



EAFM and the Fisheries Act 1996

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Summary

This report identifies commonly-accepted principles of an Ecosystem Approach to Fisheries Management (EAFM) in international literature, and assesses the extent to which the Fisheries Act 1996 requires or enables New Zealand’s fisheries management regime to reflect these principles.

The principles are identified primarily from international agreements which New Zealand has signed up to, including UNCLOS, fisheries agreements (such as the UN Fishstocks Agreement), the Convention on Biological Diversity (CBD), and non-binding guidelines such as the FAO Code of Conduct for Responsible Fisheries and FAO Guidelines on EAF. From these and other sources, 17 commonly-accepted principles of EAFM were distilled (see **Table 1**).

Table 1: EAFM principles and relevant Fisheries Act provisions

Principles	Key Fisheries Act provisions
1. Ensuring the sustainability of fish stocks	s11 sustainability measures; s13 total allowable catch (TAC); s14 and s14A alternative TACs
2. Rebuilding depleted stocks	s11 sustainability measures; s13 TAC
3. Ecosystem integrity: safeguarding biodiversity and ecosystem structure and functioning	s8 purpose; s9 environmental principles; s11 sustainability measures
4. Taking account of species interactions	s9 environmental principles; s13 TAC; s15 fishing-related mortality of marine mammals and other wildlife
5. Minimising impacts on non-target species	s9 environmental principles; s11 sustainability measures; s15 fishing-related mortality of marine mammals and other wildlife; s72 dumping of fish prohibited
6. Protecting fisheries habitats	s9 environmental principles; s11 sustainability measures
7. Managing at appropriate spatial scale	s19 [QMS introduction]; s11 sustainability measures; s11A fisheries plans; Part 9 taiāpure-local fisheries and customary fishing
8. Considering trans-boundary effects	s5 application of international obligations; s17A highly migratory species taken outside NZ fisheries waters; Part 6A high seas fishing; Schedule 1A [fish stocks agreement]

9. Managing at appropriate temporal scale	s8 purpose; s9 environmental principles; s13 TAC; s11 sustainability measures; s11A fisheries plans
10. Adopting a precautionary approach	s5 application of international obligations; s8 purpose; s9 environmental principles; s10 information principles; s13 TAC
11. Using science and diverse forms of knowledge	s12 consultation; Part 10 record keeping and reporting; Part 12 observer programme
12. Broadening stakeholder participation	s12 consultation; various specific consultation provisions; s11A fisheries plans; various provisions enabling active stakeholder involvement; s5 application of Treaty of Waitangi (Fisheries Claims) Settlement Act 1992
13. Recognising and providing for indigenous rights	s5 application of Treaty of Waitangi (Fisheries Claims) Settlement Act 1992; s12 consultation; s44 [settlement allocation]; Part 9 taiāpure-local fisheries and customary fishing
14. Balancing utilisation and sustainability	s8 purpose
15. Taking account of social and economic factors	s8 purpose; s13 TAC; s14A alternative TAC; Part 9 taiāpure-local fisheries and customary fishing; s123 dispute resolution; Part 14 cost recovery
16. Taking account of environmental influences on fisheries	s11 sustainability measures; s13 TAC; s16 emergency measures
17. Encouraging integrated management	s6 application of RMA; s11 sustainability measures; s15 fishing-related mortality of marine mammals and other wildlife

A key finding of the analysis is that principles from EAFM literature and principles from more ‘traditional’ fisheries management sources (e.g., UNCLOS, FAO Code of Conduct) show a very high degree of alignment, illustrating that EAFM principles are not distinct from principles that have guided sound fisheries management for many years.

In light of this finding, it is not surprising that New Zealand’s fisheries legislation requires and enables EAFM. The analysis shows that while the Fisheries Act is not always couched in the language of EAFM, it reflects the concepts of EAFM and is consistent with all the identified principles of EAFM. No legislative gaps were identified. It is therefore not necessary to amend the Act in order to facilitate any proposed movement towards EAFM in New Zealand.

It is important to note, however, that the existence of legislative provisions that require or enable EAFM does not, in itself, indicate the extent to which our fisheries management processes, policies and decisions reflect EAFM in practice – either generically or on a fishery by fishery basis. This would be a useful avenue for further analysis.

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Introduction

Context and purpose

The CFF is considering whether and how the industry can most effectively engage in discussions on incorporating an Ecosystem Approach to Fisheries Management (EAFM) into New Zealand's fisheries management regime. An important preliminary step is to assess the extent to which the Fisheries Act 1996 (**the Act**) meets international obligations, norms and standards for best practice fisheries management including EAFM. To that end, this report:

1. Identifies the key elements of EAFM in international literature; and
2. Assesses the extent to which the Fisheries Act 1996 enables or provides for these elements.

The report does not address the extent to which EAFM is being implemented in practice under the Fisheries Act.

Analytical approach

There is no internationally-agreed or commonly adopted definition of EAFM, nor any agreed key elements or principles relating to EAFM. Different sources rely on various sets of principles and/or use different terminology to mean the same thing. Given the lack of consistent terminology, the approach adopted in this analysis is to:

- Build a set of principles of EAFM for the purpose of the analysis, by:
 - Identifying reasonably well-accepted principles from international binding and non-binding agreements to which New Zealand is a party;
 - Group similar principles together under general themes;
 - Augment these themes with other versions of similar principles summarised in a comprehensive literature review of EAFM principles;
- Identify provisions in the Fisheries Act that relate to the principles; and
- Analyse the Fisheries Act in relation to the principles under each of the themes.

The FAO's brief description of EAFM (**appended** to this report) is the most straightforward and pragmatic expression of the EAFM concept in international fora. The FAO describes EAFM as a practical way to implement sustainable development principles:

*Ecosystem Approach to Fisheries (EAF), and other related concepts (e.g. Ecosystem Based Management, EBM), have developed in response to the need to implement, in a practical manner, the principles of sustainable development (WCED, 1987), the Convention on Biological Diversity (CBD, 1992) and the Code of Conduct for Responsible Fisheries (FAO, 1995). **EAF is consistent with all these principles** and has been adopted by the FAO Committee on Fisheries*

*(COFI) as the appropriate approach to implement these principles for the management of fisheries.*¹

The FAO’s description of EAF, and its focus on “principles”, provides guidance for the analysis in this report. The analysis is based on identifying principles of EAFM in preference to the full range of “key elements” cited in literature because EAF is a management approach rather than a prescriptive code. Principles are (or should be) generic across all types of fisheries management regimes whereas other key elements (such as particular management tools – e.g., the adoption of rights-based management, ecosystem modelling, or MPAs) may or may not be the tools of choice for giving effect to ecosystem considerations in a particular jurisdiction.

The primary sources in **Table 2** were used to identify principles relevant to EAFM (abbreviations used in the analysis below are highlighted in bold).²

Table 2: Primary Sources for identifying EAFM Principles

Source of principles	Reason this source is used
UNCLOS – United Nations Law of the Sea (1982)	UNCLOS is a binding international agreement. Any implementation of EAF must be compatible with New Zealand’s obligations under UNCLOS ³
CBD – Convention on Biological Diversity, Principles for an Ecosystem Approach (2006)	The CBD is a binding international convention. The principles, which apply to both marine and terrestrial systems, were recognised by parties to the Convention in 2006 ⁴
FSA – the United Nations Fish Stocks Agreement (1995)	The FSA is a binding international agreement that implements UNCLOS in relation to the conservation and management of straddling fish stocks and highly migratory fish stocks ⁵
CCAMLR – Convention on the Conservation of Antarctic Marine Living Resources (1980)	CCAMLR is an international convention for conserving Antarctic living resources. CCAMLR <i>practises an ecosystem-based management approach [that]... does not exclude harvesting as long as such harvesting is carried out in a sustainable manner and takes account of the effects of fishing on other components of the ecosystem.</i> ⁶

¹ EAF-Net. What is EAF. FI Institutional Websites.[online]. Rome. Updated 27 May 2011. [Cited 15 April 2019]. <http://www.fao.org/fishery/>

² Note that the 1987 WCED principles for sustainable development (referred to in the FAO description of EAF above) are not used in this report because their broad and general formulation is not particularly useful for the purposes of this more focused analysis.

³ United Nations Convention on the Law of the Sea [here](#). Note that article 22 of the CBD makes it clear that the CBD cannot be used to compel an interpretation of UNCLOS that would otherwise not be permissible.

⁴ CBD website: principles [here](#)

⁵ The FSA is included in the Fisheries Act 1996 as Schedule 1A [here](#)

⁶ CCAMLR website [here](#) and Convention text [here](#)

FAO Code of Conduct – the UN Food and Agriculture Organisation’s Code of Conduct for Responsible Fisheries (1995)	This non-binding code is recognised by FAO members, including New Zealand, as the most complete operational reference for fisheries management. ⁷ The FAO considers that the code, which does not mention EAF, nevertheless <i>does deal with practically all of its aspects</i> , as it <i>contains a significant number of ecosystem-related provisions ...which, when considered together, provide a good basis for EAF</i> . ⁸
FAO Guidelines on EAF (2003)	The UN FAO’s non-binding technical guidelines on EAF provide an extensive commentary on EAF. ⁹

In support of the primary sources above (and in order to incorporate less common and more recently-developed principles), reference is made to **Long et al (2015)**, *Key principles of marine ecosystem-based management*, which identifies 26 principles based on an extensive literature review. Long et al refer to the top 15 principles (by frequency of occurrence in reviewed literature) as ‘key principles’, and the remaining principles as ‘other principles’.¹⁰

The analysis is comprehensive with respect to the principles – i.e., the complete set of principles from each source is adopted in the analysis (so far as these can be identified, and avoiding unnecessary repetition). In particular, the full sets of principles from the CBD’s Principles for an Ecosystem Approach, the FAO Guidelines on EAF, and Long et al are incorporated in the analysis.

Summary of themes and principles

The management principles proposed in the sources listed above can be distilled into 17 principles for the purposes of this analysis. The 17 principles align with seven themes, as summarised in **Table 3**.

Table 3: EAFM themes and principles

Theme	Principles
1. Managing fish stocks (i.e., good single stock management)	<ul style="list-style-type: none"> • Ensuring the sustainability of fish stocks • Rebuilding depleted stocks
2. Minimising environmental impacts from fisheries	<ul style="list-style-type: none"> • Ecosystem integrity: safeguarding biodiversity and ecosystem structure and functioning • Taking account of species interactions • Minimising impacts on non-target species

⁷ FAO Code of Conduct for Responsible Fisheries. Rome FAO 1995.

⁸ Garcia et al (ref below).

⁹ Garcia, S.M., Zerbi, A., Aliaume, C., Do Chi, T., Lasserre, G. The Ecosystem approach to fisheries. Issues, terminology, principles, institutional foundations, implementation and outlook. FAO Fisheries Technical Paper. No 433. Rome FAO 2003.

¹⁰ Long, R., A Charles, R Stephenson (2015). Key principles of marine ecosystem-based management. Marine Policy 57 (2015) 33-60.

	<ul style="list-style-type: none"> • Protecting fisheries habitats
3. Spatial and temporal scale	<ul style="list-style-type: none"> • Managing at appropriate spatial scale • Considering trans-boundary effects • Managing at appropriate temporal scale
4. Information	<ul style="list-style-type: none"> • Adopting a precautionary approach • Using science and diverse forms of knowledge
5. Inclusive participation	<ul style="list-style-type: none"> • Broadening stakeholder participation • Recognising and providing for indigenous rights
6. Recognising that humans are part of the ecosystem	<ul style="list-style-type: none"> • Balancing utilisation and sustainability • Taking account of social and economic factors
7. Other influences on fisheries resources	<ul style="list-style-type: none"> • Taking account of environmental influences on fisheries • Encouraging integrated management

Analysis of Fisheries Act provisions

Theme 1: Principles for managing fish stocks (i.e., good single stock management)

1.1 Ensuring sustainability of fish stocks

Summary Exploited populations must not be allowed to fall below a specified limit, usually B_{MSY} -related, and fisheries must be conducted in a manner that does not lead to over-fishing.

Examples of principles

- **UNCLOS** Article 61.2 – ensure that the maintenance of the living resources in the EEZ is not endangered by over-exploitation
- **UNCLOS** Article 61.3 – maintain populations of harvested species at levels which can produce the maximum sustainable yield (MSY) as qualified by relevant environmental and economic factors
- **FSA** Article 5h – prevent or eliminate overfishing and excess fishing capacity, and ensure that levels of fishing effort do not exceed those commensurate with the sustainable use of fishery resources
- **CCAMLR** Article 2 – prevent decrease in the size of any harvested population to levels below those which ensure its stable recruitment (i.e., the level which ensures the greatest net annual increment)
- **FAO Code of Conduct** Article 6.3 – prevent overfishing and excess fishing capacity and implement measures to ensure that fishing effort is commensurate with the productive capacity of the fishery resources and their sustainable utilisation

- **FAO Guidelines** Principle 3 – maximum acceptable fishing level; Principle 4 – maximum biological productivity
- **Long et al** – sustainability (key principle)

Fisheries Act

For the majority of QMS stocks, the Minister must set a TAC that *maintains the stock at or above a level that can produce the maximum sustainable yield, having regard to the interdependence of stocks* (s13(2)(a)).

Alternative ways of setting a TAC are provided for stocks where the Minister is satisfied that it would better achieve the purpose of the Act and any of the following circumstances apply:

- it is not possible, because of the biological characteristics of the species, to estimate maximum sustainable yield; or a national allocation for New Zealand has been determined as part of an international agreement; or the stock is managed on a rotational or enhanced basis; or the stock comprises one or more highly migratory species (s14); or
- the stock is taken primarily as an incidental catch during the taking of other stocks and is only a small proportion of the combined catch of the stock and other stocks, and where the owners of at least 95% of quota shares propose that an alternative TAC be set. In this case, the stock must be maintained above a level that ensures its long-term viability and various other considerations apply – e.g., adverse effects on the aquatic environment of which the stock is a component must be avoided (s14A).

For non-QMS stocks, the Minister may set a catch limit in order to ensure sustainability of the stock (s11(4)) and in doing so must have regard to the matters in section 13(2) (s11(5)). If the current management of a non-QMS stock is not ensuring sustainability, the stock must be made subject to the QMS unless another type of sustainability measure (i.e., not a catch limit) would better achieve the purpose of the Act (s17B).

Analysis

Statutory fish stock sustainability limits are consistent with international requirements to avoid overfishing and maintain the productive capacity of fish stocks.

The Act's regulation-making powers, reporting requirements, catch balancing regime, observer programme, and enforcement provisions provide the machinery to enable catch limits to be implemented in a meaningful manner.

1.2 Rebuilding depleted stocks

Summary	Stocks that have been driven to excessively low levels should be rebuilt.
Examples of principles	<ul style="list-style-type: none">• UNCLOS Articles 61.2 and 61.3 (see above)• FAO Code of Conduct Article 6.3 – rehabilitate populations as far as possible and when appropriate• FAO Guidelines Principle 7 – rebuilding of resources
Fisheries Act	For QMS stocks, the Minister must set a TAC that enables the level of any stock whose current level is below that which can produce MSY to be altered in a way and a rate that will result in the stock being restored to or above a level that can produce MSY <i>within a period appropriate to the stock, having regard to the biological characteristics of the stock and any environmental conditions affecting the stock</i> (s13(2)(b)). The same matters must be considered by the Minister when adjusting a catch limit for a non-QMS stock (s11(5)).
Analysis	The Act’s requirement to rebuild depleted stocks to a level that is at or above a level that can produce MSY is consistent with international requirements.

Theme 2: Principles for minimising environmental impacts from fisheries

2.1 Ecosystem integrity: safeguarding biodiversity and ecosystem structure & functioning

Summary	The FAO Guidelines state that <i>while there is no agreed definition, ecosystem integrity is usually taken as implying or requiring (i) maintenance of biodiversity at biological, community, habitat, species and genetic levels, and (ii) maintenance of the ecological processes that support both biodiversity and resource productivity.</i>
Examples of principles	<ul style="list-style-type: none">• CBD Principle 5 – conserve ecosystem structure and functioning, in order to maintain ecosystem services• CBD Principle 6 – ecosystems must be managed within the limits of their functioning• FAO Code of Conduct Article 6.1 – conserve aquatic ecosystems• FAO Code of Conduct Article 6.6 and 7.2.2 – maintain biodiversity and conserve population structure and aquatic habitats and ecosystems• FAO Guidelines Principle 2 – resource scarcity (i.e., regulate extractive capacity of the fishery to maintain critical ecosystem process and structures); Principle 6 – impact minimisation; Principle 8 – ecosystem integrity• FSA Article 5g – protect biodiversity in the marine environment• Long et al – consider ecosystem connections (key principle); ecological integrity and biodiversity (key principle); acknowledge ecosystem resilience (other principle)

Fisheries Act

The purpose of the Act is to provide for the utilisation of fisheries resources while ensuring sustainability. The definition of ensuring sustainability includes *avoiding, remedying or mitigating any adverse effects of fishing on the aquatic environment* (s8). The aquatic environment is broadly defined as *the natural and biological resources comprising any **aquatic ecosystem**, including all aquatic life and the oceans, seas, coastal areas, inter-tidal areas, estuaries, rivers, lakes, and other places where aquatic life exists*. Aquatic ecosystem means *any system of interacting aquatic life within its natural and physical environment* (s2).

Section 9 requires decision makers to take into account the following environmental principles:

- *Associated or dependent species should be maintained above a level that ensures their long-term viability;*
- *Biological diversity of the aquatic environment should be maintained; and*
- *Habitat of particular significance for fisheries management should be protected.*

Biological diversity is defined as *the variability among living organisms, including diversity within species, between species, and of ecosystems* (s2).

The environmental principles are operationalised by decisions made under section 11 which enables the Minister to set or vary any sustainability measure (i.e., a measure for the purpose of ensuring sustainability) for a stock or an area. Before doing so, the Minister must take into account factors including any effects of fishing on the stock and the aquatic environment, and the natural variability of the stock concerned (s11(1)). The Minister is able to implement a non-limiting list of measures, including catch limits; controls on size, sex or biological state of fish that may be taken; area controls; fishing method controls; and fishing seasons (s11(3)).

Analysis

The Act's principle relating to maintenance of biodiversity, and the definition of biodiversity, are consistent with internationally-accepted principles.

Although not necessarily couched in the language of EAFM, the purpose and principles of the Act reflect the need to safeguard ecosystem structure and functioning – particularly given the need to avoid, remedy or mitigate adverse effects of fishing on the “aquatic environment”, which includes *any aquatic ecosystem*.

Section 11 (sustainability measures) contains provisions to enable these principles to be given practical effect in decision making. See principles 2.2 to 2.4 below for further detail on:

- Taking account of species interactions
- Minimising impacts on non-target species; and
- Protecting fisheries habitat.

2.2 Taking account of species interactions

Summary	The interdependence of stocks and interactions between harvested and non-harvested species should be considered.
Examples of principles	<ul style="list-style-type: none">• UNCLOS Article 61.3 – take account of the interdependence of stocks• FSA Article 5e – assess the impacts of fishing, other human activities and environmental factors on target stocks and species belonging to the same ecosystem or associated with or dependent upon the target stocks• CCAMLR Article 2 – maintain the ecological relationships between harvested, dependent and related populations• FAO Guidelines Principle 9 – species interdependence
Fisheries Act	<p>The Minister must set a TAC <i>having regard to the interdependence of stocks</i> (s13(1)(2) and equivalent provisions).</p> <p>The environmental principles (s9) and provisions related to protected species (s15) require that consideration must be given to interactions between harvested and non-harvested species.</p>
Analysis	The Act is consistent with international requirements to consider the interdependence of stocks, and other provisions require that consideration must be given to interactions between harvested and non-harvested species (see principle 2.3 below).

2.3 Minimising impacts on non-target species

Summary	Impacts of fishing on non-target species (including fish and non-fish species, and in particular endangered species) should be minimised.
Examples of principles	<ul style="list-style-type: none">• UNCLOS Article 61.4 – consider the effects on species associated with or dependent upon harvested species with a view to maintaining or restoring populations of such associated or dependent species above levels at which their reproduction may become seriously threatened• FSA Article 5e – assess the impacts of fishing, other human activities and environmental factors on target stocks and species belonging to the same ecosystem or associated with or dependent upon the target stocks• FSA Article 5f and FAO Code of Conduct Article 7.6.9 – minimise waste, discards, catch by lost or abandoned gear, catch of non-target species, both fish and non-fish species, and negative impacts on associated or dependent species, in particular endangered species• FAO Code of Conduct Article 6.2 – ensure the conservation of species belonging to the same ecosystem or associated with or dependent upon the target species

Fisheries Act

Non-target fish: Section 11 enables sustainability measures – including controls on the size of fish that may be taken, area closures, fishing seasons, and the fishing methods that may be used – to be imposed to minimise catch of non-target fish, including juvenile fish. Section 72 prohibits dumping of fish, other than as authorised in other provisions of the Act (e.g., where a minimum legal size exists).

Associated or dependent (and protected) species: Associated or dependent species are defined as non-harvested species taken or affected by the taking of any harvested species (s2). Section 9 requires decision makers to take into account the environmental principle that *associated or dependent species should be maintained above a level that ensures their long-term viability*. Section 11 enables sustainability measures such as area closures or gear restrictions to be imposed to implement this principle.

The Minister may take necessary measures to avoid, remedy or mitigate the adverse effects of fishing on protected species, including setting a limit on fishing-related mortality (s15). If a population management plan (PMP) has been approved under the Wildlife Act 1953 or the Marine Mammals Protection Act 1978, the Minister must take all reasonable steps to ensure the maximum allowable level of fishing related mortality set in the PMP is not exceeded (s15(1)).

Analysis

Fish: The Act treats target and non-target fish in a similar manner – i.e., the same sustainability requirements and B_{MSY} -related stock management targets apply to both. The Act requires the Minister to allow for *all other mortality* to a stock caused by fishing (including estimates of mortality associated with fish returned to the sea) before setting a TACC (s21(1)). This requirement enables incidental mortality of non-landed fish to be included within the TAC.

Associated or dependent (and protected) species: The Act's provisions for associated or dependent species are consistent with international requirements. Although there is no direct requirement to minimise interactions with non-target species, the general objective of avoiding, remedying or mitigating adverse effects on the aquatic environment (s8) implies an equivalent outcome. Section 15:

- enables the Minister to generally take *such measures as he or she considers are necessary* to ensure that adverse effects on protected species (including seabirds, marine mammals and other protected marine wildlife such as corals) are avoided, remedied or mitigated; and
- requires the Minister to take certain measures if a PMP has been approved for the protected species.

2.4 Protecting fisheries habitat

Summary	Habitats that are particularly important for critical fish life stages (e.g., spawning, juvenile growth) should be protected.
Examples of principles	<ul style="list-style-type: none">• FAO Code of Conduct Article 6.8 – all critical fisheries habitats should be protected and rehabilitated• FAO Code of Conduct Article 8.4.7 – assess the implications of habitat disturbance prior to the introduction on a commercial scale of new fishing gear, methods and operations to an area
Fisheries Act	Section 9 requires decision makers to take into account the environmental principle that <i>habitat of particular significance for fisheries management should be protected</i> . Section 11 enables measures – such as area closures or method restrictions – to be imposed for this purpose.
Analysis	The Act is consistent with internationally-accepted principles for the protection of fisheries habitat. While there is no specific requirement for impact assessment, the Minister’s ability to regulate fishing methods and areas enables the implications of habitat disturbance to be taken into account prior to the adoption of any regulatory change in fishing gear, method or area.

Theme 3: Principles relating to spatial and temporal scale

3.1 Managing at appropriate spatial scale

Summary	Management should be undertaken at a spatial scale appropriate to the objectives that are intended to be achieved.
Examples of principles	<ul style="list-style-type: none">• CBD Principle 7 – the ecosystem approach should be undertaken at the appropriate spatial and temporal scales• CBD Principle 2 – carry out management actions at the scale appropriate for the issue being addressed, with decentralization to lowest level, as appropriate• FAO Code of Conduct Article 6.12 – ensure effective conservation and protection of living aquatic resources throughout their range of distribution• Long et al – appropriate spatial and temporal scales (key principle); distinct boundaries (key principle)
Fisheries Act	<p>The basic spatial unit of management under the Act is a quota management area (QMA) which applies to a QMS “stock”, being <i>any fish, aquatic life, or seaweed of one or more species that are treated as a unit for the purposes of fisheries management</i> (s2). The Minister must, as far as practicable, maintain the same QMAs for different species (s19(2)).</p> <p>The Act enables the use of spatially-defined management measures that need not be applied on a QMA basis, as follows:</p>

- Sustainability measures may be set for one or more stocks *or areas* (s11(1));
- Fisheries plans may apply to one or more stocks, fishing years, *or areas or a combination of those things* (s11A); and
- Areas of significance to iwi or hapū for customary food gathering may be designated as taiāpure-local fisheries (Part 9) or mātaihai reserves (section 186 and associated regulations) and management measures may be applied within these areas using regulations and/or bylaws.

Analysis

The requirement to maintain the same QMAs for different species (where practicable) means that similar management units apply across different stocks, facilitating a coordinated management approach across multi-species fisheries.

While the Act is primarily based on spatial management units relating to fish stocks (QMAs), there is also provision for management at sub-QMA scale or at a scale that crosses QMA boundaries – for example, using fisheries plans, section 11 measures, or customary tools. The Act therefore enables management measures to be applied on a spatial basis that is consistent with identified ecosystem boundaries.

3.2 Considering transboundary effects

Summary

Take account of effects that cross between ecosystem boundaries, and ensure compatible measures are adopted across jurisdictional boundaries.

Examples of principles

- **CBD Principle 3** – consider the effects (actual or potential) of management activities on adjacent and other ecosystems
- **FAO Code of Conduct Article 6.12** – take into account the need for compatible measures in areas within and beyond national jurisdiction
- **FSA Article 7** – conservation and management measures for straddling and highly migratory fish stocks shall be compatible across the high seas and areas under national jurisdiction
- **FAO Guidelines Principle 12** – compatibility of management measures
- **Long et al** – consider effects on adjacent ecosystems (other principle)

Fisheries Act

The Act integrates management inside and outside the EEZ, including through the following provisions:

- the Act must be interpreted and implemented in a manner consistent with New Zealand’s international obligations relating to fishing (s5);
- highly migratory species may be managed in the QMS, including when the species are caught by New Zealand vessels outside the EEZ (s17A);
- High Seas fishing by New Zealand vessels is controlled under Part 6A; and
- the FSA, which applies to the management of highly migratory species and straddling stocks, is incorporated into the Act (Schedule 1A).

Analysis

While there is no specific requirement to take account of trans-boundary ecosystem related impacts, the purpose of the Act requires adverse effects to be avoided, remedied or mitigated irrespective of the location of the adverse effect. The definition of effect in section 2 is sufficiently broad to encompass effects which traverse ecosystem or jurisdictional boundaries.

The Act's provisions for compatibility of management measures across the EEZ boundary are well developed and consistent with international requirements.

3.3 Managing at appropriate temporal scale

Summary Recognise the dynamic nature of ecosystems by setting long-term objectives and adopting management practices that are flexible and can adjust to changing circumstances.

- Examples of principles**
- **CBD Principle 7** – the ecosystem approach should be undertaken at the appropriate spatial and temporal scales
 - **CBD Principle 8** – recognising the varying temporal scales and lag-effects that characterize ecosystem processes, objectives for ecosystem management should be set for the long-term
 - **CBD Principle 9** – management must recognise that change is inevitable
 - **CCAMLR Article 2** – prevent/minimise the risk of changes in the marine ecosystem which are not potentially reversible over two or three decades
 - **FAO Guidelines Principle 5** – impact reversibility
 - **Long et al** – appropriate spatial and temporal scales (key principle); account for dynamic nature of ecosystems (key principle); develop long-term objectives (other principle); adaptive management (key principle); consider cumulative impacts (other principle)

Fisheries Act Ensuring sustainability includes *maintaining the potential of fisheries resources to meet the reasonably foreseeable needs of future generations* (s8).

The definition of effect (s2) includes temporal aspects – i.e., *the direct or indirect effect of fishing; including any positive or adverse effect; any **temporary or permanent effect**; and any **past, present, or future effect**; any **cumulative effect which arises over time** or in combination with other effects regardless of the scale, intensity, **duration**, or frequency of the effect; and also includes any potential effect of high probability; and any potential effect of low probability which has a high potential impact* (s2).

The Act sets long term objectives in its purpose (s8), in the environmental principles (s9), and stock management objectives (s13). More specific fisheries management objectives to support the purpose and principles of the Act can be set in fisheries plans (s11A).

Flexibility is provided in the ability of the Minister to set or vary sustainability measures *from time to time* (s11(1)) and for TACs to apply on an annual basis and to be varied *from time to time* (s13). For stocks whose abundance is highly variable from year to year the Minister may increase the TAC during the fishing year (s13(7) and s14(6)).

Fisheries plans may include *contingency strategies to deal with foreseeable variations in circumstances* (s11A).

Analysis

The Act contains a mix of long-term objectives and management flexibility that is consistent with international principles. The long-term perspective is explicitly recognised in the purpose of the Act (in relation to future generations). While most catch limits may be adjusted annually, the Act enables other types of sustainability measures to be adopted at any time. This flexibility, combined with reporting requirements, enables an adaptive management approach to be adopted.

The definition of effect includes effects that are cumulative through space and time.

Impact reversibility is recognised in the Act's purpose (i.e., avoiding, *remedying* or mitigating adverse effects) and in provisions requiring the rebuilding of depleted stocks (see principle 1.2 above).

Theme 4: Principles for information

4.1 Adopting a precautionary approach

Summary

The absence of adequate scientific information should not be used as a reason for postponing or failing to take conservation and management measures.

Examples of principles

- **FSA Article 6.2** – be more cautious where information is uncertain, unreliable or inadequate. The absence of adequate scientific information shall not be used as a reason for postponing or failing to take conservation and management measures
- **FAO Code of Conduct Article 7.5.1** – apply the precautionary approach widely to conservation, management and exploitation of living aquatic resources in order to protect them and preserve the aquatic environment. The absence of adequate scientific information should not be used as a reason for postponing or failing to take conservation and management measures
- **FAO Guidelines Principle 11** – uncertainty, risk and precaution; Principle 15 – the precautionary approach
- **Long et al** – acknowledge uncertainty (key principle); apply the precautionary approach (other principle)

Fisheries Act

Decision-makers must take into account the following information principles (s10):

- a) Decisions should be based on the best available information;
- b) Decision makers should consider any uncertainty in the information available in any case;
- c) Decision makers should be cautious when information is uncertain, unreliable or inadequate; and
- d) The absence of, or any uncertainty in, any information should not be used as a reason for postponing or failing to take any measure to achieve the purpose of the Act.

Section 13(2A) specifies how the Minister must set or adjust a TAC if the stock levels and targets cannot be estimated reliably, and incorporates wording similar to section 10.

Analysis

The Fisheries Act is consistent with international requirements to apply a precautionary approach.¹¹

In addition to the specific requirements of section 10, the Act as a whole reflects a precautionary approach – including in its purpose (s8), environmental principles (s9), requirement for consistency with international obligations, many of which embody the precautionary approach (s5); and requirement for a TAC to maintain the stock *at or above* a level that can produce the maximum sustainable yield (s13).

4.2 Using science and diverse forms of knowledge

Summary

Use scientific knowledge and consider all other forms of relevant information in decision making.

Examples of principles

- **CBD Principle 11** – consider all forms of relevant information, including scientific and indigenous and local knowledge, innovations and practices
- **FAO Code of Conduct Article 6.4** – base decisions on the best scientific evidence available, also taking into account traditional knowledge of the resources and their habitat; undertake research and data collection in order to improve scientific and technical knowledge of fisheries including their interaction with the ecosystem
- **FSA Article 5b** – ensure measures are based on the best scientific advice available
- **Long et al** – using scientific knowledge (key principle); appropriate monitoring (key principle); interdisciplinarity (key principle); use all forms of knowledge (other principle)

Fisheries Act

All decisions under the Act should be based on the best available information (s10), which is defined as *the best information that, in the particular circumstances, is available without unreasonable cost, effort or time* (s2).

Information includes *scientific, customary Maori, social, or economic information* (s.2) Before making certain decisions (including all sustainability decisions) the Minister must have particular regard to *kaitiakitanga* (s12), which is defined as *the exercise of guardianship; and in relation to any fisheries resources, includes the ethic*

¹¹ Note that in 2007, when an amendment bill sought to amend section 10, extensive legal analysis of relevant international agreements and non-binding codes confirmed that the Fisheries Act is consistent with the application of precautionary approach in international fisheries agreements. Critical to this conclusion is the recognition that the UN FSA and FAO Code of Conduct use the phrase “conservation and management” to encompass measures to achieve both conservation and sustainable utilisation.

of stewardship based on the nature of the resources, as exercised by the appropriate tangata whenua in accordance with tikanga Maori (s2).

Research services that may be produced for achieving the purpose of the Act include:

- Research relating to adverse effects of commercial fishing on protected species and research on measures to mitigate such adverse effects (conservation services); and
- Research relating to fisheries resources, fishing and fish farming, including stock assessment and the effects of fishing and fish farming on the aquatic environment (s2).

Information on commercial fishing activity is also obtained by monitoring fishing activity under the requirements of recordkeeping and reporting regulations (Part 10 of the Act) and the observer programme (Part 12).

Analysis

The Act is consistent with international guidance on basing decisions on science and considering all other forms of relevant information. Research is able to be produced on a range of matters relevant to incorporating ecosystem considerations into fisheries management. The Act recognises indigenous forms of knowledge and does not in any way limit the types of information or knowledge that may be considered in decision-making.

Theme 5: Principles for inclusive participation

5.1 Broadening stakeholder participation

Summary

Requirements to manage fisheries within their ecosystems imply a broadening of participatory processes beyond those with a direct interest in the stock.

Examples of principles

- **CBD Principle 12** – involve all relevant sectors of society and scientific disciplines
- **FAO Code of Conduct Article 6.13** – facilitate consultation and effective participation of industry, fishworkers, environmental and other interested organisations in decision making
- **FAO Guidelines Principle 7.16** – subsidiarity, decentralization and participation (i.e., increase the direct involvement of stakeholders in decision-making)
- **Long et al** – stakeholder involvement (key principle)

Fisheries Act

Before making certain decisions (including all sustainability decisions) the Minister must consult *persons or organisations... having an interest in the stock or the effects of fishing on the aquatic environment in the area concerned, including Maori, environmental, commercial and recreational interests, and provide for the input and participation of tangata whenua having a non-commercial interest in the stock*

concerned or an interest in the effects of fishing on the aquatic environment in the area concerned (s12(1)).

Other more specific consultation requirements apply in respect of particular provisions, for example in sections 16, 17B, 19, 21, 25, 57E, 67B, 75A, 77, 97, 130, 186A, 186B, 186D, 186H, 186ZC, 188A, 296P and 311.

Certain provisions of the Act enable a more active direct involvement of stakeholders in fisheries decision-making, including:

- s11A – stakeholders may prepare a fisheries plan for approval by the Minister;
- s14A – quota owners may propose an alternative TACC for a stock that is incidentally caught;
- s25A – quota owners may propose the alteration of a QMA;
- Part 9 – iwi or hapū may propose that a taiāpure be established, and the taiāpure management committee may recommend the making of regulations;
- s186 – under customary fishing regulations, tangata whenua may authorise customary fishing, propose that a mātaihai reserve be established, and recommend the making of bylaws in a mātaihai reserve;
- s186ZF – quota owners may consent to an aquaculture agreement;
- s276 – the Minister may from time to time establish an advisory committee to advise on any matters related to the purpose of the Act; and
- Part 15A – specified functions, duties and powers may be provided by an Approved Services Organisation that is representative of quota owners.

The Act must be interpreted and administered in a manner consistent with the provisions of the Treaty of Waitangi (Fisheries Claims) Settlement Act 1992 (s5), which places particular obligations on the Crown, as discussed in principle 5.2 below.

Analysis

Consistent with international principles, the Act contains inclusive consultation requirements which go beyond those with a direct interest or stake in fisheries resources and extend to a requirement to consult those who have an interest in *the effects of fishing on the aquatic environment*.

Decisions are made at a range of levels under the Act, with most being made either by the Minister or by the Chief Executive of the Ministry (with ability for delegation of the latter within the Ministry). As noted above, the Act also enables direct stakeholder involvement in certain types of decisions and in the provision of specified services. There is a specific requirement to provide for input and participation of tangata whenua, as discussed in further principle 5.2 below.

5.2 Recognising and providing for indigenous rights

Summary The Treaty relationship between the Crown and Maori should be given effect in fisheries management, including in any implementation of EAFM.

Examples of principles The sources referred to in this analysis do not include clear principles relating to indigenous rights to fisheries or the marine environment. However, CBD Convention text itself recognises indigenous rights, including:

- Article 8 item (j), obliges each party, *subject to its national legislation, [to] respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilisation of such knowledge, innovations and practices;* and
- Article 10, Sustainable Use of Components of Biological Diversity, requires parties to: *protect and encourage customary use of biological resources in accordance with traditional cultural practices that are compatible with conservation or sustainable use requirements.*

The CBD Strategic Plan invites the CBD Parties to *take note of the United Nations Declaration on the Rights of Indigenous Peoples, in the implementation of the Strategic Plan for Biodiversity 2011-2020, as appropriate, and in accordance with national legislation.* While not legally binding, the UN Declaration on the Rights of Indigenous Peoples seeks to protect all types of indigenous rights to biological resources, whether traditionally owned or subsequently acquired.¹²

In New Zealand, the Crown is obliged to give effect to the principles of the Treaty of Waitangi, as expressed by the Court of Appeal and the Waitangi Tribunal, as discussed further below.

Fisheries Act Section 5(b) obliges all persons exercising or performing functions, duties, or powers conferred or imposed by or under the Act to act in a manner consistent with the provisions of the Treaty of Waitangi (Fisheries Claims) Settlement Act 1992 (**the Settlement Act**). The Settlement Act implements the Deed of Settlement between Māori and the Crown, which represented a full and final settlement of Māori claims to fisheries. Section 3 of the Settlement Act states: *It is the intention of Parliament that the provisions of this Act shall be interpreted in a manner that*

¹² The declaration was adopted by a majority vote of the General Assembly of the UN in September 2007. New Zealand, along with Australia, Canada and the United States, voted against its adoption. UN General Assembly Declarations are not legally binding instruments under international law but they do set general directions and expectations for UN member states.

best furthers the agreements expressed in the Deed of Settlement referred to in the preamble.

Other specific provisions in the Fisheries Act that acknowledge and give effect to Maori fishing rights include:

- requirements to consult with Maori, provide for the input and participation of tangata whenua and have particular regard to kaitiakitanga (s12);
- allocation of 20% of quota shares for new QMS species to Te Ohu Kaimoana Trustee (s44); and
- Part 9, taiāpure and customary fishing.

Analysis

The Act requires the Crown to further the agreements expressed in the Deed of Settlement, including a general obligation to reflect the special relationship between the Crown and Maori and provide Maori with the ability to directly engage on any matters of major concern or proposals for change to the fisheries management system. General principles of the Treaty of Waitangi require the Government to:

- consult with iwi at an early stage and on a fully informed basis for any proposal that affects fisheries and related environmental issues and (at the very least) have particular regard to the views expressed by iwi;
- uphold the integrity of existing settlements between the Government and Māori/Iwi including the Fisheries Settlement; and
- not extinguish, or substantively preclude the exercise of, the quota held under the Settlement without the informed consent of iwi.

As part of the Deed of Settlement, Māori agreed to endorse the QMS as the lawful and appropriate regime for the sustainable management of commercial fishing in New Zealand and to fully and finally settle their claims with regard to commercial fishing. Section 5 of the Fisheries Act therefore requires any move towards EAFM in New Zealand to reflect the special relationship between the Crown and Maori, and to preserve the essential attributes of the QMS (e.g., the perpetuity and security of ITQ, and the requirement to ensure sustainability). These obligations are a New Zealand-specific aspect of EAFM principles such as considering all forms of knowledge (see principle 4.2), involving all relevant sectors of society (principle 5.1) and cross-cultural equity (principle 6.2).

Theme 6: Principles recognising that humans are part of the ecosystem

6.1 Balancing utilisation and sustainability

Summary	All relevant international agreements, including UNCLOS, the CBD and fisheries agreements, recognise that utilisation and sustainability (sometimes referred to as conservation and management) are inextricably linked.
Examples of principles	<ul style="list-style-type: none">• UNCLOS Article 62 – promote the objective of optimum utilization of the living resources in the EEZ without prejudice to Article 61 (the conservation of living resources)• CBD Principle 10 – the ecosystem approach should seek the appropriate balance between, and integration of, conservation and use of biological diversity• FSA Article 2 – ensure the long-term conservation and sustainable use of fish stocks• FAO Guidelines Principle 1 – recognise explicitly the interdependence between human wellbeing and ecosystem wellbeing
Fisheries Act	The purpose of the Act is to provide for the utilisation of fisheries resources while ensuring sustainability (s8).
Analysis	The Act’s purpose is consistent with international requirements regarding utilisation and sustainability, and the operational provisions of the Act give effect to this balance (as summarised elsewhere in this analysis).

6.2 Taking account of social and economic factors

Summary	Management decisions should take account of economic context and societal preferences.
Examples of principles	<p><u>Economic context</u></p> <ul style="list-style-type: none">• CBD Principle 4 – there is a need to understand and manage the ecosystem in an economic context. Any such ecosystem management programme should (a) reduce those market distortions that adversely affect biological diversity, (b) align incentives to promote biodiversity conservation and sustainable use, (c) internalize costs and benefits in the given ecosystem to the extent feasible• FSA Article 5b – sustainability measures should be qualified by relevant environmental and economic factors• FAO Guidelines Principle 14 – the user pays principle (fuller internalization of production costs)• Long et al – consider economic context (other principle), use of incentives (other principle) <p><u>Social context</u></p> <ul style="list-style-type: none">• CBD Principle 1 – the objectives of management of land, water and living

resources are a matter of societal choices

- **FSA Article 6.3** – when implementing a precautionary approach, take into account existing and predicted socio-economic conditions
- **FAO Guidelines Principle 17** – equity: governance should endeavor to establish and preserve equity in all its forms: intergenerational, cross-sectoral, cross-boundary and cross-cultural
- **Long et al** – decisions reflect societal choice (key principle), recognise coupled social-ecological systems (key principle), explicitly acknowledge tradeoffs (other principle)

Fisheries Act

The purpose of the Act includes enabling people to provide for their social, economic and cultural wellbeing (part of the definition of utilisation in s8).

Social and economic factors must be taken into account in various decisions, including:

- **TAC decisions:** When considering the way in which and the rate at which a stock is moved towards its management target, the Minister must have regard to relevant social, cultural and economic factors (s13(3)), and when determining whether to set an alternative TAC for a stock, the Minister must be satisfied that the total benefits outweigh the total costs (s14A(5));
- **Spatial allocation decisions:** The Minister is required to consider impacts on people when making decisions on taiāpure (s176), mātaītai reserves (under customary fishing regulations), and aquaculture (s186GB); and
- **Dispute resolution:** The Minister must not determine a dispute in a way that is likely to have significant adverse effects on the fishing activities of any person (s123).

Part 14 sets out a cost recovery regime with the purpose of enabling *the Crown to recover its costs in respect of the provision of conservation services and fisheries services* (s261).

Analysis

Consistent with internationally-accepted principles, the Act enables social and economic considerations to be taken into account in all critical decisions.

In addition:

- The Act does not establish market distortions that would adversely affect biodiversity;
- The purpose of the Act is achieved using tools that operate on the basis of economic incentives that are aligned with ensuring sustainability (e.g., the QMS and the catch balancing regime);
- The costs of production are internalised to an extent in the cost recovery regime and in the allocation of quota shares for new QMS species (whereby 80% of shares are allocated to the Crown).

The Act recognises the need for inter-generational equity (s8), provides equivalent opportunities across sectors (e.g., s12); addresses trans-boundary equity issues (see principle 3.2 above); and provides for cultural equity through a range of mechanisms for recognising and protecting Maori customary and commercial fishing rights, as discussed in principle 5.2.

Theme 7: Principles about other influences on fisheries resources

7.1 Taking account of environmental influences on fisheries resources

Summary	Environmental influences on fisheries should be taken into account in management decisions.
Examples of principles	<ul style="list-style-type: none">• FAO Code of Conduct Article 12.5 – monitor and assess the state of stocks including impacts of ecosystem changes resulting from fishing pressure, pollution or habitat alteration• FAO Code of Conduct Article 12.5 – assess effects of climate or environment change on fish stocks and aquatic ecosystems
Fisheries Act	Before making a sustainability decision, the Minister must take into account the <i>natural variability of a stock</i> (which may include variability in response to environmental pressure) (s11(1)). When making a TAC decision, in relation to the way and rate at which a stock is restored towards its target level, the Minister must have regard to <i>any environmental conditions affecting the stock</i> (s13(2)). The Minister may impose emergency measures if there is <i>a significant adverse change in the aquatic environment</i> (s16).
Analysis	The Act requires that effects of environmental variability and change must be taken into account in various key decisions, consistent with internationally-accepted principles.

7.2 Encouraging integrated management

Summary	The impacts of other sectors and activities may affect fisheries resources and efforts should be made to ensure cross-sector integration.
Examples of principles	<ul style="list-style-type: none">• FAO Code of Conduct Article 6.9 – ensure fisheries interests are taken into account in the multiple uses of the coastal zone and are integrated into coastal area management, planning and development• FAO Code of Conduct Article 10.1 – ensure that an appropriate policy, legal and institutional framework is adopted to achieve the sustainable and integrated use of resources• FAO Guidelines Principle 10 – institutional integration

- **Long et al** – integrated management (key principle)

Fisheries Act

Various provisions in the Act promote or require integration with other management regimes, including:

- Section 6 deals with integration with the Resource Management Act 1991 (RMA) in relation to allocation of access to fisheries resources;
- When setting a sustainability measure, the Minister must have regard to RMA planning documents, management strategies and plans prepared under the Conservation Act 1987, the Hauraki Gulf Marine Park Act 2000, and planning documents lodged under the Marine and Coastal Areas Act 2011 (s11); and
- Section 15 (fishing related mortality of marine mammals or other wildlife) requires the Minister to implement specified measures if a population management plan has been approved under either the Wildlife Act 1953 or the Marine Mammals Protection Act 1978.

Analysis

Consistent with commonly-accepted international principles, the Act seeks to integrate measures adopted under the Fisheries Act with other statutes that apply in the marine environment (as above).

Several other statutes contain provisions that require decision-makers to recognise fisheries management under the Fisheries Act, including:

- The RMA requires regional councils to have regard to regulations relating to the conservation, management, or sustainability of fisheries resources when preparing a regional plan or policy statement (RMA s.66(2)(c)(iii));
- The New Zealand Coastal Policy Statement, prepared under the RMA, requires regional councils to ensure that significant adverse effects on areas protected under other legislation (including the Fisheries Act) are avoided, and all other adverse effects on protected areas are avoided, remedied or mitigated (NZCPS Policy 5); and
- Decision makers under the Exclusive Economic Zone and Continental Shelf (Environmental Effects) Act 2012 must take account of other marine management regimes, including the Fisheries Act (EEZ Act s33, s59).

Non-fisheries statutes also enable fisheries-related impacts to be considered in decision making processes that may affect fisheries resources or the activity of fishing – e.g., the RMA, the EEZ Act, and the Marine Reserves Act 1971.

Conclusion

The principles from 'traditional' fisheries management sources such as UNCLOS and the FAO Code of Conduct show a very high degree of alignment with principles from more recent EAFM literature (e.g., the CBD Principles for an Ecosystem Approach, FAO Guidelines on EAFM), illustrating that EAFM principles are not distinct from the principles that have guided sound fisheries management for many years.

In light of this finding, it is not surprising that New Zealand's fisheries legislation requires and enables EAFM. The analysis shows that while the Fisheries Act is not always couched in the language of EAFM, it reflects the key concepts of EAFM and is consistent with all the identified principles. In some cases the Act *requires* an approach that is consistent with EAFM (e.g., in s13 requirements related to setting TACs), whereas in other cases the broad wording of the Act, particularly in relation to avoiding, remedying or mitigating adverse effects of fishing, *enables* EAFM considerations to be taken into account. The EAFM elements in the Act's purpose and principles are *mandatory relevant considerations* in all decision-making under the Act, but – consistent with international EAFM principles – the Minister retains considerable discretion about how, and the extent to which, environmental and other factors are weighed against each other in any given situation.

Importantly, EAFM concepts are reflected not only in the 'front end' of the Act (purpose and principles) but also in the operational provisions – especially in Part 3, Sustainability Measures – which enable EAFM to be given effect in management decisions. The Act's provisions relating to research, monitoring, reporting and enforcement ensure that decisions can be implemented in a meaningful way.

No legislative gaps were identified – i.e., there are no situations in which the Act does not require or enable a management approach that is consistent with the identified principles of EAFM. This finding is more definitive than recent government statements about the alignment of the Fisheries Act with EAFM principles – for example, at the 2018 Maori Fisheries Conference the Minister of Fisheries said that the Fisheries Act *requires us to consider many components of an ecosystem based approach to fisheries management* (but without identifying specific components that might be missing).

As the Minister said at that conference, *New Zealand has committed to moving towards an ecosystem approach to fisheries management by 2020, as it is one of our targets under the Convention on Biological Diversity*. This analysis shows that movement towards EAFM in New Zealand does not require legislative amendment.

It is important to note, however, that the existence of legislative provisions that require or enable EAFM does not indicate the extent to which our fisheries management processes, policies and decisions reflect EAFM in practice – either generically or on a fishery by fishery basis. This would be a useful avenue for further analysis.

Appendix: The FAO on EAF

Extract from FAO Website <http://www.fao.org/fishery/eaf-net/about/what-is-eaf/en>

What is EAF?

The Ecosystem Approach to Fisheries (EAF) is a practical way to implement sustainable development principles

The Ecosystem Approach to Fisheries (EAF), and other related concepts (e.g. Ecosystem Based Management, EBM), have developed in response to the need to implement, in a practical manner, the principles of sustainable development (WCED, 1987), the Convention on Biological Diversity (CBD, 1992) and the Code of Conduct for Responsible Fisheries (FAO, 1995). EAF is consistent with all these principles and has been adopted by the FAO Committee on Fisheries (COFI) as the appropriate approach to implement these principles for the management of fisheries.

EAF also covers the human or social elements of sustainability

There are many different definitions of ecosystem based approaches (e.g. FAO, 2003). All include the need to maintain the ecosystem resources for their sustainable use, while recognising that humans are an integral part of the process. So, while the term EAF can be misinterpreted because this name doesn't include the non-ecological components of sustainability, EAF not only deals with all the ecological consequences of fishing, but it also explicitly deals with the social and economic implications (good and bad) generated by the management and institutional arrangements related to fisheries.

EAF includes conventional fisheries management and doesn't need complete knowledge about the ecosystem

EAF seeks to improve all fishery management processes by adopting risk management principles that recognises complete knowledge is never available and is not essential to start the process. EAF works by the identification and assessment of all relevant issues and the establishment of participatory processes to help address high priorities effectively and efficiently. It assists with making the best decisions with the information available by using a precautionary (to reflect the risk) and an adaptive approach (to improve knowledge and adjust decisions). Implementing EAF helps to develop comprehensive fishery management systems that seek the sustainable and equitable use of the whole system (ecological and human) to best meet the community's needs and values.

Critical Elements of EAF

EAF deals with all the impacts of a fishing sector in relation to its contribution to meeting 'regional' societal values and objectives

Implementing EAF essentially involves asking four questions about how a fishery is contributing to sustainable development:

1. What impacts are the fishing activities having on target and associated species plus the broader ecosystem?
2. What impacts are these fishing activities having on the resources or human activities managed by other sectors?
3. What are the economic/social benefits and costs of fishing and related activities to the sector and society as a whole?
4. What other activities and drivers beyond the control of fishery management are affecting the fishery's capacity to reach its management objectives?

The answers to these questions can vary greatly depending upon local societal values, livelihoods, ecosystem types.

What may be acceptable in one region may not be in another, because not all communities want the same outcomes from their fisheries.

Like all management frameworks, EAF is a people based process informed by information.

All management decisions are risk based, even if this is not explicit. The EAF process helps to determine what (if any) management actions are appropriate for each issue given the current level of risk, available knowledge (including stakeholder input) and the resources available.

EAF promotes the development of governance systems that match the complexity of the fishery and are aligned with the management agencies responsibility and capacity to control. EAF must be seen as an extension of conventional fisheries management not as a parallel process. It is really just a different way of implementing management that involves a broader set of objectives and a more participative and adaptive process.