



New Zealand Aquaculture Shellfish Processors and Third-Party Certifications.

Kellogg Rural Leadership Programme Course 49, 2023 Emily Clark I wish to thank the Kellogg Programme Investing Partners for their continued support.

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Executive Summary

New Zealand aquaculture shellfish processors face a deluge of options when considering whether to participate in any third-party certification programmes. There are countless third-party certifications on the market and numerous certifying bodies accredited to audit against these. It can be a difficult process to determine what, if any, third-party certifications will be most beneficial to individual New Zealand aquaculture shellfish processor operations and prove most valuable to their customers.

The aim of this report is to assist New Zealand aquaculture shellfish processors when determining what third-party certification is best for their operations based on current industry practices, consumer opinions, and by providing an overview of the most prevalent third-party certifications.

Third-party certification participation can be a costly undertaking for an operation (both monetarily, and in time and resources), and often with ambiguous return for investment.

Thematic analysis has been undertaken of customer and processor questionnaire responses, semistructured interview findings, and literature review.

The report identifies the most widely used certifying bodies operating in New Zealand, and explores the most prevalent and customer preferred third-party certifications. Customer opinion of third-party certifications, certifying bodies, and New Zealand base standards are evaluated. New Zealand aquaculture processor certification status is investigated, addressing why they have chosen their current certifications or do not participate in third-party certifications if that is the case. Other processor aspects explored are satisfaction with their certifications, how these are used, approximate costs of achieving and maintaining, and knowledge of other certifications.

Key findings:

- 1. Third-party certifications are not essential for a processor's success, but customers who purchase large volumes of products annually are likely to require suppliers to hold some form of third-party certification.
- 2. New Zealand's base requirements are highly regarded internationally. In many cases, customers are willing to accept company policy documents in place of third-party certification for the food safety and ethical employment aspects of a processor's operations.
- 3. Most leading certifications incorporate ISO management systems principles, are Global Food Safety Initiative (GFSI) benchmarked, and many share a large portion of their requirements.
- 4. The cost involved and doubtful return on investment is the leading factor in a processor choosing not to participate in (or looking to change) third-party certification.
- 5. The decision of a processor to participate in a third-party certification and which is chosen is often driven by their customer requirements.

Recommendations (all aimed at New Zealand aquaculture shellfish processors):

- 1. Develop a company policy document outlining food safety systems (RMP and HACCP etc.) regularly audited by MPI.
- 2. Develop a company policy document stating a commitment to compliance with New Zealand employment law.
- 3. Before selecting any third-party certification programme processors should speak to customers to determine whether they require their suppliers to hold these.
- 4. If customers require third-party certification inquire what their preferred certifications are, then investigate these certifications to determine if they are suitable for the processor's operations.
- 5. Consider whether individual certifications align with company values, if they will assist in achieving company objectives, and what is the organisation trying to accomplish by participating in the certification.
- 6. When selecting a certification standard consider what aspects of operations it covers, a certification covering multiple aspects is often a better option.
- 7. Seek quotes from several certifying bodies when considering adopting a certification standard as some may prove a more cost-effective option than others.

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1. Introduction

Third-party certification schemes are designed to inform and increase consumer trust in food production. Certification is an explicit and formal process to validate that a product has met certified standards.

Numerous third-party certifications are available to New Zealand aquaculture shellfish processors, and there are several certifying bodies which can audit against these standards operating in New Zealand. It can be a challenge for processors to determine which, if any, third-party certification is best suited to their operations, and which will prove most valuable to customers of their products. Some third-party certifications and certifying bodies are held in higher regard by customers than others internationally. Not all third-party certifications necessarily cover the same aspects of a processor's operation either, some will focus solely on a single aspect such as food safety or ethical employment practices, while others will cover a wide range of aspects under a single certification. These certifications can vary greatly in cost, time, and resources required to achieve and maintain. The vast majority of third-party certifications were not developed in New Zealand, and as such do not take into consideration the high base requirement standards New Zealand aquaculture shellfish processors must maintain to be allowed to operate.

This report investigates the following questions:

As a New Zealand aquaculture shellfish processing factory, what opinions do buyers of our products hold regarding additional third-party certifications?

What do these certifications involve, and how would a processor best determine which certification is most suited to their operations?

2. Objectives

The purpose of this report is to:

- Identify certifying bodies operating in New Zealand and assess how they are regarded globally by customers of New Zealand aquaculture products.
- Compare prevalent appropriate certifications.
- Determine what (if any) third-party certifications New Zealand aquaculture shellfish processors currently maintain and their reason for choosing these certifications.
- Determine consumer opinions of certifying bodies, relevant third-party certifications, and the base requirements for New Zealand aquaculture shellfish processors.

3. Methodology

The methodology used for this report was a combination of a literature review, questionnaires, semistructured interviews, and thematic analysis.

A review of existing literature including research, industry reports, articles, certifying bodies and certification owner's website content, and opinion pieces was used in order to evaluate third-party certifications and global customers' opinions.

In part, a qualitative approach was used with thematic analysis (Braun and Clarke, 2006) to help critically analyse and draw conclusions on the opportunities and challenges of third-party certifications for New Zealand aquaculture shellfish processors. Following this, recommendations have been included based on the critical analysis of this research on third-party certifications currently held by New Zealand aquaculture shellfish processors, certifying bodies and certifications on offer in New Zealand, and the information and opinions gathered from customers of New Zealand aquaculture shellfish processors products.

3.1 Questionnaires

A total of five New Zealand aquaculture shellfish processors completed a Processor Questionnaire, with a further thirteen customers (distributors) completing a Customer Questionnaire. Throughout the report comments and opinions from completed questionnaires and interviews are anonymous. This precedent was established when questionnaires were first sent out with the intent of encouraging open and frank feedback from respondents, allowing a more thorough review of the topic. The customer questionnaires were sent to processors requesting they distribute them to their customers and then return them once completed. These did not include any identifying information (with the possible exception of if customers run their own certification programmes). This was done in the hopes it would reassure processors to also contribute data from their customers without worry over potentially sharing commercially sensitive information. The two questionnaires are included in the Appendices of this research paper.

3.2 Interviews

Two semi-structured interviews were conducted via video call and took approximately one hour each. Interviewees were given an overall introduction to the topic of this report, the scope of the report, and then asked a range of questions that broadly covered the following areas.

- Opportunities and benefits of third-party certifications
- Thoughts on certifying bodies
- Views on certification standards vs New Zealand base requirement standards
- Costs involved with achieving and maintaining third-party certifications
- Any trends they are seeing in third-party certifications
- Any other thoughts or opinions they had on third-party certification for New Zealand aquaculture shellfish processors

3.3 Limitations

There are several limitations to this research paper.

The author of this report could only identify minimal literature on third-party certification relevant to New Zealand aquaculture shellfish processors. The vast majority of literature regarding third-party certification focuses on sustainability certifications and ecolabeling, and is centered around the growers/producers and not the processing factories.

There was also a relatively small data pool available to draw some conclusions from due to the low number of completed questionnaires from both Processors and customers of New Zealand aquaculture products.



4. Literature Review

Food quality certifications have been widely promoted for sustainable goals and addressing consumers' increasing concern for food safety. However, these mechanisms have achieved varied success in practice. Prior research notes the importance of certification and certifying agencies in making tangible an invisible process to build consumer trust in certified food (Truong et al., 2022).

It has certainly been made clear through the customer questionnaire responses that some certifications are more valued than others. This is likely a reflection of the varied success of some certifications, with those that are proven successful gaining recognition and trust globally.

The influence of information provided through food certification and labelling on consumers' choices largely depends on their knowledge of the certification systems, and their trust in the certification process (Truong et al., 2022).

This statement is fair, particularly when considering the vast array of possible third-party certifications available. It is not reasonable to expect consumers to be familiar with all certifications. Consumers may be marginally influenced by certain types of certifications without in-depth knowledge of the individual certification standards such as organic certifications for example. The customer may have preconceived notions of what these certifications entail and view products with any kind of organic certification as a more ethical and sustainable option.

Given that the gatekeepers to consumers are the wholesalers, processors and retailers, the decisions over which certification scheme is acceptable lie with them. The retail world in particular is keen on certification. It does a good job in ticking their due diligence and sustainability boxes for sourcing and supply, whilst diverting the cost away from the retailer and on to the producer (Holmyard, 2020).

Considering that the majority of products produced by New Zealand aquaculture shellfish processors are sold to distributors and not the end consumers this assessment is reasonable. It is customer requirements that most often drive processors to adopt third-party certifications and customers will make clear what certifications they find acceptable.

5. Certifying Bodies

There are many certifying bodies operating internationally that are licensed to audit for various third-party certifications. Some of these certifying bodies are more well-known and held in higher regard than others. Not all certifying bodies have auditors operating in New Zealand but there are still quite a few to choose from.

5.1 Those Operating in New Zealand

Of the multiple certifying bodies operating in New Zealand the top three most widely used by food producers are SGS Limited (SGS), NSF International (NSF), and AsureQuality Limited (AsureQuality). It can however sometimes be a challenge to find an auditor within New Zealand who is able to audit against some of the standards these certifying bodies have on offer. Auditor availability can particularly be an issue for industry-specific standard such as the Best Aquaculture Practices (BAP) processing standard as there is a lack of auditors with sufficient aquaculture industry experience and knowledge. In these instances, the certifying bodies will often arrange for an auditor from overseas to travel to New Zealand to perform the audit. This can result in significant additional costs for the operation being audited.

6. Certifications Offered and Their Scope

When reviewing certifications and who can audit against the standards in New Zealand the certifying bodies considered have been narrowed to SGS, NSF, and AsureQuality as the most commonly used. The certifications may also be offered by other certifying bodies operating in New Zealand.

The certifications reviewed are also those most commonly participated in, or those identified by customers of New Zealand aquaculture products as preferred certifications.

6.1 BAP (Best Aquaculture Practices) Processing

The BAP Processing certification is offered by both SGS and NSF.

This certification was developed by the Global Seafood Alliance (originally the Global Aquaculture Alliance) and designed to enable an organisation to demonstrate its commitment to providing safe and sustainably sourced aquaculture seafood. The BAP certification assesses aquaculture products throughout the production chain from hatcheries and farms through to processors and distributors and operates a star rating based on how many parts of the production chain participate in their certification standards.

Operations that are solely processors can achieve a one-star BAP rating. To achieve a two-star rating the farms the products are sourced from would also need to be BAP certified. This would be reasonably achievable if the processor also owned all the farms their products came from. As is the case for many New Zealand aquaculture shellfish processors their products are sourced from multiple farm owners and harvesters, it is unrealistic to expect all to also become BAP certified. The other option Processors could possibly take regarding two-star BAP rating would be clearly identifying and keeping separate all products from non-BAP certified farms and ensuring these are appropriately labelled and tracked. Depending on how the BAP certification is used and if BAP logos are applied by the processor, and the processor's inventory systems this may be difficult to manage.

The aspects of the processor operations the BAP certification assesses are:

- 1. Regulator management (land titles and consents etc.)
- Quality management systems (quality manual, system policy and statement, management responsibility and organizational structure, management commitment and review, resource management, purchasing and specifications of items, outsourcing of processes and services, general document requirements, procedures, record keeping, corrective and preventative action, control of non-conformity, serious incident management/business continuity plan, product recall, customer complaints etc.)
- 3. Food safety management (Hazard Analysis and Critical Control Point (HACCP), HACCP procedure assessment, food fraud, food defence, pest control, facility design and construction, maintenance program, cleaning and sanitation, personal hygiene program, utilities, chemical use, ventilation, storage, transport and product labelling, cross-contamination, product and process testing etc.)
- 4. Verification management (internal audits, calibration, sampling and testing etc.)
- 5. Social accountability requirements (wages and benefits, working hours, forced labour, child labour, terms of employment, discrimination and abuse, etc.)
- 6. Employee health and safety (employee facilities and housing, personal protective equipment, medical care, training, etc.)
- 7. Environmental and waste management (storage and disposal etc.)
- 8. Animal welfare (not such an issue for shellfish)
- 9. Traceability management (product identity preservation, traceability system and elements, labelling controls, product destinations, mass balance etc.)

The BAP Seafood Processing Plant Standard is also Global Food Safety Initiative (GFSI) benchmarked. This means on successful completion of the BAP program you can obtain both BAP certification and GFSI compliance through a single audit process.

As demonstrated above the BAP standard is an in-depth assessment that virtually covers every aspect of a processor's operations. The audit process takes approximately 2.5-3 days for a single site operation and is undertaken annually. Every three years the audit is to be unannounced as per GFSI requirements. Every fourth audit is to be conducted by a different auditor if you normally have the same auditor visiting year after year.

The BAP Processor certification is charged based on the annual volume (metric tonnes) of products produced, the bigger the volume the higher the cost. There will also be the certifying body costs (auditor hourly rate, travel and accommodation etc.) on top of the fee paid to the Global Seafood Alliance for the BAP Processing certification.

This certification was designed to be applied globally, and particularly to give consumers confidence in products produced in countries that may not have the best reputation for food safety, ethical employment, and environmental practices. Many of the standard requirements in relation to food safety, ethical, and environmental practices are already covered by New Zealand law and regularly assessed by MPI and other government agencies.

Considering the star rating structure of the BAP certification and the animal welfare aspect of the assessment the BAP certification may be better suited to fin fish and crustacean aquaculture operations rather than aquaculture shellfish processors. Particularly in New Zealand where high processing, employment, and environmental standards are already maintained as base requirements.

6.2 ISO 9001 Quality Management Systems

The ISO 9001 Quality Management Systems (QMS) certification is offered by SGS, NSF, and AsureQuality.

ISO 9001 QMS is designed to document the processes, procedures, and responsibilities for operations to achieve their quality policies and objectives.

There are seven quality management principles (QMP) the standard is based on and assesses:

- 1. QMP 1 Customer focus (understanding customer's needs and expectations, objectives, monitoring customer satisfaction, actively managing customer relationships, etc.)
- 2. QMP 2 Leadership (communicate vision, strategy, policies and processes throughout the organization, ethical models for behaviour, culture of trust and integrity, commitment to quality, resources and training, etc.)
- 3. QMP 3 Engagement of people (communication within the organisation, collaboration, recognition and acknowledgment of employees, self-evaluation against personal objectives, employee surveys, etc.)
- 4. QMP 4 Process approach (objectives of the QMS and processes to achieve, traceability, authorities and responsibilities, organisations capabilities and restraints, change management, communication, risk management, performance evaluation, etc.)
- 5. QMP 5 Improvement (promote improvement, training, competence evaluation, processes for continual improvement, reviews and internal audits, management review, recognition and acknowledgment of improvement, etc.)
- 6. QMP 6 Evidence-based decision making (determine, measure and monitor key performance indicators, nonconformity and corrective actions, data availability and accuracy, data analysed using suitable methods, competency, evidence and experience-based decision making, etc.)
- 7. QMP 7 Relationship management (determine interested parties (suppliers, partners, employees, society as a whole, etc.) and their relationship to the organisation, prioritize party relationships

management, pool and share information, measure performance and provide feedback, establish collaborative development and improvement, encourage and recognize improvements, etc.)

There appears to be a reasonable amount of overlap between the seven quality management principles with a strong focus on continual improvement and communication throughout the organisation and interested parties.

The standard is focused on the quality management systems aspect of operations and although there is some attention to ethical employment practices and food safety it is not sufficient to say these aspects of operations are also covered under the ISO 9001 QMS certification.

The ISO 9001 QMS standard has been used as the foundation for many other certifications currently available with its principles incorporated into these. Feedback regarding this certification from interviews and discussions conducted during research for this report suggested that this certification has fallen out of favour with processors and customers in recent years (although interestingly the customer questionnaire responses do not as a whole support this view). Given the narrow scope of this certification, processors and customers are now favouring other certifications that build on the ISO 9001 QMS standard but cover a great range of aspects of operations.

6.3 ISO 14001 Environmental Management System

The ISO 14001 Environmental Management Systems (EMS) certification is offered by SGS, NSF, and AsureQuality.

This certification standard sets out the criteria for environmental management systems and specifies requirements that enable an organization to achieve the intended outcomes it sets for its EMS.

The purpose of this standard is to provide organizations with a framework to protect the environment and respond to changing environmental conditions in balance with socio-economic needs.

There are seven core principles the standard is based and assessed on:

- 1. Context of the Organization (Understanding of the organization and context, Understanding the needs and expectations of workers and other interested parties, Determining the scope of the EMS, and Environmental management system)
- 2. Leadership (planning, support, resources, training, communication, documentation, operation, performance evaluation, improvement)
- 3. Planning (aspects, impacts, risks, opportunities, compliance obligations, environmental objectives and planning, etc.)
- 4. Support (resources, competence and awareness, communication, documentation, etc.)
- 5. Operation (operational planning and control, maintenance programs, procedures, records and documents, emergency planning, emissions reducing technology, etc.)
- 6. Performance Evaluation (monitoring, measurement, analysis and evaluation, internal audits, management review, data collection and analysis, etc.)
- 7. Improvement (nonconformity and corrective actions, continual improvement, etc.)

If participating in the ISO 14001 EMS standard then it is worth considering also participating in the ISO 9001 QMS standard. A well-constructed and maintained integrated management system should simultaneously handle the requirements of ISO 9001 and ISO 14001. Typically, the processes required in each Standard for document control, internal audits, dealing with nonconformities, corrective actions, or management review are shared, so that the requirements of each Standard are met by achieving one. You would however be paying for two separate standards.

6.4 ISO 22000 Food Safety Systems Certification

The ISO 22000 Food Safety Systems Certification (FSSC) is offered by SGS, NSF, and AsureQuality.

This certification standard is a certification scheme that specifies the requirements for a comprehensive food safety management system. It incorporates elements of Good Manufacturing Practice (GMP) and HACCP (Hazard Analysis Critical Control Points). It covers all processes in the food chain, from farming, food processing and packaging to transportation, storage and retail.

The core principles this standard is based on are very similar to those of ISO 9001 and 14001.

As is the usual structure of ISO standards the core principles of this standard are:

- 1. Context of the Organisation (structure, interested parties needs and expectations, scope of food safety management system, etc.)
- 2. Leadership (commitment, policy, roles, responsibilities and authorities, etc.)
- 3. Planning (actions to address risks and opportunities, objectives of food safety management system, change management, etc.)
- 4. Support (resources, documentation, communication, competence, etc.)
- 5. Operation (procedures, records and documentation, etc.)
- 6. Performanace Evaluation (monitoring, measuring, internal audits, analysis and evaluation, etc.)
- 7. Improvement (nonconformity and corrective actions, etc.)

If a processor is considering adopting this certification then it is recommended they also investigate the FSSC 22000 Certification which is also outlined within this report.

6.5 ISO Certifications Commonalities

ISO certification standards were developed by the International Organization for Standardization (ISO) and set out the criteria for a range of management systems.

The audit process for individual ISO certifications takes approximately 2-3 days for an average-size New Zealand aquaculture shellfish processing operation and are conducted annually. Every fourth audit is conducted by a different auditor if the same one has conducted the previous three years. There are no unannounced audits with these certifications.

The ISO certification pricing framework can differ depending on the certifying body used. Some may charge a flat rate for the certification with travel and other costs added to this. Others will assess organisations on a case-by-case basis and determine costs individually.

There are some restraints in how the ISO certification logos are used. If a processor wishes to add the certification logo to their packaging, then a paragraph must also be added below the logo stating that the product has been manufactured under the system the ISO certification applies to and the certifying body used. This is so consumers are not misled to believe it is the product itself that is ISO certified.

6.6 FSSC 22000 Certification (Food Safety System Certification 22000)

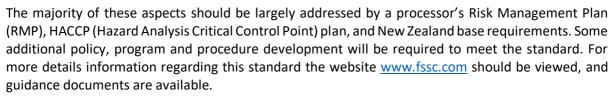
The FSSC 22000 certification is offered by SGS, NSF, and AsureQuality.

This certification is a GFSI (Global Food Safety Initiative) benchmarked food safety certification for food manufacturers. The certification standard combines the requirements of ISO 22000, appropriate technical standards, and additional requirements to create the FSSC 22000. FSSC 22000 certifies the food, feed, and packaging safety systems of companies in the food production chain.

The FSSC standard consists of pre-requisite programs addressing the below aspects:

1. Construction and layout of buildings

- 2. Layout of premises and workspace
- 3. Utilities (air, water, energy)
- 4. Waste disposal
- 5. Equipment suitability, cleaning, and maintenance
- 6. Management of purchased materials
- 7. Measures for prevention of cross-contamination
- 8. Cleaning and sanitizing
- 9. Pest control
- 10. Personnel hygiene and employee facilities
- 11. Rework
- 12. Product recall procedures
- 13. Warehousing
- 14. Product information/consumer awareness
- 15. Food defence, bio-vigilance and bio-terrorism



The audit process for this certification is constructed on a three-year cycle. The first year consists of two staged audits. The stage 1 audit is a full review of documentation followed by findings rated as critical, minor, and observations. There is a six-month period in which all findings must be addressed before the stage 2 audit is conducted confirming all of the standard's requirements are met. The following two years' annual audits are observation audits. Combined the audits conducted in the first year would take approximately 5-6 days for an average-size New Zealand aquaculture shellfish processing operation, with the stage 2 audit taking the longest. The observation audits would each take approximately 2-3 days. Every third certification cycle is to be conducted by a different auditor if you have had the same one for the previous two cycles (six years). As per GFSI requirements one audit within the three-year cycle is to be unannounced.

The FSSC certification pricing framework can differ depending on the certifying body used.

This standard incorporates certain quality management system principles but does not address ethical practices or sustainability.

6.7 BRCGS Certification (Brand Reputation through Compliance Global Standard)

The BRCGS certification is offered by SGS and NSF.

This certification is a GFSI (Global Food Safety Initiative) benchmarked certification and covers food safety and management of product quality. The standard has been designed to provide a framework to manage product safety, integrity, legality, and quality. It also provides operational controls in the food, food ingredient, manufacturing, processing, and packaging industries.

The BRCGS standard consists of seven core principles:

- 1. Senior management commitment (objectives, management review, resources, communication, organisational structure, etc.)
- 2. The food safety plan HACCP (HACCP team, prerequisite programmes, product description and intended use, process flow, hazard analysis, critical control points, monitoring, records, etc.)



- 3. Food safety and quality management system (manuals, procedures, document control, internal audits, supplier approvals and reviews, specifications, corrective actions, traceability, etc.)
- 4. Site standards (layout and product flow, maintenance, building materials, security, utilities, equipment, staff facilities, chemical control, hygiene practices, etc.)
- 5. Product control (product development processes, labelling, management of allergens, packaging, inspection and testing, product release, etc.)
- 6. Process control (procedures, monitoring, labelling and packing, weight/volume/number control, calibration of measuring devices, etc.)
- 7. Personnel (training, hygiene, medical screening, protective clothing, etc.)

The requirements of the BRCGS standard heavily incorporate ISO principles.

The audit process for this certification takes approximately 2-3 days and is conducted annually. Every third audit is to be conducted by a different auditor if you have had the same one for the previous two years. Unannounced audits are required with this certification and are conducted at a minimum every three years as per GFSI requirements.

The BRCGS certification pricing framework can differ depending on the certifying body used.

This certification combines food safety management systems and quality management systems and as such is likely a better option than a single systems certification. Like the FSSC 22000 certification it does not address ethical practices or sustainability.

6.8 IFS (International Featured Standards) Food Safety Certification

The IFS certification is offered by SGS and NSF.

This certification assesses food safety and product quality management and belongs to an organisation also called International Featured Standards (IFS). The standard has been designed much in the same way as the FSSC and BRCGS certifications, the core standard requirements are comparable.

The IFS standard contains five core principles:

- 1. Governance and commitment (organisation structure, policy, management review, etc.)
- 2. Food safety and quality management system (HACCP, quality management, document management, record keeping, product flow diagram, product description, hazard analysis, etc.)
- 3. Resource management (human resources, personal hygiene, staff facilities, training, etc.)
- 4. Operational processes (specifications, purchasing, packaging, maintenance and construction, pest control, traceability, food fraud and defence, transport, waste management, etc.)
- 5. Measurements, analyses, improvements (internal audits, site inspections, calibrations, testing, product release, management of non-conforming products, etc.)

This certification is a GFSI (Global Food Safety Initiative) benchmarked certification.

At first glance the IFS certification seems to contain fewer requirements than the FSSC 22000 or BRCGS certifications with only five core principles. On review, the principles in this certification have been merged compared to FSSC 22000 and BRCGS. In truth, all three certifications are much the same.

The audit process for this certification takes approximately 2-3 days and is conducted annually. Every third audit is to be conducted by a different auditor if you have had the same one for the previous two years. Unannounced audits are required with this certification and are conducted every three years at a minimum as per GFSI requirements.

The IFS certification pricing framework can differ depending on the certifying body used.

6.9 Organic Certification

Organic certifications are offered by AsureQuality (and some other certifying bodies operating in New Zealand).

There is a range of organic certifications on offer, and determining which is best suited to any operation largely comes down to the markets a processor is intending to export to. Some countries have strict organic standard requirements that differ from other countries.

Ministry for Primary Industries (MPI) Official Organic Assurance Programme (OOAP);

Exported organic products need to meet Official Organic Assurance Programme (OOAP) requirements if being exported under the OOAP. They must also meet market access requirements of the country being exported to, where not covered under the OOAP.

Any operator exporting to the regulated markets covered by the OOAP is required to register with MPI as an organic exporter and declare each consignment through the use of an export certificate request. MPI does not audit against the OOAP, operators contract a certifying body such as AsureQuality to perform certification audits. The MPI website has all the information regarding the OOAP, including information on countries with additional organic requirements in their OMARs (Overseas Market Access Requirements). https://www.mpi.govt.nz/agriculture/organic-product-requirements-in-nz/

AsureQuality Organic Standard;

This certification is suitable for non-regulated organic export markets such as Australia, Cook Islands, Fiji, French Polynesia, Hong Kong, Malaysia, Singapore, and Vanuatu.

IFOAM (International Federation Organic Agricultural Movement);

AsureQuality is IFOAM accredited. IFOAM is the world's leading organic organisation and organic certifications accredited by IFOAM are more recognised and trusted internationally.

USDA National Organic Program;

The United States of America has a strict organic products standard and this certification will gain market access. North America, and in particular the United States of America is the largest export market for New Zealand aquaculture products. This certification is a good option if a processor is considering adopting an organic certification.

National Standard of Canada;

Canada also has a strict organic products standard. If wishing to export organic certified products into Canada this certification will gain market access.

There are other organic certifications that AsureQuality offers such as the Soil Association certification (not the best fit for aquaculture shellfish products).

If a customer expects some form of third-party certification they are unlikely to view organic certification as a comprehensive certification. Organic certifications may touch on ethical practices and food safety but are not sufficient to certify these aspects of an operation. Organic certification labelling applied to products can be an attractive option as customers often associate organic products with being ethically and sustainably produced.

6.10 Summary and Discussion

Most of the leading prevalent certifications are offered by at least two of the three most widely used certifying bodies in New Zealand SGS, NSF, and AsureQuality. Many of the ISO core components have been incorporated into leading certification standards, building on the ISO framework but offering a more comprehensive review of a processor's operations, covering multiple aspects under a single certification. These certifications with a wider scope give customers greater assurance in the products certified. Much of the certification standards requirements in relation to food safety and ethical practices are already covered by base New Zealand requirements. A processor's Risk Management

Plan (RMP) and Hazard Analysis Critical Control Point (HACCP) plan should meet most of the various standards requirements. It is the quality management systems aspect of operations that would require the most development for the majority of these certifications. Certifications that are also GFSI benchmarked meet strict requirements and are well regarded internationally.

7. Aquaculture Shellfish Processor Findings

There were a total of five New Zealand aquaculture shellfish processor respondents who contributed to the blow finds. Three respondents are processors of Greenshell™ mussels, one respondent processes Pacific oysters, and one respondent process both Greenshell™ mussels and Pacific oysters. All respondents solely process products of New Zealand aquaculture shellfish origin.

7.1 Primary Export Markets

All four that process Greenshell™ mussels have indicated that their largest export market is North America. Europe was the second largest for three of the four mussel processors, with one listing the Caribbean as their second largest and Europe as third. Asia was then listed by all mussel processors and then followed by other regions. It is worth noting that a processor ranked Russia as their third largest market but given current political tensions they are unlikely to currently be exporting to this market. The oyster processor listed in order Australia, French Polynesia, Asia, and North America as their top markets.

7.2 Current Certifications and Certifying Bodies Used

Three of the respondents participated in third-party certification standards. The oyster processor holds an organic certification, a mussel processor holds the BAP Processor certification, and the processor that produces both Greenshell™ mussel and Pacific oyster holds the FSSC 22000 certification. Two of the Greenshell™ mussel processors do not currently participate in any third-party certifications.

The processor who participates in the BAP certification is audited by SGS and this is their preferred certifying body. The processor did however note that they do not necessarily get the final say in which certifying body is used. During the initiation of the recertification process, the processor indicates their preferred certifying body, but the Global Seafood Alliance will allocate the audit to a certifying body based on availability and other factors. The processor has also been audited against the BAP standard by NSF in the past.

The other two processors who participate in third-party certification are both audited by AsureQuality. When asked why they had chosen their current certifications the processor with the organic certification replied "We do it more for the social implications and ethical employment issues covered ...". This response using the word 'implications' is fitting when discussing organic certifications given consumers perceptions regarding the term organic and what that means. Whether these perceptions are correct depends on the specific organic certification held.

The processor with the FSSC 22000 certification did not give a specific reason for choosing this certification but did comment "... it is great to have an international standard". It is true that based on the responses to customer questionnaires, the FSSC 22000 is well regarded and valued internationally.

7.3 Knowledge of Third-Party Certifications on Offer

Respondents were asked how familiar they were with other certifications the majority of respondents have had some experience with other certifications previously with the most identified being ISO

9001. Many of the common certifications outlined in this paper were mentioned. One made the comment "Fairly family with FSSC22000 ..." and another who does not currently hold any third-party certifications commented "Aware of other certifications".

When asked if they had held any other certifications previously the processor with the BAP certification responded that they moved to their current certification from ISO 9001 QMS. The reasons given for the switch were "Previous certificate (ISO 9001) not fit for purpose" and "Could not display logo on retail packagingtwo. This statement aligns with other opinions expressed during research conducted for this paper and it is not surprising with individual ISO certifications have become less popular options for processors. It is noted that there are ways of using the ISO logos on packaging.

The other 2 processors currently with third-party certifications have only ever held these certifications. A processor that does not currently have any third-party certification once held WQA (Water Quality Association) certification for a product range they no longer produce. The remaining processor without any third-party certification has never participated in any.

When asked if they had ever investigated other certification options the processor who has not participated in third-party certifications responded "Yes. The cost of implementation outweighed the benefits.". The other processor who does not currently hold any third-party certification has investigated FSSC 22000 but they have indicated that they chose not to adopt the certification due to the cost of works needed to meet the standard. If a processor is entering into third-party certification for the first time there can be significant work and costs involved to develop systems and documentation sufficient to meet the standards required. In some cases, redial work may be needed to site and facilities. Once these systems are in place there are usually only minor adjustments required if adopting additional certifications or switching certifications altogether if they are of a comparable nature such as the BRCGS, FSSC 2200, and IFS certifications.

The processors who hold the organic certification and FSSC 22000 certification both responded that they have not investigated other options with the holder of the organic certification stating "We have not felt the need to do this as our customers tell us they do not need it". This statement highlights that adoption of third-party certification is often driven by customer demand.

7.4 Certification Use in Marketing

Of the respondents who hold third-party certification, only the processor with the BAP certification uses a certification logo on packaging. All three processors include information on their third-party certifications on their websites. The processors with the organic certification and FSSC 22000 certification also use these in promoting their brand stories.

If a processor holds a third-party certification then it should be valuable in promoting the products produced. Consideration needs to be given to how this will be done and any restrictions the certification may have regarding its use in promotional materials and logo use.

7.5 Certification Satisfaction

Two of the three respondents with third-party certifications are satisfied with them. The processor with the BAP certification is somewhat dissatisfied and considering changing certifications. They cited a number of reasons for this, but the main factors appear to be cost (including the time and resources spent achieving the standard), and questionable benefits in holding this standard over others that may be more cost-effective and less arduous to achieve and maintain.

7.6 Expenditure to Achieve and Maintain Certification

The organic certification costs the processor <\$10,000 annually including their time, resources, and any other activities they undertake solely to achieve the certification.

The BAP certification costs the processor between \$25,000 and \$40,000 annually. Included in this cost are time, resources, and any other activities such as additional tests undertaken solely to achieve the certification. This certification is also charged based on annual volumes produced.

The FSSC 22000 certification costs the processor >\$40,000 annually. Note that this processor deals in both Greenshell™ mussels and Pacific oysters. Their operations may be split across multiple sites, RMPs, and HACCP plans. All these factors are likely to contribute to the high annual cost of the certification.

7.7 Summary and Discussion

The respondents had a wide spread of views regarding third-party certification. Those who do not currently hold any third-party certifications cited cost as a leading factor in this decision. The cost to achieve and maintain third-party certifications compared to the value gained was also questioned by both those who hold certifications and those who don't. All agree that third-party certifications can be useful, whether that be in marketing, or promoting continual improvements and streamlining systems. There were many comments made throughout the responses regarding MPI's frequent audits and the high base standards New Zealand maintains. This is a leading factor in why some processors feel food safety focused third-party certifications are not necessary for their operations. Whether a processor chooses to undertake a third-party certification is likely to come down to what their customers require of them.







8. Customer Findings

There were a total of thirteen New Zealand aquaculture product customer respondents who contributed to the below findings. All thirteen respondents are customers of Greenshell™ mussel products with three of the respondents also customers of Pacific oyster products. The majority of these customers are distributors and not end consumers.

8.1 Location and Countries of Operation

Five (38%) of the customer respondents are based in New Zealand and distribute products to international markets. The New Zealand based respondents have indicated the following regions as their main distribution locations: North America, Europe, Asia, Australasia, and the Middle East.

Three (23%) of respondents are bases in, and solely operate in America.

One (8%) respondent is based in Denmark and operates within the European Union.

One (8%) respondent is based in, and solely operates in Switzerland.

One (8%) respondent is based in, and solely operates in Australia.

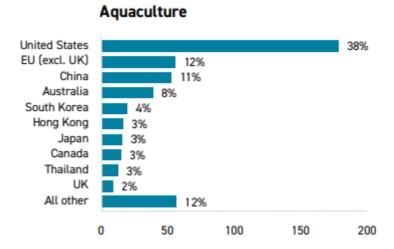
One (8%) respondent is based in, and solely operates in Japan.

One (8%) respondent is based in, and solely operates in Vietnam.

The feedback from the customer respondents indicates that the United States of America is the largest market for Greenshell™ mussels.

Of the three respondents who also purchase Pacific oysters one operates solely in Australia, one in Europe, and one distributes products into Asia, the Middle East, and Canada.

These responses closely mirror the data shown in the Ministry for Primary Industries (MPI), Situation and Outlook for Primary Industries document. Below is the Aquaculture table displayed under Seafood Top seafood export markets (MPI, Situation and Outlook for Primary Industries document, page 57).



8.2 Are Third-Party Certifications Required

Of the respondents who distribute aquaculture shellfish products in America 50% said not holding a third-party certification would prevent them from purchasing products. Of the three who are based and solely operate in America 66% said not holding any third-party certifications would prevent them from purchasing products.

Of the five respondents who distribute into Europe 60% said not holding a third-party certification would prevent them from purchasing products. This includes one customer who distributes exclusively to Europe. Of the two based and solely operating within Europe 50% said not holding a third-party certification would prevent them from purchasing products.

All the respondents (100%) who distribute primarily in Asia indicated that not holding a third-party certification would not be a barrier to them purchasing New Zealand aquaculture products.

Of the three respondents who distribute in Australia, the one (33%) respondent based and solely operating in Australia said not holding a third-party certification would prevent them from purchasing products. The other two (66%) respondents both based in New Zealand said it would not prevent them from purchasing.

The two respondents (100%) who distribute into the Middle East indicated that not holding a third-party certification would not prevent them from purchasing products.

When analysing the response as to whether a processor not holding any third-party certification would prevent them from purchasing products in conjunction with the approximate volume each customer purchased annually (ten responses regarding annual volume purchased) those who were at the lower end of volume purchased said 'No' it would not prevent them from purchasing the products. Those who purchased larger volumes of products responded 'Yes' it would prevent them from purchasing. The conclusion based on these responses is that third-party certifications give customers greater confidence in products when buying larger volumes. Customers dealing in larger volumes are also likely to be distributing products to a greater range of businesses or retailers, such as supermarkets

further down the supply chain and third-party certifications may help secure better market opportunities. It is worth noting that both respondents based in Asia do not purchase particularly large volumes annually and this should be kept in mind when considering their responses. Some of the customers based in New Zealand distribute a reasonable volume into Asia and the Middle East and share many of the Asia-based customer opinions.

Of the six customers who said not holding a third-party certification would be a barrier to purchasing product, when asked what their preferred third-party certifications were, two listed HACCP which is a minimum New Zealand requirement under the National Shellfish Sanitation Program (NSSP), and one based in America stated "Must be on ICSSL list" (Interstate Certified Shellfish Shippers List). This is also a minimum New Zealand requirement as per the NSSP to produce aquaculture shellfish products for export to America.

Of the remaining three respondents two identified BAP and ISO as preferred third-party certifications. BRC, IFS, FSSC, ASC, and GFSI approved food safety were also identified once as preferred certifications.

8.3 Preferred Certifying Bodies

Twelve of the respondents choose to comment on recognized and trusted certifying bodies. In the questionnaire a short list of some of the certifying bodies operating in New Zealand was given for respondents to select from. These were SGS, NSF, SAI Global, and Telarc Limited (note that AsureQuality were not present on the questionnaire). Respondents were also asked to specify any other certifying bodies they particularly recognise and trust.

As mentioned in the Certifying Bodies section of this paper there are many certifying bodies operating internationally. For example, to name just a few of these certifying bodies there are Bureau Veritas, DNV-GL, Merieux, SCS Global Services, SGS, TUV Nord Group, NSF, AIB International, Eurofins, Food Safety Net Services, Safe Food Certifications, Eagle.

In the customer questionnaire responses all the above certifying bodies were identified in at least one response as being a recognized and trusted certifier. There was however a clear preference for the certifying body SGS with 83% of the responses identifying them as a certifying body they recognize and trust. An additional comment made regarding SGS was "They are globally recognized and our clients in market will want a certifier that is well known and trusted".

SAI Global and NSF are both fairly recognized and trusted with each of these identified in 25% of the responses.

A comment one of the customers made about recognised and trusted certifying bodies was "There are so many, but in general auditing bodies approved by the standards". This is a reasonable opinion as any certifying body offering a particular certification standard will have been rigorously assessed by the owner of the standard to be allowed to audit against it.

Another particularly insightful customer reply stated "The challenge is for any auditing body to have a pool of auditors that are well trained and have in-depth knowledge of the product and processing as well as standards requirements". This can be a distinct issue for the New Zealand aquaculture industry as it is still relatively young and small, there are not many auditors available with in-depth knowledge of our operations or aquaculture-specific standards. It has been the author's personal experience that much of the first audit with a new auditor is spent educating them on the kind of operation and product they are auditing so the auditor can then appropriately assess compliance with the requirements of the standard the operation is being audited against.

8.4 Aspects of Business Operations Expected to be Covered by Third-Party Certification

Twelve respondents chose to comment on what aspects of the processors operations they would expect to be covered by any third-party certifications.

83% said they would expect managements systems to be included in the third-party certification.

83% said they would expect sustainability to be included in the third-party certification.

75% said they would expect ethical practices (employment, responsible sourcing, social responsibility, etc.) to be included in a third-party certification.

When asked if there were any other aspects of operations they would expect third-party certifications to cover a respondent based in Denmark specified "Food Safety", and a respondent based in America specified "post harvest processing".

When analysing the responses based on respondents base location both of those based in Asia indicated they would expect sustainability to be included in the third-party certification, one (50%) said they would expect management systems to be included, and neither selected ethical practices.

The two respondents based in Europe both selected management systems, sustainability, and ethical practices.

The three respondents based in America all selected management systems, sustainability, and ethical practices.

The respondent based in Austrialia selected management systems and ethical practices.

Of the four respondents based in New Zealand, two selected management systems, ethical practices, and sustainability. One selected just management systems, and the other selected ethical practices and sustainability. These gave each of the aspects a 75% selection rate.

The results with high rates of selection for management systems, sustainability, and ethical practices would suggest that when selecting a certification standard the processor would do well to pick one that covered a range of aspects of their operations rather than focusing on just one. These results are interesting in that the aspects the customers have said they would expect covered by a certification do not necessarily align with what they have nominated as their preferred third-party certifications.

8.5 Preferred Third-Party Certifications

Twelve respondents contributed their opinions on preferred certifications for processors to hold. In the questionnaire a short list of some of the most common third-party certifications was given for respondents to select from in a multiple-choice fashion, and they were also asked to specify any other certifications they prefer. The certifications listed were Global Aquaculture Alliances - Best Aquaculture Practices (BAP), ISO 9001 Quality Management Systems Certification (ISO 9001), ISO 22000 Food Safety Management (ISO 22000), BRCGS Global Standard for Food Safety (BRCGS), and IFS Food Safety Certification (IFS).

The BAP certification proved the most popular with 67% of respondents selecting it as a preferred certification. The ISO 9001 certification and the BRCGS certification were second equal, with both achieving 58% selection. ISO 22000 and IFS certifications both had 50% selection.

The other third-party certifications specifically identified by customers as preferred certifications for processors to hold were FSSC 22000 Food Safety System Certification (FSSC 22000) specified by two customers, and the Safe Quality Food (SQF) certification specified by one customer.

The customers based and solely operating in America selected the BAP, BRCGS, and the IFS certifications 100% of the time. The ISO 9001 and the ISO 22000 certifications were both selected twice (66%). The third American respondent who did not select either of the ISO certifications made the comment "ISO certifications are not accepted by key national accounts in USA". The third American respondent also specified FSSC 22000 and SQF as preferred certifications.

Of the two customers based and operating in Europe the IFS Food Safety Certification was selected by both (100%). BAP, ISO 9001, ISO 22000, and BRCGS were each selected at a rate of 50%.

Of the two customers based and operating in Asia, one selected the BAP certification and the other selected the ISO 9001 certification.

The customer based and solely operating in Australia selected BAP, ISO 22000, BRCGS, and IFS, and specified FSSC 22000 as preferred certifications.

For the four customers based in New Zealand and distributing products globally ISO 9001 was selected the most at 75%. The BAP, ISO 22000, and BRCGS certifications were each selected 50% of the time.

A comment made was "all are reputable" and given the generally high rate of selection for all listed certifications across the respondents with all achieving at least 50% selection as a preferred certification this comment proves true.

8.6 Opinion on MPI Requirements

Twelve customers chose to share their opinion on the New Zealand Ministry for Primary Industries (MPI) and New Zealand's base requirements for export food production. Customers were also asked, founded on their opinion of MPI and base requirements, whether food safety third-party certifications are necessary. The question asked whether a company policy document stating that the processor operates a Risk Management Programme (RMP) and HACCP Plan, and is regularly audited by MPI would be sufficient in place of a third-party food safety certification. Generally, MPI and New Zealand base requirements are viewed positively.

Two America-based customers choose to share their opinions of MPI and New Zealand base standards. One commented "This type of audit (regulatory) has been always viewed as bare minimum and accepted only by some accounts in USA in lieu of GFSI type of audit". The other customer commented "MPI is a gold standard". Both believe that the base requirements are acceptable with one stating "Current standards are world class.", and the other customer noted "Standards are compatible with US FDA standards ... companies in USA prefer for NZ establishments to be listed on ICSS and have valid GFSI certification (or regulatory audit)". When asked if a company policy document would be sufficient in place of a third-party food safety certification both responded "Yes".

Of the two customers based in Europe, only one chose to share their opinion of MPI and New Zealand base requirements and held a positive view of both. This customer did however still believe food safety third-party certification was required and was the only respondent of the twelve to believe so. The other Europe-based customer did not wish to share their opinion on MPI and New Zealand base requirements but did indicate that they would accept a company policy document instead of third-party food safety certification.

MPI and New Zealand base requirements are particularly well regarded by the customers based in Asia with one commenting "They are excellent. We are very confident with their management of food safety". When asked if they trust MPI to conduct thorough, accurate, and unbiased verification activities both respondents replied "Yes" citing MPI's strict processes and ethicality. This perception likely plays a large role in the Asia-based customer's willingness to purchase products without any third-party certifications. When asked if the MPI base standards are sufficient assurance that New Zealand products are safe to eat, or if they believed third-party food safety certification is still necessary both indicated that they did not believe it necessary, replying a company policy document would be sufficient instead of a third-party food safety certification for these customers.

The customer based in Australia commented "Third Party certification is always a good thing to have" but said they would accept a company policy document.

For the customers based in New Zealand who distribute products globally MPI and New Zealand base requirements are well respected and trusted with the only somewhat negative feedback being the comment "In general good but can be inflexible to find solutions". All believe NZ base requirements

are sufficient and would accept a company policy document in lieu of a third-party food safety certification. However, one did note that third-party certification is a common request from their own customers. A comment was "I am sure NZ standards are good enough, but overseas companies seems to prefer standard well known to their country, hence ISO and BAP, MSC are popular request". As these customers are based in New Zealand they generally have much more interaction with MPI than those based overseas. This is likely to be a strong factor in their willingness to accept a company policy document over third-party certification as the New Zealand standards are well-known to them.

Overall, there was a strong consensus (92%) that a company policy document stating that the processor operates an RMP and HACCP Plan, and is regularly audited by MPI would be sufficient in place of a third-party food safety certification. The one respondent who said a company policy would not be sufficient is the same respondent who also specified Food Safety as an aspect of processors operations they would expect covered by any third-party certification.

8.7 Opinion on New Zealand Employment Law

Twelve customers contributed feedback regarding their overall opinions on New Zealand Employment law, and whether adherence to it sufficiently meets all ethical employment obligations. Customers were also asked if they believed third-party ethical employment certifications were necessary or if they would instead accept a company policy document stating that all employment practices comply with New Zealand employment law.

Two of the customers based in America gave their opinions on the subject. When asked if they think New Zealand employment law meets ethical employment obligations and if they would accept a company policy document instead of third-party certification both agreed a policy document would be sufficient. One commented "Personally, I would accept. Challenge is that customers in USA are not familiar with NZ employment law and most likely will require third-party certification".

One customer based in Europe chose to comment saying that they would accept a company policy document instead of third-party ethical employment certifications and stated "New Zealand is a low risk / high living standard and well developed democracy. That is sufficient".

Two customers based in Asia responded that they would accept a company policy document instead of third-party certification, but one did also comment "third party sign off is always better". This is a curious comment in that the customer did not select Ethical Practices as an aspect of the processor's operations they would expect to be certified.

The customer based in Australia would accept a company policy document instead of third-party certification.

All five customers based in New Zealand replied to this section of questions. There was agreement that the employment law sufficiently meets ethical employment obligations with statements such as "Favours the employee" and "Yes NZ employment law covers these obligations". Of the five respondents four said they would accept a company policy instead of third-party certification. One responded "No" they would not accept a company policy however they did not give a clear reason as to why this was. As with the responses to the Opinion on MPI Requirements section the customers based in New Zealand are much more familiar with New Zealand employment law than those based overseas.

As 91% of respondents agreed a company policy document would be sufficient instead of third-party certification this appears to be a sound option for processors. It is worth remembering that 75% of respondents did also say they would expect ethical (employment, responsible sourcing, social responsibility, etc.) practices to be covered in any third-party certification.

8.8 Summary and Discussion

If customers of New Zealand aquaculture products tend to purchase smaller volumes annually then they are more likely to not require any third-party certifications. Those purchasing larger volumes are likely to require third-party certification of some form.

Customer requirements also vary depending on where in the world they are based or distributing products into. Those based or distributing in America are likely to require a third-party certification. Those based and distributing in Europe may require third-party certification, particularly if they are operating in multiple countries. Customers based and distributing in Asia or the Middle East do not tend to require third-party certification and see New Zealand base requirements as sufficient assurance.

New Zealand's employment law, MPI, and base requirements for export food production are highly regarded internationally and in many cases customers are willing to accept company policy documents over third-party certification for certain aspects of processors operations.

If a processor chooses to undertake a third-party certification standard they would do well to select one that covers multiple aspects of their operations. Any certifications they do choose should be well recognized and regarded internationally. The certifying body that audits for the standard is not as important as the standard itself but a recognised and trusted certifying body is preferable.







9. Conclusions

Two of the three most used certifying bodies in New Zealand are highly recognised and trusted globally, with SGS rated the highest. There are unlikely to be any issues if using a certifying body that international customers do not immediately recognise as any certifying body accredited to audit against a certification standard will be rigorously assessed and monitored by the certification owner. One of the biggest challenges faced in New Zealand is auditor availability, especially if participating in a certification that requires specific aquaculture knowledge.

There are numerous third-party certifications on offer and which is best suited to an operation is determined by their values, objectives, and customer requirements. Most leading prevalent certifications, and those identified by customers as preferred certifications, are based on ISO management systems principles and Global Food Safety Initiative (GFSI) benchmarked. Many of these certifications share a large portion of their requirements. New Zealand base requirements meet a sizable portion of the food safety and ethical employment requirements of these certifications.

The most significant barrier preventing processors from adopting third-party certifications is the cost involved without a clear return on investment when their customers do not require these certifications.

Third-party certifications are not essential for a New Zealand aquaculture processor's market access and success. New Zealand's base requirements are internationally respected and products produced

here are viewed as of a high standard and low risk. Many customers will accept company policy documents for the food safety and ethical employment aspects of operations in place of third-party certifications considering New Zealand's base requirements. Whether a processor participates in a third-party certification and which they chose is often driven by their customer's preferences and/or requirements. There is some correlation between customer location and what, if any, third-party certification they may require but the leading factor appears to be the volumes purchased. Customers purchasing higher volumes of products and with higher numbers of their own clients are more likely to require third-party certifications.

10. Recommendations

The below recommendations are all aimed at New Zealand aquaculture shellfish processors.

- 1. Develop a company policy document outlining food safety systems (RMP and HACCP etc.) regularly audited by MPI.
- 2. Develop a company policy document stating a commitment to compliance with New Zealand employment law.
- 3. Before selecting any third-party certification programme processors should speak to customers to determine whether they require their suppliers to hold these.
- 4. If a customer does require third-party certification processors should inquire what their preferred certifications are, then investigate these certifications to determine if they are suitable for their operations.
- 5. Consider whether individual certifications align with company values, if they will assist in achieving company objectives, and what is the organisation trying to accomplish by participating in the certification.
- 6. When selecting a certification standard consider what aspects of operations it covers, a certification covering multiple aspects is often a better option.
- 7. Seek quotes from several certifying bodies when considering adopting a certification standard as some may prove a more cost-effective option than others.



11. References

AsureQuality, FSSC-ISO 22000: Version 5 .1. https://www.asurequality.com/academy/course/fssc-iso-22000-course

AsureQuality, Gain Competitive Advantage with ISO 14001. https://www.asurequality.com/assets/Flyers/ISO-14001-Flyer-2020.pdf

AsureQuality, Management Systems Certification. https://www.asurequality.com/industries/food/food-supply-chain-certification/management-systems-certification/

AsureQuality, *Organic Certification*. https://www.asurequality.com/services/certification/organic-certification/

AsureQuality, Organic Certification. https://www.asurequality.com/assets/Flyers/Organic-Certification-2020.pdf

BAP Certification. Program Standards. https://www.bapcertification.org/Standards

BAP Certification (November 2020). Seafood Processing Standard (SPS) (Issue 5.1). https://www.bapcertification.org/Downloadables/pdf/PI%20-%20Standard%20-%20Issue%205.1%20-%2016-November-2020-GSA.pdf

BRCGS. Food Safety. https://www.brcgs.com/our-standards/food-safety/

BRCGS. Global Standard: Food Safety (Issue 9). https://www.brcgs.com/media/2170923/fsi9-standard-sample.pdf

FSSC (April 2023). FSSC 22000 scheme food safety management systems certification (Version 6.0).

FSSC. Delivering trust and impact on global food safety with FSSC 22000. https://www.fssc.com/schemes/fssc-22000/

GFSI. Certification. https://mygfsi.com/how-to-implement/certification/?utm_source=website&utm_medium=homepage&utm_campaign=home-shortcut

GFSI. GFSI-Recognised Certification Programme Owners. https://mygfsi.com/how-to-implement/recognition/certification-programme-owners

GFSI. Who Are We, Overview. https://mygfsi.com/who-we-are/overview/

Global Seafood Alliance. Home. https://www.globalseafood.org/

Holmyard, N. (26 October 2020). The great mussel debate: What's wild, what's farmed and what certification scheme fits the bill? *Responsible Seafood Advocate* https://www.globalseafood.org/advocate/the-great-mussel-debate-whats-wild-whats-farmed-and-what-certification-scheme-fits-the-bill/

IFS Certification. Fact Sheet, IFS Food Standard. https://www.ifs-certification.com/images/ifs documents/pdfs/ifs-blocks/Fact sheet IFS Food EN.pdf

- IFS Certification. IFS Food. https://www.ifs-certification.com/en/food-standard
- IFS Certification (April 2023, Version 8). IFS Food: Standard for assessing product and process compliance in relation to food safety and quality. https://www.ifs-certification.com/images/ifs documents/IFS Food v8 standard EN 1681804068.pdf
- ISO. Certification. https://www.iso.org/certification.html
- ISO, ISO 9001 and related standards. https://www.iso.org/iso-9001-quality-management.html
- ISO. ISO 9001:2015 Quality management systems. https://www.iso.org/standard/62085.html
- ISO. *ISO 9001:2015(en) Quality management systems Requirements.* https://www.iso.org/obp/ui/en/#iso:std:iso:9001:ed-5:v1:en
- ISO. ISO 9001:2015 How to use it. https://www.iso.org/files/live/sites/isoorg/files/store/en/PUB100373.pdf
- ISO. *ISO* 14001 and related standards. https://www.iso.org/iso-14001-environmental-management.html
- ISO. *ISO* 14001:2015 Environmental management systems Requirements with guidance for use. https://www.iso.org/standard/60857.html
- ISO. *ISO* 14001:2015(en) Environmental management systems Requirements with guidance for use. https://www.iso.org/obp/ui/en/#iso:std:iso:14001:ed-3:v1:en
- ISO. *ISO 14004:2016 Environmental management systems General guidelines on implementation*. https://www.iso.org/standard/60856.html
- ISO. ISO 14004:2016(en) Environmental management systems General guidelines on implementation. https://www.iso.org/obp/ui/en/#iso:std:iso:14004:ed-3:v1:en
- ISO. ISO 14005:2019 Environmental management systems Guidelines for a flexible approach to phased implementation. https://www.iso.org/standard/72333.html
- ISO. *ISO 14005:2019(en) Environmental management systems Guidelines for a flexible approach to phased implementation*. https://www.iso.org/obp/ui/en/#iso:std:iso:14005:ed-2:v1:en
- ISO. *ISO* 22000 Food safety management. https://www.iso.org/iso-22000-food-safety-management.html
- ISO. *ISO 22000:2018 Food safety management systems Requirements for any organization in the food chain*. https://www.iso.org/standard/65464.html
- ISO. ISO 22000:2018(en) Food safety management systems Requirements for any organization in the food chain. https://www.iso.org/obp/ui/en/#iso:std:iso:22000:ed-2:v1:en

Ministry for Primary Industries (December 2022). *Situation and Outlook for Primary Industries*. https://www.mpi.govt.nz/dmsdocument/54517-Situation-and-Outlook-for-Primary-Industries-SOPI-December-2022

MPI. *Organic product requirements in NZ*. https://www.mpi.govt.nz/agriculture/organic-product-requirements-in-nz/

NSF. Best Aquaculture Practices (BAP) Certification. https://www.nsf.org/nz/en/food-beverage/food-safety-audits-certifications/seafood-cer

NSF. BRCGS Certification. https://www.nsf.org/nz/en/food-beverage/food-safety-audits-certifications/manufacturing-packaging-distribution-certifications/brcgs?serviceType=certification

NSF. FSSC 22000 Certification. https://www.nsf.org/nz/en/food-beverage/food-safety-audits-certifications/manufacturing-packaging-distribution-certifications/fssc-22000?serviceType=certification

NSF. *IFS Food Safety Certification*. https://www.nsf.org/nz/en/food-beverage/food-safety-audits-certifications/manufacturing-packaging-distribution-certifications/ifs?serviceType=certification

NSF. *ISO 9001 Quality Management Systems Certification*. https://www.nsf.org/nz/en/management-systems/quality-management/iso-9001?serviceType=certification

NSF. ISO 14001 Environmental Management System (EMS) Standard. https://www.nsf.org/nz/en/management-systems/environmental-health-safety-management-systems/iso-14001?serviceType=certification

SGS. BAP Farm, Hatcheries and Feed Mills. https://www.sgs.com/en-nz/services/bap-farm-hatcheries-and-feed-mills

SGS. BAP Processing. https://www.sgs.com/en-nz/services/bap-processing

SGS. BRCGS Certification. https://www.sgs.com/en-nz/services/brcgs-certification

SGS. BRCGS Food Safety. https://www.sgs.com/en-nz/services/brcgs-food-safety

SGS. FSSC 22000. https://www.sgs.com/en-nz/services/fssc-22000

SGS. FSSC 22000 Food & Ingredients. https://www.sgs.com/en-nz/services/fssc-22000-food-and-ingredients

SGS. IFS Food. https://www.sgs.com/en-nz/services/ifs-food

SGS. *ISO 9001 Certification – Quality Management Systems*. https://www.sgs.com/en-nz/services/iso-9001-certification-quality-management-system

SGS. ISO 9001 QUALITY MANAGEMENT SYSTEMS — REQUIREMENTS. https://www.sgs.com/en-nz/media/sgscorp/documents/corporate/brochures/sgs-kn-iso-9001-brochure-en.cdn.en-NZ.pdf

SGS. *ISO* 14001 Certification – Environmental Management Systems. https://www.sgs.com/en-nz/services/iso-14001-certification-environmental-management-systems

SGS. ISO 14001 ENVIRONMENTAL MANAGEMENT SYSTEMS – REQUIREMENTS WITH GUIDANCE FOR USE. https://www.sgs.com/-/media/sgscorp/documents/corporate/brochures/sgs-kn-iso-14001-brochure-en.cdn.en.pdf

SGS. ISO 22000. https://www.sgs.com/en-nz/services/iso-22000

Truong, V. A., Lang, B., & Conroy, D. M. (01 January 2022). When food governance matters to consumer food choice: Consumer perception of and preference for food quality certifications. *Appetite, Volume* 168, https://www-sciencedirect-com.ezproxy.lincoln.ac.nz/science/article/pii/S019566632100595X

12. Appendices

Appendix 1: Processor Survey Questions

Processer Third-Party Certification Questionnaire

Emily Clark: Kellogg Rural Leadership Programme Research Project

The purpose of this questionnaire is to gather data to be used in the development of a research paper looking into third-party certification for New Zealand Aquaculture shellfish processors and consumer opinions.

I am writing this research paper for a student project as part of the requirements of the Kellogg Rural Leadership Programme I am currently participating in.

My research question is 'As a New Zealand aquaculture shellfish processing factory, what value do additional third-party certifications hold for consumers of our products globally, and what is the cost to achieve and maintain these?'

I would greatly appreciate your contribution to my research by completing the below questionnaire and returning it to me by email, at emily@opcolumbia.co.nz.

All responses will be kept confidential and anonymous.

I promise to send all parties who participate a copy of the final research paper once completed.

Company Name:		
Со	Completed By: Date:	
	When completing these questions please tick all boxes that apply, leave a comment, put NA, or Prefer not to say.	
1)	1) What New Zealand aquaculture shellfish species do you process?	
	☐ Greenshell Mussels (<i>Perna canaliculus</i>)☐ Pacific Oysters (<i>Crassostrea gigas</i>)☐ Other, please specify:	
	a) Do you also process products not of Nev	v Zealand Aquaculture Shellfish origin?
	☐ Yes ☐ No	
	i) If you answered Yes to the above qu covered under any third-party certif	estion, what are these, and are these also ications you may currently hold?
2)	What countries do you export the bulk of you to? (Please list the top 5 countries below in order	our New Zealand aquaculture shellfish products of most to least)

3)	What (if any) third-party certifications do you currently maintain? (If you do not maintain any third-party certifications please skip to question 10)
	☐ BAP (Global Aquaculture Alliance – Beat Aquaculture Practices)
	☐ ISO 9001 Quality Management Systems Certification
	☐ ISO 22000 Food Safety Management
	☐ BRCGS Global Standard for Food Safety
	☐ IFS Food Safety Certification
	☐ Other, please specify:
	a) What certifying body do you use?
	□ SGS
	□ NSF
	□ SAI Global
	☐ Telarc Limited
	☐ Other, please specify:
	b) Are you considering changing your certifying body?
	□ Yes
	□ No
	i) If you answered Yes to the above question, why?
4)	Why have you chosen your current certification above others?
	□ Price
	\square Time and resources required to achieve and maintain
	☐ Customer requirement
	☐ Other, please specify:
	a) How long have you held your current certification?
	b) How satisfied are you with the certification?
	☐ Very satisfied
	☐ Mostly satisfied
	☐ Moderately satisfied
	☐ Somewhat dissatisfied☐ Very dissatisfied
	i) What are your reasons for your above satisfaction score?

c) How much do you spend annually achieving and maintaining your certifications? Please also consider the cost of your time, resources, and any other activities you undertake solely to achieve the certification.
□ <\$10,000
□ \$10,000 - \$25,000
□ \$25,000 - \$40,000
□ >\$40,000
☐ Prefer not to say
i) What are your thoughts on the cost, time, and resources required to achieve and maintain the certification?
d) Are you considering changing your certification type?
☐ Yes
□ No
i) If you answered Yes to the above question, why?
5) How do you use the certification?
☐ Logo on packaging
☐ Certification information on your website
\square In promoting your brand story
\square Other, please specify:
6) Has the certification standard requirements changed at all in the time you have taken part?
☐ Yes
□ No
a) If you answered Yes to the above question, have the changes differed greatly and/or significantly increased the workload from the original standard, and how?
•
7) Are there any parts of the certification standard requirements that you feel hold little relevance to your operation?
7) Are there any parts of the certification standard requirements that you feel hold little
7) Are there any parts of the certification standard requirements that you feel hold little relevance to your operation?
7) Are there any parts of the certification standard requirements that you feel hold little relevance to your operation? Yes

8)		you undertake any actions solely to achieve the certification and see little value in nerwise?
	a)	If you answered Yes to the above question, what are they and why do you feel this way about them?
9)	If y	ou do not maintain any third-party certification, why have you chosen not to?
10)	Но	w familiar are you with other certifications?
	a)	Have you always had your current certification, or have you had others in the past, what were they?
		i) If you have had others, why did you choose to withdraw from them?
	b)	Have you ever investigated other certification options, what were your findings?
11)	fol	any of your customers also have their own assurance programme they require you to low? You answer No blow please skip to question 12)
		Yes
		No
	a)	If you answered Yes to the above question, what is the name of the customer assurance programme?
		i) What aspects of your operations does the customer's programme cover?
		ii) Who audits you against the customer's programme standard, and how often are you audited?
		iii) Approximately how much time, money, and resources do you spend to achieve and maintain this?

- 12) Do you have any additional thoughts or comments on third-party certification?
 - a) Are there any questions regarding third-party certification of New Zealand Aquaculture Shellfish Processors you think are missing from this questionnaire?

Appendix 2: Consumer Survey Questions

Customer Third-Party Certification Questionnaire

Emily Clark: Kellogg Rural Leadership Programme Research Project

The purpose of this questionnaire is to gather data to be used in the development of a research paper looking into third-party certification for New Zealand Aquaculture shellfish processors and consumer opinions.

I am writing this research paper for a student project as part of the requirements of the Kellogg Rural Leadership Programme I am currently participating in.

I would greatly appreciate your contribution to my research by completing the below questionnaire and returning it by email.

All responses will be kept confidential and anonymous.

Date:
When completing these questions please tick all boxes that apply, leave a comment, put NA, or Prefer not to say.
13) What country are you based in?
a) Do you distribute shellfish of New Zealand aquaculture origin in any other countries?
□ Yes
□ No
i) If you answered Yes to the above question, where?
14) What shellfish from New Zealand aquaculture origin do you purchase?
☐ Greenshell Mussels (<i>Perna canaliculus</i>)
☐ Pacific Oysters (<i>Crassostrea gigas</i>)
☐ Other, please specify:
a) Approximately what volume of each of the above New Zealand shellfish species do you purchase annually?
15) If a New Zealand aquaculture shellfish processor did not hold any third-party certification would this prevent you from purchasing their products?
□ Yes
□ No
a) If you answered Yes to the above question, do you require them to hold a specific certification or are there a range of certifications you accept, what are these?

i) Do you have your own assurance programme you require suppliers to follow?
☐ Yes
□ No
16) What certifying bodies do you recognize and trust?
□ SGS
□ NSF
☐ SAI Global
☐ Telarc Limited
☐ Other, please specify:
a) What is your opinion of the above certifying bodies, are there any that you do not value, and why?
17) What are your preferred certifications for a processor to hold?
☐ BAP (Global Aquaculture Alliance – Beat Aquaculture Practices)
☐ ISO 9001 Quality Management Systems Certification
☐ ISO 22000 Food Safety Management
☐ BRCGS Global Standard for Food Safety
☐ IFS Food Safety Certification
☐ Other, please specify:
a) What is your overall opinion of the above certificates, are there any that you do not value, and why?
18) What aspects of the New Zealand aquaculture shellfish processor's operation would you expect to be certified?
☐ Management Systems
\square Ethical Practices (Employment, responsible sourcing, social responsibility, etc.)
☐ Sustainability
☐ Other, please specify:
19) What is your opinion on the New Zealand Ministry for Primary Industries (MPI), which monitors and assess New Zealand food processors, verifying that processing premises operate appropriate risk management and food safety programmes, and why? (for more information please visit https://www.mpi.govt.nz/about-mpi/)
a) Do you trust the New Zealand Ministry for Primary Industries (MPI) to conduct thorough, accurate, and unbiased verification activities, and why?

b) What is your opinion of the standards New Zealand food processors must achieve to be permitted to export products, and why?
(For more information please visit https://www.mpi.govt.nz/legal/legislation-standards-
and-reviews/food-safety-legislation/legislation-seafood-processing/)
i) What is your opinion on whether the standards are sufficient assurance that New Zealand products are safe to eat, or do you believe third-party food safety certification is still necessary, and why?
ii) Would you consider a company policy document stating that the processor operates a Risk Management Programme (RMP) and HACCP Plan, and is regularly audited by MPI sufficient instead of a third-party food safety certification?
☐ Yes
□ No
20) What is your opinion on New Zealand employment law? (Please visit www.employment.govt.nz for more information)
a) Would you accept that adherence to the New Zealand employment law meets all ethical employment obligations, or do you believe third-party ethical employment certification is still necessary, and why?
i) Would you consider a company policy document stating that all employment practices comply with New Zealand employment law sufficient instead of a third- party certification?
21) Do you have any additional thoughts or comments on third-party certification?