

2. SECTORS: GREAT BARRIER REEF ACTIVITIES

The data collected for the input-output analysis presented in this report range over the years 1978/79 to 1981/82. Thus the data provide an historical picture of the economic characteristics of Reef-based activities over that period. The year to which the data refers is indicated in brackets. In most cases the data are primary data, collected by surveys undertaken as part of consultancies for the GBRMPA. In all cases the data presented in this section are descriptive data for each sector, not yet subject to further analysis. For each sector, the descriptive data is presented according to economic region. Standardized data converted to 1981/82 dollars are also presented at the end of the chapter.

2.1 Island resorts

In 1981, there were 17 island resorts (excluding Magnetic Island) operating in the Great Barrier Reef Region. Although these resorts are generally not actually located within the Great Barrier Reef Marine Park (Commonwealth jurisdiction begins at low water mark around most islands), the close association between resorts and Reef-based recreation qualified island resorts for classification as a Reef-based sector. Information on the economics of island resorts was gathered by both personal interviews and mail surveys over the period 1979 to 1982.

Cairns Region

The resorts on Lizard Island, Green Island and Dunk Island were included in the Cairns Region. These resorts together had a capacity of 305 beds in 140 rooms/units and generated approximately 66 000 visitor nights in 1980. Tourist expenditure (excluding day-trippers), on transport to (from the adjacent mainland) and accommodation and expenses at these resorts was approximately \$5 million (1979/80) (Hundloe et al., 1981).

Townsville Region

Magnetic Island was not included in this sector because of the diversity of activities on the island and its status as a suburb of Townsville.

At the time of collecting data within the Townsville Region, only Hinchinbrook Island resort had been operating for some time. The present Orpheus Island resort commenced operations in 1982. Hinchinbrook Island resort had a capacity of 90 beds in 15 units and attracted around 7 000 guests in 1981, while employing, on average, 7 staff. Financial details were not available for confidentiality reasons (Driml et al., 1982).

Mackay Region

This region is the focus of island resort tourism on the Great Barrier Reef. In 1981 there were eight island resorts operating in the region, with resorts on: Brampton, Newry, Lindeman, Hayman, Daydream and South Molle Islands and two resorts, Happy Bay and Palm Bay on Long Island. Together these resorts had a capacity of 1 600 beds in 585 units. Employment was approximately 578 persons in full-time equivalents. Gross output (revenue from accommodation and other sales) was around \$25 million in 1980/81 (McGinnity, 1981).

Rockhampton Region

Within the Rockhampton Region there were resorts on Heron Island and Great Keppel Island in 1982. Also included in this sector were the low cost units and commercial camping facilities on Lady Elliott Island and on Great Keppel Island ('Wappaburra Haven').

Together the resorts of Heron Island and Great Keppel Island had a capacity of 490 beds, while Wappaburra Haven had 12 units. On average, 189 staff were employed by these establishments, and the gross output was approximately \$9.2 million (1978/79) (Jensen, 1979; Driml et al., 1982).

2.2 Charter boats

The term 'charter boats' describes those vessels available for hire for extended trips for fishing, diving etc. and also generally includes vessels which provide regular day-trips and ferry services. For two regions, Cairns and Rockhampton the day-trip component was investigated separately.

Cairns Region

The charter boat sector as described here includes both 'conventional' charter boats which undertake extended charters and the ferry boats which take day-trips on set routes (for example, to Green Island). The major components of the conventional charter boat fleet working out of Cairns is the game fishing fleet and the economics of this fleet were described by Owen (1980). In the 1979 season, 30 boats participated in the four month marlin season whilst 18 of these boats were available for charter all year. Employment in full-time equivalents was approximately 70 people. Gross output (earnings from charter fees) in 1979 was \$3.1 million.

The day-trip sector for the Cairns Region was analysed separately. Between 145 000 and 155 000 day-trips were made within the Cairns region in 1980/81. The major component of this sector in 1981 was the Green Island ferry trip. Employment was generated for 80 people in full-time equivalents. The gross output was approximately \$2.3 million (1981) (Hundloe et al., 1981).

Townsville Region

As of June 1982, around 24 charter boats plus two ferries to Magnetic Island were operating from ports in the Townsville Region. Fishing and diving/snorkelling were the major activities undertaken from charter boats. A considerable amount of part-time employment is involved in the industry, estimated employment was 40 persons in full-time equivalents. The estimated output from this sector was \$1.6 million in 1982 (Driml et al., 1982).

Mackay Region

Charter boat operations in the Mackay Region cater largely for tourism around the Whitsunday Islands and include a large 'bareboat' component. In 1980, around 60 conventional charter boats (including ferries) and 52 bareboats operated in the Mackay Region. Approximately 94 persons (in full-time equivalents) were employed in this sector. Gross output (revenue from charter fees and other sales) was \$13.4 million in 1980/81 (McGinnity, 1981).

Rockhampton Region

The number of conventional charter boats operating from the Rockhampton Region in 1980, was 14 boats. The major activity undertaken was recreational fishing in the Capricornia Section of the Great Barrier Reef Marine Park or in the Swain Reefs area. The conventional charter boat fleet had a replacement value of \$3 million (1980) and employed around 28 people in full-time equivalents. The output of this sector (charter fees) was \$1.3 million in 1981/82.

In addition, day-trip/ferry services operate to Great Keppel Island. In 1982, there were four vessels (one of which was a hydrofoil) operating on this run. The day-trip service carried approximately 100 000 people in 1982 and employed 23 people in full-time equivalents.

The output was approximately \$1.2 million (1981/82). Because complete data was not available, it was not possible to include the day-trip component in the Rockhampton Region charter boat sector for input-output analysis (Driml et al., 1982).

2.3 Commercial fishing

Commercial fishing data for the Cairns, Townsville and Mackay Regions were collected in a major survey conducted by personal interview in 1980. The financial data pertain to the three previous financial years, 1977/78 to 1979/80. Data for the Rockhampton Region were collected by mail survey and personal interviews in 1980 and data pertain to the year 1978/79. All commercial fishing vessels registered in home ports adjacent to the Great Barrier Reef Region except those endorsed to fish in the Gulf of Carpentaria are included. Data on sales of fish and seafoods generally represent an under-reporting due to black-market sales and the figures calculated may be low estimates of the actual situation.

Otter trawling for prawns and, to a lesser extent for scallops, is the dominant fishery. Mackerel fishing, demersal reef fishing and inshore fisheries (netting and crabbing) are the other important fisheries.

Cairns Region

The Cairns Region has the largest Reef fishing fleet of the four regions, with 378 vessels - 196 otter trawlers and 157 vessels engaged in other fishing methods (netting, trolling, handlining etc.) - based in Cairns Region home ports in 1981. The number of people employed in total was approximately 700, with a full-time equivalent of around 500 persons. The 1981 market value of vessels was approximately \$25.8 million. Gross output (sales of fish and seafoods) was approximately \$9.8 million in 1979/80 (Hundloe et al., 1981; Hundloe, 1985).

Townsville Region

The population of commercial fishing vessels with their home ports in the Townsville Region was 278 vessels in 1981, 129 of which were otter trawlers and 149 were vessels engaged in other fishing. Full-time equivalent employment was around 320 persons (around 520 people were involved in the industry indicating a high proportion of part-time work involved). The output from this sector was \$7.8 million in 1978/79 (Driml et al., 1982; Hundloe, 1985).

Mackay Region

Home ports in the Mackay Region catered for 125 commercial fishing vessels in 1981, 36 otter trawlers and 89 vessels engaged in other fishing in 1981. The full-time equivalent employment was estimated at 250 people. Gross output (fish and seafood sales) was approximately \$2.7 million (1979/80) (McGinnity, 1981; Hundloe, 1985).

Rockhampton Region

Numbers of fishing vessels operating from home ports in the Rockhampton Region in 1980 were estimated at 129 otter trawlers and 140 vessels engaged in other fishing. Although a total of 580 people participated in this industry, the full-time equivalent employment was around 420 persons. Commercial fishing returned around \$9.8 million in 1979/80 dollars (Driml et al., 1982; Hundloe, 1985).

2.4 Recreational fishing

This sector covers recreational fishing and other recreational activities from privately owned motor boats. In 1981 there were approximately 25 000 such boats registered in cities and towns adjacent to the Great Barrier reef Region.

Cairns Region

A survey of privately owned motor boats in the Cairns Region established that in 1981 approximately 3 530 boats were used to make recreational fishing trips into the GBRR. recreational fishing is a non-commercial activity and therefore there is no conventional output as in commercial fishing (fish sales) or in resort and charter boat sectors (accommodation and charter fees). Economic impact does arise from money spent on equipment, fuel etc. necessary to go fishing and it is this expenditure which is used as a proxy for gross output. this amount for the Cairns Region was approximately \$10 million in 1980. There is no direct employment attributed to recreational fishing (Hundloe et al., 1981; Hundloe, 1985).

Townsville region

Approximately 4 320 private motor boats travelled into the Great Barrier Reef Region from ports in the Townsville Region to undertake recreational fishing in 1981. For this sector, expenditure was \$12.3 million (1980) (Driml et al., 1982; Hundloe, 1985).

Mackay Region

The Mackay Region supports the smallest number of private motor boats undertaking recreational fishing in the Great Barrier Reef Region at around 2 597 boats in 1981. Expenditure in 1980 was approximately \$4.5 million (McGinnity, 1981, Hundloe, 1985).

Rockhampton Region

In 1981, 4 440 private motor boats from the Rockhampton Region were used to fish in the Great Barrier Reef Region. Expenditure by Rockhampton Region recreational fishermen was \$10.2 million (1980) (Driml et al., 1982; Hundloe, 1985).

2.5 Island camping

This activity was included as a Reef-based sector because of the close association between island camping and Reef-based recreation. The Queensland National Parks and Wildlife Service (Q.NPWS) issues permits for camping on island National Parks - although an unknown number of people camp without permit. Information on island camping in the Cairns Region indicated that it was negligible and so this sector is not included in the input-output analysis.

Townsville Region

There are five island National Parks adjacent to the Townsville Region on which camping is permitted. 2 700 people obtained permits for island National Parks in 1981/82. Unfortunately because of confidentiality of records held by Q.NPWS, it was not possible to survey these campers to determine economic characteristics.

Mackay Region

The Whitsunday group of islands and other islands in the Mackay Region contain around 80 island National Parks. In 1980/81, around 1 500 campers were issued permits, however the Q.NPWS estimate that actual camping numbers were around 5 500 people. A survey of expenditure estimated that \$1.2 million was spent on island camping in 1980/81. Around two-thirds of expenditure was made in the Mackay Region (McGinnity, 1981).

Rockhampton Region

During 1981/82, approximately 2 500 people obtained camping permits for islands including island National Parks adjacent to the Rockhampton Region. A survey of people who had camped on islands in 1981/92 was conducted. Campers spent \$0.28 million in 1981/82, around half of which was spent in the Rockhampton Region (Driml et al., 1982).

2.6 Research

Expenditure on research in the Great Barrier Reef Region is sufficiently high to qualify this sector for inclusion in this study of economic impact. The Mackay Region does not include any research stations. Unfortunately, data from the Lizard Island Research Station in the Cairns Region were not available at the time of analysis - the characteristics could be expected to be similar to those of the Rockhampton Region in terms of input-output characteristics.

Townsville Region

Townsville is the main centre for research on the Great Barrier Reef, being the site of the Australian Institute of Marine Science, the James Cook University (including Orpheus Island Research Station) and the Great Barrier Reef Marine Park Authority.

The GBRMPA has as its main functions the planning and management of the Great Barrier Reef Marine Park and, in that context, funds research. Because its reason for existence is the Great Barrier Reef, the total annual budget of the GBRMPA has been included in this sector.

Research is also undertaken in the Great Barrier Reef Region by other universities and government bodies (CSIRO for example). However, it has been found that most expenditure is made within the region in which the institution is located, and that the economic impact in the Townsville Region is small (chartering of vessels is covered under the charter boat sector).

Full-time equivalent employment for GBR research in the Townsville Region has been calculated at 160 persons. Expenditure is taken as a proxy for gross output and this has been estimated at \$6.8 million for 1981/82 (Driml et al., 1982).

Rockhampton Region.

The foci for research in the Rockhampton Region are the Heron Island and One Tree Island Research Stations. In 1979, there were eight people employed at the research stations. Estimated expenditure due to research in the Rockhampton Region was low, at \$90 000 (Jensen, 1979).

Results of analysis for this sector are not presented in this report because of the relatively insignificant value of output.

2.7 Summary

The economic data reported in this chapter has been converted into 1981/82 dollars in Table 1, to allow direct comparison between sectors and regions.

The figures in the table represent the 1981/82 dollar values of the 'total output' or value of production figures used for input-output analysis. Where a normal commercial activity is concerned (island resorts, charter boats, commercial fishing), the figures quoted are for gross revenue.

'Total output' figures quoted for non-commercial activities (recreational fishing, island camping, research) are gross expenditure figures.

Table 1. Comparative total output 1981/82.

Sector	Cairns Region	Townsville Region	Mackay Region	Rockhampton Region	Total output
Island resorts	6.0	n.a.	27.7	12.2	45.9
Charter boats	6.6	1.6	14.8	2.5	25.5
Commercial					
fishing	11.8	9.4	3.3	11.8	36.3
Recreational					
fishing	11.6	14.2	5.2	11.8	42.8
Island camping	n.a.	n.a.	1.3	0.3	1.6
Research	n.a.	6.8	n.a.	0.1	6.9
TOTAL	36.0	32.0	52.3	38.7	159.0

All values are A\$ millions.

n.a. - not applicable/available