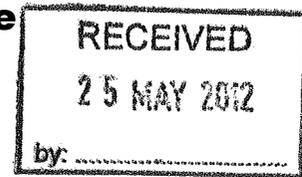


**SUBMISSION NO. 35**  
**Inquiry into the Role of Science**  
**for Fisheries and Aquaculture**



**Inquiry into the Role of Science for Fisheries and Aquaculture**

Submission by the National Aquaculture Council

18 May 2012

## **INTRODUCTION**

Aquaculture is a high technology, high-risk industry. Competition is worldwide and developing countries, such as, China is proving to be a fierce competitor. Firms that enter aquaculture must be prepared to make significant investments not only in physical infrastructure, but also in innovation and technology transfer.

Government policy, the role of science and risk management used in regulatory decision making processes significantly affect the environment in which aquaculture investments are made. It is on this basis, the National Aquaculture Council (NAC) welcomes the Review as industry considers that there is considerable opportunity to improve.

### Key Contextual facts

- Seafood is the most important animal protein in the human diet, comprising about 30% of all animal protein intake.
- Seafood is the most traded global animal protein.
- The gap between global seafood demand and supply represents a challenge for the entire world.
- Australia is a significant net importer of seafood.
- By 2025 Australian's seafood consumption will increase by 50%.
- In absolute terms seafood supply shortfall will be 610,000 by 2050. This demand can only be met by aquaculture.
- Australia's high relative cost base means the aquaculture industry has high technology and innovation needs to ensure that it can remain globally competitive.

NAC's submission is divided into two sections:

1. General Comments; and
2. Specific comments

### **The Committee's Terms of Reference**

The Committee will inquire into and report upon the role of science for the future of fisheries and aquaculture, and in particular:

a) the relationship between scientific knowledge of fish species, ecosystems, biodiversity and fish stock sustainability;

b) fishery management and biosecurity, including but not limited to:

- the calculation and monitoring of stock size, sustainable yield and bycatch, as well as related data collection
- the effects of climate change, especially relating to species dispersion, stock levels and impacts on fishing communities
- pest and disease management and mitigation
- minimising risks to the natural environment and human health
- cooperation among Australian governments on the above

c) research, development and applied science of aquaculture, including:

- transitioning from wild fisheries to aquaculture in individual species

- improving sustainability and lifecycle management practices and outcomes
  - pest and disease management and mitigation
- d) governance arrangements relating to fisheries and aquaculture, including the implications for sustainability and industry development;
- e) current initiatives and responses to the above matters by state, territory and Australian governments;
- f) any other related matter.

## **General Comments**

### **Whole of government approach - National Aquaculture Policy**

The uneven rate of expansion of the aquaculture industry is symptomatic of the absence of a whole of government approach to enable aquaculture development. This can easily be remedied by promulgating a National Policy Statement on the importance and its commitment to aquaculture's ongoing development, especially given its importance to address Australia's trade imbalance of this critical protein source.

### **Specific Comments**

Under each term of reference heading, NAC will provide comment.

#### **1. The relationship between scientific knowledge of fish species, ecosystems, biodiversity and fish stock sustainability;**

NAC has no comment on this term of reference, as this relates to a fisheries management.

#### **2. Fishery management and biosecurity, including but not limited to:**

##### ***(a) the calculation and monitoring of stock size, sustainable yield and bycatch, as well as related data collection***

NAC has no comment on this term of reference, as this relates to a fisheries management.

##### ***(b) the effects of climate change, especially relating to species dispersion, stock levels and impacts on fishing communities.***

NAC submits that this is not well understood. Given the critical role of aquatic ecosystems in maintaining our climate, it is important to understand the role of Australian oceans, lakes, wetlands, estuaries, and aquaculture production systems to create carbon sequestration opportunities.

In additional, need to understand what effective adaption strategies will be required in relation to aquaculture production.

##### ***(c) pest and disease management and mitigation***

NAC has no comment on this term of reference, as this relates to a fisheries management..

***(d) minimising risks to the natural environment and human health***

NAC submits that the science demonstrates that the risks to the environment from aquaculture are well managed. The key is to ensure that these facts are communicated to the community and environmental regulators in a clear, concise and transparent fashion.

On the above basis, the areas of future development include, but are not limited to, the following:

- standardize environmental impact statement reporting;
- establish national aquaculture environmental monitoring and management standards;
- develop cost effective and real time environmental monitoring and reporting systems;
- understand the structure of the ecosystems.
- develop ecological carrying capacity models that will enable the carrying capacity to be undertaken on a regional, multi-user, coastal scale; and
- develop validation tools for the carrying capacity models.

The risks to human health are well managed under FASANZ, under the Primary Production and processing standard.

***(e) cooperation among Australian governments on the above***

NAC submits that the governance of both food and aquaculture would benefit from a greater recognition and higher standing in the Primary Industries Standing Committee process. The aquaculture committee would benefit from equal status to Marine & Coastal Committee. This improved status would enable political agreement and synergies regarding some of the issues mentioned in this submission.

**3. Research, development and applied science of aquaculture, including:**

***(a) transitioning from wild fisheries to aquaculture in individual species***

NAC submits that Australia has a good track record in this space, which has resulted from the Research Development Corporations that are established under the *Primary Industries and Energy, Research and Development Act 1989*. For example, investment into prawns, tuna and abalone have resulted in competitive industry sectors. However, further incentives need to be provided to encourage:

- (1) Knowledge transfer, national breeding programs and feed development trails that will underpin the required productivity gains to remain globally competitive; and
- (2) Integration of fisheries management and aquaculture in stock enhancement and artificial reef production platforms.

Presently, due to declining earnings fisheries research investment is rapidly declining in real terms, there is a significant risk that critical activities will not be undertaken due to competing priorities within a shrinking funding pool.

***(b) improving sustainability and lifecycle management practices and outcomes***

NAC submits that research in lifecycle management is required.

***(c) pest and disease management and mitigation***

NAC submits that Australia's aquaculture can demonstrate freedom from many diseases and pests that occur overseas, which provides Australia with a comparative advantage in global trade. However, new and emerging diseases continue to threaten our conditions of trade, especially going forward as our international trading partners increase phyto-sanitary certification requirements.

In addition, the regulation of translocation is restricting trade between the States and territories of gametes, eggs, broodstock and juvenile stock, in particular, in species that operate trans-nationally. This regulatory risk will significantly restrict productivity gains that can be achieved through national breeding programs and regional specialisation of specific elements of the production system. Ultimately, if this matter is not resolved, these sectors will become unviable.

On the above basis, the areas of future development include, but are not limited to, the following:

- Establish a national standard for translocation risk assessments and the governance of the decision making;
- Diagnostic validation testing;
- Development of rapid diagnostic test and the extension to labs across Australia;
- Development of cell lines;
- Development of detection method for sub-clinical infections;
- Development of measure tools for the health/immune-competency of herd; and
- Development and extension of:
  - biosecurity planning standards;
  - emergency diseases response preparedness;
  - passive, intensive and maintenance surveillance to demonstrate regional, zone and compartment freedom of notifiable diseases.

**Governance arrangements relating to fisheries and aquaculture, including the implications for sustainability and industry development;**

NAC submits that time, cost and complexity is the enemy of investment.

The decision-making and regulatory conditions applied to manage environmental risks of aquaculture across Australia are heterogeneous in nature, in terms of:

- Certainty in the decision making process;
- Application of risk assessments; and
- Application of risk management tools, namely the application of licence conditions.

This is symptomatic of the absence of contemporary understanding of the environmental risks that aquaculture poses, by environmental regulatory authorities.

The environmental risks of aquaculture are well understood, however, there should be investment in extending this information into the environmental regulatory authorities eg. State Environmental Protection Authorities (EPA's). Furthermore, this science needs to be used to establish national aquaculture environmental monitoring, reporting and management standards to ensure equivalence between states.

**Current initiatives and responses to the above matters by state, territory and Australian governments;**

NAC submits that there is a need for a separate national aquaculture/seafood development policy and strategy, as this sector will be lost within the National Food Strategy.

**Any other related matter.**

Australian seafood in general needs significant investment in terms of market development research. On this basis, the *Primary Industries and Energy, Research and Development Act 1989*, will need to be amended to provide explicit scope to undertake this type of research. Please note - that the each sector will need to agree to any additional levies.