

26 March 2014

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Queensland Competition Authority
GPO Box 2257
Brisbane, QLD 4001

Attn: Mr Alex Dobes
BY EMAIL: aquaculture@qca.org.au

Dear Alex

Submission on Aquaculture Regulation in Queensland – Issues Paper

Thank you for the opportunity to respond to the Issues Paper of February 2014.

Seafarms Group Limited (SGL) has committed considerable resources into aquaculture in Australia and in particular in Queensland. SGL (formerly Western Australian Resources Limited) recently purchased a large prawn farm (Seafarm Pty Ltd), at Cardwell together with hatchery at Innisfail. Our Crystal Bay prawns (banana prawns) are one of the best recognised farmed seafood brands in Australia.

We also operate an aquaculture facility at Exmouth, Western Australia and the company is developing a world-scale, land-based prawn farming operations in the Northern Territory and Western Australia.

Following initial feasibility studies which looked across all of northern Australia to locate this large-scale greenfield aquaculture project, SGL regrettably decided to discount Queensland from further feasibility assessment due to the poor history of new development approvals for aquaculture and industry views that realising Queensland's potential was being stifled by unnavigable regulatory processes. Indeed, this issue was recognised firstly by the Productivity Commission in its 2004 Research Paper *Assessing Environmental Regulatory Arrangements for Aquaculture*.¹ Unfortunately, for the industry many of the Commission's findings still remain relevant today in Queensland and other states. Nonetheless, South Australia and Tasmania have made some substantial progress in areas of aquaculture tenure, zoning and regulatory streamlining and that combined with a determined industry and other government and corporate financial support has in the case of Tasmania, seen the farmed salmonid industry become Australia's largest and most successful single fishery grossing \$513 million in 2011/12².

By comparison, the Queensland aquaculture industry – largely land-based prawn and barramundi farming – in the same period grossed \$83M. We believe that with only some modest and sustainable expansion the industry could readily produce 10 times this production revenue. Moreover, this production could be achieved at a higher economic return per hectare than the other coastal land farming industries and – significantly for the context of this review – with a lower environmental impact per hectare than these industries.

¹ Productivity Commission 2004, *Assessing Environmental Regulatory Arrangements for Aquaculture*, Canberra. Commonwealth of Australia (ISBN 1 74037 141 0).

² Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES), *Fishery status reports 2012*, OCTOBER 2013

The issues around the real environmental impacts of aquaculture in Australia have been extensively researched and investigated by eminent scientific organisations such as the CSIRO, Australian Institute of Marine Science and various State Fisheries bodies. The overwhelming findings from this work are that properly designed and managed aquaculture operations are low impact and low risk to receiving environments along the Queensland coast.³ Existing aquaculture operations are required to operate under rigorous discharge reporting and environmental performance monitoring licence conditions. However, new aquaculture developments are subject to detailed environmental impact assessment processes requiring that the burden of proof of acceptable impact be proven by the proponent up against a regulator who is able to stand behind a 'precautionary principle' defence instead of any substantive scientific rebuttal of the environmental impact assessment. A clear indication of the prime marine environmental regulatory body GBRMPA's 'scientific' policy position on aquaculture can be taken from its *Position Paper on Aquaculture* in which the science referenced is: extremely dated (all of references are pre- 2002); key references for 'adverse impacts from nutrient impacts from aquaculture' are *personal comments* only; and many of the key references are from subtropical, ocean-caged aquaculture operations and overseas studies⁴, despite the large volume of locally relevant, peer-reviewed literature for Australian (and indeed Queensland) tropical aquaculture operations and receiving environments.

If the Queensland aquaculture industry's complaints could be summarised into one key point it would be: The (Queensland aquaculture) industry has not been on a 'level playing field' in terms of the development-critical issue of environmental impact assessment and approvals processes. Aquaculture development applications are typically small-scale, low-budget, and hobby farm style operations but their operational issues and discharges are point-source regulated, easily measured and monitored, have high visibility to regulators and importantly – their development applications can readily be rejected by regulatory officers keen to demonstrate their environmental protection zeal and impact of the their role.

This point is starkly reflected against the comparative results of applications for other developments with potential impacts on coastal water quality and ecosystems such as coastal mining and industrial development, dredging, coastal agriculture and urban development, sewage and stormwater discharge licensing. Contemporary, peer-reviewed and local scientific studies point to the impacts of these activities having far greater impacts on the Queensland coastal waters and the Great Barrier Reef than those from aquaculture.⁵ Yet these activities it could be argued have far less comparative and proportional regulatory scrutiny than that applied to aquaculture! Conditions set by coastal zone regulators requiring aquaculture operations to have zero nutrient discharges are arbitrary, disproportionate and discriminatory. As highlighted above, aquaculture applicants are typically small private operators and are therefore unlikely to take such regulatory decisions to legal appeal. As a result, despite a massive amount of coastal development being approved in Queensland – primarily with large corporates and industrial companies as proponents – not one new aquaculture development has been approved in over a decade.

As a starting point, the playing field must be made level for all coastal development applicants to have administrative and procedural fairness in the development approvals process. SGL believes that there is huge potential for aquaculture in Queensland, but that the multi-layered aquaculture regulatory framework has blocked the growth of aquaculture. The result is the message to industry and potential investors in

³ We understand that CSIRO have made a submission to the QCA and documented the relevant scientific publications supporting this.

⁴ See Great Barrier Reef Marine Park Authority Position Statement on Aquaculture at:

http://www.gbrmpa.gov.au/_data/assets/pdf_file/0018/3915/GBRMPA_position_statement_aquaculture.pdf

⁵ For a good starting point on this science, see: Olley et al. 2013 *Subsoil erosion dominates the supply of fine sediments to rivers draining into Princess Charlotte Bay, Australia*, J of Env. Radioactivity, 124 (2013), 121-129; Thorburn et al. (2103). *Water Quality in agricultural lands draining to the Great Barrier Reef: A review of causes, management and priorities*. Agriculture, Ecosystems and Environment 180: 4-20; Thorburn, P (2013), *Catchments to reef continuum: Minimising impacts of agriculture on the Great Barrier Reef*, Agriculture, Ecosystems and Environment 180: 1-3.

aquaculture is that 'Queensland is closed for business'. Without significant changes to the current legislation in Queensland SGL is unlikely to consider entering into the protracted and convoluted aquaculture development application process required for a development such as Sea Dragon. SGL has concluded regrettably that despite Queensland's comparative natural advantages, an aquaculture project application in NT or WA would have a higher likelihood of being successful within a reasonable timeframe.

Simplifying and streamlining the aquaculture regulatory framework for Queensland – by creating a single-point regulatory body to deal with aquaculture development applications and creating an aquaculture zoning system, is a step in the right direction. However it is important to note that these changes will have no substantive effect on facilitating the sustainable expansion of the industry whilst zero nutrient conditions for approvals remains in place for aquaculture and other coastal industries with diffuse source nutrient runoffs to coastal environments are not regulated within the same framework.

We look forward to the outcomes of this next stage of the review and would welcome the opportunity to further discuss the issues or elaborate on any of the points made in our submission.

Yours sincerely



Robert Bell

Managing Director
Seafarms Group Limited

Review questions addressed in this submission

Our response to the Review addresses several, but by no means all, of the questions posed by the Issues Paper. Specifically the following key questions are covered:

- *Has the CIE report correctly described the important features of aquaculture regulation in the jurisdictions being compared? Are there further features this review should consider?*

The QCA is interested in further information on how to attain the optimum balance between economic and environmental considerations, and how it might be possible to define acceptable and unacceptable environmental impacts within the framework for aquaculture regulation. The QCA is also interested in stakeholder experience with the way agencies interpret and apply regulatory frameworks designed to control environmental impacts.

- *Given current economic and environmental conditions, is there potential for greater development of aquaculture in Queensland? Would the increased production be sold primarily in the Australian market or elsewhere?*

Does the Queensland aquaculture industry need to increase its scale of operations in order to become globally competitive? Does the industry need to enhance its technical expertise?

- *How difficult (or expensive) is it to achieve zero net emissions from pond farming of species such as prawns and barramundi? What is the potential (and likely timing) for transitioning from pilot projects to full scale production?*
- *Is it appropriate to apply the precautionary principle to aquaculture development? Which gaps in knowledge would make it appropriate to apply this principle?*

In which cases concerning aquaculture development has the precautionary principle been applied?

Has the CIE report correctly described the important features of aquaculture regulation in the jurisdictions being compared? Are there further features this review should consider?

CIE highlights that “the Queensland regulatory framework appears more complex than that in other states, partly due to overlapping responsibilities between State regulators and Commonwealth regulators such as the Great Barrier Reef Marine Park Authority (GBRMPA)”. This impact of this overlap on the ability of the industry to expand operations either on existing sites or on greenfield sites cannot be overstated. It is the stated belief of many industry players that the additional layer of GBRPMA is among the major reasons why industry progress has stalled in the past decade or more.

SGL believes that CIE’s focus on the relative importance of wastewater limits as not the best framework for consideration of environmental impact of the industry.

CIE highlights that “Wastewater discharge limits are a more significant issue in Queensland than elsewhere, due to concerns about water quality, particularly in the GBR region.” However CSIRO cites research showing that the discharges from aquaculture are highly bio-available and basically are undetectable beyond 2km from the point of discharge. In addition, CSIRO points out that any effects of prawn farms are small enough that if a farm ceases operations there is no evidence of its previous existence in the receiving environment within three months.

That aside, there appears to be a presumption that aquaculture contributes to the overall ‘load on the reef’. Logically there is a problem with this – the implication is that a point discharge is equivalent to additional load, even though local assimilative capacity may be sufficient for this not to be the case. In this respect here is a real problem of framing and a mismatch of scales, embedded within the regulatory framework. The absence of any real load-based licencing regime – for all coastal nutrient input sources – also means that approvals outcomes and licensing is arbitrary and therefore often disproportionate or discriminatory against those proponents least likely to contest a decision.

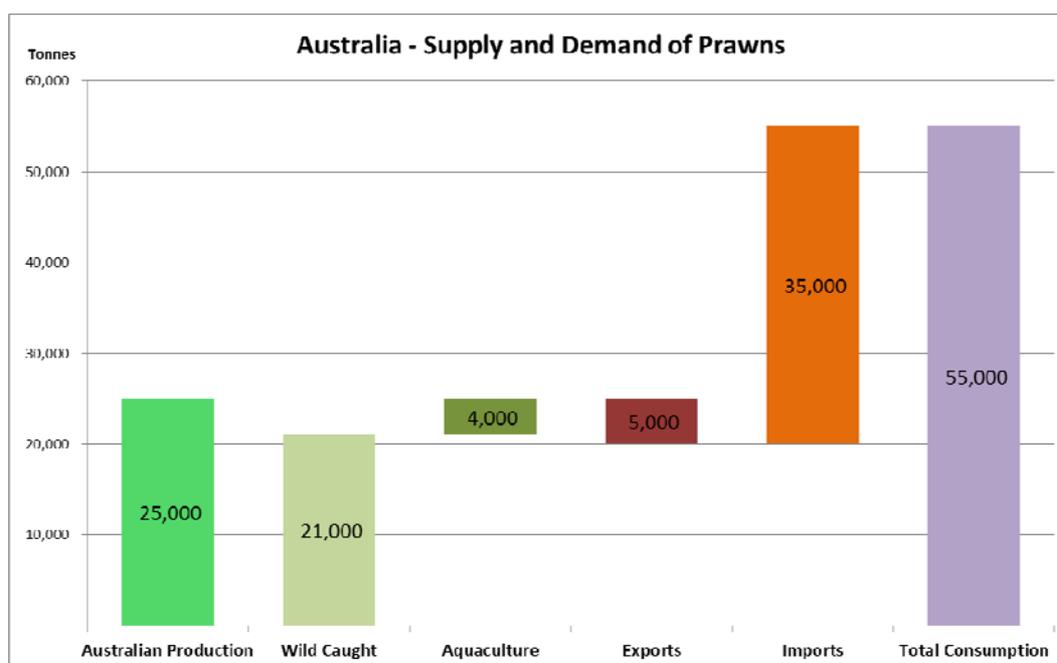
Given current economic and environmental conditions, is there potential for greater development of aquaculture in Queensland? Would the increased production be sold primarily in the Australian market or elsewhere?

Does the Queensland aquaculture industry need to increase its scale of operations in order to become globally competitive? Does the industry need to enhance its technical expertise?

These questions can be addressed by highlighting the current supply and demand for prawns in Australia and globally.

Australian consumption of prawns is 55,000 tonnes per year, with:

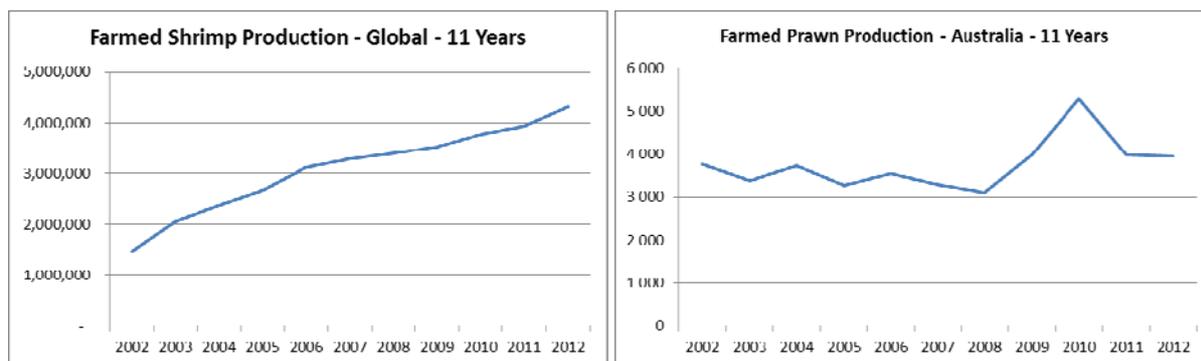
- 25,000 tonnes per year total Australian production
 - 21,000 tonnes wild catch; plus
 - 4,000 tonnes aquaculture (almost entirely from Queensland).
- Circa 5,000 tonnes is exported
- 35,000 tonnes (or 68% of local consumption) imported



Market realities will determine whether an expansion of domestic production leads to import substitution or increased exports. In general Australian exports are higher priced than imports, so increased production may

lead to increased exports. On the other hand, import substitution may become more likely given recent record global prawn (shrimp) prices and rhetoric from supermarket chains stating a strengthened ambition to “buy local”. In any case, it is clear that there is potential to modestly increase production from aquaculture without seriously impacting the overall supply/demand situation. Alternatively, there is a massive import replacement opportunity if the volume can be filled with cost-competitive product.

To put the current Australian industry into a global perspective, global production of prawns is over 7 million tonnes per year, of which greater than 4 million tonnes is aquaculture product (FAO 2013). This growth (from 1.5 million tonnes in 2002) represents a annual rate of production increase of 11% per year.



Australian production in that time (ABARES 2012) has remained almost stable (3,757 tonnes in 2002 to just 3,941 tonnes in 2012).

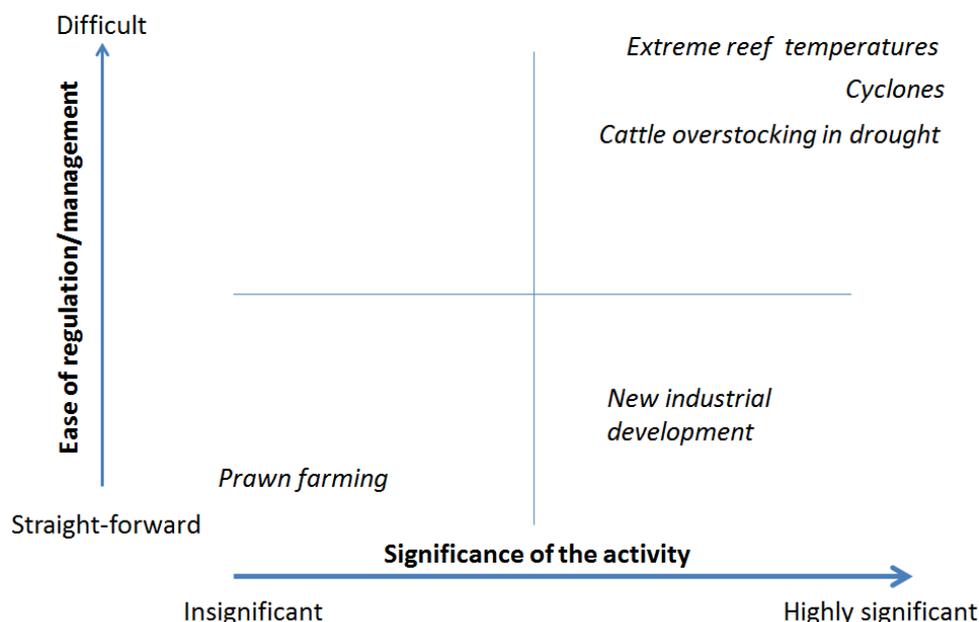
These figures indicate that Australia is a very small player in the global prawn production context. Australian total prawn production (wild caught plus farmed) represents just 0.3% of global production, while Australian farmed production is a tiny 0.1% of global farmed production and falling. At this scale the industry cannot attract the levels of R&D and investment achieved globally in all parts of the supply chain. In addition, a growth-limited industry means low job growth which in turn leads to limits on the educational opportunities available at vocational and tertiary levels.

How difficult (or expensive) is it to achieve zero net emissions from pond farming of species such as prawns and barramundi? What is the potential (and likely timing) for transitioning from pilot projects to full scale production?

The Queensland aquaculture industry has been constrained to 700 hectares of production. In comparison, there are 370,000 hectares of sugar cane production and millions of hectares of cattle production in coastal Queensland. However, the aquaculture industry is the only primary industry that requires a water quality discharge; and the industry operates under the strictest water quality discharge standards in the world.

The issue is that along the coast only a fraction of the inputs are ‘regulated’. You have a phenomenon that is relatively easy to measure (e.g. prawn farm discharge) versus something that is difficult to measure (e.g. diffuse inputs of sediment, nutrients and chemicals from extensive agriculture). However it is incorrect to conflate ease of measurement with environmental significance. The approach is highly discriminatory and acts as a barrier to new entrants whose activities may in fact improve environmental condition overall. The matrix below highlights the flaws in such an approach.

Regulatory Decision Matrix



The goal of zero net emissions imposed in 2008 by SEWPAC/GBRMPA can be seen as the application of the precautionary principle imposed in an *ad hoc* manner, unsupported by science. While the goal may be technically possible, it is likely that it will be economically unviable. And while the constraint is in place, the industry will continue to be deterred from investment and unable to expand.

The aim of reducing the exposure of the GBR to nutrients or other environmental stressors will not be accomplished by stopping any new loads while permitting existing loads to continue. Counter-intuitively the problem may become entrenched by impeding the development of higher value land-uses that can afford to invest in technologies/management that would reduce exports of nutrients.

Industry	Hectares Farmed	Value of production	Value \$/ha
Sugar	370,000	\$1,900m (2011-2012)	\$19,000
Farmed Prawns	700	\$57 (2011-2012)	\$81,000

Sources: (1) ABARES Australian Commodity Statistics 2012. (2) Lobegeiger Report to Farmers 2011-2012

Is it appropriate to apply the precautionary principle to aquaculture development? Which gaps in knowledge would make it appropriate to apply this principle?

In which cases concerning aquaculture development has the precautionary principle been applied?

The Australian Prawn Farmers Association Code of Conduct (*and also the Pearl Producers Association Code of Conduct*) regards use of the precautionary principle as dependent on the state of knowledge of the industry's impacts:

“Consistent with the three operational interpretations of the Precautionary Principle (Young 1993), it is suggested that as confidence with an activity increases, a transition must be made to require only the use of best available technology when this does not entail excessive cost.”

However, as this information and predictive confidence has increased, regulators in Queensland have not transitioned to a ‘best available technology’ approach. Indeed,

The issues around the real environmental impacts of aquaculture in Australia have been extensively researched and investigated by eminent scientific organisations such as the CSIRO, Australian Institute of Marine Science and various State Fisheries bodies. Extensive knowledge of the impacts of prawn farming has been gained over the past twenty to thirty years of Australian operations. In addition, hydrodynamic modelling, nutrient cycling fate and effects in the environment predictive tools have also become very sophisticated. The overwhelming findings from this work are that properly designed and managed aquaculture operations are low impact and low risk to receiving environments along the Queensland coast. Existing aquaculture operations are required to operate under rigorous discharge reporting and environmental performance monitoring licence conditions. However, new aquaculture developments are subject to detailed environmental impact assessment processes requiring that the burden of proof of ‘acceptable impact’ be proven by the proponent up against a regulator who is able to stand behind a ‘precautionary principle’ defence without any substantive scientific rebuttal of the environmental impact assessment results.

A clear indication of the prime marine environmental regulatory body GBRMPA’s current ‘scientific’ policy position on aquaculture can be taken from its *Position Paper on Aquaculture* in which the science referenced is: extremely dated (all of references are pre- 2002); key references for ‘adverse impacts from nutrient impacts from aquaculture’ are personal comments only; and many of the key references are from subtropical, ocean-caged aquaculture operations and overseas studies, despite the large volume of locally relevant, peer-reviewed literature for Australian (and indeed Queensland) tropical aquaculture operations and receiving environments.

Environmental Offsets

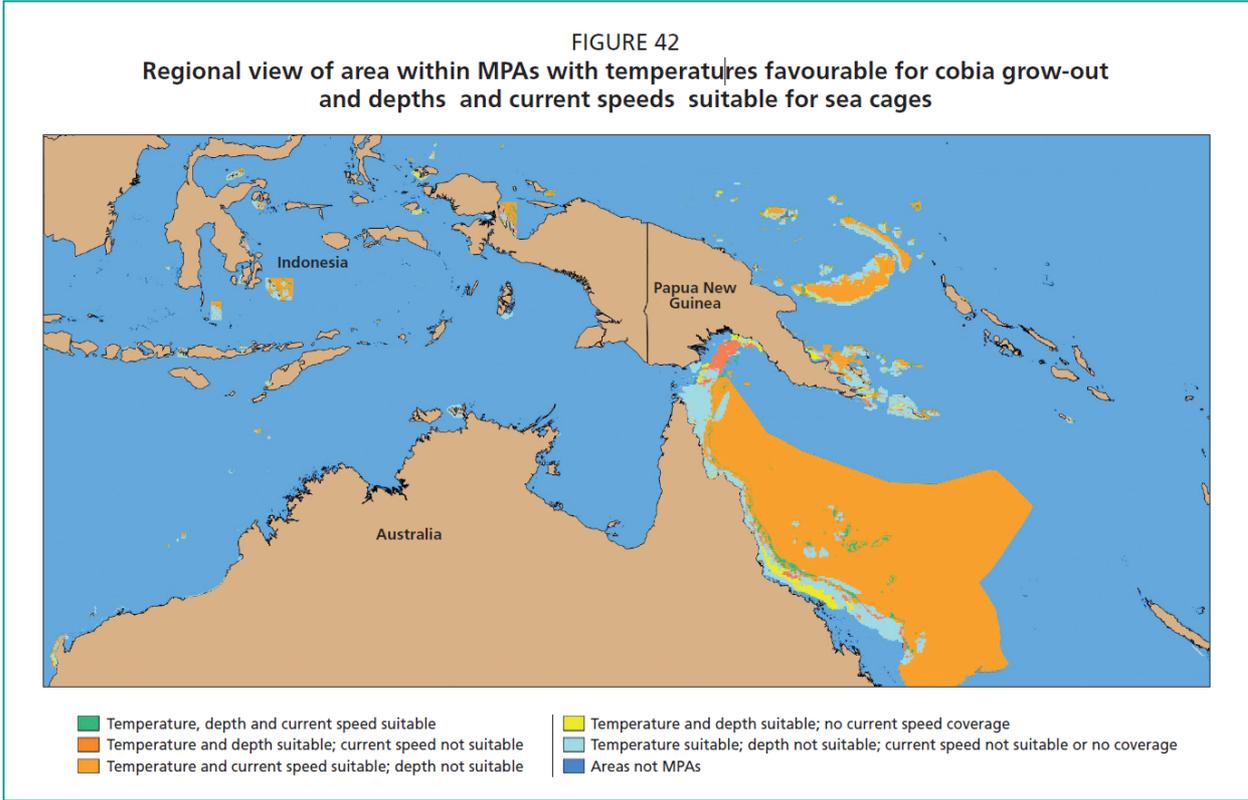
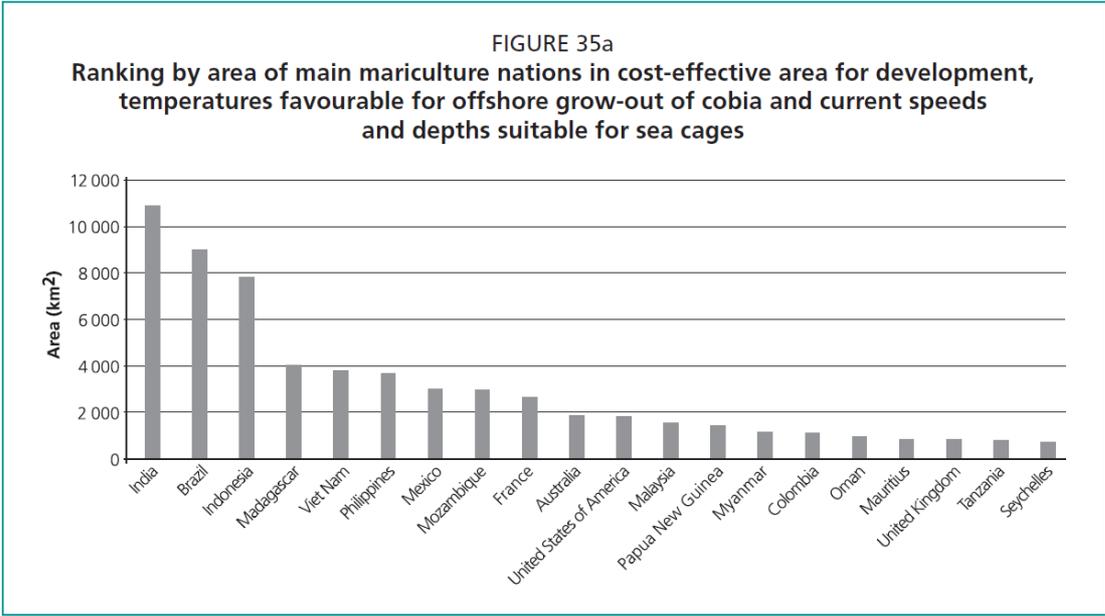
The issue of environmental offsets for aquaculture is a complex one. We would like to comment further on the use of environmental offsets. However, at this stage of the review process, SGL believes that it is suffice to say that mechanisms for environmental offsets, for buy-back of agricultural land or nutrient input offsetting would be a useful framework to help manage the overall issue of nutrient inputs to the GBR and for setting best use/lowest impact land use objectives for coastal development.

The potential for cage aquaculture in Queensland

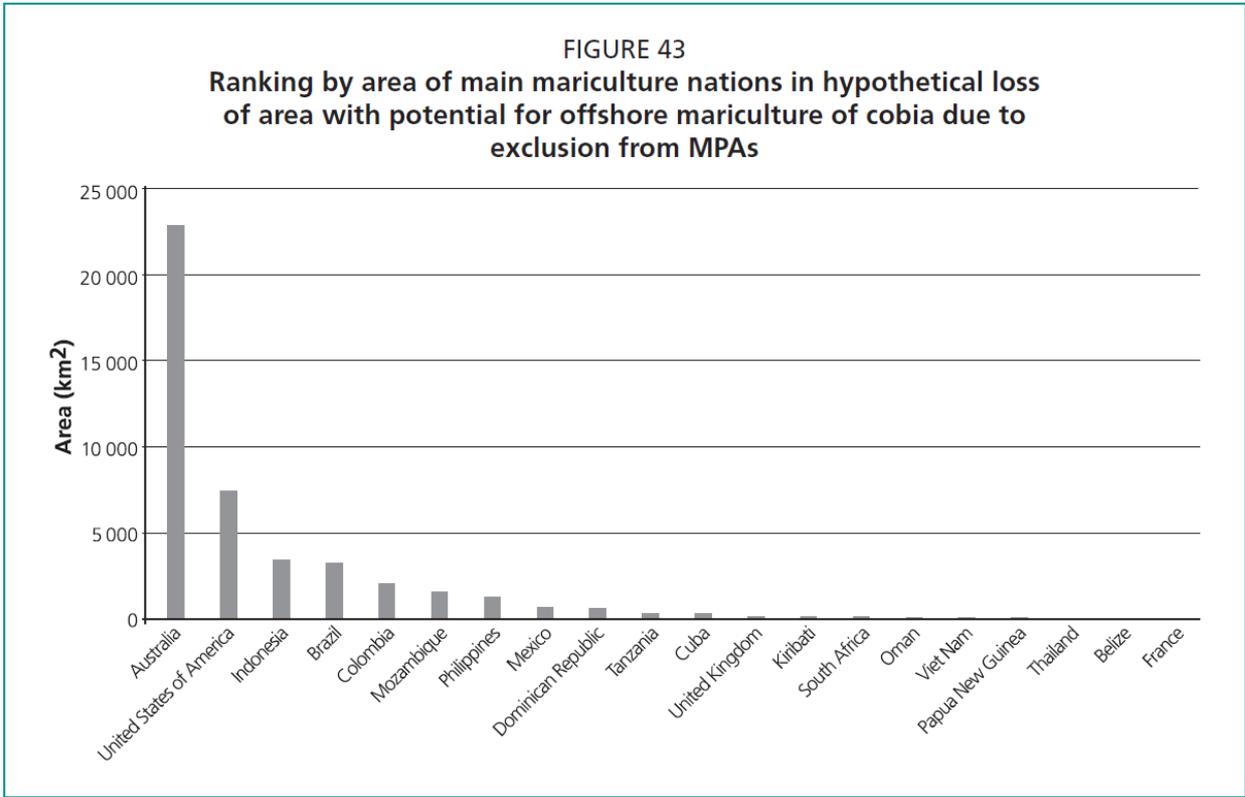
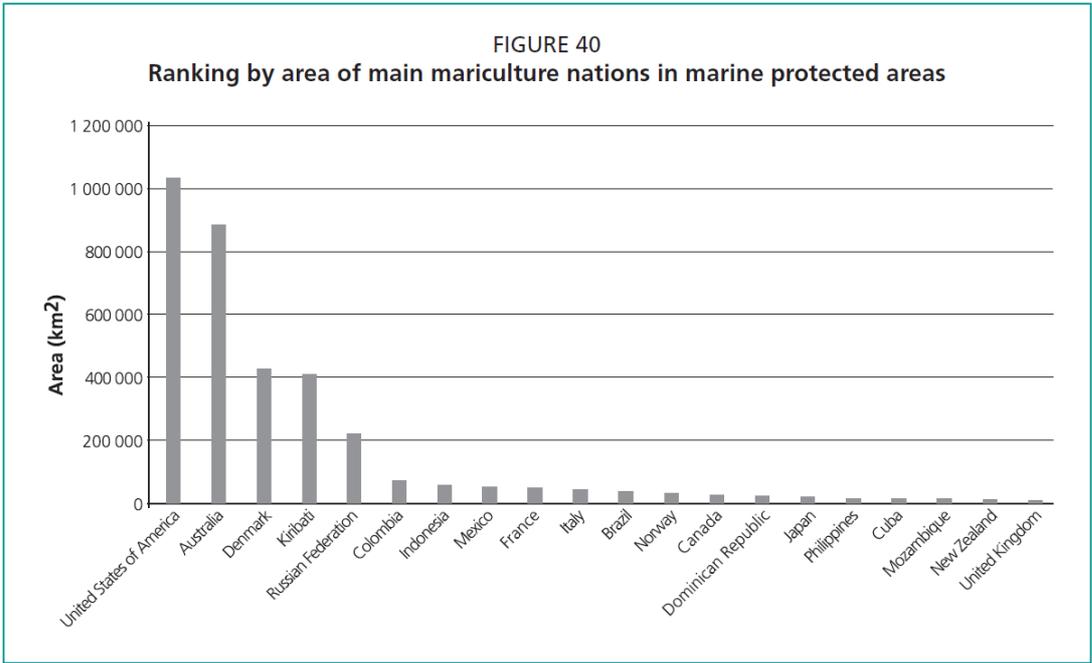
An assessment of global potential for offshore mariculture was recently undertaken by the FAO.⁶ Potential was defined by the depth and current speed limits on offshore cages and longlines, the cost-effective area for offshore mariculture development, and the favourable conditions for grow-out of representative species: cobia (*Rachycentron canadum*), Atlantic salmon (*Salmo salar*) and blue mussel (*Mytilus edulis*), and integrated multitrophic aquaculture (IMTA) of the last two species.

The high-level results indicated that for the tropical representative species cobia, Australia ranked highly in potential for sites for offshore cage culture (see below).

⁶ See FAO Fisheries & Aquaculture Technical Paper 2013, *A global assessment of offshore mariculture potential from a spatial perspective* FAO Rome, E-ISBN 978-92-5-107584-5 (PDF).



When an overlay of Marine Protected Areas was overlaid, the results indicated that Australia and the USA had the greatest amounts of area suitable for growing cobia within MPA's



However, when the overlay of MPA as assessed as precluding the amounts of area suitable for growing cobia, Australia dropped completely off the ranking list.