

## THE ECONOMIC VALUE OF AUSTRALIAN FISHERIES

Over one billion people rely on fish as their basic source of protein and as the global population increases so too does the demand for fish, placing global fisheries under further pressure. This is then compounded by a shift in eating habits as increasing affluence drives demand for high value seafood. Since 1950, the global fish catch has quadrupled and demand is forecast to increase from about 90 million tonnes today to 115 million tonnes in 2015.<sup>1</sup> These two factors - an increase in general demand for fish and a more specific demand for certain fish species - have contributed to widespread overfishing around the world. Overfishing has generally been enabled by poor management of fisheries, due to a lack of knowledge or understanding of sustainability issues; and illegal, unregulated and unreported (IUU) fishing, which either compounds the problems of a poorly managed fishery or impedes sustainable management. Australia is not immune to these pressures, suffering from illegal fishing in some of its northern fisheries and also in southern fisheries by distant water fishing fleets, as depleted northern hemisphere fisheries lead fishermen further south.

The current global framework for the management of marine resources stems from the *United Nations Convention on the Law of the Sea 1982* and the *United Nations Fish Stocks Agreement 1995*; where coastal states have sovereign rights to explore, exploit, conserve and manage natural resources. Australia has long been involved in law of the sea issues and has progressively legislated maritime boundaries as international discussions and treaties were developed:

- on 30 January 1968 Australia legislated for a 12nm Declared Fishing Zone under the *Fisheries Act 1968*
- declared a 200nm Australian Fishing Zone (AFZ) on 1 November 1979 (except off the Australian Antarctic Territory)
- declared a 200nm Exclusive Economic Zone (EEZ) on 1 August 1994 (including off the Australian Antarctic Territory).

Although the AFZ encompasses the same area as the EEZ it solely relates to the management of fisheries. Australia has a complex jurisdictional regime relating to the oceans, with States and the Northern Territory generally having responsibilities out to 3nm, and with the Commonwealth (Australian government) having responsibility for 3-200nm. Where there are overlapping jurisdictions, fisheries are generally managed under the *Offshore Constitutional Settlement 1979*.

The Australian government's approach to fisheries management aims to maintain fish stocks at ecologically sustainable levels and maximise the economic returns to the Australian community. Net economic return is a requirement under the *Fisheries Management Act 1991*, and is calculated as the difference between revenues earned on fish harvested and the economic costs incurred to harvest those fish. Economic costs generally relate to fuel, crew, repairs, fishery management, depreciation and the opportunity costs of capital. Given the common property nature of fisheries resources, market forces alone cannot bring about economic efficiency; instead, management is required to constrain catch and effort to allow maximum economic yield from a sustainable stock biomass.

To manage sustainability, Australia has developed management policies, strategies, and research programs which are all contributing to fewer numbers of Australian fish stocks classified as overfished and are assisting in the preservation and management of marine ecosystems.<sup>2</sup> For example:

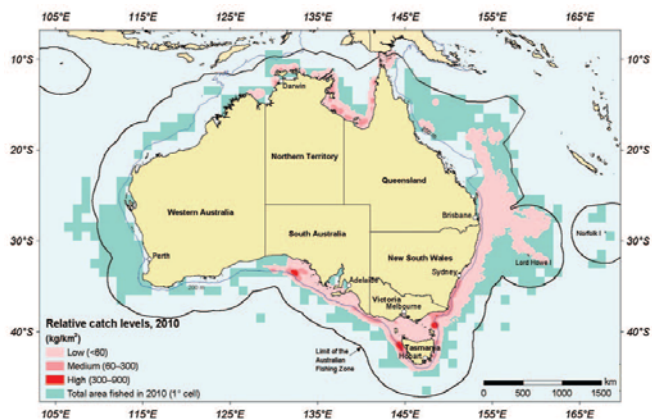
- *Australia's Oceans Policy 1998* provided a framework for integrating and planning the sustainability of ecosystems in Australia's marine jurisdictions.
- The *Environment Protection and Biodiversity Conservation Act 1999* is Australia's primary environmental legislation and requires the government to assess fisheries performance and sustainability.
- *Securing our Future Fishing Package 2005* was a one-off \$220 million structural adjustment to help secure the sustainable future of Australia's fishing industry.
- *Commonwealth Fisheries Harvest Strategy Policy 2007* is the framework for managing Australia's Commonwealth fisheries into the future.
- *Reducing Uncertainty in Stock Status 2008* is a research project to mitigate the increasing number of stocks classified with an uncertain status.

The most recent assessment of Australian fisheries canvassed 96 fish stocks across 22 wild catch fisheries, and concluded that 13 stocks remain overfished or subject to overfishing. This is a significant improvement from 2005 levels which indicated that 24 stocks were endangered by overfishing. Ten of these wild catch fisheries are solely managed by the Commonwealth through the Australian Fisheries Management Authority (AFMA), and the remaining 12 are managed jointly with other Australian State authorities or other countries through international arrangements. In addition to the fisheries managed by AFMA, there are more than 100 other fisheries around Australia that are managed by State governments.<sup>3</sup>

Totalling \$2.18 billion, the overall value of Australian fisheries has declined by 31 per cent since 2000; although most of this decrease occurred between 2000 and 2006 with production stabilising from 2007-10. Fisheries production including aquaculture, Commonwealth and State wild catch fisheries were valued in 2009-10 at approximately \$870 million, \$317 million and \$993 million respectively. During 2009-10 Australia's Commonwealth-managed fisheries accounted for about 25 per cent of the production of all fisheries. The northern prawn fishery, and the southern and eastern scalefish and shark fishery generated production valued at \$88.8 million and \$81.3 million respectively. Together these fisheries generated over half of the production value of Commonwealth fisheries. Add to these the southern bluefin tuna fishery worth \$38.1 million, and the eastern tuna and billfish fishery at \$30.1 million, and these four most valuable fisheries equate to 77.7 per cent of revenue.<sup>4</sup>

Australia's largest export markets for seafood are Japan, Hong Kong and the United States; high value export species include lobsters, prawn, tuna, abalone, and salmon. However, a decline in the volume of exported edible fishery products, as well as world market prices for fisheries, combined with the more recent appreciation of the Australian dollar; saw the value of Australian fisheries exports decrease by 55 per cent since 2000 to approximately \$1.2 billion in

2009-10. Notwithstanding the size of Australian fisheries, Australia also imported fishery products, worth \$1.52 billion in 2009-10, including fish and prawns, which compete with Commonwealth fisheries production.<sup>5</sup> The relative catch level of all Commonwealth fisheries during 2010 is depicted below.



Source: ABARES, *Fishery Status Reports 2010*, p. 1.

Aquaculture in Australia has grown at an average of approximately 12 per cent per annum since the early 1990s and the industry accounts for 40 per cent of the gross value of fisheries production in Australia. The majority of the value of aquaculture production in Australia comes from high value species for domestic and overseas markets. The top five species in terms of production are salmonoids, tuna, prawns, and both edible and pearl oysters. As global consumption of marine species continues to rise, aquaculture production requires further development to meet this demand.<sup>6</sup>

Due to increasing demand for certain fish species and overfishing in various waters, IUU fishing activities continue to be a widespread problem. Illegal fishing negatively impacts on economic returns in the fisheries sector, while also damaging fish stocks and the marine ecosystem. Internationally there are 44 regional fishery bodies that exist to help nations work together in the management, protection and conservation of marine ecosystems including fisheries. Of these, 20 have a specific management mandate and are known as Regional Fisheries Management Organisations. Protecting sovereignty and territorial waters in Australia's maritime jurisdiction is the responsibility of six government departments, however, only the Australian Customs and Border Protection Service and the RAN, possess the capability to enforce Commonwealth maritime law at sea. The assets within these organisations, including aircraft, patrol boats and surveillance systems, are used to patrol and monitor territorial waters as well as respond to suspected illegal incidents at sea.<sup>7</sup>

The trend in illegal fishing within Australia's EEZ rose steadily between 1999 and 2006 particularly in northern waters which are relatively close to adjoining coastal states. The 1974 memorandum of understanding between Australia and Indonesia recognises traditional fishing by Indonesian fisherman in an area specified as the 'MoU Box' in northern Australian waters. Unfortunately some Indonesian fishing vessels continue to use non-traditional methods to illegally fish in the 'box' or they fish outside it in Australian waters. In other cases, criminal syndicates deliberately fish illegally in these waters. Australia responded to this illegal fishing activity by improving its maritime security arrangements through the enhancement of domestic maritime operational capability and stronger deterrence measures within its domestic fisheries legal framework. To maintain pressure on

illegal foreign fishers and deter illegal maritime activities, operations such as AUSINDO CORPAT with the Indonesian navy enable RAN patrol boats to participate in joint surveillance and patrol units in northern waters.<sup>8</sup>

The marine ecosystem south of the Antarctic convergence, has suffered from extensive illegal fishing. While the Heard Island Fishery is managed sustainably, the toothfish stock in the Antarctic Waters Fisheries is already significantly depleted in the spawning area for the species. Whilst Australian vessels did not fish these during 2009-10, the high levels of estimated catch from IUU fishing continued to exceed the precautionary catch limits set by the Commission for the Preservation of Antarctic Marine Living Resources resulting in the toothfish stock remaining classified as overfished. Bilateral treaties with France enable surveillance and joint patrols of each other's maritime zones in the Southern Ocean to help manage distant but economically important marine resources.<sup>9</sup>

Global demand for bluefin tuna has also led to the serious depletion of most bluefin tuna stocks resulting in Australia classifying it as overfished during 2009-10. Whilst this has led to a significant increase in the aquaculture/cage ranching of bluefin tuna, worth \$102.2 million, its highly migratory nature hinders attempts to sustain the species.<sup>10</sup>

In 2011 AFMA announced that foreign illegal fishing apprehensions in Australian waters were at an 18 year low reflecting a significant reduction in illegal fishing activity, however, the pressures driving IUU fishing remain strong and Australia's maritime security and constabulary requirements will continue to increase in the future. The global demand for fish stocks in the Southern Ocean may soon demand additional patrol vessels that are capable of withstanding conditions in southern waters, and illegal foreign fishers from Indonesia indicate that Australia's northern coastline will also remain a high priority for constabulary operations. Australian experience over the last decade, in relation to countering frequent illegal pursuits in the great geographic expanse of Australia's maritime sovereignty, has demonstrated that naval and other available resources can sometimes be stretched.<sup>11</sup>

<sup>1</sup> See Food and Agriculture Organization (FAO), Fishery and Aquaculture Statistics, Summary tables of fishery statistics, World capture production, <http://ftp.fao.org/FI/STAT/summary/a1a.pdf>.  
<sup>2</sup> Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES), *Fishery status reports 2010: Status of Fish Stocks and Fisheries Managed by the Australian Government*, Canberra, 2011, pp. 1-35.  
<sup>3</sup> Department of Sustainability, Environment, Water, Population and Communities, 'Fisheries and the environment', <www.environment.gov.au/coasts/fisheries/index.html>.  
<sup>4</sup> ABARES, *Fishery status reports 2010*, p. 17.  
<sup>5</sup> ABARES, *Fishery status reports 2010*, p. 18; and Austrade, 'Seafood Overview', <www.austrade.gov.au/Seafood-overview/default.aspx>.  
<sup>6</sup> ABARES, *Australian fisheries statistics 2010*, Canberra, 2011, pp. 1 and 72; and Department of Agriculture, Fisheries and Forestry, 'The Aquaculture Industry in Australia', <www.daff.gov.au/fisheries/aquaculture/the\_aquaculture\_industry\_in\_australia>.  
<sup>7</sup> FAO, 'What are Regional Fishery Bodies', <www.fao.org/fishery/topic/16800/en>; and Martin Tsamenyi, 'Constabulary arrangements for enforcement of Australia's maritime jurisdiction', *Australian Journal of Maritime and Ocean Affairs*, Vol. 4(1), pp. 11-17.  
<sup>8</sup> See Clive Schofield, Martin Tsamenyi and Mary Ann Palma, 'Securing Maritime Australia: Developments in Maritime Surveillance and Security', *Ocean Development & International Law*, Vol. 39(1), 2008, pp. 94-112; and Joanna Vince, 'Policy Responses to IUU fishing in Northern Australian waters', *Ocean and Coastal Management*, Vol. 50(8), 2007, pp. 683-699.  
<sup>9</sup> Border Protection Command, *Guide to Australian Maritime Security Arrangements*, Canberra, 2009.  
<sup>10</sup> Marcus Haward, 'The Southern ocean, climate change and ocean governance', and Emily A Gardner, 'The legacy and fate of bluefin tuna under international law', papers presented at the *Law of the Sea Institute Conference on The Limits of Maritime Jurisdiction*, 28 November - 2 December 2011, ANCORS, University of Wollongong; see also ABARES, *Fishery status reports 2010*, p. 4.  
<sup>11</sup> See Australian Fisheries Management Authority, *Annual Report 2010-11*, Canberra, 2011, p. 2.

