws rather than exceeding local laws, as they do in other areas (e.g. complete prohibition of legal xenobiocides).	
S4 Equity	Only the non-discrimination indicator is addressed by standards, and gender and vulnerable people equity is not covered.	
S5 Human safety and health	Most requirements in the standards regarding health & safety relate to ensuring compliance with local legislation, rather than going beyond local legislation, so standards only achieve an average score in this area.	
S6 Cultural diversity	There is little coverage of cultural diversity in the organic standards.	

Organic standards cover most of the SAFA framework, but they are weak to very weak in multiple areas, average in others, and strong to surpassing SAFA requirements in a small number of areas, such as animal welfare and product quality. As organic standards were once world leading (e.g. until the mid-1990s), the fact that they only achieve an overall score of 35% compared with SAFA is considered a clear indication of how far sustainability assessment frameworks have advanced in the last three decades.

### 3.6.1 ISEAL

A comparison of organic certification with ISEAL is more challenging, as auditing is highly decentralised within organic agriculture, with IFOAM not undertaking on-farm audits itself, rather individual country based organisations (mostly IFOAM members) undertake the on-farm audit process. Each of these typically has their own standards, many which were developed in parallel with the evolution of IFOAM standards. IFOAM's role is to audit both the on-farm auditing organisations, both their standards and their auditing processes. There are also many government-to-government agreements on organic certification which create mutual recognition of their organic regulatory systems to facilitate trade. For most of these government regulations, it is the country based organisations that undertake the audit process (rather than the government directly undertaking the auditing). These country based organisation are therefore also regulated by the government regulatory system, which audit both their standards and their audit processes. Many country based organisations are required to have appropriate ISO certification e.g., ISO 65 and 17020.

IFOAM was a founding member of ISEAL (Paiement, 2017) and was the first to be Compliant with the ISEAL Standards Setting Code in 2006<sup>21</sup> but it ended membership in 2010 due to

<sup>21</sup> [www.greentrade.net/Articles283.html](http://www.greentrade.net/Articles283.html) [organic-market.info/news-in-brief-and-reports-article/IFOAM is First to be Compliant with the ISEAL Standards Setting Code.html](http://organic-market.info/news-in-brief-and-reports-article/IFOAM%20is%20First%20to%20be%20Compliant%20with%20the%20ISEAL%20Standards%20Setting%20Code.html)

“disappointment with ISEAL’s governance and strategic Direction”<sup>22</sup>. It is understood that IFOAM is currently a member of ISEAL at the ‘subscriber’ level because “Full ISEAL membership requires compliance with ISEAL Codes. This could be relatively challenging for IFOAM, because we are in an unusual position whereby we carry out standard setting but have no own certification scheme and consumer-facing label associated with our standard”<sup>22</sup>. IFOAM is listed on the ISEAL website but without details of its membership level<sup>23</sup>. It is not possible within the resources of this report to undertake an independent analysis to find if IFOAM meets the ISEAL Credibility Principles, due to the sheer scale and complexity of IFOAM. However, considering IFOAM was a founding member, and was the first to achieve compliance with the ISEAL Standards Setting Code, it is considered likely to score highly against the Credibility Principles.

### **3.7 NZ Pipfruit Integrated Fruit Production (NZP-IFP)**

Integrated Fruit Production (IFP) is an integrated production management system that started in 1996 in response to UK supermarket demands regarding pesticide residues in food (Wiltshire 2003). Prior to the IFP system, growers often sprayed on a calendar basis regardless of pest populations, and often with older, more toxic agrichemicals (e.g. organophosphates). By 2001, 100% of the industry had converted to IFP. It is now a requirement to comply with IFP for export market access (Wiltshire 2003).

The stated goal of IFP is to

Produce high quality apples and pears prioritising human health and the environment through sustainable production techniques including integrated pest management, soil and water management, food safety, biosecurity, health and safety and social responsibility.<sup>24</sup>

IFP is therefore highly focused on the production system (i.e. on-orchard activities rather than the whole-of-business approach of SAFA). While it has wider goals, as described above, it is principally focused on managing and reducing agrichemical use, which was the original impetus for its introduction, and it is still a major driver, with the current aim being zero detectable residues on product in the market. Continuing to achieve market access is a key function of IFP, and it is one of the main sections in the IFP website.<sup>10</sup>

As the main purpose of the IFP system is minimising agrichemical use and residues, at a practical level the IFP system focuses on pest, disease, and weed management, with some additional requirements for ‘Sustainability and Environment’. There are 10 ‘tabs’, or sections, on the IFP website:<sup>10</sup>

- How to guide
- Overview
- Market access
- Activity calendar

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<sup>22</sup> [www.ifoam.bio/sites/default/files/ia\\_ga\\_2014\\_web2\\_0.pdf](http://www.ifoam.bio/sites/default/files/ia_ga_2014_web2_0.pdf)

<sup>23</sup> [www.isealalliance.org/node/2271](http://www.isealalliance.org/node/2271)

<sup>24</sup> [ifp.pipfruitnz.co.nz](http://ifp.pipfruitnz.co.nz)

- Pests
- Diseases
- Soils
- Water
- Weeds and shelter
- Spraying.

These further illustrate the main focus of the IFP system.

The IFP is unique among the assessment frameworks analysed in that it is available only as a website: all others were available as PDFs so could be printed and read *in toto*, and also searched for keywords. The manual on the website was also in the form of an interactive database that had no search function, and with multiple collapsed sections on each page. It was also not directly printable by the web browser, and the inbuilt print function produced a very large PDF that was incomplete, had broken sections, and was also unsearchable. It has therefore not been possible in this high-level review to undertake as detailed level analysis as for other frameworks due to the difficulty accessing the information *in toto*.

<i>Good governance</i>	Governance	There is very little in IFP that correlates with good governance as defined by SAFA.
<i>Environmental integrity</i>	E1 Atmosphere	The main focus of IFP is minimising the use of agrichemical pesticides to minimise residues for market access, which has the additional benefit of minimising the amount of agrichemicals that could pollute the atmosphere. There is nothing, however, that directly addresses the main focus of E1 of GHGs and ozone-depleting chemicals.
	E2 Water	There is nothing in IFP about the issue of water withdrawal. Rather, the focus is on how to use water to best to irrigate the trees for economic return. There is one mention of excess irrigation causing leaching, and a range of recommendations for 'responsible fertiliser use', but there are no specific targets or metrics for leaching (i.e. it is not a requirement).
	E3 Land	One tab in the manual is devoted to soil, and contains a range of useful information on optimising soil health, but this is not a requirement. There is more detailed information on compaction, soil sampling for laboratory nutrient analysis and, as noted above, best practice fertiliser use. There are no requirements for soil sealing or other soil-degrading practices.
	E4 Biodiversity	No explicit reference to biodiversity was found, nor methods to deliberately enhance it (e.g. native plantings, biodiversity flower strips). However, the requirements to use IPM techniques and the core aim of reducing agrichemical pesticide use will have a much lower negative impact on biodiversity than the pre-IFP intensive pesticide programme.
	E5 Materials and energy	The general aim of the IFP system is to reduce unnecessary resource use (e.g. pesticide sprays that are not required). However, the IFP system does not address the deeper meaning of energy and material use, disposal, recycling, and recovery.
	E6 Animal welfare	As the IFP is for purely horticultural systems, there is nothing in the manual regarding animal husbandry (i.e. it is not applicable).
<i>Economic resilience</i>	Economics	There are no parts of the IFP system that address economic resilience. Growers could gain economic benefits, as IFP is more financially rational, but this is a by-product of the system, not its deliberate intent.
<i>Social well-being</i>	Social	The main area in the social well-being dimension relates to health and safety (S5) with regard to pesticide application (spraying).

IFP is therefore mainly an agrichemical pesticide reduction and control system that uses integrated management approaches to achieve this aim. Some additional areas of sustainability (e.g. soil health) have been introduced, but these do not currently have the same level of detail or compulsion used in the pesticide components of the framework.

As the only available documentation on IFP is the web based IFP manual<sup>24</sup>, there is insufficient information to undertake a full comparison with the ISEAL Credibility Principles. It can be noted that the key driver of IFP is achieving higher prices and returns for growers, which aligns with Principle 3. Value creation. As the whole of the IFP growers' manual is publicly available, that is a good foundation within Principle 6. Transparency; however, the rest of the system is not transparent. Since its foundation in 1996, the system continues to evolve and improve, thereby achieving a level of continuous improvement, Principle 10.

### **3.8 New Zealand Good Agricultural Practice (NZGAP)**

New Zealand Good Agricultural Practice (NZGAP)<sup>25</sup> is the New Zealand version of the Global Good Agricultural Practice (GLOBAL G.A.P.) system.<sup>26</sup> GLOBAL G.A.P. began in 1997 in Europe, among retailers, particularly the multiples/supermarkets, in response to consumers' growing concerns regarding pesticide residues on food, as well as overall product safety, environmental impact, and workers' and animals' welfare and safety. NZGAP was started soon after GLOBALG.A.P. as many New Zealand producers were exporting to Europe and therefore needed GAP certification.

GAP is an auditing system at the farm level, 'inside the farm-gate', which addresses the origin and safety of food and how it is produced. Originally it focused strongly on pesticides, as that was the core driver, but it is now a broader framework (e.g. it also covers sustainable farming practices and worker safety). NZGAP only certifies New Zealand-grown fruit and vegetables, not other sectors (e.g. livestock). It is required by a considerable number of New Zealand retailers, and the GLOBAL G.A.P requirements are required for many exports, so it is one of the more widely used assurance frameworks.

NZGAP is now a complex system, with multiple documents to cover a wide range of production systems and structures (e.g. owner-operator vs corporate). The main NZGAP standard 'For Growers, Packers, Transporters and Wholesalers' was downloaded<sup>27</sup> for this analysis. In addition to the main checklist, a wide range of guidelines<sup>28</sup> and add-ons (e.g. 'Environment Management System' and 'Social Practice') are also published; however, as these are voluntary and not part of the core compulsory requirement, they are not included in the analysis unless they are referred to in the checklist as a requirement.

NZGAP is a fixed benchmark, input control system, with considerable detail required to achieve compliance (e.g. the minimum content of first aid kits is listed), and corrective

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<sup>25</sup> [www.nzgap.co.nz](http://www.nzgap.co.nz)

<sup>26</sup> [www.globalgap.org](http://www.globalgap.org)

<sup>27</sup> [www.nzgap.co.nz/NZGAP\\_Public/Growers/Checklists/NZGAP\\_Public/Growers/Checklists.aspx](http://www.nzgap.co.nz/NZGAP_Public/Growers/Checklists/NZGAP_Public/Growers/Checklists.aspx)

<sup>28</sup> [www.nzgap.co.nz/NZGAP\\_Public/Growers/Guidelines/NZGAP\\_Public/Growers/Guidelines.aspx](http://www.nzgap.co.nz/NZGAP_Public/Growers/Guidelines/NZGAP_Public/Growers/Guidelines.aspx)

actions are specified by the auditor in the case of non-compliance. The following are the headings from the checklist.

- B1: Management Responsibility
- B2, C7, D5: Health and Safety
- B3: Training
- B4: Purchase of Goods and Services
- B5: Complaints
- B6: Records
- C1, D1: Product / Service Identification and Traceability
- C2: Production Site Management
- C3: Nutrient Management
- C4, D2: Pest and Disease Control
- C5, D3: Water Management
- C6, D4: Product Safety
- C8, D6, F: Vehicles, Equipment and Machinery Maintenance
- C9, D7: Property Maintenance
- C10: Harvest
- C11, D8: Quality
- C12, D9: Handling, Packaging, Storage and Delivery
- E4: Contracted Labour.

NZGAP’s original and core objective is food safety, and this is strongly reflected in the items covered in the checklist. So while NZGAP does now cover sustainability issues (and is therefore included in this report), there is something of a mismatch with SAFA, which in comparison has sustainability at its core.

<i>Good governance</i>	Governance	NZGAP, as an input control framework, has limited governance requirements. B1: 'Management responsibility' is the closest match, requiring identification of persons responsible for compliance and job descriptions for key positions, and a documented and displayed quality statement, but this is a quite narrow quality focus rather than the broad remit and self-direction required by SAFA.
<i>Environmental integrity</i>	E1 Atmosphere	There are no specific requirements matching E1 in NZGAP, though some measures (e.g. maintenance, minimising agrichemical pesticides) will have indirect outcomes.
	E2 Water	Sections C5, D3: Water Management and C4, D2: Pest and Disease Control (i.e. agrichemical use) address water management, including requiring an irrigation plan. The requirements are more focused on contaminating water than managing its withdrawal, though a good irrigation plan should include this aspect.
	E3 Land	There is nothing in the checklist that relates to protection of land or promoting soil health.
	E4 Biodiversity	Biodiversity is not mentioned in the checklist, but the strict control of agrichemicals and promotion of integrated pest management should have the indirect outcome of improved biodiversity.

	E5 Materials and energy	There are no requirements in the checklist relating to energy and material extraction. There are wider requirements for the correct use of inputs, particularly agrichemicals, and for waste management, but there are no requirements for recycling apart from empty pesticide containers.
	E6 Animal welfare	As a horticulturally focused system, all issues relating to animals are not applicable.
<i>Economic resilience</i>	Economics	The same as for the Governance dimension, there are no requirements in NZGAP that relate to the self-direction approach of SAFA. The one area that is partly covered is C3 'Product Quality and Information', as the whole NZGAP system is a quality assurance system focused on maintaining product quality in terms of meeting specifications and avoiding all forms of contamination and other harms. NZGAP is also strong on traceability. However, it does not address the issue of nutritional quality.
<i>Social well- being</i>	Social	NZGAP focuses on worker/employee rights, and health & safety, with a strong focus on contracted labour (B2, C7, D5: Health and Safety; B3: Training; E4: Contracted Labour). This also includes ensuring workers are correctly trained (B3: Training). However, the wider social aspects and self-directed nature of SAFA are not present.

While NZGAP is weak in a number of SAFA dimensions and themes, it also goes beyond SAFA requirements, particularly in terms of the level of prescribed detailed information and record keeping required. Given that SAFA is focused on sustainability using a continual improvement, outcome-based framework, and NZGAP is focused on product safety using a fixed benchmark, input-controlled framework, it is to some extent a comparison of apples with oranges.

### 3.8.1 ISEAL

There is considered to be just sufficient publicly available information to compare NZGAP with the ISEAL Credibility Principles.

#### 1. Sustainability impacts

NZGAP is principally a hazard reduction system, initially addressing agrichemical use and broadening into best practices throughout the production system, e.g. harvesting, wastewater management. Where it achieves ISEAL sustainability impacts this is more incidental, e.g. better pesticide use. While it does have a sustainability module that is specifically focused on sustainability impacts, this is voluntary at present, so cannot be considered to be at the heart of the NZGAP system.

#### 2. Collaboration

The NZGAP system is the result of the many different sectors in the NZ horticulture industries collaborating. It is also strongly aligned with the GLOBAL G.A.P. system and has achieved equivalence, i.e. achieving NZGAP means growers also attain GLOBAL G.A.P. standards. It is also working with other NZ regulatory systems, e.g. food safety legislation and farm environment plans (FEPs). However, it is an industry-driven system and no evidence was found of it working with wider civil society. It therefore only partly meets this Credibility Principle.

### **3. Value creation**

The key purpose of NZGAP is to demonstrate the safety of food produced under the system with the vision of being “The worlds most trusted food”.<sup>29</sup> This has the potential to create increased value and return to producers, but, going back to its inception, NZGAP is more a means of avoiding products being refused by the market due to pesticide residues. Were a product to lose market access, there will be substantial loss of value; from that perspective NZGAP can at least be seen as protecting existing value.

### **4. Measurable progress**

There is not sufficient publicly available information to determine if NZGAP achieves this Credibility Principle.

### **5. Stakeholder engagement**

NZGAP is owned by Horticulture NZ, the peak industry body for the majority of the NZ horticulture sectors. It is managed by a dedicated committee, including appointed and elected members – which must include four growers. The credentials of these members are published, as are the committee’s terms of reference and lists of those organisations that are members.<sup>30</sup> The grower stakeholder therefore does have clear lines of engagement with the system. However, no information could be found on wider stakeholder engagement.

### **6. Transparency**

NZGAP has a good range of information publicly available, including the detailed audit checklists and other compliance information. As noted above, information about its history, ownership, and governance is also public. However the more detailed information required in this Credibility Principle, e.g. minutes of the NZGAP committee, was not found

### **7. Impartiality**

The NZGAP system uses well recognised third-party auditors, who also audit a wide range of other standards, and are government accredited (to JAS-NZ<sup>31</sup>). With the ownership and governance of NZGAP being clearly public it is therefore considered to have a good level of impartiality.

### **8. Reliability**

With its equivalence to GLOBAL G.A.P., use of third party auditors, and clear audit documentation, NZGAP achieves good compliance with the Reliability Credibility Principle.

### **9. Truthfulness**

With the robust systems described above and linkage to GLOBAL G.A.P., the NZGAP system is considered to achieve a high level of truthfulness.

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<sup>29</sup> New-Zealand-GAP-Overview-2017-Handout.pdf

<sup>30</sup> [www.nzgap.co.nz/NZGAP\\_Public/About/Governance/NZGAP\\_Public/About/Governance.aspx](http://www.nzgap.co.nz/NZGAP_Public/About/Governance/NZGAP_Public/About/Governance.aspx)

<sup>31</sup> [www.jas-anz.org](http://www.jas-anz.org)

## 10. Continual improvement

No information was found on the website about continual improvement, but, as a whole, the GLOBAL G.A.P system is undergoing a major revision, and the NZGAP system shows evidence of the system being regularly updated, although a fair amount of the information on the website is now 5 or more years old. It is not possible therefore to determine the level of continual improvement based on the available information.

### 3.9 Regenerative Agriculture Network

The Regenerative Agriculture Network<sup>32</sup> (RAN) started in 2018 with the foundational aim of using a blockchain, decentralised accounting system coupled with remote-sensing technology (e.g. Landsat, LiDAR) to facilitate an economic/market-driven system to remedy ecological degradation. While there was an initial burst of work, with four papers explaining the concept (Whitepaper, Protocols, Economics, and Architecture), it appears the project may have stalled in 2019 as there is little documentation, etc., dated later than that, and the original plan was for a full launch at the start of 2020, which has not occurred.

The document *Regen Network Ecological State Protocols, Version 0.2 May 13, 2018*, shows that the main focus of the system is biophysical measurements of ecosystem health, primarily soil, water, and plants, while also measuring the impacts of management, such as GHGs and carbon sequestration. The approach is designed on the basis of continual improvement of outcomes (see section 'Fixed benchmark vs continual improvement and input vs outcome focused frameworks'). As the concept still appears to be a work in progress, the following analysis is preliminary.

<i>Good governance</i>	Governance	RAN does not cover governance.
<i>Environmental integrity</i>	E1 Atmosphere	RAN is highly focused on addressing climate heating and air quality.
	E2 Water	RAN proposes to measure a wide range of water quality indicators.
	E3 Land	RAN is highly focused on land management (e.g. measuring soil loss, soil carbon levels).
	E4 Biodiversity	Biodiversity is identified as a critical measure, but how this could be measured remotely is not stated.
	E5 Materials and energy	Remote sensing would pick up land-use change associated with mining and dumping, but it is not clear if or how it could measure on-farm energy use (e.g. fuel, electricity) and material use (e.g. agrichemical sprays).
	E6 Animal welfare	RAN does not cover animal welfare.
<i>Economic Resilience</i>	Economics	RAN does not cover economics.
<i>Social Well-Being</i>	Social	RAN does not cover social well-being.

<sup>32</sup> [regen-network.gitlab.io](https://regen-network.gitlab.io)

While an interesting concept, RAN appears to be driven by information technology rather than the practicalities of agriculture, and it also fails to address the wider sustainability issues defined by SAFA.

With the limited information available it is not possible to undertake an analysis of RAN against ISEAL.

### **3.10 Regenerative Organic Certified (ROC)**

Regenerative Organic Certified (ROC) is an assurance framework developed by the Rodale Institute<sup>33</sup> in the USA, based on that organisation's long-term promotion of the concept of regenerative organic agriculture (Merfield 2019). While sharing the word 'regenerative' with RA, ROC has quite separate origins (Merfield 2020), although they do share a number of features (e.g. minimising tillage). ROC is now managed by its own association, the Regenerative Organic Alliance,<sup>34</sup> comprising both non-profit and commercial partners (the former includes the Rodale Institute).

ROC is clearly an extension to organic agricultural standards and certification, as it is impossible to achieve ROC certification without having United States Department of Agriculture (USDA) National Organic Programme (NOP) certification or an international equivalent formally recognised by the NOP. This starkly clarifies the difference between ROC and RA, in that the latter is still an evolving farming system that does without, and potentially avoids, the confines and strictures of standards and auditing/certification, while Organic agriculture and ROC are highly defined and controlled (Merfield 2019). This means an RA farmer would be completely unable to achieve ROC certification without converting to organic, which may make some of their regenerative practices (e.g. no-till) impossible. Despite sharing the word 'regenerative', the two systems are therefore really quite separate and completely different.

With the origin of ROC being the USA, and ROC being strongly tied to the NOP or NOP-recognised systems, the current standards are considered to be USA/North American centred.

ROC standards could also be viewed as 'filling in' some of the gaps in organic agriculture standards (see section 'Organic certification'), especially compared with SAFA (Merfield 2015), that Organic V3.0 is trying to address (Arbenz et al. 2016; Rahmann et al. 2016; Merfield 2020). The goal of ROC is:

... to promote holistic agriculture practices in an all-encompassing certification that:

- Increases soil organic matter over time and sequesters carbon below and above ground, which could be a tool to mitigate climate change
- Improves animal welfare
- Provides economic stability and fairness for farmers, ranchers, and workers.  
(Regenerative Organic Alliance 2020)

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<sup>33</sup> [www.rodaleinstitute.org](http://www.rodaleinstitute.org)

<sup>34</sup> [www.regenorganic.org](http://www.regenorganic.org)

ROC is divided into three pillars:

- Soil Health and Land Management
- Animal Welfare
- Farmer & Worker Fairness.

It then has three levels, Bronze, Silver, and Gold, each requiring successively higher levels of achievement or meeting extra requirements, through the specification of each practice being 'Required', 'Optional' or a 'Critical Tolerance', where action is required within 30 days. ROC is therefore a less common mixture of continual improvement and fixed benchmark approaches (see section 'Fixed benchmark vs continual improvement and input vs outcome focused frameworks').

With the ROC framework, as well as a wide range of other documentation and information available on the ROC website, a thorough analysis against SAFA was possible. The analysis also included the scores from the standard organic framework as a baseline.

<i>Good governance</i>	Governance	Organic standards, which underpin ROC, have limited governance outcomes, achieving a score of 31% when compared with SAFA (Merfield et al. 2015; Merfield 2015). There are no specific components in the ROC framework regarding good governance. The Farmer & Worker Fairness pillar has some governance requirements relating to worker rights and fair trade for farmers.
<i>Environmental integrity</i>		Organic standards, which underpin ROC, have medium environmental integrity outcomes, achieving a score of 45% when compared with SAFA (Merfield et al. 2015; Merfield 2015).
	E1 Atmosphere	There are limited specific requirements on GHGs and other atmospheric pollutants, except in 'Soil Health & Land Management', Practice 7.3 'Computer Models', which for Gold require the use of models to 'determine annual GHG emissions and sequestrations'. However, the wider pillar has actions (such as riparian planting) that are known climate heating mitigation factors. It must be noted that while reduced tillage has been considered in the past to sequester soil carbon, this has been shown to be incorrect (Baker et al. 2007; Powlson et al. 2014).
	E2 Water	Protection of water is limited to Practice 1.3 regarding conservation and restoration of wetlands, and that irrigation is compliant with the law. Practice 10.3 requires that the environmental impacts buildings cause should be minimised, including water.
	E3 Land	<i>There are no requirements regarding land sealing, but the whole focus of the Soil Health &amp; Land Management pillar is on maximising soil health, so the ROC is strong in this theme. Further, while organic agriculture was founded on issues of soil health, organic standards are considered to be weak in specific measures (e.g. restrictions on tillage) and measuring outcomes (e.g. soil health assessments) (Merfield 2015), which the ROC standards clearly address.</i>
	E4 Biodiversity	<i>Biodiversity is only explicitly mentioned with regard to soil biodiversity in the description of the Soil Health &amp; Land Management pillar, but a number of practices (e.g. 1.3 Water, 1.4 Deforestation, 2.1 Vegetative Cover, 2.2 Crop Rotations) would all have positive biodiversity outcomes.</i>
	E5 Materials and energy	<i>Practice 1.5, 'Extractive Practices', directly addresses this.</i>

	E6 Animal welfare	A whole ROC pillar is dedicated to animal welfare, with considerable detail, which goes significantly beyond SAFA requirements in both scope and detail.
<i>Economic resilience</i>	Economics	Organic standards, which underpin ROC, have poor economic resilience outcomes, achieving a score of 35% when compared with SAFA (Merfield et al. 2015; Merfield 2015). One of the three goals of ROC is 'Provides economic stability and fairness for farmers, ranchers, and workers'. However, ROC's main focus for economic stability is requirements relating to 'fair trade' within the supply chain. Therefore there is something of a mismatch between ROC's and SAFA's economic resilience.
<i>Social well-being</i>		Organic standards, which underpin ROC, have poor social well-being outcomes, achieving a score of 30% when compared with SAFA (Merfield et al. 2015; Merfield 2015). In comparison, ROC's third pillar, 'Farmer and Worker Fairness', is strongly focused on social well-being, particularly workers' rights, so it is viewed as strongly addressing the social well-being theme of SAFA, and also addressing a significant gap in organic standards in this area (Merfield et al. 2015; Merfield 2015). All references below to individual practices are from within Pillar VII, 'Farmer and Worker Fairness'.
	S1 Decent livelihood	Practices 1.4 and 12.1 to 12.7 address this theme.
	S2 Fair trading practices	Practices 12.3 to 12.5 directly address this theme.
	S3 Labour rights	Practices 1.3 to 11.1 address this theme.
	S4 Equity	As above, and practices 5.1 and 5.2 directly address this theme.
	S5 Human safety and health	As for S3, and practices 10.1 to 10.5 directly address this theme.
	S6 Cultural diversity	Practice 11.1 specifically addresses the cultural diversity theme, and practices 12.1 to 12.7 also have relevance.

Compared with the wide focus of SAFA, ROC is quite tightly focused on soil health, animal welfare, and good treatment of workers. These, however, address areas of organic agriculture standards that are considered weak (Merfield 2015), and an argument could be made that instead of being an add-on for organic standards, the ROC standards should be incorporated into the main organic standards.

### **3.10.1 ISEAL**

ROC has a considerable amount of publicly available information allowing for an analysis against ISEAL Credibility Principles.

#### **1. Sustainability impacts**

ROC clearly states its purpose and communicates its scope and its specific sustainability objectives. It focuses on the significant sustainability impacts in its scope by seeking to

address the root causes of sustainability issues. It reflects current scientific evidence. It is considered to effectively meet this Credibility Principle.

## **2. Collaboration**

ROC was established by a small but diverse collaboration of organisations, and now has some twenty organisations supporting it in a range of ways. It is working with existing organic certification audit bodies to undertake the ROC certification / auditing process. It is also working with over ten other certification bodies, mostly in the fair trade, worker rights, and animal welfare spaces. It therefore has a high level of collaboration.

## **3. Value creation**

The ability of ROC to create value for licensees is not so clear. While Version 5 of the Framework document states that the goal of "ROC is to ... Provides economic stability and fairness for farmers, ranchers, and workers" it is not yet clear how much additional value creation ROC will create above the baseline organic certification.

## **4. Measurable progress**

The ROC system collects a considerable amount of data on farm performance and has a three-tiered system (bronze, silver, gold) to indicate year-to-year improvements. The ROC system does not state on how users progress will be aggregated to demonstrate that ROC as a whole is achieving its objectives.

## **5. Stakeholder engagement**

While there are a considerable number of stakeholder organisations engaged in supporting ROC, it is not clear if or how ROC facilitates its end-users to participate in decisions and hold the system to account. There is however a disputes process that partly addresses engagement issues<sup>35</sup>.

## **6. Transparency**

There is a significant amount of information publicly available, including the sustainability framework and the management plan<sup>36</sup> end-users must complete. There is also full disclosure of staff and governance personnel. While there is a specific system to download the US Government "IRS 990" form that details the financial position and charitable status of ROC, and ROC has "strict policies in place for accepting corporate funds"<sup>37</sup>, information such as the agenda and minutes of governance and other key decision making meetings are not currently public.

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<sup>35</sup> [regenorganic.org/wp-content/uploads/2020/10/ROC-Disputes-Process.pdf](https://regenorganic.org/wp-content/uploads/2020/10/ROC-Disputes-Process.pdf)

<sup>36</sup> [regenorganic.org/wp-content/uploads/2020/10/ROC\\_ROSP\\_2020\\_1029.xlsx](https://regenorganic.org/wp-content/uploads/2020/10/ROC_ROSP_2020_1029.xlsx)

<sup>37</sup> [regenorganic.org/wp-content/uploads/2021/02/ROA\\_Policy\\_on\\_Accepting\\_Corporate\\_Funds\\_2021.pdf](https://regenorganic.org/wp-content/uploads/2021/02/ROA_Policy_on_Accepting_Corporate_Funds_2021.pdf)

## **7. Impartiality**

It is considered that the ROC system has a good level of impartiality, in particular as ROC sets up the framework but then uses existing organic certifiers/auditors to undertake the inspection, meaning it is at arm's length from end users.

## **8. Reliability**

The detailed ROC framework document and equally detailed management plan<sup>36</sup> mean that end users are consistently assessed. The detailed requirements and assessment of the certifiers/auditors undertaking the audits means that audits are competent and accurate.

## **9. Truthfulness**

Overall, ROC is considered to have a good level of truthfulness, with the ability to check claims made by end-users. However, the claims about sustainability impacts are not backed up with publicly available information.

## **10. Continual improvement**

There have been a number of evolutions and versions of the ROC framework since its inception, given the current iteration is version 5. The initial standards were also subjected to a pilot programme with the participants being publicly listed.<sup>38</sup> However, there are no statements about ROC having a continual improvement system as detailed in this Credibility Principle.

Overall, ROC is considered to achieve a considerable proportion of the ISEAL Credibility Principles.

### **3.11 Sustainable Wine New Zealand (SWNZ)**

NZ Wine<sup>39</sup> has had a sustainability programme since 1997, being one of the first in the international wine industry to do so. The programme is in the process of being updated but currently there are six 'Pillars of Sustainability':

- Water
- Waste
- Pest & Disease
- Soil
- Climate Change
- People.

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<sup>38</sup> [regenorganic.org/pilot-2/](https://regenorganic.org/pilot-2/)

<sup>39</sup> [www.nzwine.com](https://www.nzwine.com)

The current framework documents were supplied by NZ Wine, and while not finalised, NZ Wine said they were close to being finalised. They are also an evolution of previous standards, so they were considered sufficient to use for a comparison with SAFA.

<i>Good governance</i>	Governance	There are no specific components in the SWNZ framework regarding good governance. There are requirements in the individual pillars regarding compliance with the law, or local and industry regulations. There are encouragements to engage workers to improve sustainability and also to ensure they are fully aware of and trained in ensuring that compliance is achieved.
<i>Environmental integrity</i>	E1 Atmosphere	The main focus in E1 in SWNZ is regarding minimising energy use to minimise climate change impact, mostly under the climate change pillar. There is limited focus on direct production of CO <sub>2</sub> or other GHGs (e.g. nitrous oxide from soil).
	E2 Water	Water has its own pillar, which covers the complete life cycle, including minimising use, maximising efficiency, and minimising waste, including water pollution. Requirements extend beyond purely meeting regulations. There is a good match with SAFA requirements.
	E3 Land	Soil has its own pillar, with the most detailed requirements for nutrient management and also for general soil health (e.g. organic matter), the correct use of organic fertilisers such as marc, and maintaining ground-covering vegetation. Again, there is good compatibility with SAFA.
	E4 Biodiversity	Biodiversity is mostly addressed in the Pest & Disease pillar, with a considerable focus on the use of integrated pest/disease management, using non-chemical approaches wherever possible and best practice agrichemical use. However, this is more of an indirect than a direct approach to biodiversity enhancement.
	E5 Materials and energy	The climate change (energy), water and waste pillars particularly address E5, but there are no specific cradle-to-grave requirements for non-consumable inputs into the wine system (e.g. buildings, machinery).
	E6 Animal welfare	As a horticultural system there may be no animals on the properties at all, in which case E6 does not apply. However, some vineyards graze sheep over winter, so, in those situations E6 does apply, but livestock are not included in the SWNZ system.
<i>Economic resilience</i>	Economics	There is limited coverage of economic resilience in the SWNZ system. Spread across all the pillars are some requirements for C3, product quality and information, particularly as NZ wine is viewed as a high-quality product and needs to protect its market image.
<i>Social well-being</i>	Social	One pillar is dedicated to 'people', but it is the briefest of the pillars. Mostly, it notes that New Zealand has 'a robust legal framework, which covers employment relations, labour management, [and] health and safety'. SWNZ is focused on ensuring that New Zealand law is fully complied with, including where contract labour is used. However, there is little requirement for employers to go beyond minimum legal requirements. There is however, encouragement to promote and train staff on improving sustainability.

With the SWNZ system being finalised at the time of writing, it was not considered appropriate to undertake a comparison with the ISEAL Credibility principles. However, it was considered valuable to see how much public facing information on the system was currently available on the NZ Winegrowers website.<sup>40</sup> While there is an overview of the system, descriptions of the 'Pillars' and a 'Sustainability Report' (this was dated 2016), the workings of the system are not made public, e.g. the details of the framework, the auditing process, etc., so were an analysis against ISEAL made on currently available public information, SWNZ would not score highly.

<sup>40</sup> [www.nzwine.com/en/sustainability/swnz/](http://www.nzwine.com/en/sustainability/swnz/)

### 3.12 Synlait Milk 'Lead with Pride'

Synlait Milk,<sup>41</sup> founded in 2007, is a dairy processing company based in Canterbury that manufactures ingredient and nutritional milk powders. In 2013 it developed the Lead with Pride certification system to demonstrate 'industry leadership in food safety and sustainability', which rewards farmers who meet the standards with increased milk payments. This requires achieving 'excellence in the management of water, effluent, biodiversity, soil quality, energy, greenhouse gasses and emissions.'<sup>42</sup>

The framework is made up of four pillars:

- Environment
- Animal health and welfare
- Milk quality
- Social responsibility.<sup>43</sup>

Then there are three levels of compliance/achievement in the framework:

- *Good practice – non-certified / Gold standard*, the standard currently being met by all Synlait milk suppliers. There is no ISO/IEC 17065 certification (Conformity assessment – Requirements for bodies certifying products, processes and services; see also section 'New Zealand Merino Company's ZQ and ZQRX programmes') or premium payment paid for milk at this level.
- *Best practice – Gold Plus* has additional standards above 'Gold' that must be met. These requirements cover the four pillars. Suppliers are ISO/IEC 17065 certified (Certified Members), and premium payments are paid for their milk.
- *Leading Practice – Gold Elite*: when Gold Plus certification has been maintained for a minimum of 12 months, Gold Elite certification can be obtained, with additional requirements in all four pillars. Suppliers are ISO/IEC 17065 certified (Certified Members) and higher premium payments are paid for their milk<sup>43</sup>.

The standards were not available on Synlait's website. A copy was requested, and it was indicated that this would be supplied. However, it was not received by the time this report was completed, so no comparison with SAFA nor ISEAL could be undertaken.

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<sup>41</sup> [www.synlait.com](http://www.synlait.com)

<sup>42</sup> [www.synlait.com/our-milk/#LWP](http://www.synlait.com/our-milk/#LWP)

<sup>43</sup> [www.synlait.com/wp-content/uploads/2018/10/Synlait-LWP-Black-Book-Update\\_100918.pdf](http://www.synlait.com/wp-content/uploads/2018/10/Synlait-LWP-Black-Book-Update_100918.pdf)

## 4 Conclusions

The sustainability assessment frameworks reviewed in this report are hugely diverse:

- Some have been running for over 40 years, while others are just a few years old.
- Some are clearly input focused, like NZGAP and organic agriculture, while others are outcome focused, such as EOV and SAFA itself.
- Some are very restricted in the areas they cover (e.g. IFP and NZFAP), while others are much broader (e.g. organic agriculture and, again, SAFA).

What this high-level review clearly shows is that, compared with SAFA, no current sustainability assessment framework is comprehensive, all omit some themes, and some omit entire dimensions. Sometimes this is deliberate, in that the framework is intentionally focused on particular issues that are the industries' major concern (e.g. the use of integrated pest management, animal welfare), so it is not always appropriate or practical to include all the SAFA dimensions and themes in industry quality assurance programmes. At other times there are clear gaps in the framework in the areas it is targeting, and these could be improved.

The comparisons with the ISEAL Credibility Framework also show a wide range of variation between the sustainability systems, ranging from only partly achieving one or two Principles, while others achieve all Principles at some level. The comment at the start of this report is re-emphasised, that undertaking a comparison with ISEAL is a much more detailed and complex exercise than for SAFA, as it is the system rather than the standard being compared. However, it is clear that even on the basic transparency issue of the full sustainability framework being publicly available (a necessity to be able to actually undertake the SAFA comparison), a number of sustainability systems failed on that measure. Clearly there is therefore considerable room for improvement in some frameworks.

Overall, what this report shows is that different primary sectors in Aotearoa New Zealand have taken highly contrasting approaches to their sustainability standards, from the primary drivers (e.g. achieving product premiums) through to what the framework focuses on (e.g. pesticide reduction, improved animal welfare), to the approaches used (e.g. input controls vs continual improvements). At a high level, this diversity of systems could have the potential to be overwhelming for consumers to understand and even prove a challenge for those in the food distribution and retail systems to stay abreast of. This poses the question if there is value in a unified sustainability framework and assessment system for all of Aotearoa New Zealand's primary production sectors, to provide a coherent and authoritative scheme that maximises positive outcomes, both in terms of addressing sustainability and of achieving a higher price and better market access. Clearly there would need to be sector-specific requirements, e.g. wool quality is different from fruit quality, which is different from meat quality. This speaks to the key reason SAFA was created: by the start of the 21<sup>st</sup> century there were such a huge number, diversity, and quality of agricultural standards that some form of order and rigour was required. The same could be said of the burgeoning Aotearoa New Zealand primary industry sustainability frameworks.

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