

SECTION 4

**New partnerships for achieving fish safety
and quality**

ISO 22000: food safety management systems and their related requirements

Philippa Seagrave
Standards Australia

ABSTRACT

More and more food products are traded internationally. International standards such as ISO 22000 are crucial for giving final consumers confidence that the products they buy are safe, regardless of where they have been produced. They need to know that potential safety hazards have been identified and controlled throughout the food chain, from production, to handling, transportation, and supply. This paper outlines the development of ISO 22000, with particular reference to the role of Australian participants in the process.

INTRODUCTION

The word “standard” is used frequently in everyday speech, most often in an imprecise descriptive manner: “That’s fairly standard for the time of year” or “standard English”. But in the standards world, a Standard has to have a very precise meaning. The definition that best describes a contemporary standard is the following:

“A standard is a document established by consensus that provides, for repeated use, rules, guidelines or characteristics of products, services or systems”.

By themselves, standards merely indicate criteria, but do not actually ensure that these criteria are met.

‘Conformity Assessment’ on the other hand, refers to the systems sitting behind and supporting any given standard. These systems provide confidence that the specifications of a standard have been met. It is the practice of determining if a product, service or system meets the requirements of applicable standards.

The standards landscape has many important players who contribute to the public good through a variety of standards. These include individual and organizations that develop codes of practice for regulated professions and non-regulated associations. In Australia, these players provide standards to Australians such as industry associations, technical associations, governments and regulators.

STANDARDS AUSTRALIA

Standards Australia is one of the important players in the standards landscape, and has been recognised by the Federal Government as the peak non-government standards organization. It is not-for-profit, with members representing a broad cross-section of Australia’s technical and commercial infrastructure, industry, unions, academia and government. It has no shareholders, no dividends are paid and any surpluses are put back into further standards development work.

Its primary role is to prepare standards through an open process of consultation and consensus in which all interested parties from a variety of industries are invited to

participate. Standards Australia is the Australian member of International Organization for Standardization (ISO).

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION (ISO)

ISO is a network of the national standards institutes from 153 countries, on the basis of one member per country, with a Central Secretariat in Geneva, Switzerland, that coordinates the system. It is a non-governmental organization. Its members are not, as is the case in the United Nations system, delegations of national governments.

ISO occupies a special position between the public and private sectors. Many of its member organizations are part of the governmental structure of their countries, or are mandated by their government. However, other members have their roots solely in the private sector, having been set up by national partnerships of industry associations.

There are currently over 3,000 ISO Technical Committees, Subcommittees and Working Groups. Australia participates on many of these. Of particular interest to food safety and quality is ISO/TC 34: Food Products. This is the committee that produced ISO 22000.

ISO 22000

Failures in food supply can be dangerous and very costly. There is an increasing requirement by customers of organizations that produce, manufacture, handle or supply food, to demonstrate and provide adequate evidence that they are able to identify and control food safety hazards, and the many conditions impacting on food safety.

Prior to the development of ISO 22000, the relevant standard was ISO 9001:2000, but this is concerned with quality management and does not deal specifically with food safety. As a result, many countries such as Denmark, the Netherlands, Ireland and Australia, amongst others, developed voluntary national standards and other documents specifying auditable requirements for food safety management systems. This meant a proliferation of national standards; that led to some confusion.

A need was seen to harmonize those national standards on an international level. This is the reason why, in 2001, the Danish Standards Association submitted to the ISO technical committee ISO/TC 34, *Food products*, a new work item proposal for a food safety management systems standard.

Working Group 8, *Food safety management systems*, of ISO/TC 34, with experts from 23 countries, participated in the development of the standard, together with the international organizations that had liaison status. There was also close cooperation with the Codex Alimentarius Commission, the body jointly established by the Food and Agriculture Organization of the United Nations (FAO) and the World Health Organization (WHO). Also included in the development were the Confederation of Food and Drink Industries of the European Union (CIAA), the CIES/Global Food Safety Initiative, and the World Food Safety Organization (WFSO).

The major benefit of this cooperation is that it will make it easier for organizations worldwide to implement the Codex HACCP (Hazard Analysis and Critical Control Point) system for food hygiene in a harmonized way. This will help to avoid variations between countries and between food products.

AUSTRALIA'S ROLE IN THE PROCESS

Australia actively participated in the development work of this standard by forming a mirror-working group to generate input from Australian experts. Australian Mirror Group (FT-024-00-01-Food Safety) had members from many organizations, including:

- NSW Food Authority
- Certification Bodies

- Department of Agriculture, Fisheries and Forestry (Commonwealth)
- Consulting companies
- Dairy Australia
- Food Standards Australia New Zealand
- Joint Accreditation System of Australia and New Zealand
- Retailers
- Australian Quarantine and Inspection Service
- Meat and Livestock Australia

The Australian experts submitted their technical contribution to the meetings of the ISO working group, thus ensuring that Australia had a significant say in the development of this standard. To align with international standards and to facilitate trade, the Standards Australia Technical Committee FT-024-*Food Products* recommended the adoption of ISO 22000:2005 as an Australian Standard.

WHY IS THE STANDARD IMPORTANT?

Food safety is related to the presence of and levels of food-borne hazards in food at the point of consumption (intake by the consumer). As food safety hazards may be introduced at any stage of the food chain, adequate control throughout the food chain is essential. ISO 22000 is intended to provide security by ensuring that there are no weak links in the food supply chain.

It is important to note that food safety is a joint responsibility that is principally assured through the combined efforts of all the parties participating in the food chain. For any organization along the food chain, ISO 22000 provides requirements for a food safety management system that allows that organization to:

- demonstrate its ability to control food safety hazards so that it consistently provides safe end products that meet both the requirements agreed with the customer and those of applicable food safety regulations; and
- enhance its customer satisfaction through the effective control of food safety hazards, including processes for updating the system.

INTENDED USERS

ISO 22000 may apply to all types of organizations within the food chain ranging from feed producers, primary producers through food manufactures, transport and storage operators and subcontractors to retailers and food service outlets, together with inter-related organizations such as producers of equipment, packaging material, cleaning agents, additives and ingredients.

As mentioned above, it is important to emphasise that food safety is a joint responsibility that is principally assured through the combined efforts of all these parties participating in the food chain.

WHAT DOES THE STANDARD COVER?

The standard combines generally recognized key elements to ensure food safety along the food chain:

- interactive communication;
- systems management; and
- hazard control.

Interactive communication

Communication along the food chain is essential to ensure that all relevant food safety hazards are identified and adequately controlled at each step within the food chain. This implies communication of the needs of the organization to other organizations both upstream and downstream in the food chain.

Communication with customers and suppliers, based on the information generated through systematic hazard analysis, will also assist in substantiating customer and supplier requirements, to determine their feasibility, need, and impact on the end product. The standard requires that such communication is planned and maintained.

Systems management

The most effective food safety systems are designed, operated and updated within the framework of a structured management system and incorporated into the overall management activities of the organization.

This provides maximum benefit for the organization and interested parties.

ISO 22000 gives due consideration of the requirements of ISO 9001:2000 in order to enhance compatibility of the two standards. Thus ISO 22000 can be applied on its own, or in combination with other management system standards such as ISO 9001:2000, with or without independent (third party) certification of conformity.

Hazard control

Effective systems must be capable of controlling food safety hazards to acceptable levels in end products to be delivered to the next link in the food chain. They require the balanced integration of prerequisite programmes and a detailed HACCP plan.

ISO 22000 dynamically combines the HACCP principles and application steps with prerequisite programmes, using the hazard analysis to determine the strategy to be used to ensure hazard control. The standard further clarifies the concept of prerequisite programmes, of which there are two subcategories:

- Infrastructure and maintenance programmes, which are used to address basic requirements of food hygiene and accepted good practice of a more permanent nature.
- Operational prerequisite programmes, which are used to control or reduce the impact of identified food safety hazards in the product or the processing environment.

The HACCP plan is used to manage the critical control points determined during hazard analysis, to eliminate, prevent or reduce specified food safety hazards from the product.

THE BENEFITS OF ISO 22000

Organizations implementing the standard are likely to reap the following benefits:

- More efficient and dynamic food safety hazard controls that are focused on what is necessary for achieving the desired end results
- Confidence that all their control measures have been subjected to hazard analysis
- Systematic management of prerequisite programmes
- A more solid and valid basis for taking decisions
- Increased due diligence
- More efficient use of resources by reducing overlapping system audits.

Other stakeholders can have more confidence that the organizations implementing the standard have the ability to identify and control food safety hazards.

Overall the standard adds value to the food safety system because it:

- is international in scope
- provides potential for harmonisation of national standards
- provides a reference for the whole food chain
- provides a framework for third party certification
- fills a gap between ISO 9001:2000 and HACCP
- contributes to a better understanding and further development of Codex HACCP

- is an auditable standard with clear requirements
- takes a systems approach, rather than product approach
- is suitable and workable for regulators.

THE CURRENT STATUS OF THE STANDARD

ISO published ISO 22000:2005 on 1 September 2005. The Australian adoption of the standard AS ISO 22000:2005, was published on 15 September 2005. ISO 22000:2005 is the first in a family of standards that will include the following documents:

- ISO/TS 22004 *Food safety management systems – Guidance on the application of ISO 22000: 2005*, which will be published by ISO in November 2005, and is under consideration for publication as an AS ISO standard. This technical specification provides important guidance that can assist organizations including small and medium-sized enterprises around the world.
- ISO/TS 22003 *Food safety management systems – Requirements for bodies providing audit and certification of food safety management systems*, will give harmonised guidance for the accreditation (approval) of ISO 22000 certification bodies and define the rules for auditing a food safety management system as conforming to the standard. It is expected to be published by ISO in the first quarter of 2006.
- ISO 22005 *Traceability in the feed and food chain – General principles and guidance for system design and development* will shortly be circulated by ISO as a Draft International Standard.
- *ISO 22000: Are you ready?* This is an easy-to-use checklist for small business and developing countries. It is being prepared in partnership with the International Trade Centre (ITC), the technical co-operation agency of the United Nations Conference on Trade and Development (UNCTAD), and the World Trade Organization (WTO)

CONCLUSIONS

International standards are important for ensuring that hazards are controlled throughout the food chain regardless of where products are produced or finally consumed. The ISO process allows a variety of stakeholders to participate in designing systems and standards that are appropriate and workable around the world. As more and more food products are traded internationally, standards such as ISO 22000 become crucial for giving consumers confidence that the food they have access to is safe.

Mercury in fish: using targeted consumer advice as a key risk management tool

Samara Kitchener, Adrian Bradley and George Davey

New South Wales Food Authority, Australia

ABSTRACT

This paper examines a public education campaign to inform pregnant women, those planning pregnancy, and breastfeeding women how to maximise the health benefits of fish while reducing mercury risks. It outlines an innovative three-prong approach used by the New South Wales (NSW) Food Authority to reach the 85 000 women who give birth in NSW each year. Early indications suggest that the campaign, launched in May 2005, has successfully deflected previous negative media about the risks associated with fish consumption, and has provided the target group with accurate dietary information. This in turn has enabled those women to make healthy and informed dietary choices, to maximize the benefits of fish while reducing the potential risks from mercury.

INTRODUCTION

Some species of fish (for example, shark, swordfish, marlin) have elevated mercury levels. Mercury in fish is predominantly a problem for pregnant women and those planning pregnancy as mercury can negatively affect the development of a baby's central nervous system (Food Standards Australia New Zealand, 2004). On the other hand, fish is an important part of a pregnant woman's diet because of the numerous nutritional benefits, notably Omega-3 fatty acids, which assist the development of a baby's brain. The Australian Dietary Guidelines advise eating one to two meals of fish per week (NHMRC, 2003).

In March 2004, the national standard setting body, Food Standards Australia New Zealand (FSANZ) issued new dietary advice on mercury in fish. The mass media was used to promote the FSANZ advice. However, using the media as the primary dissemination tool has its limitations. The media has a propensity to focus on negative or sensational information, and because it tends to simplify information is sometimes a problematic vehicle for delivering complex messages.

The NSW Food Authority was established in April 2004, and is responsible for implementing national standards in NSW. While the Authority supported the FSANZ advice it also noticed considerable community confusion around the issue.

RESEARCH MATERIALS AND METHODS

Market research

Research by the Food Authority revealed that women in the target group were sacrificing the benefits of fish due to fears about mercury; fears that were driven by inaccurate or 'sensationalist' media reporting. An analysis of media coverage further confirmed this. Over the previous two years (since early 2003) a number of negative

stories had eroded public confidence in fish. This was true for all population groups, not just the target market. Further analysis revealed these stories were highly 'cyclical', and generally ran on a six to eight monthly basis. While print and magazine coverage was generally negative, 'tabloid' television programmes produced a series of highly emotive and extremely negative stories linking miscarriage and conception problems with excessive mercury consumption from fish.

The women featured in the media had been unaware they should reduce their exposure to mercury in fish by avoiding certain species. They were also unaware that they could safely consume other species to maximise the numerous health benefits from fish. This lack of awareness was compounded by misunderstandings among the professionals many women turned to for information. Initial research by the Food Authority revealed widespread misunderstandings among doctors, midwives and dieticians on the issue.

The challenge for the Authority was to develop a campaign that:

- educated women planning pregnancy and pregnant women on how to safely include fish in their diet;
- educated public health professionals on fish consumption during pregnancy;
- encouraged appropriate fish choices at point-of-sale; and
- facilitated balanced media coverage of the issues.

One of the first tasks was to assess awareness levels among the target group about mercury in fish. Roy Morgan was commissioned to conduct a Benchmark Survey to measure issue awareness and understanding. Some 403 females in the 18 to 40 year cohort were interviewed NSW-wide.

The benchmark survey confirmed the Food Authority's concerns. While 64% of women were aware of mercury in fish, the majority didn't know which fish to avoid: 44% couldn't name a fish; 39% named an incorrect fish; and 40% had cut fish from their diet. In most cases they eliminated the wrong types of fish.

The market research confirmed the extent of the problem and confirmed that a strategy to inform women about how to avoid mercury while enjoying the benefits of fish was necessary.

Stakeholder partnership

It was decided that any public education campaign needed broad support from a number of different community, medical, and industry groups to help with message dissemination and to give it credibility in the eyes of the public and the media. It was also felt that these groups could channel the message via their membership more effectively than a single agency. Given that women in the target group often turn to doctors, midwives, and dieticians for information, the support of those professionals was considered critical to the success of the campaign.

The support of the seafood industry was critical as well because industry was a vital outlet for any information relating to mercury in fish.

The Food Authority amassed a coalition with broad government, industry, medical and community focus. Members included: NSW Health; Australian Medical Association; Australian Consumers' Association; Australian Midwives Association; Australian Dieticians' Association; Australian Obstetricians and Gynaecologist Association; Australian Breastfeeding Association; Sydney Fish Market; Master Fish Merchants' Association and Food Standards Australia New Zealand. A major retailer, Coles, agreed to support the campaign by distributing point of sale material in its supermarkets.

All stakeholders agreed that there was an information vacuum and were concerned about negative media creating misunderstandings among consumers, particularly in the target group. Stakeholders agreed that a coordinated message supported by a broad coalition would help correct misunderstanding. Some groups gave specific suggestions.

Midwives explained that because expectant mothers face information overload and message complexity the message should be made portable, for example in the form of a wallet card. Retailers supported point of sale materials endorsed by reputable third parties.

Campaign criteria for success

Further research determined that the following elements would increase the likelihood of success:

- partnership between industry, government and public health organizations;
- multiple distribution channels, including point-of-sale, media and health professionals;
- careful targeting of the message to 'at-risk' groups;
- message portability, for example, a wallet card which women could carry with them and use when making food choices;
- reinforcing the positive effects of fish consumption;
- recognizing that the cohort of pregnant women is constantly evolving and ensuring that information is continually available to this renewing target market;
- ensuring a strong Internet presence.

A paper in the *Journal of Nutrition Reviews* (Smith and Sayhoun, 2005) analysed various approaches to informing pregnant women about mercury in fish. The paper was critical of campaigns that warned women about high mercury fish without providing balanced messages on the nutritional benefits of fish. There have been examples in other countries of how poorly crafted and targeted campaigns can reduce fish consumption, meaning fewer women consume fish and therefore miss out on its benefits.

An estimated 85,000 women give birth in NSW each year. Food Authority research suggested up to 14,000 of these did not eat any fish during pregnancy because of misunderstandings and fear about the potential risks. Clearly, if more women were armed with scientifically based advice presented in a non-sensational way, they would be able to include fish in their diet without fear.

It was determined that to be truly successful, the campaign had to address a number of criteria:

- **Portability:** The campaign needed to be based on the FSANZ advice, but this was in tabular format and had proved to be difficult to remember. A card was designed that could be carried by pregnant women and used when shopping.
- **Accessibility and multiple channels:** Cards and merchandisers needed to be suitable for both seafood retailers and public health channels; they were waterproof for fish shops and looked suitable for a doctors surgery.
- **Credibility:** Message acceptability by pregnant women and doctors required endorsement from a broad coalition of stakeholders.

THE CAMPAIGN MESSAGE

The following message was used for the campaign.

"A Healthy Fish Message for Women Planning Pregnancy and Mums to be...."

Fish are full of many nutritional benefits for pregnant women and young children.

Fish are a valuable source of protein, minerals, vitamin B12, iodine and are low in saturated fat and contain omega-3 fatty acids. Omega 3 fatty acids are important for the development of the central nervous system in babies, before and after they are born.



But eating too much of a good thing when you are a soon-to-be mum or breastfeeding can be bad. That's because some fish contain mercury levels that may harm an unborn baby or young child's developing nervous system.

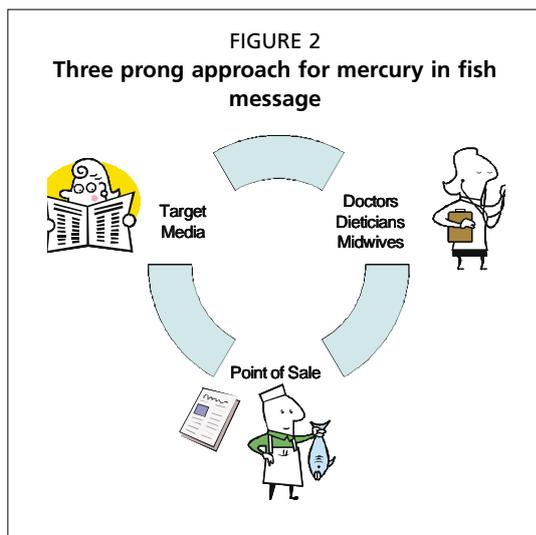
The good news is you can receive all the benefits of eating fish without the risk if you follow some simple dietary advice.

Most fish in Australia have low mercury levels. The following table will help you safely include fish as an important part of a balanced diet."

TABLE 1

Dietary advice on fish consumption (Source: Food Standards Australia New Zealand)

Pregnant & breastfeeding women & women planning pregnancy	Children (up to 6 years) 1 serve equals 75 grams
1 serve equals 150 grams	
2 – 3 serves per week of any fish and seafood not listed below	
OR	
1 serve per week of Orange Roughy (Sea Perch) or Catfish and no other fish that week	
OR	
1 serve per fortnight of Shark (Flake) or Billfish (Swordfish / Broadbill and Marlin) and no other fish that fortnight	

**MESSAGE DELIVERY**

Previous attempts at communicating this message proved that the media could not be used as the only dissemination tool. The specificity of the target market required well-targeted message delivery tactics. The campaign was spearheaded by a three-prong approach, allowing for the message to be reinforced in multiple ways.

Partnership with public health professionals

Public health professionals are often called upon to provide dietary advice for pregnant women. Their involvement in the campaign was critical for message delivery and credibility. The following associations agreed for their logos to be printed on the card, and assisted in distributing materials and publicised the campaign:

- NSW Health
- FSANZ
- Australian Medical Association
- Australian Consumers Association
- Australian Midwives Association
- Australian Obstetricians and Gynaecologists Association
- Australian Dietitians Association
- Australian Breastfeeding Association

Partnership with industry

Fish purchase decisions are most often made at point of sale. It was important for this health message to be reinforced by fish retailers so that advice was also available at point of sale. The campaign is supported by the following organizations that committed to distributing the card in their stores:

- Coles Supermarkets
- Sydney Fish Markets
- Master Fish Merchants Association
- NSW Seafood retailers

The media

The media played an important part in initial message dissemination, but could not be relied on to repeat the information on a long-term basis.

RESULTS AND DISCUSSION

Distribution

Five hundred thousand wallet cards were produced, and were mailed to retailers and doctors in a custom designed merchandiser. Posters complemented the cards. All material was provided free of charge and could be replenished from the Food Authority. Table 1 identifies the distribution points for materials. A pregnancy section was also added to the Authority's website, including a series of translated fact sheets. Information was provided through the Authority's contact centre.

TABLE 2
Distribution points used for the healthy fish consumption card

Group	Distribution point:	
Doctors	⇒	Over 1000 GP practices ¹
	⇒	All 180 Obstetricians and Gynaecologists ²
Ante-natal clinics, Midwives	⇒	All NSW Public Hospitals
	⇒	1500 Midwives ³
Dieticians	⇒	3000 Dieticians ⁴
Fish Shops	⇒	350 fish shops ⁵
	⇒	134 Coles supermarkets
Authority Contact Centre	⇒	Pregnant women, women planning pregnancy
	⇒	Medical professionals

¹ To be cost effective, practices were targeted on advice from AMA Division of General Practices.

² List provided by Australian Obstetricians' and Gynaecologists' Association.

³ List provided by Australian Midwives' Association.

⁴ Members of Australian Dieticians' Association, and Direct Mail.

⁵ Covers majority of fish shops in NSW. List Provided by Master Fish Merchant's Association and Yellow Pages.

The challenge for the campaign is to ensure longevity of the message. The Authority is consulting with stakeholders to ensure that the cards continue to be available through these distribution points.

Media activity

Media launches can generate good publicity to leverage a campaign. A launch event was held at the Sydney Fish Market on 11 May 2005. The campaign was officially launched by the NSW Minister for Primary Industries, The Hon. Ian Macdonald. He was joined by: the NSW Australian Medical Association President, Dr John Gullotta, a pregnancy nutritionist Tania Nash, Managing Director of the Sydney Fish Markets, Grahame Turk, and the NSW Food Authority Director General, George Davey.

The campaign was successful in both media reach and balanced messaging. All media reports mentioned the benefits of fish, and information about fish choices when pregnant or planning pregnancy. There was no negative media on the issue.

In summary, the campaign was reported by:

- Newspapers: The Sydney Morning Herald, Daily Telegraph, Sun Herald
- Magazines: Women's Day, NSW Doctor, Sydney Child Australian Table, FoodWeek
- Radio: multiple reports on ABC, 2UE, 2GB, 2NM, Nova

- Television: 'Sunrise-Seven'
- Web-based: FoodWatch, BubHub, FeMail, Birth.com.au, Coles Baby Club

The campaign achieved a successful media turnaround: balanced messages reached a potential audience of 1.5 million through television, radio, print media, and Internet channels.

It is important to note this was not a marketing campaign, but rather a carefully targeted public education campaign to raise consumer awareness about an important health issue. While the Food Authority takes a neutral stand on the sale of fish as a commercial activity, it wanted to see more pregnant women consuming the recommended amount of low mercury fish because of the nutritional benefits.

According to the Sydney Fish Market, previous unbalanced media reports had impacted negatively on fish sales. While figures are not yet available for analysis, the campaign appears to have had positive market impacts. This suggests that the message has been communicated to the target market in a balanced way.

Many pregnant women and public health professionals sought further information from the Food Authority. This is reflected in increased call centre volumes and website enquiries. Feedback on the card and information has been very positive.

CONCLUSION

The Food Authority's Mercury in Fish education campaign attempted to fill an information void through an innovative three-pronged strategy harnessing a synergistic approach of media, point of sale and stakeholder information dissemination. Overseas evidence suggests this is the first time such an approach has been attempted. The campaign was highly successful in bringing together a coalition of disparate groups to cooperate on an important health issue.

The campaign succeeded in providing balanced information to pregnant women and women planning pregnancy on how to maximise the health benefits of fish while reducing the potential risk from mercury.

Importantly, the campaign also conforms to international best risk management practice as recommended by the World Health Organization. It provides consumers with timely and accurate information to empower them and to enable them to make informed food choices.

REFERENCES

- Smith K.M. and N.R. Sahyoun. 2005. Fish Consumption: Recommendations Versus Advisories, Can They Be Reconciled? *Journal of Nutrition Reviews*, Vol . 63, No. 2
- Food Standards Australia New Zealand. 2004. Mercury in Fish Advice on Fish Consumption. http://www.foodstandards.gov.au/_srcfiles/mercury_in_fish_brochure_lowres.pdf. Commonwealth of Australia, Canberra.
- National Health and Medical Research council (NHMRC). 2003. Dietary Guidelines for Australian Adults. Commonwealth of Australia, Canberra.

Proactive environmental management: Clean Green rock lobster presents a fully-integrated product management strategy

Paul McShane, Roger Edwards, Matt Muggleton and David Milne

Australian Maritime College, South Australian Rock Lobster Advisory Council, Australia

ABSTRACT

The annual production of Australian Southern rock lobster (*Jasus edwardsii*) is about 4500 tonnes returning more than AU\$200 million in annual export revenue. As applied to this fishery, the Clean Green programme represents the world's first fully integrated product management system for commercial fisheries. Embracing contemporary quality assurance protocols, Clean Green presents an auditable system of standards applicable to ecological sustainability, food safety, product quality, workplace safety, and animal welfare across the supply chain, from the point of capture to point of consumption. Based on successful development and application in South Australia, the Clean Green programme has now been extended to the other southern rock lobster-producing states of Victoria and Tasmania.

The principle driver of the Clean Green programme was the South Australian rock lobster industry's response to adverse community perceptions and perceived threats to their commercial fishery. Even without this pressure, there were obvious marketing advantages in presenting a robust framework of product quality and food safety to super premium seafood markets. The challenges of defining work place standards amenable to independent audit under internationally recognized protocols have been successfully addressed. With an emphasis on working closely with industry participants across the supply chain and assisted by a targeted training programme, a responsive culture has been developed yielding high participation rates. So far, more than 250 industry participants have completed training in three states of Australia. More than 130 vessels have been audited against Clean Green standards. The overall programme offers a successful model to other seafood sectors.

INTRODUCTION

The Clean Green strategy is a quality assurance system covering the supply chain, from point of capture to consumption, for Australian Southern rock Lobster (*Jasus edwardsii*). It represents the industry's vision of environmental sustainability, product quality, food safety, safe working environment, and animal welfare embedded in a quality assurance programme that can be independently certified against internationally recognized criteria. In this regard it goes well beyond standards of environmental sustainability embodied in other programmes, such as the Marine Stewardship Council's Fish for the Future system of certification.

A vision, shared by fishers and processors working in the South Australian seafood industry, has been realized with the development and application of a fully integrated product management system. To date, more than 250 fishers have been trained and audited in Clean Green protocols in South Australia. This outstanding success (more than three quarters of the participants in one fishery) has been extended to other rock lobster producing states (Victoria and Tasmania). Many operators are expected to be certified as compliant against the internationally recognized suite of standards applicable to the Clean Green strategy. The scope of coverage across the entire supply chain exceeds any comparable system applicable to commercial fisheries. This paper describes the system of management as it applies primarily to the catching sector. Future articles will explain its application at higher levels of the supply chain, including distribution and sales.

PROACTIVE ENVIRONMENTAL MANAGEMENT

Some time ago fishers in South Australia's AU\$100 million a year rock lobster industry were concerned that negative community perceptions of commercial fishing could adversely affect their industry. Commercial fisheries worldwide are under increasing threat because of concerns about environmental damage and sustainability. In contrast, the South Australian rock lobster fishers believed that the demonstrably responsible management of their fishery (and its associated coastal ecosystems) should be recognized and celebrated by the community including their primary export markets. Their proactive response to environmental management and product quality prompted the Clean Green strategy.

In Australia, rock lobsters are caught in baited traps deployed on coastal reefs where they are usually retrieved within a day by fishers working from fast planing hulled vessels (about 20 m LOA). The practice of fishing for rock lobster is far less damaging to the environment than many other forms of fishing such as demersal trawling. Although incidental capture of animals, other than rock lobsters, does occur (for example octopus and fish), the bycatch is returned safe and alive. The South Australian rock lobster fishery was recently independently assessed as ecologically sustainable by Australia's Department of Environment and Heritage, the national agency responsible for environmental protection. Australia leads the world in requiring all export-based fisheries to be assessed against protocols of ecological sustainable development. Decisions are legally enforced.

These more general attributes of environmental and fisheries sustainability are complemented with specific work practices covering other aspects of the supply chain in the Clean Green strategy. These other aspects include food safety, product quality, a safe working environment and animal welfare. These are presented as work practice standards to be followed by fishers, processors and other participants in the rock lobster industry, as part of a fully integrated product management strategy (McShane 2002).

THE CLEAN GREEN STRATEGY

The Clean Green strategy provides:

- supply chain standards, from point of capture to consumption. These are environmental and product standards developed with guidance from the Joint Accreditation System of Australia and New Zealand (JAS-ANZ). JAS-ANZ is an internationally recognized accreditation agency facilitating the alignment of standards to audit protocols and certification;
- training materials and resources to develop competencies in the desired work place standards;
- industry training to meet the standards;

- best practice manual;
- audit protocols;
- independent third party certification of the rock lobster supply chain; and
- branding materials for those achieving certification.

The Clean Green strategy is supported by a customized training programme specifically developed to meet the needs of industry. Graphically informative learning resources designed to present the desired work practices (aligned to standards of environmental management, food safety, product quality, workplace safety and animal welfare) have been produced in close consultation with industry practitioners. Draft training resources, and trial training sessions also provided an opportunity to get valuable feedback from industry participants. The response from industry was helpful in developing a user-friendly approach to training and getting the desired response to best practice standards. Furthermore, the programme has been developed specifically to provide a career path, to assist participants in the supply chain in fulfilling their legal obligations related to the above issues, and to subsequently achieve certification of compliance with the suite of work place standards.

The standards in the Clean Green strategy reflect existing best practice principles and, as a minimum, the relevant legal requirements. The existence of work place standards is not intended to replace or avoid the obligations specified by any legislation. Indeed, working to the standard presents an opportunity to ensure legislative requirements are met in practice, which is often not the case when working to industry Codes of Practice.

The Clean Green strategy is framed within an environmental management system (EMS) similar to that prescribed by the ISO 14000 series. An important part of any EMS is the ability for the system to encourage continuous improvement. This means that actions that are being implemented as part of the Clean Green strategy are also monitored to make sure that they are achieving the desired outcomes.

TRAINING AND INDUSTRY PARTICIPATION

The high degree of ownership by industry participants is evident from the enthusiastic voluntary participation in Clean Green initiatives. Building from overwhelming support in port visits, formal training sessions were scheduled and conducted in ports, aboard rock lobster fishing vessels and in processing facilities. In South Australia, more than 250 industry members (including vessel operators, licensed fishers, and deckhands) have participated in best practice training in two different training rounds, in 2004 and in 2005.

The training, conducted at local ports, involves hands-on experience aboard rock lobster vessels with qualified work place trainers experienced in commercial fisheries. It includes development of competencies in bycatch management, marine mammal interaction, first aid, oil spill management, waste management, and workplace safety as well as many other issues relevant to managing a safe, sustainable industry producing a product for premium export markets.

The outstanding participation rates of fishers in the Clean Green programme is in contrast to the generally unresponsive training culture characteristic of the commercial fishing sector in Australia. Overwhelmingly, fishers believed in the programme and were willing to fund their own training. This unrivalled voluntary participation in Clean Green Training can be attributed to:

- a shared vision for a sustainable industry;
- ownership of the Clean Green strategy by industry;
- clear, accessible, training resources supported by credible trainers;
- practical hands-on training (aboard fishing vessels, in processing facilities);
- positive brand image of the Clean Green logo extending awareness to the community and developing pride amongst industry participants;

- positive reinforcement from the 'bottom up' rather than a punitive top-down approach to environmental management.

This success provides valuable guidance for others considering similar initiatives in other sectors (including other commercial fishing sectors and other industries including aquaculture).

AUDIT AND CERTIFICATION

For the audit process to have credibility, bodies that are both independent and competent undertake evaluations for certification. A requirement is that audit against the Clean Green standard shall be carried out by bodies formally accredited to the Australian standard AS/NZS 3843 (general requirements for bodies operating product certification systems) and equivalent international standards. To comply with AS/NZS, certification bodies must be independent of the organizations and activities that they are evaluating, while evaluators must have technical competence, including appropriate qualifications, training and experience, for specific product categories. In addition, audits must be supervised by competent staff, following documented policies and procedures. Client confidentiality must be ensured.

The 134 vessels already audited have met and/or exceeded the standards, which demonstrates that industry is adhering to best practice standards. These operators will be certified as Clean Green. The resultant change in culture within the industry will need to be developed over time to allow operators to adapt their work practices. Following the audit process, evidence is gathered on an ongoing basis to ensure that industry members involved in the Clean Green strategy are meeting the standards. Ongoing monitoring is imperative.

Standards developed in the current project have been extended to Australian southern rock lobster more generally by also applying it to the Victorian and Tasmanian industries.

Conclusions

The template of supply chain protocols could be extended to other sectors of the Australian seafood industry by following the pathway successfully taken in the Clean Green strategy. That pathway would include:

- assessing current work practices in the seafood industry sector concerned;
- identifying gaps in existing best practice compared with current (or proposed) national and international regulations and legislation;
- drafting standards in plain accessible language descriptive of desired best practice and aligned to current requirements (regulations, market, legislation);
- working closely at all times with an appropriate internationally recognized accreditation agency (e.g. JAS-ANZ) and with industry participants;
- seeking and acting on feedback from end users;
- finalizing standards and audit protocols;
- developing training programmes reflecting standards and audit protocols aligned to modules of the National Seafood Industry Training Package;
- delivering training; and
- auditing participants.

Ongoing monitoring is also vital to ensure a process of continuous improvement.

REFERENCE

McShane, P. (2002). Supply chain management for commercial fisheries: southern rock lobster. *Professional Fisherman* 24 (10), 14–15.

The Global Food Safety Initiative

Alan Fagerland

Woolworths, Australia

ABSTRACT

In April 2000, a group of international retailer CEOs identified the need to enhance food safety, to ensure consumer protection, to strengthen consumer confidence, to set requirements for food safety schemes, and to improve cost efficiency throughout the food supply chain. As a result, the Global Food Safety Initiative (GFSI) was launched in May 2000. The initiative is facilitated by CIES (the Food Business Forum) and is supported by a Task Force that today has representatives of more than 40 retailers, which in turn account for over 70 percent of food retail sales worldwide.

INTRODUCTION

The Food Business Forum (CIES) is the only independent global food business network. It serves the CEOs and senior management of 175 retailer and 175 supplier member companies and their subsidiaries, in over 150 countries. CIES retailer members alone generate over US\$2,000 billion, employ 4.5 million people and operate close to 600,000 stores representing a total sales area of 160 million square metres. CIES has been growing with the food business for over 50 years. Its strength lies in the active commitment of its member companies and its privileged access to key industry players. CIES is based in Paris but has regional offices in Washington, Singapore and Tokyo. From these bases The Food Business Forum serves its members throughout the world.

In April 2000, a group of involved CEOs identified the need to enhance food safety, to ensure consumer protection, to strengthen consumer confidence, to set requirements for food safety schemes, and to improve cost efficiency throughout the food supply chain. In response to this need the Global Food Safety Initiative (GFSI) was born.

THE GLOBAL FOOD SAFETY INITIATIVE

The main objective of the Global Food Safety Initiative (GFSI) is to implement and maintain a scheme to recognise food safety management standards worldwide. In doing so, GFSI aims to also:

- facilitate mutual recognition between standard owners; and
- work towards world wide integrity and quality in the certification of standards and the accreditation of certifying bodies.

The overall vision is to achieve a simple set of rules for standards, harmony between countries, and cost efficiency for suppliers.

In their day-to-day business, retailers accept certificates based on standards in order to assess whether suppliers of private label products, fresh products and meat, have carried out production in a safe manner. There are many of these standards, and many suppliers with many customers. Suppliers may be audited many times per year, at a high cost and with little added benefit.

GFSI does not undertake any certification or accreditation activities. Instead, GFSI encourages the use of third-party audits against benchmarked standards. The goal is to reduce the number of audits so that resources can be redirected towards continually ensuring the quality of food produced and sold worldwide.

HOW THE GLOBAL FOOD SAFETY INITIATIVE WORKS

To support this objective, GFSI has developed a Guidance Document, now in its fourth edition. It lists key requirements against which food safety management standards can be benchmarked. The benchmark requirements in the Guidance Document are made up of three key elements:

- Food Safety Management Systems;
- Good Practices for Agriculture, Manufacturing or Distribution; and
- HACCP (Hazard Analysis and Critical Control Point).

In addition, requirements for the delivery of auditing and certification based on these standards have been added to the document.

Once a food safety standard has been benchmarked successfully, the standard is 'acknowledged'. The conforming benchmarked food safety management standards can be applied by food suppliers throughout the whole supply chain. This includes when making agreements with retailers and when defining contracts for the sourcing of products. The application of the benchmarked standards to particular products will be at the discretion of retailers and suppliers. This process will vary in different parts of the world, depending on:

- company policies;
- general regulatory requirements; and
- product liability and due diligence regulations.

At present (September 2005), there are four compliant benchmarked standards:

- BRC Technical Standard
- Dutch HACCP Code
- International Standard for Auditing Food Suppliers (International Food Standard)
- SQF 2000 Code.

Over the past year, these standards have been revised by their respective standard owners. GFSI will now re-benchmark these standards against the fourth edition of the GFSI Guidance Document, in order to verify their compliant status.

One standard has already been benchmarked against the fourth edition of the Guidance Document: the BRC Global Standard: Food (Version 4). Several other standards have been accepted for re-benchmarking. They are:

- International Food Standard (Version 4)
- Safe Quality Food 2000.

Yet another group of standards is under consideration for benchmarking. They are:

- The Dutch HACCP Code (Requirements for a HACCP-based food safety system) 3rd Version, September 2002 (Netherlands).
- China Retailers Standard
- New Zealand Fresh Produce Programme.

Benchmarking of farm assurance standards for agricultural produce has also started this year. One standard has been benchmarked so far and has been found compliant with the fourth edition of the GFSI Guidance Document: the SQF1000 Code.

GFSI is also engaged in two other important projects: the development of traceability guidelines, and the co-ordination of Good Retail Practices.

CFSI Governance

The GFSI Board is the main governing body. It is responsible for policy-making and overall decisions. The Board is made up of representatives from the following companies:

- Royal Ahold
- Carrefour
- Delhaize
- Metro
- Migros
- Tesco
- Wal-Mart

Outside the Board is the GFSI Task Force. It acts as a consultation body and contributes to the final CFSI decision-making process. The Task Force is a world wide retailers network of food safety experts, and includes participation by the following companies: Albert Heijn, Asda Stores, Auchan, BRC, Carrefour, Casino, Cold Storage, COOP Switzerland, COOP Italia, COOP Norden, CWS, Delhaize, Esselunga, FCD, FMI, Hannaford, HDE, J.Sainsbury, JMR, Kesko, Laurus, Loblaw, Marks & Spencer, Metro, Migros, Mondelo Continente, Norgesgruppen, Pick'N Pay, Provera, Rewe, Sobeys, Superquinn, Supersol, Superunie, Tegut, Tesco, The Great A&P Company, The Kroger Co, Waitrose, Wal-Mart, Wegmans, Woolworths South Africa, and Woolworths Australia.

CONCLUSIONS

Through the various projects of the CFSI, retailers are stepping up their actions to strengthen consumer confidence by providing safe, quality food in retail outlets.

More details on GFSI are available in the GFSI Yearbook, which can be downloaded from www.ciesnet.com.