

FISHERY COUNTRY PROFILE	Food and Agriculture Organization of the United Nations	FID/CP/AUL Rev.5  October 2003
PROFIL DE LA PÊCHE PAR PAYS	Organisation des Nations Unies pour l'alimentation et l'agriculture	
RESUMEN INFORMATIVO SOBRE LA PESCA POR PAISES	Organización de las Naciones Unidas para la Agricultura y la Alimentación	

STRUCTURE AND CHARACTERISTICS OF THE INDUSTRY

Marine fisheries

In total, Australia's commercial fishing industry ranks fourth amongst the nations rural food based industries. The value of landings is increasing although the volume of landings remains static or is increasing more slowly. In 2001/02, total landings from all marine areas were estimated at 230, 000 tonnes live weight with a gross value of production (GVP) of \$US 1 612 million. Some 200 marine species are caught commercially. Major species being prawns, lobster, abalone, scallops, oysters and tuna with a growing trend towards live fish and lobster production.

Of a total of 19,000 persons employed in fisheries production, about 14,250 people are employed in the marine fishing sector with a further 8,560 employed in the processing and wholesaling sector. The fishermen operate more than 7 000 boats, the majority of which are under 10 m, although deepwater trawl, tuna and some prawn fisheries employ much larger vessels. These numbers have remained relatively stable, but significant increases in fishing power have occurred with the introduction of new technologies.

The three high value species of shrimp, lobster and abalone dominate the sector, contributing \$US 797 million (or 49%) of value, although only contributing 52,100 t or 23% of production. Other major species are edible oysters, tuna, scallops and a variety of marine and estuarine fish.

In the northern areas of Queensland bordering the Pacific Ocean, shrimp fisheries dominate production and value while in the more temperate areas of New South Wales, Victoria, Tasmania and South Australia, abalone and rock lobsters are more important. Western Australia, with its large Indian Ocean sea area and important rock lobster and shrimp fisheries, remains the greatest producer, accounting for \$US 397 million, or 25% of total Australian production. Recreational fishing is a major component of marine fish utilization throughout Australia, particularly around the large centers of population. Although Australia has a very large fishing zone, ranging from the tropical to sub-Antarctic, production is limited by nutrient runoff, low levels of nutrient-rich upwellings, and a small continental shelf. For these reasons, Australia's fisheries need to be, and generally are, well managed.

Inland fisheries

Commercial inland fisheries are a relatively small, and declining, component compared to marine and estuarine fisheries. With the cessation of commercial fishing in the Murray River of South Australia, and earlier in Queensland and New South Wales, production declined significantly after 2001 to less than 500 t. Recreational fishing in inland waters remains, however, an important component of the sector. Other limiting factors are low rainfall and few river systems. The major systems are the Darling, Murray and Murrumbidgee rivers.

These fisheries are fully exploited or declining, with most states now banning the commercial harvesting of freshwater species. Large environmental changes – often associated with dams, barrages or impoundments – and water usage for agricultural purposes are major limiting factors for these fisheries. Main species include the introduced European carp, redfin, Murray cod, eels, bony bream and black bream. The most important market for the lower value species such as carp is as bait for fisheries such as the rock lobster fishery.

Many inland waterways or large dams have been stocked with native fish for recreational purposes. Some states are now emphasizing the use of inland waters for recreational purposes, and stocking these waters with indigenous fish under strict translocation principles.

Aquaculture

By world standards, Australia's aquaculture industry is small, but continues to grow. Live-weight production has grown from 14 300 tonnes in 1991 to 33 200 tonnes in 1997-98 to 43,600 t in 2000/01, while aquaculture GVP increased from \$US 178 million to \$US 394 million to \$US 485 million in the same period. This represents approximately 12% of Australia's annual demand for fisheries products.

The main contributor to this growth has been southern bluefin tuna farming in South Australia which, at \$US 171 million, contributed 46% of the value of all aquaculture activities in 2001/02. Other important species are cultured edible oysters in South Australia, Tasmania and New South Wales, Atlantic salmon in Tasmania and shrimp and barramundi in Queensland.

The majority of aquaculture production is exported, due mainly to the entire production of the dominant southern bluefin tuna and peeling industry production being exported, principally to Japan. However, aquaculture production also supplies important local markets for barramundi, shrimp and freshwater crayfish. Most production takes place in Australia's coastal zones and is limited by competing multiple-use demands and associated environmental concerns, water supply and issues such as the development of cost-effective feeds. There is also a growing demand for marine estuarine sites, but these are limited by marine park zoning measures and recreational use. However, there is a large potential for aquaculture in the cooler southern waters of Australia. A growing requirement of aquaculture is the provision of fingerlings for stocking waterways for recreational purposes. The diversity of aquaculture products, including crocodiles, algae, freshwater crayfish of various species, mussels, clams and scallops, has grown in recent times, but production levels are still relatively low by world standards.

Utilization of the catch

The export sector is dominated by the supply of high-unit-value products, such as rock lobster, prawns, tuna, scallops and abalone. A significant trend has been the export of live product for species such as lobster, prawns and coral trout. Some 17% of finfish production is exported, but it represents nearly 50% of GVP of fish production. Domestic production provides 65% of finfish supply; the rest is made up of frozen fillets (such as Nile perch and hake), canned fish (such as pilchards, tuna and salmon) and processed product (mainly prawns).

Australia continues to export the majority of its high value species such as lobsters, shrimp and abalone while the major population centers of the Pacific Coast consume the majority of imported table fish.

Most commercially caught and aquaculture edible marine produce was used either fresh or frozen, with a small quantity used for canning or converted to meal or petfood.

State of the industry

The Australian fishing industry is reaching full production for all the known finfish, crustaceans and mollusk resources. Serious stock depletions have occurred in wild caught southern bluefin tuna, gemfish and shark species although these have been, or are, being addressed through appropriate recovery strategies. The future of the industry may depend on growth in aquaculture and a small growth in developmental deepwater fisheries. Production from fisheries resources has remained at around 230 000 t since 1995-96, due principally to strict management controls in almost all fisheries that limit production and/or fishing effort to sustainable levels. Some limited development may be possible of underutilized fisheries, such as albacore tuna, southern whiting and deep sea species, including species off the north-west coast of Australia.

Because of strict management controls, most fisheries remain very profitable. Almost all fisheries now operate under a limited access arrangement although access licenses are usually freely tradable. This arrangement has led to significant increases in access license values, resulting in a concentration of ownership and economic barriers to new entrants. However, the commercial industry is also subject to continuing and increasing pressures, including conservation needs (such as the increasing coastal sea area being set aside as Marine Protected Areas), allocation of resources with the recreational sector and added restrictions to address marine biodiversity issues. This has led, in most major fisheries, to a significant reduction in the number of operators (within a limited entry management environment) and therefore an increase in the concentration of ownership of access rights.

Continued and improved fisheries management within the requirements of ecological sustainable development (ESD) is the key objective for the Australian fishing industry. The challenge may well be to achieve this objective in a way which minimizes the concentration of access rights to a small number of fishers.

Economic role of the fishing industry

The fishing industry ranks fourth in rural-sector food-based production in terms of GVP of agricultural products, behind wool; cattle and calves; wheat for grain; and milk. A similar ranking applies for fisheries exports. Although fisheries products constitute less than 0.4% of gross value of production at factor cost, the economic and social impacts are important for many coastal towns.

Fish consumption studies undertaken in 2001 showed per capita consumption is in excess of 15 kg of seafood product, of which less than half is produced domestically. This compares with 36 kg of beef, 31 kg of chicken and 12 kg of lamb and 19 kg of pork. Consumption of seafood outside the home is about 4 kg per year.

DEVELOPMENT PROSPECTS

Australia's marine resources are basically fully exploited and subject to strict management controls. Some potential may exist for small, niche fisheries such as deep water trawl fishing for finfish and crustacean species off Western Australia, and for finfish off northern Australia. Other areas that may offer some limited potential include seamounts off Queensland, and north western shelf areas. The Australian Fisheries Management Authority (AFMA) and most states and territories have experimental and developmental fishing policies to further encourage the use of these fisheries resources.

Aquaculture development prospects appear greater and production from aquaculture is currently growing at around 9% per annum. Access to coastal sites may, however, limit the growth of marine cage culture and other marine aquaculture. However, land-based aquaculture (including the culture of marine species in saline-affected rural areas) shows some potential while Government has for some years, identified the culture of freshwater crayfish as a possible significant growth area. The Australian Aquaculture Forum (AAF) was formed in 1996 as a peak industry organization to represent the aquaculture industry at a national level and to assist in the development of aquaculture in a sustainable manner. A similar organization representing commercial fishers and aquaculture is the Australian Seafood Industry Council that encourages development in the post-harvest industry.

FISHERIES MANAGEMENT

Almost all Australian fisheries are strictly managed by both State and Commonwealth agencies. Most legislation for fisheries management is now based on the principles of Ecological Sustainable development (ESD) and therefore addresses not only the management of target species but also broader ecosystem management issues, including by-catch, impacts on rare or endangered species and preservation of representative marine habitat.

Fisheries resources within the Australian Fishing Zone (AFZ) are managed under both Commonwealth and State/Territory legislation. The demarcation of jurisdiction and responsibilities among these various governments has been agreed to under the Offshore Constitutional Settlement (OCS), which was needed to clarify the complex fisheries management arrangements after the establishment of the AFZ in 1979. This was a response to the then forthcoming declaration of the 1982 United Nations Convention on the law of the Sea.

Under OCS, the states and territories have jurisdiction over localized, inshore fisheries. The Commonwealth has jurisdiction over offshore fisheries or fisheries extending to waters adjacent to more than one state or territory. Each government has separate fisheries legislation and differing objectives. Transboundary fisheries (foreign fisheries) are managed by the Commonwealth fishery agencies.

AFMA manages all commonwealth fisheries under OCS. An important goal of AFMA is: 'ensuring that the exploitation of fisheries resources and the carrying on of any related activities are conducted in a manner consistent with the principles of ecologically sustainable development and the exercise of the precautionary principle, in particular the need to have regard to the impact of fishing activities on non-target species and the long-term sustainability of the marine environment.'

State and territory fisheries agencies have similar objectives, together with emphases on social, economic and community benefits from use of fisheries resources, and in the fair sharing of fisheries resources between competing users.

At both the State and the Commonwealth level, management is highly participatory with various joint Industry/Government bodies being established to advise on fisheries management issues. These bodies also often include community and/or conservation representatives. Specific management strategies used by AFMA and the States are based on publicly available Fishery Management Plans that have been developed through these various Management Advisory Committees and Consultative Committees.

State and territory fisheries agencies have similar types of management strategies, with emphasis on Fishery Management Plans. These plans, on a fishery-specific basis, identify objectives, describe fishing concessions (i.e., statutory fishing rights, ITQs, fishing permits and foreign fishing licenses), allocation procedures and detailed rules governing fishers. The main management methods covering recreational and commercial fishing are: input controls (e.g., gear restrictions, limited entry licenses, area and seasonal closures); output controls (TAC, ITQs, bag limits and size limits); and measures for species and habitat protection.

RESEARCH

At both the Commonwealth and the State level, research priorities are identified both as part of fisheries-specific management plans and also as more strategic, long-term State or Commonwealth priorities. Research on fisheries and aquaculture is carried out by a variety of State-based and Commonwealth research agencies. These include fisheries research laboratories that are part of each State or Territory's fisheries management agency, the Commonwealth Scientific and Industrial research Organization (CSIRO) and the various Universities in Australia. Generally, research is carried out by the agencies that also have legislative responsibility for a specific fishery so that, for example, research on State-controlled fisheries is carried out by that State etc.

The Fisheries Research and Development Corporation (FRDC), created in 1991, is Australia's main funding agency for fisheries and aquaculture research.

FRDC aims to improve the production, processing, storage, transport and marketing of fish and fish products, and to achieve sustainable use and management of fisheries resources. The basis of this support is through the Corporation's R&D programs: resource sustainability; ecosystem protection; and industry development. The effectiveness of FRDC is enhanced by a Total Quality Management policy. To ensure that only appropriate and relevant research projects are funded, FRDC has a network of Fisheries Research Advisory Bodies which ensure collaboration of managers, industry and researchers. The Australian Government contributes 0.5% of fisheries GVP to FRDC for research and development. An important feature of this arrangement is the contribution by fishers towards research that is matched by the government funding, up to 0.25% of fisheries GVP.

State Governments also contribute directly to the funding of research undertaken by their own agencies and, in many cases, this direct State funding is the most significant part of total research funding. For most major fisheries, a system of 'cost-recovery' is in place where fishers pay, through their license fees, the full cost of research (as well as other services such as compliance, administration etc) in support of their fishery. Priorities for research carried out under such 'cost-recovery' arrangements are set by joint Government/Industry management advisory committees. These arrangements often result in very high license (or access) fees being imposed to fund these research and other services.

Universities or Co-Operative Research Centers (CRCs) often undertake more long-term strategic research. The Australian Government created and funded the Cooperative Research Center for Ecologically Sustainable Development of the Great Barrier Reef (CRC Reef Research Center) in 1992 to address ecosystem management issues for the Great Barrier Reef. The Center has programs for regional environmental status, tourism and fishing operations, engineering, education, utilization and application of the research, commercialization, and links with users. An Aquaculture CRC, based in Tasmania, has placed \$US 26 million into research and associated activities on aquaculture projects focused on commercial outcomes. The Commonwealth Scientific and Industry Research Organization (CSIRO) and the Australian Institute of Marine Science (AIMS) also undertake a range of fisheries-related research.

POLICY AIMS

The policy aims of fisheries management in Australia rests on two main pillars: that of Ecological Sustainable Development (ESD) and that of cost-recovery or 'user-pays'.

Since the late 1990s, legislative changes at both Commonwealth and State level have established the principles of (ESD) as a cornerstone policy for fisheries management and development in Australia. Since the establishment of the AFZ, the Australian Government has introduced management regimes aimed at achieving self-sustaining stocks of marine resources that can support a strong, stable, fully viable and internationally competitive fishing industry. In addition, the ESD basis of most legislation now requires a focus on not only sustainable management of the target species, but also a more broadly based ecosystem management approach. This includes an assessment and management of issues such as by-catch reduction, impacts on rare or endangered species etc. A 1999 National By-catch Policy provides a framework for limiting marine ecosystem impacts of fishing.

Recent implementation of changes to Australia's Environmental legislation now requires fisheries to be approved by the Commonwealth Environment agency before export permits for their products are issued. This has resulted in an increasing number of fisheries specifically addressing and documenting how their management practices address ESD issues.

The emphasis on ESD issues in fisheries management has also resulted in non-legislated initiatives. For example, the fishery for the western rock lobster in western Australia (Australia's largest and most valuable fishery) has undertaken a comprehensive sustainability certification process by the Marine Stewardship Council.

The other policy pillar of 'cost-recovery' or 'user pays' requires that the users of the resource (usually fishers) pay the full cost of supporting management, compliance etc in for their fisheries. These costs are reflected in license, or access, fees charged with these fees sometimes being substantial.

This policy is already in place for most major fisheries and for some minor fisheries administered by both Commonwealth and most, but not all, State authorities. The impact of this policy is that supporting Government services such as research and compliance are well focussed to fishery needs, are delivered efficiently and are appropriate. Joint Government/industry Advisory Committees have a major role in determining the level of services each year.

Australia is also the first country to develop a comprehensive, national plan to protect and manage its oceans. Australia's Ocean Policy and specific sectoral measures policy documents address integrated management of Australia's marine ecosystems and is used as a basis for fisheries management planning and for minimization of potential conflicts between sectors over resource allocation.

The 1994 National Strategy on Aquaculture and the 1999 Code of Conduct for Australian Aquaculture forms the basis for future growth of Australia's aquaculture industry.