

**Advice in relation to the Commonwealth's Marine Reserve Network for the South West, North, North West, Coral Sea & Temperate East Regions.**

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**A Report Prepared for the Commonwealth Fisheries Association**

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## Executive Summary

- This report analysed the Regulatory Impact Statement (RIS) for the Commonwealth Marine Reserve Network against the adequacy guidelines of the Commonwealth Office of Best Practice Regulation (OBPR) and found the RIS to be critically deficient in many key areas and demonstrably failed to meet the guidelines.
- This report found that the RIS was deficient in four of the seven elements that an RIS should contain, and this includes the assessment of impacts which is THE critical element.
  - *Problem and Problem Definition*
    - The RIS does not present an objective or coherent discussion of the problem and its definition.
    - The RIS fails to document relevant existing regulation at all levels of government and demonstrate that it is not adequately addressing the identified problem.
  - *Objectives*
    - The objective of a creating a comprehensive, adequate and representative (CAR) network of marine parks is accurately described. However, the RIS is misleading in that it describes the objective as a conservation outcome, when in fact it is a tool for potentially achieving an outcome. This is not semantics.
  - *Options*
    - The RIS did not provide sound justification for considering only the two options discussed.
    - The RIS did not consider the option of whether the NRSMPA now represents the most efficient and effective approach for marine biodiversity protection.
  - *An Assessment of the Impacts (costs, benefits and, where relevant, levels of risk)*
    - The RIS has failed to adequately conceptualise, let alone quantify the full breadth of likely impacts from the proposed management intervention. The RIS has not undertaken a rigorous cost-benefit analysis.
    - The RIS has failed to utilise the full breadth of the peer reviewed literature which documents the likely range and magnitude of the impacts of marine parks and marine reserves on fisheries.

- The RIS has failed to identify tangible benefits from the proposed management intervention and has not adequately considered distributive justice.
  - Due to uncertainties regarding scale and magnitude (and indeed its presence at all), the “spillover effect” should not be considered a likely fisheries benefit from the management intervention.
  - The RIS has not effectively considered opportunity cost to the seafood industry.
  - The RIS has not provided adequate recognition of the effect of the options on individuals and the cumulative burden on business.
  - The RIS has principally and erroneously limited the discussion of impacts to forgone GVP from the commercial fishing industry and has not adequately considered economic impacts to support businesses that are reliant on the catching sector, and the impacts on seafood consumers.
  - The analysis of impacts in the RIS is not geographically comprehensive and has not considered the differential vulnerability of coastal communities to the proposed management interventions.
  - The RIS has not provided a rudimentary cost to government of the proposal which includes the cost of enforcement and compliance, monitoring, and foregone research revenue.
  - The RIS is not risk based and in particular has not considered the risk that unregulated illegal foreign fishing activities will expand to replace the legal and regulated domestic fisheries in a number of areas.
- *Consultation*
  - The RIS has documented an adequate consultation phase, however to be effective a participatory approach to designing the marine protected area network is required, but was lacking.
- *Recommended Option*
  - The RIS has provided a recommended option.
- *A Strategy to Implement and Review the Preferred Option*
  - The RIS does not provide an adequate discussion of how the preferred option will be reviewed.
- There is an urgent need to ensure that a structural adjustment package is comprehensive and of a sufficient magnitude to offset impacts. Failure to do this will compromise the management of fisheries, conservation, and the viability of 100s of regional businesses.

- Like the impacts from previous marine park networks this report has identified that it is highly likely that the impacts of the current proposed management intervention on the seafood industry, government and governance has been significantly underestimated. This conclusion is based on the conceptually and technically flawed impact assessment contained in the RIS.
- This report considered the elements of two previous structural adjustment packages that have been provided by Government for components of the NRSMPA – the Great Barrier Reef RAP and the Securing Our Fishing Future Package (SFFP).
- Media statements suggest that structural adjustment will be based on the approach utilised for the marine park network in the south-east marine bioregion. This approach was the \$220 million *Securing Our Fishing Future* (SFFP) package.
- The SFFP also addressed fisheries management objectives where it could be reasonably assumed that operators remaining in the fishery would receive a long term economic benefit as a result of remaining in a fishery where capacity was reduced. Further the marine park network in the south-east marine bioregion was designed through a participatory approach which was able to minimise the cost to the seafood industry.
- In the current instance, a participatory process was not utilised in the design of the proposed marine park network and there is no measurable economic benefit for those that remain in the fishery as a result of a reduction in fleet capacity. As such the SFFP is not an appropriate model for structural adjustment.
- A structural adjustment program must provide funding for businesses that need to restructure to stay in the seafood industry, as well as funding for those that want to exit the industry.
- A structural adjustment program must also contain community assistance and social impact assessment and levy subsidies. Overall, the structural adjustment program should closely resemble that of the Great Barrier Reef RAP which, like the current proposal, solely addressed marine parks impacts.
- It is critical that a participatory approach be adopted in developing the structural adjustment package.

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## Introduction

The Commonwealth Government is in the final stage of the process of implementing a marine park network (National Representative System of Marine Protected Areas – NRSMPA). The network has the potential to cause significant impacts to the seafood industry. These potential impacts are not restricted to the catching sector, but flow on to other components of the seafood supply chain, and regional coastal communities.

This report will address important points in relation to the proposed Commonwealth Marine Reserve Network for the South West, North, North West, Coral Sea and Temperate East bioregions. Principally using peer reviewed literature, it critically analyses the RIS and assesses it against the RIS adequacy guidelines issued by the Office of Best Practice Regulation (OBPR). These guidelines represent a comprehensive benchmark for determining the quality of an RIS. The report also identifies and discusses the importance of a participatory process in the development and management of a marine park network.

This report reviews two previous structural adjustment packages with the aim of broadly determining the key elements of a structural adjustment that are required in the current context. The two previous structural adjustment packages reviewed are the Great Barrier Reef Structural Adjustment Program (GRB SAP) which specifically addressed the economic impacts of the Great Barrier Reef Representative Areas Program, and the *Securing Our Fishing Future Package* which addressed the impacts of the Commonwealth's South East Marine Protected Area Network as well as fishing capacity issues in a number of Commonwealth fisheries.

This report does not provide a review of the estimates of economic impact provided by ABARES, and also does not consider the merits (or otherwise) of any of the specific proposed marine park zonings.

## RIS Review

A Regulatory Impact Statement (RIS) has seven key elements, setting out:

- the problem or issues which give rise to the need for action;
- the desired objective(s);
- the options (regulatory and/or non-regulatory) that may constitute viable means for achieving the desired objective(s);
- an assessment of the impact (costs, benefits and, where relevant, levels of risk) on consumers, business, government and the community of each option;
- a consultation statement;
- a recommended option; and
- a strategy to implement and review the preferred option.

All seven elements of a RIS should contain a degree of detail and depth of analysis that is commensurate with the magnitude of the problem and the size of the potential impacts of the proposal. The emphasis of the RIS should be on analysis; it is not intended to be an advocacy document. The Office of Best Practice Regulation (OBPR) has established a set of adequacy guidelines for RIS' which are included as Appendix 1. The remainder of this section assesses the RIS against these guidelines.

Overall, the RIS for completing the Commonwealth marine reserves network represents an advocacy document. It does not objectively or thoroughly consider the impacts of the proposed management intervention. It demonstrably fails to meet the adequacy guidelines established by the OBPR.

### **Background to the Problem and Problem Definition**

Background to the problem is provided and then the problem is described with respect to climate change, national and international commitments, biodiversity decline, prevention and resilience, and then a regional summary.

The background to the problem as outlined in the RIS has focussed on climate change and the meeting of national and international agreements and initiatives. While climate change is important, climate change was not the driver of the NRSMPA. It appears that climate change has been "retrofitted" as a justification for the proposed marine reserve network. The statement that there are observable and measurable declines in productivity and biodiversity, even in areas subject to low levels of current direct exploitation is broad brush with no information provided as to the scale or magnitude of the purported decline. It is noted that there are no specific examples or references given to support this statement. The problem definition in the RIS has largely failed to define the magnitude, scale or scope of the problem and as such is inconsistent with the OBPR Guidelines. Further, the RIS fails to document relevant existing regulation at all levels of government and demonstrate that it is not adequately addressing the problem. Overall, the definition of an environmental problem must be grounded in the thorough understanding of the governing system and the system-to-be governed and the stakeholders that inhabit them (Jentoft *et al.*, 2011). The RIS presents no evidence that this has been done.

### **National and International Commitments**

The RIS provides a comprehensive (if not completely up to date) list of national and international policy frameworks and commitments on marine protected areas by Australian governments. The RIS identifies that the terms marine parks, marine protected areas and marine reserves are used interchangeably. A better approach to clarify meaning is to use the term marine reserves to refer to "no take areas", while the terms marine park or marine protected areas to areas of multiple use where fishing activities are allowed. The CBD Ad Hoc Technical Expert Group on Marine and Coastal Protected Areas provides the following definition: "*Marine and Coastal Protected Area' means any defined area within or adjacent to the marine environment, together with its overlying waters and associated flora, fauna,*

*and historical and coastal features, which has been reserved by legislation or other effective means, including custom, with the effect that its marine and/or coastal biodiversity enjoys a higher level of protection than its surrounds”.*

The key aspect of this definition and its application is that it is not specific to marine reserves as a tool for achieving the conservation of marine biodiversity. The Convention on Biological Diversity takes a broader approach that marine parks are not just marine reserves but also includes where some fishing activities (and indeed other types of impacts) are permissible. Why clarifying this terminology is important, is because many of the key frameworks referred to in Table 1.1 of the RIS are for marine protected areas (marine parks) and not specifically for marine reserves (no take areas). In the context of meeting international commitments, the RIS has failed to provide the necessary and relevant background to objectively determine whether Australia already meets these commitments without the proposed management intervention.

### **Biodiversity Decline**

The discussion of the biodiversity decline would have been more rigorous if it had focussed on the marine environment only. The discussion uses material that covers both the marine and terrestrial environment. Given though the decision to discuss the marine and terrestrial biodiversity together without clear or distinct delineation, it would have been prudent to identify the major current and long term threats to Australia’s biodiversity by reference to the *National Approach to Addressing Marine Biodiversity Decline* report and the *National Approach to Biodiversity Decline* report, which are:

- climate change and enhanced climate variability;
- the spread and introduction of new invasive species and diseases;
- loss, fragmentation and degradation of habitat;
- marine and coastal pollution, including from land based sources and vessels;
- changes to the aquatic environment and to water flows;
- inappropriate grazing and fire regimes; and
- population growth and unsustainable development.

In fact, the overall discussion of biodiversity decline in the marine environment would have been more rigorous had it utilised the *National Approach to Addressing Marine Biodiversity Decline* which was obviously prepared specifically to address the topic of biodiversity decline. That report provides a comprehensive assessment of what needs to be done to address marine biodiversity decline and should form the basis of describing the problem and then informing options with respect to how the problem could be addressed.

Even though the proposed management intervention is for Commonwealth waters, in some instances they may be impacted by terrestrial land uses. The RIS has failed to consider the impacts of terrestrial land uses on the marine environment. This is an example of the overall failure of the RIS to effectively consider risk.

### **Prevention and Resilience**

When marine parks are implemented they may in some cases serve to camouflage the most relevant environmental, social and economic problems, including those existing outside the marine park boundary and hinder these problems being dealt with effectively (Jentoft *et al.*, 2011). This section in the RIS commences by using the example of the Gulf of Mexico oil spill as an example as to why it costs less to avoid damage than repair it. The choice of this example is incongruous in the context of the RIS, as it is the very type of impact that marine protected areas cannot mitigate. An oil spill, like forms of pollution in general, is not mitigated by spatial management and promotion either implicitly or explicitly that it can be irresponsible public policy.

The discussion of ecosystem resilience identifies the need for “understanding and managing risks to the marine environment”. This is an important point and relevant to defining the problem, however, as discussed later in this submission, understanding and managing such risk is not reflected in the proposed management responses and not discussed in the remainder of the RIS. The RIS has raised an issue as a problem and then been silent on how the proposed management intervention can comprehensively address risk.

### **Regional Summary**

This section is a regional overview and does not add to describing the problem. With respect to the discussion of the Coral Sea, the statement is made that the isolated reefs of the Coral Sea play an important ecological part in ecological processes that affect a large proportion of eastern Australia including the Great Barrier. By definition, if it is isolated it is cut-off and thus would not play a role beyond its borders (however defined). The statement in the RIS has no supporting references or elaboration. The RIS also states that without increased protection an increase in a range of pressures in the area of the Coral Sea are likely to increase – predominantly from the extraction of living resources. This statement ignores the (well known) pressure that illegal foreign fishing poses which is discussed later in this submission.

### **The Objective being Sought**

The objectives being sought is the achievement of a comprehensive, adequate and representative (CAR) reserve network in the marine environment. The objectives as described are adequate. However, the RIS identifies the marine reserve network as a conservation outcome. This is misleading. The marine network is a management tool to achieve a conservation outcome. This is not just semantics as it goes to the heart of the often criticised approach of creating “paper parks” which do little in the way of achieving a conservation outcome, and may be counterproductive because they create an illusion of protection (for instance see Agardy *et al.* 2011).

### **Options**

The RIS has presented two options with respect to a marine network. In considering options, investigation in the RIS of whether the NRSMPA represents a cost-effective and efficient

solution to marine biodiversity conservation should have been undertaken and included. This is particularly relevant given how dated the NRSPMA now is, and the advancements in understanding regarding the costs and benefits of such a network and new information which calls into question whether a solution designed for a terrestrial environment is directly applicable to the marine environment.

### **Impact Analysis of Marine Reserve Options**

The impact analysis of the marine reserve options is inadequate. There is a focus on describing the cost to the commercial fishing sector. This is obviously a legitimate cost; however the full costs of management of the proposed marine reserve network should have been discussed in the RIS. Failure to do this leads to an impact assessment that is incomplete and inaccurate. It is acknowledged that it is not always possible to quantify the exact impacts; however at the very least the factors that influence the impacts, an order of magnitude estimate of the impacts, and the process for better assessment of the impacts should be provided. Overall with respect to the OBPR guidelines, the following have not been met:

- assessment of the costs and benefits of all the options supported by an acceptable level of evidence, where appropriate through a formal cost-benefit analysis, using the status quo as a baseline;
- recognition of the effect of the options on individuals and the cumulative burden on business;
- quantify other significant costs and benefits to an appropriate extent, taking into account the significance of the proposal and its impact on stakeholders
- analysis of the extent to which each option would reduce the relevant risk if an objective of regulation is to reduce risk, and the costs and benefits involved; and,
- provide evidence in support of key assumptions and clearly identify any gaps in data.

### **Overall Benefits**

Overall, for the commercial fishing sector, Smith and Wilen (2003) concluded that the asserted economic benefits of marine reserves for fisheries production are optimistic and may be an artefact of simplifying assumptions that ignore economic reality. Although a number of points are raised, the section on overall benefits in the RIS does not specifically articulate what the tangible overall benefits of the proposal are. If there are no tangible benefits then that should have been stated. The need for an insurance policy and the identification of the proposal appropriate precautionary approach are discussed in general terms as benefits. The latter is not a benefit but rather an approach to obtain a benefit. It should have also been clearly articulated that marine parks are an immediate cost that tends to be borne by local users of a resource (e.g. fishing families), whereas the benefits tend to be delayed and accrue primarily to non-local and non-consumptive users (Scholtz *et al.*, 2004; Jentoft *et al.*, 2007). The RIS in particular in particular has not considered issues of distributive justice, yet it is known that they are critical (Scholtz *et al.*, 2004; Jentoft *et al.*,

2007; Jones, 2009). The RIS has also not referred to a number of peer reviewed studies where marine reserves and marine protected areas have not delivered the predicted benefits (e.g. Kellner and Hastings, 2009; Suuronen *et al.*, 2010) and discussed whether the current management interventions are also likely to fail to deliver the predicted benefits.

The lack of identification and quantification of tangible benefits and the distribution of these benefits means that even a rudimentary cost-benefit analysis cannot be undertaken.

### *Spillover Effect*

The RIS has raised the possibility of the spillover effect as a possible benefit that may arise from the marine reserve network. While it was appropriate that the RIS raises the issue of spillover, it should have been discussed in a more rigorous fashion.

There has been considerable empirical research examining the spillover effect from marine reserves, particularly spillover of adult/juvenile fish. Overall the body of research shows that spillover is highly variable (or can be absent) and dependent on a range of factors including adjacent habitat types, the movement patterns of animals, body size, life history stages, hydrodynamic factors, larval ecology, and the nature of the fisheries management regime including the overall pattern of fishing effort (McClanahan and Mangi, 2000; Tewfik and Bene, 2003; Murawski *et al.*, 2005; Stelzenmuller *et al.*, 2007; Cudney-Bruno *et al.*, 2009; Cole *et al.*, 2011; Grüss *et al.*, 2011). A number of studies present evidence that clearly support the presence of spillover from marine reserves and marine parks (e.g. Abesamis and Russ, 2005; Amargós *et al.*, 2010; Russ and Alcala, 2011). However, a number of well designed studies have failed to detect a spillover effect on fished species (e.g. Willis *et al.*, 2001; Tewfik and Bene, 2003; Cole *et al.*, 2011; March *et al.*, 2011).

One key and generally consistent factor is that the spatial magnitude of spillover (if it is recorded as occurring at all) is spatially limited (e.g. McClanahan and Mangi, 2000; Halpern *et al.*, 2010; Russ and Alcala, 2011). For example, McClanahan and Mangi (2000) found that at the Mombasa Marine Park (Kenya) (6.2 km stretch of inshore area), spillover was probably less than a few hundred metres on the northern side of the park but may have extended to 2 km on the southern side of the park. Seven years after the park's creation the total mass of landed fish appeared to be below pre-park levels. For a number of studies that report a spillover effect, the information presented is insufficient to determine with certainty the exact spatial scale of purported spillover, and whether the magnitude of any such impact is meaningful from a fisheries perspective (e.g. Kelly *et al.*, 2010).

When considering the spillover effect of a marine reserve on fisheries, it is not sufficient in itself that such an effect occurs. The question of fisheries benefit is a question of costs and benefits and for a fisheries benefit to occur, the benefit must exceed the cost, with the cost being lost access to an area where a no-take area is declared. The following example is for a hypothetical commercial fishery and is drawn from McPhee (2008).

The magnitude of the spillover effect (in GVP) must be such so that it offsets GVP forgone in the area that has been declared an MPA. This is described for three different scenarios whereby declaration of an MPA covering 25% of the fishing ground is applied across a fishery with 50 vessels initially which generated \$10 million GVP per year equating to \$200,000 per vessel (Figure 1). The assumptions in this example are that catch and effort are evenly distributed throughout the fishing area, that GVP is equally distributed among vessels and that no adjustment of fleet size has occurred as a result of implementing the MPA. Case A describes the scenario whereby no spillover effect is evident, which results in total GVP and GVP per vessel decreasing in proportion to the amount of fishing ground forgone (25%). Case B describes the scenario where a spillover effect is evident and equivalent to an additional \$1 million GVP per annum. However, the magnitude of this spillover effect is insufficient to compensate for the amount of GVP forgone (\$2.5 million) as a result of declaring the MPA. Case C is the only case where a fisheries benefit accrues as a result of the spillover effect. In Case C the magnitude of the spillover effect (\$3.5 million) is greater than the GVP forgone leading to an economic benefit across the fishery of \$1 million or \$20,000 per vessel.

	<p>CASE B</p> <p>Spillover Effect 10%</p> <p>Fishery GVP</p> <p>\$8.5 million</p>
<p>CASE C</p> <p>Spillover Effect 35%</p> <p>Fishery GVP</p> <p>\$11 million</p>	<p>CASE A</p> <p>No Spillover Effect</p> <p>Fishery GVP</p> <p>\$7.5 million</p>

**Figure 1.** The GVP of the fishery and the individual vessel earnings as a result of an MPA covering 25% of the area of the fishery under three different cases. Case A is with no spillover effect. Case B is with a spillover effect equating to 10% of the initial GVP and Case C is with a spillover effect equating to 35% of the initial GVP. Initially the fishery had a GVP of \$10 million and individual vessel earning of \$200,000 (50 vessels).

### Overall Costs

Assessing the overall costs of a proposal is one of the most important aspects of an RIS and environmental management in general. However, in the current instance, it is the component of the RIS that is the most deficient. The RIS has not fully described costs to government and has not fully or accurately described costs to the seafood industry. Important costs to both government and the seafood industry have been ignored.

### Cost to Government

In many cases the Commonwealth marine parks are remote, increasing the cost of enforcement and the cost of management in general. Community presence and support in combination with a highly visible and well informed enforcement capacity is essential. In the Northern and North West bioregion, illegal foreign fishing is known to be a significant issue. It is also a significant issue in the Coral Sea. As economic pressures grow in south-east Asia, the problem of illegal foreign fishing is projected to get significantly and rapidly worse (Field *et al.*, 2009). Illegal foreign fishing poses a well acknowledged risk to harvested fish stocks, threatened species and bio-security. The presence of licensed and regulated Australian commercial fishermen provide not only an important deterrent to illegal fishing, but also an important source of information to the Department of Defence and the Australian Customs Authority, which strongly assists the targeting of those agencies enforcement activities. These commercial fishermen also provide information on border security in general.

Without the presence of licensed Australian commercial fishermen, the incidence of illegal foreign fishing is highly likely to increase. The RIS has failed to acknowledge the threat illegal foreign fishing poses and how the proposed marine reserve network potentially increases this threat. To mitigate this threat, the Department of Defence and the Customs Authority will need to redirect resources from border protection at Christmas Island and other locations, and/or significantly increase their budgets. If no new additional funding is available for enforcement of the proposed marine reserves, then this consigns them to the long global list of “paper parks” which do not achieve any desired objectives. The lack of any additional enforcement will also mean that a regulated Australian fishery is simply replaced by an unregulated illegal foreign fishery. If additional funding is to be required for the additional required enforcement and compliance activities; the level of funding required needs to be specified (even in general terms). An estimate of this funding requirement needs to be provided to ensure that it is suitable to meet the requirements and indeed whether the proposed options represent a cost-effective management outcome.

The cost of management is not specifically limited to compliance and enforcement, but also extends to research and monitoring activities. As already stated, marine reserves and marine protected areas are a management tool, not a conservation outcome. Like any management tool they should be monitored for their effectiveness against specific objectives. Agardy *et al.* (2011) identifies that a blind faith in marine parks is fraught with risk. Failing to undertake effective monitoring consigns them to being a faith-based management tool. Specifically in terms of research funding, a drop in GVP from the

commercial fishing industry will result in a concomitant reduction in contributions for fisheries research to the Fisheries Research and Development Corporation. A reduced revenue stream to a corporation enacted under the Commonwealth's *Primary Industries, Energy and Development Research Act 1989* should have been identified and discussed in the RIS.

The case of management of Victorian marine parks by Parks Victoria is an important contemporary example of the challenges (and costs) of managing marine park networks. Despite receiving state funding of around \$38.1 million for marine-related activities since 2002–03, the Victorian Auditor General (2011) concluded that Parks Victoria was not effectively managing marine protected areas or in fact being effective or efficient in protecting marine biodiversity within marine protected areas. It is imperative that the Commonwealth government provide sufficient funding for monitoring, management and enforcement of marine parks and marine reserves. Given the scale and remoteness of the proposed Commonwealth marine parks, the funding required for effective management is likely to far exceed that required in the example of Victorian coastal waters.

It is also imperative that good governance models are developed and applied to ensure cost management is efficient, effective and transparent. Given the scale and remoteness of the areas discussed in the current proposal, the annual financial investment necessary for management will be significant and does not appear to have been costed.

#### *Cost to the Seafood Industry*

Overall, there can be no defensible argument mounted that minimising the impacts to the seafood industry from the proposed management intervention has been achieved. The RIS identifies that the economic and social costs of the proposals are not well assessed. This makes it difficult to identify the magnitude of structural adjustment required and this issue is further exacerbated as the RIS does not outline the approach to better determine the impacts and hence the magnitude of the structural adjustment required. As already stated, government has consistently underestimated the economic impacts of marine reserve network initiatives and the cost of associated structural adjustment necessary to mitigate the impact.

The RIS has a number of specific and significant shortcomings. The accuracy of the exact estimates of economic impact are not considered in detail in this report, however a number of conceptual issues are identified:

- The RIS discusses aggregate information only. There is no meaningful discussion of the likely impacts on individual businesses. The RIS should have more thoroughly identified that an individual business may be significantly impacted even when aggregate information suggests a relative minor impact (see McPhee, 2008). Within a fishery participants are not impacted equally and their ability to adapt to spatial

change is highly variable (e.g. Holland, 2000; Endter-Wada and Keenan, 2005; Mascia *et al.*, 2010; Bavinck and Vivekanandan, 2011).

- The RIS has not discussed the obsolescence of vessels and equipment which is a potential cost from the management intervention.
- The RIS relies on GVP as a proxy for economic impact. This is not a good proxy as it does not consider the vulnerability of individual businesses.
- The RIS has limited assessment to a limited range of fish landing ports only. It does not address where fishing and other support businesses are based around Australia. A single or smaller number of seafood related businesses in a small regional centre may make a disproportionate economic contribution to that region.
- The RIS has not effectively considered opportunity cost to the seafood industry.
- In terms of potential employment losses, an important consideration is the region where the losses are likely to occur. Some regions are more vulnerable than others as opportunities for alternative employment differ significantly across regions as a result of varying economic activities. This is an important consideration regarding the impacts of the proposed options that has not been canvassed in the RIS. This information would have been able to be put together without the collection of additional empirical information.
- Overall, the RIS has failed to utilise the full breadth of the peer reviewed literature which documents the range and magnitude of the impacts of marine parks on fisheries.

While the RIS acknowledges in general terms that businesses linked to the seafood industry may be impacted by a loss of GVP in the catching sector, no attempt was made to discuss in detail or quantify the likely impacts on such businesses, the geographic distribution of the impacts, and the potential employment losses likely to occur. That this has not been done almost certainly means that estimates of employment losses are underestimated and most probably significantly underestimates them.

#### **Other Costs**

The RIS did not consider costs to consumers despite the OBPR guidelines identifying that this analysis should be undertaken. A number of fisheries impacted directly supply the domestic market with fresh seafood. The impact on consumers of the proposed management intervention is an important issue that should have been considered.

The cost to the fisheries management regime is a cost to both the Government and the seafood industry. The cost to fisheries management has not been adequately discussed in the RIS despite the importance of understanding the interaction of fisheries and environmental legislation being documented in the literature (Baelde, 2005).

#### **Risk**

The RIS has identified the need to address risks however has demonstrably failed to utilise provide an analysis of the extent to which each option would reduce the relevant risk, and

the costs and benefits involved. Management of marine systems should focus on identifying and prioritising threats through a risk assessment process and applying management tools to address the relevant risks. The appropriate risk management process is the internationally recognised Australian Risk Management Standard AS/NZS ISO 31000. This standard replaced the earlier AS/NZS 4360 standard. Given its status as a national standard and its use in the environmental discipline in general it represents a well accepted approach to considering environment risk. The revised standard is more applicable to natural environments, including biodiversity conservation than the previous standard. Overall however, the NRSPMA itself is of questionable merit in terms of addressing and prioritising risk. This should have been identified in the RIS. The mitigation of risk is a key issue for understanding costs and benefits and goes to the heart of the management intervention purported role as “insurance”.

A key risk that should have been assessed is that associated with the potential for increased illegal foreign fishing in Australian waters which has been discussed briefly in this report.

### Consultation

Overall, the Commonwealth Government has undertaken a generally appropriate approach to consultation. It is uncertain though how the output from the consultation has been utilised in developing the details of the two options and indeed excluding other options.

However the quality of the consultation itself is not the issue. By itself consultation should be just one part of engagement with stakeholders. An extensive amount of literature clearly documents the need to engage stakeholders effectively through consultation and participation in marine park planning and management (e.g. Beaumont, 1997; Manson and Die, 2001; Agardy *et al.*, 2003; Helvey, 2004; Scholz *et al.*, 2004; Kareiva, 2006; Wheeler *et al.*, 2008; Charles and Wilson, 2009). The Australian Government Fisheries Adjustment Policy (2011) identifies that “utilising the knowledge and expertise of stakeholders with genuine engagement” is the approach necessary in order to have the least possible impact on existing fishing operations. However, in the current context the Australian Government has failed to deliver. There are numerous examples and reviews using specific case studies that could have been drawn upon to design and implement an acceptable model of participatory input. Overall, the current consensus in the peer reviewed literature is that successful marine park planning involves the balancing of “bottom-up” and “top-down” approaches (e.g. McCay and Jones, 2011; Gopnick *et al.*, 2012; Voyer *et al.*, 2012).

The benefits of effective participation in MPA planning processes include:

- Increased support and compliance (Milton, 2000; Jones, 2006);
- allowing for marine park planners to take advantage of expert local knowledge of the marine environment (Baelde, 2001; Manson and Die, 2001; Lunn and Deardon, 2006; Heyman, 2011); and

- the collection of information on fishing activities at a fine scale which can potentially aid the mitigation of conflict and negative impacts on fishing businesses (Scholz, *et al.*, 2004).

The latter two are critical as they directly influence the determination of the impacts on the seafood industry of marine park planning options. Without a participatory process, the likelihood of unintended consequences on the seafood industry, and an underestimation of the economic impacts are high. The Great Barrier Reef Representative Areas Program (GBR RAP) provides an example of how a lack of effective participation can lead to gross underestimation of the economic impacts of a marine reserve network on the seafood industry. The original estimate of economic impact that was communicated to decision makers and the general public was between \$0.5 and \$2.5 million; however, in the end the structural adjustment required was in the order of \$250 million (McPhee, 2008; Sen, 2011). ABARES also undertook an estimate of economic impacts of the GBR RAP which was a significant underestimate of the real economic impact (Sen, 2011).

In developing the proposal in the RIS, the Commonwealth has focussed principally on consultative mechanisms as a means of obtaining stakeholder input. In effect, it is a top-down approach. In early planning for marine park networks in Australia, Baelde (2005) discussed the overly heavy reliance on consultative mechanisms and the very limited or non-existent participatory practices. Simply, no matter how well the consultation is undertaken, without dedicated and inclusive participatory approaches, the marine park planning process cannot be considered to approximate anything resembling acceptable good practice as recognised in the peer reviewed literature. The Commonwealth government has failed to build on successes in the South-East Marine bioregion where a participatory approach reduced by 80% the impact on the seafood industry, while still delivering a marine reserve network that is consistent with the NRSMPA.

**Table 1 Examples of Key Statements from Peer Reviewed Literature Regarding the Importance of Participation and Stakeholder Engagement.**

Author	Location	Comments
Nutters and da Silva (2012)	U.S. (Rhode Island and Massachusetts)	Beyond sound science and data, a stakeholder engagement process that encourages public participation, collaboration and communication between disparate groups is at the heart of effective marine spatial planning.
Gopnik <i>et al.</i> (2012)	U.S.	Despite some predictable areas of conflict, project participants agreed on a number of issues related to stakeholder engagement in marine spatial planning: all felt strongly that government planners need to engage outsiders earlier, more often, more meaningfully, and through an open and transparent process. Equally important, the project affirmed the value of bringing unlike parties together at the earliest opportunity to learn, talk, and listen to others with whom they rarely engage.
Sowman <i>et al.</i> (2011)	South Africa	Failure to understand the context, and integrate human dimensions into MPA identification, planning, and management processes will result in undermining the conservation and fisheries management objectives. Identifying and engaging with primary resource users and other stakeholders in a potential MPA area is one of the first steps in the process.
Charles and Wilson (2009)	Canada	Experience has shown that the imposition of MPAs without broad consensus often leads to failure. Furthermore, strong participation has been demonstrated empirically to be a factor in the success of MPAs in various circumstances.

### **A Strategy to Implement and Review the Preferred Option**

The RIS documents the process for preparing a management plan under the EPBC Act. In terms of a review, the RIS presents information that is so broad and generic as to provide little or no guidance as to what is to be reviewed and how the review will occur. Interactions between the preferred option and existing regulation of the sector were not discussed as directed by the OBPR guidelines. The review of the management plan two years before its expiry, which in effect is eight years since the plan will be in place for ten years is the antithesis of adaptive management.

## Structural Adjustment

The need to compensate individuals and industries when conservation initiatives reduce their livelihood is well recognised in the conservation biology literature as well as the economics literature. For instance, Redford and Richter (1999) in the prestigious scientific journal *Conservation Biology* stated the following – “*A good conservation deal must offer affected resource users an acceptable degree of certainty for the immediate future, or at least an agreeable amount of compensation to offset the uncertainty or loss of resource use, to facilitate the transition into long-term adaptive management process*”. Adjustment assistance schemes have long been used by Australian governments to mitigate the social and economic impacts of biodiversity conservation initiatives taken for the public good. Structural adjustment is a broad concept that aims to address on-going shift in the distribution of activities and resources within and between individuals in an attempt to improve efficiency, contribute to economic growth and raise living standards.

There is an urgent need to ensure that a structural adjustment package is comprehensive and of a sufficient magnitude. Failure to do this will compromise the management of fisheries, “off reserve” conservation, and the viability of 100s of regional businesses. From media statements, a structural adjustment package in the vicinity of \$100 million has been made for the proposed marine reserve network encompassing the South West, North, North West, Coral Sea and Temperate East bioregions. The package is to be designed to meet case-by-case needs of these fishers and businesses, and the Government has committed to work with industry to develop measures such as:

- Transitional business assistance to support changes to fishing business operations
- Assistance for employees including payments
- Investment in research and monitoring
- Removal of commercial fishing effort from impacted fisheries through possible purchase of entitlements
- Targeted assistance to vertically integrated fishing businesses

Simply, the scope of the structural adjustment package as outlined in the media release is inadequate. As discussed in this report, the RIS has almost certainly underestimated the potential impacts of the proposal on the seafood industry. Conceptually, the impact assessment is flawed.

Previously, there have been two structural adjustment programs that have addressed the impacts of Commonwealth marine park initiatives – the Great Barrier Reef Structural Adjustment Program and the *Securing Our Fishing Future Package* (SFFP). The key elements of these two packages are described in Table 2.

It has been indicated that the model for adjustment to be used in the current instance is that which was applied to the South-East bioregion which is the SFFP. The \$220m *Securing our Fishing Future Package* (SFFP) was developed by the Australian Government in response

to concerns about the long term economic and ecological sustainability of Australia's Commonwealth-managed fisheries. A complementary aim of the Package was to offset fishing effort displacement and other the socio-economic impacts associated with the introduction of the South East Marine Protected Area Network.

The GBR SAP was more comprehensive than the SFFP. In the case of the SFFP, no assistance was provided to licensed fishers remaining in the industry to adjust to the new zoning arrangements. This decision was taken on the basis that adjustments to the zoning arrangements through a participatory approach had substantially reduced the impact on commercial fishers and, at least for Commonwealth-managed fisheries, fishers were already expected to benefit from reduced competition as a result of the fishing concession buyback. The SFFP also addressed the needs of fisheries adjustment more generally and not just mitigation of a marine park implementation. The participatory process adopted for marine park planning in the south east region meant that the social impact assistance or the community assistance were also not necessary for the SFFP as the majority of impacts themselves were appropriately mitigated through the site selection of marine reserves.

From public statements made, the current scenario is one that more closely resembles the Great Barrier Reef circumstance. That is, the adjustment is being provided purely to mitigate the impacts from marine park declaration without a broader focus on improving the economic efficiency of the fleet as a whole, which is a fisheries management objective. Further, unlike the case in the South East bioregion, no adjustments to the zoning arrangements as a result of a participatory approach were undertaken, thus there is a need for a business restructure assistance to allow businesses to remaining in the seafood industry (the catching sector as well as onshore businesses) to adjust their activities to the modified spatial pattern of harvesting. As such, the structural adjustment approach adopted in the south east bio-region is not the appropriate model to apply. However, given the current proposal will affect Commonwealth managed fisheries; a levy subsidy will be required.

It is critical that a participatory approach be adopted in developing the structural adjustment package.

**Table 2 Comparison of the Key Elements of the GBR Structural Adjustment Package and the Securing Our Fishing Future Package**

<b>Element</b>	<b>GBR Structural Adjustment Package</b>	<b>Securing Our Fishing Future</b>
<b>Business Exit Assistance (including Licence Buyout)</b>	This component assisted fishers and fishery-related businesses who wished to exit the industry as a result of GBRMP rezoning. For catching sector businesses the main purpose of this component was to offset the economic and ecological impacts of displaced fishing effort.	Under this component fishing businesses were given the opportunity to exit the industry or rationalise their businesses through a once-off, voluntary tender of their Commonwealth fishing concessions. This element was considered to be the centrepiece of the package and received the largest share of the funding (\$150m).
<b>Business Restructure Assistance</b>	This component provided assistance to fishers, lessees and fishery related business to help them restructure their businesses to “manage the negative impacts they will experience as a result of the rezoning”. For licensed fishers this included, for example, managing the costs associated with steaming to more distant fishing grounds; for lessees, it included the costs associated with securing a replacement licence if their current one was surrendered in the licence buyout; and for fishery related businesses it included, for example, costs associated with productivity improvements or debt restructuring to manage the expected drop in turnover.	Not provided (see text)
<b>Business Advice Assistance</b>	Under this component, up to \$1,000 was available to all licence holders and fishery related businesses adjacent to the GBRMP to offset the costs of financial, business planning or legal advice to assist their participation in the package.	Under this component all Commonwealth concessions holders were eligible for a capped grant to seek professional advice to support decisions (e.g. decisions on whether to tender, preparation of tender prices) about participation in the package.
<b>Employee Assistance</b>	Under this component one-off, lump sum grants were available for full time skippers and crew respectively who lost employment as a result of the rezoning in order to offset the costs of retraining, “short-term dislocation costs” and potential relocation	Under this component direct payments to skippers and crew were paid to workers who lost employment as a direct result of a successful tender under the BEA. The payments were intended to assist with the costs of retraining, relocation or job seeking arising from the loss of employment.

<b>Element</b>	<b>GBR Structural Adjustment Package</b>	<b>Securing Our Fishing Future</b>
<b>Social Impact Assistance</b>	<p>The social assistance component involved a range of support initiatives including:</p> <ul style="list-style-type: none"> <li>- providing industry based personnel within organisations, to provide a link between fishers and support agencies</li> <li>- providing training and professional development briefings to key agencies that may be called upon to provide support for fishers and their families;</li> <li>- filling service capacity gaps in the regions; and</li> <li>- providing crisis counselling to those impacted by the rezoning.</li> </ul>	Not provided (see text)
<b>Community Assistance</b>	This component aimed to assist communities and regions adjust to any major economic, social and environmental change experienced as a result of the rezoning.	Not provided (see text)
<b>Onshore Business Assistance</b>	Not specifically provided, however the Business Restructure Assistance and Business Exit Assistance components were open to onshore businesses.	Under this component grants were provided to assist onshore businesses adjust to changes as a result of reduced fishing activity. Two types of assistance were available: Onshore Business Development Assistance (OBDA) and Onshore Business Exit Assistance (OBEA).
<b>Levy Subsidy</b>	Not applicable	Under this component the Australian Government provided a subsidy totalling \$15m over three years to offset the costs of Australian Fisheries Management Authority (AFMA) management levies. The levy subsidy acknowledged that, as a result of the fishing concession buyout, the (largely static) costs of management would be spread amongst fewer fishers and hence levies would rise

## Discussion and Conclusion

Marine parks and marine reserves are a management tool for the protection of marine biodiversity. The approach adopted in Australia based on CAR principles has been transferred from the terrestrial to the marine environment without, until recently (see Kearney *et al.*, 2012 and in press), appropriate critical analysis in the peer reviewed literature of whether it represents the most effective or efficient approach to achieving the goal of marine biodiversity protection. An important question remains as to what the NRSMPA is protecting biodiversity from. Overall, the RIS is grossly inconsistent with many aspects of the Office of Best Practice Regulation (OBPR) Guidelines for RIS' - it simply does not meet a basic test of adequacy. Presumably, the OBPR lacked the professional expertise to consider and assess a complex, multi-disciplinary, and specialised area of marine environmental management.

The articulation of the problem that the management intervention is designed to address is incomplete and inaccurate. It does not follow an appropriate model for rigorously defining a problem (for instance see Jentoft *et al.*, 2011). The objective of the RIS is the creation of a marine park network to meet the NRSMPA. Significant time and importantly new information in the peer reviewed literature has called into question the contribution the NRSMPA can actually make towards marine biodiversity conservation. The RIS should have investigated the option of modifying and updating the NRSMPA. The NRSMPA is a tool to achieve an outcome and should not be considered an outcome in itself.

The RIS has failed to objectively and accurately assess the impacts of the proposed marine park network (including marine reserves) on the seafood industry and government. The RIS overstates the benefits of the proposed marine park network, while underestimating the impacts and the costs. It fails to adequately conceptualise, let alone quantify the full breadth of likely impacts from the proposed marine park network. It fails to adequately identify the costs to government, the seafood industry and resource dependent coastal communities from the management intervention.

The process overall contained consultative mechanisms, but lacked the participatory approaches that are necessary to ensure an outcome that can deliver conservation outcomes at minimal cost to resource users. The need for and design of potential participatory frameworks are well documented in the peer reviewed literature (e.g. Beaumont, 1997; Manson and Die, 2001; Agardy *et al.*, 2003; Helvey, 2004; Scholz *et al.*, 2004; Kareiva, 2006; Wheeler *et al.*, 2008; Charles and Wilson, 2009). Of critical importance is that a participatory approach in the full design and management of marine parks can increase support and compliance and hence reduce enforcement costs; allows for marine park planners to take advantage of expert local knowledge of the marine environment; and, provide for the collection of information on fishing activities at a fine scale which can potentially aid the mitigation of conflict and negative impacts on seafood businesses. Successful engagement is achieved by: 1) early engagement by collaborating organisations

to build trust; 2) ensuring scientific questions have direct relevance to the community; 3) providing appropriate incentives for participation; and 4) clear and open communication (Almany *et al.*, 2010). An adequate participatory framework was undertaken in the South East Marine Bio-regional planning exercise and this led to minimising the impact on the seafood industry and contributed to a structural adjustment package that could be reduced in scope. In the current instance, there is little to suggest that a successful participatory approach has been undertaken.

This report considered the elements of two previous structural adjustment packages that have been provided by Government for components of the NRSMPA – the Great Barrier Reef RAP and the Securing Our Fishing Future Package (SFFP). The package for the GBR RAP was more comprehensive than the SFFP because in conjunction with the aforementioned participatory approach to reducing impact, the SFFP also addressed fisheries management objectives where it could be reasonably assumed that operators remaining in the fishery would receive a long term economic benefit as a result of remaining in a fishery where capacity was reduced. In the current case, the management intervention is for marine parks only and the proposed structural adjustment is to focus on mitigating this impact. As such, the elements of the structural adjustment need to be similar to that provided for the Great Barrier Reef RAP. It needs to provide assistance (business restructure) to those that wish to remain in the seafood industry as well as address community impacts to coastal communities. Additionally however, it does need to provide the levy subsidy that was part of the SFFP. Overall using the approach adopted for mitigating the impact of the marine park network in south east bioregion (the SFFP), is not the appropriate model for current proposal.

The Commonwealth Government has committed in the vicinity of \$100 million for a structural adjustment package. The provision in the package for research and monitoring should be removed. While funding these activities is important, they do not constitute elements of structural adjustment and should be funded by the Commonwealth separately. Given that the RIS has not accurately estimated the economic impact to the seafood industry from the proposed management interventions, the adequacy of the \$100 million cannot be determined. There needs to be a government commitment to a participatory approach to develop the guidelines for the application of the structural adjustment package and a commitment to addressing the impacts in a comprehensive fashion.

The magnitude of the additional costs of compliance and enforcement should also be determined. These are costs to government and should be estimated and made public. Failing to provide adequate additional funding for enforcement and compliance will in a number of instances simply see a regulated domestic fishery replaced with an unregulated foreign fishery, which will potentially compromise biodiversity conservation, and Australia's food security. The challenge of enforcement of marine parks is well recognised in the peer

reviewed literature (e.g. Walmsley and White, 2003), but was not afforded a thorough discussion in the RIS

In conclusion, this report found that the RIS was deficient in four of the seven elements that an RIS should contain, and this includes the assessment of impacts which is THE critical element. This report also found that a structural adjustment package modelled on the SFFP would be inadequate in the current instance for mitigating the impacts of the proposed management intervention.

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## Appendix 1 Criteria for Assessing the Adequacy of the RIS

### *1. Problem*

The RIS should clearly identify the problem(s) that need to be addressed. This part of the analysis must:

- present evidence on the magnitude (scale and scope) of the problem
- document relevant existing regulation at all levels of government and demonstrate that it is not adequately addressing the problem
- identify the relevant risks, if the problem involves risk, and explain why it may be appropriate for the government to act to reduce them, and
- present a clear case for considering that additional government action may be warranted, taking account of existing regulation and any risk issues, and the potential for market developments to overcome the problem.

### *2. Objectives*

The RIS should explain the objectives, outcomes, goals or targets of government action.

### *3. Options*

The RIS should identify a range of alternative options including, as appropriate, non-regulatory, self-regulatory and co-regulatory options. If only one option (apart from the status quo) is considered feasible, the RIS should provide sound justification for considering only two options. If the Cabinet directs that a limited set of options be considered, or options are limited because the regulation relates to an election commitment, this must be clearly stated.

### *4. Impact analysis*

The RIS should provide an adequate analysis of the costs and benefits of the feasible options, and should:

- identify the groups in the community likely to be affected by each option and specify significant economic, social and environmental impacts on them
- assess the costs and benefits of all the options supported by an acceptable level of evidence, where appropriate through a formal cost-benefit analysis, using the status quo as a baseline
- assess the net impact of each option on the community as a whole, taking into account all costs and benefits
- assess the impacts on business and the not-for-profit sector, including distributional issues such as the impact on small business, and quantify (using the Business Cost Calculator, Tax Compliance Cost Calculator, or equivalent approved by the OBPR) the effect of each option on business compliance costs
- recognise the effect of the options on individuals and the cumulative burden on business

- quantify other significant costs and benefits to an appropriate extent, taking into account the significance of the proposal and its impact on stakeholders
- analyse the extent to which each option would reduce the relevant risk if an objective of regulation is to reduce risk, and the costs and benefits involved
- document any relevant international standards and, if the proposed regulation differs from them, identify the implications and justify the variations
- if the proposed regulation would maintain or establish restrictions on competition, demonstrate that the regulation results in a net benefit and that the government's objective/s can be achieved only by restricting competition, and
- provide evidence in support of key assumptions and clearly identify any gaps in data.

### ***5. Consultation***

The RIS should:

- outline the consultation objective
- describe how consultation was conducted (including when consultation was undertaken, the timeframes given and the methods of consultation)
- articulate the views of those consulted, including substantial disagreements
- outline how those views were taken into consideration, and
- if full consultation was not undertaken, provide a reasonable explanation as to why not.

The consultation process reported in the RIS should conform to the government's best practice principles and policy on consultation

### ***6. Conclusion and recommended option***

The RIS should clearly state the preferred option, why it is preferred, and indicate the costs and benefits of this option. This statement needs to be supported by the analysis contained in the RIS.

### ***7. Implementation and review***

The RIS should provide information on how the preferred option would be implemented, monitored and reviewed. Interactions between the preferred option and existing regulation of the sector should be clearly identified.