# australian commodities

## march quarter 08.1

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abare is a professionally independent government economic research agency

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abare project 1163



ISSN 1321-7844

abare.gov.au

# fish and seafood

## *trends in production and trade and outlook to 2012-13*

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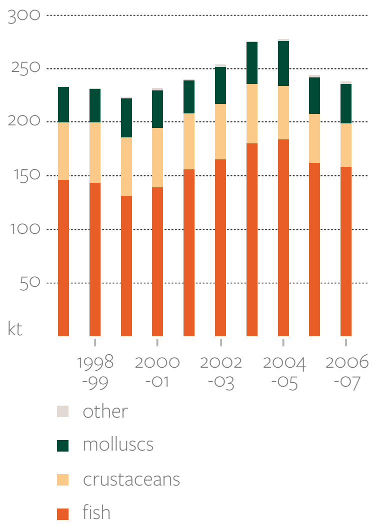
### *trends in world seafood production and trade*

World fisheries production continued to rise in 2005, reaching a new record of 157.5 million tonnes. Over the past decade, total production has risen by 22 per cent, mainly caused by strong growth in aquaculture, which more than doubled between 1996 and 2005 — rising from 31 million tonnes to 63 million tonnes. The aquaculture sector now accounts for 40 per cent of total fisheries production worldwide. With growth averaging 8.8 per cent a year since 1970, aquaculture continues to grow more rapidly than any other animal food producing sector.

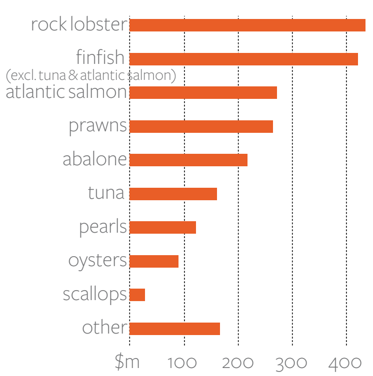
In contrast, wildcaught production appears to have reached a plateau. Over the ten years to 2005, wildcaught fisheries production remained largely unchanged, averaging 94 million tonnes. Deviations from this average were mostly driven by fluctuations in the catch of Peruvian anchovies, a species for which catch rates are significantly affected by the influence of El Niño on ocean currents in the south east Pacific. Catches of other major wildcaught species — alaskan pollock, atlantic herring and skipjack tuna — remained relatively stable over this period. Together, these four species accounted for nearly one-fifth of global wildcaught fisheries production in 2005.

Although growth has occurred in some wildcatch fisheries and regions, the stable production trend observed over the past ten years supports the Food and Agriculture Organisation's view that, globally, wildcatch fisheries have reached their potential. In 2005, it was estimated that approximately half of the world's fish stocks were fully exploited, with no room for expansion. A further quarter were overexploited, depleted or recovering from depletion (17 per cent, 7 per cent and 1 per cent respectively), with no possibilities for expansion in the short or medium term. Furthermore, of the top ten wildcaught species, which account for approximately 30 per cent of capture fisheries production, most are fully exploited or overexploited, and are therefore not likely to produce major increases in production.

The FAO estimates that by 2030 an additional 37 million tonnes of fish a year will be needed to maintain current per person levels of fish food consumption, which in 2005 was estimated at 16.6 kilograms a year (live weight equivalent). Given the limited room for expansion in wildcatch fisheries, the majority of this additional supply, if it is needed, will probably be sourced from aquaculture. However, access to suitable land is likely to be a major constraint to aquaculture expansion, especially in the Asia Pacific region, australian fisheries production




australian production of key species, 2006-07




which currently accounts for 92 per cent of total aquaculture production. Access to clean water and capital is also likely to be a limiting factor, particularly in developing countries.

In line with increases in production and consumption, global trade in fisheries products continues to grow. Between 2000 and 2005, the real value of fisheries exports increased by 25 per cent to an estimated US$85.8 billion. This is despite prices for the major export products remaining relatively stable in real terms over this period. Shrimp (prawns) continues to be the most important commodity traded in value terms, accounting for around 17 per cent of the total value of internationally traded fishery products in 2004. The other main groups of exported species were groundfish (10 per cent), tuna (9 per cent) and salmon (9 per cent).

In 2005, China was the world's largest exporter of fishery products, with exports valued (in real terms) at US$8.3 billion, followed by Norway (US$5.4 billion), Thailand (US$4.9 billion) and the United States (US$4.7 billion). The major importing countries in terms of value were Japan (US$16 billion), the United States (US$13.2 billion) and Spain (US$6.1 billion).

## australian fisheries production and trade

### *production*

After reaching a peak of 278 000 tonnes in 2004-05, Australian fisheries production declined. In 2006-07, it fell by 3 per cent to 238 000 tonnes. Although mollusc production rose by 10 per cent to 37 000 tonnes, driven by strong growth in squid, oyster and scallop production, this increase was not sufficient to offset a decline in fish and crustacean production, which fell by 3 per cent (4700 tonnes) and 11 per cent (5200 tonnes) respectively.

In nominal terms the value of Australian fisheries production rose by 2 per cent in 2006-07 to $2.19 billion, although in real terms it fell by 1 per cent. Finfish species accounted for 39 per cent of the gross value of production, crustaceans 36 per cent and molluscs 23 per cent. Rock lobster, salmon, prawns, abalone, tuna and pearls were key contributors to gross value of production — generally, these are also Australia's major export species. Farmed atlantic salmon from Tasmania, which is mostly sold on the domestic market, overtook tuna as Australia's most valuable finfish species.

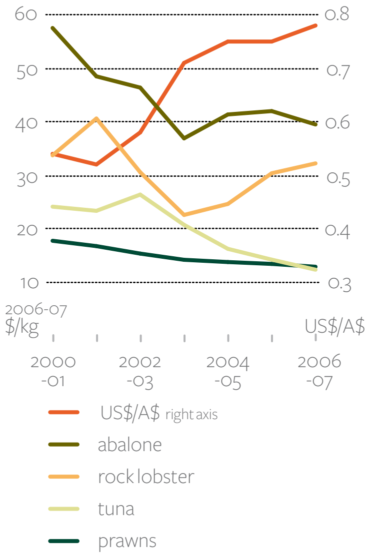
Between 1999-2000 and 2004-05, the real gross value of Australian fisheries production fell by 25 per cent. Given that the volume of production increased by 25 per cent over this period, the decline in value was driven largely by a fall in unit prices for key species, as the Australian dollar appreciated strongly against the currencies of major trading partners. Yet despite the continued appreciation of the Australian dollar in 2005-06 and 2006-07, and a decline in production, the gross value of production has since remained relatively stable at approximately $2.2 billion. Contributing

## fish and seafood outlook

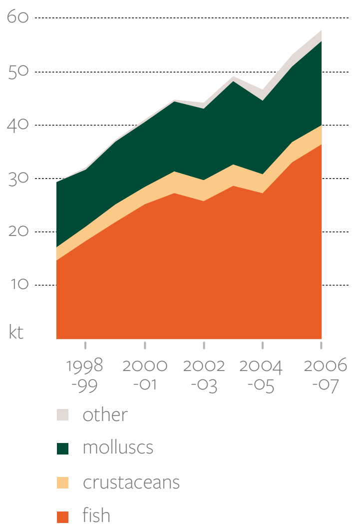
| | 2005 -06 | 2006 -07 | 2007 -08 f | 2008 -09 z | 2009 -10 z | 2010 -11 z | 2011 -12 z | 2012 -13 z |
|---|---|---|---|---|---|---|---|---|
| gross value of fisheries production | $m | $m | $m | $m | $m | $m | $m | $m |
| tuna a | 175 | 161 | 217 | 277 | 298 | 313 | 330 | 349 |
| – real b | 185 | 166 | 217 | 269 | 283 | 290 | 298 | 308 |
| other fish | 599 | 693 | 715 | 736 | 758 | 780 | 803 | 825 |
| – real b | 634 | 713 | 715 | 717 | 720 | 723 | 725 | 727 |
| prawns c | 306 | 265 | 235 | 230 | 236 | 240 | 247 | 253 |
| – real b | 324 | 272 | 235 | 224 | 224 | 223 | 223 | 224 |
| rock lobster | 459 | 441 | 436 | 469 | 474 | 480 | 586 | 647 |
| – real b | 486 | 454 | 436 | 457 | 450 | 445 | 529 | 571 |
| abalone | 225 | 217 | 214 | 234 | 253 | 293 | 337 | 381 |
| – real b | 238 | 223 | 214 | 228 | 240 | 272 | 305 | 336 |
| scallops | 26 | 28 | 29 | 28 | 31 | 33 | 37 | 38 |
| – real b | 27 | 29 | 29 | 28 | 29 | 31 | 33 | 34 |
| other | 350 | 379 | 376 | 381 | 390 | 393 | 403 | 412 |
| – real b | 371 | 390 | 376 | 371 | 371 | 364 | 364 | 363 |
| total | 2 141 | 2 186 | 2 222 | 2 356 | 2 441 | 2 533 | 2 742 | 2 906 |
| – real b | 2 265 | 2 247 | 2 222 | 2 293 | 2 317 | 2 346 | 2 478 | 2 562 |
| export value | | | | | | | | |
| tuna a | 179 | 162 | 211 | 274 | 295 | 309 | 327 | 345 |
| – real b | 190 | 167 | 211 | 267 | 280 | 286 | 295 | 305 |
| other fish | 115 | 118 | 122 | 124 | 126 | 128 | 130 | 132 |
| – real b | 122 | 121 | 122 | 121 | 120 | 119 | 118 | 116 |
| prawns | | | | | | | | |
| headless | 3 | 2 | 5 | 3 | 3 | 4 | 4 | 4 |
| – real b | 3 | 2 | 5 | 3 | 3 | 4 | 3 | 3 |
| whole | 129 | 89 | 57 | 59 | 61 | 61 | 66 | 68 |
| – real b | 136 | 91 | 57 | 58 | 58 | 57 | 60 | 60 |
| rock lobster | | | | | | | | |
| tails | 97 | 102 | 94 | 107 | 105 | 108 | 130 | 145 |
| – real b | 103 | 104 | 94 | 104 | 100 | 100 | 117 | 128 |
| whole | 387 | 357 | 363 | 389 | 397 | 398 | 488 | 538 |
| – real b | 410 | 367 | 363 | 379 | 377 | 369 | 441 | 475 |
| abalone | | | | | | | | |
| fresh, chilled or frozen | 132 | 139 | 120 | 125 | 129 | 145 | 160 | 173 |
| – real b | 139 | 143 | 120 | 122 | 122 | 134 | 144 | 153 |
| prepared or preserved | 114 | 107 | 88 | 102 | 113 | 122 | 150 | 167 |
| – real b | 121 | 110 | 88 | 99 | 107 | 113 | 135 | 147 |
| scallops | 39 | 35 | 26 | 33 | 35 | 36 | 37 | 37 |
| – real b | 41 | 36 | 26 | 32 | 34 | 34 | 33 | 33 |
| other fisheries products | 62 | 69 | 67 | 64 | 89 | 97 | 93 | 94 |
| – real b | 65 | 71 | 67 | 62 | 85 | 90 | 84 | 83 |
| total (excluding pearls) | 1 257 | 1 180 | 1 153 | 1 280 | 1 353 | 1 409 | 1 583 | 1 704 |
| – real b | 1 330 | 1 213 | 1 153 | 1 246 | 1 285 | 1 305 | 1 431 | 1 502 |
| pearls | 290 | 314 | 272 | 285 | 295 | 300 | 310 | 318 |
| – real b | 306 | 322 | 272 | 277 | 280 | 278 | 280 | 280 |
| total (including pearls) | 1 547 | 1 494 | 1 425 | 1 565 | 1 648 | 1 709 | 1 893 | 2 022 |
| – real b | 1 637 | 1 536 | 1 425 | 1 523 | 1 565 | 1 583 | 1 711 | 1 783 |

a Exports of tuna landed in Australia. Excludes tuna transhipped at sea or captured under joint venture or bilateral agreements. b In 2007-08 Australian dollars. c Includes headless and whole prawns only. f ABARE forecast. z ABARE projection.
Sources: Australian Bureau of Statistics; ABARE.

## unit prices for key species




## australian aquaculture production




to this has been an overall rise in prices for fisheries products, and a strong recovery in the price of rock lobster in particular.

Of the $2.2 billion of fisheries products produced in 2006-07, wildcaught fisheries accounted for $1.4 billion (65 per cent). After several years of strong growth, wildcaught fisheries production fell by 21 per cent between 2004-05 and 2006-07, from 236 000 tonnes to 186 000 tonnes. Approximately a third of this decline was attributable to a drop in pilchard production; however, being a low value species, the affect on real gross value of production was not as large (only 4 per cent or $6 million). The 10 per cent ($153 million) fall in the real gross value of production over the two year period was largely the result of a $53 million fall in prawn production and a $34 million fall in abalone production.

In 2006-07, the value of aquaculture production rose by 7 per cent to $796.5 million. Over the decade to 2006-07, aquaculture production almost doubled from 29 300 tonnes to 57 800 tonnes. Most of this growth came from an increase in salmon and trout production, which together accounted for 44 per cent of total aquaculture production in 2006-07. The contribution of these species to gross value of production also increased from 15 per cent ($97.2 million) in 1997-98 to 35 per cent ($282.4 million) in 2006-07. Other major aquaculture species in Australia include southern bluefin tuna (17 per cent of value in 2006-07), pearls (15 per cent), oysters (11 per cent) and prawns (6 per cent).

### *trade*

In real terms, the value of Australian fisheries exports fell from $2.6 billion in 2000-01 to $1.5 billion in 2006-07, a decline of 42 per cent. Driving this decrease was a decline in the export value of key species, including prawns (73 per cent), whole tuna (49 per cent), pearls (37 per cent), rock lobster (26 per cent) and abalone (16 per cent). Together, the value of these five fisheries products fell by $797 million between 2000-01 and 2006-07. The main factors contributing to this decline were a 26 per cent drop in the volume of edible exports and falling unit prices for major export species. In particular, real unit prices for prawns fell 48 per cent over the period 2000-01 to 2006-07, while unit prices for whole tuna and abalone fell by 44 per cent and 24 per cent respectively.

Meanwhile the real value of imports rose by 8 per cent over this period, from $1.36 billion in 2000-01 to $1.5 billion in 2006-07. This increase came mostly from a 38 per cent rise in the volume of edible imports, from 144 000 tonnes in 2000-01 to 199 000 tonnes in 2006-07.

As a relatively small producer of fisheries products, Australia receives prices for seafood exports that are predominantly set on world markets. An appreciating Australian dollar against the currencies of major trading partners, particularly the US dollar and the Japanese yen, therefore results in lower prices for Australian exporters and makes imports more attractive to domestic consumers. Hence, declining world market prices in recent years, and the appreciation of the Australian dollar relative to the US dollar and the Japanese yen, have been largely responsible for the decline in the total value of Australian seafood exports and the rise in the value of Australian seafood imports. If past trends continue it is likely that Australia will be a net importer of fisheries products in volume and value terms in 2007-08.

## exports

Australian exports of fisheries products fell by 3 per cent to $1.5 billion in 2006-07. Approximately 80 per cent of the total value of exports was of edible seafood products, which in volume terms fell by 8 per cent to 48 000 tonnes, while pearls accounted for the majority (93 per cent) of nonedible exports. The main exported products in terms of value were rock lobster (31 per cent of gross value of exports), pearls (21 per cent), abalone (16 per cent), whole tuna (11 per cent) and prawns (6 per cent).

Contributing to the decline in export value was a decrease in the value of whole tuna, prawn and rock lobster exports. Driving the fall in the value of whole tuna exports was an 8 per cent decline in price, while the export value of prawns and rock lobster fell because export quantities dropped by 27 per cent and 14 per cent respectively.

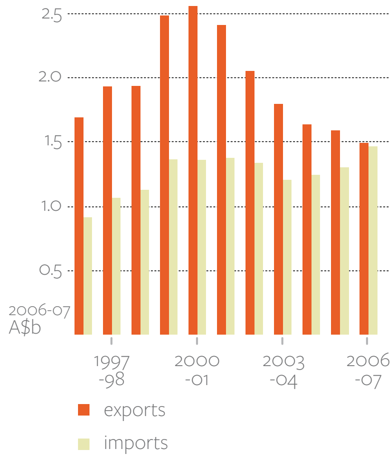
Although export prices on average remained fairly stable in 2006-07, prices for key export species (excluding rock lobster) continued to fall. The unit export prices for whole tuna, abalone and prawns fell by 8 per cent, 6 per cent and 4 per cent respectively. In particular, the unit export price for yellowfin tuna dropped by 32 per cent to $5.78 a kilogram. In contrast, the export price for rock lobster rose by 10 per cent to $45.20 a kilogram.

Hong Kong was the primary export market for Australia's edible fisheries products in 2006-07 followed by Japan. In value terms, 40 per cent of edible fisheries products were exported to Hong Kong ($447 million) and 27 per cent to Japan ($306 million). The main edible fisheries products exported to Hong Kong were rock lobster ($235 million) and abalone ($149 million). The main products exported to Japan were whole tuna, rock lobster, prawns and abalone. Before 2005-06, Japan was the primary export market for Australia's edible fisheries product. Between 2000-01 and 2006 07, the real value of exports to Japan fell by 65 per cent, from $863 million to $306 million.

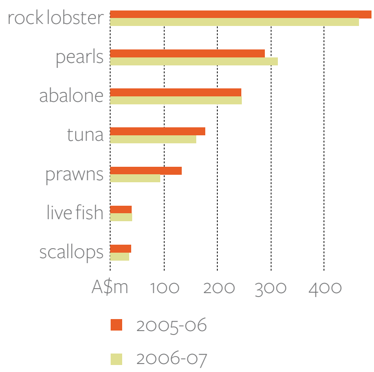
## imports

In 2006-07, the value of Australia's imports of fisheries products increased by $203 million to $1.47 billion, driven mostly by increases in the value of prawns, frozen fish fillets and pearls. The volume and value of Australia's imports of fisheries products increased by 5 per cent and 16 per cent

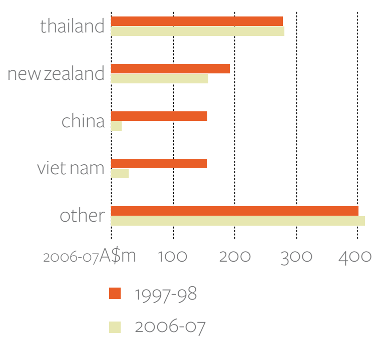
real value of australian exports and imports of fisheries products




value of Australian exports of fisheries products




imports of edible fisheries products, by source



respectively. Over 80 per cent of the gross value of imports was edible fisheries products, with pearls accounting for 64 per cent of nonedible imports. The main edible products imported were prawns ($246 million, 21 per cent of the gross value of edible seafood imports), canned fish ($244 million, 21 per cent) and finfish fillets ($235 million, 20 per cent).

In 2006-07, the major sources of edible fisheries products imported into Australia were Thailand ($279 million or 24 per cent of the total), New Zealand ($192 million, 16 per cent), China ($156 million, 13 per cent) and Viet Nam ($155 million, 13 per cent). In that year, imports from these four countries accounted for 66 per cent of total edible imports by value. Over 60 per cent of Australian imports of canned fish, 21 per cent of fresh, chilled or frozen prawns, and 17 per cent of canned crustaceans and molluscs were soured from Thailand. New Zealand was the source of 38 per cent of Australian imports of fresh, chilled or frozen fish products, 28 per cent of canned crustaceans and molluscs, and 21 per cent of fresh, chilled or frozen mollusc imports.

Although Thailand and New Zealand are currently our primary sources of seafood imports, the quantity of edible seafood imports from China has been steadily rising. In 2006-07 alone, imports of edible seafood products from China increased by 51 per cent, from 17 900 tonnes to 27 100 tonnes. Overall, since 1996-97, imports of edible seafood products from China have increased almost seventeenfold, from 1600 tonnes to 27 000 tonnes in 2006-07. Of particular note is the growth in prawn imports from China, which increased from only 160 tonnes in 2000-01 to 8470 tonnes in 2006-07.

Between 2000-01 and 2004-05 the real value of edible seafood imports remained fairly stable; however, since 2004-05 it has increased by 16 per cent. This recent increase was driven primarily by increases in the real value of canned fish (22 per cent), frozen fish fillets (15 per cent) and prawns (15 per cent). Together these three seafood products increased the real value of Australia's edible seafood imports by $105 million since 2004-05.

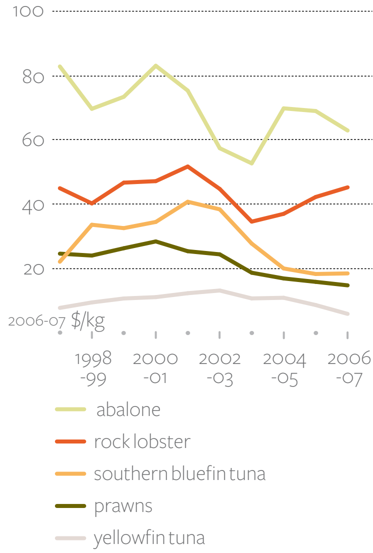
## medium term outlook

The total value of Australia's fisheries production in 2007-08 is forecast to increase to $2.2 billion, largely reflecting a strong recovery in the value of southern bluefin tuna, driven by increases in both volume and price. Over the medium term, fisheries production and value are likely to be affected by, among other factors, movements in fuel prices and exchange rates, as well as management responses aimed at rebuilding stock levels. While fuel prices are likely to remain high, the expected depreciation of the Australian dollar over the medium term should result in favourable price movements for fishers, particularly for the major production species, which are generally export oriented. Any reduction in total production in the wildcatch sector is likely to be offset to some extent by increases in aquaculture production, particularly for abalone and finfish.

As the Australian dollar continues to appreciate against the currencies of major trading partners in 2007-08, the value of exports is forecast to fall slightly to $1.4 billion. Over the medium term, however, the assumed depreciation of the Australian dollar and expected growth in production of high value species are likely to result in an increase in the value of fisheries exports through to 2012-13. Free trade agreements with important seafood trading partners, such as Thailand, New Zealand, Singapore and the United States, are also likely to create opportunities for Australian exporters in overseas markets.

Australia has historically been an exporter of high value seafood products and an importer of low value products. In 2006-07 the value of edible exports and edible imports were each worth approximately $1.2 billion. However, in quantity terms, 48 000 tonnes of edible fisheries products were exported, while 199 000 tonnes of edible fisheries products were imported. Of particular note is the increase in imports of low value prawns and frozen fish fillets from China and Viet Nam over the past ten years. Between 1997-98 and 2006-07, the quantity of prawn imports from these two countries increased from 800 tonnes to nearly 20 000 tonnes, while the quantity of frozen fish fillets increased from 1300 tonnes to nearly 15 000 tonnes. Demand for these low value products is expected to remain strong so long as the Australian dollar is high, although the recent introduction of tighter quarantine measures may reduce the quantity of raw prawn imports from south east Asia.

export prices for various fisheries products

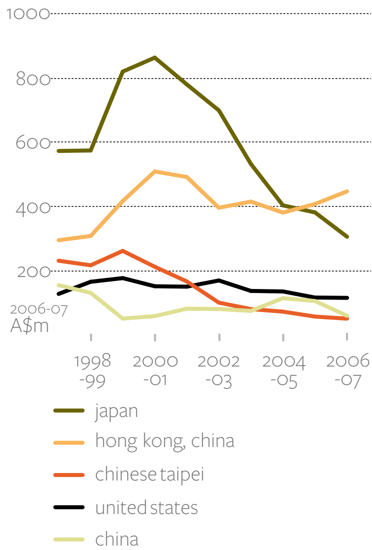



## *rock lobster*

Approximately two-thirds of Australia's production of rock lobster is from Western Australia. In recent years, production in this fishery has declined because of prevailing El Niño conditions; however, catches are expected to increase in 2007-08 and 2008-09 before declining to decade lows. The other two main rock lobster fisheries occur in South Australia (17 per cent of total catch in 2006-07) and Tasmania (11 per cent). Catches in these two fisheries are managed through TACs and are expected to remain relatively constant in the medium term.

The majority of rock lobster production is exported. Major export markets include Hong Kong (50 per cent of total quantity in 2006-07), Japan (15 per cent) and the United States (14 per cent). Recent prices in overseas markets have been high because of strong demand, which is the result of increased marketing, the emergence of new markets and a reduction in supplies from other competing suppliers in key markets, such as the United States. These high prices, however, have not flowed through to domestic producers because of the high value of the Australian dollar.

australian exports of edible fisheries products, by destination



Strong demand and high prices for Australian lobster on international markets are expected to continue. The expected depreciation of the Australian dollar against the US dollar over the medium term should result in an increase in prices received by Australian fishers.

## *prawns*

Over half of Australia's prawns are wild catch from northern waters off Queensland and the Northern Territory. A growing share of prawn production is farmed; in 2006-07, 16 per cent of Australian prawn production was farmed. The majority of farmed prawns are from Queensland, which produced 3085 tonnes in 2006-07, with a value of $43 million.

Prawn production declined by 2950 tonnes in 2006-07 to 20 600 tonnes, largely because of a decline in wildcaught production from Queensland, Western Australia and the northern prawn fishery. The value of production also fell, from $306 million in 2005-06 to $265 million in 2006-07, reflecting falls in both production and average beach prices for the major prawn species, tiger, banana and endeavour prawns. The fall in prices is a reflection of the appreciating Australian dollar and increased competition on the domestic and international markets from low price imports from south east Asia. In 2006-07 the volume of prawn imports rose by 12 per cent to 33 900 tonnes. In 2006-07, China, Viet Nam and Thailand together accounted for 73 per cent of Australia's total prawn imports, by volume.

In the outlook period, it is expected that wildcaught prawn production will remain stable but will continue to be influenced by both biological and economic factors. External economic factors such as the price of fuel and the Australian exchange rate will strongly influence the quantity and value of prawn production. The assumed depreciation of the Australian dollar over the medium term will improve both the domestic and export price received for Australian prawns. It is expected that aquaculture production of prawns will continue to increase at a consistent rate through to 2012-13.

The recent Australian Government structural adjustment package — Securing Our Fishing Future — will also influence the outlook for prawn production in Commonwealth fisheries. Under the structural adjustment package's licence buyback, boat statutory fishing rights in the northern prawn fishery were reduced from 95 to 52.

## *tuna*

Approximately three-quarters of Australia's production of tuna is exported, mostly to Japan and the United States, but increasingly to Thailand and the South Pacific. The principal tuna species in value and volume terms is southern bluefin tuna, which is caught using purse seine methods from Commonwealth waters and then fattened in farms at Port Lincoln. Other important export species are yellowfin tuna, bigeye tuna and most recently albacore tuna. Low value albacore tuna is being caught in large volumes along the east coast. Much of the catch is exported to south east Asia and the Pacific.

Falling world prices for bluefin tuna — caused partly by an increase in supply from northern bluefin tuna farms in the Mediterranean as well as unfavourable exchange rate movements — drove a fall in the value of total tuna exports of 55 per cent to $162 million in real terms between 2002-03 and 2006-07. A sharp recovery to approximately $211 million is expected in 2007-08 as the world price for bluefin tuna rises strongly and production of southern bluefin tuna increases.

In the longer term, world production of northern and southern bluefin will be constrained by international quota limits. For this reason, southern bluefin prices are expected to remain strong. Concern about the size of bluefin stocks has prompted discussion about reducing catch limits. However, abare has assumed that quotas will remain at current levels because the timing and size of any reductions are not known with certainty. In Australia, southern bluefin tuna exports are expected to increase somewhat as a result of technological improvements in yield and longer fattening periods. In contrast, little growth in the value of production is anticipated in Australia's wildcatch tuna sector over the next five years.

### *abalone*

The majority of Australia's abalone production has historically been harvested from wildcatch fisheries in Tasmania, Victoria and South Australia. Over the past five years, however, aquaculture production in these states has expanded, with nearly 10 per cent (507 tonnes) of total abalone production in 2006-07 sourced from aquaculture farms.

In December 2005, a highly virulent herpes-like virus was detected in two land based abalone aquaculture farms and two offshore experimental farms in Victoria. The disease then spread to the Victorian abalone fishery's western zone and to parts of its central zone, forcing areas of the fishery to be closed and a reduction in the TAC. Measures were also put in place to try to prevent the spread of the disease to other parts of the fishery, and across Bass Strait to Tasmania.

After a voluntary destocking and decontamination process, the affected farms are slowly returning to their former production capacity. The effect on total abalone production in 2007-08, however, is expected to be minor as the lost production from these farms, combined with TAC reductions, will be largely offset by increased output from nonaffected farms and from other states. In 2006-07, abalone production is forecast to increase slightly to 5600 tonnes. In the medium term, production is forecast to rise as existing farms increase production capacity and additional farms in Victoria, Tasmania, South Australia and Western Australia come on stream. It is expected that by 2012-13 approximately a third of Australia's abalone production will be farmed.

The abalone industry in Australia is predominantly export oriented; therefore, exchange rate movements influence export volumes and prices. With the assumed depreciation of the Australian dollar in the medium term, the expected increase in production will result in an increase in the value of abalone exports through to 2012-13.

### *salmon*

In 2006-07, aquaculture farmed salmon from Tasmania emerged as Australia's most valuable single species fishery, overtaking Western Australia's rock lobster fishery. This follows four years of rapid growth, during which the value of Tasmania's farmed salmon more than doubled. Based on preliminary estimates, over 23 600 tonnes of Atlantic salmon was produced in 2006-07, worth an estimated $272 million.

Tasmania supplies most of its salmon to the domestic market. A key factor contributing to its rapid growth in recent years has been the focus on marketing salmon to Australian consumers. Another factor behind the sector's strong growth is the role of research and development, which has allowed the sector to adopt improved feeding techniques and apply better disease control measures.

The sector is expected to continue to grow in the medium term, albeit at a slower pace than that experienced in recent years. While access to sheltered waters is becoming a constraint, the sector is looking to develop farms in more exposed, remote areas using technologies practised in Europe.

## recent pressures on fisher profitability

Fisheries management since the early 2000s has been more strongly focused on economic objectives than in any previous period, particularly at the Commonwealth level. Although the Australian Fisheries Management Authority (AFMA) was established in the early 1990s with the explicit objective of pursuing maximum economic efficiency in the exploitation of fisheries resources, the 1990s generally was a period of favourable economic conditions. Fuel prices were low and stable, the Australian dollar was relatively strong, investment in fisheries was high and the need for proactive management to ensure economic efficiency did not seem pressing.

Since the early 2000s, however, conditions have changed. A significant increase in fuel prices and an appreciation of the Australian dollar have led to a substantial decline in profits. Real net economic returns in the northern prawn fishery (historically one of the most profitable Commonwealth fisheries) fell from $69 million in 2000 01 to $14 million in 2004-05. Net economic returns in the Commonwealth trawl sector and the eastern tuna and billfish fishery were poor from the outset, given the lack of binding catch and effort controls. Net economic returns worsened further after 2001-02.

A fishery accruing large positive net economic returns when conditions are favourable can withstand the onset of negative returns for a considerably longer period than fisheries with low returns in good times. Of course, fishers in profitable fisheries can also offset losses from poor periods with returns from better times.

One of the reasons for the pressure on fishers' profits since the early 2000s has been a substantial increase in fuel costs. Fuel costs generally make up a large proportion of total cash costs for fishers, particularly in trawl fisheries. In 2005-06, fuel costs in the northern prawn fishery and the Torres Strait prawn fishery made up almost 40 per cent of the total cash costs of operators. Fuel costs in the Commonwealth trawl sector were almost 25 per cent of total cash costs in 2004-05.

In fisheries using methods other than trawl, fuel costs are a smaller share of total costs. In the eastern tuna and billfish fishery (in which the longline method is used), fuel costs were about 17 per cent of total cash costs in 2004-05 and in the gillnet, hook and trap sector, fuel costs represented less than 10 per cent of total cash costs. For comparison, the average contribution of fuel costs to total cash costs in the Australian grains industry is 9 per cent.

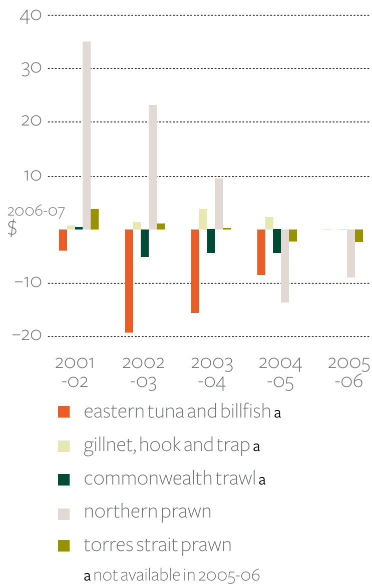
After a period of low and stable real offroad diesel prices throughout the 1990s, the price of offroad diesel increased significantly between 2002-03 and 2005-06, rising by 77 per cent from 48.3 cents a litre to 85.3 cents a litre. The increase places current fuel prices at levels not reached in real terms since the late 1970s and early 1980s.

With few substitutes for fuel in the short term, the rise in price has meant fuel costs have constituted ever larger shares of total cost. In the northern prawn fishery, for example, the share of fuel of total cash costs almost doubled between 2000-01 and 2005-06.

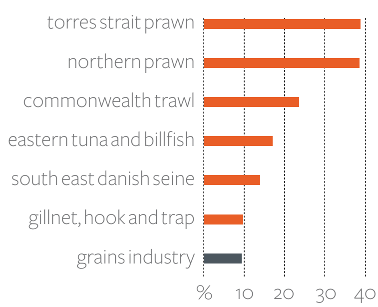
As would be expected, the increase in diesel price has changed fisher behaviour. In the eastern tuna and billfish fishery, the amount of effort targeting inshore albacore stocks has increased. Also, as part of abare's regular survey of the southern and eastern scalefish and shark fishery, operators reported spending less time both searching for new grounds and trawling grounds with variable yields.

Sustained high fuel prices are likely to motivate an increase in the use of fishing methods that are less fuel intensive (generally methods other than

net economic returns in Commonwealth fisheries

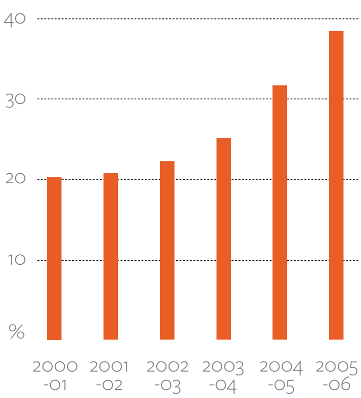



fuel cost as a share of total cash costs, by fishery



real offroad diesel fuel price


fuel cost as a share of total cash costs in the northern prawn fishery




trawl) and may bring forward the decision to substitute new, more efficient engines for aging ones. If fuel prices remain high, fishers would benefit from an environment in which the trial and adoption of new methods is permitted. Already, global TACs in the southern and eastern scalefish and shark fishery mean quota can be transferred across sectors. It will also be important for managers to monitor the distribution of effort across areas in their fishery to ensure that particular stocks are not fished excessively. Effort in general may not be as widely dispersed when fuel costs are high, and aggregating stocks may be targeted more heavily. To the extent that abundance can be influenced by management, it may be desirable to set lower catch limits so that stocks are 'thicker' and catching costs are lower.

At the same time as fuel prices have been historically high, average real fisheries product prices have been relatively low. In 2006-07, the average real price of fisheries products was $9.16 a kilogram, compared with its most recent peak of $13.17 a kilogram in 1999-2000. One of the factors behind the decline in average real price has been the appreciation of the Australian dollar, which simultaneously makes foreign imports more attractive to domestic consumers and Australian exports more expensive to overseas purchasers.

In the diagram opposite, the magnitude and duration of the joint occurrence of relatively high fuel prices and relatively low real fisheries products prices are shown. Since the early 2000s, conditions have moved predominantly from quadrant IV in the figure to quadrant I. Both diesel prices and average fisheries products prices for the period were far from the mean values over the period 1988-89 to 2006-07.

The resulting financial pressure on operators in Commonwealth fisheries has emphasised the importance of managing fisheries to be profitable. Although movements in fuel prices and exchange rates are outside the control of AFMA, there are steps that it can take to influence stock abundance. Where there are effective caps on catch and effort, landings can be made at less cost from an abundant stock.

Fisheries can adjust autonomously to an efficient fleet structure if effective property rights and limits are implemented, but the process can be sped up by buyback programs. The recent structural adjustment package for Commonwealth fisheries has reduced the number of vessels operating in high value fisheries and is likely to result in greater catch per vessel and lower costs overall, given that more extensive use will be made of existing capital. Buying back entitlements at a time of low profitability has probably resulted in the Australian Government being able to retire more concessions than they otherwise would have been able to, while at the same time easing the burden on fishers who choose to leave.

Coinciding with the adjustment package, AFMA gave notice that tighter controls on catch and effort are likely in the future, particularly for overfished stocks. Many fisheries are now required to develop harvest strategies that specify a set of actions to be taken according to the levels of various biological and economic indicators. It is important to the sustainability and profitability of Commonwealth fisheries that the current focus on effective property rights, effective restrictions on catch and effort and effective harvest strategies be maintained.

real fuel prices and real fisheries product prices 1988-89 to 2006-07
in 2006-07 dollars