NSW Food Authority

safer food, clearer choices

Risk Management Programs Evaluation Framework 2008-12

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Contents

About this document

This document outlines the NSW Food Authority's (the Authority) Evaluation Framework for Risk Management Programs. It includes a proposed schedule of evaluation work to be undertaken by the Authority over the next five years. The Evaluation Framework and the work schedule will be reviewed every May.

Any questions about this document, contact the NSW Food Authority Contact Centre on 1300 552 406.

Summary

This document outlines the NSW Food Authority's Evaluation Framework for Risk Management Programs (Evaluation Framework).

Increasingly, governments in Australia are expected to objectively evaluate outcomes and plan future policies and programs on an evidence-basis. To this end the NSW Food Authority (the Authority) has developed an Evaluation Framework to assess the effectiveness of food safety risk management requirements (including Regulation) in NSW and to provide information for their continuous improvement. This represents a new approach for the Authority.

The two broad purposes of evaluation are accountability and continuous improvement.

In the Authority's case, evaluation aims to assess the effectiveness of risk management programs, how food safety risk is jointly managed by industry and the Authority and the appropriateness of the regulatory framework.

Evaluation findings enable the Authority to fine-tune food safety requirements, develop programs to assist industry to improve performance and establish benchmark practices (against which to assess the impacts of any new requirements). In the future, Evaluation findings can be used to justify requirements as part of the ongoing regulatory repeal process and will be an input into the Authority's mandatory performance reporting to government.

The Evaluation Framework is summarised as a generic model that includes examples of the following:

- Generic outcomes hierarchy
- Planning using program logic mapping
- Project planning
- Possible data collection methodologies
- Standards for communication
- A requirement to develop a continuous improvement plan
- Reporting evaluation findings as a results table

The Evaluation Framework is overseen by a cross branch Evaluation Management Committee. Each project is managed by a project team that reports to an internal Evaluation Management Committee.

The Evaluation Framework includes a proposed schedule of work to be undertaken by the Authority over the next five years.

1. Objectives

Increasingly, governments in Australia are expected to objectively evaluate outcomes and plan future policies and programs on an evidence-basis. To this end, the NSW Food Authority (the Authority) has developed an Evaluation Framework to assess the effectiveness, impacts and appropriateness of food safety risk management requirements (including Regulation) in NSW. It also provides information for their continuous improvement. This represents a new approach for the Authority. It is a shift from relying solely on audit (monitoring) results of individual businesses as a measure of the effectiveness of risk management programs.

The two broad purposes of evaluation are accountability and continuous improvement.

In the Authority's case, evaluation work aims to assess the effectiveness of risk management programs, how food safety risk is jointly managed by industry and the Authority and the appropriateness of the regulatory framework.

Evaluation facilitates clear thinking about the purpose of policy and its usefulness at the beginning and the end of the policy cycle. Appropriateness, effectiveness and efficiency are the basis of any evaluation. The findings of each evaluation study can serve the following purposes:

- Providing information supporting the staged repeal of statutory rules process and the Better Regulation Office rolling review program (*Food Regulation 2004* is subject to staged repeal on 1 September 2009 and a Regulatory Impact Statement justifying the regulation will need to be prepared)
- Responding to industry wide food safety issues (foodborne illness outbreaks, industry audit performance issues)
- Enabling the Authority to assess the impact of legislative change eg the introduction of national standards and other state-based food safety requirements
- Providing a framework that fosters continuous improvement of risk management programs (eg Food Safety Scheme Regulation)
- Enabling the Authority to measure the impacts on industry performance if systems change

2. What is evaluation?

Evaluation is the systematic assessment of the performance of policies and programs which examine their efficiency (whether resources are used to maximise outputs), effectiveness (how well these outputs achieve the desired outcomes), and appropriateness (how well objectives relate to community needs or aims).

Evaluation methodologies provide information on a program's performance and to identify options for managing programs more efficiently and effectively in the future. It involves the assessment of a program, or part of it, to assist the Authority to:

- assess the continued relevance and priority of program objectives in the light of current circumstances, including government policy changes,
- test whether the program outcomes achieve stated objectives,
- ascertain whether there are better ways of achieving these objectives,
- assess the case for the establishment of new programs, or extensions to existing programs, and
- to decide whether the resources for the program should continue at current levels, be increased, reduced or discontinued (Commonwealth Department of Finance, as cited in Mackay, K. n.d.).

Evaluation versus audit – what is the difference?

NSW food safety legislation requires certain dairy, meat, seafood and plant products businesses to operate in accordance with HACCP based food safety programs (FSPs). These requirements are included in industry-specific Food Safety Schemes (FSS) which are introduced by regulation (*NSW Food Regulation 2004)*. Routine food safety audits of individual businesses assess compliance with regulatory requirements. Audits allow the Authority to monitor the performance of each business against itself over time.

Conversely, evaluation takes a whole of industry approach and tries to measure the risk management program (eg the Regulation) against its purpose. Evaluation answers the question; "*Did we achieve the outcome?"* (Pendlebury, 2007). For example, "*Are our Food Safety Scheme Regulations effective in managing food safety risk?"*

Why evaluate?

The purposes of evaluation can be collapsed into two broad reasons: accountability ("*Did we make a difference?*") and program continuous improvement ("*What do we need to do differently in the future to achieve a better result?*") (Masters, 2006).

Therefore the two main objectives of the Evaluation Framework are to:

- assess the effectiveness of risk management programs, and
- provide a framework to deliver the benefits of evaluation via continuous improvement.

3. Developing the Evaluation Framework

The Evaluation Framework development process included:

- reviewing internal and external evaluation studies,
- conducting two pilot studies,
- defining an outcomes hierarchy for the Authority's risk management programs (Figure 1), and
- summarising evaluation methodology into a generic model (Figure 2).

3.1 Review of evaluation studies

NSW

An audit of previous work undertaken by the Authority (formerly NSW Dairy Corporation, SafeFood NSW and the NSW Health Department) was conducted. Since 1999, the Authority has undertaken a number of industry sector studies. The purpose of each study varies and a number of different designs and methodologies have been employed.

Australia

A review of similar studies by Australian food regulatory agencies was also undertaken. The results are listed in Table 1. These studies also informed the design and methodologies of the two pilots and the overall Evaluation Framework.

A number of studies conducted by jurisdictions evaluated the effectiveness of meat regulation (South Australia and Victoria).

At a national level in 2004, FSANZ implemented a four year strategy to evaluate new key food regulatory measures. For example, the National Food Handling Survey was a benchmark survey conducted in 2001. The study was designed to benchmark knowledge of food businesses and food handling practices before the national Food Safety Standards were introduced.

Table 1. Evaluation work conducted by Australian food agencies

	Reference
1.	FSANZ Evaluation Strategy 2004 – 2008 Accessed at: http://www.foodstandards.gov.au/_srcfiles/Evaluation%20Strategy.pdf#search=%22evaluation%22. Accessed on: 02/04/08
2.	FSANZ National Food Handling Benchmark Survey (2004). Accessed at: http://www.foodstandards.gov.au/_srcfiles/Part%201%20Food%20Safety%20final%20ver30%20with%20ES.pdfAvailable at http: Accessed on: 02/04/08
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International

The United States Department of Agriculture Food Safety and Inspection Service (FSIS), Health Canada and the UK Food Standards Agency websites were examined for examples of evaluation work.

A number of reports are published on the FSIS website covering various Regulations and policies as well as pathogen reduction and HACCP. The evaluations used different data collection techniques including focus groups and self assessment surveys. For example, *An Evaluation of Listeriosis Food Safety Messages and Delivery Mechanisms for Pregnant Women (2001)* collected qualitative data from a number of focus groups. A summative reporting format is used which is an appropriate way to communicate information via a website.

In 2003, the Health Canada Food Safety Assessment Program undertook the development of a logic model and an evaluation framework of Canadian Food Inspection Agency's Modernized Poultry Inspection Program (MPIP) before initiating a full assessment. A MPIP logic model was developed, interviews were held with stakeholders and key evaluation questions for evaluating the effectiveness of the MPIP were determined. No further reports on the MPIP evaluation could be located.

The UK Food Standards Agency published a Regulatory Framework (2007) that schedules evaluation for the purposes of learning into all significant regulatory interventions. The Sudan 1 review is cited as an example of the robust processes adopted for the review of the largest of incidents.

This review of past evaluation work informed the Evaluation Framework development process and the design of the pilot studies.

In summary, the review of past studies dictates that future evaluation projects include:

- a priority based selection process,
- clear objectives and stated short, medium and long term outcomes,
- appropriate collection methodologies (statistically valid if possible),
- a continuous improvement framework,
- strategies for communicating findings and future actions, and
- clear and consistent format for presenting findings.

3.2 Pilot studies

NSW food safety legislation requires certain business sectors to operate in accordance with HACCP based food safety programs. To inform the development of the Evaluation Framework, the Authority conducted two pilot evaluations. The first was in an industry where HACCP requirements were relatively new (Plant Products Food Safety Scheme) and the other in a mature industry (red meat abattoirs - Meat Food Safety Scheme).

Evaluation of the Plant Products Food Safety Scheme – Initial benchmark study

In April 2005, the new NSW Plant Products Food Safety Scheme regulation required businesses that produce high-priority plant products to implement HACCP based food safety programs. Five product groups were identified as high priority in terms of food safety risk. They were:

- producers of seed sprouts,
- vegetables-in-oil,
- fresh cut fruit,
- vegetables, and
- un-pasteurised juices.

In this evaluation study, the Authority collected benchmark data on industry food safety practices before regulatory auditing of HACCP programs commenced. The Plant Products Food Safety Scheme was considered to be an ideal pilot evaluation study as previously these businesses had only received sporadic food safety inspections from local and State authorities.

The study consists of:

- an onsite evaluation of 35 plant products businesses for food safety practices,
- a review of the regulatory framework and associated materials, and
- collection and analysis of finished product samples for chemical and microbiological quality and safety.

An on-site assessment tool was developed for the purposes of the onsite component. Questions focussed on the existence of risk management measures as well as a judgement about their effectiveness. This concept was drawn from a similar assessment tool used in the Gold Standard audit of *Process Control in Poultry Processing; and for the control of L. monocytogenes in Smallgoods Manufacturers in South Australia*. (G. Raven, Manager Food Plant Standards, PIRSA, personal communication.) The FSANZ national *Food Handling Benchmark Survey (2001)* instrument also formed the basis of some of the pilot evaluation questions.

A final report was prepared (Bass & Miller, 2006) and evaluation findings were communicated to the Authority's auditors and industry participants via presentations, industry specific summaries and the Authority's industry newsletter *Foodwise*.

Two continuous improvement outcomes resulted from the pilot. The sprout producers section of the Plant Products Food Safety Manual was revised. The licensing framework was amended such that from October 2007, compliance with the Manual became a condition of licence.

Evaluation of NSW domestic red meat abattoirs

Following a decade of major regulatory change the NSW Food Authority recently evaluated food safety management by domestic red meat abattoirs in NSW.

Abattoirs and the Authority jointly manage food safety risk via the *NSW Consolidated Regulation (2004).* Since 1997, HACCP (as an Australian Standard requirement) has been mandatory in NSW domestic red meat abattoirs. Company based meat inspection was also introduced in 1997. A pilot study evaluating the effectiveness of this Scheme was conducted from March 2006 to January 2007. Final carcase samples were collected December 2007.

The objectives of the study were to:

- assess company based meat inspection and mandatory HACCP compliance,
- benchmark industry food safety practices,
- establish a NSW domestic red meat carcase hygiene baseline in order to assess the impact of future food safety management initiatives,
- review the regulatory framework and industry guidelines used to administer the NSW Meat Food Safety Scheme to drive any future food safety management strategies, and
- inform the development of the Authority's overarching Program Evaluation Framework.

The evaluation team visited and collected standard data from sixteen domestic red meat abattoirs in NSW from March to June 2006. An on-site assessment tool was developed based on elements of the South Australian audit tools: *Gold Standard Process Control in Poultry Processing and Gold Standard for the control of L.monocytogenes in Smallgoods manufacturers* (G. Raven, Manager Food Plant Standards, PIRSA, personal communication). The philosophy that underpins both the South Australian tools is the concept of evaluating the effectiveness of each Critical Control Point. The assessment tool also contained questions that directly relate to the Authority's generic outcomes hierarchy that was developed as part of the Evaluation Framework development (see Figure 1).

Microbiological carcase samples were also taken from each site during the visits; additional samples were collected from selected sites in December 2006, January 2007 and December 2007.

All participants received site specific feedback and evaluation findings were communicated to the Authority's auditors.

The evaluation established benchmarks for industry food safety practices and carcase hygiene. Areas requiring attention were identified and plans to improve industry performance included the development of industry assistance material in the form of the Meat Food Safety Manual.

This pilot study employed a number of additional practices which have also informed the development of the Evaluation Framework. They include:

- the establishment of an intra-branch project team that was active for the entire project,
- undertaking a field trial of the assessment tool before the data collection phase commences,
- statistically based sample size determination,
- a review step where the statistical validity of the study design and data analysis are checked by a statistician, and

- communication strategies that consists of:
    - ongoing communication with industry stakeholder groups,
    - feedback to industry participants and auditors eg microbiology data, industry ranked results, suggested areas for audit focus, and
    - information in the Authority's industry newsletter.

4. Program Evaluation Framework

4.1 Risk Management Programs - outcomes hierarchy

The cornerstone of the Program Evaluation Framework is the outcomes hierarchy (Figure 1.) which depicts the intended outcomes (immediate, intermediate and ultimate outcomes) of Risk Management Programs. It is an illustrative program logic model of the theory that underpins the policy framework in NSW. It serves to focus and refine evaluation objectives. This generic hierarchy is the starting point for planning of all future evaluation projects by the Authority.

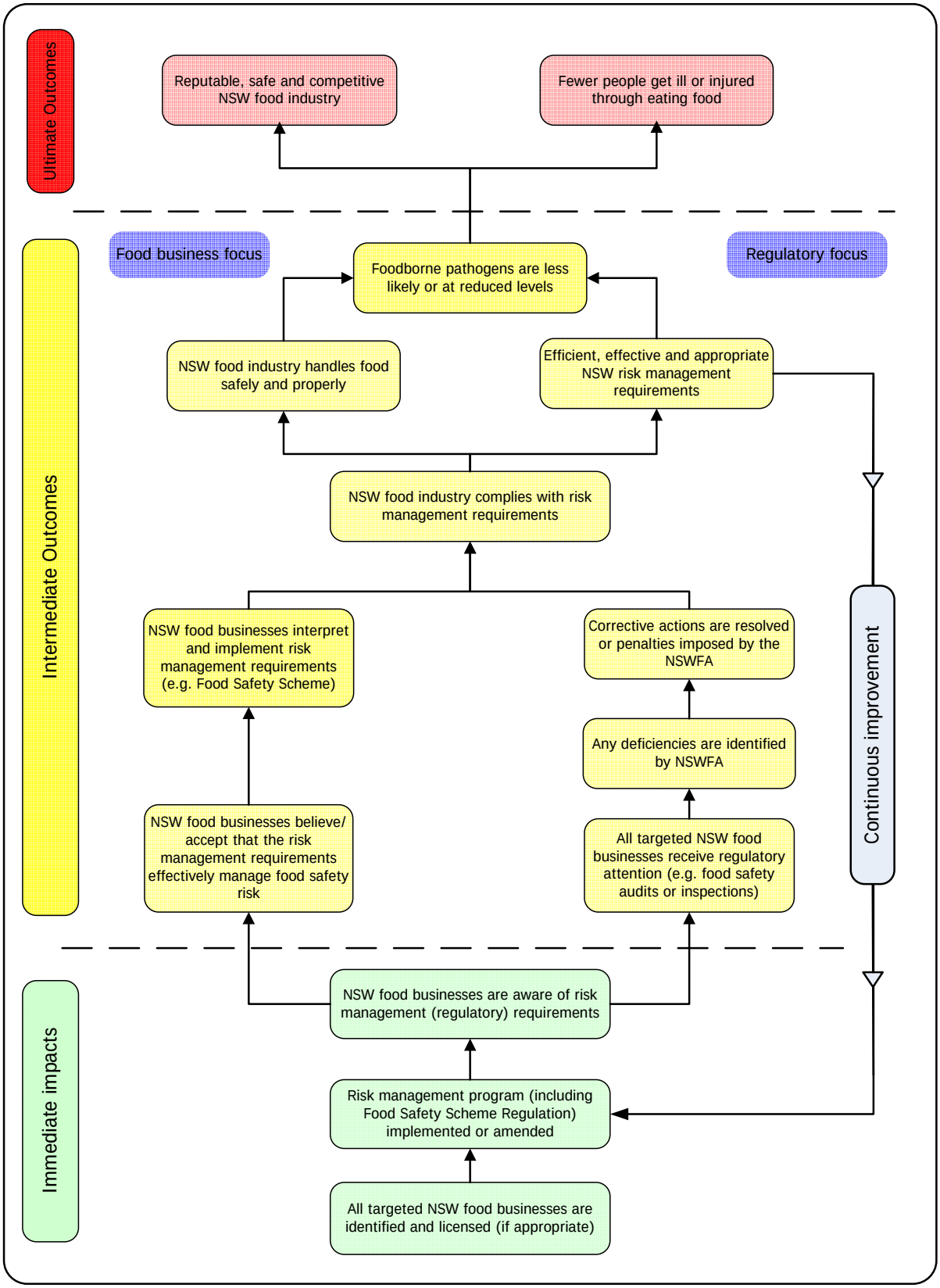
As noted in Figure 1, the highest order outcome corresponds to the mission goal of the Authority. As described in the Authority's mandatory performance reporting plan (the Results and Services Plan, 2007-08), the Authority plans to deliver to the community of NSW a "Reputable, safe and competitive NSW food industry" and "Fewer people get ill or injured through eating food". However, evaluation projects focus less on final outcomes and more on measuring intended outcomes lower in the hierarchy as lower-level outcomes are more attributable to Food Authority programs and are less subject to other factors.

In future, all evaluation work will consider the generic outcomes hierarchy when developing project plans and objectives. Where appropriate, industry specific hierarchies will be developed.

Accordingly, the Authority may choose to include the following information requirements in the data collection phases:

- Industry knowledge and awareness of regulatory requirements
- Industry belief in the effectiveness of Food Safety Programs or other risk management programs (including perceived audit consistency)
- Industry food safety practices
- Microbiological and chemical status of industry products
- Food Authority audit outcomes and reports
- NSW Legislation, Food Safety Manual, Policy Directives

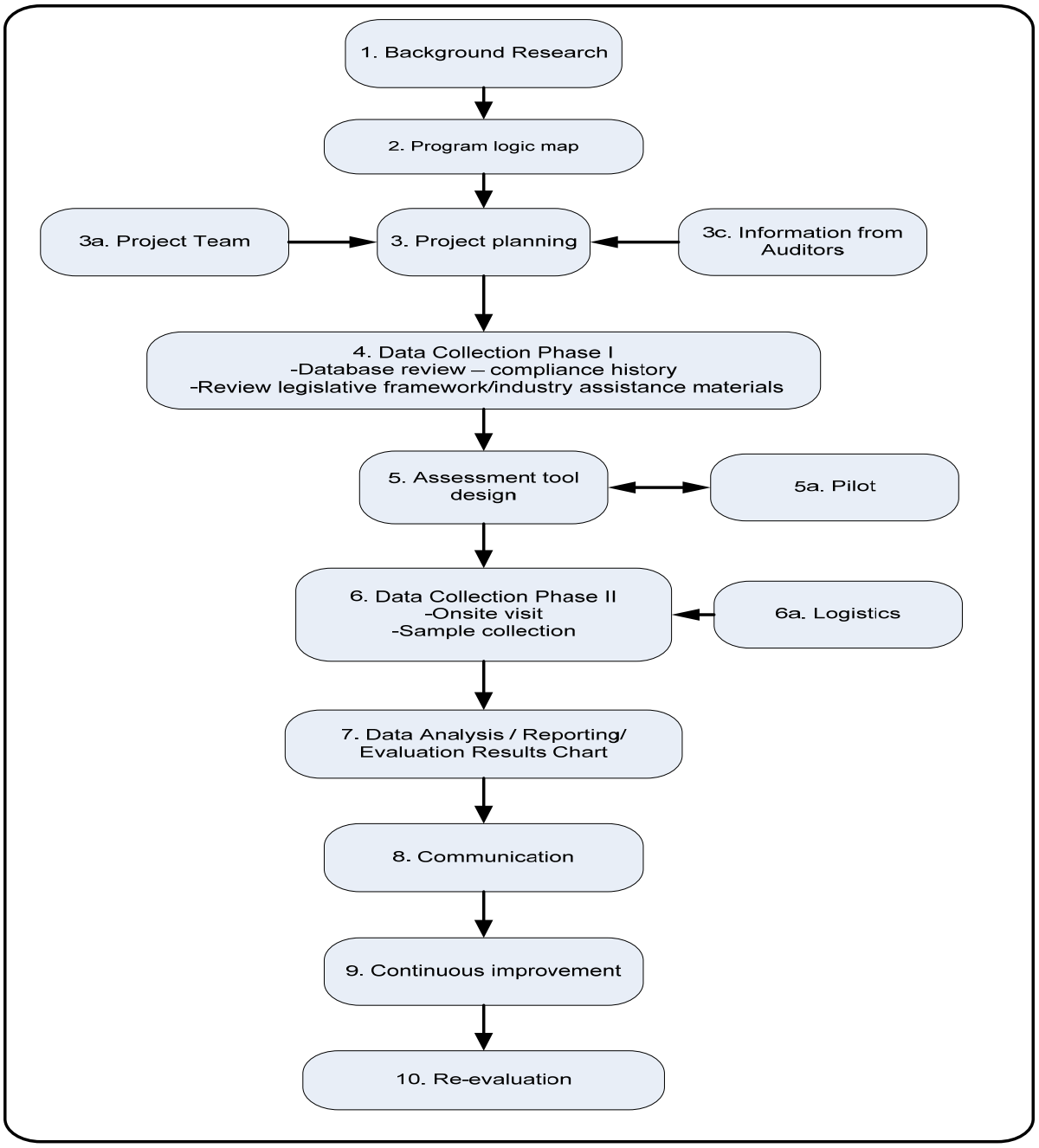
Figure 1. Risk Management Programs – outcomes hierarchy



4.2 Evaluation model

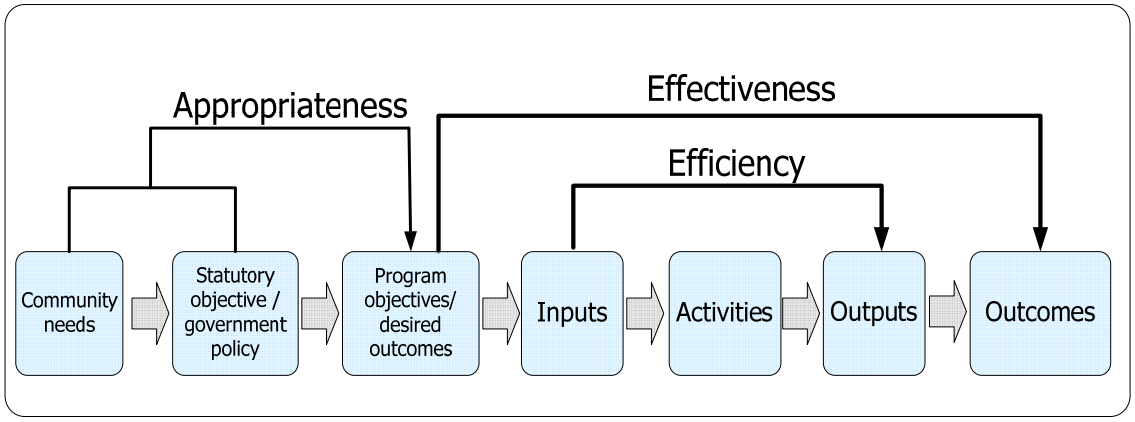
The generic evaluation model is outlined in Figure 2. It comprises ten steps to be taken when conducting an Evaluation study. The design of each study is dependent upon its stated objectives and resources. For example, the extent and type of data collected during the data collection phases can be varied, thus affecting timeframes and the amount of resources required. Evaluation methodologies can also be used to evaluate Food Authority programs or projects that are not based on Food Safety Scheme Regulations. For example, evaluation methodologies have already been used to determine the impact and appropriateness of an industry assistance document such as the Authority's Guideline for Seafood Retailers. Similarly, evaluation has applications in consumer education initiatives.

Figure 2. Evaluation steps



1. **Background research:** A review of published literature and other relevant information is undertaken. This includes advice from relevant external bodies.
2. **Program logic map:** A mapping exercise is conducted by the cross branch Project Team and Authority auditors (where appropriate). The mapping exercise is designed to facilitate clear thinking about the purpose of the policy underpinning the project/program. Evaluation objectives are then more easily derived. The mapping exercise is based on program logic methodology. A basic program logic flow diagram is outlined in Figure 3 (Commonwealth of Australia of Department of Finance, as cited in FSANZ Evaluation Strategy, 2004).

Figure 3. Program logic diagram



The mapping exercise addresses all elements of the program logic flow diagram. The results are presented in a report with the following headings:

1. What is the problem? *(Community needs/government policy/desired outcomes)*
2. What do we do? *(Inputs/activities)*;
3. Other interventions in the same policy space *(potential barriers/conditions)*;
4. What would success look like in 1 year? *(Immediate impacts)*;
5. What would success look like in the medium term *(Intermediate outcomes)*;
6. What would success look like in the long term *(Ultimate outcomes)*;
7. Data we could collect; and
8. Critical questions for the Evaluation (Page, 2007).

3. **Project planning:** The project plan is developed using information gleaned from the cross branch project team and Authority auditors. Project plans will include a time and cost calculations, and will take into account the outcomes of a risk analysis.
4. **Data collection phase I**: Business information in the Authority's food business database and a review of the legislative framework and other industry material occurs here. Depending on its purpose, the evaluation study may include elements of both data collection phases.
5. **Assessment tool design:** Information from the data collection phase I also informs the development of the assessment tool. The tool is field tested and modifications are made before data collection begins.

6. **Data collection phase II:** This step collects information directly from businesses and takes a multi-method approach. Depending on the study objectives, the following suite of data collection strategies may be utilised. These include:
    - the collection of both qualitative or quantitative data,
    - self survey or assessment using a web-based or paper based survey tools,
    - extracting past audit information from the Authority's database,
    - undertaking on-site visits,
    - obtaining qualitative data from interviews with businesses and/or Authority auditors, and
    - sample collection for microbiological and chemical analysis.

    Resources and laboratory capacity have an impact on the extent of information collected and the timing of this phase.
7. **Data analysis and reporting:** Outputs from the evaluation include a non-interpretative report and the findings are also entered into a results table.
8. The format of the results table is consistent with program logic evaluation methodologies where results are reported for each of the outcomes (immediate impacts, intermediate and ultimate outcomes) in the hierarchy.

    It contains columns for the following information:
    - What we expected to achieve *(desired or expected outcomes are recorded)*
    - What did we achieve *(this includes an interpretation of the actual outcomes, and is framed as an opinion)*
    - What was planned for (*planned activities are noted here but this could also include a comment on unforeseen and foreseen issues)*
    - What we managed to do *(activities, results and measured changes are recorded)*
    - Comparison and reference data
9. **Communication**: Findings and recommendations are communicated first internally to auditors and then to industry. A number of different strategies are available; reports, industry flyers, auditor and industry workshops. Where possible information will be published on the Authority website and in scientific journals.
10. **Continuous improvement:** The Food Authority has an ongoing role to continue to improve policy and programs. In order to deliver continuous improvement benefits an action plan is developed for each evaluation.

    Recommendations for continuous improvement are organised under the following headings:
    - Communication strategy *(describes how the findings will be communicated and to whom)*
    - Technical requirements *(lists any technical risk management requirements that should be clarified or developed)*
    - Information and research needs (*describes possible future work)*,
    - Future audit *(identifies focus areas for future audits*)
    - Revision of regulatory arrangements *(describes the changes, scope, materials etc)*

11. **Re-evaluation:** In order to assess the impact of any food safety management initiatives and to demonstrate continuous improvement, a follow up evaluation study should be conducted after an appropriate period of time. There is potential to refine the scope of follow up studies based on the original information collected. For example, it may be appropriate to collect finished product samples, review and analyse audit outcomes or collect qualitative information from interviews with staff or businesses.

5. Oversight arrangements and reporting

In order to manage the Program Evaluation Framework, oversight arrangements have been determined. An Evaluation Management Committee has been established and a dedicated team is formed for each project.

Program Evaluation is an input into the Authority's mandatory performance reporting to government. It is envisaged that outputs of the Evaluation Framework will ultimately feed into one or more of the result indicators.

6. Program Evaluation Schedule

The Evaluation Framework includes a work schedule for the next five years (2008 – 2012).

The following considerations influence the evaluation schedule:

- Information needed to support legislative development and repeal processes
- When the industry was last evaluated
- Whether new legislative requirements have been implemented
- If special needs exist
- The key outcomes needed

Table 5. Food Authority Evaluation Schedule 2008- 2012

Industry area	Purpose	When	Recommended scheduling
Childcare baseline evaluation study	To inform the legislative process for the introduction of Standard 3.2.1 into childcare centres.	October 2008	**1**
Repeal of Food Regulation 2004	Informs the development of the Regulatory Impact Statement required as part of the ongoing statutory repeal process.	Completed by 1 Sep 2009	**2**

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