Possible Indicator Appendix

Establish Mechanisms to Monitor Ministry and Sector Performance: Draft Possible Indicators for Consultation.

Fisheries 2030 Goal

New Zealanders maximising benefits from the use of fisheries within environmental limits.

Outcomes

Use Outcome

1. The high level Fisheries 2030 outcome for use is:

   Fisheries resources are used in a manner that provides greatest overall economic, social and cultural benefit.

2. Fisheries 2030 includes four supporting outcomes under the high-level outcome for use:

Use supporting outcomes

- An internationally competitive and profitable seafood industry that makes a significant contribution to our economy
- High-quality amateur fisheries that contribute to the social, cultural, and economic well-being of all New Zealanders
- Thriving customary fisheries, managed in accordance with kaitiakitanga, supporting the cultural well-being of iwi and hapū
- Healthy fisheries resources in their aquatic environment that reflect and provide for intrinsic and amenity value.

Environment Outcome:

3. The high-level outcome for the environment is:

   The capacity and integrity of the aquatic environment, habitats and species are sustained at levels that provide for current and future use

4. Fisheries 2030 includes four supporting outcomes under the high-level outcome for environment:

   - Biodiversity and the function of ecological systems, including trophic linkages are conserved
   - Habitats of special significance to fisheries are protected
   - Adverse effects on protected species are reduced or avoided
   - Impacts, including cumulative impacts, of activities on land, air or water on aquatic ecosystems are addressed

Governance Outcome:

5. The high-level governance condition identified in Fisheries 2030 is:

Sound governance arrangements are well specified, transparent, and support cost-effective and accountable decision-making.

Fisheries 2030 includes five supporting outcomes under this high-level governance condition:

a. The Treaty partnership is realised through the Crown and Maori clearly defining their respective rights and responsibilities in terms of governance and management of fisheries resources

b. The public have confidence and trust in the effectiveness and integrity of the fisheries and aquaculture management regimes

c. All stakeholders have rights and responsibilities related to the use and management of fisheries resources that are understood and for which people can be held individually and collectively accountable

d. We have an enabling framework that allows stakeholders to create optimal economic, social, and cultural value from their rights and interests

e. We have an accountable, responsive, dynamic, and transparent system of management.

Key	
Indicator	Definition
Intervention Logic	Intervention logic is the description of the casual links between an indicator and an outcome.
Relevancy	Ranking of low, medium or high. A subjective assessment taking into account both the relevancy to all components of an outcome and individual components of an outcome.
Cost	Cost below $10,000 a year is defined as low: $10,000 to $100,000 is medium; and above $100,000 is high.
Availability	Availability takes into account a number of factors including whether data quality was fit for purpose and whether the data could be obtained through investment.
Use	Name of agency or agencies that use a similar indicator.

Definitions

ACE is Annual Catch Entitlement.

DOC is the Department of Conservation.

EEA is the European Environmental Agency.

Governance conditions are the key conditions needed to achieve the outcomes and the goal. They include a requirement for monitoring and evaluation.

IFP is an Iwi Fisheries Plan.

Indicators provide a summary indication of an outcome, and permit the observation of progress or change. The progress can be measured over time or against benchmarks, targets or visions for the future.

MFE is the Ministry for the Environment.

OECD is the Organisation for Economic Development and Co-operation.

Outcomes elaborate on the goal of Fisheries 2030 by outlining more specific results desired for fisheries management at a national level.

QMS is the Quota Management System.

SACES is the South Australian Centre for Economic Studies.

SeaFIC is the New Zealand Seafood Industry Council.

Stakeholders are those with rights and interests in fisheries resources.

Stats NZ is Statistics New Zealand.

WB is the World Bank.

2010 EPI is the 2010 Environmental Performance Index Summary for Policy Makers compiled by Yale and Columbia Universities, USA.

USE1 SUPPORTING OUTCOME: An internationally competitive and profitable seafood industry that makes a significant contribution to our economy.

1 Indicator	Asset Value (Quota and ACE)
Intervention Logic	Asset Value demonstrates the value of the seafood industry to our economy.
Relevancy	High. Quota value provides an indication of the value and profitability of the seafood sector to the economy. Quota value is a measure of the net present value of expected future returns (profits) – ACE value is a measure of current profitability (or expected profits for the current year) and quota value goes that for all future years (discounted). It is important to note that the asset value figure will be driven by the management of a few key species.
Cost	Low.
Availability	Yes/ now. Annually (Normally published in Feb/ March).
Use	Stats NZ, SeaFIC.

2 Indicator	Wild fisheries exports (earnings and volumes)
Intervention Logic	Export earnings indicate contribution to the economy.
Relevancy	High. Export earnings cover most of the contribution to the economy as 90-95% of fish landings are exported. When analysed against other countries export earnings it does provide an indication of New Zealand's international competitiveness as it compares costs. Must be adjusted for inflation and averaged exchange rates.
Cost	Low.
Availability	Yes/now. Monthly 2-3 month lag. May also need to take into account diesel price.
Use	WB, SeaFIC and Stats NZ.

3 Indicator	Aquaculture exports (earnings and volumes)
Intervention Logic	Asset Value can be used to show that aquaculture industry makes a significant contribution to the economy.
Relevancy	High. Export earnings cover most of the contribution to the economy as aquaculture exports are contained in the 90-95% of fish landings that are exported. When analysed against other countries export earnings it does provide an indication of New Zealand's international competitiveness as it compares costs. Must be adjusted for inflation and averaged exchange rates.
Cost	Low.
Availability	Yes, now monthly (2-3 month lag).
Use	WB, SeaFIC.

USE2 SUPPORTING OUTCOME: High-quality amateur fisheries that contribute to the social, cultural, and economic well-being of all New Zealanders.

4 Indicator	Amateur participation (rates)
Intervention Logic	Best available measure of this outcome but is unlikely that it will accurately represent the outcome.
Relevancy	Medium. The percentage of the population that goes fishing in a year assumes that increasing number of fishers each year is in response to high quality amateur fisheries. However, increasing numbers of amateur fishers may be in response to such issues as population increases, economic hardship and popularity.
Cost	Medium. $12,000.
Availability	Yes. Yearly. (Ministry Public Opinion Survey and Active Survey). While there were telephone interviews with the 502 participants it is more than likely that telescoping and other biases were introduced into the results. There are also some issues with the reliability of the participation numbers.
Use	Unknown.

5 Indicator	Amateur catch per unit of effort and size (indices)
Indicator	Amateur catch per unit of effort and size (indices).
Intervention Logic	Catch per unit of effort and size indices measure catch rates and size of fish available which are the main factors amateur fishers attribute to the quality of their fishing.
Relevancy	High as it directly measures high quality amateur fisheries.
Cost	Medium to high.
Availability	Yes, but only for blue cod. Could possibly be used for other important target fisheries
Use	Unknown.

6 Indicator	Amateur fishing satisfaction (surveys)
Intervention Logic	A questionnaire could provide qualitative information on all aspects of this outcome.
Relevancy	High.
Cost	High.
Availability	Future. Mid to late 2012 (then likely to be repeated every 4-5 years). Likely to be a challenge to design a good survey.
Use	Unknown.

7 Indicator	Value of amateur fishing (surveys)
Intervention Logic	These surveys could be used to establish the value that amateur fishers place on the fishing experience.
Relevancy	Medium.
Cost	High. SACES project cost $104,000 (in 1998). But the work is very expensive.
Availability	Yes/future. When ad hoc projects are completed.
Use	Unknown.

8 Indicator	Amateur harvest estimate (national survey)
Intervention logic	A new National Diary Survey would provide the most complete picture of recreational fishing in NZ. This would allow Ministry to produce harvest estimates for recreational catch.
Relevancy	High. Provides a direct indication of high quality amateur fisheries.
Cost	High.
Availability	Yes /future. There were issues with both the 1996 and 2001 National Diary surveys that mean they are not comparable. If a new survey can address these issues this survey could act as a baseline for future surveys.
Use	Unknown.

USE3 SUPPORTING OUTCOME: Thriving customary fisheries, managed in accordance with kaitiakitanga, supporting the cultural well-being of iwi and hapū.

9 Indicator	Number of Iwi Fisheries Plans (IFPs) (number)
Intervention Logic	IFPs are a way of incorporating Māori world news into fisheries management and are broader than developing specific goals for customary fishers. This, in

	conjunction with abundant fisheries of appropriate quality, will support cultural well-being.
Relevancy	Medium/Short term indicator. IFPs move towards managing in accordance with kaitiakitanga but how well it relates to the outcome depends on their implementation and/or incorporation with Fisheries Plans.
Low.	Already planned.
Availability	Yes/now.
Use	Unknown.

10 Indicator	Tangata Tiaki/Kaitiaki (number)
Intervention	The number of Tangata Tiaki/Kaitiaki indicate that Maori are participating in managing their customary fisheries. Tangata Tiaki/Kaitiaki authorise customary fishing within their tangata whenua rohe moana accordance with tikanga Māori. Consequently, this indicator supports Kaitiakitanga and the culture well-being of iwi and hapū.
Relevancy	Medium –Provides a direct indication that customary fisheries are being managed in accordance with kaitiakitanga, supporting the cultural well-being of iwi and hapū. However, there are reporting issues that need to be resolved.
Cost	Low.
Availability	Yes/now.
Use	Unknown.

11 Indicator	IFPs impact on national fisheries plans (number of IFP objectives given effect in national fisheries plans)
Intervention Logic	Assessing how IFPs are reflected in National Fish Plans and decision making processes. Links to input/participation objectives, achieving more of a

	partnership with Maori and managing fisheries in accordance with kaitiakitanga.
Relevancy	Medium/high. An indicator for achieving sector outcomes and Ministry's support towards those outcomes.
Cost	Low.
Availability	Yes/future.
Use	Unknown.

12 Indicator	Customary fishery needs (catch)
Intervention Logic	Provides direct measurement of thriving customary fisheries.
Relevancy	Medium/high. Long term indicator that measures outcome indirectly.
Cost	Low/medium.
Availability	Yes/future. Information may be able to be gathered by Pou Hononga.
Use	Unknown.

USE4 SUPPORTING OUTCOME: Healthy fisheries resources in their aquatic environment that reflect and provide for intrinsic and amenity value.

13 Indicator	Marine protected areas (number and % surface area)
Intervention Logic	Provides an indication of habitats sustained at non-extractive levels. The assumption is that if marine reserve habitats are sustained at healthy levels in the long term then there is progress towards achieving this outcome.

Relevancy	Medium. Based on assumption. Can also be used as an indicator for ENV 1 SUPPORTING OUTCOME.
Cost	Low.
Availability	Yes/now but only for marine reserves. Could be redefined better to "marine habitats meeting protection standard "in the future.
Use	MFE, 2010 EPI, OECD, WB.

14 Indicator	Intrinsic value perception (survey)
Intervention Logic	Describes whether the public believe the management of fisheries resources is providing for intrinsic and amenity values.
Relevancy	Medium. Perception survey is a qualitative estimate of healthy fisheries resources that reflect and provide for intrinsic and amenity value.
Cost	Medium.
Availability	Yes /future as Omnibus perception survey would need to be modified to provide for intrinsic and amenity values.
Use	Unknown.

ENV1 SUPPORTING OUTCOME: **Biodiversity and the function of ecological systems, including trophic linkages, are conserved.**

15 Indicator	Stock status (number/percentage of stocks near or above target level, overfished, depleted and collapsed)
Intervention Logic	The percentage of stocks evaluated as near or above target level, overfished, depleted and collapsed as determined by the harvest strategy provides an indication of the overall status of New Zealand's fish stocks. The near or above target level is a safe level fluctuating around a target; overfishing is a stock being fished at levels that will lead to depletion; a depleted stock is below the soft limit and needs rebuilding; and a collapsed stock is below the hard limit and may need closure.

	Assumption is that if fish stocks are sustained at safe levels (near or above target) in the long term, then the outcome is being achieved.
Relevancy	High – directly relates to outcome as use of fishstocks is the main human use of marine resources that could impact on biodiversity. Maintaining fish stocks at sustainable levels is very important for this outcome.
Cost	Low, already resourced.
Availability	Yes/now.
Use	MFE, OECD, EEA.

16 Indicator	Total commercial catch of QMS and QMS stocks (greenweight)
Intervention Log	An indicator of the total amount of fish being taken from ecological systems and reflects pressure on the system.
Relevancy	Medium as it only provides a gross level of pressure on biodiversity.
Cost	Low.
Availability	Yes/now.
Use	OECD, Stats NZ, SeaFIC.

17 Indicator	Marine trophic index (trawl surveys or catch data)
Intervention	High trophic levels reflect a high level of evolved biodiversity. Assumption is that if fisheries trophic levels are sustained at healthy levels in the long term, then the outcome is being achieved.
Relevancy	Medium. Declines in mean trophic levels of fisheries result in smaller food chains that leave marine ecosystems increasingly vulnerable to natural and human induced stress. However, the impact on biodiversity is based on an assumption.
Cost	Medium.

Availability	Possible/ future. Requires comprehensive data analysis.
Use	WB, 2010 EPI, MFE .

ENV2 SUPPORTING OUTCOME: Habitats of special significance to fisheries are protected.

18 Indicator	Location of commercial trawling effort (total area trawled in square km)
Intervention Logic	Total area trawled in square km. Provides an indication of the impact of trawling on the seabed.
Relevancy	Medium.
Cost	Low.
Availability	Yes/now.
Use	OECD, 2010 EPI, MFE.

19 Indicator	Habitats of special significance to fisheries (number/percentage of sea area)
Intervention Low	Habitats of significance to fisheries need to be conserved to provide for the diversity, productivity and health of species within them to enable use of the environment.
Relevancy	High. Directly relates to outcome.
Cost	High.
Availability	Possible/future.
Use	Unknown.

ENV3 SUPPORTING OUTCOME: Adverse effects on protected species are reduced or avoided.

20 Indicator	Threat status of protected species (number)
Intervention Logic	Threat level of species gives indication of health of species relative to established classification systems.
Relevancy	High.
Cost	Low.
Availability	Yes. But need to decide on classification system. The most internationally recognised classification is the IUCN Red List.
Use	ECD, EEA, WB.

21 Indicator	Fishing interactions with protected species (number)
Intervention Logic	Strong relationship between observed interactions and the level of adverse effects.
Relevancy	High. Provides direct indication of the known relationship between incidental fishing-related mortality and the level of adverse effect on protected species.
Costs	High. Costs of verification can be high.
Availability	Yes/now. Methodology is often difficult because of the low number of mortalities.
Use	Unknown

ENV4 SUPPORTING OUTCOME: Impacts, including cumulative impacts, of activities on land, air or water on aquatic ecosystems are addressed.

22 Indicator	River and lake water quality [nutrients (nitrogen and phosphorus), visual clarity, and macroinvertebrates or algae]
Intervention Logic	High nutrient levels are indicative of pollution caused by runoff etc. Can affect the freshwater aquatic environment by changing vegetation composition and vegetation structure. In coastal water it can lead to algal bloom and deoxygenated dead zones in which only a few bacteria may survive.
Relevancy	Medium. Provides an indication of cumulative impacts of activities on land, air or water on aquatic ecosystems primarily for freshwater only and aquaculture areas.
Cost	Low. Reported by MFE.
Availability	Yes/now. May have some potential to be extended to some coastal water areas.
Use	MFE.

23 Indicator	Water quality (E. coli levels)
Intervention Logic	Bacterial levels can act as a proxy for pollution levels.
Relevancy	Medium /high.
Cost	Low, but if extended to outside coastal swimming spots costs would rise.
Availability	Yes/now. Reported by MFE but only for coastal swimming spots.
Use	MFE.

24 Indicator	Sedimentation levels in aquatic ecosystem (survey)
Intervention Logic	Sedimentation can be harmful to some marine ecosystems.

Relevancy	Medium /low. Difficult to determine link in many habitats between sedimentation levels and impacts on the ecosystem).
Cost	High cost - would require new monitoring program.
Availability	Future.
Use	Unknown.

GOV1 SUPPORTING OUTCOME: The Treaty partnership is realised through the Crown and Maori clearly defining their respective rights and responsibilities in terms of governance and management of fisheries resources.

25 Indicator	National level forum (established)
Intervention Logic	Precursor to increasing effective participation in fisheries management. This will support the Treaty partnership being realised and increasing iwi input and participation.
Relevancy	Medium/high. Short term indicator. Would be a step towards realising Treaty partnership and participation of Iwi. Indicator could later be changed to "number of forum initiatives incorporated in national fisheries plans".
Cost	Low. Development planned.
Availability	Yes/now.
Use	Unknown.

26 Indicator	Integrated iwi fisheries plans (IFP numbers)
Intervention Logic	The number of IFP's will indicate that the Treaty partnership is being realised through defining rights and responsibilities in terms of governance and management of fisheries.

Relevancy	Medium/high. Short term indicator. Once established are not an indicator of achieving this outcome. Indicator could be replaced with number of IFP objectives given effect in national fisheries plans.
Cost	Low. Already planned for.
Availability	Yes/now.
Use	Unknown.

27 Indicator	Satisfaction survey (defined rights and responsibilities)
Intervention Logic	Would be most effective if considered after IFPs established as it would give objectives for satisfaction to be assessed against. Risk that iwi will be influenced by external factors (e.g. other political issues, conjecture, etc) when responding to survey.
Relevancy	Medium/high. Depends of quality of survey and frequency. Careful consideration of survey questions, design and sampling methods needed for it to be any use.
Cost	Medium/high.
Availability	Yes/future.
Use	Unknown.

28 Indicator	Iwi/hapū represented in regional forums (number)
Intervention Log	Used to track development and representation of new regional forums.
Relevancy	High. They help ensure that the Treaty partnership is realised through the defining of rights and responsibilities.
Cost	Low. Ministry records.

Availability	Yes/future.
Use	Unknown.

GOV2 SUPPORTING OUTCOME: The public have confidence and trust in the effectiveness and integrity of the fisheries and aquaculture management regimes.

29 Indicator	Public confidence in fisheries management (% changes)
Intervention Logic	The Ministry monitors the level of public confidence in fisheries management and administration. This provides an indication of the public perception of confidence and trust in the fisheries management regimes.
Relevancy	Medium. A shortcoming is that it does not differentiate between wild fisheries and aquaculture management.
Cost	Medium. The Omnibus survey costs Ministry $12,000.
Availability	Yes/now.
Use	Unknown.

30 Indicator	Challenged legislation (number of successful challenges)
Intervention Logic	The number of successful legislation challenges provides an indication of public confidence and trust in the effectiveness and integrity of the fisheries and aquaculture management regimes.
Relevancy	Medium/low.
Cost	Low.
Availability	Yes/future.
Use	Unknown.

GOV3 SUPPORTING OUTCOME: All stakeholders have rights and responsibilities related to use and management of fisheries resources that are understood and for which people can be held individually and collectively accountable.

31 Indicator	Educational contacts (number)
Intervention Logic	Educational contacts such as school visits and boat shows increase stakeholders understanding of their rights and responsibilities related to the use and management of fisheries resources.
Relevancy	Medium.
Cost	Low.
Availability	Yes/now.
Use	Unknown.

32 Indicator	Ministry Website hits (number)
Intervention Log	This measures the demand for information about the rules of fishing. Indicator demonstrates whether there is an understanding of the rights and responsibilities related to the use and management of fisheries resources.
Relevancy	Medium/low.
Cost	Low.
Availability	Yes/future.
Use	Unknown.

33 Indicator	Number of prosecutions (% where prima facie cases established, % without adverse judicial comment about case handling)
Intervention Logic	Number of prosecutions measures the number of stakeholders complying with fisheries rules. Indicator demonstrates whether there is an understanding of the rights and responsibilities related to the use and management of fisheries resources.
Relevancy	Medium.
Cost	Low.
Availability	Yes/now.
Use	Unknown.

34 Indicator	Compliance rates (commercial and non-commercial percentage rates)
Intervention logic	Observed compliance rate percentage measures the number of stakeholders complying with the rules. The compliance rate demonstrates understanding of the rights and responsibilities of stakeholders.
Relevancy	Medium.
Cost	Low.
Availability	Yes/now.
Use	Unknown.

GOV4 SUPPORTING OUTCOME: We have an enabling framework that allows stakeholders to create optimal economic, social and cultural value from their rights and interests.

35 Indicator	Regulations (number)
Intervention Logic	This indicator presumes that regulation is restrictive and less regulation provides for an enabling framework.

Relevancy	Low. Ideally, monitoring regulatory intervention would focus on the effectiveness of regulations but this is not monitored so indicator is a proxy for effectiveness of regulations.
Cost	Low.
Availability	Yes/now.
Use	Unknown.

36 Indicator	Cost recovery levy (amount $)
Intervention Logic	Changes in cost recovery levied on commercial stakeholders is an indication of the uptake of a stakeholders is an indication of the uptake of an enabling framework and may result in reduced costs to stakeholders.
Relevancy	Medium.
Cost	Low.
Availability	Yes/now.
Use	Unknown.

GOV5 SUPPORTING OUTCOME: We have an accountable, responsive, dynamic and transparent system of management.

37 Indicator	Public awareness (survey)
Intervention Logic	Comprehensive public awareness surveys may improve reporting on this outcome.
Relevancy	Medium.
Cost	Medium.

Availability	Yes/future.
Use	Unknown.

38 Indicator	Complaints (number)
Intervention Logic	Provides a vehicle through which the wider public can register complaints and concerns. It allows the Ministry to gauge where changes may be necessary.
Relevancy	Low.
Cost	Low.
Availability	Yes/future.
Use	Unknown.