CONFIDENTIAL

SURVEY OF VALUE-ADDED FISH AND SEAFOOD PROCESSORS

Prepared for: FISHING INDUSTRY RESEARCH & DEVELOPMENT CORPORATION

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1. EXECUTIVE SUMMARY

1.1 Background

Relative to comparable Western countries, the Australian value-added fish and seafood processing industry has not achieved the same level of market penetration.

In overseas countries fish processors have identified problems which consumers have with fish and seafood and have increased efforts to make fish more acceptable to the consumer, by processing, pre-preparing, and introducing other benefits, including packaging, which overcome these problems.

Given all international growth trends in value-added fish and seafood products, there appears to be a major opportunity in Australia to stimulate the processing industry to achieve greater consumer penetration. The research findings which are the subject of this report to the FRDC, inter-link with the National Seafood Consumption Study to provide information on which the Australian value-added fish and seafood processing industry can be further enhanced.

1.2 Research Objectives

The primary objectives of the Survey of Value-Added Fish and Seafood Processors were:

- To collect detailed and meaningful statistics pertaining to value-added fish and seafood processing within Australia from general frozen food manufacturers and specific fish and seafood processors;

- To gather information about the likely future direction of the Australian value-added fish and seafood processing industry, and the main barriers which are inhibiting its expansion;

- To determine from these statistics and survey techniques what is the Australian value-added fish and seafood market today and how this market might be improved both in terms of utilised and under-utilised species; and

- To recommend what and how on-going fish and seafood processing statistics could be collected for better understanding and for tracking the sector to allow future predictions.

1.3 Research Methodology

Prior to the commencement of the project, Yann Campbell Hoare Wheeler's best estimate of the number of value-added fish and seafood processors operating in Australia was between 200 and 300 enterprises.

The methodology employed was a two-staged research programme.

Stage 1:

The first stage involved 21 in-depth personal interviews with key operators in the value-added processing industry. Interviews were conducted in October, 1991. The sectors represented were:

- General Processors (eg. filleting or packing) mainly for the Domestic Market (4 VAP's interviewed);
- General Processors Mainly for the Export Market (3 VAP's interviewed);
- Canneries (3 VAP's interviewed - 2 in the same business);
- Fish and Seafood Smokehouses (2 VAP's interviewed);
- Pre-prepared Fish and Seafood Meal Producers (4 VAP's interviewed);
- "Elaborate Transformers" (3 VAP's interviewed); and
- Aquaculture Producers (2 VAP's interviewed).

Stage 2:

The measurement of the size of the Australian value-added processing industry was one of the key objectives of the research project. To do so, rather than complete interviews with a sample of value-added processors, telephone interviews were attempted with all processors throughout Australia. A listing of processors was obtained through two key sources: Nick Ruello and Associates; and the Export Register of Fish Establishments and the "Australian Fishing Industry Directory" published by the DPIE.

Before attempting at least the first section of the questionnaire (business details and volume input and output), a screening question was asked to verify that value-added processing was undertaken. The definition used was as follows:

> "Firstly, is this business involved in value-added processing (VAP) of fish or seafood. By this we mean those situations where fish raw materials are put through a process which increases their value (even where the extra costs outweigh the incremental revenue earned). It may include where the natural raw material is changed in flavour (eg. smoking or sauce) or description (eg. battering) or where the value of the raw material is maximised (eg. kept alive, fed special diet, filleted, boned). It could involve repacking fish or seafood, but not just transferring it from one place to another."

All 147 interviews (including the 21 in-depth interviews, the responses of which were transposed onto the questionnaire) were conducted from Yann Campbell Hoare Wheeler's telephone battery in Melbourne. Fieldwork was conducted in April 1992.

1.4 What is the Australian Value-Added Processing Industry Today?

All information gathered suggests that the initial estimate of between 200 and 300 value-added processors is roughly in accord with the population estimate arising from this research. The **best estimate indicates there to be 213 value-added processors in Australia.** It is important when considering this figure, to remember that one processor may operate in more than one State and have more than one site in each State.

The total figure presented above includes: those processors interviewed; those who refused; and a small proportion of processors who did not consider themselves to be value-added processing operations though on review they were defined as such.

More precisely, 183 fish and seafood processors were definitively identified as undertaking value-adding operations within Australia. The assumed value-adding status of an additional 30 businesses is made on the basis of call sheet information *suggesting* value-added processing.

The following description is based on the 147 value-added processors interviewed. It is emphasised that the following categorisations represent the main processing activity undertaken by each business (based on volume). Other types of processing activities may have been undertaken.

- **General Processors** mainly supplying filleted product (and other processed forms) **for the domestic market** accounted for 35% of processors interviewed (51 respondents). Compared with the total processor profile, a slightly higher proportion of these operators were small businesses, that is, employing between 1 and 7 employees (43% compared with 33% in total). Just over one in five (22%) general domestic processors sourced imported species, and one in three (33%) exported at least some value-added product.

- **General Processors mainly supplying the export market** constituted 34% of the sample (50 respondents). These businesses tended to be larger operations (employing between 33 and 350 employees), with two in five (38%) classified in this way (cf 33% of all 147 VAP's). Businesses mainly involved in the export of filleted product (and other processed forms) were less likely to source imported species (2% cf 18% in total).

- **Aquaculture Processors** represented 7% of the sample (11 businesses), and almost half (45%, or 5) were of a medium size - employing between 8 and 32 workers. Seven out of the 11 exported at least some aquaculture species, and naturally no species were imported.

- **Canneries** accounted for 6% of the total sample (9 respondents), and 7 of the 9 canneries employed over 33 workers, that is, they were defined as large businesses (78%). More commonly, the source of the product is imported (56% or 5 processors; cf 18% in total) and 7 out of the 9 (78%) export some product.

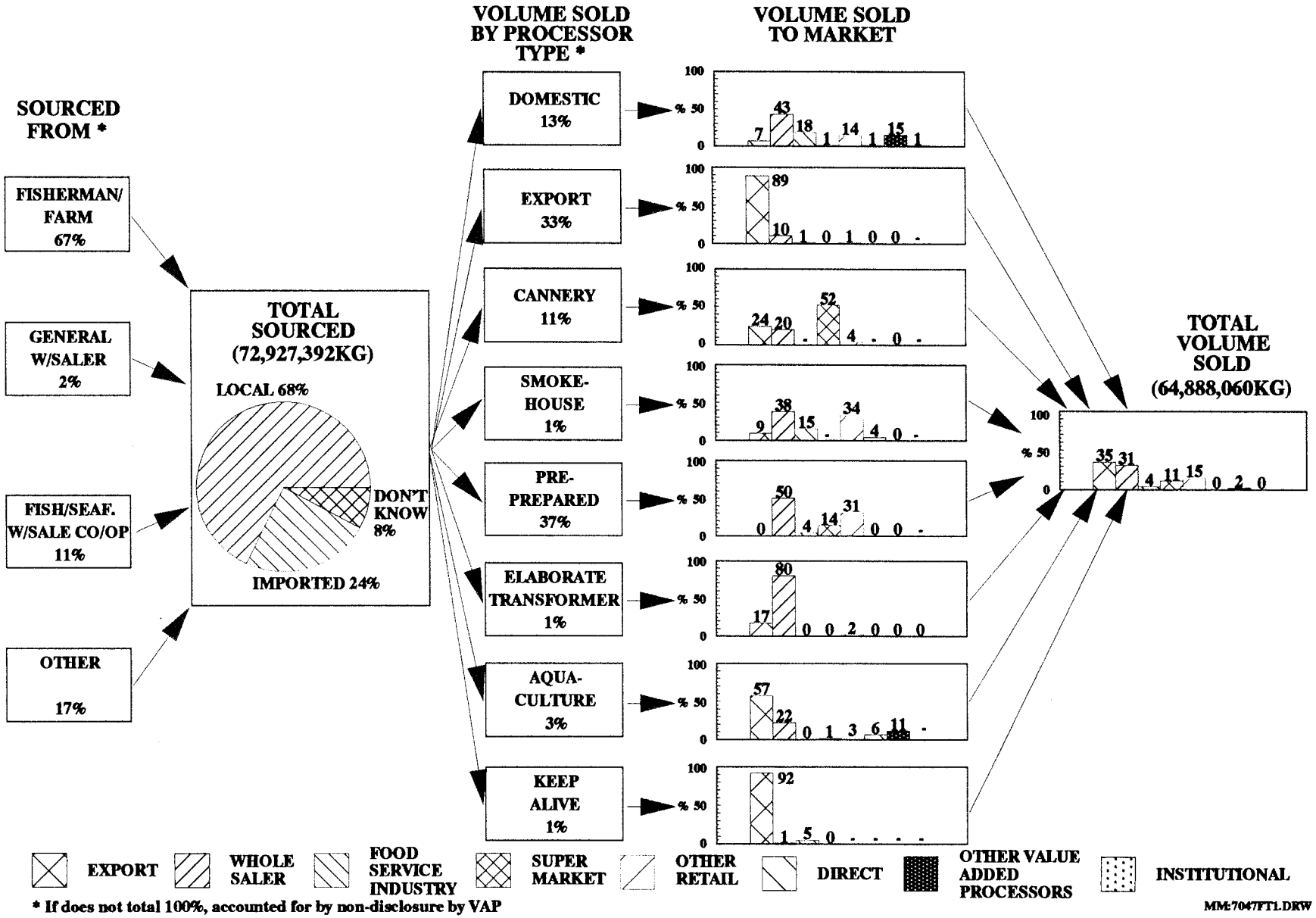
- **Processors Mainly Keeping Product Alive** represented 5% of the sample, that is, 7 processing operations. No product is imported, and 6 of the 7 export some live species of fish and seafood.

- **Fish and Seafood Smokehouses** represented 5% of the sample (7 respondents). They were more commonly small operations employing seven or fewer people (4 businesses). Two smokehouses sourced product from overseas and 3 export some of the final processed product.

- **Pre-Prepared Fish and Seafood Meal Producers** accounted for 5% of the sample (7 respondents). Five of the meal producers were large employers, that is, of at least 33 people. Imported product is commonly sourced (6 out of the 7), but few reported export activities (2 out of 7).

- **"Elaborate Transformation" Processors** represented 3% of the sample, or five businesses. Two employed between 1 and 7 employees; one employed 8 to 32 workers; and two were large businesses employing 33 or more employees throughout Australia. Two businesses import some product and all five are involved in export activities.

FLOW THROUGH OF TOTAL FISH AND SEAFOOD FROM VAP - 1990/1991



* If does not total 100%, accounted for by non-disclosure by VAP

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Through a series of questions, the **flow-through of value-added product - based on volumes for the 1990/91 financial year** - was developed. The output is depicted graphically and is described below. It is emphasised that not all value-added processors were willing (because of confidentiality), or able, to provide these estimates. Therefore, it represents the best information available. The same analysis has been undertaken for the main species of fish and seafood sourced by value-added processors.

- In total, through the survey process, just over **72,927,000kg of fish and seafood was sourced** for value-adding in 1990/91.

- Of the volume sourced:

  - 68% was local product (domestic market);
  - 24% was imported;
  - 8% were uncertain of the source.

- The source from which VAP bought species to be used for value-adding activities was in the proportions:

  - 67% fisherman or farm;
  - 11% a fish or seafood wholesaler;
  - 2% a general wholesaler; and
  - 17% another type of supplier.

- In total, through the survey process, **64,888,000kg of value-added product was actually sold in 1990/91.**

- Of the volume of value-added product sold:

  - 35% was exported;
  - 31% was sold onto a wholesaler;
  - 15% moved to other retailers (eg. fishmongers) besides supermarkets;
  - 11% was sold to supermarkets;
  - 4% was sold to the food service industry;
  - 2% to other value-added processors; and
  - 0% (representing less than 1% not "no product") was sold direct to the consumer and the institutional sector.

- Of the volume of value-added product sold, it was actually sold by a business describing its **main value-added processing activity** in the proportions:

  - 37% pre-prepared meal producer;
  - 33% general processor mainly for the export market;
  - 13% general processor mainly for the domestic market;
  - 11% cannery operation;
  - 3% aquaculture producer;
  - 1% elaborate transformer;
  - 1% smokehouse; and
  - 1% mainly keep fish and seafood alive.

  This must not be confused with the product form sold. For example, 12% of the total volume of value-added product sold was not canned, but it was sold by a business describing its main activity as canning.

  A value-added processor's business activity may span any number of classifications.

- For each type of processor (as described by the main business activity) the markets supplied are indicated in the accompanying chart.

1.5 Species Currently Utilised and Potential for Under-Utilised Species in the Value-Added Processing Industry

Utilised Species:

The **species most commonly used for value-added processing**, that is, those species used by at least 5% of processors were:

- Whiting (16%) which was commonly used by general processors for the domestic market (31%);
- Shark (14%);
- Garfish (10%) which was commonly used by general processors for the domestic market (22%);
- Orange roughy (10%), which is exported by 16% of general processors mainly supplying the export market;
- Tuna (10%) and spontaneously mentioned by 66% of canneries;
- Snapper (9%) which was more frequently used by domestic (18%) than export (4%) general processors;
- Flathead (8%) which was more frequently used by domestic (16%) than export (4%) general processors;
- Australian salmon (8%) being commonly used by canners (33%) and smokehouses (43%);
- Mullet (7%);
- Bream (6%);
- Blue grenadier (5%);
- Hake (5%) which was used by 5 of the 7 of pre-prepared meal producers;
- Eel (5%) which was commonly smoked and kept alive - 2 of the 7 smokehouses and those who keep product alive; and
- Atlantic salmon (5%) which was used by 3 of the 7 smokehouses.

The ten most frequently mentioned species of **molluscs and crustaceans** used for value-added processing by at least one in ten processors included:

- Prawns (33%) and commonly used by pre-prepared meal producers (71%), general processors for the domestic market (43%) and elaborate transformers (40%);
- Crayfish (33%) and almost half (46%) of the general processors who mainly export product sourced this species;
- Scallops (17%);
- Abalone (12%) and one in five (18%) general export processors, almost half (44%) of the canners and two in five of the elaborate transformers used Abalone for value-added processing;
- Crabs (12%);
- Squid/Calamari (10%) and one in five (22%) general domestic processors mentioned this as a species obtained for value-adding;
- Oysters (7%);
- Octopus (5%);
- Bugs (4%); and
- Mussels (2%).

It is important to note that the **above analysis does not relate to the volume of the species handled by value-added processors.**

Under-Utilised Species:

Value-added processors were systematically asked if they believed there to be potential for increased sales through value-added processing for **five wild species and six farmed species currently under-utilised.**

Among the five wild species, more **potential was believed to exist in the value-adding of Squid or Calamari** than the other four species. Overall, **44% of processors could see value-adding potential for Squid.**

Less than one in four processors believed there to be potential for the other species, namely:

- Pilchards (24%) - and 32% of general processors mainly for the export market;
- Jack mackerel (21%);
- Silver trevally or Skippy (18%); and
- Australian Herring (17%).

The support for any one of the farmed species was not as great as that for Squid. Approximately three in ten processors felt greater sales potential to exist for value-added:

- Oysters (31%) - 40% of those mainly processing for the domestic market and 3 of the 6 who keep product alive;
- Mussels (31%);
- Farm prawns (29%) - 4 of the 5 pre-prepared meal producers, and 3 of the 6 who keep and sell live species; and
- Atlantic salmon (28%) - 4 of the 6 smokehouses.

A slightly lower proportion of processors considered there to be sales potential for Rainbow trout and Farm barramundi (24% each). General processors mainly for the domestic market were more likely to see development opportunities for Rainbow trout (30%).

Potential Supply by the Australian Aquaculture Industry:

Value-added processors were **polarised in their opinion of the Australian aquaculture industry as a source of supply for the value-added processing** activities for their business.

Favourably, 30% of processors specifically stated that they believed there to be good potential for the Australian aquaculture industry, however, this is conditional on raw material being cost competitive (16%). One in ten (11%) felt that value-added business growth was dependent on supply from the aquaculture industry, but supply must be consistent (11%).

Negatively, almost one in five (18%) stated outright that they do not believe there to be any future for the Australian aquaculture industry, and a further 14% believed the future limited. Approximately one in eight (12%) held the opinion that costs will never be competitive with wild species, and imports, to be used for value-added processing. Commercial viability is thought to take along time (9%), therefore, success is limited unless there is government support (7%).

1.6 Strengths and Weaknesses of the Value-Added Processing Industry

Strengths:

Almost two in three (63%) processors considered Australia's main strength to be the quality of the fish and seafood resource. Just over one in three (37%) felt Australia's competitive strength to be the clean water in which the resource is found - these two strengths are obviously very closely linked.

The next most frequently mentioned strengths were:

- the abundance of fish and seafood within Australian waters (14%); and
- strict health regulations enforced by DPIE (11%).

Weaknesses:

Consistent with the findings from the in-depth interviews, was the belief that **Australian industry lacks competitiveness** because of high costs and variable supply:

- the **Australian wage structure** compared with competing overseas countries (29%) - particularly mentioned by large businesses (40%) and aquaculture processors (44%);
- the **cost of raw material** sourced in Australia (20%);
- Australia's **lack of high volume raw material** which can be used in the production of value-added product (13%); and
- **unreliability in the supply** of Australian species (12%).

All these factors contribute to Australia being uncompetitive in terms of costs (7%). In addition, 6% felt fluctuating quality to be a weakness of the industry.

1.7 Developments in Products Processed

Recent Developments:

The three most frequently mentioned product and process developments identified were:

- **new types of packaging** and methods for the transportation and storage of value-added products (14%);
- **introduction of new lines** and utilisation of different species (12%); and
- **improved methods for exporting live product** (10%).

Other packaging developments were also noted and included the production of different pack sizes (7%), vacuum packaging (7%), and an increased emphasis on packaging for the supermarket trade (6%). More sophisticated freezing and chilling techniques had been recently adopted by 7% of businesses.

One in two processors had not recently altered the types and ways in which products are processed and sold by the business.

Likely Future Developments:

The five most frequently mentioned likely developments in the next five years were:

- **more ready to cook meals**, such as, boil in the bag and products for ovens (11%) - 5 of the 7 pre-prepared meal producers mentioned this development;
- the **introduction of new products**, although no specific details were provided (11%);
- the **movement of a greater volume of value-added products to the retail** market (10%);
- increased **mechanisation** and technology improvements (10%); and
- the emergence of **new types of packaging** (10%).

Just over one in four (28%) processors did not believe any new developments or advancements would be made in the next five years.

The most common suggestion for **processing and product development technology improvement was in learning from overseas experience:**

- to travel overseas to see the most up-to-date methods for processing and any product developments which had been made (14%); and
- the continual investigation of new technology and its suitability in Australia (10%).

1.8 Enhancement of Australia's Value-Added Processing Industry

The greatest call for fisheries resource enhancement involved **actions to be taken by the government.** Approximately one in ten respondents mentioned that the government should:

- gain a better understanding of the industry before setting guidelines for its operation (10%);
- provide more support for local industry by reducing charges and make information available about quotas, thereby allowing for long-term business planning (10%); and
- work together with those in the industry to establish the sustainable catch (8%), and related with this comment was the need for more scientific investigation (7%).

In terms of up-grading the expertise of personnel within the industry, most often **general on-the-job training, which must be undertaken on an on-going basis throughout the industry,** was called for (18%).

More specific up-grading of industry expertise was thought necessary in the area of:

- **handling procedures** to maximise product quality (14%);
- becoming more **market driven**, that is, gaining an understanding of **what the markets are looking for** in terms of products (13%); and
- having a better understanding of **marketing techniques to assist in building demand** (11%).

A recurring theme was the establishment of a united industry group, which is concerned about the long-term sustainable development of the Australian value-added processing industry (10%).

1.9 Actions Which Could be Taken to Increase the Demand of Australian Value-Added Product

In the Domestic Market:

The three most frequently mentioned actions to increase the Australian demand for value-added fish and seafood products were broadly, to increase the awareness of fish and seafood products, offer a variety of products to meet demand, and at a price which is competitive:

- more **advertising and promotion** (46%) - which could focus on the health and dietary benefits of fish and seafood (11%), or the quality of Australian waters in which local product is caught compared with that overseas (5%);
- better **education of consumers** and heightened public awareness of the variety of products available (34%); and
- **competitive pricing** by the reduction in production costs (23%).

One in ten processors (11%) felt there should be greater **protection of locally produced product**, and as such a reduction in imported product. And along a similar theme was the suggestion to clearly **label value-added product as Australian caught and produced** (7%).

In the Export Market:

In an overall sense, the **Asia or South East Asian markets are considered to offer Australian exporters of value-added product, the greatest potential.** More specifically, the countries which were thought primary targets (by more than one in ten exporters) were:

- Japan (32%);
- Taiwan (29%);
- United States (17%);
- France (16%);
- Korea (15%); and
- Hong Kong (13%).

To increase export demand, as found for the local market, the greatest proportion of processors felt there a need for **more marketing and promotion of Australian made value-added product in export markets (28%). This was followed by the need to offer products at a competitive price (15%) and of a consistently high standard (13%).**

The other key actions focus on the need to **specifically target established market needs and for government to encourage Australian industry** to export value-added product. These themes are encapsulated in the responses outlined below:

- research market needs and operate to suit customer tastes (9%);
- more co-ordination between the government and exporters (8%);
- the provision of government incentives for exporters (8%);
- learn about export markets by visiting them (6%); and
- to abolish quotas to allow for greater volume production, which may then be exported (6%).

2. BACKGROUND

Relative to comparable Western countries, **the Australian value added fish and seafood processing industry has not achieved the same level of market penetration.** By 1989 in the United Kingdom, the consumer market for fresh and frozen fish was worth 564 million pounds, a value increase of four percent in real terms over the previous year. In addition, there is a substantial market for fish products which have been further processed in some way, including canned, cooked, smoked and other value added products like seafood with sauce. This added a further 657 million pounds to the total sector, aggregating to give a total value for the industry of 1.2 billion pounds in 1989.

In the UK, there is a growing range of fish and fish products now being merchandised in chilled cabinets, which have extended consumer choice in the purchasing of fish, and have been able to overcome several of the disincentives from which the fresh fish sector has tended to suffer - mainly the handling, the smell, and the preparation, which remain problems for many housewives, particularly the younger ones.

Pre-prepared fillets, goujons, kebabs, and packs with sauce and trimmings, have now been allocated their own section of the chilled cabinet in the larger stores, while the delicatessen products such as smoked salmon and trout, bottled fish and seafood (such as herrings and caviar) are also being merchandised alongside, to provide a more attractive and tempting range for the shopper. Some value has been added to the market with the development of fish products in a variety of sauces and dressings. At the top of the market, it is sold as a salad with a fish base, generally packaged in a more convenient ring-pull can. Such products can command a 75% - 100% price premium over the regular canned fish sector.

The frozen fish and seafood products sector has also grown steadily, particularly processed fish such as fish fingers, and fish based ready-made meals. The later segment has grown primarily because of convenience but partly because it removes the difficulties of preparation that tend to deter a wider consumption of fresh fish. It is the more convenient and premium products that have performed most strongly. Frozen food has shown particularly good growth over the last decade as the penetration rate for freezers has exceeded 80% in the UK. More recently, microwave sales have risen strongly, to achieve a penetration rate of 45%. With microwave cooking in mind, John West has recently launched a range of salmon and tuna ambient ready meals. Recipes include Salmon Parisienne, Tuna Florenza and Tuna Mexicana. Chilled fish recipe meals have been exhibiting dynamic growth since the early 1980's.

The combined effect of high penetration of both freezers and microwaves has been to lift sales of frozen food on the grounds of both quality and convenience largely at the expense of canned foods. However, the strong health aspects which are linked to fish products have helped increase volume sales of all categories, including canned products. For example, manufacturers have produced canned fish in brine rather than vegetable oil which contains more fat.

In total, it is estimated that 1.3 pounds of fish is eaten per person each month in the UK, either at home or when eating out. Fish remains a key element in the catering sector, since consumers feel that they can enjoy the product without the trouble. Housewives, particularly younger ones, are inclined to consider that fresh fish is not "user-friendly", because of the smell, the fear that it will go off too soon, the problem with bones, and resistance to frying in the wake of the healthier eating trends.

Observing this trend, **fish processors have increased efforts to make fish more acceptable to the consumer, by processing, pre-preparing, and introducing other benefits, including packaging, which overcome these problems.** In 1989 one-fifth of British fish and seafood consumption was accounted for by frozen convenience products, one-ninth by cooked products and a further seven percent comprised processed (non-canned) fish and seafood - aggregating to nearly 40% of total consumption.

The French manufacturers have moved their products up-market with a variety of value added developments, including sales of fish-based ready meals. A generic advertising campaign launched with the help of EEC funding has also helped to revitalise the domestic market.

Similarly, it has been concluded that, in the UK, there is considerable potential for increased consumption in virtually every segment of the fish market, if current consumer attitudes to fish can be strengthened. Birds Eye Fish Fingers and other fish shapes are a response to the fact that **if children are converted, they will eat more fish when they are adults.** However, it was thought necessary to introduce children to a much wider range of fish than frozen breaded shapes. Semi-prepared fish portions and chilled recipe meals, targeted specifically at children, were thought to present growth possibilities.

The main growth areas within the UK fish market, as a whole, will be the convenience and value added products in the frozen, canned and processed sectors. British manufacturers are constantly introducing new lines, particularly in the recipe meals sector, and are **generally moving towards reducing additives to up-grade the quality of their products.**

Consumers appear willing to pay higher prices for value added products, and the chilled variants are expected to be the most dynamic sector over the next few years. Likely growth areas include chilled fish recipe meals, smoked and cured fish, fish salads, seafood assortments, and more up-market lines such as smoked salmon.

Given these international growth trends in value added fish and seafood products, there appears to be a major opportunity in Australia to stimulate the processing industry to achieve greater consumer penetration. The research findings, which are the subject of this report to the FRDC, inter-link with the National Seafood Consumption Study to provide information on which the Australian value added fish and seafood processing industry can be further enhanced.

3. RESEARCH OBJECTIVES

The primary objectives of the Survey of Value Added Fish and Seafood Processors were:

- To collect detailed and meaningful statistics pertaining to value added fish and seafood processing within Australia from general frozen food manufacturers and specific fish and seafood processors;

- To gather information about the likely future direction of the Australian value added fish and seafood processing industry, and the main barriers which are inhibiting its expansion;

- To determine from these statistics and survey techniques what is the Australian value added fish and seafood market today and how this market might be improved both in terms of utilised and under-utilised species; and

- To recommend what and how on-going fish and seafood processing statistics could be collected for better understanding and for tracking the sector to allow future predictions.

4. RESEARCH METHODOLOGY

4.1 The Population Under Study

The number of enterprises in Australia involved in the value added processing of fish and seafood products is not precisely known. Tables 1 and 2 overleaf present alternative sources of statistical data on the size of the population of processors. Table 1, which is based on a 1990 Telecom Yellow Pages Count shows the number of frozen foods manufacturers and/or wholesalers, and the number of fish and seafood producers and/or processors, by State of operation. It is emphasised that not all of the 1,124 enterprises included in Table 1 would have been involved in the processing of fish and seafood products. Some may have been fish or seafood producers; others may have been manufacturers of frozen foods products other than fish or seafood; still others may have been wholesalers of frozen foods. It is likely that only a relatively small proportion of these 1,124 enterprises were involved in the fish and seafood industry to any significant extent.

Table 2 shows the number of establishments **mainly** engaged in processing fish or other seafoods, including establishments mainly engaged in operating vessels which process but do not catch fish or other seafoods. It excludes establishments mainly engaged in operating vessels which both catch and process fish or other seafoods, and those involved in cleaning or filleting whole fin fish, or in shelling or freezing oysters or bottling oysters in brine. As can be seen from the Table, in August 1988, there were 131 establishments mainly engaged in processing fish or other seafoods, according to the ASIC Code published by the Australian Bureau of Statistics.

Prior to the commencement of the project, Yann Campbell Hoare Wheeler's best estimate of the number of value added fish and seafood processors operating in Australia was between 200 and 300 enterprises.

TABLE 1
FROZEN FOODS MANUFACTURERS OR WHOLESALERS AND FISH AND SEAFOOD PROCESSORS BY STATE OF OPERATION

	NSW	VIC	QLD	SA	WA	TAS	TOTAL
FISH & SEAFOOD PRODUCTION AND/OR PROCESSING	90	40	32	41	46	69	318
FROZEN FOODS - MANUFACTURERS AND/OR WHOLESALERS	315	178	120	66	94	33	806
TOTAL PROCESSORS/ WHOLESALERS	405	218	152	107	140	102	1124

Source: Telecom Yellow Pages Count

TABLE 2
ESTABLISHMENTS MAINLY ENGAGED IN PROCESSING FISH OR OTHER SEAFOODS

NEW SOUTH WALES	14
VICTORIA	32
QUEENSLAND	13
WESTERN AUSTRALIA	27
SOUTH AUSTRALIA	21
TASMANIA	24
TOTAL PROCESSORS	**131**

Source: Australian Bureau Of Statistics, Australian Standard Industrial Classification, Operating Enterprises as at August 1988

4.2 The Sample Surveyed

Yann Campbell Hoare Wheeler implemented a two-stage research methodology for the Survey of Value-Added Processors. The first stage involved twenty-one personal in-depth interviews with major fish and seafood processors and frozen foods manufacturers in Australia. Each interview was relatively structured, and investigated in detail each of the four objectives nominated above. The questionnaire instrument is presented in Appendix 1. Broad estimates were also obtained of the volume of fish and seafood products processed on an annual basis, by main type of species, and by main type of product produced. This completes the analysis of the through-put of fish and seafood products already being documented in the 1990/1 National Seafood Consumption Study, and the Survey of Fish and Seafood Producers.

The organisations that participated in the first stage of the Survey of Value-Added Processors are listed below.

General Processors Mainly for the Domestic Market:

- Mendolia Seafoods (WA);
- Angelakis Bros. Pty. Ltd. (SA);
- McLaughlins Marine Industries Pty. Ltd. (VIC); and
- Urangan Fisheries (QLD).

General Processors Mainly for the Export Market:

- Ocean Foods Pty. Ltd. (SA);
- Valente Seafood Processors Pty. Ltd. (SA); and
- A Raptis and Sons (QLD).

Canneries:

- Safcol Holdings Ltd.(SA and VIC); and
- HJ Heinz (NSW).

Fish and Seafood Smokehouses:

- Adelaide Smoked Fish Co. Pty. Ltd. (SA); and
- Riba Foods Pty. Ltd. (NSW).

Pre-Prepared Fish and Seafood Meal Producers:

- Australian Danish Foods (WA);
- Seafoods Melbourne (VIC);
- International Sea Products Pty. Ltd. (NSW); and
- Markwell Pacific Ltd. (NSW/QLD).

Elaborate Transformation Processors:

- Trident Seafoods Pty. Ltd. (TAS);
- Austrimi Seafoods Pty. Ltd. (VIC); and
- Queensland Sundried Seafoods (QLD).

Aquaculture Producers:

- Barilla Bay Seafoods (TAS); and
- Aquatas Pty. Ltd. (TAS).

Originally, the second stage was to involve 100 telephone interviews with fish and seafood processing enterprises selected in proportion to the distribution of the industry in each State of Australia. The enterprises were to be randomly selected within each State to guarantee appropriate coverage of the industry by size and type of enterprise. This was the approach for which Yann Campbell Hoare Wheeler was contracted by the FRDC.

However, as the measurement of the size of the Australian value-added processing industry was one of the key objectives of the research project, the methodology was altered.

Rather than complete interviews with a sample of value-added processors, **telephone interviews were attempted with all processors throughout Australia.** The listing of value-added processors was supplied by Nick Ruello and Associates and supplemented by records from the Export Register of Fish Establishments and the "Australian Fishing Industry Directory" published by the Department of Primary Industries and Energy. Before attempting at least the first section (Section A) of the questionnaire (business details and volume input and output), a screening question was asked to verify that value-added processing was undertaken. The definition used was as follows:

> "Firstly, is this business involved in value-added processing (VAP) of fish or seafood. By this we mean those situations where fish raw materials are put through a process which increases their value (even where the extra costs outweigh the incremental revenue earned). It may include where the natural raw material is changed in flavour (eg. smoking or sauce) or description (eg. battering) or where the value of the raw material is maximised (eg. kept alive, fed special diet, filleted, boned). It could involve repacking fish or seafood, but not just transferring it from one place to another."

All 147 interviews (including the 21 in-depth interviews, the responses of which were transposed onto the questionnaire) were conducted from Yann Campbell Hoare Wheeler's telephone battery in Melbourne, and the questionnaire administered is shown in Appendix 2. Completed questionnaires were edited, coded and processed using the Microtab suite of survey analysis packages.

A computer printout, containing detailed cross-tabulations of all the data collected from the Stage 2 survey has been presented to the FRDC under separate cover.

The following table presents an analysis of the number of interviews completed in each State, and the response rate for the survey.

Field Analysis

	VIC	NSW	QLD	SA	WA	TAS	NT	TOTAL
SECTION A	4	3	8	4	2	3	-	24
SECTION A & B	26	18	22	23	19	14	1	123
REFUSALS	5	-	10	4	7	4	-	30
NO VAP	16	11	14	1	7	13	1	63
VAP's WHO DIDN'T CONSIDER THEMSELVES TO BE VAP's	3	-	1	-	-	2	-	6
NO LONGER IN OPERATION	1	1	5	-	4	7	1	19
NO TELECOM LISTING		6	14	1	3	2	3	29
ESTIMATED NO. & VAP's	38	21	41	31	28	23	1	183

Source: Telephone Call Sheets

4.3 The Report Structure

This report is presented in three sections. The **first section (Chapters 2 to 5) contains the introduction, objectives, methodology, and a discussion of the meaning of the term "value-added" processor.**

The **second section (Chapter 6) describes the findings of the twenty-one in-depth personal interviews,** conducted in October, 1991, classified into seven separate segments, as follows:

1. General Processors, mainly for the Domestic Market;
2. General Processors, mainly for the Export Market;
3. Canneries;
4. Fish and Seafood Smokehouses;
5. Pre-prepared Fish and Seafood Meal Producers;
6. "Elaborate Transformation" Processors; and
7. Aquaculture Producers.

Within each of the seven segments the following topics have been addressed:

a) The type of processing operation, and the types of species processed;

b) Recent developments in the products manufactured and sold;

c) Main barriers inhibiting expansion;

d) Opportunities for utilised and under-utilised species;

e) Likely future trends and their implications for Australian and imported species;

f) Opportunities for import replacement and export development; and

g) Actions that could be taken to enhance the "value-added" industry.

The **third section (Chapter 7) of this report presents the findings from the telephone survey of 147 Australian fish and seafood processing enterprises.** This survey was conducted in April 1992. It is worth noting that there are essentially two different respondent bases within this chapter:

147 respondents = those who responded to the first section of the questionnaire (business activities and volume input and output - Section A).

Sections 7.1 to 7.4 and 7.11 to 7.12

123 respondents = those who completed both sections of the questionnaire (business activities and volume input and output; and attitudinal data - Section A and B).

Sections 7.5 to 7.10

5. DEFINITION OF THE TERM "VALUE-ADDED PROCESSING"

There is considerable debate, and no consensus, over the meaning of the term "value-added" processing. The chapter on Processing Activities in the Australian Science and Technology Council Report (September, 1988), entitled "Casting the Net: Post-Harvest Technologies and Opportunities in the Fishing Industry", did not provide a clear definition of the term. According to this report,

> *"processing can take the form of "elaborate transformation" of lower value product - for example, into oven-ready foods or preparations for fast food outlets, or by reforming the flesh from smaller fish into larger fillets."*

Furthermore:

> *"It can take the form of improved preservation techniques; such as better initial handling, processing and refrigeration. It can - and it should - take the form of increased utilisation of by-product, or waste, from processing fisheries product. It can take the form of better packaging - both for prolongation of shelf life and for more appealing presentation. On-board processing activities can play an increasingly important role as new fisheries are developed in deep water and remote areas."* (Page 75).

Implied in this description is the suggestion that "value-added processing" includes all actions from better on-board handling to the elaborate transformation of fish and seafood into pre-prepared consumer meals. The report noted that:

> *"processing establishments vary greatly in size, scope of operations, and sophistication of the technologies employed; they range from establishments undertaking only the most basic cleaning, filleting, packing and freezing processes, which comprise the majority, to those equipped with the latest plant and with the capacity for significant product diversification. There are very few in the latter category."* (Page 76).

Furthermore:

> *"With the exception of the few companies which produce substantially transformed products, the use of automated processing and handling technologies in the Australian seafoods industry is negligible compared with that of other seafoods producing developed nations. With a few notable exceptions, the level of interest in, and knowledge of, advances in seafoods processing technologies and their potential applications in the Australian context was generally slight amongst processing operators."* (Page 77).

Without necessarily having the focus on wide-ranging processing and handling technologies that ASTEC by definition must have, other operators in the Australian fish and seafood industry have adopted a more narrow definition of the term "value-added processing". They note that some forms of "elaborate transformation" of lower value product may in fact not add any value (at least using the narrow definition of the term) - for example, where the incremental revenue generated by a packaged fish meal is less than that which would have been generated if the raw material was sold "in the round", because of the costs of packaging material, processing technology, etc.. On the other hand, others argue that even in such situations where the incremental revenue generated may be negative, value has been added through the general economic benefits which accrue - employment, wages, taxation revenue, sales turnover and associated multiplier effects.

Some respondents interviewed personally in the first stage of the study offered a restricted definition of the term "value added processing", applying it only where the natural raw material is changed in **flavour** (eg adding sauce, smoking or cooking) or **description** (eg battering or crumbing). Other activities are said to **increase** the value of the natural raw material by maximising the return generated - these include, keeping the species alive, feeding it a special diet, filleting and boning it, etc.. Packaging the product into consumer packs, or packs for the food services industry, can maximise the value of either category of products - the "value-added" or the "increased value". The ASTEC Report (1988) suggested that "value may be added through better presentation and marketing (but) substantial processing of Australian product will, in most cases, be restricted to lower value, under-utilised species and to by-product". (Page 80).

Of course, there are methods of catching, handling, storing and transporting fish and seafood products which will reduce their potential value, and thus **reduce the return** on the raw material resource.

According to the ASTEC Report (Page 80):

> *"The correct application of freezing technologies is essential to maintain product quality and relies upon an understanding of the biology of the product. Poor freezing techniques can lead to deterioration in texture and flavour and therefore reduction in the value of the end product. The capacity to store product, both unprocessed and processed, at temperatures which prevent or delay spoilage is also vital in maintaining quality, and provides flexibility in organising processing schedules and in matching market demand and supply."*

Given the assumption that the methods employed to catch, handle, store and transport Australian fish and seafood raw materials, optimise their potential value (admittedly a massive assumption compared to major international competitors like New Zealand),

the term "value-added processing" will refer to:

- **those situations where fish and seafood raw materials are put through a process which increases their value, even if the incremental costs outweigh the incremental revenue generated.**

Therefore, it includes both the narrow definitions discussed above - "value-adding" and "increasing the value" (including both filleting processes and processes which keep seafood alive).

Recent advice received from Ruello & Associates, Fisheries Consultants, supports this position regarding the definition of the term "value-added":

> *"I feel that it is any* **process** *which adds value to the fish above the average value of the standard product. My definition would include live fish because you spend money and follow a* **process** *which increases the value of the good. This definition is in line with discussion in Jackson & McConnell's "Economics" (1986 edition) - 'value-added is the market value of a firm's output less the value of the inputs which it has purchased from others' (Page 127). Perry Smith (ABARE, Canberra) defines 'value-added' as anything which increases 'utility', that is, the usefulness of the product for a customer."* (personal communication, November, 1991)

6. DETAILED FINDINGS - IN-DEPTH INTERVIEWS

6.1 General Processors, Mainly for the Domestic Market

6.1.1 The Type of Processing Operation and the Types of Species Processed

Three of the four operations represented in this category are major processors and distributors of a wide variety of fish and seafood in the Australian domestic market, and for export, while the fourth specialises in the processing and distribution of Anchovies, and frozen and fresh boneless, and butterfly crumbed Sardine fillets for the Australian market.

They operate from Queensland, Victoria, South Australia and Western Australia.

The three major processors have large filleting, gutting, cooking and re-packing operations, and supply wholesalers, retail outlets and the food services sector. All three are major importers of fish and seafood products.

6.1.2 Recent Developments in the Products Manufactured and Sold

The specialist processor launched his range of fresh Sardines, and fresh and frozen boneless crumbed fillets, in September, 1991. Because Sardines are high in Omega 3 oil content, their health benefits can be promoted, and **"Sardines will take over from Hake because of Omega 3, with promotion."**

One of the major general processors has recently been developing **smaller consumer packs** (250 gm punnets with cling wrap, or vacuum packed, freshly frozen) that the average family can use. This is considered to be a "reasonably big market", though greater potential may exist in the export of frozen consumer packs. Many European supermarkets apparently require smaller consumer packs. Such packs can be sold directly to the retailers, thus increasing returns to the Australian processor by avoiding wholesalers and import agents.

One respondent warned, however, that fish and seafood shouldn't be packed in plastic as it doesn't breathe - paper packaging keeps the product a lot better. In the words of one respondent:

> *"Shoppers won't buy fish that is old and grey - retailers have educated their customers about what is fresh and what is frozen, and now 60% would know what they are buying."*

6.1.3 Main Barriers Inhibiting Expansion

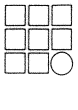
The Government:

Considerable **disenchantment was expressed about the role of the Government in the Australian fishing industry.** The criticisms seem to revolve around the perceived paucity of "practical people" in the Department of Primary Industry and Energy (DPIE):

> *"they only have scientists there, and the Government has gone too 'Green'."*

This is thought to have cost Australia many opportunities in the value-added processing of fish and seafood products.

For example, a few years ago, a major general processor had formed a joint venture with a Thai partner, under which thirteen trawlers and three carry vessels fished the waters of the Gulf of Carpentaria. An export processing plant was established in Darwin, generating $8-10 million annually to the local economy; and import substitution, as the raw material would otherwise have been processed in Thailand, with some then being sold to Australia for domestic consumption. When quotas were placed on Gulf species by the DPIE, the operation became uneconomic, and was closed down. **Now, Indonesian vessels fish these species in international waters - "the fish aren't aware of the 200 mile boundary" - and the catch is processed in Indonesian plants.** The species may be no better protected than they were prior to the introduction of the new quotas, and the processing has been driven off-shore.



Quota Controls:

Another respondent was **critical of the quotas placed on Orange roughy** in the South-Eastern trawl by the DPIE. As it is a deep sea species, only found in 4,000 feet of water, he queried:

> *"How do they know what is down there? Huge stocks have been pulled out by the New Zealanders for 15 years. Our quotas are restrictive, and will chase the export trade away."*

In his view, with the exception of a few species like Flounder which are in short supply, there are sufficient stocks of fish and seafood products in Australian waters to avoid the need for quotas. As evidence, he noted that almost all the species advertised on the price list of one of his major competitors are obtained from New Zealand suppliers, **and yet they are in abundant supply in Australian waters**.

He feared quotas being placed on Blue grenadier by the DPIE, as his company had recently built up an export market for the species in the United States, which quotas could eliminate. Apparently there is also a possibility of quotas being placed on Trevally. He summarised his attitude to the management of the Australian fisheries as follows:

> *"The quotas that are placed on fishing in Australian waters allow New Zealanders to fish in large quantities and export from the same waters. Fishing management in Canberra should not be involved in the industry - 'they are square pegs in round holes' - the industry should be left to people who know something about it, not engineers and cooks who go through schools without first-hand experience. The DPIE and State Fisheries officials are a team of "little tin Gods" and Hitlers. Forget the permanent public servants."*

He suggested the establishment of an honorary board, with members selected from leading fishing industry organisations, to manage the fish and seafood industry:

> *"The government won't listen to businessmen who have succeeded."*

Industry committees could then be formed to police the fishing grounds:

> *"Anyway, fish stocks always build up when it is uneconomic for trawlers to operate in them."*

The DPIE is only needed to control unscrupulous operators in the industry, but the export inspection service must be operated by experienced inspectors.

In the past, DPIE inspectors have caused considerable disquiet among exporters through some of their practices which incur significant costs to the processor. For example:

> *"They tip frozen fish out of 13 boxes per tonne, and each box is valued at $100, and it is very difficult to repack frozen fish. They don't care about the product."*

Another respondent also did not express much faith in the Government's approach to the management of Australia's fisheries. One of the **greatest potential threats he foresaw for the industry was overfishing**, which could result from the DPIE issuing more licences to raise revenue, once value is seen in newly developed fisheries. Such exploitation could destroy the natural resource. Another respondent was also concerned about the preservation of species. He believed that Government intervention is necessary to prevent overfishing in one area. Closures may be necessary for a period in a particular fishing ground, which can be re-opened when stocks have been satisfactorily replenished:

> *"We must know the resource, and when it is appropriate to fish it."*

All this leads to three conclusions. Firstly, quotas on species must be carefully calculated by fish management authorities, and take all factors into account, including the likely behaviour of other fishing nations, and then discussed and agreed with industry representatives.

Secondly, the rationale for the introduction of quotas, or changes to them, must be clearly communicated to all segments of the industry, with sufficient notice to allow plans to be adjusted.

And thirdly, DPIE officials must pay particular attention to the public relations side of their work with the Australian fishing industry, taking heed of the fact that it is also their economic livelihood.

Supply Issues:

Another respondent listed the main barriers that are inhibiting the expansion of the value-added processing of fish and seafood products as:

- price (too high);
- quality (too low); and
- (lack of) continuity of supply.

It is of concern that Australia used to be ranked third or fourth in terms of quality as an exporter of Prawns to Japan, but is now ranked twelfth or thirteenth. This was attributed to the attitude of people in the industry, and to the relatively poor handling of the product. To overcome this major barrier inhibiting expansion, this respondent believed that:

> *"everyone must get their act together, and training in the industry must be enhanced."*

The competing supplying nations have certainly lifted their game.

It was also pointed out that some of the species in demand in Australia are not found in local waters. For example, the small Pink tiger shrimp which is used in Chinese meals and seafood cocktails, is imported in large quantities from Asia; the very large Prawn (U8, eight Prawns to the pound) is in demand but not grown in Australia; the size of Australian Scallops is diminishing, but the food services sector requires larger meat; the species of Squid (logigo) required by the restaurant trade is not available locally, and can be imported from India cheaply and pre-cleaned. Some of the raw materials for marinara mix, also imported from India, are not available in Australia.

Maybe consideration can be given to assisting producers in Australia to grow some of these species, given that they are considered to have long term economic viability.

A **good future is seen for the Australian aquaculture industry** as a source of supply:

> *"provided that it is carefully managed - if there are too many players to supply a small market the bad suppliers prostitute the market".*

Such opportunities need to be built up slowly over time, with orderly marketing to build credibility. The constant supply of raw materials (eg. Squid, Octopus, Cuttlefish, Crabs, Mussels) at competitive, stable prices, could help to overcome one of the main barriers inhibiting the further expansion of value-added processing in Australia. Furthermore, there is considerable demand for the supply of portion-controlled fish fillets for the restaurant trade.

Associated Costs - Labour, Equipment and Research and Development:

The cost of labour in Australia is another barrier inhibiting expansion of the value-added processing industry. One respondent suggested that Australia lagged behind the rest of the world in filleting technology, and filleting machines could make Australia more competitive with imports by reducing the labour input. Apparently twenty species of fish are trawled in his local waters, suggesting the demand for a significant number of flexible fish filleting machines.

He also pointed out that the expertise in maintaining and repairing the machines is also critical, and at present, is in short supply in Australia. The need for this technical support should not be overlooked. Similarly, a major general processor saw a need for machinery to assist processors in the cleaning of Crabs, to make them more competitively priced.

Another barrier which was mentioned as an inhibitor to the further expansion of value-added processing was the time needed to identify, investigate and assess potential new markets and products. Also, the fear was expressed that if a new initiative is not initially successful, it may prove to be a drain on resources, and core elements of the existing business may deteriorate.

6.1.4 Opportunities for Utilised and Under-utilised Species

Given the fact that these respondents operate from four different States, there was no consensus as to the opportunities for utilised and under-utilised species. The main species said to be offering potential for increased sales by State are summarised below.

Queensland Processor's View:

The general processor operating from Queensland saw **potential**:

- in **Cuttlefish as a substitute for Squid**, as it can be purchased for a lower price (though it cannot be stuffed like a Squid tube);
- in **Sardines**, to be processed into whitebait for export to Europe; and
- in **Golden trevally**, for the domestic Asian community.

Apart from Oysters, for which there "is always a good market", **farmed species were considered to be inferior in flavour to wild species** (eg. Prawns), and would only be purchased if the quality and price were attractive. There is thought to be a market for farmed Barramundi at a competitive price, though as discussed below, similar types of fish are imported and sold for half the price.

The **high cost of raw material supplied through aquaculture generally makes it uncompetitive for value-added processing** in South Australia, compared with imported alternatives. An example cited was the New Zealand Black-lipped mussel, which is cheaper than the local alternatives, and is considered better because it is a native species. Again, farmed Barramundi was considered expensive compared with imported alternatives. Similarly Calamari, the best squid in Australia, attracts a high price compared with imported alternatives.

South Australian Processor's View:

A Tasmanian company has recently recorded a large loss when the Jack mackerel fishery collapsed - the fish did not appear for a whole season. They had planned to process the raw material into fish meal and bait, and to can the fish. Other processors are now very **cautious about relying on the Jack mackerel fishery.**

There may also be **potential for Australian herrings,** marinated as roll mops or as hot smoked kippers, but this is limited because the Australian population has not developed a taste for such offerings. There is a need for the integration of eating habits - that is, consumer education about fish and seafood, and promotion of new product ideas.

Value-adding of all the **wild species investigated** - Jack mackerel, Squid, Sardines, Australian herring and Silver trevally - has been attempted by the Adelaide processor, but funds have been limited for promotion, and the hard work needed to gain product acceptance has **not generated proportional returns.**

More **emphasis should be given to the value-added processing of by-products** (eg. from Squid, Crabs, Scampi), as the marginal revenue generated can make a significant contribution to overhead expenditures.

Victorian Processor's View:

The major Victorian processor sees **potential for the increased sales of all the wild species** listed above. He agrees that:

- consumer advertising will be necessary to gain acceptance for Jack mackerel at the consumer level;
- that there is a growing market for Squid, though sufficient supplies cannot be obtained at reasonable prices (and when prices fluctuate, the market is flooded, and prices fall);
- that a greater volume of Australian herring could be canned as fillets, depending on the cost of production; and
- depending on the price, there is potential in both the local and export (Japan) markets for Silver trevally. It is in abundant supply in season, and is caught in large amounts by Asians, who can supply it onto world markets significantly more cheaply than can Australia.

Aquaculture species are considered to have less potential because production costs make them uncompetitive on export markets, and the taste of farmed Prawns is considered poor.

Western Australia Processor's View:

In Western Australia, considerable **potential** was seen for **Australian Herring**, though its use may be limited by the strong political lobby of amateur fishing representatives.

There is **limited additional potential for Sardines**, but the potential for Jack mackerel is limited to bait as "the public does not think that you can eat it".

There may be **potential for both Bream and Sweep** (reef fish) in the Asian market if they can be supplied to the food services sector portion controlled. Both can apparently be grown through aquaculture.

Other opportunities for value-added fish and seafood products mentioned included **Lobster heads, paste and pate, and belly meat (spiders)** for the Asian market.

6.1.5 Likely Future Trends and Their Implications for Australian and Imported Species

The processor who was particularly critical of the quota restrictions applying to a number of species painted a particularly gloomy prognosis for the Australian fishing industry, unless there are dramatic changes in its organisation and management. In his view, there won't be an industry in three or four years time, and a major factor is the quotas issue. Because of quotas, Australian trawlers will not be able to afford to operate as the supply of fish and seafood available to them to catch will be low, forcing them to ask a "ridiculous" price for the raw material.

Prices are also inflated by the prevailing wage structure in Australia - notably the cost of labour, the 17.5% leave loading, payroll tax, the MediCare levy, etc. The high price of fish and seafood raw materials in turn causes the Australian processors to be uncompetitive - "we can't produce cheaply enough to compete with the majority of the species available here from imports". The cost of raw material from New Zealand and South America, particularly Chile and Argentina, is generally less than half that charged by Australian producers.

Some respondents believe that, if quotas were reduced, or eliminated altogether, more fish would be caught, the unit cost of catching would be lower, and the prices paid by processors would be significantly reduced. More efficient catching infrastructure and technology would also achieve the same result - a more efficient Australian fishing industry, and more competitive value-added processing. In the words of one respondent:

> *"Unless the raw material is cheaper than imports, it is not economic to value-add in Australia - we simply can't compete."*

Another large general processor imports Nile perch from Africa, sold as a "poor man's Barramundi", as it is "the same flavour and texture, but about half the price".

The recent trend evident of the Australian market becoming more oriented to **fresh** fish and seafood, and to **live** products, is expected to strengthen in the future. This will result in greater demand for species in season, reflected by the menus in food service establishments, which in turn will reduce storage and handling costs. Closer working relationships will be essential throughout the supply and distribution chain, from the producer to the processor, wholesaler and retailer.

6.1.6 Opportunities for Import Replacement and Export Development

As Michael Angelakis pointed out in his paper on "The Value Adding of Seafood" to the National Outlook Conference in February, 1990:

> *"The better presented (seafood) product has more marketing options; its owners are not confined to the restraints of a narrow market. The chain begins once the catch lands on the deck."* (Page 1)

There was a feeling among the major general processors that many fishermen have become more aware of the need for improved quality control of their catch, so that new markets can be opened, shelf life extended, and better prices obtained:

> *"a large volume catch can still attract a high price if quality control is high."*

There was evidence that many fishermen had improved:

- their on-boat refrigeration;
- were using more ice;
- were grading their catch more consistently and more accurately; and
- were packing some of the catch on board.

There was also a trend toward killing the catch more quickly, thus minimising stress on the fish, and therefore lengthening the shelf life of the processed product. Greater use was being made of electronic identification equipment, to locate the schools of fish more efficiently.

However, there is apparently considerable room for improvement. Apart from the important fact that large volumes of fish are imported because it is so much cheaper - "local Whiting fillets wholesale for $10-15/kg, while similar imported fish wholesale for $5-6/kg" - imports are often preferred because of superior packing. Packs of imported fish are interleaved, while often the local product is packed poorly. Local packs often contain fish of different sizes, and random, non-uniform weights; two kilogram blocks are not separated by paper; etc. **Significant import replacement would be achieved by more uniform and better quality packing of the Australian catch.**

Because the quotas set by the DPIE for fishing particular species are so strict, significant quantities of fin-fish have to be imported for filleting because the volume required cannot be obtained from Australian waters.

Paradoxically, it appears that more elaborate processing could result in the greater utilisation of Australian species. As an example, one respondent mentioned that crumbing and battering fish reduces the price per kilogram (eg. from $10/kg to $7/kg) because batter and crumbs are significantly cheaper than fish. Therefore, he may purchase a filleting and battering machine and purchase a lot more fish from Australian suppliers - for example, small School whiting, for which the cost of manual filleting is high - and the battering could allow the retail selling price to be competitive with imports.

6.1.7 Actions That Could be Taken to Enhance the "Value-Added" Industry

Industry Promotion:

Respondents mentioned the need for **national generic promotion** to the public to enhance the "value-added" industry. A major general processor expressed the need for national seafood promotion, financed through a levy on imported fish and seafood products - "many other countries do it". The umbrella campaign could focus on the health and dietary benefits of fish and seafood, such as its ability to lower cholesterol. It must counter the perception that seafood is expensive, and has to be purchased by the kilogram. **It must add value to fish and seafood, and build knowledge of the wide range of alternative products available in the range.** The costs of promotion and marketing, and the lack of funds available for such activities, are considered major barriers inhibiting the further expansion of the value added processing of fish and seafood.

More extensive fish and seafood marketing is seen as critical to combat the competition from other protein sources, such as red and white meats. Aggressive proactive marketing is needed to maintain and build market share. **And the biggest positive about Australian fish and seafood is that it is caught (or grown) in relatively clean, unpolluted waters, which will underpin the health benefit claims.** The marketing and promotion must increase the demand for the **Australian** product only, making it essential that the origin of all fish and seafood products are identified on product labels. **It is considered that there is a lot more potential for Australian fish and seafood.**

The specialist processor mentioned the need for **tastings to obtain trial** for new products (eg. fresh or filleted Sardines - "people think of small fish as too bony and salty") - all the resources available through his organisation are used for tastings at trade shows.

A major general processor has had success with **demonstration cooking** at the retail level:

> *"the price of octopus has sky-rocketed 300-400% since it has been grilled in the depot."*

Many consumers haven't had experience in preparing fish and seafood, and need to be able to taste the cooked product before they can purchase it with confidence. Retail staff, therefore, need to be trained to handle consumer enquires about preparing fish and seafood products (eg. steaming). Education in how to use these products will be enhanced by the **distribution of recipes through outlets** selling fresh fish and seafood.

Research and Development:

It was suggested that, in the area of new product development, assistance from organisations such as the CSIRO should be encouraged and made available. The shelf-life of new products could be tested on a "user-pays" basis, but many operators in the industry do not know about the existence of such possibilities.

6.2 General Processors, Mainly for the Export Market

6.2.1 The Type of Processing Operation and the Types of Species Processed

Three major processors of fish and seafood, mainly for the export market, participated in the first stage of the Survey of Value-Added Processors. One was involved in the processing of locally caught Lobsters and Prawns for the export markets:

- live Rock lobsters were being exported to Japan, Hong Kong, Singapore and Europe;
- frozen Rock lobster tails to the U.S.A., Japan, Hong Kong and Taiwan; and
- pre-packaged raw, headless, shelled King prawns were being sent to the U.S.A., Japan, Hong Kong, Singapore and Taiwan.

A relatively small volume of cooked King prawns was sold chilled on the Australian market, along with some frozen Rock lobster tails. **It is noteworthy that all exported Lobsters and Prawns are sold to other value-added processors overseas.**

The second company exports ninety percent of the fish and seafood it processes, all of which is sourced from local waters. More specifically,

- live Lobsters, and Lobster tails are exported to wholesalers in the United States, with some whole-cooked Lobsters being sold in Australia;
- ninety percent of the fin-fish fillets are also exported to U.S.A. wholesalers, mainly Orange roughy and deep water Flathead, for sale to the restaurant trade; and
- chilled Western king prawns are sold in twelve kilogram packs to German wholesalers.

Other species exported through overseas wholesalers in lower volumes include Queen snapper, Whiting, Trawl squid, Calamari and headed and gutted long-finned Boarfish.

A third company also only processes locally caught fin-fish (Orange roughy) and seafood (Lobsters, Scallops and Prawns), mainly for sale on the export market:

- Scallop meat is graded, packed in two kilogram boxes and frozen, and exported to Hong Kong for use in the food service sector;

- Lobster tails are graded, re-packed and frozen, and sent to the U.S.A. and Hong Kong in 11.34kg cartons for use in the restaurant trade;

- Tiger prawns are graded and re-packed, and exported frozen to Japan in 1.5 kilogram packs (they are further processed into tray packs and consumer packs on arrival - the Japanese apparently will not accept consumer packs that have not been prepared in Japan), while headless Banana prawns are graded, re-packed and frozen and sent to the United States in two kilogram packs; and

- half of the Orange roughy processed is exported to the U.S.A. in frozen fillet form.

This company also operates a major domestic fish and seafood wholesaling operation, and retail fish markets. Frozen prawn meat and prawn cutlets are sold domestically, along with frozen fillets of Orange roughy, and Lobsters, Scallops and Prawns which have been rejected for sale on the export market. While no imported fish or seafood is actually processed, large quantities of Hake fillets are imported from South America and Thailand - apparently some Australian fish is re-imported as fillets because it is so much cheaper to process in Asia.

As the quantity of fish available in Australian waters is inadequate to substitute for the cheap imports, Australia's strategy must be to export the high value species (eg. Australian Scallops sold to Hong Kong attract a premium), albeit at relatively low volumes, to compensate for the large volume of low value species imported.

6.2.2 Recent Developments in the Products Manufactured and Sold

New product developments, and enhancements to manufacturing processes appear to have been put "on hold" in the current recessionary climate. The exception to this appears to be in the area of **packaging development**. One exporter freezes Flathead into a twelve kilogram pack, which is comprised of eight 1.5kg individual packs designed for purchase by restaurants. The meal preparer can slice the blocks while still frozen, and batter them and fry them while frozen.

As mentioned above, another exporter tried to introduce new consumer tray packs for the Tiger prawns it was selling to Japan. Strong resistance was encountered - the selling price was inflated to such an extent that they did not sell - as the Japanese processors wanted to sell their own consumer products. They now concentrate on preparing frozen 1.5kg packs of Tiger prawns for the Japanese market, often preparing the packs in their own boats while at sea.

A niche market may exist for consumer packs sold through supermarkets, however, product development may be limited by the size of the Australian population - "not everyone could do it."

In general, it was considered that more attention will have to be given to value-added meals, such as one serve microwave dinners. However, it was questioned if Australian producers will be able to compete with imports from New Zealand and other countries.

6.2.3 Main Barriers Inhibiting Expansion

Cost of Production:

Cost is clearly the main barrier inhibiting expansion. One exporter is considering undertaking a major part of its fin-fish processing in Indonesia. Fish caught in Australian waters will be skinned and filleted in Australia, but boned off-shore. The cost of labour in Australia is too expensive - boning costs an extra $2 per kilogram if undertaken in Australia. This company's philosophy is "**anything time consuming will be done off-shore**", yet by all appearances, it is not a company to scrimp on expenditure - it is merely seeking value-for-money and a reasonable return on the investment of private resources.

Another respondent was more specific about the cause of Australia's labour cost disadvantage. In his view, it is the on-costs that make labour more expensive in total in Australia than even in Japan:

> *"Labour costs are cheaper overall in Japan - while the workers get paid more per hour, there is no superannuation, holiday pay, WorkCare levy, etc. The on-costs are much higher here than in Japan - it is therefore much more economic to do value-added processing in Japan or Singapore. For example, it costs $11-12 per hour for unskilled labour to process Prawns in Japan, in Australia it costs $8-9 per hour, but the add-on costs make it about $13 per hour, plus the extra packaging costs that are incurred in Australia because Prawns have to be sold by weight rather than count, as they are in Japan."*

This means that Prawns and Lobsters are being exported from Australia without being value-added. They go from the fishing boat into sleeves for transportation to Japan, where they are processed.

The obvious solution is to look to greater mechanisation to avoid labour costs - an area in which Australia cannot compete. However, even if not cost prohibitive, it was believed certain processing activities, such as filleting, are not suited to mechanisation because each fish is slightly different. This type of activity must involve manual processing:

> *"Whiting is caught and sent to Thailand for filleting and then packed into consumer and wholesale packs there. Machines can't fillet each fish and we can't compete because fish filleting can't be mechanised."*

One general export processor felt a lack of infrastructure to exist in Northern Queensland, resulting in prohibitive transportation costs. As noted by one respondent:

> *"It is more expensive to get Prawns to Adelaide (from North Queensland), than to transport them from South Australia to Japan."*

In addition, it is cheaper to send product through New Zealand to Japan, than direct from Australia.

6.2.4 Opportunities for Utilised and Under-utilised Species

Respondents were read a list of:

- five wild species;
  - Jack mackerel, Squid (or Calamari), Pilchards or Sardines, Australian herring or Tommy ruff, and Silver trevally or Skippy; and
- six "farmed" species;
  - farm Prawns, Rainbow trout, Atlantic salmon, Mussels, Oysters and farm Barramundi,

which have been identified as being under-utilised. They were asked to indicate which species they considered as having the greatest potential for increased sales.

It is clear that, overall, **greater potential is seen for the "farmed" species investigated, than for the wild species.** However, again it is the labour costs which will determine the extent of processing undertaken in Australia, and indeed, whether there is a viable level of market demand for the species in question.

One respondent saw export potential for all the "farmed" species investigated (and for yabbies), **but it would depend on whether they would be able to compete on the world market. This in turn would depend on the cost efficiency of their farm labour.** Even on the domestic market, "farmed" species may not be competitive, as many competing products sourced from overseas do not attract tariffs. It was noted that "farmed" species have the potential to offer guaranteed supply, and to be sold at times of high demand for higher prices. In addition, the trend to portion control will favour the development of the Australian aquaculture industry:

> *"There is a market for Prawns that are all the same size - in the wild you can't control the size."*

One respondent was sceptical about the need to farm Barramundi, as in his view, there is an abundant supply in the Gulf of Carpentaria, and in the waters off Northern Western Australia. Also, because it grows so slowly it doesn't breed well in captivity. Another respondent noted that wild Prawns attract a higher price in Japan than the "farmed" alternative, which may limit their potential to generate a reasonable return. While there may be potential for increasing the sale of Oysters, particularly tropical varieties which could be farmed, and which are in abundant supply, the costs are high and the market is not developed. There are also a number of bureaucratic barriers to Oyster farming, particularly the need for between eight and twelve permits before an Oyster farm can be set up.

The potential for the **wild species investigated was considered limited**, particularly for value-added processing. Any wild species of fin-fish could be packed and frozen in Australia, and exported to a country like China or Indonesia for canning or smoking - the labour costs in these countries are about $1 per day compared with $11.60 per hour in Australia. None of the wild species of fin-fish investigated are well known in Australia, or have a strong market image, therefore they can only be price-takers when sold. **They therefore may not be economically viable for the fishermen to catch.**

Silver Trevally:

One respondent saw considerable potential in increasing the utilisation of Silver trevally, provided the market can be developed for a fish of stronger flavour. Apparently, large quantities of this species are caught and dumped in Queensland waters, because at present it can only be sold to Saudi Arabia for $1 per kilogram, which does not even pay for the freight.

Squid:

One respondent did not regard Squid (or Calamari) as an under-utilised species. In his view, not enough Squid was available to supply the market in his State, and it had to be imported from Thailand. Apparently it is also well utilised in another State.

Jack Mackerel:

Similarly, some respondents think that Jack mackerel has been fished out in Tasmania for fish meal, and in recent years, very little has been caught as it has shifted south on the warmer current into colder waters.

Australian Herring:

While Australian herring may be under-utilised, there is no market for it, it can't be sold, so it is used for lobster bait.

It was suggested that there **may be potential** for:

- **Pilchards or Sardines** processed for pet food in Thailand;
- **Indian mackerel**, which is found in tropical waters, for processing into pet food or fish meal plants;
- **Painted sweetlip**, which is found in the Gulf of Carpentaria, and is a good eating (rather than processing) fish; and
- **Red snapper and Scarlet perch**, which are in abundant supply in the Gulf. No market has been developed for these species in Australia, so potential customers are not used to them and will not buy them. Apparently Sizzlers restaurants sell Red snapper and Scarlet perch, which is caught in Northern Australian waters, sent to Thailand, and filleted into 115-125kg portions by hand, and returned to Australia.

There may also be a potential market for Telapia (catfish), and a number of species in supply in the Great Australian Bite, including Boarfish, Latchet, Knife jack, and deep water Flathead. **However, there is a very low margin after expenses, unless the product has been differentiated and the market has been developed**.

It was commented that fish are in abundant supply in the Gulf of Carpentaria, but there is a definite lack of infrastructure in this region.

6.2.5 Likely Future Trends and Their Implications for Australian and Imported Species

Highlighted was the problem in the current management of the resource, which is in part due to the attitude of "traditional fishermen". There must be greater utilisation of by-catch species, which is at present dumped overboard. By-catch species could be used in the production of fish meal. However, there is a reluctance by fishermen to bring it on-board unless they can be guaranteed a return of at least 50 cents per kilogram.

In addition, as highlighted by one processor in another segment, sufficient by-product cannot be sourced even though there is demand for this product - fishermen have not recognised the potential value-added processing activities which could be undertaken of by-product.

6.2.6 Opportunities for Import Replacement and Export Development

In this particular segment, import replacement was not a great issue for concern. Of the three export processors, only one imports fish and seafood for the domestic market. In this respondent's view, there really is little opportunity for the replacement of a species, like Hake, as there is no equivalent Australian species which can be sourced for the same cost.

The greatest problem facing these export processors, was the sourcing of a regular supply of local species for the export market - Scallops, Lobsters and Prawns. There is a limited supply and all export processors are essentially competing for the same highly valued product. Fishermen therefore have market control over the price and can trade one export processor off against the other. This is a major dilemma for the processor, as his export customers seek a regular supply and will pay a higher price to the more consistent suppliers.

One processor specifically commented on the development potential in Northern Australia near the Torres Island.

6.2.7 Actions that Could be Taken to Enhance the "Value-Added" Industry

Industry Promotion:

Respondents mentioned the need for industry promotion which must support the locally caught, rather than cheap imported species. To do so, it was suggested that a label be developed which clearly identifies local product. This label may appear on the product, or alternatively, take the form of point of sale material.

To counter the perception of fish being expensive, it may be possible to lower the price of under-utilised species, thus, encouraging trial of those species which are in abundant supply. Species specifically mentioned included Red snapper and Scarlet perch.

There could be merit in educating consumers about the quality of frozen fish. However, if inferior product is sold because it is near the end of its "life", the perception of consumers will be confirmed - that of inferior quality compared to fresh product. Retailers must also be encouraged to discount fish which is nearing the end of its shelf-life. If consumers have an unfavourable experience with a product, which in their view is quite expensive, the likelihood of repeat purchase is very low.

Training:

One respondent was particularly concerned by the lack of knowledge about fish hygiene and handling by operators at all levels in the fishing industry. Priority must be given to training in this area to ensure that shelf-life is maximised. The lack of use of ice in Northern Queensland was cited as an example of a lack of knowledge about fish handling.

Industry Research:

It was highlighted that little knowledge exists as to what processing activities, if any, are undertaken on the filleted fish and seafood sourced in Australia which is exported. It was suggested that an organisation, such as Austrade, could investigate overseas processing market demand:

- Is it re-packed, smoked etc?
- If processing activities are in fact undertaken overseas, are there opportunities for the Australian value-added fish and seafood industry to produce the final product for export?

6.3 Canneries

6.3.1 The Type of Processing Operation and the Types of Species Processed

Two major suppliers of canned fish and seafood, most predominantly Tuna and Salmon, represented the responses for this category. While the focus of one operation is entirely the canning of Tuna and Salmon for the Australian market, the other operation (for which two interviews in Victoria and South Australia were conducted) is involved in both importing and exporting fish and seafood.

The Australian canning operation, located in New South Wales, sources raw material mainly from this country, but the quota placed on Skipjack has resulted in supply having to be supplemented by imported Yellowfin tuna. Salmon is sourced entirely from Australia. All product is utilised either for canned product, fishmeal or the heads are frozen and used for lobster bait. Reportedly, this business has moved into the canning of other products to cross-subsidise operations.

The second supplier of canned product is more diversified. All tuna is imported in the can from Thailand:

> *"Thailand is the centre of canned product."*

Thailand is also the primary source of Sardines. Canned Salmon is sourced from Canada, Mussels are imported from Chile and Oysters originate from Korea. This operation also markets Snappy Tom cat food which is imported in its entirety from Thailand. While a large volume of canned product is imported, a greater value is exported. Abalone canning operations exist in Melbourne and Tasmania, and the Tasmanian plant is also responsible for canning Australian salmon. All canned Abalone is exported to Japan, Hong Kong, Singapore, Korea, UK, and USA. In addition, live and frozen Lobster products are exported. The value generated from other species is fairly insignificant.

6.3.2 Recent Developments in the Products Manufactured and Sold

There has **not been any dramatic change in the processing of canned Tuna and Salmon.** The only development in product manufacture relates to product extensions catering for the health conscious market, for example, Tuna in brine.

Considerable concern has been expressed by the community towards **drift net fishing**, a method used by Taiwanese fisherman. The greatest marketing opportunity for canned Tuna suppliers has been the promotion of the "green aspect". Suppliers sourcing Tuna not caught by drift nets can promote their brand as being "dolphin safe" - offering a selling advantage over those sourcing Taiwanese product.

Packaging changes are the main development observed by these operators. Specifically, **can sizes and the opening method have changed.** One respondent mentioned the recent introduction of 100 gram cans with an easy to open circle on the top of the can. Tuna is now also available in 180 gram and 425 gram cans.

One processor mentioned their recent introduction of **"shelf-stable" plastic packaging** of Abalone destined for the Japanese market. Plastic packaging offers considerable advantages over canning. Unlike canning which requires 10% over-packing to account for losses once drained, this can be avoided with a plastic pack. In addition, no additives are required with plastic packaging, thereby offering an all natural product. This product can attract $100 per kilogram wholesale in Japan.

More generally, it was believed consumer packs (like that for meat) of fresh filleted and whole fish products are in their infancy in Australia and will grow in significance in the supermarket trade. Vacuum packs are considered the next growth area.

As people try to maintain good nutrition and in a convenient form, there may be potential for meals packed in plastic containers, suited to microwave cooking. However, the development of this type of product may be limited by the cost of technology.

6.3.3 Main Barriers Inhibiting Expansion

Cost of Production:

In the view of the respondent from the Tuna and Salmon cannery, the costs incurred in Australia from the producer down, are the main barriers inhibiting the expansion of the value-added processing of fish and seafood products. Apart from the obvious labour rate differences in Australia compared with Thailand, other charges are not "on a level playing field". The cost of transport, fuel, waste disposal, levies and the government's withdrawal of the payroll tax rebate, in Australia compared with overseas, all contribute to an **inequitable cost structure**:

> *"In Australia we're paying $430 a week to a women in a factory, in Thailand it is $42 a week.....Labour and packaging costs constitute 44% of costs in Australia compared with 17% in Thailand."*

It was felt that a more equitable cost structure could be achieved if the raw material was imported in a processed form, thus avoiding significant filleting costs. This is an undesirable option as local Tuna is processed, however, to remain competitive this operator felt there may be no other choice.

Australia's inability to compete in the world market is evidenced by the closure of canning operations in this country. Previously six Tuna canning operations existed; only two remain.

The actual can cost was also cited as an area where Australia is not competitive.

The Government:

Quotas were seen as a barrier inhibiting the expansion of the Australian fish and seafood processing industry. One respondent was particularly critical of the restrictions placed on the Skipjack fishery as a result of conflict between long line fisherman and the East Coast Tuna Fishermans Association. Protection of the fishery for, as he described "cut lunch fisherman", was seen as a huge mistake, preventing a fishery from developing and allowing Australia to become world competitive.

The reasons for any such restriction or quotas established by government must be clearly communicated to those within the industry. If they believe government does not support the processing industry, processors will have less regard for supporting Australian catchers.

As an aside, the comment was made that trawling operations need to be made more efficient and with greater concern for the maintenance of quality, thereby maximising the value of fish and seafood.

General VAP Product Development:

It was felt that the **quality of fresh product in Australia** is inferior to that which could be produced given better on-board handling practices. In addition, if the shelf life of fish and seafood could be improved through better handling by the fishmonger, the consumer would be able to buy fish once a week, but be able to keep it in the fridge (or freezer) and eat fish twice a week. At present, the majority of consumers buy fish on the day it is to be consumed. It is possible that consumption has not been maximised, in part, because of current inefficiencies in handling. These inefficiencies, in turn, lead to the value of fish and seafood not being maximised.

Australian consumers consider the price of fresh fish and seafood expensive compared with other protein sources. However, overseas there is less difference in the price of fish compared with meat, because meat attracts a high price (it is scarce). As the Australian resource is limited, and the market overseas is more willing to pay a premium price, **greater value can be achieved by exporting fish and seafood**, rather than retaining it for the domestic market. This leads to an **insufficient supply of Australian raw material which could be used for value-added product development.**

Consumer Knowledge and Reluctance:

In general, these processors felt the Australian market limited for value-added product as the consumer lacks preparation and cooking knowledge. It was noted however, that as Australia becomes more multi-cultural this knowledge will improve.

The Australian consumer is also unwilling to trial relatively unknown species. In an attempt to build demand and trial for canned Tuna, one manufacturer has developed a series of recipes. The success of this initiative was not discussed.

6.3.4 Opportunities for Utilised and Under-utilised Species

The three respondents from the two canning operations all basically agreed few opportunities exist, if any, for the canning or further processing, of the six wild and five farmed species defined as being under-utilised.

Jack mackerel is an oily fish of low quality which would not be suited to the Australian market and primary export markets. The Pacific Islands and Papua New Guinea were considered the only markets offering export potential for Jack mackerel, as this species is consumed in brine, oil or tomato. However, the cost of canning in Australia was seen as a major barrier to success. This species is essentially used for bait and in pet foods.

It was felt that the canning of **Squid** would not offer any opportunity for value-added processors. However, these respondents believed there **potential for distribution to the consumer in frozen form or the food service sector in crumbed portion controlled rings.**

These respondents believed there to be an insufficient supply of **Pilchards** to allow for a successful Australian canning operation, or the cost of the raw material to be too great to be viable. The raw material cost ($600 a tonne) and volume of supply was not considered appropriate for the canning of **Australian herring**.

One respondent had experimented with Silver trevally, but found the bone structure to be too heavy and supply too seasonal for successful operation.

No potential was considered to exist for the canning of **any of the six farmed species.** At present, the value of aquaculture species is maximised by selling a fresh product, not one which has been value-added. Supply would have to well exceed demand - resulting in a reduced price - before a canning operation would consider these species:

> *"We looked at Atlantic salmon but cost was a problem....$13,000 a tonne from Tassal."*

The only farmed species which are canned at present are Korean oysters and mussels.

It was suggested that there may be potential (not canning) for:

- **giant Clams** which are highly prized in Asia; and
- **farmed Yabbies and Marron** which would represent niche markets.

6.3.5 Likely Future Trends and Their Implications for Australian and Imported Species

Regardless of the source of the fish, consumers are seeking greater convenience in any products bought, therefore, it is believed that the **demand for filleted fish** will strengthen.

One of the greatest threats which could be faced by Australian fisherman is the **reduced demand for Tuna caught in Australian waters**, which is destined for canning. The growth in the generic and housebrand market for canned Tuna will result in less emphasis being placed on branded cans of Tuna. While some branded product relies on Australian supply, it was reported that all generic product is imported. If the market share of branded product declines, this could threaten the only two Tuna canning operations in Australia supplying established brand names.

Chile farm producers have developed a species of Salmon (**Silver salmon or Coho**) which is in between the quality of Red and Pink salmon, but has no skin and no bones. This is obviously suited to value-added processing activities, such as canning. It was felt that Australian farmers would not be able to produce this species competitively as most farms are not operating profitably. If this species is used for canning, sourcing of Salmon caught in Australian waters may reduce, thus threatening the livelihood of catchers. Like the scenario given for Tuna, if canned Salmon is imported in greater quantity, the survival of Australian canneries could be threatened.

6.3.6 Opportunities for Import Replacement and Export Development

In terms of the opportunities for import replacement of canned product, it was agreed that cost constraints and insufficient supply leave little choice but to import canned Tuna and Salmon (and other volume species). This is evidenced by the sourcing of Tuna by one Australian canner. Due to an insufficient supply and the small size of Skipjack, roughly two fifths of the volume of Tuna processed is imported.

Australia's competitive strength lies in the supply of species highly valued by export markets. It is these species, such as Abalone and Lobster, that generate greater profits to catchers and processors through export trade, rather than the domestic market.

It was reported that the Abalone fishery is well managed and the world demand for Abalone will remain stable. In comparison, the world market for Lobster, a world commodity, is unstable and the price is controlled by those countries which supply the greatest volume. For example, Lobster production in South Australia and along the East Coast was quoted as roughly 4,000 tonnes; Western Australia produces 14,000 tonnes; and the Carribean and Mexico supplies 150,000 tonnes. Therefore, Australia must be a price taker and seek to maximise returns by choosing to export or sell Lobster on the domestic market.

6.3.7 Actions that Could be Taken to Enhance the "Value-Added" Industry

Fisheries Management and Handling Practices:

One respondent felt that **fisheries resources could be enhanced if they were better managed.** While the Abalone fishery was considered well managed, the management of Gemfish in New South Wales was considered poor, as was that for Lobster in the East. The management of the Lobster fishery in Western Australia was considered far superior to that in South Australia:

> *"Western Australia think it is an industry, whereas, South Australia see it as a recreation industry."*

The management is dependent on scientific methods used to calculate the biomass available for commercial fishing. Not until there is agreement by the scientists, of for example the life-cycle of Lobsters, will industry confidence develop.

Of a more specific nature, it was felt that **fisherman need to adopt better handling practices** on the boat to ensure quality maximisation. A better quality product will generate higher prices and return for investment to those operating in the industry. The handling practices of the retailer were also cited as an area for improvement, thus maintaining the quality and extending the shelf-life of fish and seafood.

In addition, it was felt that there must be **greater industry co-operation.** All those in the distribution chain must adopt a long-term view seeking to strengthen and maximise the cost of the raw material used for value-added processing. In the words of one respondent:

> *"Australia has a polarised industry for Abalone. Fisherman play processors off against each other...there is no investment in value-adding product for the future. Therefore, the whole industry can fall over with the investor taking the pain."*

Industry Promotion:

To increase the consumption of Australian made value-added fish and seafood products by Australians, **industry promotion was deemed necessary.** Australia has moved forward over the last ten years in the range of species bought, however, further education is needed to:

- explain the health benefits of fish;
- outline the Australian species available; and
- how to store, and prepare fish and seafood.

Ultimately, the Australian consumer will have greater confidence in buying, preparing and cooking fish and seafood.

The **distribution of recipes** was also thought an opportunity to enhance fish and seafood sales. One canner has actually developed recipes using canned Tuna and Salmon.

It was felt that **in-store tastings** would encourage the trial, and hopefully adoption, of the less well known Australian species.

The cost of fish and seafood relative to other protein sources must also be addressed.

6.4 Fish and Seafood Smokehouses

6.4.1 The Type of Processing Operation and the Types of Species Processed

Two smokehouse operations located in New South Wales and South Australia were interviewed. These form quite a contrast to most other value-added processing operations in terms of the size of the operation - one employed 11 staff, the other employed 5 full-time staff.

The smokehouse located in South Australia solely distributes fresh (filleted) and smoked product in the State. With the exception of Norwegian herrings, all raw material is sourced within Australia. The species which are smoked include:

- Wahoo;
- Tommy ruff (Australian herring);
- Spanish mackerel;
- Norwegian herring;
- Rainbow trout; and
- Atlantic salmon.

It was noted that smoking reduces the weight of the fish by approximately half.

The second establishment has an export licence for live, fresh, frozen and smoked product. At the time of interview, eel fillets and pieces were the only products exported. All other value-added product is distributed to retailers (supermarkets, fish shops and delicatessens), with limited volume being distributed to the food service sector:

- Atlantic salmon is sliced and vacuum packed and also used as the main ingredient for dips;
- Trout is sold fresh;
- imported Kippers and Mackerel are smoked and sold frozen in vacuum packs; and
- Seafood and tartare sauces are sold through fish and chip shops.

6.4.2 Main Barriers Inhibiting Expansion and Actions to Enhance the "Value-Added" Industry

The Government:

It was felt that those within government do **not have enough practical experience in the industry** to be making decisions which impact on the industry. In the view of industry operators, those involved in fisheries management need to have personally experienced the industry's operation. Alternatively, a structure should be developed allowing for greater industry consultation and thus drawing from the experience of those in the industry.

An example of the **rigidity of government restrictions** was given highlighting the lost opportunity for the enhancement of Australia's value-added processing industry. In Australia, licences to fisherman are limited to boats of at least 7.8 metres, however, to catch eels, smaller boats will suffice. New Zealand, a major competitor for smoked eel, does not have such restrictions. In addition, farmers in New Zealand are permitted to place traps in freshwater lakes, this is not allowed in Australia. Due to these government restrictions, the supply of eels is limited in Australia, and so to the export opportunities.

The **export duties** which apply (eg. 20% on smoked eels to Germany) were also considered a disincentive, particularly when there are no comparable import duties. Government must seek to explain the necessity for such duties and the impact these have on the Australian economy.

Associated Costs:

For small operations such as these, the **capital required for expansion was seen as a key barrier within their business.** Although the smokehouse in South Australia could develop interstate and overseas markets, the set-up costs (time required, taxes, Workcare, holiday loading, superannuation, overtime payments, etc.) associated with such expansion were considered too high.

Given an increased supply of eels, the other smokehouse could expand operations if funds could be found for the purchase of an eel gutting machine:

> *"One eel takes one man 3 to 4 minutes to gut; a machine does three in 1 minute."*

This same operator believed that the demand for seafood spaghetti sauce will increase in the future. However, the machinery required to produce this product will cost $250,000: a large outlay for a relatively small operator.

Where possible, Australian value-added processors must seek to minimise the labour component by the use of machinery, thereby allowing Australian value-added product to be competitive in the world market.

Opportunities for new product development were also considered limited within particularly small businesses. The effort required for a low likelihood of success was considered too risky.

Consumer Perceptions:

As in other segments, the **perception of fish being more expensive** than alternative protein sources was considered a hindrance to the increased consumption of Australian made value-added product. **Fair cost comparisons** need to be made through industry promotion to counter this barrier. In addition, consumers need improved knowledge of cheaper species of fish and seafood.

Trial and hopefully adoption of less well known, and possibly cheaper species, should be encouraged through **in-store tastings**. As it is believed there is a lack of knowledge in fish preparation and cooking, **in-store demonstrations** could be an appropriate approach in educating the public how to cook fish and seafood.

6.4.3 Opportunities for Utilised and Under-utilised Species and Export Development

In terms of producing a **smoked product, not one of the five identified under-utilised species was thought to have any potential** for increased sales. The comments made about each species are summarised below:

- **Jack mackerel** is not suited to smoking. It is soft, dry and unpleasant to eat.

- **Squid** is too tough to smoke and was felt to be suited only for pickling or fresh sales. One processor indicated that he produces a summer seafood sauce using Squid. This is distributed through supermarkets and delicatessens.

- **Pilchards or Sardines** are small and consequently preparation for smoking would be very labour intensive - costs are too high for an economic return.

- **Tommy ruff** is currently smoked and distributed in South Australia as those within the State are familiar with this species. Sales in other States would require a far greater investment in knowledge building. It was noted that the production of smoked product is very labour intensive.

- **Silver trevally** was not considered to have smoking potential. The greatest opportunity for this species was thought to be in export, in chilled form, to Japan and Europe. On the domestic market, new Australians may be interested in this species.

Limited opportunity was seen to exist for aquaculture species which may be smoked. The comments are noted below.

- **Farm prawns** were not considered suitable for smoking.

- The market for **smoked Rainbow trout** exists, but the current cost of the raw material will make it **expensive on the world market** - Italy is a major producer of Rainbow trout.

- **Smoked Atlantic salmon** is produced, however, like Rainbow trout, it is **difficult to compete with imported product** - eg. from the Danish.

- **Mussels and Oysters** farmed in Australia were considered far **too expensive to smoke**. If these species were to be smoked, they would be imported - eg. Mussels from New Zealand - but smoking of these species was considered too labour intensive.

- **Farm Barramundi** was seen as an area for increased sales, although in **fresh fillet form**, not smoked.

One processor believed there to be considerable potential for **Mullet roe in Japan**. The other processor who currently smokes eel, believed there to be **far greater potential for the export of smoked eel** - exports have been limited by the supply of raw material.

6.5 Pre-Prepared Fish and Seafood Meal Producers

6.5.1 The Type of Processing Operation and the Types of Species Processed

All four of the pre-prepared meal producers are major suppliers to the Australian market, primarily manufacturing:

- fish fingers and crumbed and battered fish portions (primarily using Hake as the raw material, although one producer is also using Cod, Barracouta, Whiting, Hoki and Flounder); and/or
- seafood portions (Scallops, Calamari Rings, Oysters) or cutlets (Prawn) and surimi (seafood sticks) which have been crumbed or battered.

Other meal based products, such as, those featuring added flavours are also offered by some of these manufacturers. Pre-prepared products are distributed by: marketing organisations who have contracted a manufacturer; or by general wholesalers, through the retail sector as branded and generic product; and wholesalers to the food service and institutional sectors.

Two of these producers operate in New South Wales, one in Victoria and the fourth in Western Australia.

It is also noteworthy that at least one of these producers is exporting non-prepared fish and seafood which has been graded and re-packed. However, this was not considered to be a value-added processing activity. This processor views value-adding as:

> *"taking the raw material and changing its form substantially....the definition does not include filleting."*

According to the company profile of another operator:

> *"The term 'value-added' is best described as fish which has added to it batter, breading and flavours such as sachets of sauce, cheese, almonds, etc."*

However, the perspective of another processor was somewhat broader seeing it in two senses:

> *"Value adding the raw material involves changing the natural product in flavour (adding sauce, smoking, cooking) or description (battered or crumbed)";*
>
> *or*
>
> *"Value-adding is increasing the value of fish and seafood by maximising the return for raw material...this includes feeding up and keeping the product live, filleting and boning."*

In general, packaging maximises the revenue of either two methods of value adding, although in some case there is no incremental value gained from re-packing (the costs have increased without adding value), in which case it is better not to pack the product at all.

What is clear is the lack of agreement of the term, "value-added", even amongst those operating in the same industry sector.

6.5.2 Recent Developments in the Products Manufactured and Sold

Competitive Threat:

One of the key issues raised by each processor was the increased competitive threat from overseas producers, which, in the worst case scenario would lead to Australian manufacturers having to withdraw from the industry.

Various countries pose a threat to the long-term survival of the pre-prepared manufacturing industry. The comments reflecting this view are noted below.

- If an overseas competitor has excess capacity and is prepared to marginally cost their product, then the incremental price is 20% to 30% less than what it would sell for elsewhere - it is dumped. Already business has been gained by New Zealand which has a huge natural resource suitable for value-added product.

- South America and South Africa also represent likely future competition as they are seeking economies of scale.

- The change in the Australian dollar, and the current Thailand economy and technology, places it in a position to offer wholesalers a far cheaper product than local manufacturers - supplying crumbed seafood sticks, cutlets and fish (Nichierei).

- Breaded Prawns are under threat from South East Asia. The Japanese product is 10% to 20% cheaper than ours, but they are prepared to offer at this price to "buy" market share.

Products Introduced:

Convenience based meals are becoming more prolific, thus offering manufacturers of pre-prepared meals a major opportunity provided that other food and health trends are considered in the product development phase. Manufacturers noted that research and development is continually occurring and although it is recognised that there are limited opportunities to open up huge new segments, significant new segments may be created with the "right" product.

Australians are in general becoming more health conscious, therefore pre-prepared fish and seafood meal producers need to develop products addressing this issue. Recent products introduced include:

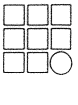
- oven-fry fish and seafood products (rather than deep-frying);
- low fat or light variants which are cholesterol free - "Extra Light";
- "tempura" style battering; and
- variations on core products with added flavourings, such as coconut, curry and a Mexican taste - which are in their infancy in Australia.

It was also noted that overseas producers are utilising surimi for value-added product. The Alaskans in particular were noted as a leader in this field and use pollock to produce lobster tails. At present Australian producers are essentially only producing seafood and crab sticks, seafood extender and sea shanties from surimi.

Of late, the European trend has been to fresh or chilled pre-prepared meals which may grow in interest in Australia. However, one key factor may limit the possible success of this product development, namely, the Australian infrastructure. Primarily the distance required to transport product and the small population density centres in Australia (leading to low product turnover) limit the likely success of chilled pre-prepared meals. In addition, established, reputable, high quality outlets are not believed to exist in Australia as they do overseas (eg. Marks and Spencer).

An example was given of a frozen meal, based around fish and seafood, which had been sold in 20 different varieties in Australia. The variety of frozen meals was not successful in the supermarket trade. This was considered to be a result of poor marketing by Edgell Birdseye. To gain consumer acceptance (and trial), the launch of a new product concept, such as this, was considered to require substantial above-the-line advertising support.

One manufacturer noted a trend to packing frozen pre-prepared meals in a vacuum pack, or by gas flushing. These procedures reportedly extend the product's shelf life.



6.5.3 Main Barriers Inhibiting Expansion

Cost of Production:

The associated costs of production in Australia were seen as a major barrier to expansion of the value-added processing industry as a whole and within individual businesses . **Labour costs** in Australia were cited by all respondents as a huge barrier to the expansion of this sector. Labour rates were compared by respondents, such as:

> *"$4 per day in Thailand compared with $13 per hour in Australia."*

To compete with overseas producers, it was felt Australian industry must **become more highly automated**, thus minimising labour costs. However, some limitations to this theory were noted. If Australia is the target market for a specific product, the **size of the Australian population acts as a limitation to the volume of production** and also likely success:

> *"You have to achieve 30% of the market to make it viable."*

If a producer cannot support mass production, and consequently achieve economies of scale, the investment in **high-tech equipment cannot be justified as there will not be a sufficient return on investment.** Capital expenditure can only be justified given a high return on investment; to do so may require wider product distribution to export markets.

In terms of technology, examples were given of where Australia lags behind the rest of the world. The first noted area was for the processing of Prawns, where at present the heads are manually peeled off - this suits low labour cost nations, but not Australia. It was felt that Australia needs to consider robotics in this field to become more competitive. Block processing was another area where Australia was considered to be behind the rest of the world.

The geographic distances between major Australian cities also adds significant **transport costs.** All goods require refrigerated transport and the distances travelled make this an expensive procedure.

Supply Issues:

At present, fish and seafood sourced in Australia is essentially caught for the domestic fresh fish market, with select species which attract premium prices being exported. In terms of the pre-prepared processing sector, raw material supply is a major barrier to expansion, at least using Australian product. The use of Australian raw material is limited because:

- the cost is far too high compared with imported species (and variable), consequently making the final product uncompetitive in the market;
- supply is limited in Australia, that is, we do not have the tonnage required of a suitable species for the pre-prepared processing sector

  "Australia is a marine desert";
- a constant, reliable supply cannot be guaranteed; and
- the standard of processing and grading is inferior in Australia compared with that imported.

In the future, **pre-prepared meal producers did not consider the aquaculture industry as a potential source of raw material.** A number of factors in current production lead to this belief:

- farms have been over-capitalised and lack necessary environmental controls;
- there is a general lack of knowledge in this industry;
- the tonnage of any one species is too small for the pre-prepared processing sector and exacerbating this issue is the fact that Australian farmers harvest only once a year compared with three times a year in Thailand; and
- at present, prices are uncompetitive with wild species (and more particularly imported species), and the perception is that farmers expect a high price for their product which is best achieved through the supply of fresh fish and seafood.

The Attitude and Expertise in the Industry:

One respondent was particularly critical of the attitude and lack of long-term vision of some operators within the industry. Rather than seeing an opportunity and seeking to satisfy customer demand, disinterest was expressed:

> *"If we catch it we will let you know."*

Pre-prepared meal producers need a guaranteed supply to ensure that they meet the supply requirements of contracts with other businesses and are able to supply other markets, such as, the institutional sector.

In addition, the same respondent felt there to be a lack of trust between catchers and processors:

> *"You can't have mutual trust and mutual goals on a long-term basis, as they (the catcher) will change according to a whim."*

If there is such uncertainty about the long-term supply of a species, processors are unlikely to invest resources in product development.

In general, these respondents felt that the management of some of the larger fish and seafood wholesalers do not think and plan strategically for the long-term maximisation of their business, and the Australian industry as a whole.

Another respondent mentioned the huge potential for deep sea trawling off Northern Queensland; an opportunity of which Australian boats have not exploited. Australian boats were considered, by this particular respondent, to be some of the most efficient in the world, and yet we are not fishing these areas where the Russians, Chinese and Japanese are drawing huge volumes (100,000 tonnes) of quality table fish.

The Government:

Pre-prepared processors were fairly critical of the role of government in the Australian fishing industry. One respondent was overwhelmed by the number of government departments and authorities which have involvement in the fishing industry and made the following comment:

> *"There are more people in government compared with those in fish management in the industry. More resources should be put into management (and marketing) and technology (to help in product development)."*

Government intervention through quota controls on select species was also seen as a hindrance to the industry. From the processors perspective, it is difficult to establish a long-term business venture if established tonnages are then reduced by quota controls. The business needs to know from the out-set the sustainable level of catch for a year. Businesses can then analyse whether there is a viable business opportunity.

It was also felt marine biologists take too long to analyse the data establishing what is the sustainable catch for a species. The experience of the Victorian scallops, and New South Wales abalone was cited.

To aid communication and cooperation between government and industry, it was felt that the current industry structure should be changed. State regulators were viewed as an unnecessary resource, instead it was considered that a National body should be established. This National body would have the mandate for the improvement of the national fish and seafood resource and would be comprised of both government and industry representatives.

6.5.4 Opportunities for Utilised and Under-utilised Species

The potential market opportunities for five "wild" species and six aquaculture species of fish and seafood, which were identified as being under-utilised, was explored with all respondents. In addition, the potential for other species was also explored. The responses given by the four pre-prepared meal producers for each of the nominated species is outlined below.

Jack Mackerel:

Is not suited to value-added processing of this type, particularly as it is a dark, oily fish. This species is essentially seen as one used for bait and fish meal.

Squid (Calamari):

Only one respondent thought there potential for the import replacement of Squid, provided that a substantial fishery can be established and offered at a price which is competitive. The likelihood of Australian suppliers being cheaper than exports was thought very remote by one respondent:

> *"You can import cheaper than locally, and you can even import value-added product cheaper (than Australian raw material)."*

Pilchards or Sardines:

Sardines were essentially seen as a canned product. One respondent had considered developing a white bait fritter, but the current price of the raw material makes it a very high cost product - up-market.

Australian Herring:

No pre-prepared meal producer could see any application for this species. It is too dark and difficult to fillet.

Silver Trevally:

Only one respondent thought there potential for this species, provided that a regular 12 month supply could be guaranteed and well graded and filleted product supplied. Other respondents felt this species too dark to be suited to crumbing or battering.

Select aquaculture species were considered to have some potential for VAP, however, as previously mentioned, the limited tonnages currently produced and the cost of raw material are major barriers facing the industry at present. The specific comments made about select species are noted below.

Farm Prawns:

Two respondents expressed opposite **views about the processing capabilities of farm prawns.** One thought the aquaculture form better for processing, although the eating quality is not as good; while the other felt the aquaculture form inferior as when made into a "butterfly" the membrane is broken down and then curls when it is cooked.

Rainbow Trout:

Little potential was seen for this species amongst these meal producers as this species is best suited to the fresh or frozen market.

Atlantic Salmon:

Possibly some potential was seen for the production of **salmon patties,** however, cost would be a major barrier to a successful launch.

Mussels:

At present two respondents commented on the sourcing of this species from New Zealand. Australia has the potential to compete, but the cleaning processing was thought difficult and Australians too "lazy" to further expand this market. Mechanisation is required for the cleaning process. **Marinated mussels** are currently supplied by one of the four meal producers.

Oysters:

In the broad market, potential was thought to exist for this species, particularly as it is one for which there is a high demand. For pre-prepared meal producers, **oyster meat** may be utilised for a product which was not divulged, or alternatively oysters may be **crumbed.**

Farm Barramundi:

In terms of pre-prepared meal products, no potential was thought to exist for this product. Its value is maximised when sold fresh.

Other species for which there may be VAP potential included:

- **Royal red prawn** a deep sea species which is currently cheaper than imported prawn species;
- **Blue grenadier** as it is in sufficient supply and could be used for crumbed and battered products;
- **Tuna** which could be smoked or peppered, although one company did produce this product for $30kg and went broke;
- **Silver cobbler** may have export potential to the United States as it is the base product for many VAP; and
- **dry Abalone.**

The quantity of supply is a key issue for the pre-prepared meal producer. An example was given of shark fillets which are popular for pre-prepared meals, however, almost the entire volume moves through to the wholesaler who then sells onto fish and chip shops and other retailers.

6.5.5 Likely Future Trends and Their Implications for Australian and Imported Species

As previously discussed, the **competitive threat posed by imported value-added products** which are dumped on the Australian market, by producers who are prepared to marginally cost, is a major trend Australian producers must seek to counteract. If it is not possible to reduce costs or seek government assistance (import duties), such activities could lead to the eventual demise of pre-prepared fish and seafood meal producers in Australia. These producers primarily source imported species of fish (Hake and Cod) and seafood (Prawns, Scallops etc.), therefore, there would not be a huge impact on Australian catchers.

Interestingly, one respondent mentioned the reduced availability of Hake. This has resulted in the price of the raw material increasing and according to this respondent, there is no Australian substitute, with the possible exceptions of Tailor. A major concern, naturally, is the volume of this species which could be supplied.

The changing tastes and demand for convenience based products in the Australian market result in product having to be continually altered to meet these needs. As previously mentioned, the small population base in Australia makes the cost of research and development relatively expensive compared with large overseas markets. High entry costs into the pre-prepared fish and seafood meal market are exacerbated by an inavailability of large display areas in supermarkets. If a product is not profitable for the retailer, it will soon be unable to compete for freezer space.

A number of **pre-prepared fish and seafood meal producers believe that they will soon diversify into meat (and vegetable) and other food based meals.** Consumption of meat is greater than that of fish and seafood and there has been little per capita growth in fish and seafood.

It was believed that the **food service sector will have an expectation for better graded and portioned controlled product.** Therefore, the pre-prepared producers will have to source raw material meeting service sector requirements.

6.5.6 Opportunities for Import Replacement and Export Development

Australia has one major advantage over the rest of the world, that being the **clean waters** in which fish and seafood are caught. The major disadvantage is the **lack of Australian resource**. Unlike New Zealand which lies on a large continental shelf, the white fish predominantly caught on Australia's continental shelf is small - the resource is limited. The limited resource, the lack of a suitable species for value added processing, non-continuity of supply, and the cost of the raw material and production, all leads to the **limited opportunities for significant import replacement with Australian species.**

Hake is currently the main species used for pre-prepared meal products. This species is of reasonable quality and taste and can be imported for $3 to $4 a kilogram. Apart from there being no totally suitable Australian substitute for Hake (New Zealand Hoki is a consideration), no Australian species can be landed at a cost competitive with that imported. Examples of the cost of Orange roughy fillets at $8 to $9 and Snapper for $6 per kilogram were cited. One respondent felt Cod to be the only volume species with which Australia could compete against Hake and New Zealand Hoki. Cod can be produced in block form, it is a high quality species, but as such attracts a slightly higher price.

The majority of seafood is also imported, primarily because of cost considerations. While prawns are caught in Australia, the return to the fisherman is maximised by exporting fresh product, rather than using the raw material for Australian value-added product. The cost of the imported Prawn was quoted as $8 to $9 per kilogram, compared with an export value of the Australian Prawn for $18 per kilogram.

Aside from all these issues, if there was a suitable Australian substitute for value-added processing into pre-prepared meals, the processor needs to have an appreciation for the level of sustainable catch. Without this, the processor cannot establish the long-term business viability for a product.

As one respondent stated:

> *"Unless we have a unique raw material (like Orange roughy, Prawns, Lobster and Abalone), or process, we cannot compete in the international market."*

One processors has successfully sold crumbed Prawns into Denmark. However, again imported Prawns are used, are crumbed in Australia and then exported to Denmark.

6.5.7 Actions that Could be Taken to Enhance the "Value-Added" Industry

To increase the consumption of Australian made value-added fish and seafood products, the starting position must be the **determination of market needs both in Australia and internationally. Product research and development can then follow on a priority basis and be distributed to appropriate markets. It is important to precede promotion with an efficient distribution network.**

The promotion of fish and seafood products aimed at increasing consumption can take a number of different forms. These respondents perceived a **need for generic promotion** which would highlight:

- the clean waters from which Australian fish and seafood is sourced;
- the advantages of buying Australian and reasons for the higher price (the quality) of Australian versus imported product;
- the real cost differences between alternative protein sources as fish is perceived more expensive than the other options - a fair comparison between a fish fillet, meat and chicken fillet;
- improved knowledge of the less well known species to encourage trial - this may be timely as the Australian population is becoming more cosmopolitan; and
- fresh is not necessarily best - a better quality is achieved through freezing on boats.

However, no respondent suggested how a campaign of this type should be funded, except to say that industry should pay as it will be the beneficiary.

The other type of promotion is more specific. These respondents felt that manufacturers should be undertaking more **branded promotions** to increase brand equity and demand for pre-prepared fish and seafood meals. In addition, manufacturers and wholesalers should seek wider distribution of fish and seafood products into the food service sector.

6.6 "Elaborate Transformation" Processors

6.6.1 The Type of Processing Operation and the Types of Species Processed

Three "elaborate transformation" processors were interviewed in this category. However, the type of processing undertaken and the size of each operation varied substantially. These businesses operate in Tasmania, Victoria and Queensland. A profile of each business is outlined in the following paragraphs.

The **first processor, employing 200 staff, is essentially involved in the export (95%) of headed and gutted and filleted fish** to North America, Asia and Europe. Species processed include:

- Orange roughy;
- species of Dory;
- Hoki;
- Tasmanian trevally;
- Warrahas;
- Monkfish; and
- Squid.

However, what distinguishes this particular processor, from others who export, is the further processing of almost all waste product. **Other products manufactured include fishmeal, oil and organic fertilisers.** After by-product processing, waste is just 12% of total volume and this is converted to steam and used to help power the plant. These innovative procedures have resolved a major environmental issue, that being waste disposal. This operator is forward thinking, seeing major opportunities for a whole range of new products sourced from by-product.

The **second processor** (which employs 45 people), is **involved in the production of surimi** for both the domestic and export markets. A combination of species is used in the production of surimi and predominately include Blue Grenadier and Flathead sourced from Victoria, and Pollack, Itoyori and Kinme which is imported. The products manufactured include seafood highlighter and seafood sticks (for the Australian market) and various species of surimi for the export market. Surimi is packaged in 1 kilogram blocks and ten packs constitute a box. This processor is also involved in exporting frozen whole Australian fish, including amongst others, Abalone (whole, meat and steamed), School whiting, Snapper and Crayfish.

The **Queensland processor** only employs one full-time and one part-time worker. By-product is sourced from Australian fisherman operating on the Queensland Coast, Northern Territory and Northern New South Wales. All **by-product is dried, cut, graded, pack and shipped to the Asian market.** The importing agent then value-adds Australian dried product:

- Shark fin is boiled, skinned, noodled and then packaged and used in cuisine (soup);
- Fish air bladders are soaked, boiled, fried and packaged and used in Asian cuisine;
- Sea-dragons (double-ended Pipe fish) are washed, whitened and crushed into powder and used in the production of MSG; and
- Shark liver oil is used as a rust proof additive and also as a Vitamin A supplement.

6.6.2 Recent Developments in the Products Manufactured and Sold

A number of recent developments or trends were noted in the types of products sold overseas. Opportunities for the Australian value-added industry may exist if product can be competitively priced, although the investment in technology may be a hindrance to development.

The producer of Australian surimi noted this to be one of the fastest growing industries around the world. With 2,000 tonnes utilised in the Australian market in 1991, of which three quarters was imported, the market is believed to be in its infancy. The Australian manufacturer believed demand will have grown to such an extent that new premises will be sought in three years time (after just moving into new premises). At present four countries supply the Australian market: Japan; Thailand; South Korea; and China (which is fast developing).

In Australia, seafood highlighter and seafood sticks are currently the only surimi products available. The future for surimi products is thought to be much broader. Consumers will be able to buy surimi meals in a sauce which can be heated in a microwave. The range will also expand to include seafood balls, prawn balls, squid balls, seafood sausages etc.. The types of surimi products currently manufactured in Japan are very highly processed - various shapes are produced and include, for example, a picture of a snow-capped Mt. Fuji. Technology currently used in Australia has been imported from Japan.

This particular processor could also see potential for the expansion into meat based value-added products. However, the target market is not Australia, but Japan with an enormous market base.

Another processor has moved into production of portion controlled pieces using computerised graders for the export market. It is believed that portion control will be increasingly more relevant in production as the Australian market moves towards ready-to-use products (pre-prepared frozen meals) - a trend already well establish in other Western countries.

The use of by-product is an area which has not been developed in Australia, however, there are markets overseas for many products which could be manufactured in this country. The potential viability of these activities was not assessed, but included such areas as:

- fish cartridge can be processed and used to heal burns;
- glue can be produced from part of the fish's tail;
- Shark skin can be manufactured into leather; and
- the cornea of fish can be used for eye implants.

Cosmetics have even been manufactured from fish by-product in Japan.

One processor had applied for a grant, from the FRDC, to investigate the drying of Sea slugs (or Sea cucumbers) which are than soaked and reconstituted. Apparently Asians seek this product for its medical healing qualities.

6.6.3 Main Barriers Inhibiting Expansion

The Government:

The three "elaborate transformation" processors all voiced considerable criticism about the role of government in the Australian fishing industry. The government was seen as backwards thinking and rigid - not admitting when policies are inappropriate. It was felt that those in government lack the knowledge of what is really happening within the Australian value-added industry and as such are unaware of the support required to develop this industry. One processor even went so far as to say that:

> *"The government needs to be organised on a regional basis so that they're closer to the ground where the action is."*

Policies set by government were seen to act against industry development as noted below.

- Licensing and inspection fees (eg. $75 for water sampling) are high. Those who are licensed are disadvantaged when backyard operators who are avoiding these fees can still exist.

- Government tariffs support imported product - there is no protection for local producers against those who import. An example was given of a Japanese manufacturer trying to capture the Australian surimi market by offering a 90 day letter of credit encouraging wholesalers to buy imported rather than locally produced surimi.

- It was believed Australian Customs should apply more stringent tests on the quality of imported product and ensure labels accurately describe that product.

- The definition of "Australian Made" was thought to be misleading. For example, if an imported fish is battered in Australia, and the weight of the batter is greater than the fish, it can be labelled "Australian Made".

Industry Support Bodies:

One processor had a particularly poor experience with **Aus-trade**. After commissioning Aus-trade to investigate the export potential for a product to France, which cost $2,800 in total, all information was misplaced. It was claimed that Aus-trade absolved themselves of all responsibility and asked for another contribution to undertake the study again. Not surprisingly, this processor felt he would have received better value by actually flying to France and undertaking the research himself.

The comment was also made that:

> *"It is difficult getting grants from the FRDC as they are not futuristic enough in assessing proposals. K and F was given a grant for $100,000 to undertake a value-added study in Japan."*

Associated Costs:

As in all sectors, the cost of Australian **labour and delivery costs** were highlighted as barriers inhibiting expansion. However, besides the most obvious constraints, a **lack of capital** was seen as a major barrier to expansion of the Australian value-added industry. Compared with the rest of the world, Australia was thought to be very under-capitalised:

> *"Industry doesn't want to do well. We have to match world class practices and have commitment."*

In particular, to supply competitively priced products, Australian producers must seek to reduce the labour component and look to increased automation.

The time taken and funds required to develop new products was also seen as a barrier to expansion. For many small Australian companies, the costs associated with **research and development are prohibitive**. Consequently they will seek funding from bodies like the FRDC.

Catching costs were also seen as a barrier to expansion. This occurs because Australia's fishing fleet is comprised of many small boats, not large vessels which are capable of achieving economies of scale. A small catch leads to a high unit cost of the fish and seafood, therefore effecting Australia's competitiveness.

The Attitude and Expertise in the Industry:

A major criticism was levied at the culture of the industry, that being supply rather than market driven and lacking co-ordination in the view of export markets:

> *"Abalone has not been handled properly, the price has gone up and down, it is not co-ordinated. The Japanese will now not buy as they are uncertain who they should be buying from - don't stab each other in the foot."*

It was felt that this is in part due to the dominance of traditional Greek and Italian operators. However, as more "business people" enter the industry it was believed attitudes will change - Australian industry, as a whole, will have a more focussed and co-ordinated approach. In the future, more businesses will be vertically integrated.

These processors also considered fisherman, being supply driven, not to have the foresight to recognise opportunities for the development of the by-product industry. At present a fairly significant volume of by-product, which could be utilised, is dumped overboard.

One respondent also pointed out the lack of knowledge in Australia in the maintenance and repair of machinery. Machinery down-time obviously results in reduced productivity, an undesirable factor in any business.

6.6.4 Opportunities for Utilised and Under-utilised Species

In general, the two larger processors agreed on the potential sales growth for a number of the under-utilised species. The areas which they could see for value-added product development (which may not necessarily be undertaken by themselves) are outlined below.

Jack mackerel was believed to be a good quality fish for the production of fish mince, or surimi. Although as the surimi manufacturer noted, the recovery (25%) is far less than from Blue grenadier (60%). Considerable funds must be spent on research and development of the machinery. The access the government will allow to the fishery must be known before any processor will pursue utilisation of this species. It may also be used for fish meal or bait.

Squid offers huge potential for import replacement. Products which may be manufactured include Squid tubes and rings. Both processors thought potential exists for the production of squid balls (flavoured with Prawn), made from fish paste combined with protein - surimi.

Technology does exist to turn **Pilchards** into surimi. The other processor thought canning of Pilchards should be investigated in Australia.

Australian herring was essentially seen as an ingredient for cat food. No respondent commented on the potential for human consumption of this species.

One processor has already undertaken extensive research on the potential for **Silver trevally** - a red fish. The Japanese are known to like this species, therefore, considerable export opportunities would exist.

The potential for the six nominated farmed species was thought low given the current cost of the raw material.

The small processor who dries fish by-product could not personally see any potential for the under-utilised species identified. The only comment made was in regard to squid. This respondent thought potential may exist for the production of cuttlefish balls (a squid substitute). However, this operation is not in a position to manufacture.

Other **under-utilised species for which there is potential** included:

- **Cardinal fish and Alfonsin** are a huge untapped resource which can be used in surimi production and then value-added into seafood highlighter and seafood sticks; and

- **Shark** has been used by Americans in the production of a protein source which is then later used in value-added product - fish fingers, fish balls etc. Deep sea shark are not harvested as they are viewed as non-viable. In the light of the American development, potential may exist.

One processor believed Orange roughy and Blue grenadier both species suited to value-added processing. However, quota controls on these species may limit production capabilities.

6.6.5 Likely Future Trends and Their Implications for Australian and Imported Species

One of the greatest concerns expressed by these processors was the government management of fisheries which, in their view, was not focussed on long-term planning for the industry. The **TAC** established for specific species could potentially close the market for some value-added products. For example, the quota on Blue grenadier was reported to be 15,000 tonnes and it was believed this will be reduced to 5,000 tonnes. **Processors need to know what is the long-term sustainable catch for each species, to allow for forward business planning.** However, it was warned that quotas need to be established by scientific means and in consultation with industry. Fisherman and processors currently consult to identify what the resource base is for a species - for example, the size of the nets helps gauge what may be caught.

The introduction of **individual transferable quotas (ITQ's) were an even greater fear of processors than the TAC**:

> *"The government is hell bent on ITQ's."*

ITQ's dictate what proportion of the total allowable catch any one person may fish and, on understanding, ITQ's can be bought and sold. In the **worst case scenario, 100% of the TAC could be sold to the Japanese** (who do not have their own resource). Japanese boats were described as "factory vessels", which are some of the most effective and efficient in the world. One respondent stated:

> *"We could loose 60% of our fleet in the first 12 months, and 100% of fish shops (because we will not have a resource)."*

Clearly, fisheries management must explain how management procedures will operate and the protection, if any, there is of the Australian fishing industry. Experiences of the New Zealanders who have established these practices should be drawn upon.

The current minimum boat size regulations were also thought inappropriate if the Australian fishing industry is to be competitive. Larger boats must be encouraged to operate to allow for economies of scale to be achieved. It is believed that this would lead to a reduction in the raw material cost and increased likelihood of the utilisation of Australian species.

6.6.6 Opportunities for Import Replacement and Export Development

The three "elaborate transformation" processors try to source all product from Australia, but because of an insufficient and variable supply of raw material, alternative sources have to be used. Imported product supplements the Australian supply. Clearly, there are opportunities for under-utilised species. However, the development of new fisheries and the appropriate catch levels must be based on consultation between value-added processors and fisherman.

The processor of by-product indicated that the required quantity of Shark fin cannot be sourced within Australia because much is dumped overboard. In the 1990/1991 financial year 5 tonne of Shark fin was bought for drying, but if readily available, this value-added processor felt that 50 to 60 tonne could be exported in a month - clear growth opportunities exist.

6.6.7 Actions that Could be Taken to Enhance the "Value-Added" Industry

Improved Industry Co-operation and Culture Change:

One processor was particularly concerned about the lack of consultation between industry operators. In his view, all **industry leaders, from Government and private industry, should form a board** similar to the Wool Board. This board would have a diverse knowledge base and could share ideas, and in consultation, seek to overcome industry problems. It was felt that a united board or council would foster greater agreement about the direction of the Australian fishing industry.

Another processor felt there to be a need for more exposure of the **fishing industry as a alternate career path.** In so doing, a greater range of skilled personnel would be encouraged to move into the industry. This would ultimately reduce the dominance of the traditional Greek and Italian operators who were felt more supply than demand driven. **Individuals with more diverse skills** were considered more likely to recognise consumer demands, and look to growth opportunities through processing and product development.

In general, greater **emphasis needs to be placed on product quality,** which will lead to increased profits for all operators in the distribution chain. Improved quality can only occur with a change in the attitude and procedures used by fisherman.

Industry Promotion:

Respondents mentioned the need for industry promotion to the general public to enhance the Australian value-added fish and seafood industry. It was felt **industry promotion should be undertaken both in Australia and in key export markets.** Communications should be based on the enhancement of Australian, rather than imported species. In the view of one respondent, any promotion should be financed through a levy based on a proportion of turnover by Australian processors.

In terms of promotion to export markets, one respondent suggested that this could be a responsibility of the proposed industry council (with representatives from all areas of the industry). Features which should be highlighted in promotion to export markets include:

- Australia has one of the best resources in the world - clean waters; and

- it is a sustainable resource.

Promotion was also thought necessary for the Australian population. Targeted promotion must seek to enhance Australian sourced and manufactured value-added products and to increase the knowledge about methods of handling and preparing fish and seafood. The perception that frozen product is inferior to fresh must be changed to assist in increasing consumption of value-added products.

6.7 Aquaculture Producers

6.7.1 The Type of Processing Operation and the Types of Species Processed

Two Tasmanian aquaculture operations were represented in this category, both farming different species.

One operation farms Oysters and supplies close to half of the volume to the Melbourne wholesale fish market in live, whole form. Almost all the remaining product is processed on-site by splitting the shell and is then distributed throughout Tasmania, Queensland, South Australia, and Western Australia. A limited quantity is exported to South East Asia.

The other farmer produces, processes and smokes Atlantic salmon and Ocean trout. This business is totally Japanese owned. Specific products produced include:

- cold smoked Salmon in a vacuum pack;
- hot smoked Salmon in a vacuum pack;
- Salmon steaks in modified atmosphere packs and frozen;
- salmon cutlets;

- cold smoked Trout in a vacuum pack;
- hot smoked Trout in a vacuum pack; and
- chilled and frozen Trout fillets.

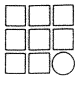
Ultimately it was believed that 80% of the product would be used within the food service sector, with the remaining 20% being sold through the retail network, including supermarkets in New South Wales, Queensland and South Australia. No farmed Atlantic salmon or Ocean trout is sold through Victorian supermarkets.

6.7.2 Recent Developments in the Products Manufactured and Sold

The main developments noted by these aquaculture producers related to product and packaging changes which they have adopted.

For the Oyster farmer, splitting and distributing chilled Oysters on the shell is a recent development for their business.

The other producer noted packaging changes, such as the recently introduced **modified atmosphere packs** which assist in maintaining product freshness and consequently the product's shelf life. There is also greater concern for **portion controlled product** reaching the retail sector.



6.7.3 Main Barriers Inhibiting Expansion

Cost of Production:

The main barrier to the expansion of the value-added processing of fish and seafood products was the **cost of production**. Various costs in aquaculture production make Australian producers uncompetitive and consequently limit the export potential for Australian farmers. These costs include:

- processing costs contributed to by a high labour component;
- freight costs; and
- packaging costs.

It was conceded a more realistic pricing structure must be achieved from the farmer, otherwise the Australian aquaculture market will remain stagnant. More efficient farming practices will contribute to improved competitiveness.

One producer noted that good returns are achieved from growing, but once processed the margins are reduced.

The other producer noted that if there are any new innovative develops in machinery or packaging, there is a very high cost for Australian producers to gain this knowledge. Apart from the cost of acquiring new technology, personnel must be trained. If the development originates overseas, which is quite likely, significant costs are involved in sending personnel for training. Therefore, to adopt new production innovations, the producer must be quite large and have access to investment resources.

One producer noted that "key money" is paid by the large multi-national companies to secure shelf space in supermarkets. These costs are prohibitive to a small producer, particularly if there is no guarantee of shelf space. Therefore, if producers do not pay "key money", the number of possible outlets for the distribution of aquaculture product is limited.

General Issues:

The lack of knowledge of aquaculture species by the general population was seen as a barrier to the growth of the Australian aquaculture industry. Marketing of aquaculture species was deemed necessary and was seen to be the responsibility of relevant industry associations.

In a more general sense, the competition posed by alternative entree meals - Mussels, pate etc. - was seen to limit the demand for the aquaculture species discussed. Obviously such competition will always exist.

6.7.4 Opportunities for Utilised and Under-utilised Species

The Tasmanian Oysters farmer did not consider the Australian aquaculture industry to have a strong future, as a source of supply, if it continues to operate using the same methods:

> *"Some players will stay, some will go. The ones who are not highly geared or are efficient will stay. A lot of farms for Oysters are relying on high prices which may decline because of an increased supply. To export we must look at the world price which is lower."*

This comment reinforces the need for more efficient farming practices to reduce the cost of the raw material, resulting in a more competitive industry. At present, New Zealand is a major competitor in the export market.

The opinion of the other producer in regard to the potential for specific under-utilised species is noted below. Obviously, in his business the only potential for increased sales would come from species currently farmed (Atlantic salmon and Ocean trout).

- There is **potential for the export of Jack mackerel to Japan** as it is used for sashimi and is a marinated.
- Potential was thought to exist for the **canning of tubes and rings of Squid.**
- **Australian herring** could be used as a **substitute for Dutch roll mops.**
- **Growth in sales is possible for Rainbow trout**, however, the high temperatures early in the season limit the growth of the species - this is a production problem.
- If the **Atlantic salmon** industry was rationalised, sales growth could be achieved.
- Potential does exist for Mussels and Oysters, though care needs to be taken. The industry must be market driven rather than supply driven - an oversupply leads to a decline in value.

6.7.5 Likely Future Trends and Their Implications for Australian and Imported Species

The trends mentioned by the aquaculture producers related to product developments overseas and the sales presentation of fish and seafood.

In general, there is a trend towards convenience based products which are healthy. Overseas the development of Oysters mornay was noted, however, the possibility of an Australian producer being able to supply this product is unlikely. Current processing was noted to be very expensive and actually reduces the return to the farmer. Without a huge capital investment, Australian value-added producers will be unable to produce a product, such as Oysters mornay. A number of Australian companies have tried, but now no longer exist.

The recent trend to an increased demand for fresh fish and seafood is believed likely to continue. Favourably this will increase the demand for Australian product, as frozen imported species become less popular. However, the distribution network for chilled product does not currently exist in Australia. Air freight is too expensive and so to the packaging (polystyrene), and according to the respondent, there are no truck fleets suited to the transport of chilled fish and seafood.

There was a strong belief that Australia should have a greater concern for improved product life. This can be achieved by reducing the temperature in cold stores to between minus 30 and 40 degrees. Freezing techniques were also thought in need of update, for example, plate freezing rather than blast freezing fish fillets.

6.7.6 Opportunities for Import Replacement and Export Development

It was conceded that Australia will never be competitive enough to seek to replace imported product, such as, Korean smoked Oysters in a can. However, Australia can position itself as a producer of high quality fresh and smoked farmed species. Australia can exploit its main strength in seeking export markets, that being the clean environment and waters in which the fish and seafood are grown. If unique to Australia, hatchery technologies - for example of Oysters produced of a uniform size and shell shape - can also be used as an element in export development.

Both producers believed there to be export possibilities for the Australian aquaculture industry, but we must become more competitive by having a stronger commercial focus, using practical operators and seeking to reduce costs:

> *"The future is tremendous if it is managed properly. We have to get away from the Ph D's and get a more commercial base, by looking at the rest of the world and copying it, not by reinventing the wheel. Australia needs to be commercial and market driven, to reduce costs and increase tonnages."*

6.7.7 Actions that Could be Taken to Enhance the "Value Added" Industry

Training:

A recurring theme through discussion with aquaculture producers was the need for **training at all levels in the production and distribution chain** of fish and seafood products.

- In companies with overseas ownership, Australian executives should seek transfers with European executives to gain knowledge of technologies, techniques and product presentation used overseas.

- Apprenticeships should be offered which focus on the practical rather than theoretical procedures of aquaculture production. Staff and management of the future will consequently be more practical and market driven.

- Retailers need to be educated of better storage and handling techniques, and ideas for presentation which will ensure a better quality product reaching the consumer. Returns to the retailer will also be maximised.

Industry Promotion:

The Australian culture is based on the consumption of meat, more so than fish and seafood. However, with a growing health concern and ethnic population it was felt that there is some movement to fish and seafood products. To enhance the VAP industry it was felt that industry promotion is necessary to encourage greater consumption of fish and seafood products. Consumers need the confidence in the preparation of fish and seafood and also access to convenience based products:

> *"Housewives don't like horrible fishy fingers; they want to microwave."*

It was felt that because fish and seafood has health and dietary benefits, the National Heart Foundation should take some responsibility for consumer education.

7. DETAILED FINDINGS - QUANTITATIVE SURVEY

7.1 THE POPULATION AND STRUCTURE OF THE VALUE-ADDED PROCESSING INDUSTRY

All information gathered suggests that the initial estimate of between 200 and 300 value-added processors is roughly in accord with the population estimate arising from this research. The **best estimate indicates there to be 213 value-added processors in Australia.** It is important when considering this figure, to remember that one processor may operate in more than one State and have more than one site in each State.

The total figure presented above includes, those processors interviewed, those who refused and a proportion of processors contacted who did not consider themselves to be value-added processing operations. The value-adding status of processors not interviewed was determined through scrutiny of the reasons for refusing interview (see Section 4.2).

More precisely, 183 fish and seafood processors were definitively identified as undertaking value-adding operations within Australia. The assumed value-adding status of the fourth category of processors, is made on the basis of call sheet information *suggesting* value-added processing. This figure is derived thus:

1.	Total number of interviews (including 21 in-depth interviews)	147
2.	Refusals	30
3.	Processors involved in VAP who did not consider themselves as VAPs (some exported live species)	6
	Sub-Total	**183**
4.	Indeterminate processing status	30
	ESTIMATED POPULATION	**213**

7.2 PROFILE OF VALUE-ADDED PROCESSORS SURVEYED

General Description:

In total, 147 processors (69% of the estimated population) from all Australian States agreed to participate in this study. Processors from Victoria and Queensland each represented 20% of the sample, South Australian processors 18%, New South Wales and Western Australia processors 14% each, Tasmanian processors 12% of the sample, and the Northern Territory 2%.

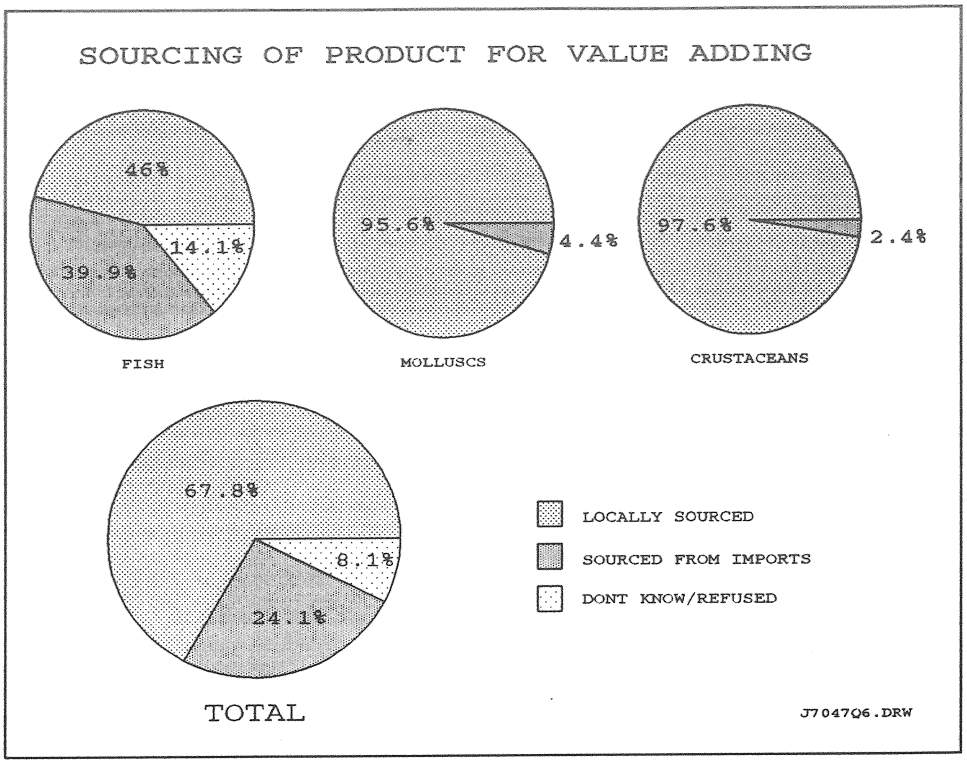
In the data processing stage, one third of businesses were classified as small, medium and large sized value-added processing operations. The size definitions, based on the total number of full-time and part-time or casual employees throughout Australia were as follows:

- small processors employed between 1 and 7 workers;
- medium businesses employed between 8 and 32 staff; and
- large processing operations employed between 33 and 350 people.

In analysing the source of raw material used for value-added processing, **18% of businesses indicated that some fish and seafood is imported**, with the vast majority (82%) sourcing species from within Australia.

However, when the volume of raw material is considered, the emphasis on imported species increases. As can be seen by referring to Figure 7.2, just under one quarter (24.1%) of the volume of fish and seafood sourced for value-added processing was imported, whilst just over two thirds (67.8%) of the volume was locally sourced. The origin of 8.1% of the volume of product used for value-adding was not accounted. If the volume of product sourced which could not be allocated is disregarded, **74% of the volume of product used for value-added activities was locally sourced and 26% was imported.**

Figure 7.2



In terms of intended markets, **66% of processors stated that they exported at least some of their value-added product**, whilst the remaining 34% produced value-added product for the domestic market only.

Each value-added processor was asked to identify the value-added processing description which best applies to their operation - this assessment was confirmed by the information containing the flow-through of species used for value-added processing.

The resulting distribution of value-added processors was as follows:

- 35% were general processors (eg. filleting or packing) mainly for the domestic market;
- 34% were general processors mainly for the export market;
- 7% were aquaculture processors;
- 6% were defines as cannery operations;
- 5% of processors mainly keep product alive for re-sale;
- 5% were fish and seafood smokehouses;
- 5% of processors mainly produce fish and seafood meals; and
- 3% were defined as "elaborate processors" - these businesses are very sophisticated processing operations.

These classifications are very important as they form the primary analysis category for the quantitative survey with value-added processors.

7.2.1 MAIN CHARACTERISTICS OF PROCESSORS

Base: All Respondents

		PROCESSING ACTIVITY							
	TOTAL	GENERAL/ MAINLY DOMESTIC	GENERAL/ MAINLY EXPORT	AQUA-CULTURE PROCESSOR	CANNERY	KEEP ALIVE	SMOKE-HOUSE	PRE-PREPARED MEAL PRODUCER	ELABORATE TRANS-FORMER
	(147)	(51)	(50)	(11)*	(9)*	(7)*	(7)*	(7)*	(5)*
	%	%	%	%	%	%	%	%	%
TOTAL	100	35	34	7	6	5	5	5	3
BUSINESS SIZE									
SMALL: 1-7 EMPLOYEES	33	43	24	36	11	43	57	14	40
MEDIUM: 8-32 EMPLOYEES	33	33	36	45	11	57	29	14	20
LARGE: 33-350 EMPLOYEES	33	24	38	18	78	-	14	71	40
TOTAL	100	100	100	100	100	100	100	100	100
IMPORT PRODUCT									
IMPORT SOME	18	22	2	-	56	-	29	86	40
NO IMPORTS	82	78	98	100	44	100	71	14	60
TOTAL	100	100	100	100	100	100	100	100	100
EXPORT PRODUCT									
EXPORT SOME	66	33	100	64	78	86	43	29	100
NO EXPORTS	34	67	-	36	22	14	57	71	-
TOTAL	100	100	100	100	100	100	100	100	100

* Note low base

Source: Computer Printout "7047A" Table 4 Page 5

Question: Which of the following statements best describes the main processing activity for fish and seafood undertaken by your business?

7.2.1 Main Characteristics of Processors

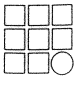
Table 7.2.1 outlines the business size and importing and exporting activities of each of the eight types of processing operations. It should be noted that while the **classification represents the main processing activity of each business (based on volume), other types of processing activities may have been undertaken.** Outlined below are some of the *main characteristics* associated with each type of processor.

It is emphasised that throughout this report, the **number of operations in all categories, with the exception of general processors (domestic and export), is very low.** Care should be taken in those categories where it is known that the population would well exceed the sample size.

- **General Processors** mainly supplying filleted product (and other processed forms) **for the domestic market** accounted for 35% of processors interviewed (51 respondents). Compared with the total processor profile, a slightly higher proportion of these operators were small businesses (43% compared with 33% in total). Just over one in five (22%) general domestic processors sourced imported species, and one in three (33%) exported at least some value-added product.

- **General Processors mainly supplying the export market** constituted 34% of the sample (50 respondents). These businesses tended to be larger operations, with two in five (38%) employing over 32 workers. Businesses mainly involved in the export of filleted product (and other processed forms) were less likely to source imported species (2% compared with 18% in total).

- **Aquaculture Processors** represented 7% of the sample (11 respondents), and almost half (45%, or 5) were of a medium size - employing between 8 and 32 workers. Seven out of the 11 exported at least some aquaculture species, and naturally no species were imported.



- **Canneries** accounted for 6% of the total sample (9 respondents), and 7 of the 9 canneries employed over 33 workers, that is, they were defined as large businesses (78%). More commonly, the source of the product is imported (56% or 5 processors; cf 18% in total) and 7 out of the 9 (78%) export some product.

- **Processors Mainly Keeping Product Alive** represented 5% of the sample, that is, 7 processing operations. No product is imported, and 6 of the 7 export some live species of fish and seafood.

- **Fish and Seafood Smokehouses** represented 5% of the sample (7 respondents). They were more commonly small operations employing seven or fewer people (4 businesses). Two smokehouses sourced product from overseas and 3 export some of the final processed product.

- **Pre-Prepared Fish and Seafood Meal Producers** accounted for 5% of the sample (7 respondents). Five of the meal producers were large employers, that is, of at least 33 people. Imported product is commonly sourced (6 out of the 7), but few reported export activities (2 out of 7).

- **"Elaborate Transformation" Processors** represented 3% of the sample, or five businesses. As defined by employment size, 2 were small, 1 was of a medium size and 2 were large businesses. Two businesses import some product and all five are involved in export activities.

7.2.2 SPECIFIC PROCESSING ACTIVITIES

Base: All Respondents

	TOTAL	GENERAL/ MAINLY DOMESTIC	GENERAL/ MAINLY EXPORT	CANNERY	SMOKEHOUSE	PRE-PREPARED MEAL PRODUCER	ELABORATE TRANSFORMER	AQUACULTURE PROCESSOR	KEEP ALIVE
	(147)	(51)	(50)	(9)*	(7)*	(7)*	(5)*	(11)*	(7)*
	%	%	%	%	%	%	%	%	%
PROCESSING									
FIN FISH	43	45	26	67	100	86	80	36	-
CRUSTACEANS	39	41	48	33	14	57	20	-	43
MOLLUSCS	30	29	38	44	-	29	40	9	14
DOMESTIC SALE									
FIN FISH	18	37	10	11	-	-	-	18	-
MOLLUSCS	12	22	10	11	-	-	-	-	-
CRUSTACEANS	13	27	6	11	-	-	-	-	14
EXPORTING									
CRUSTACEANS	17	4	32	11	-	-	-	-	86
MOLLUSCS	17	8	34	11	-	-	20	-	29
FIN FISH	16	8	22	22	-	-	20	18	43
FARMING									
FIN FISH	5	2	-	-	-	-	-	64	-
MOLLUSCS	2	2	-	-	-	-	-	18	-
CRUSTACEANS	2	-	-	-	-	-	-	18	14
CATCHING									
CRUSTACEANS	5	6	6	-	-	-	-	-	14
FIN FISH	3	4	6	-	-	-	-	-	-
MOLLUSCS	3	2	6	-	-	-	-	-	-
IMPORTING									
MOLLUSCS	1	2	-	-	-	-	-	-	-
CRUSTACEANS	1	2	-	-	-	-	-	-	-
FIN FISH	1	2	-	-	-	-	-	-	-

PROCESSING ACTIVITY

MULTIPLE RESPONSE ALLOWED

* Note low base

Source: Computer Printout "7047A" Table 1 Pages 1 - 2

Question: First of all, could you please describe the main business activities of this company/organisation?

7.2.2 Specific Processing Activities

At the commencement of the survey, respondents were asked to describe the main business activities undertaken by the company. Therefore, it is a totally spontaneous response. All answers were grouped on the basis of involvement in processing, domestic sale, export sale, farming, catching and importing of fin fish, crustaceans and molluscs.

Naturally the most frequently mentioned main business activity undertaken was the **processing** of different types of fish and seafood. Spontaneously, 43% of processors indicated that they processed fin fish, 39% processed crustaceans, and molluscs were processed by 30% of businesses.

After processing, **domestic sale** of fish and seafood was the next major category of business activity spontaneously cited. The domestic sale of fin fish was mentioned by 18% of respondents as their main business activity, of crustaceans by 13% and of molluscs by 12%.

Exporting was the third most spontaneously mentioned main activity of businesses in this survey. Within this category 17% of processors stated they were exporters of crustaceans and molluscs, and 16% have some involvement in the export of fish.

Fish **farming** was mentioned as the main activity for 5% of processors, 2% produced molluscs, and 2% were involved in farming crustaceans.

The **catching** of fish and seafood was essentially reported as an activity undertaken by general processors mainly for the domestic and export markets. In total, 5% stated that their main business activity was catching crustaceans, 3% catching fin fish, and 3% molluscs.

The least frequently mentioned business activity was **importing**, however, in later analysis it was discovered that 18% of businesses imported some product. Spontaneously, 1% of processors indicated their main activity to be the importation of crustaceans, molluscs and fin fish.

7.2.3.1 STATES OF OPERATION

	LOCATION OF INTERVIEW		ALL STATES OF OPERATION
	NO.	%	NO.
STATES OPERATE IN			
VICTORIA	30	20	35
NSW (NORTHERN & ACT)	21	14	25
QUEENSLAND	29	20	32
SOUTH AUSTRALIA	27	18	31
WESTERN AUSTRALIA	21	14	22
TASMANIA	18	12	23
NORTHERN TERRITORY	1	2	3
TOTAL	147	100	171

Source: Computer Printout "7047A" Table 24 Page 45

Question: Does this business operate in any other State?

7.2.3 States of Operation

The first column displayed in Table 7.2.3.1 shows the distribution, by State, in which the 147 interviews were completed with value-added processors. Of the 147 value-added processors, nine in ten (89%) reported activities only in the State in which the interview was conducted (although it was possible to have multiple sites in that State). Therefore, **11% of processors undertook processing operations in more than one State.**

The State coverage of value-added processing activity is shown in the last column of Table 7.2.3.1. For example, 30 head office interviews were conducted in Victoria, but another 5 businesses reported processing activities in this State - 35 value-added processing operations exist in Victoria. Queensland and South Australia also appear to be common States for the processing of fish and seafood (32 and 31 operations respectively).

Table 7.2.3.2 outlines the number of processing sites operated in each State by individual processors. Of the 147 value-added processors, there was "coverage" in 171 States (accounting for processing activities in more than one State). In total, **227 value-added processing sites were operated by the 147 businesses surveyed.**

In any one State:

- 142 of the 147 businesses just operated the one site;
- 19 businesses operated two sites in a specific State;
- 5 businesses operated three sites in a State;
- a processor in South Australia and Tasmania each operated four sites in that State;
- a processor in Queensland and Western Australia each operated five sites in those States; and
- one processor operating in Tasmania undertook activities at 14 sites throughout the State.

7.2.3.2 NUMBER OF SITES PER STATE (MULTIPLE SITES)

Base: All Respondents

NUMBER OF SITES	TOTAL	STATES OPERATED IN						
		VICTORIA	NEW SOUTH WALES (INC.ACT)	QUEENSLAND	SOUTH AUSTRALIA	WESTERN AUSTRALIA	TASMANIA	NORTHERN TERRITORY
		(35)	(25)*	(32)	(31)	(22)*	(23)*	(3)*
1	142	30	24	25	24	16	20	3
2	19	4	1	5	4	4	1	-
3	5	1	-	1	2	1	-	-
4	2	-	-	-	1	-	1	-
5	2	-	-	1	-	1	-	-
14	1	-	-	-	-	-	1	-
TOTAL NUMBER OF SITES								
227	**171**	**41**	**26**	**43**	**42**	**32**	40	3

* Note low base

Source: Computer Printout "7047A" Table 25 Page 46

Question: **At how many separate sites does this business conduct value-added processing of fish and seafood in this state**
Does this business operate in any other state?

7.2.4 TOTAL NUMBER OF EMPLOYEES IN AUSTRALIA

Base: All Respondents

	PROCESSING ACTIVITY								
	TOTAL	GENERAL/ MAINLY DOMESTIC	GENERAL/ MAINLY EXPORT	CANNERY	SMOKEHOUSE	PRE-PREPARED MEAL PRODUCER	ELABORATE TRANSFORMER	AQUACULTURE PROCESSOR	KEEP ALIVE
	(147)	(51)	(50)	(9)*	(7)*	(7)*	(5)*	(11)*	(7)*
	%	%	%	%	%	%	%	%	%
FULL TIME									
1 - 5 EMPLOYEES	54	65	54	22	71	14	40	45	71
6 - 10 EMPLOYEES	13	10	20	11	14	-	-	9	14
11 - 20 EMPLOYEES	12	8	12	22	14	-	20	18	14
21 - 30 EMPLOYEES	7	2	10	-	-	14	20	18	-
31 - 50 EMPLOYEES	4	6	2	-	-	14	20	-	-
MORE THAN 50 EMPLOYEES	9	8	-	44	-	57	-	9	-
AVERAGE	19	14	9	89	4	85	18	14	4
FULL & PART TIME/CASUAL									
1 - 5 EMPLOYEES	20	29	14	-	29	14	40	9	14
6 - 10 EMPLOYEES	21	27	12	11	43	-	-	36	43
11 - 20 EMPLOYEES	14	16	18	11	14	-	-	9	14
21 - 30 EMPLOYEES	8	4	14	-	-	-	-	9	29
31 - 50 EMPLOYEES	11	4	14	22	14	14	20	18	-
MORE THAN 50 EMPLOYEES	25	20	26	56	-	71	40	18	-
AVERAGE	45	30	39	153	11	139	66	30	12

* Note low base

Source: Computer Printout "7047D" Table 1 Pages 1-6

Question: And how many full-time and part-time/casual workers are employed in the value-added processing of fish and seafood <u>in this state</u>?

Does this business operate in any other state?

7.2.4 Number of Employees

Table 7.2.4 provides information about the number of employees that different types of value-added processing operations employed. The table is broken into two parts. The top half of the table displays the number of *full-time* employees by each type of processor, whilst the lower half provides the total number of employees including *part-time and casual* workers. The average number of employees working in each type of processing business is provided in the shaded boxes.

The three types of processors employing the highest *average number* of workers is summarised below.

Full-Time Employees (19 on average):

- Canneries employed 89 workers on average; and
- Pre-prepared meal producers employed 85 staff on average.

Total Employees - full-time and part-time/casual workers - (45 on average):

- Canneries employed an average of 153 staff;
- Pre-prepared meal producers each employed 139 workers, on average; and
- Elaborate Transformers employed an average of 66 workers.

On average, smokehouses and those who keep species alive for sale, employed fewer workers than any of the other processing operations.

If the average is multiplied by the total number of processors within this study, 6,615 people are employed in the value-added industry. If the assumption is made that those who did not participate are equally as likely to employ the same number of people, almost 10,000 (213x45) people work within the industry.

7.2.5 NUMBER OF YEARS IN BUSINESS

Base: All Respondents

	TOTAL	PROCESSING ACTIVITY							
		GENERAL/ MAINLY DOMESTIC	GENERAL/ MAINLY EXPORT	CANNERY	SMOKEHOUSE	PRE-PREPARED MEAL PRODUCER	ELABORATE TRANSFORMER	AQUACULTURE PROCESSOR	KEEP ALIVE
	(147) %	(51) %	(50) %	(9)* %	(7)* %	(7)* %	(5)* %	(11)* %	(7)* %
UP TO THREE YEARS	14	2	16	11	43	14	60	18	14
FOUR TO FIVE YEARS	13	20	6	11	14	-	20	9	29
SIX TO TEN YEARS	18	14	24	-	-	14	-	36	29
ELEVEN TO FIFTEEN YEARS	19	25	18	-	14	14	-	27	14
SIXTEEN TO TWENTY YEARS	10	6	10	22	29	29	20	-	-
TWENTY ONE TO THIRTY YEARS	13	14	16	11	-	14	-	9	14
MORE THAN THIRTY YEARS	12	16	8	44	-	14	-	-	-
DON'T KNOW	1	2	-	-	-	-	-	-	-
REFUSED	1	2	2	-	-	-	-	-	-
TOTAL	100	100	100	100	100	100	100	100	100
AVERAGE	15.3	17.7	14.1	28.9	8.3	18.4	5.8	9.8	9.3

* Note low base

Source: Computer Printout "7047A" Table 18 Page 36

Question: For how many years has this business been established?

7.2.5 Number of Years in Business

Table 7.2.5 provides information about the number of years processors have been established, and includes the average number of years that different types of processors have been in business.

On average, **value-added processors had been in business for 15.3 years.** More specifically:

- one in seven (14%) had been established for up to three years;
- roughly another one in seven (13%) for four or five years;
- almost one in five (18%) six to ten years, and;
- **just over one half (54%) of value-added processors had been in business for over ten years - one quarter (25%) more than twenty years.**

There were, however, quite marked differences by the type of processing activity.

Newer established businesses were more commonly found to be:

- "elaborate transformers" (5.8 years);
- smokehouses (8.3 years on average);
- those who keep seafood alive (9.3 years on average);
- aquaculture processors (9.8 years).

The longer standing business operations were:

- canneries (28.9 years on average);
- pre-prepared meal producers (18.4 years);
- general processors mainly for the domestic market (17.7 years); and
- general processors mainly for the export market (14.1 years).

7.3.1 OTHER NON-PROCESSING BUSINESS ACTIVITIES

Base: All Respondents

		PROCESSING ACTIVITY								BUSINESS SIZE		
	TOTAL	GENERAL MAINLY DOMESTIC	GENERAL MAINLY EXPORT	CANNERY	SMOKE-HOUSE	PRE-PREPARED MEAL PRODUCER	ELABORATE TRANS-FORMER	AQUA-CULTURE PROCESSOR	KEEP ALIVE	SMALL	MEDIUM	LARGE
	(147)	(51)	(50)	(9)*	(7)*	(7)*	(5)*	(11)*	(7)*	(49)	(49)	(48)
	%	%	%	%	%	%	%	%	%	%	%	%
JUST PROCESSING FISH AND SEAFOOD	21	24	10	44	29	29	40	27	14	27	18	19
OTHER ACTIVITIES	79	76	90	56	71	71	60	73	86	73	82	81
TOTAL	100	100	100	100	100	100	100	100	100	100	100	100
	(116)	(39)	(45)	(5)*	(5)*	(5)*	(3)*	(8)*	(6)*	(36)	(40)	(39)
	%	%	%	%	%	%	%	%	%	%	%	%
OTHER ACTIVITIES												
EXPORTER	72	44	93	100	60	40	100	63	100	53	80	79
GENERAL WHOLESALER	59	77	49	20	80	60	-	75	33	58	63	54
RETAILER	26	41	18	20	20	-	-	38	17	28	25	26
IMPORTER	16	18	11	-	-	60	33	25	17	8	18	23
FISHING	3	5	2	-	-	-	-	-	-	8	-	-
FARMING	2	3	-	-	-	-	-	13	-	-	3	3
OTHER	3	3	2	-	-	20	-	-	17	6	3	3

MULTIPLE RESPONSE ALLOWED

* Note low base

Source: Computer Printout "7047A" Tables 2 & 3 Pages 3-4

Question: **Is this business just involved in processing fish and seafood or in other activities also (such as: general wholesale of fish and seafood, importer, exporter, retailer)?**
And in what other activities is this business involved?

7.3 EXTENT OF VALUE-ADDED PROCESSING

7.3.1 Other Non-Processing Business Activities

Respondents were asked if the business in which they work was just involved in processing fish and seafood or in other activities, such as, wholesaling, importing, exporting and retailing. Overall, **four in five (79%) value-added processors were involved in other non-processing activities.**

Among the four in five processors involved in other activities, almost **three quarters (72%) indicated that they export fish and seafood** (although in data processing it was established that, in the 1990/1991 financial year, 66% exported product). **Three in five (59%) businesses acted as a wholesaler and one in four (26%) retailed their own fish and seafood** products. Importing was mentioned as an activity undertaken by 16% of these processors (18% actually did so in the 1990/91 financial year). Other activities less commonly undertaken by processors included fishing (3%), farming (2%), and other activities (3%).

It would seem that the larger the business (large and medium sized businesses compared with small operations), the more likely they were to undertake other non-processing activities - importing fish and seafood for value-adding and exporting value-added product.

7.3.2 PROCESSING OF NON-SEAFOOD BASED PRODUCTS

Base: All Respondents

	BASE	OTHER PRODUCTS PROCESSED %	NO OTHER PRODUCTS PROCESSED %	TOTAL %
TOTAL	**(147)**	**12**	**88**	**100**
PROCESSING ACTIVITY				
GENERAL PROCESSOR DOMESTIC	(51)	8	92	100
GENERAL PROCESSOR EXPORT	(50)	4	96	100
AQUACULTURE PROCESSOR	(11)*	-	100	100
CANNERY	(9)*	33	67	100
PROCESSOR KEEPING ALIVE	(7)*	-	100	100
SMOKEHOUSE	(7)*	29	71	100
PRE-PREPARED MEAL PRODUCER	(7)*	57	43	100
"ELABORATE TRANSFORMATION" PROCESSOR	(5)*	40	60	100
BUSINESS SIZE				
SMALL: 1 - 7 EMPLOYEES	(49)	2	98	100
MEDIUM: 8 - 32 EMPLOYEES	(49)	6	94	100
LARGE: 33 - 350 EMPLOYEES	(48)	27	73	100
GROWTH EXPECTATIONS				
INCREASE	(93)	15	85	100
DECREASE	(18)*	6	94	100
REMAIN THE SAME	(15)*	13	87	100
PRODUCT INPUT				
IMPORT SOME	(27)*	48	52	100
NO IMPORTS	(120)	3	97	100

* Note low base

Source: Computer Printout "7047A" Table 5, Page 6

Question: Is fish and seafood the only product processed by this business?

7.3.2 Processing of Non-Seafood Based Products

All respondents were asked if the business processes other non-fish and seafood products. Overall, **12% of businesses reported that other raw material, besides fish and seafood, is processed.** Large businesses (27%) and those importing fish and seafood products (48%) were more likely to be involved in processing other products. There is an indication that pre-prepared meal producers, "elaborate transformers", canneries and smokehouses were more likely to be diversified - to process other products.

Non-fish products manufactured by 12% of value-added fish and seafood processors (17 respondents) included:

- Meat based products (not smallgoods or chicken) (10 respondents);
- Chicken based products (6 respondents);
- Vegetable based products (4 respondents);
- Dairy products (4 respondents); and
- Smallgoods (3 respondents).

7.4.1.1 FISH SPECIES COMMONLY USED FOR VALUE-ADDED PROCESSING

Base: All Respondents

		PROCESSING ACTIVITY							
	TOTAL	GENERAL/ MAINLY DOMESTIC	GENERAL/ MAINLY EXPORT	CANNERY	SMOKEHOUSE	PRE-PREPARED MEAL PRODUCER	ELABORATE TRANSFORMER	AQUACULTURE PROCESSOR	KEEP ALIVE
	(147) %	(51) %	(50) %	(9)* %	(7)* %	(7)* %	(5)* %	(11)* %	(7)* %
WHITING	16	31	4	11	14	14	20	-	14
SHARK	14	25	12	-	-	14	-	-	-
GARFISH	10	22	2	11	14	-	20	-	-
ORANGE ROUGHY	10	10	16	-	14	-	20	-	-
TUNA (UNSPEC. STRIPED AND OTHER)	10	4	8	66	-	14	-	9	-
SNAPPER	9	18	4	-	-	-	20	-	14
FLATHEAD	8	16	4	-	14	-	20	-	-
AUSTRALIAN SALMON	8	6	4	33	43	14	-	-	-
MULLET	7	16	6	-	-	-	-	-	-
BREAM	6	12	4	-	-	-	-	-	14
BLUE GRENADIER	5	10	-	-	-	14	20	-	-
HAKE	5	6	-	-	-	71	-	-	-
EEL	5	-	4	-	29	-	-	9	29
ATLANTIC SALMON	5	2	-	11	43	-	-	18	-

MULTIPLE RESPONSE ALLOWED

* Note low base

Please note the totals equate to any mention of the species - for example different species of whiting

Source: Computer Printout "7047A" Table 7 Pages 8 - 16

Question: Which are the main species of fish or seafood that you buy, obtain or grow <u>for value added processing</u>?

7.4 SIZE OF THE VALUE-ADDED PROCESSING INDUSTRY

7.4.1 Species Commonly Used for Value-Added Processing

Table 7.4.1.1 outlines the species most commonly used for value-added processing, that is, those species used by at least 5% of processors. The most frequently mentioned species of fish were:

- Whiting (16%) which was commonly used by general processors for the domestic market (31%);
- Shark (14%);
- Garfish (10%) which was commonly used by general processors for the domestic market (22%);
- Orange roughy (10%), which is exported by 16% of general processors mainly supplying the export market;
- Tuna (10%) and spontaneously mentioned by 66% of canneries;
- Snapper (9%) which was more frequently used by domestic (18%) than export (4%) general processors;
- Flathead (8%) which was more frequently used by domestic (16%) than export (4%) general processors;
- Australian salmon (8%) being commonly used by canners (33%) and smokehouses (43%);
- Mullet (7%);
- Bream (6%);

7.4.1.2 CRUSTACEANS & MOLLUSCS COMMONLY USED FOR VALUE-ADDED PROCESSING

Base: All Respondents

		PROCESSING ACTIVITY							
	TOTAL	GENERAL/ MAINLY DOMESTIC	GENERAL/ MAINLY EXPORT	CANNERY	SMOKEHOUSE	PRE-PREPARED MEAL PRODUCER	ELABORATE TRANSFORMER	AQUACULTURE PROCESSOR	KEEP ALIVE
	(147) %	(51) %	(50) %	(9)* %	(7)* %	(7)* %	(5)* %	(11)* %	(7)* %
PRAWNS	33	43	30	22	14	71	40	9	14
CRAYFISH	33	25	46	33	29	14	-	18	57
SCALLOPS	17	18	26	11	-	29	-	-	-
ABALONE	12	2	18	44	-	-	40	9	14
CRABS	12	20	6	-	-	-	20	-	43
SQUID/CALAMARI	10	22	6	-	-	14	-	-	-
OYSTERS	7	12	2	-	-	14	-	18	-
OCTOPUS	5	6	6	11	-	-	-	-	14
BUGS	4	12	-	-	-	-	-	-	-
MUSSELS	2	4	-	-	-	-	-	9	-

MULTIPLE RESPONSE ALLOWED

* Note low base

Please note the totals equate to any mention of the species - for example different species of Prawns

Source: Computer Printout "7047A" Table 7 Pages 8 - 16

Question: Which are the main species of fish or seafood that you buy, obtain or grow <u>for value added processing?</u>

- Blue grenadier (5%);
- Hake (5%) which was used by 5 of the 7 of pre-prepared meal producers;
- Eel (5%) which was commonly smoked and kept alive - 2 of the 7 smokehouses and those who keep product alive; and
- Atlantic salmon (5%) which was used by 3 of the 7 smokehouses.

Table 7.4.1.2 displays the ten most frequently *mentioned* species of **molluscs and crustaceans** used for value-added processing. In cases where a variety of the same general species was mentioned, the data has been combined. The species used by at least one in ten processors included:

- Prawns (33%) and commonly used by pre-prepared meal producers (71%), general processors for the domestic market (43%) and elaborate transformers (40%);
- Crayfish (33%) and almost half (46%) of the general processors who mainly export product sourced this species;
- Scallops (17%);
- Abalone (12%) and one in five (18%) general export processors, almost half (44%) of the canners and two in five of the elaborate transformers used Abalone for value-added processing;
- Crabs (12%);
- Squid/Calamari (10%) and one in five (22%) general domestic processors mentioned this as a species obtained for value-adding;
- Oysters (7%);
- Octopus (5%);
- Bugs (4%); and
- Mussels (2%).

7.4.1.3 TOTAL VOLUME SOURCED FOR VALUE-ADDED PROCESSING IN 1990/91 FY

Base: All Respondents Providing Volume Data (of that sourced)

	TOTAL PROCESSORS (147) %	1990/91 VOLUME SOURCED
WHITING	16	571,748
SHARK	14	760,966
GARFISH	10	227,020
ORANGE ROUGHY	10	2,797,636
TUNA	10	12,598,300
SNAPPER	9	292,813
FLATHEAD	8	481,974
AUSTRALIAN SALMON	8	1,964,989
MULLET	7	1,062,056
BREAM	6	85,864
BLUE GRENADIER	5	643,895
HAKE	5	9,808,080
EEL	5	520,840
ATLANTIC SALMON	5	2,569,657
PRAWNS	33	14,576,819
CRAYFISH	33	9,569,828
SCALLOPS	17	2,154,903
ABALONE	12	2,861,087
CRABS	12	261,025
SQUID/CALAMARI	10	286,775
OYSTERS	7	315,929
OCTOPUS	5	220,013
BUGS	4	94,800
MUSSELS	2	22,540

It is important to note that the above analysis does not relate to the volume of the species handled by value-added processors. Consequently, the actual volume sourced in the 1990/91 financial year by the 147 value-added processors (where data was provided) for the above species is presented in Table 7.4.1.3.

This highlights the huge differences between the top species in terms of usage by value-added processors and the actual volume of fish and seafood moving through the industry.

7.4.2 FORM IN WHICH SPECIES OBTAINED

Base: All Species Forms Bought By Respondents

	TOTAL (505) %	TOTAL FISH (284) %	TOTAL SEAFOOD (221) %
FORM			
WHOLE	48	55	40
LIVE	25	15	38
FILLET	9	14	2
HEAD AND GUTTED	5	7	3
CUTLET	1	1	1
SMOKED	1	1	-
OTHER	11	8	15
TOTAL	100	100	100

Source: Computer Printout "7047C" Table 2 Page 3

Question: **Do you buy (READ OUT SPECIES) live, whole, filleted, cutlet, headed and gutted, smoked or in some other form?**

7.4.2 Form in Which Species Obtained

Table 7.4.2 provides a summary of the **product form in which the different processors obtained "raw-material" for value-added processing.** It is based on **505 responses** which could represent, for example, one species being bought in two different forms (2 forms). There were 284 "form" responses for fish and 221 "form" responses for seafood.

An understanding of the analysis base is important as the same reasoning applies through to Section 7.4.5. It is emphasised that **it is not based on the number of processors, or the weight of raw material sourced for value-adding in the 1990/1991 financial year - it is based on the different forms of species bought.**

The most frequently obtained forms of raw product were:

- **whole (48%);**
- **live (25%); and**
- **filleted (9%).**

Other forms in which fish or seafood could be bought were each mentioned by 5% or fewer respondents. Eleven percent of processors mentioned other non-specified forms in which product is sourced.

Over half (55%) of the fish sourced for value-adding was originally in whole form. Other forms were far less common for fish - the closest being a live form at 15% and filleted form at 14%.

Seafood was equally as likely to be bought for value-adding, whole (40%) and live (38%).

The acquisition of species in live form would often be accounted for by those defined as aquaculture processors.

7.4.3 SUPPLIERS OF FISH AND SEAFOOD USED FOR VALUE-ADDED PROCESSING

Base: All Species Forms Bought By Respondents

	TOTAL (505) %	TOTAL FISH (284) %	TOTAL SEAFOOD (221) %
TYPE OF SUPPLIER			
FISHERMAN/FARM	75	75	76
FISH/SEAFOOD WHOLESALER/CO-OPERATIVE	8	9	6
GENERAL WHOLESALE	7	7	6
OTHER	8	7	9
NO ANSWER	3	2	4
TOTAL	100	100	100

Source: Computer Printout "7047C" Table 4 Page 6

Question: **Who do you generally purchase this from (NAME OF SUPPLIER) and would you describe this supplier as a fisherman/farm; general wholesaler; fish or seafood wholesaler or co-op; or a retailer?**

7.4.3 Suppliers of Fish and Seafood Used for Value-Added Processing

Table 7.4.3 displays the proportion of raw material forms bought (505) from different types of supplier. Overall, three quarters (75%) of the raw material bought, in different forms, was sourced through a fisherman or fish farm.

Another 8% of the raw material forms bought was from a fish or seafood wholesaler, 7% from a general wholesaler and 8% from some other source.

7.4.4 IMPORTED VERSUS LOCAL SOURCING

Base: All Species Forms Bought By Respondents

	TOTAL (505) %	TOTAL FISH (284) %	TOTAL SEAFOOD (221) %
FORM SOURCED THAT WAS IMPORTED			
NONE	88	87	88
1- 20%	1	1	0
21 - 40%	0	-	0
41 - 60%	1	0	2
61 - 80%	1	-	1
81 - 99%	0	-	0
100%	8	10	6
DON'T KNOW	1	1	2
TOTAL	100	100	100
AVERAGE (%)	10	11	9

Source: Computer Printout "7047C" Table 5 Page 7

Question: **And what proportion of** (READ OUT TYPE AND FORM) **that was bought for processing last year was imported and what proportion was caught in this state and in other states?**

7.4.4 Imported Versus Local Sourcing

For each species and form bought for value-added processing, the source (domestic or imported) of that raw material was established. This is not to be confused with the proportion of processors who import raw material, or the volume of raw material which is imported. **The results, based on the form bought**, are shown in Table 7.4.4.

Of the 505 different forms of species acquired for value-added processing, 88% was local product, that is, from the Australian market. Almost one in ten (8%) species forms bought was 100% imported. Fish forms were slightly more likely than seafood to be imported (10% and 6% respectively).

7.4.5 VOLUME OF FISH AND SEAFOOD SOURCED FOR VALUE-ADDED PROCESSING

Base: All Species Forms Bought By Respondents

	TOTAL (505) %	TOTAL FISH (284) %	TOTAL SEAFOOD (221) %
1 - 500 kg	11	14	7
500 - 1000 kg	7	7	7
1 - 2 TONNE	6	7	5
2 - 5 TONNE	12	14	10
5 - 10 TONNE	9	9	8
10 - 25 TONNE	10	9	12
25 - 50 TONNE	13	13	14
50 - 75 TONNE	5	3	7
75 - 100 TONNE	6	6	6
1 - 15 (x 100) TONNE	3	2	4
15 - 20 (x 100) TONNE	3	2	4
20 - 50 (x 100) TONNE	5	6	5
MORE THAN 50 (x 100) TONNE	6	5	7
REFUSED	1	1	0
DON'T KNOW	3	2	4

TOTAL VOLUME	72,927.4 TONNE	42,486.2 TONNE	30,441.2 TONNE
AVERAGE PER PROCESSOR	496.1 TONNE	289.0 TONNE	207.0 TONNE

Source: Computer Printout "7047C" Table 3 Pages 4 - 5

Question: **In the 1990/91 financial year, how many kilograms of** (READ OUT TYPE AND FORM) **were bought for processing for this business?**

7.4.5 Volume of Fish and Seafood Sourced for Value-Added Processing

Table 7.4.5 provides a breakdown of the *volume* of fish and seafood used for value-added processing. It is again based on a particular species and the form in which it was bought in the 1990/1991 financial year - 505 species forms were bought by the 147 processors.

In the 1990/1991 financial year, a **total of 72,927 tonne of fish and seafood was reported as being used for value-adding activities by the 147 processors surveyed.** The total volume of **fish sourced** for value-added processing was reported to be **42,486 tonne in the 1990/1991 financial year, and 30,441 tonne of seafood.**

The distribution in the volume of species forms sourced for value-adding is widely varied. For example, 11% of the species forms weighed between 1 and 500 kilograms in the 1990/1991 financial year.

7.4.6 FORM IN WHICH VALUE-ADDED PRODUCT IS SOLD

Base: All Species Forms Sold By Respondents

	TOTAL (783) %	TOTAL FISH (402) %	TOTAL SEAFOOD (381) %
AFTER PRIMARY PROCESSING			
FROZEN	60	57	62
FRESH	19	26	12
BONED/FILLETED	15	28	-
WHOLE	13	9	17
LIVE	7	1	13
CHILLED	6	6	6
SORT/GRADE	4	2	5
CUTLETS	3	2	3
TAILS	3	-	6
SLICED	2	4	1
HEADED	2	1	3
GUTTED	2	3	0
SKINNED/SCALED	2	3	-
FLESH/MEAT/MINCE	2	1	4
WASHED/CLEANED	1	0	2
PEELED/SHELLED	1	-	3

	TOTAL (783) %	TOTAL FISH (402) %	TOTAL SEAFOOD (381) %
AFTER SECONDARY PROCESSING			
COOKED (NON-SPECIFIC)	5	1	10
SMOKED	3	5	0
PATE/DIP/PASTE	3	3	3
DRIED	2	2	2
BREADED	2	2	2
BATTERED	1	2	1
FISH FINGERS/CAKES/NUGGETS	1	2	-
BOILED	1	1	1
PACKAGED			
PACK IN BOXES/ CARTONS/POLYSTYRENE	30	25	35
PACK IN NYLON/WOVEN BAGS/PLASTIC	6	6	6
VACUUM PACKED/TRAY PACKED	4	6	1
CANNED	4	4	3
GLASS BOTTLE	1	0	1

MULTIPLE RESPONSE ALLOWED

Source: Computer Printout "7047C" Table 9 Pages 12 - 14

Question: **Is this** (READ OUT PROCESSED PRODUCT) **sold, live, fresh, chilled, frozen, canned, smoked, dried or in a glass bottle?**

7.4.6 Form in Which Value-Added Product is Sold

The form in which value-added product was sold, in the 1990/1991 financial year, was broken into two categories, primary processing, and secondary processing. Out of the 505 species forms bought, 783 species form products were sold. This may have eventuated because different pack sizes were sold or because a different product was produced from the form originally sourced.

Primary Processing, refers to "low level" processing, involving treatment of fish or seafood immediately after it has been caught or harvested. The three most frequently mentioned forms in which value added product is sold after primary processing were:

- **Frozen** (60%);
- **Fresh** (19%);
- **Boned/Filleted** (15%).

Other forms produced included whole (13%), live (7%), chilled (6%), sorted or graded (4%), as cutlets, or tails (3% each), sliced, headed, gutted, skinned or scaled, as flesh, meat or mince (all by 2% of processors), and washed and cleaned, or peeled and shelled (1%).

Secondary Processing, was classified as any action which involved cooking or curing of raw product. The three most frequently mentioned product forms in this category were:

- **Cooked** (non-specific) (5%)
- **Canned** (4%)
- **Smoked** (3%)

Other forms of product produced in this category were paté, dip or paste (3%), dried product and breaded product (2% each), and battered product, fish fingers/cakes or nuggets, and boiled product (1% each).

In terms of the packaging (which was not provided by all respondents), of the 783 different forms:

- 16% was packaged in what has been defined consumer packs, that is, the final product is to be bought by the consumer; and
- 57% was packaged in non-consumer packs.

The pack type was not clearly established for one in four of the form (26%).

All fish forms (402) were more likely than seafood forms (381) to be packaged by the processor into consumer packs (22% and 10% respectively).

Other types of packaging details provided by value-added processors is shown in Table 7.4.6.

7.4.7 VALUE-ADDED PRODUCT WEIGHT "AS SOLD"

Base: All Species Forms Sold By Respondents

	TOTAL (783) %	TOTAL FISH (402) %	TOTAL SEAFOOD (381) %
PROCESSED PRODUCT WEIGHT			
1 - 250 GM	3	5	1
251 - 500 GM	5	7	2
501 - 999 GM	1	0	1
1 KG - 3 KG	**13**	**5**	**20**
3 KG - 5 KG	3	4	1
5 KG - 10 KG	**21**	**17**	**25**
10 KG - 20 KG	**8**	**6**	**9**
OVER 20 KG	1	2	1
BULK PACKS (WEIGHT UNSPECIFIED)	1	2	1
RANDOM WEIGHTS	9	11	6
OTHER	2	3	-
DON'T KNOW/NOT ANSWERED	35	37	33
TOTAL	100	100	100

Source: Computer Printout "7047C" Table 8 Page 11

Question: **How is the (READ OUT TYPE AND FORM) processed, that is, what final product or pack is produced?**

7.4.7 Value-Added Product Weight "As Sold"

Out of the **505 species forms bought, 783 species form products were sold.** This may have eventuated because different pack sizes were sold or because a different product was produced from a specific species and form of raw material. Table 7.4.7 shows the processed weight of value-added product sold.

The three most frequently mentioned package types sold are shown below.

	Total	Fish	Seafood
5-10 Kilograms	21%	17%	25%
1-3 Kilograms	13%	5%	20%
10-20 Kilograms	8%	6%	9%

Approximately one in ten (9%) products sold in the 1990/1991 financial year were sold in random weights. The processed product pack sizes was not established in one third (35%) of cases - the product description was only supplied.

7.4.8 DISTRIBUTION OF VALUE-ADDED PRODUCT

Base: All Species Forms Sold By Respondents

	TOTAL (783) Average %	TOTAL FISH (402) Average %	TOTAL SEAFOOD (381) Average %
EXPORTED	31	15	48
WHOLESALER	31	37	25
OTHER VAP MANUFACTURER	3	2	3
INSTITUTIONAL	0	1	0
FOOD SERVICE INDUSTRY	14	15	13
RETAIL SUPERMARKET	3	5	2
RETAIL OTHER	11	18	4
DIRECT TO CONSUMER	5	7	4
TOTAL	100	100	100

Source: Computer Printout "7047C" Tables 11 - 18 Pages 17 - 28

Question: **What proportion of** (READ OUT PROCESSED FISH OR SEAFOOD PRODUCT) **was sold to the following markets?**

7.4.8 Distribution of Value-Added Product

The proportion of value-added product forms sold (783) to different operators in the distribution chain is shown in Table 7.4.8. On average, 31% of the product forms produced were exported in the 1990/1991 financial year. A far greater proportion of seafood (48%) than fish (15%) forms were sold to the export market.

Within the domestic market, the greatest proportion of species forms sold moved to other wholesalers (31%) who then distribute value-added product. The food service sector was the next most likely to receive the produced species forms from value-added processors (14%), followed by non-supermarket retailers (11%). Interestingly, a greater proportion of fish (18%) than seafood species forms sold passed through non-supermarket retailers.

Other channels of the distribution chain, on average, received a low proportion of the species forms produced - direct to the consumer (5%), supermarkets (3%), and other value-added manufacturers (3%).

7.5 COMPETITION IN THE VALUE-ADDED PROCESSING INDUSTRY

7.5.1 Main Competitors in the Domestic Market

The questionnaire comprised two sections - A and B. **Section A was completed with 147 value-added processors** (21 of whom were interviewed in the in-depth interviewing phase), and consisted of all business details and value-added product manufactured in the 1990/1991 financial year. **Section B, which essentially consisted of attitudinal data, was completed with 123 respondents** (including 21 in-depth interviews). There was a reduction in the number of respondents, as interviewers were instructed not to pressure the respondent to continue if time constraints were obvious.

All 123 respondents (to Section B) were asked who they considered to be their **main competitors in the supply of value-added product within Australia.** In general, respondents specifically **named Australian processors** (with almost 100 separate companies mentioned), although most domestic suppliers were mentioned by only 1% or 2% of respondents. On average, 2.3 domestic suppliers (or fishing areas) were named by each of the 73 processors*. The most commonly named competitive local suppliers included:

- Kailis and France (7%);
- Safcol (6%);
- Edgell-Birdseye (5%);
- Raptis and Sons (5%);
- Markwell Pacific (4%);
- I & J (4%);
- Poulos Seafoods (3%);
- Tassal (3%);'
- Nortas (3%).

* 73 Processors = 123 Processors - 50 responses (any processor, no processor, don't sell local, refused and don't know)

Countries which export value-added product to Australia were also seen as major competitors for local producers. Overall, there was a **31% mention of foreign imports, most commonly, Asian (4%), New Zealand (3%), Thai (2%) and Japanese (2%).**

Another 15% of value-added processors considered any local processor to represent major competition, but another 14% did not deem any to be a threat. Seven percent indicated that value-added product is not distributed within Australia (they only export). One in twenty (5%) did not respond.

7.5.2 MAIN COMPETITORS IN THE EXPORT MARKET

Base: Respondents Exporting Value-Added Product

	PROCESSING ACTIVITY
	TOTAL (82) %
NEW ZEALAND	21
ASIA/SOUTH EAST ASIA	
JAPAN	18
TAIWAN	18
THAILAND	15
CHINA	12
INDONESIA	11
PHILIPPINES	5
SINGAPORE	4
KOREA	4
HONG KONG	2
MALAYSIA	1
OTHER SPECIFIC ASIAN COUNTRIES	5
ASIA/SOUTH EAST ASIA (UNSPEC)	7
AMERICAS	
UNITED STATES	13
CANADA	10
CHILE	7
CUBA	6
MEXICO	5
OTHER LATIN AMERICAN COUNTRIES	10
EUROPE	
FRANCE	1
SPAIN	1
OTHER SPECIFIC EUROPEAN COUNTRIES	5
EUROPE UNSPECIFIED	4
SOUTH AFRICA	7
OTHER	2
DON'T KNOW	2
NONE	7

Source: Computer Printout "7047B" Table 36 Pages 89 - 91

Question: Thinking of the value-added product which the business exports, which markets represent the greatest competition?

7.5.2 Main Competitors in the Export Market

Among the 123 respondents who completed Section B of the questionnaire, 82 (67%) actually exported value-added product in the 1990/1991 financial year. The countries which these respondents considered to represent the greatest competition are detailed in Table 7.5.2. Countries have been grouped in the geographical regions of Asia/South East Asia, the Americas, and Europe.

The countries which value-added exporting processors viewed as the greatest competition (by more than 10% of respondents) were:

- New Zealand (21%);
- Japan (18%);
- Taiwan (18%);
- Thailand (15%);
- United States (13%);
- China (12%);
- Indonesia (11%).

7.5.3 EXPORT MARKETS WITH THE GREATEST POTENTIAL

Base: Respondents Exporting Value-Added Product

	PROCESSING ACTIVITY
	TOTAL (82) %
ASIA/SOUTH EAST ASIA	
JAPAN	32
TAIWAN	29
KOREA	15
HONG KONG	13
CHINA	9
SINGAPORE	7
MALAYSIA	2
INDONESIA	1
OTHER SPECIFIC ASIAN COUNTRIES	2
ASIA/SE ASIA UNSPECIFIED	6
AMERICAS	
UNITED STATES OF AMERICA	17
CANADA	1
OTHER LATIN AMERICAN COUNTRIES	2
EUROPE	
FRANCE	16
ITALY	9
SPAIN	5
GERMANY	4
U.K.	2
OTHER SPECIFIC EUROPEAN COUNTRIES	4
EUROPE UNSPECIFIED	10
MISCELLANEOUS	
NEW ZEALAND	2
SAUDI ARABIA	1
SOUTH AFRICA	2
OTHER	1
DON'T KNOW	6
NONE	2
	MULTIPLE RESPONSE ALLOWED

Source: Computer Printout "7047B" Table 37 Pages 92 - 94

Question: And which markets offer the greatest potential?

7.5.3 Export Markets with the Greatest Potential

The same 82 respondents who currently export product were asked which countries they considered to have the greatest *potential* for export development. Countries have been listed by geographical region and appear in the accompanying table.

In an overall sense, the **Asia or South East Asian markets are considered to offer Australian exporters of value-added product, the greatest potential.** More specifically, the countries which were thought primary targets (by more than one in ten exporters) were:

- Japan (32%);
- Taiwan (29%);
- United States (17%);
- France (16%);
- Korea (15%); and
- Hong Kong (13%).

MAIN STRENGTHS OF AUSTRALIA'S VALUE-ADDED PROCESSING INDUSTRY

Base: All Respondents (Section A & B).

		PROCESSING ACTIVITY								BUSINESS SIZE		
	TOTAL	GENERAL/ MAINLY DOMESTIC	GENERAL/ MAINLY EXPORT	CANNERY	SMOKEHOUSE	PRE-PREPARED MEAL PRODUCER	ELABORATE TRANSFORMER	AQUACULTURE PROCESSOR	KEEP ALIVE	SMALL	MEDIUM	LARGE
	(123)	(40)	(41)	(9)*	(6)*	(7)*	(5)*	(9)*	(6)*	(36)	(43)	(43)
	%	%	%	%	%	%	%	%	%	%	%	%
QUALITY RESOURCE (FISH & SEAFOOD)	63	68	68	56	67	43	60	44	50	58	70	60
CLEAN WATER	37	38	44	22	33	14	20	56	33	39	35	40
ABUNDANT SUPPLY	14	10	17	-	17	29	-	-	50	8	26	7
STRICT HEALTH REGULATIONS (DPIE)	11	8	15	11	-	-	40	11	-	17	7	9
GOOD QUALITY CONTROL	4	5	7	-	-	-	-	-	-	6	2	2
ADVANCED TECHNOLOGY	3	-	-	11	-	14	-	22	-	3	2	5
UNPOLLUTED FISH	2	3	-	-	17	-	-	-	-	-	-	5
OTHER	13	8	10	33	17	29	-	-	50	14	9	16
NONE	5	3	5	-	-	-	40	11	-	6	5	5
DON'T KNOW	7	5	5	22	-	-	-	22	-	11	5	5

MULTIPLE RESPONSE ALLOWED

* Note low base

Source: Computer Printout "7047B" Table 33 Page 74

Question: Compared to overseas countries what are the main strengths of the Australian value-added fish and seafood industry?

7.6 STRENGTHS and WEAKNESSES, OPPORTUNITIES and THREATS, FOR THE AUSTRALIAN VALUE-ADDED PROCESSING INDUSTRY

7.6.1 Main Strengths of Australia's Value-Added Processing Industry

Table 7.6.1 displays processors' perceptions of the *main* strengths of the Australian value-added processing industry compared to overseas countries.

Almost two in three (63%) processors considered Australia's main strength to be the quality of the fish and seafood resource. Just over one in three (37%) felt Australia's competitive strength to be the clean water in which the resource is found - these two strengths are obviously very closely linked.

The next most frequently mentioned strengths were:

- the abundance of fish and seafood within Australian waters (14%); and
- strict health regulations enforced by DPIE (11%).

That Australia has good quality control, advanced technology and a resource which is unpolluted were each mentioned as strengths by fewer than one in twenty processors.

Interestingly, 5% of value-added processors did not believe Australian industry to have any dominance over that of the overseas countries - there are no benefits which Australia can utilise as a selling mechanism in export markets.

7.6.2 MAIN WEAKNESSES OF AUSTRALIA'S VALUE-ADDED PROCESSING INDUSTRY

Base: All Respondents (Section A & B)

		PROCESSING ACTIVITY								BUSINESS SIZE		
	TOTAL	GENERAL/ MAINLY DOMESTIC	GENERAL/ MAINLY EXPORT	CANNERY	SMOKEHOUSE	PRE-PREPARED MEAL PRODUCER	ELABORATE TRANSFORMER	AQUACULTURE PROCESSOR	KEEP ALIVE	SMALL	MEDIUM	LARGE
	(123)	(40)	(41)	(9)*	(6)*	(7)*	(5)*	(9)*	(6)*	(36)	(43)	(43)
	%	%	%	%	%	%	%	%	%	%	%	%
COST OF LABOUR/WAGE STRUCTURE	29	33	34	33	17	14	-	44	-	28	19	40
COST OF AUSTRALIAN RAW MATERIAL	20	23	22	11	-	29	-	11	50	17	23	21
LACK HIGH VOLUME OF RAW MATERIAL (FISH & SEAFOOD)	13	3	12	22	-	29	20	33	33	11	14	12
UNRELIABILITY OF SUPPLY	12	10	17	11	17	14	-	11	-	8	9	16
COST OF EQUIPMENT/MACHINERY	8	10	10	11	17	-	-	-	-	14	7	5
LACK OF VISION/ INTEREST BY BUSINESS	7	-	7	11	17	14	20	11	-	6	7	7
LACK OF MANAGEMENT EXPERTISE	7	5	10	11	-	14	-	-	-	3	9	5
NOT COST COMPETITIVE	7	8	2	11	17	-	20	-	17	6	5	9
OTHER ECONOMIC FACTORS	7	13	2	-	17	-	-	11	-	11	7	2
LIMITED KNOWLEDGE OF CONSUMERS	6	5	-	-	17	29	20	11	-	-	9	7
LACK OF QUALITY CONTROL/ FLUCTUATING QUALITY	6	-	7	11	33	-	20	-	-	11	2	5
GOVERNMENT INTERVENTION/ POLICY	6	-	7	11	17	14	20	-	-	6	7	5
POOR GOVERNMENT LIAISON WITH INDUSTRY	6	8	2	-	-	-	20	11	17	8	5	5
OTHER	40	33	41	56	67	43	60	-	50	50	30	42
NONE	1	3	-	-	-	-	-	-	-	-	2	-
DON'T KNOW	8	10	10	11	-	-	-	11	-	14	7	5

MULTIPLE RESPONSE ALLOWED

* Note low base

Source: Computer Printout "7047B" Table 34 Pages 75 - 77

Question: And what are the main weaknesses of the Australian value-added fish and seafood industry?

7.6.2 Main Weaknesses of Australia's Value-Added Processing Industry

Processors were asked what they perceived to be the main weaknesses of the Australian value-added fish and seafood industry. The range of responses is detailed in Table 7.6.2 and is broader than the strengths seen in the Australian value-added industry.

Consistent with the findings from the in-depth interviews, was the belief that **Australian industry lacks competitiveness** because of high costs and variable supply:

- the **Australian wage structure** compared with competing overseas countries (29%) - particularly mentioned by large businesses (40%) and aquaculture processors (44%);
- the **cost of raw material** sourced in Australia (20%);
- Australia's **lack of high volume raw material** which can be used in the production of value-added product (13%); and
- **unreliability in the supply** of Australian species (12%).

All these factors contribute to Australia being uncompetitive in terms of costs (7%). In addition, 6% felt fluctuating quality to be a weakness of the industry.

As a theme, a **poor attitude and lack of knowledge were seen as weaknesses of the Australian value-added industry.** Seven percent of value-added processors believed that those in the distribution chain lacked vision and interest in industry development and the expertise and knowledge of those in management is limited. The consumers' lack of knowledge about fish and seafood was also cited by 6% of processors as a weakness of the Australian value-added industry.

In a general sense, **government was seen as a hindrance to the development of industry.** This included the belief by 6% of respondents that government policies act against the interests of the industry, and another 6% commented on poor industry consultation, that is, between government and those in the fish and seafood business.

The cost of equipment and machinery used in the production of value-added fish and seafood products was considered a weakness by 8% of respondents.

Many other weaknesses of the Australian value-added fish and seafood industry were mentioned by 5% or fewer respondents - totalling 40%.

7.6.3.1 PRODUCT & MARKETING FACTORS LIKELY TO INCREASE NET RETURNS

Base: All Respondents (Section A & B)

		PROCESSING ACTIVITY								BUSINESS SIZE		
	TOTAL	GENERAL/ MAINLY DOMESTIC	GENERAL/ MAINLY EXPORT	CANNERY	SMOKEHOUSE	PRE-PREPARED MEAL PRODUCER	ELABORATE TRANSFORMER	AQUACULTURE PROCESSOR	KEEP ALIVE	SMALL	MEDIUM	LARGE
	(123)	(40)	(41)	(9)*	(6)*	(7)*	(5)*	(9)*	(6)*	(36)	(43)	(43)
	%	%	%	%	%	%	%	%	%	%	%	%
PRODUCT FACTORS												
INCREASE OUTRIGHT VOLUME (THROUGH RAW MATERIAL AVAILABILITY)	10	8	12	11	-	29	-	-	17	6	14	9
CHANGE SPECIES USED/ PRODUCTS MADE	8	5	5	22	-	14	20	11	17	14	5	7
INCREASE RETAIL/MORE PREPARED MEALS	2	-	5	-	-	-	-	11	-	3	-	5
CHEAPER RAW MATERIALS	2	-	2	-	-	14	-	11	-	3	5	-
MARKETING FACTORS												
INCREASE EXPORT MARKETS	12	5	15	33	-	14	-	11	33	17	7	14
BETTER MARKETING/ PROMOTION TO INCREASE DEMAND	7	10	7	-	-	-	-	11	17	8	7	7
MORE RESEARCH INTO CONSUMER DEMANDS	3	-	2	22	17	-	-	-	-	-	-	9

MULTIPLE RESPONSE ALLOWED

* Note low base

Source: Computer Printout "7047B" Table 25 Pages 52 - 54

Question: What opportunities are there for increasing net returns for value-added processing businesses like this?

7.6.3 Opportunities for Increasing Net Returns

7.6.3.1 Product and Marketing Factors Likely to Increase Net Returns

Processors were asked what opportunities exist for increasing net returns for value-added businesses. A range of responses were given. These responses have been split into three categories: product and marketing factors; productivity and quality assurance measures; and macro-economic and government policy factors.

Table 7.6.3.1 identifies *product and marketing* factors that were cited as avenues to increase net returns. An increase in return would naturally be likely if there was an **outright increase in volume output, however, this is dependent on the availability of raw material (10%). Changing the species used and products made could also contribute to increased returns (8%).**

Expansion through **greater penetration in export markets** was seen as a fairly key method for increasing net returns (12%). It was also thought local demand would increase with **improved marketing and promotion** (7%) and investigation of consumer demands, rather than being just supply driven (3%).

7.6.3.2 PRODUCTIVITY & QUALITY ASSURANCE MEASURES LIKELY TO INCREASE NET RETURNS

Base: All Respondents (Section A & B)

		PROCESSING ACTIVITY								BUSINESS SIZE		
	TOTAL	GENERAL/ MAINLY DOMESTIC	GENERAL/ MAINLY EXPORT	CANNERY	SMOKEHOUSE	PRE-PREPARED MEAL PRODUCER	ELABORATE TRANSFORMER	AQUACULTURE PROCESSOR	KEEP ALIVE	SMALL	MEDIUM	LARGE
	(123)	(40)	(41)	(9)*	(6)*	(7)*	(5)*	(9)*	(6)*	(36)	(43)	(43)
	%	%	%	%	%	%	%	%	%	%	%	%
PRODUCTIVITY MEASURES												
INCREASE EFFICIENCY/ MONITOR WAGES & WORK PRACTICES	9	10	7	33	-	-	-	11	-	3	7	16
DECREASE COSTS	9	8	7	33	-	-	-	11	17	-	12	14
IMPROVE TECHNOLOGY/ CUT LABOUR COSTS THROUGH AUTOMATION	6	10	2	-	-	14	-	11	-	3	9	5
QUALITY ASSURANCE MEASURES												
INCREASED QUALITY MEANS HIGHER PRICES/MORE PROFIT	7	5	7	22	-	-	-	-	17	6	5	9
BETTER HANDLING TO PRODUCE BETTER QUALITY END PRODUCT	6	3	7	11	-	-	-	11	17	3	5	7

MULTIPLE RESPONSE ALLOWED

* Note low base

Source: Computer Printout "7047B" Table 25 Pages 52 - 54

Question: What opportunities are there for increasing net returns for <u>value-added processing businesses</u> like this?

7.6.3.2 Productivity and Quality Assurance Measures Likely to Increase Net Returns

In total, three *productivity measures* were identified as a means to increase net returns. To be **internationally competitive, Australian industry must seek methods for decreasing costs** (9%), for example, through increased efficiency in work practices (9%) and improved technology to reduce the labour component (6%) - labour in countries, such as, Thailand is far lower.

Generally, Australian industry must place **greater emphasis on actions to improve the quality** of value-added product. In so doing, all operators in the industry will benefit financially - increased quality means higher prices (7%) and better handling practices to produce a better quality end product (6%).

7.6.3.3 MACRO-ECONOMIC FACTORS & GOVERNMENT POLICY ISSUES AFFECTING NET RETURNS

Base: All Respondents (Section A & B)

		PROCESSING ACTIVITY								BUSINESS SIZE		
	TOTAL	GENERAL/ MAINLY DOMESTIC	GENERAL/ MAINLY EXPORT	CANNERY	SMOKEHOUSE	PRE-PREPARED MEAL PRODUCER	ELABORATE TRANSFORMER	AQUACULTURE PROCESSOR	KEEP ALIVE	SMALL	MEDIUM	LARGE
	(123)	(40)	(41)	(9)*	(6)*	(7)*	(5)*	(9)*	(6)*	(36)	(43)	(43)
	%	%	%	%	%	%	%	%	%	%	%	%
MACRO-ECONOMIC FACTORS												
ECONOMIC UP-TURN	7	13	10	-	-	-	-	-	-	8	7	7
IF INDUSTRY & GOVT. CAN WORK TOGETHER IN MANAGEMENT	2	5	-	11	-	-	-	-	-	3	2	2
INCREASE IN STABILITY OF PRICE PAID BY OVERSEAS MARKETS	2	-	2	11	-	-	-	-	17	6	2	-
GOVERNMENT POLICY ISSUES												
CHANGE IN GOVERNMENT POLICY/NO QUOTAS/MORE ASSISTANCE/LOWER CHARGES	12	10	12	11	33	-	40	11	-	19	9	9
REDUCE IMPORTS/REPLACE WITH LOCAL VAP	5	3	7	-	17	14	-	-	-	-	9	5
MISCELLANEOUS												
OTHER COMMENTS	11	13	15	11	-	-	-	22	-	14	14	7
NONE	10	10	10	11	17	29	-	-	-	6	14	9
DON'T KNOW	13	15	7	-	33	14	40	22	-	17	14	9

MULTIPLE RESPONSE ALLOWED

* Note low base

Source: Computer Printout "7047B" Table 25 Pages 52 - 54

Question: What opportunities are there for increasing net returns for <u>value-added processing businesses</u> like this?

7.6.3.3 Macro-Economic and Government Policy Factors Affecting Net Returns

To increase net returns for value-added processing businesses, 7% of respondents thought that an **economic up-turn necessary.** Another 2% felt greater consultation between industry and government could contribute to an increase in net returns of business, as could improved stability in the world price for fish and seafood products (2%).

Respondents thought that the government could assist and stimulate the value-added processing industry by **changing its position on specific policies, such as, quotas and government charges (12%)**, and restricting market access for imported products (5%).

7.6.4 FUTURE THREATS TO AUSTRALIA'S VALUE-ADDED PROCESSING INDUSTRY

Base: All Respondents (Section A & B)

	TOTAL	PROCESSING ACTIVITY								BUSINESS SIZE		
		GENERAL/ MAINLY DOMESTIC	GENERAL/ MAINLY EXPORT	CANNERY	SMOKEHOUSE	PRE-PREPARED MEAL PRODUCER	ELABORATE TRANSFORMER	AQUACULTURE PROCESSOR	KEEP ALIVE	SMALL	MEDIUM	LARGE
	(123)	(40)	(41)	(9)*	(6)*	(7)*	(5)*	(9)*	(6)*	(36)	(43)	(43)
	%	%	%	%	%	%	%	%	%	%	%	%
COMPETITION FROM OVERSEAS/ IMPORTING OF PRODUCT	37	38	32	33	67	43	20	33	50	28	47	35
HIGH COST OF AUSTRALIAN LABOUR	20	23	22	11	17	-	20	33	-	22	16	19
COMPETITION FROM OVERSEAS/ DUMPING OF PRODUCT	18	20	15	11	-	71	40	-	-	17	9	26
LIMITED DOMESTIC RESOURCE/PRODUCT	16	15	22	11	33	-	-	22	-	22	19	9
GOVERNMENT INTERVENTION	16	10	15	33	-	-	60	33	17	14	21	14
HIGH COST OF AUSTRALIAN RAW MATERIAL	13	18	10	-	17	14	20	22	-	11	14	14
UNRELIABILITY OF SUPPLY	13	13	17	-	17	43	-	-	-	17	12	9
OVERFISHING	11	13	15	11	-	-	20	-	17	17	9	9
GOVERNMENT CHARGES	11	18	12	-	-	-	-	11	-	8	16	7
HIGH PRICE OF AUSTRALIAN PRODUCT	10	10	12	-	-	14	-	-	33	6	9	14
POLLUTION/ENVIRONMENTAL DAMAGE	7	15	2	11	17	-	-	-	-	8	7	7
THE QUOTA SYSTEM	7	10	5	11	-	-	20	-	17	11	9	2
ENVIRONMENTALISTS/ GREEN LOBBY	4	3	2	11	-	-	20	11	-	8	2	2
HIGH COST OF MACHINERY/ EQUIPMENT	2	3	-	11	17	-	-	-	-	6	-	2
LIMITED OVERSEAS RESOURCE	1	-	2	-	-	-	-	-	-	3	-	-
OTHER	21	13	29	33	50	-	20	11	17	22	19	23
DON'T KNOW	4	3	2	-	17	-	-	22	-	6	5	2

MULTIPLE RESPONSE ALLOWED

* Note low base

Source: Computer Printout "7047B" Table 32 Pages 72 - 73

Question: What are the greatest threats likely to be faced in the future by the value-added fish and seafood industry in Australia?

7.6.4 Future Threats to Australia's Value-Added Processing Industry

The greatest threat that value-added fish and seafood processors considered likely to be faced in the future was **increased competition, in the domestic market, from imported product.** Almost two in five (37%) respondents spontaneously cited this threat.

Another four threats were mentioned by between one in five and one in six respondents, these were:

- the **high cost of Australian labour** (20%), making Australian industry uncompetitive;
- **dumping of product** in Australia (18%);
- the **limited Australian resource** which could be used for value-added product (16%); and
- **government intervention**, for example, quotas on species used for value-added processing (16%).

The high cost of Australian raw material, unreliability in supply, possible overfishing, government charges and the high cost of the final Australian product were all mentioned by between 13% and 10% of processors as threats the industry is likely to face in the future.

Other comments made by fewer than 10% of respondents are detailed in the accompanying table.

7.7.1 RECENT DEVELOPMENTS IN PRODUCTS PROCESSED

Base: All Respondents (Section A & B)

	TOTAL	GENERAL/ MAINLY DOMESTIC	GENERAL/ MAINLY EXPORT	PROCESSING ACTIVITY: CANNERY	SMOKEHOUSE	PRE-PREPARED MEAL PRODUCER	ELABORATE TRANSFORMER	AQUACULTURE PROCESSOR	KEEP ALIVE
	(123)	(40)	(41)	(9)*	(6)*	(7)*	(5)*	(9)*	(6)*
	%	%	%	%	%	%	%	%	%
NEW TYPES OF PACKAGING/ WAYS TO TRANSPORT/STORE	14	8	7	33	17	-	20	11	17
NEW LINES/VALUE-ADDING DIFFERENT SPECIES/WAYS	12	13	7	22	33	29	20	-	-
MORE/BETTER WAYS OF EXPORTING LIVE PRODUCT	10	8	7	11	-	-	20	22	33
MORE SOPHISTICATED FREEZING/ CHILLING TECHNIQUES	7	5	10	-	-	-	20	22	-
PACKAGING IN DIFFERENT SIZE PACKS	7	5	7	22	-	-	-	11	-
VACUUM PACKAGING	6	3	7	-	-	14	20	11	-
MORE PACKAGING/PROCESSING FOR RETAIL/SUPERMARKET	6	5	10	-	-	14	-	-	-
READY TO COOK/PORTION CONTROLLED MEALS	5	3	2	11	17	14	20	-	-
MORE ADVANCED PROCESSING MACHINERY	4	-	7	-	-	14	20	-	-
MEET DEMAND FOR HEALTHIER/ CHOLESTEROL FREE PRODUCTS	3	3	-	11	-	14	20	-	-
PRODUCTION OF DRIED PRODUCTS	2	-	2	11	-	-	20	-	-
MORE SMOKING OF FISH/SEAFOOD	2	-	2	-	17	-	-	-	-
OTHER COMMENTS	9	5	7	11	17	14	40	11	-
NONE	50	70	41	33	67	29	-	44	67

MULTIPLE RESPONSE ALLOWED

* Note low base

Source: Computer Printout "7047B" Table 3 Pages 5 - 6

Question: What are the major recent developments in the types and ways in which products are processed and sold by your business?

7.7 RECENT AND POSSIBLE FUTURE DEVELOPMENTS IN THE VALUE-ADDED PROCESSING INDUSTRY

7.7.1 Recent Developments in Products Processed

Table 7.7.1 outlines what processors thought to be the most significant recent developments in the types and ways in which products are processed. The three most frequently mentioned product and process developments were:

- **new types of packaging** and methods for the transportation and storage of value-added products (14%);
- **introduction of new lines** and utilisation of different species (12%); and
- **improved methods for exporting live product** (10%).

Other packaging developments were also noted and included the production of different pack sizes (7%), vacuum packaging (7%), and an increased emphasis on packaging for the supermarket trade (6%). More sophisticated freezing and chilling techniques had been recently adopted by 7% of businesses.

One in twenty (5%) value-added processors had introduced ready to cook or portion controlled meals. More advanced processing technology (4%) had been taken on by general processors mainly for the export market, elaborate transformers and also pre-prepared meal producers. The demand for cholesterol free products was noted by 3% of respondents and specific product changes had been made by 2% - dried products and more smoking of fish and seafood.

Noteworthy, **one in two processors had not recently altered the types and ways in which products are processed and sold by the business.** General processors mainly supplying the domestic market were least likely to have changed past practices (70% had not introduced any new developments).

7.7.2 LIKELY FUTURE DEVELOPMENTS IN PRODUCT PROCESSING

Base: All Respondents (Section A & B)

	TOTAL	PROCESSING ACTIVITY							
		GENERAL/ MAINLY DOMESTIC	GENERAL/ MAINLY EXPORT	CANNERY	SMOKEHOUSE	PRE-PREPARED MEAL PRODUCER	ELABORATE TRANSFORMER	AQUACULTURE PROCESSOR	KEEP ALIVE
	(123)	(40)	(41)	(9)*	(6)*	(7)*	(5)*	(9)*	(6)*
	%	%	%	%	%	%	%	%	%
MORE INSTANT MEALS/READY TO COOK/BOIL IN BAG/OVENABLE	11	3	7	22	-	71	20	22	-
PRODUCING DIFFERENT PRODUCTS	11	13	2	33	17	43	-	-	-
MORE VALUE-ADDED PRODUCTS TO RETAIL MARKET NOT WHOLESALE	10	8	10	-	-	14	20	33	-
MORE MECHANIZATION/ UPGRADED MACHINERY	10	10	5	11	33	14	-	22	-
DIFFERENT TYPES OF PACKAGING	10	13	5	22	-	-	-	11	33
LOOK TO EXPORT MORE	9	10	12	-	-	-	-	11	17
EXPANDING BUSINESS/OPEN NEW MARKETS/INCREASING SALES	8	5	10	11	-	-	-	11	33
CRYOGENIC FREEZING/ INDIVIDUAL QUICK FREEZING	8	5	10	-	-	29	40	-	-
BIGGER EMPHASIS ON LIVE PRODUCT	8	3	10	-	-	-	20	-	67
MORE PROCESSING/VALUE ADDING IN GENERAL	8	5	10	-	-	-	20	33	-
SMALLER PACKS (500g - 1kg)	7	10	10	-	-	-	20	-	-
MORE/MODIFIED VACUUM PACKAGING	7	10	5	-	17	-	20	11	-
PROCESSING DIFFERENT/ UNDERUTILISED SPECIES	7	5	-	-	17	29	20	11	17
LARGER PACKS/BULK PACKS (E.G. 10kg)	3	5	5	-	-	-	-	-	-
MORE ON-BOARD/AT SEA PROCESSING/PACKAGING	2	3	2	11	-	-	-	-	-
MORE DRIED PRODUCTS	2	3	-	11	-	-	20	-	-
PUSH NUTRITION/HEALTH PRODUCTS/ASPECTS	2	-	-	11	-	29	-	-	-
OTHER COMMENTS	8	10	7	22	-	-	-	-	17
NONE	28	35	39	11	17	-	20	11	-
DON'T KNOW	5	5	7	-	17	-	-	-	-

MULTIPLE RESPONSE ALLOWED

* Note low base

Source: Computer Printout "7047B" Table 4 Pages 7 - 9

Question: **And what developments or advancement in the types and ways in which products are processed and sold are likely for your business in the next five years?**

7.7.2 Likely Future Developments in Product Processing

Processors were asked to look forward to the next five years and predict the likely developments or advancements in the types and ways in which products are processed and sold. The changes thought likely are detailed in Table 7.7.2. Not one development was commonly mentioned by value-added processors; most were mentioned by one in ten or fewer respondents. Just over **one in four (28%) processors did not believe any new developments or advancements would be made in the next five years.**

The five most frequently mentioned likely developments were:

- **more ready to cook meals**, such as, boil in the bag and products for ovens (11%) - 5 of the 7 pre-prepared meal producers mentioned this development;
- the **introduction of new products**, although no specific details were provided (11%);
- the **movement of a greater volume of value-added products to the retail** market (10%);
- increased **mechanisation** and technology improvements (10%); and
- the emergence of **new types of packaging** (10%).

Expansion into new markets was predicted by a number of processors. Just under one in ten mentioned greater export of value-added product (9%) and opening up new markets for the product (8%). An increased demand for live product was thought probable (8%) and for value-added product in general (8%).

Although 10% generally commented on different types of packaging, 7% specifically believed that smaller pack sizes will be produced (500 gm to 1kg), 7% considered vacuum packaging will become more popular and, in contrast, 3% thought bulk packaging will be introduced (10kg) in the future.

Cryogenic freezing was thought likely to increase in significance by 8% of processors. And one in fourteen (7%) felt that they would be using other species, some under-utilised, for value-added processing.

7.7.3 IMPLICATIONS OF PRODUCT DEVELOPMENTS ON THE SPECIES PROCESSED

Base: All Respondents (Section A & B)

	TOTAL	GENERAL/ MAINLY DOMESTIC	GENERAL/ MAINLY EXPORT	PROCESSING ACTIVITY: CANNERY	SMOKEHOUSE	PRE-PREPARED MEAL PRODUCER	ELABORATE TRANSFORMER	AQUACULTURE PROCESSOR	KEEP ALIVE
	(123)	(40)	(41)	(9)*	(6)*	(7)*	(5)*	(9)*	(6)*
	%	%	%	%	%	%	%	%	%
HANDLE LARGER QUANTITIES/ MORE PROFIT/PURCHASING POWER	15	15	12	11	17	29	20	11	33
NEW PRODUCTS USING DIFFERENT SPECIES WILL EXPAND BUSINESS	11	10	12	-	17	29	20	-	-
PURCHASE MORE LOCALLY/LESS IMPORTS/KEEP DOLLARS HERE	6	8	2	-	-	-	40	11	17
MORE HANDLING FOR QUALITY BY FISHERMEN/ON-BOARD PROCESSING	6	8	2	11	-	-	20	-	17
OPEN MORE/LUCRATIVE MARKETS/MORE EXPORT	6	5	7	11	-	14	-	-	-
IMPORT RAW MATERIALS & PROCESS HERE	5	3	10	-	-	14	-	-	-
HIGHER YIELD/PRODUCE MORE FROM LESS/USE PARTS NOW WASTED	5	3	2	22	17	-	20	-	-
MORE CONSUMER EDUCATION TO INCREASE DEMAND	4	5	-	-	-	29	20	-	-
MORE EQUIPMENT FOR HOLDING LIVE/FRESH FISH	4	3	5	-	-	-	-	11	17
NEED CHANGE IN GOVERNMENT REGULATIONS SO WE CAN MAKE MONEY	3	-	7	-	17	-	-	-	-
USING MORE AQUACULTURE PRODUCTS	2	-	2	-	-	14	-	11	-
PROCESSING OFF-SHORE IS CHEAPER	2	-	2	11	-	-	-	-	-
OTHER COMMENTS	10	8	15	-	17	14	-	11	-
NONE	31	43	32	33	17	-	-	33	17
NOT APPLICABLE	8	8	7	-	-	-	-	33	17
DON'T KNOW	7	8	10	-	33	-	-	-	-

MULTIPLE RESPONSE ALLOWED

* Note low base

Source: Computer Printout "7047B" Table 5 Pages 10 - 12

Question: What are the implications of these developments and trends on your purchasing of fish and seafood species and forms from Australian suppliers, and from overseas suppliers?

7.7.3 Implications of Product Developments on the Species Processed

The likely developments and trends over the next five years will have some specific implications on the purchasing of fish and seafood species, and forms, from Australian and overseas suppliers. These implications are shown in Table 7.7.3.

Approximately **one in seven (15%) processors** considered that because of the changes likely to occur in their business over the next five years, a **greater volume of fish and seafood will be processed.** In turn, this will give the buyer greater purchasing power and ultimately profit. Another **one in ten (11%)** respondents believed that they will be **seeking different species for value-added processing**, and 6% specifically stated that they will source more local raw material as a means of keeping money within Australia.

Quality fish and seafood will be more frequently demanded from fishermen for value-added processing, however, fishermen may become more involved in on-board processing (6%) - possibly overlapping the function of on-shore processors. Export markets were thought a target for 6% of processors - a greater volume will need to be processed to satisfy demand. A higher yield is the aim for 5% of processors (utilising by-product) and 2% believed that they will source a greater volume of aquaculture species.

Unfavourably, 5% of processors thought that they would change to imported raw material which would be processed in Australia, and 2% were contemplating processing off-shore because it is far cheaper.

Other comments made by value-added processors can be found in the accompanying table.

7.8.1.1 PRODUCTION BARRIERS INHIBITING EXPANSION OF THE VALUE-ADDED PROCESSING INDUSTRY

Base: All Respondents (Section A & B)

	TOTAL	PROCESSING ACTIVITY								BUSINESS SIZE		
		GENERAL/ MAINLY DOMESTIC	GENERAL/ MAINLY EXPORT	CANNERY	SMOKEHOUSE	PRE-PREPARED MEAL PRODUCER	ELABORATE TRANSFORMER	AQUACULTURE PROCESSOR	KEEP ALIVE	SMALL	MEDIUM	LARGE
	(123) %	(40) %	(41) %	(9)* %	(6)* %	(7)* %	(5)* %	(9)* %	(6)* %	(36) %	(43) %	(43) %
PROCESSING BARRIERS												
COST OF LABOUR	37	35	44	44	33	57	-	11	33	25	35	47
COST OF EQUIPMENT/ MACHINERY	15	15	15	33	-	-	20	22	17	14	14	19
FREIGHT/TRANSPORT COSTS	11	5	20	11	-	-	-	11	33	14	9	12
COST OF POWER	7	8	10	11	-	-	-	-	-	6	7	7
PACKAGING COSTS	2	-	5	-	-	-	-	-	17	3	2	2
DIFFICULTY IN ACCESSING UP TO DATE TECHNOLOGY	2	3	-	11	-	-	-	-	-	-	5	-
RAW MATERIAL BARRIERS												
COST OF AUSTRALIAN RAW MATERIAL/PRICE	24	43	10	22	33	29	-	11	33	19	28	26
LIMITED DOMESTIC RESOURCES SMALL FISHERIES/VOLUME	12	8	22	-	-	14	20	-	17	8	14	14
UNRELIABILITY OF SUPPLY	10	10	12	-	-	29	20	-	-	11	9	9
LACK OF SUPPLY OF RAW MATERIALS	4	5	-	33	-	-	-	-	-	3	2	7
LIMITED OVERSEAS RESOURCES	2	-	-	-	-	-	-	-	33	-	5	-
MARKET BARRIERS												
INADEQUATE PROMOTION/ LACK OF CONSUMER EDUCATION/ACCEPTANCE	10	10	5	22	17	14	-	22	-	17	2	12
CHEAP IMPORTS	7	5	5	11	33	-	20	-	-	11	2	7
LIMITED SIZE OF AUSTRALIAN POPULATION	3	-	5	11	-	14	-	-	-	3	-	7

MULTIPLE RESPONSE ALLOWED

* Note low base

Source: Computer Printout "7047B" Table 22 Pages 42 - 45

Question: What are the main barriers that are inhibiting the expansion of the value-added processing of fish and seafood products in Australia?

7.8 BARRIERS INHIBITING THE EXPANSION OF THE AUSTRALIAN VALUE-ADDED PROCESSING INDUSTRY

7.8.1 Main Barriers Inhibiting the Expansion of the Value-Added Industry in Australia

Value-added processors were asked what they considered to be the main barriers inhibiting the expansion of value-added processing of fish and seafood products in Australia. The range of spontaneous responses has been classified into production based (Section 7.8.1.1) and infrastructure based (Section 7.8.1.2) barriers, the discussion of which appears below.

7.8.1.1 Production Based Barriers

Within the production based classification, responses were further divided into three categories: processing barriers; raw material barriers; and market barriers.

Production barriers, most commonly the **costs associated with processing,** were mentioned as one of the major constraints to the expansion of Australian industry. In particular, the **cost of Australian labour** was considered a barrier to expansion by **almost two in five (37%) respondents** - and one half (47%) of large businesses.

This is further exacerbated by the cost associated in the acquisition of **machinery and equipment which could be used to reduce the labour component (15%)** - and the difficulty in accessing this technology (2%). The long distance which has to be travelled to move product around Australia was seen as a barrier inhibiting the expansion of Australian industry by one in ten (11%) respondents. Power costs (7%) and packaging costs (2%) were less frequently cited.

Raw material acquisition and cost was also seen as a major barrier to the expansion of the value-added processing industry. **One in four (24%) processors indicated the cost of Australian raw material to be high** compared to that in other countries. This was particularly commented on by general processors mainly for the domestic market (43%). The **limited domestic resource (12%) and unreliability in the supply** of domestic product (10%) act as barriers to the expansion of Australian industry - it is difficult to forward plan. Other raw material barriers mentioned by fewer than one in twenty respondents have the same theme.

Market based barriers inhibiting the expansion of the value-added processing industry were seen to stem from a **lack of promotion** and education of the consumer about the existence and benefits of value-added products and consequently their acceptance (10%). **Cheap imported product and the limited size of the Australian market** were also seen as barriers limiting the expansion of Australian industry (by 7% and 3% of processors respectively).

7.8.1.2 INDUSTRY INFRASTRUCTURE BARRIERS INHIBITING EXPANSION OF THE VALUE-ADDED PROCESSING INDUSTRY

Base: All Respondents (Section A & B)

	TOTAL	PROCESSING ACTIVITY								BUSINESS SIZE		
		GENERAL/ MAINLY DOMESTIC	GENERAL/ MAINLY EXPORT	CANNERY	SMOKEHOUSE	PRE-PREPARED MEAL PRODUCER	ELABORATE TRANSFORMER	AQUACULTURE PROCESSOR	KEEP ALIVE	SMALL	MEDIUM	LARGE
	(123) %	(40) %	(41) %	(9)* %	(6)* %	(7)* %	(5)* %	(9)* %	(6)* %	(36) %	(43) %	(43) %
GOVERNMENT BARRIERS												
GOVERNMENT INTERVENTION	15	18	10	11	17	-	40	22	33	14	21	12
OTHER GOVERNMENT CHARGES	12	13	20	11	-	-	-	11	-	11	12	14
DEPARTMENT OF FISHERIES REGULATIONS/QUOTAS	9	13	10	11	-	-	-	11	-	11	9	7
EXPORT COSTS/FEES/ CHARGES/LICENCES	6	8	5	-	-	-	40	-	-	8	7	2
POOR SUPPORT FROM GOVERNMENT/AUSTRADE	5	5	5	-	-	-	20	11	-	11	2	2
DPIE	4	8	5	-	-	-	-	-	-	6	2	5
RED TAPE	4	3	-	-	-	-	40	22	-	6	7	-
PAYROLL TAX	3	3	5	11	-	-	-	-	-	-	2	7
OPERATIONAL BARRIERS												
POOR MANAGEMENT ATTITUDE/ PRACTICES/EXPERTISE	9	5	12	11	-	29	20	-	-	8	-	19
ACCESS TO FINANCE FOR INDUSTRY IS POOR/LACK OF FUNDS	7	3	12	-	-	-	20	11	-	11	7	2
LACK OF TRAINING	2	-	2	-	17	-	-	-	-	-	2	2
TOO MUCH COMPETITION CREATES SMALL MARGIN	2	3	5	-	-	-	-	-	-	3	2	2
OTHER	17	20	12	-	17	29	40	22	17	17	12	21
NONE	2	-	5	-	-	14	-	-	-	-	5	2
DON'T KNOW	4	5	2	-	17	-	-	11	-	6	5	2

MULTIPLE RESPONSE ALLOWED

* Note low base

Source: Computer Printout "7047B" Table 22 Pages 44 - 46

Question: What are the main barriers that are inhibiting the expansion of the value-added processing of fish and seafood products in Australia?

7.8.1.2 Industry Infrastructure Barriers Inhibiting Value-Added Processing Expansion

Infrastructure barriers were further divided into two categories, barriers inherent in government policies, and more fundamentally, barriers at an operational level.

A **fair degree of criticism was levied at the government.** Actions taken and charges by government were seen as a hindrance the expansion of the Australian value-added fish and seafood processing industry. Overall, 15% of processors commented on general government intervention in the fish and seafood processing industry **(without industry consultation)**, which could be assumed to link with the **regulations and quota restrictions** recently established (9%).

Government charges associated with the establishment of a processing business were also seen as a barrier to expansion. For example, mention was made of government charges in general (12%), costs associated with export (6%) and payroll tax (3%). Poor support from government (and Austrade), general government "red tape" and the actions of DPIE were each mentioned by approximately one in twenty processors.

At an **operational level**, one in ten (9%) processors considered that **a poor attitude and lack of expertise** of those within the industry was a barrier to expansion of the processing sector - **greater industry training** is needed. Difficulty in **accessing funds** for business expansion was a limitation noted by 7% of processors.

7.8.2.1 PRODUCTION BARRIERS INHIBITING THE EXPANSION OF VALUE ADDED PROCESSING BUSINESSES

Base: All Respondents (Section A & B)

		PROCESSING ACTIVITY								BUSINESS SIZE		
	TOTAL	GENERAL/ MAINLY DOMESTIC	GENERAL/ MAINLY EXPORT	CANNERY	SMOKEHOUSE	PRE-PREPARED MEAL PRODUCER	ELABORATE TRANSFORMER	AQUACULTURE PROCESSOR	KEEP ALIVE	SMALL	MEDIUM	LARGE
	(123)	(40)	(41)	(9)*	(6)*	(7)*	(5)*	(9)*	(6)*	(36)	(43)	(43)
	%	%	%	%	%	%	%	%	%	%	%	%
RAW MATERIAL BARRIERS												
LACK OF RAW MATERIALS	16	15	27	-	17	-	-	11	17	17	14	16
COST OF RAW MATERIALS	7	8	2	11	33	-	-	-	33	3	14	5
PROCESSING BARRIERS												
COST OF LABOUR	12	8	10	33	33	29	20	-	-	8	7	21
COST OF PRODUCTION/ PROCESSING PACKAGING	8	3	10	22	-	14	-	11	17	8	5	12
COST OF EQUIPMENT	5	5	2	11	33	-	-	-	-	3	7	5
COST OF FREIGHT/TRANSPORT	5	5	5	-	-	-	-	-	33	8	5	2
MARKET BARRIERS												
CHEAP IMPORTS/ TOO MUCH COMPETITION	8	3	15	-	-	29	-	11	-	3	2	19
LACK OF CONSUMER DEMAND POOR MARKETING/SMALL POPULATION	7	10	-	11	-	29	-	11	-	6	2	12

MULTIPLE RESPONSE ALLOWED

* Note low base

Source: Computer Printout "7047B" Table 23 Pages 46 - 48

Question: **And what are the main barriers <u>within your business</u> which inhibit the further expansion of the <u>value-added processing of fish and seafood</u>?**

7.8.2 Main Barriers Inhibiting the Expansion of Value-Added Processing Businesses

In contrast to the general barriers inhibiting the expansion of the Australian value-added industry, processors were questioned on the factors specifically **inhibiting the expansion of their business.** In total, 15% of respondents considered that there were no barriers to possible business expansion. And another 2% were uncertain of the barriers faced.

The responses have again been categorised as production (Section 7.8.2.1) and infrastructure based (Section 7.8.2.2) barriers. The spontaneous responses are described below.

7.8.2.1 Production Based Barriers

Production based barriers were allocated into three categories, namely raw material, processing, and market barriers.

Factors associated with the **acquisition of raw material were the most frequently mentioned barriers** inhibiting the expansion of specific processing businesses. The lack of suitable raw materials and the cost of Australian sourced fish and seafood were mentioned by 16% and 7% of processors respectively.

The **cost of labour (12%)** and more broadly general production costs (8%) were the main processing barriers cited by respondents as inhibiting expansion. The cost of equipment and that associated with the transportation of goods were each mentioned by one in twenty (5%) processors.

Just under one in ten processors felt that the competition posed by imports (8%) and the relatively small size of the Australian market (7%) were limitations to business expansion.

7.8.2.2 INFRASTRUCTURE BARRIERS INHIBITING THE EXPANSION OF VALUE-ADDED PROCESSING BUSINESSES

Base: All Respondents (Section A & B)

		PROCESSING ACTIVITY								BUSINESS SIZE		
	TOTAL	GENERAL/ MAINLY DOMESTIC	GENERAL/ MAINLY EXPORT	CANNERY	SMOKEHOUSE	PRE-PREPARED MEAL PRODUCER	ELABORATE TRANSFORMER	AQUACULTURE PROCESSOR	KEEP ALIVE	SMALL	MEDIUM	LARGE
	(123) %	(40) %	(41) %	(9)* %	(6)* %	(7)* %	(5)* %	(9)* %	(6)* %	(36) %	(43) %	(43) %
OPERATIONAL BARRIERS												
LACK OF CAPITAL	18	18	17	11	17	-	40	44	-	28	16	12
LACK OF EXPERTISE/ TECHNICAL STAFF TRAINING	7	8	15	11	17	-	40	-	-	11	7	5
LACK OF SPACE FOR EXPANSION	3	8	2	-	-	-	-	-	-	3	5	2
GOVERNMENT BARRIERS												
GOVT. REGULATIONS/QUOTAS RED TAPE/CHARGES	11	10	12	33	-	-	-	11	17	14	12	9
ECONOMIC CLIMATE/ INTEREST RATES/ EXCHANGE RATES	7	8	10	-	17	-	-	-	-	11	5	5
LACK OF GOVT. ASSISTANCE INFORMATION/BACKING	4	3	7	-	-	-	20	-	-	6	5	2
OTHER	8	13	7	11	-	-	-	11	-	11	7	7
NONE	15	13	15	-	-	43	20	22	17	14	19	12
DON'T KNOW	2	3	-	-	17	-	-	-	-	-	-	5

MULTIPLE RESPONSE ALLOWED

* Note low base

Source: Computer Printout "7047B" Table 23 Pages 46 - 48

Question: And what are the main barriers <u>within your business</u> which inhibit the further expansion of the <u>value-added processing of fish and seafood</u>?

7.8.2.2 Infrastructure Barriers

Barriers inherent in the industry infrastructure were further classified as operational or government based obstacles.

At the level of the individual operator, **almost one in five (18%) processors felt that a lack of capital was the main barrier** to the expansion of their business. In addition, 7% considered their staff to have insufficient expertise and training for the business to really move forward. A lack of space was a limitation for 3% of processors.

Uncertainty as to the restrictions and quotas which will be established by the government in the future, restrained some processors from a large investment in product development - government regulations and quotas (11%) and lack of government information (4%). **If processors cannot be assured of the sustainable catch for a species, future business plans cannot be developed.** The current economic climate was thought inappropriate for business expansion by 8% of processors.

VALUE-ADDING POTENTIAL OF UNDER-UTILISED SPECIES

Base: All Respondents (Section A & B)

		PROCESSING ACTIVITY							
	TOTAL	GENERAL MAINLY DOMESTIC	GENERAL MAINLY EXPORT	AQUACULTURE PROCESSOR	CANNERY	PRE-PREPARED MEAL PRODUCER	KEEP ALIVE	SMOKEHOUSE	ELABORATE TRANSFORMER
	(123)	(40)	(41)	(9)*	(9)*	(7)*	(6)*	(6)*	(5)*
	%	%	%	%	%	%	%	%	%
WILD SPECIES									
SQUID (OR CALAMARI)	44	53	44	11	44	29	33	17	100
PILCHARDS (OR SARDINES)	24	30	32	-	22	14	-	-	40
JACK MACKEREL	21	18	20	22	33	14	-	33	60
SILVER TREVALLY	18	20	20	-	-	14	33	17	40
AUSTRALIAN HERRING	17	23	17	11	-	-	-	33	40
FARMED SPECIES									
OYSTERS	31	40	32	22	11	14	50	-	40
MUSSELS	31	38	29	33	22	29	-	17	60
FARM PRAWNS	29	23	29	11	33	57	50	17	60
ATLANTIC SALMON	28	33	22	11	22	14	17	67	60
RAINBOW TROUT	24	30	20	22	11	29	-	50	20
FARM BARRAMUNDI	24	25	29	22	-	-	33	17	40

* Note low base

Source: Computer Printout "7047B" Tables 8 - 18 Pages 19 - 29

Question: **There are various species of fish and seafood which have been identified by the fishing industry as being under utilised. READ OUT For businesses like this, which types do you consider to have the greatest potential for increased sales through value-added processing?**

7.9 OPPORTUNITIES FOR UNDER-UTILISED SPECIES

7.9.1 Value-Adding Potential of Under-Utilised Species

The 123 value-added processors were systematically asked if they believed there to be potential for increased sales through value-added processing for five wild species and six farmed species currently under-utilised. In general terms, large businesses were more likely to consider there potential for each of the under-utilised species.

Among the five wild species, more **potential was believed to exist in the value-adding of Squid or Calamari** than the other four species. Overall, **44% of processors could see value-adding potential for Squid** - and all 5 elaborate transformers.

Less than one in four processors believed there to be potential for the other species, namely:

- Pilchards (24%) - and 32% of general processors mainly for the export market;
- Jack mackerel (21%);
- Silver trevally or Skippy (18%); and
- Australian Herring (17%).

The support for any one of the farmed species was not as great as that for Squid. Approximately three in ten processors felt greater sales potential to exist for value-added:

- Oysters (31%) - 40% of those mainly processing for the domestic market and 3 of the 6 who keep product alive;
- Mussels (31%);
- Farm prawns (29%) - 4 of the 5 pre-prepared meal producers, and 3 of the 6 who keep and sell live species; and
- Atlantic salmon (28%) - 4 of the 6 smokehouses.

A slightly lower proportion of processors considered there to be sales potential for Rainbow trout and Farm barramundi (24% each). General processors mainly for the domestic market were more likely to see development opportunities for Rainbow trout (30%).

7.9.2.1 REASONS FOR BELIEF IN POTENTIAL OF WILD SPECIES

Base: Respondents Mentioning Species With Development Potential

	SQUID/ CALAMARI	PILCHARDS/ SARDINES	JACK MACKEREL	SILVER TREVALLY/ SKIPPY	AUSTRALIAN HERRING/ TOMMY RUFF
	(54) %	(30) %	(26) %	(22) %	(21) %
REASONS FOR POTENTIAL					
POPULAR FISH IN DEMAND	35	23	12	5	5
TO REPLACE IMPORTS	20	-	4	-	14
HUGE POTENTIAL FOR EXPORT/ OVERSEAS MARKET	19	10	19	32	14
POTENTIAL TO PROCESS IN OTHER SPECIFIC MANNER	13	7	12	14	14
IF CONSISTENT/BETTER SUPPLY AVAILABLE	9	10	15	18	10
IF PRICE CAME DOWN	9	-	-	9	5
ORIGINALLY ONLY FOR BAIT/ NOW FOR HUMAN CONSUMPTION	6	3	12	-	-
PEOPLE MORE EDUCATED ABOUT IT NOW	6	7	-	-	-
CANNED/SMOKED/ BOTTLED SELLS WELL	4	7	15	9	5
REPUTATION/QUALITY	4	-	4	-	5
IF CONSISTENT QUALITY	4	3	4	-	-
CAN BE CAUGHT LOCALLY/ WELL KNOWN	4	3	-	-	-
TO USE AS BAIT/PET FOOD	2	13	15	-	19
SHOULD BE PROMOTED/ ADVERTISED	2	7	12	5	5
VERSATILE/CAN DO ALOT WITH THEM	2	3	8	-	-
UNDER-RATED/UNTAPPED/ NEED SUPPLY	2	7	8	-	5
FRESH WOULD BE IN DEMAND (IF FARMED)	2	3	4	5	5
CHEAP/CHEAPER	2	7	-	9	10
SELLING WELL ALREADY	2	-	-	-	-
POTENTIAL FOR SELLING LIVE/WHOLE	2	-	-	5	5
MEATY/FLESHY/GOOD VALUE	-	-	4	5	-
FOR RESTAURANTS	-	4	-	-	-
GOOD FLAVOURED FISH	-	-	-	5	5
GOOD EQUAL SIZED PORTIONS	-	-	-	9	-
GROWING ASIAN/ ETHNIC POPULATION	-	7	-	-	-
OTHER COMMENTS	-	10	-	9	5
DON'T KNOW	2	-	-	-	-

MULTIPLE RESPONSE ALLOWED

Source: Computer Printout "7047B" Table 7 Pages 14 - 18

Question: And what are the main reasons for believing that the potential lies with?

7.9.2 Reasons for Belief in Species' Potential

Those respondents who believed that increased sales potential existed for any of the under-utilised species, were asked for what reasons they held this view. The responses have been divided into two tables, one for the five wild species (Section 7.9.2.1), the other for the six aquaculture species (Section 7.9.2.2).

7.9.2.1 Wild Species

Table 7.9.2.1 outlines the reasons for believing potential exists for each of the five wild under-utilised species, and the discussion below highlights the key factors.

Squid (44% considered there development potential)

The most frequently cited reasons for the belief in development potential were:

- it is a popular fish and one in demand (35%);
- greater utilisation of Australian species could result in import replacement (20%); and
- there is huge potential in the export market.

Pilchards/Sardines (24% considered there development potential)

The most frequently cited reasons were:

- that it is a popular fish in demand (23%);
- it is suited to use as bait or pet food (13%);
- more would be utilised if supply was more constant (10%); and
- export potential exists (10%).

Jack mackerel (21% considered there development potential)

The most frequently mentioned reasons for the development potential of this species were:

- good export potential exists (19%);
- it is suited to canning, bottling or smoking (15%);
- it can be used as bait or pet food (15%); and
- a greater, more consistent supply would result in increased distribution and sales (15%).

Silver trevally (18% considered there development potential)

Essentially potential for this species was thought to exist in export markets (32%), provided that a constant supply is guaranteed (18%).

Australian herring (17% considered there development potential)

The most common reasons for the potential growth in this species were:

- it is suited to processing for bait and pet food (19%);
- imports may be replaced (14%);
- export potential exists (14%); and
- it has the potential to be processed in other ways (14%).

7.9.2.2 REASONS FOR BELIEF IN POTENTIAL OF FARMED SPECIES

Base: Respondents Mentioning Species With Development Potential

	OYSTERS (38) %	MUSSELS (38) %	FARM PRAWNS (36) %	ATLANTIC SALMON (34) %	RAINBOW TROUT (29) %	FARM BARRAMUNDI (29) %
REASONS FOR POTENTIAL						
INDUSTRY JUST BEGINNING HERE	24	16	-	3	3	3
POPULAR FISH/IN DEMAND	18	32	14	26	14	17
HUGE POTENTIAL FOR EXPORT/ OVERSEAS MARKET	16	11	17	12	3	10
SHOULD BE PROMOTED/ ADVERTISED	13	8	3	3	14	3
ALWAYS AVAILABLE IF FARMED	13	8	19	3	7	17
WOULD STANDARDISE SIZE	8	8	8	3	3	10
REPUTATION/QUALITY	5	8	-	6	3	3
TO REPLACE IMPORTS	5	11	11	6	7	17
WOULD BE CHEAPER IF FARMED	5	5	3	9	10	14
IF PRICE CAME DOWN	5	-	8	6	10	21
POTENTIAL TO PROCESS IN OTHER SPECIFIC MANNER	3	5	11	12	7	7
FRESH WOULD BE IN DEMAND (IF FARMED)	3	3	6	6	7	3
QUALITY CONTROL	3	-	3	-	-	3
UNDER-RATED/UNTAPPED/ NEED SUPPLY	3	3	-	-	-	3
CHEAP/CHEAPER	3	3	-	-	-	-
IF CONSISTENT QUALITY	3	3	3	-	-	-
FOR RESTAURANTS	-	8	6	6	10	-
PEOPLE MORE EDUCATED ABOUT IT NOW	-	5	3	3	3	3
IF CONSISTENT/BETTER SUPPLY AVAILABLE	-	3	3	12	-	-
POTENTIAL FOR SELLING LIVE/WHOLE	-	-	3	-	3	3
CONSISTENT PRICE	-	-	3	-	-	-
CANNED/SMOKED/BOTTLED SELLS WELL	-	-	-	9	3	-
ORIGINALLY ONLY FOR BAIT/NOW FOR HUMAN CONSUMPTION	-	3	-	-	-	-
SELLING WELL ALREADY	-	-	-	13	-	-
GOOD FLAVOURED FISH	-	-	-	-	7	-
GOOD/EQUAL SIZED PORTIONS	-	-	-	-	3	-
GROWING ASIAN/ ETHNIC POPULATION	-	3	-	-	-	-
HEALTH BENEFITS	-	-	-	3	-	-
VERSATILE/CAN DO A LOT WITH THEM	-	-	3	-	-	7
OTHER COMMENTS	3	3	3	9	3	3
DON'T KNOW	3	3	3	3	3	3

MULTIPLE RESPONSE ALLOWED

Source: Computer Printout "7047B" Table 7 Pages 14 - 18

Question: And what are the main reasons for believing that the potential lies with?

7.9.2.2 Farmed Species

Table 7.9.2.2 displays the supporting reasons for the believed potential of farmed species. A summary for each species is outlined below.

Oysters (31% considered there development potential)

The three most frequently cited reasons for the belief in the development potential of farmed Oysters were:

- the "newness" of the industry (24%);
- Oysters are always a popular species (18%); and
- there is a potential export market (16%).

Mussels (31% considered there development potential)

The most commonly cited reasons for the development potential of mussels were:

- that it is popular species for which demand will always exist (32%);
- the "newness" of the industry (16%);
- potential export market (11%); and
- imports should be able to be replaced (11%).

Farm Prawns (29% considered there development potential)

The three most commonly offered reasons for the belief in the development potential of Farm Prawns were:

- the constant availability of farmed product (19%);
- potential for export development (17%); and
- domestically, it is popular and demanded species (14%).

Atlantic salmon (28% considered there development potential)

One in four (26%) of those who considered potential for increased sales, essentially felt it to be a popular species and therefore opportunities for enhancement to exist.

Rainbow trout (24% considered there development potential)

More commonly than any other response, greater sales potential is thought possible for this species as it is a popular fish, and with promotion its full potential may be realised (14% each).

Farm Barramundi (24% considered there development potential)

Potential increased demand for this species appears dependent on the lowering of the price (21%). However, if this is achieved sales should increase because:

- it is a popular fish (17%);
- will be readily available if farmed (17%); and
- could be suited to import replacement (17%).

7.9.3 Other Under-utilised Species Suitable for Value-Added Processing

Value-added processors were asked to identify other under-utilised species which they considered to have potential for value-added processing in their business. Overall, **58% stated that they did not know of any other under-utilised species which could be sourced in the manufacture of value-added product.** The remaining 42% of processors identified fifty eight different types of fish and seafood (each species mentioned by 5 or fewer processors). Most of these species would be sourced from Australian catchers.

The species mentioned, by at least 3 respondents, as those under-utilised, and for which potential could exist included:

- Sea roe or Urchin;
- Crab;
- Crayfish;
- Octopus;
- Tuna;
- Abalone;
- Clam meat;
- Golden and Silver perch; and
- Flathead.

7.9.4 FUTURE OF AUSTRALIAN AQUACULTURE INDUSTRY AS A SUPPLIER TO VALUE-ADDED PROCESSING INDUSTRY

Base: All Respondents (Section A And B)

	TOTAL	PROCESSING ACTIVITY							
		GENERAL/ MAINLY DOMESTIC	GENERAL/ MAINLY EXPORT	CANNERY	SMOKEHOUSE	PRE-PREPARED MEAL PRODUCER	ELABORATE TRANSFORMER	AQUACULTURE PROCESSOR	KEEP ALIVE
	(123)	(40)	(41)	(9)*	(6)*	(7)*	(5)*	(9)*	(6)*
	%	%	%	%	%	%	%	%	%
GOOD FUTURE/A LOT OF POTENTIAL	30	35	20	22	50	29	40	44	33
NONE	18	25	22	11	-	-	-	22	-
IF ECONOMICAL/COMPETITIVE COSTS	16	13	15	33	-	43	40	11	-
LIMITED FUTURE	14	5	15	33	-	29	20	11	33
NOT COMPETITIVE WITH IMPORTS/WILD PRODUCTS	12	10	12	22	-	14	-	11	33
CANNOT GROW/SURVIVE WITHOUT IT/ DEPEND ON EACH OTHER	11	13	2	-	33	14	20	33	-
IF CONSISTENT SUPPLY	11	3	10	-	-	71	20	11	17
LONG LEAD TIME FOR ANY COMMERCIAL RETURN	9	3	5	56	-	14	-	-	33
PREFER NON-FARMED PRODUCT	9	15	10	-	-	14	-	-	-
NEEDS GOVT. SUPPORT/IMPORT CONTROL/ FUNDING/CONTROL OF FARMS	7	5	2	11	17	-	20	22	17
GOOD POTENTIAL FOR EXPORTING AUSTRALIAN PRODUCTS	7	5	5	-	33	-	20	-	17
TO REPLACE DEPLETED WILD RESOURCES	7	5	7	-	17	-	20	11	-
IF GOOD QUALITY PRODUCTS	5	5	7	-	-	14	-	-	-
LITTLE FOR LOBSTERS/CRAYS- CAN'T FARM SUCCESSFULLY	5	3	12	-	-	-	-	-	-
BEST PLACE FOR FARMING - UNPOLLUTED WATERS	2	3	2	-	17	-	-	-	-
CAN CREATE AN OVERSUPPLY DESTROYING BUSINESS	2	-	-	-	17	-	-	-	17
ALTERNATIVE TO IMPORTS	1	-	-	11	-	-	-	-	-
OTHER POSITIVE COMMENTS	8	8	15	-	-	14	-	-	-
OTHER NEGATIVE COMMENTS	3	3	2	22	-	-	-	-	-
OTHER COMMENTS	5	5	5	11	-	-	-	-	17
DON'T KNOW	4	10	2	-	-	-	-	-	-

* Note low base

Source: Computer Printout "7047B" Table 21 Pages 39 - 41

Question: **What future do you see for the Australian aquaculture industry as a source of supply for <u>your value-added processing activities</u>?**

7.9.4 Future of Australian Aquaculture Industry as a Supplier to the Value-Added Processing Industry

Value-added processors were **polarised in their opinion of the Australian aquaculture industry as a source of supply for the value-added processing** activities for their business. The opinions of processors are detailed in Table 7.9.4 and the more common response are detailed below.

Favourably, 30% of processors specifically stated that they believed there to be good potential for the Australian aquaculture industry, however, this is conditional on raw material being cost competitive (16%). One in ten (11%) felt that value-added business growth was dependent on supply from the aquaculture industry, but supply must be consistent (11%).

Negatively, almost one in five (18%) stated outright that they do not believe there to be any future for the Australian aquaculture industry, and a further 14% believed the future limited. Approximately one in eight (12%) held the opinion that costs will never be competitive with wild species, and imports, to be used for value-added processing. Commercial viability is thought to take along time (9%), therefore, success is limited unless there is government support (7%).

7.10.1 ENHANCEMENT OF AUSTRALIA'S FISHERIES RESOURCES

Base: All Respondents (Section A & B)

	TOTAL	PROCESSING ACTIVITY								BUSINESS SIZE		
		GENERAL/ MAINLY DOMESTIC	GENERAL/ MAINLY EXPORT	CANNERY	SMOKEHOUSE	PRE-PREPARED MEAL PRODUCER	ELABORATE TRANSFORMER	AQUACULTURE PROCESSOR	KEEP ALIVE	SMALL	MEDIUM	LARGE
	(123)	(40)	(41)	(9)*	(6)*	(7)*	(5)*	(9)*	(6)*	(36)	(43)	(43)
	%	%	%	%	%	%	%	%	%	%	%	%
BETTER UNDERSTANDING OF INDUSTRY BY GOVT.	10	10	5	22	-	14	20	11	17	8	9	12
MORE GOVT. SUPPORT/LOWER CHARGES/QUOTAS PROVIDE INFORMATION	10	8	10	-	17	14	40	-	17	17	7	7
SENSIBLE RESOURCE MANAGEMENT BY INDUSTRY AND GOVT. TOGETHER	8	8	10	11	-	29	-	-	-	3	2	16
NO NEED FOR ENHANCEMENT	9	10	7	11	33	-	-	11	-	11	9	7
TAKE THE LONG TERM VIEW/ COMMITMENT TO THE INDUSTRY	7	-	7	22	-	29	40	-	-	-	-	19
MORE SCIENTIFIC INVESTIGATION/STUDY	7	10	5	11	-	-	40	-	-	8	2	12
CANNOT BE ENHANCED	7	3	12	11	-	-	-	-	17	6	9	5
RESTRICT NO. OF BOATS/ LICENCES/ENFORCE SIZE REGULATIONS	7	5	10	-	-	-	20	-	17	6	12	2
INCREASED AQUACULTURE	7	5	10	-	-	14	-	-	17	3	9	7
BETTER HANDLING TO MAINTAIN QUALITY	7	8	2	11	-	-	20	-	33	11	2	7
BETTER MKTG. CAMPAIGNS/TO INCREASE CONSUMER DEMAND	5	8	2	-	-	14	-	11	-	8	5	2
REDUCE COMPETITION- LOCALLY/FROM IMPORTS	4	-	10	-	-	-	-	11	-	3	5	5
SELF REGULATION/CONTROL IN HANDS OF INDUSTRY	3	3	-	-	-	-	20	11	17	6	5	-
REDUCE PRICE OF RAW MATERIAL	3	5	2	-	17	-	-	-	-	3	2	5
OTHER	9	10	5	22	-	-	-	33	-	-	7	19
DON'T KNOW	24	43	10	11	33	14	20	22	17	33	28	12

MULTIPLE RESPONSE ALLOWED

* Note low base

Source: Computer Printout "7047B" Table 26 Pages 55 - 57

Question: As it relates to your business, in what ways can the supply of Australia's fisheries resources be enhanced?

7.10 FUTURE ENHANCEMENT OF AUSTRALIA'S VALUE-ADDED PROCESSING INDUSTRY

7.10.1 Enhancement of Australia's Fisheries Resources

Table 7.10.1 outlines the suggested means of *enhancing* Australia's fisheries resources, as it relates to the processor's business. A range of suggestions were made, with no single response being mentioned by more than one in ten respondents.

One in four (24%) processors could not suggest any means by which fisheries resources could be enhanced.

The greatest call for fisheries resource enhancement involved **actions to be taken by the government.** Approximately one in ten respondents mentioned that the government should:

- gain a better understanding of the industry before setting guidelines for its operation (10%);
- provide more support for local industry by reducing charges and make information available about quotas, thereby allowing for long-term business planning (10%); and
- work together with those in the industry to establish the sustainable catch (8%), and related with this comment was the need for more scientific investigation (7%).

Seven percent of processors considered that a long-term view has to be taken by all operators in the industry, rather than a short-term profit maximisation strategy. By restricting the number of boat licences and enforcing size regulations, increasing the emphasis on aquaculture, and through better handling practices fisheries resource enhancement was considered likely by 7% (each) of processors.

One in twenty (5%) processors thought that better marketing campaigns should be implemented to increase consumer demand for value-added fish and seafood products.

Other suggestions made by fewer than one in twenty processors are shown in the accompanying table.

It was the belief of almost one in ten (9%) processors that there is no need to enhance Australia's fisheries resource and 7% felt the resource could not be enhanced.

In general terms, it was the larger processors who expressed the need for greater government and industry consultation, in order to understand what is the size of the resource and how to plan for its long-term sustainability.

7.10.2 UP-GRADING OF INDUSTRY EXPERTISE

Base: All Respondents (Section A & B)

	TOTAL	PROCESSING ACTIVITY								BUSINESS SIZE		
		GENERAL/ MAINLY DOMESTIC	GENERAL/ MAINLY EXPORT	CANNERY	SMOKEHOUSE	PRE-PREPARED MEAL PRODUCER	ELABORATE TRANSFORMER	AQUACULTURE PROCESSOR	KEEP ALIVE	SMALL	MEDIUM	LARGE
	(123)	(40)	(41)*	(9)*	(6)*	(7)*	(5)*	(9)*	(6)*	(36)	(43)	(43)
	%	%	%	%	%	%	%	%	%	%	%	%
ON-GOING TRAINING IN INDUSTRY AS A WHOLE/ON THE JOB	18	20	20	11	-	14	20	33	-	22	14	16
HANDLING CATCH TO MAINTAIN QUALITY	14	13	20	-	-	14	-	-	50	19	9	12
UNDERSTAND WHAT MARKETS ARE LOOKING FOR	13	15	10	11	-	29	20	-	33	19	14	7
OTHER SPECIFIC AREA OF KNOWLEDGE MENTIONS	12	20	7	11	-	14	-	22	-	14	7	16
BETTER MARKETING TECHNIQUES/ SKILLS TO CREATE DEMAND	11	10	7	22	17	14	-	11	17	8	12	12
UNITED APPROACH/LONG TERM THINKING/SUSTAINABLE DEVELOPMENT	10	13	12	-	-	29	-	-	-	6	5	16
GOVERNMENT STAFF MAKING REGULATIONS SHOULD HAVE PRACTICAL UNDERSTANDING	8	8	7	11	17	-	20	11	-	6	7	12
LOOK MORE AT TECHNOLOGY	6	5	5	-	-	14	40	-	-	6	2	9
TRAVEL TO MARKETS TO GAIN FIRST HAND EXPERIENCE/GO OVERSEAS	4	3	5	22	-	-	-	-	-	-	5	7
NONE REQUIRED	18	15	22	22	50	-	-	11	17	11	26	16
OTHER COMMENTS	12	15	12	11	17	-	20	-	17	17	12	9
DON'T KNOW	7	8	5	22	17	-	-	11	-	6	9	7

MULTIPLE RESPONSE ALLOWED

* Note low base

Source: Computer Printout "7047B" Table 27 Pages 58 - 59

Question: In what ways does the <u>expertise of personnel within the industry</u> need to be up-graded for the value-added processing sector?

7.10.2 Up-Grading of Industry Expertise

Processors were asked to indicate the ways in which they believed the *expertise of personnel* within the industry needs to be up-graded for the value-added processing sector. The responses are detailed in Table 7.10.2.

Almost one in five (18%) did not consider any further expertise to be required and 7% were uncertain of the measures needed to up-grade the expertise of industry personnel.

Mentioned by a higher proportion of processors than any other suggestion was not the need for specific training, but that of **general on-the-job training which must be undertaken on an on-going basis throughout the industry.** This was mentioned by almost one in five (18%) processors.

More specific up-grading of industry expertise was thought necessary in the area of:

- **handling procedures** to maximise product quality (14%);
- becoming more **market driven**, that is, gaining an understanding of **what the markets are looking for** in terms of products (13%); and
- having a better understanding of **marketing techniques to assist in building demand** (11%).

A recurring theme has been the establishment of a united industry group, which is concerned about the long-term sustainable development of the Australian value-added processing industry. This was mentioned by one in ten (10%) processors.

The need for decision makers in the industry to have a better practical understanding of the industry, the need to utilise technology, and the need to travel to overseas markets to gain first hand experience were each mentioned by less than one in ten processors (8%, 6%, and 4% respectively).

7.10.3 TECHNOLOGICAL IMPROVEMENTS REQUIRED FOR PRODUCT & PROCESSING DEVELOPMENT

Base: All Respondents (Section A & B)

		PROCESSING ACTIVITY							BUSINESS SIZE		
	TOTAL	GENERAL/ MAINLY DOMESTIC	GENERAL/ MAINLY EXPORT	CANNERY	SMOKEHOUSE	PRE-PREPARED MEAL PRODUCER	ELABORATE TRANSFORMER	AQUACULTURE PROCESSOR	KEEP ALIVE	SMALL	MEDIUM	LARGE
	(123) %	(40) %	(41) %	(9)* %	(6)* %	(7)* %	(5)* %	(9)* %	(6)* %	(36) %	(43) %	(43) %
TRAVEL OVERSEAS TO SEE MODERN METHODS	14	13	20	-	17	-	-	22	17	6	23	12
CONTINUAL INVESTIGATION INTO AVAILABLE TECHNOLOGY	10	5	12	11	-	14	60	-	-	6	7	16
MORE SOPHISTICATED MACHINES FOR ALL PROCESSING FUNCTIONS	9	18	5	11	17	-	-	-	-	6	14	7
MORE FUNDING TO BUY/ RESEARCH NEW TECHNOLOGY	9	8	10	-	17	-	20	22	-	11	9	7
DEVELOP NEW MACHINES FOR SPECIFIC PROCESSING FUNCTIONS	7	10	-	11	-	29	-	22	-	6	5	12
BETTER HANDLING ON VESSELS/FISHERMEN TO BE ASSISTED	7	3	10	11	-	-	20	-	17	3	5	9
MACHINES TO LOWER PROCESSING COSTS/PRICE TO CONSUMER	6	5	5	-	17	-	-	-	33	3	7	7
SUFFICIENT VOLUME/ SUPPLY TO WARRANT NEW TECHNOLOGY	5	-	10	11	-	14	-	-	-	-	5	9
OTHER PACKAGING MENTIONS	5	5	7	11	-	-	-	-	-	6	7	2
NONE REQUIRED	11	8	15	-	33	14	-	-	17	17	14	2
OTHER COMMENTS	24	28	20	33	-	14	40	33	33	19	23	30
DON'T KNOW	19	25	17	11	17	14	20	22	-	28	19	12

MULTIPLE RESPONSE ALLOWED

* Note low base

Source: Computer Printout "7047B" Table 28 Pages 60 - 62

Question: In what ways can technology for processing and product development in Australia be improved?

7.10.3 Technological Improvements Required for Product and Processing Development

Table 7.10.3 displays the suggestions of processors regarding various *technology based* improvements which could be made in processing and product development in Australia's value-added processing industry.

One in five (19%) processors were uncertain of possible technological improvements.

The most common suggestion for **processing and product development technology improvement was in learning from overseas experience:**

- to travel overseas to see the most up-to-date methods for processing and any product developments which had been made (14%); and
- the continual investigation of new technology and its suitability in Australia (10%).

In general, there was a **call for more sophisticated technology** to be used within Australia for all forms of processing - more sophisticated processing (9%), and develop new machinery (7%) - with the aim of reducing the per unit processing cost, and ultimately the price paid by the consumer (6%).

However, as noted by almost one in ten (9%) processors, **more funding is required** to buy, and research, possible new technology; and one in twenty (5%) mentioned the need for **sufficient volumes to be processed to warrant such investment.**

Seven percent of processors highlighted the need for technological improvements in on-board handling of the catch.

Amongst the other comments (24%), the need for packaging improvements to extend the shelf life and methods for the transportation of live product were cited.

7.10.4 MEANS OF INCREASING LOCAL DEMAND FOR AUSTRALIAN VALUE-ADDED PRODUCT

Base: All Respondents (Section A & B)

		PROCESSING ACTIVITY								BUSINESS SIZE		
	TOTAL	GENERAL/ MAINLY DOMESTIC	GENERAL/ MAINLY EXPORT	CANNERY	SMOKEHOUSE	PRE-PREPARED MEAL PRODUCER	ELABORATE TRANSFORMER	AQUACULTURE PROCESSOR	KEEP ALIVE	SMALL	MEDIUM	LARGE
	(123)	(40)	(41)	(9)*	(6)*	(7)*	(5)*	(9)*	(6)*	(36)	(43)	(43)
	%	%	%	%	%	%	%	%	%	%	%	%
MORE ADVERTISING/ PROMOTION	46	55	37	11	67	71	20	78	17	42	44	49
BETTER EDUCATION OF CONSUMERS/PUBLIC AWARENESS OF VARIETY	34	35	17	44	33	71	60	56	33	33	35	35
COMPETITIVE PRICING/ PRODUCE CHEAPER PRODUCTS/ LOWER COSTS	23	15	41	11	17	-	-	11	33	22	16	28
PROMOTE HEALTH ASPECTS/ DIETARY VALUE	11	15	7	11	-	-	40	22	-	8	14	12
PROTECTION FROM/ REDUCING IMPORTS	11	15	15	11	-	-	20	-	-	8	9	16
GOOD QUALITY PRODUCTS/ CONSISTENTLY	11	5	12	44	-	14	20	-	-	11	7	14
PRODUCT LABELLING TO PUSH LOCAL PRODUCT	7	8	5	-	17	14	20	-	-	6	-	14
RELIABILITY OF SUPPLY	6	5	7	22	-	-	-	-	-	6	5	7
PUSH NON-POLLUTED ASPECT OF AUSTRALIAN PRODUCTS COMPARED TO OVERSEAS	5	5	2	11	17	-	20	-	-	-	5	9
OTHER	9	5	15	-	-	14	-	11	17	6	12	7
DON'T KNOW	4	10	-	-	-	-	-	-	17	11	2	-

MULTIPLE RESPONSE ALLOWED

* Note low base

Source: Computer Printout "7047B" Table 29 Pages 63 - 65

Question: What needs to be done to increase the demand for Australian made value-added fish and seafood product within Australia?

7.10.4 Means of Increasing Local Demand for Australian Value-Added Product

Processors were asked to suggest actions which could lead to an increase in demand for Australian made value-added fish and seafood products within this country. The spontaneous suggestions are outlined in Table 7.10.4.

The three most frequently mentioned actions to increase the Australian demand for value-added fish and seafood products were broadly, to increase the awareness of fish and seafood products, offer a variety of products to meet demand, and at a price which is competitive:

- more **advertising and promotion** (46%) - which could focus on the health and dietary benefits of fish and seafood (11%), or the quality of Australian waters in which local product is caught compared with that overseas (5%);
- better **education of consumers** and heightened public awareness of the variety of products available (34%); and
- **competitive pricing** by the reduction in production costs (23%).

One in ten processors (11%) felt there should be greater **protection of locally produced product**, and as such a reduction in imported product. And along a similar theme was the suggestion to clearly **label value-added product as Australian caught and produced** (7%).

In terms of supply, to encourage demand of Australian product the value-added fish and seafood should be of consistently good quality (11%), and with defined regularity (6%).

Interestingly, general processors mainly supplying the domestic market were more likely to call for local advertising and promotion (55% compared with 46% for the total response) as a means of increasing demand for Australian product.

7.10.5 MEANS OF INCREASING EXPORT DEMAND FOR AUSTRALIAN VALUE-ADDED PRODUCT

Base: All Respondents (Section A & B)

	TOTAL	PROCESSING ACTIVITY								BUSINESS SIZE		
		GENERAL/ MAINLY DOMESTIC	GENERAL/ MAINLY EXPORT	CANNERY	SMOKEHOUSE	PRE-PREPARED MEAL PRODUCER	ELABORATE TRANSFORMER	AQUACULTURE PROCESSOR	KEEP ALIVE	SMALL	MEDIUM	LARGE
	(123)	(40)	(41)	(9)*	(6)*	(7)*	(5)*	(9)*	(6)*	(36)	(43)	(43)
	%	%	%	%	%	%	%	%	%	%	%	%
MORE MARKETING/ PROMOTION	28	30	29	11	33	29	20	44	17	25	26	35
COMPETITIVE PRICES	15	13	22	11	17	29	-	-	17	11	21	14
CONSISTENTLY HIGH STANDARD OF PRODUCTS	13	10	22	11	-	-	-	11	17	14	12	14
RESEARCH MARKET NEEDS AND OPERATE TO SUIT CUSTOMER	9	8	7	33	-	-	20	11	-	6	5	16
MORE CO-ORDINATION BETWEEN GOVT. & EXPORTERS/ THE INDUSTRY	8	3	12	11	-	-	40	11	-	6	9	9
GOVT. INCENTIVES FOR EXPORT/PROMOTION OVERSEAS	8	8	7	11	17	14	20	-	-	11	2	12
TRAVEL TO/VISIT MARKETS	6	8	7	11	-	-	-	-	-	3	7	7
PRODUCE MORE TO EXPORT/ DEMAND IS THERE/END QUOTA SYSTEM	6	3	12	-	-	-	-	-	17	3	12	-
NONE REQUIRED	5	5	5	-	-	-	20	-	17	6	7	2
OTHER COMMENTS	33	35	24	22	83	57	20	33	33	28	35	37
NOT APPLICABLE/DON'T EXPORT	8	15	-	22	-	-	-	22	-	11	14	-
DON'T KNOW	8	13	7	-	17	14	-	-	-	14	7	5

MULTIPLE RESPONSE ALLOWED

* Note low base

Source: Computer Printout "7047B" Table 30 Pages 66 - 69

Question: And what needs to be done to increase the demand for Australian made value-added fish and seafood products in the export market?

7.10.5 Means of Increasing Export Demand for Australian Value-Added Product

As distinct from building local demand, Australian processors were asked what actions could be taken to stimulate the demand for Australian value-added product in export markets. Table 7.10.5 displays the spontaneous suggestions of processors.

Just under one in ten (8%) processors indicated that export activities were not relevant to their business.

As found for the local market, the greatest proportion of processors felt the need for **more marketing and promotion of Australian made value-added product in export markets (28%). This was followed by the need to offer products at a competitive price (15%) and of a consistently high standard (13%).**

The other key actions focus on the need to **specifically target established market needs and for government to encourage Australian industry** to export value-added product. These themes are encapsulated in the responses outlined below:

- research market needs and operate to suit customer tastes (9%);
- more co-ordination between the government and exporters (8%);
- the provision of government incentives for exporters (8%);
- learn about export markets by visiting them (6%); and
- to abolish quotas to allow for greater volume production, which may then be exported (6%).

In total, another 33% "other comments" were mentioned, each be fewer than one in twenty respondents. Five percent of processors thought that no actions were required to increase demand in export markets.

7.10.6 OTHER OPPORTUNITIES TO ENHANCE AUSTRALIA'S VALUE-ADDED PROCESSING INDUSTRY

Base: All Respondents (Section A & B)

		PROCESSING ACTIVITY								BUSINESS SIZE		
	TOTAL	GENERAL/ MAINLY DOMESTIC	GENERAL/ MAINLY EXPORT	CANNERY	SMOKEHOUSE	PRE-PREPARED MEAL PRODUCER	ELABORATE TRANSFORMER	AQUACULTURE PROCESSOR	KEEP ALIVE	SMALL	MEDIUM	LARGE
	(123) %	(40) %	(41) %	(9)* %	(6)* %	(7)* %	(5)* %	(9)* %	(6)* %	(36) %	(43) %	(43) %
INCREASE EXPORTS	12	10	10	11	17	-	20	44	-	8	12	14
DIVERSIFY/TRY PROCESSING NEW/ DEMANDED SPECIES	9	8	5	-	-	14	-	33	33	3	12	9
IF BECOME MORE COMPETITIVE	7	8	7	-	-	14	-	-	33	6	7	9
BETTER MARKETING/ INCREASE PUBLIC AWARENESS OF SPECIES/ USAGE	7	8	7	11	-	-	-	11	-	11	7	2
INSTANT/READY-TO-GO MEALS/ PORTION CONTROL/PACK FOR RETAIL	6	10	-	11	-	29	-	-	-	3	9	5
LESS RED TAPE/GOVERNMENT INTERVENTION/END QUOTAS/ MORE HELP	5	3	7	-	17	14	-	-	-	6	-	9
IMPROVE THE PRODUCT/ CONSISTENTLY GOOD QUALITY	4	5	5	-	-	-	-	-	17	-	5	7
MANY NEED ONLY TO BE IDENTIFIED	4	3	2	11	17	-	-	-	17	8	2	2
NONE	20	13	29	22	33	14	-	11	17	14	21	23
OTHER	13	18	12	11	17	-	20	-	17	17	14	9
DON'T KNOW	37	43	34	33	33	29	60	44	17	44	37	33

MULTIPLE RESPONSE ALLOWED

* Note low base

Source: Computer Printout "7047B" Table 31 Pages 70 - 71

Question: What other opportunities are there for value-adding and trade in manufactured fish and seafood products by Australian businesses?

7.10.6 Other Opportunities to Enhance Australia's Value-Added Processing Industry

Table 7.10.6 shows the proportion of processors who mentioned other opportunities for the *enhancement* of Australia's value-added processing industry besides those already cited.

The greatest opportunities were seen by:

- increasing exports (12%);
- attempting to process new and other species which are currently in demand (9%); and
- by developing instant, ready-to-go, portion controlled products for the retail sector (6%).

To be successful, the Australian value-added processing industry must become more competitive (7%), increase awareness by marketing its products (7%), and improve the quality of products manufactured (4%).

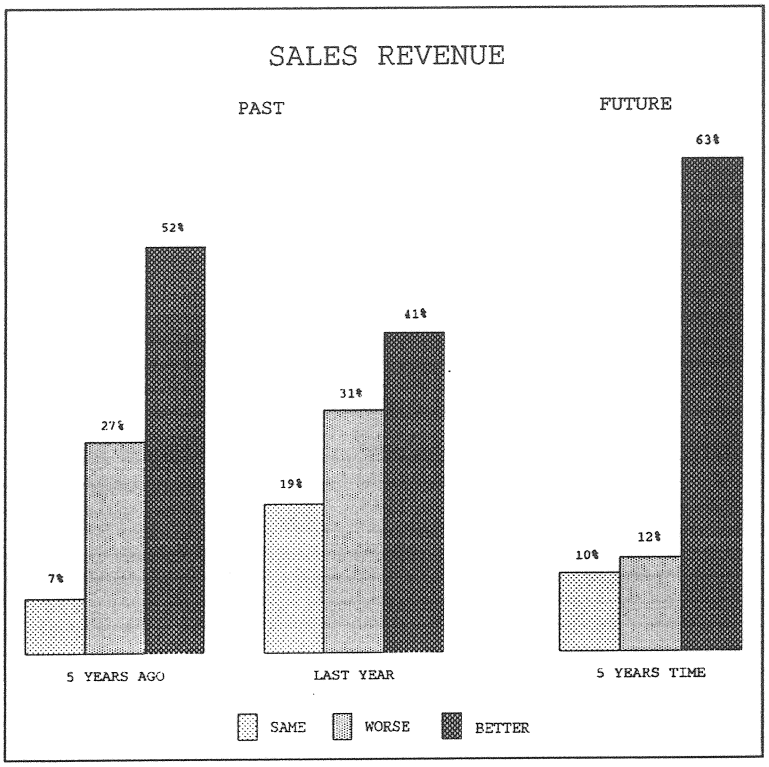
It was felt that less government red tape and intervention, such as quotas, would allow the Australian value-added processing industry to develop further (5%).

Over half (57%) - none and don't know - of the processors were unable the cite any other opportunities for value-adding and trade in manufactured fish and seafood products by Australian businesses.

7.11 PAST AND FUTURE OUTLOOK FOR BUSINESS

Tables 7.11.1 to 7.11.3 show the proportion of processors who experienced an increase, decrease, or static sales revenue last year compared with five years ago, last year and likely sales in the next five years. The overall figures for all types of processors are summarised below in Figure 7.11.

Figure 7.11



Comparing this year's sales revenue, that is the 1990/1991 financial year, with the year before and five years prior, indicates that **there is growth but it has slowed.** For example, compared with five years ago, over half of the processors reported sales growth in 1990/1991, but growth had declined to two in five processors in 1990/1991 compared with the previous year - a higher proportion had maintained constant sales in 1990/1991 to the year before. Approximately, three in ten processors reported a decline in sales in 1990/1991 compared with the year before (1989/1990) and five years prior.

The Australian value-added processing industry is fairly optimistic about future sales. In five years time, almost two in three (63%) processors believe that sales will be greater than they were in the 1990/1991 financial year. Another 10% considered that they will hold at the same level, and unfortunately 12% anticipated a decline in sales revenue compared with that in 1990/1991.

7.11.1 SALES REVENUE IN 1990/91 COMPARED TO THE LAST FIVE YEARS

Base: All Respondents

		PROCESSING ACTIVITY							
	TOTAL	GENERAL/ MAINLY DOMESTIC	GENERAL/ MAINLY EXPORT	CANNERY	SMOKEHOUSE	PRE-PREPARED MEAL PRODUCER	ELABORATE TRANSFORMER	AQUACULTURE PROCESSOR	KEEP ALIVE
	(147)	(51)	(50)	(9)*	(7)*	(7)*	(5)*	(11)*	(7)*
	%	%	%	%	%	%	%	%	%
COMPARED TO PREVIOUS FIVE YEARS									
INCREASED	52	47	48	56	57	57	60	73	57
DECREASED	27	35	26	22	29	43	-	18	-
STAYED THE SAME	7	10	8	22	-	-	-	-	-
DON'T KNOW	4	2	6	-	-	-	20	-	14
NOT RELEVANT/ NOT IN BUSINESS	7	2	8	-	14	-	20	9	29
REFUSED	3	4	4	-	-	-	-	-	-
TOTAL	100	100	100	100	100	100	100	100	100

* Note low base

Source: Computer Printout "7047A" Table 22 Page 43

Question: And has this year's sales revenue from value-added processed fish or seafood products increased, decreased or remained the same compared to five years ago?

7.11.1 Sales Revenue in 1990/1991 Compared to the Last Five Years

Table 7.11.1 shows the proportion of processors reporting increased, decreased, or static sales revenue in the past twelve months (1990/1991 financial year) when compared with the twelve month period five years prior.

It can be seen that:

- **one in two (52%) processors reported an increase in revenue** compared with five years ago;
- another 7% had maintained constant sales; and
- just over **one in four (27%) processors reported that sales revenue had declined from that five years earlier.**

Seven percent of value-added processors indicated that they were not in business five years ago.

General processors mainly supplying the domestic market was the sector more likely to have experienced a decline in sales in 1990/1991 compared with five years ago (35% compared with 27% in total).

7.11.2 SALES REVENUE IN 1990/1991 COMPARED TO LAST YEAR

Base: All Respondents

	PROCESSING ACTIVITY								
	TOTAL	GENERAL/ MAINLY DOMESTIC	GENERAL/ MAINLY EXPORT	CANNERY	SMOKEHOUSE	PRE-PREPARED MEAL PRODUCER	ELABORATE TRANSFORMER	AQUACULTURE PROCESSOR	KEEP ALIVE
	(147)	(51)	(50)	(9)*	(7)*	(7)*	(5)*	(11)*	(7)*
	%	%	%	%	%	%	%	%	%
COMPARED TO PREVIOUS YEAR									
INCREASED	41	29	40	44	57	57	40	55	71
DECREASED	31	45	26	33	43	43	-	9	-
STAYED THE SAME	19	20	20	22	-	-	40	27	14
DON'T KNOW	2	2	4	-	-	-	-	-	-
NOT RELEVANT/ NOT IN BUSINESS	4	-	6	-	-	-	20	9	14
REFUSED	3	4	4	-	-	-	-	-	-
TOTAL	100	100	100	100	100	100	100	100	100

* Note low base

Source: Computer Printout "7047A" Table 21 Page 42

Question: **Has this year's sales revenue from value-added processed fish or seafood products increased, decreased or remained the same compared to last year?**

7.11.2 Sales Revenue in 1990/1991 Compared to Last Year

Table 7.11.2 shows the proportion of processors whose sales revenue in the 1990/1991 financial year increased, decreased, or remained the same compared with the previous year.

In total:

- **two in five (41%) processors reported an increase in sales** in 1990/1991 compared with the previous year;
- another one in five (19%) noted sales had remained the same; and
- sales for **31% of processors had declined in 1990/1991** compared with the previous year.

Again it was general processors mainly supplying the domestic market who were most likely to have suffered from declining sales in 1990/1991 (45% compared with 31% in total).

7.11.3 EXPECTED SALES REVENUE IN THE NEXT FIVE YEARS

Base: All Respondents

		PROCESSING ACTIVITY							
	TOTAL	GENERAL/ MAINLY DOMESTIC	GENERAL/ MAINLY EXPORT	CANNERY	SMOKEHOUSE	PRE-PREPARED MEAL PRODUCER	ELABORATE TRANSFORMER	AQUACULTURE PROCESSOR	KEEP ALIVE
	(147)	(51)	(50)	(9)*	(7)*	(7)*	(5)*	(11)*	(7)*
	%	%	%	%	%	%	%	%	%
OVER THE NEXT FIVE YEARS									
INCREASE	63	63	46	89	43	100	100	73	100
DECREASE	12	12	22	-	14	-	-	-	-
STAY THE SAME	10	12	12	11	-	-	-	18	-
DON'T KNOW	12	10	16	-	43	-	-	9	-
REFUSED	3	4	4	-	-	-	-	-	-
TOTAL	100	100	100	100	100	100	100	100	100

* Note low base

Source: Computer Printout "7047A" Table 23 Page 44

Question: **Thinking in the next five years, do you consider that the business' sales revenue from value-added processed fish or seafood products will increase, decrease or remain the same?**

7.11.3 Expected Sales Revenue in the Next Five Years

Referring to Table 7.11.3, it can be seen that:

- **almost two in three (63%) processors expected their sales revenue to increase** over the next five years;
- another 10% anticipated that sales will remain constant; and
- 12% felt that a decline in sales revenue is likely in the next five years.

The remaining 15% of value-added processors were essentially unsure of what the future will hold.

7.12 FLOW-THROUGH OF VALUE-ADDED PRODUCT IN 1990/91

The charts which follow are an explanation of the flow-through of fish and seafood which occurs in the value-added processing industry. It is based on the data supplied by respondents to the questions listed below. It is emphasised that not all value-added processors were willing or able to provide these estimates. Therefore, it represents the best data available in regard to the value-added processing industry.

All questions were asked for each species "form" bought by value-added processors.

- Which are the main species of fish or seafood that you buy, obtain or grow for value-added processing?
- Do you buy (species) live, whole, filleted, cutlet, headed and gutted, smoked or in some other form?
- In the 1990/91 financial year, how many kilograms of (species) were bought for processing for this business?
- Who do you generally purchase this from (species) and would you describe this supplier as a fisherman/farm, general wholesaler, fish or seafood wholesaler or co-op, or a retailer?
- And what proportion of (species) that was bought for processing last year was imported and what proportion was caught in this State and in other States?
- Is this sold live, fresh, chilled, frozen, canned, smoked, dried or in a glass bottle?
- In the 1990/91 financial year, how many kilograms of (processed product) was sold by this business?
- What proportion of (processed product) was sold to the following markets: exported; domestic other VAP manufacturer; wholesaler; institutional sector; food service industry; retail supermarket; other retailer (eg. fishmonger); and direct to the consumer.

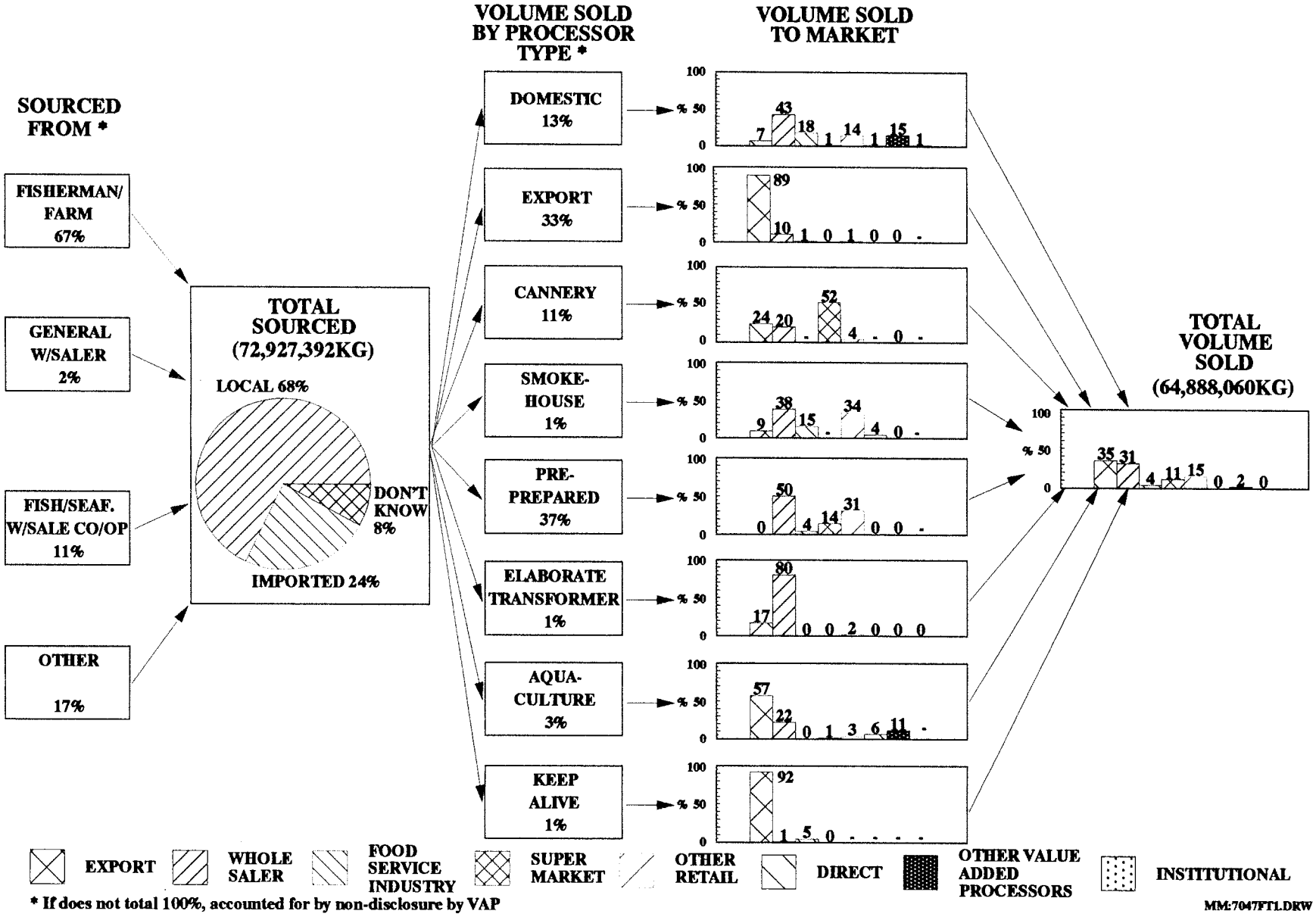
The charts prepared represent a selection of the top species of fish, molluscs and crustaceans used by the value-added processing industry. Their selection is based on:

- the actual volume of processed product involved;
- the existence of a number of processors who handle the species (to protect confidentiality); and
- minimal "missing data".

Flow-through charts exist for:

- Total fish and seafood;
- Hake;
- Tuna;
- Orange Roughy;
- Rainbow Trout;
- Mullet;
- Scallops;
- Abalone;
- Oysters;
- Squid/Calamari;
- Prawns;
- Crayfish; and
- Crabs.

FLOW THROUGH OF TOTAL FISH AND SEAFOOD FROM VAP - 1990/1991



* If does not total 100%, accounted for by non-disclosure by VAP

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Explanation in Reading the Value-Added Flow-Through Chart

The following points are based on the chart titled "Flow-Through of Total Fish and Seafood from VAP - 1990/91".

- In total, through the survey process, just over **72,927,000kg of fish and seafood was sourced** for value-adding in 1990/91.

- Of the volume sourced:

  - 68% was local product (domestic market);
  - 24% was imported;
  - 8% were uncertain of the source.

- The source from which VAP bought species to be used for value-adding activities was in the proportions:

  - 67% fisherman or farm;
  - 11% a fish or seafood wholesaler;
  - 2% a general wholesaler; and
  - 17% another type of supplier.

- In total, through the survey process, **64,888,000kg of value-added product was actually sold in 1990/91.**

- Of the volume of value-added product sold:

  - 35% was exported;
  - 31% was sold onto a wholesaler;
  - 15% moved to other retailers (eg. fishmongers) besides supermarkets;
  - 11% was sold to supermarkets;
  - 4% was sold to the food service industry;
  - 2% to other value-added processors; and
  - 0% (representing less than 1% not "no product") was sold direct to the consumer and the institutional sector.

- Of the volume of value-added product sold, it was actually sold by a business describing its **main value-added processing activity** in the proportions:

  - 37% pre-prepared meal producer;
  - 33% general processor mainly for the export market;
  - 13% general processor mainly for the domestic market;
  - 11% cannery operation;
  - 3% aquaculture producer;
  - 1% elaborate transformer;
  - 1% smokehouse; and
  - 1% mainly keep fish and seafood alive.

  This must not be confused with the product form sold. For example, 12% of the total volume of value-added product sold was not canned, but it was sold by a business describing its main activity as canning.

  A value-added processor's business activity may span any number of classifications.

- For each type of processor (as described by the main business activity) the markets supplied are indicated.

Issues in the Charts Requiring Explanation

The charts depict the differences in the processing activities of a species. The following issues, while they may appear inconsistent with market knowledge can be explained through close scrutiny of the data.

- Crayfish - 9% of the total weight sold was by a cannery, but on closer analysis, less than .5% of the total weight was actually canned by these businesses. The greatest proportion was sold live, or frozen (tails, meat or cooked).

- Scallops - 5% of the total weight sold was by a cannery, but this was not canned product. It is sorted, bagged and boxed.

- Oysters - 71% of the total weight sold was by a farmer (aquaculture), and by far the greatest proportion of product produced is exported live. Hence the high proportion of live Oysters presented in the table "Form of Value-Added Product Sold".

FORM OF VALUE-ADDED PRODUCT SOLD

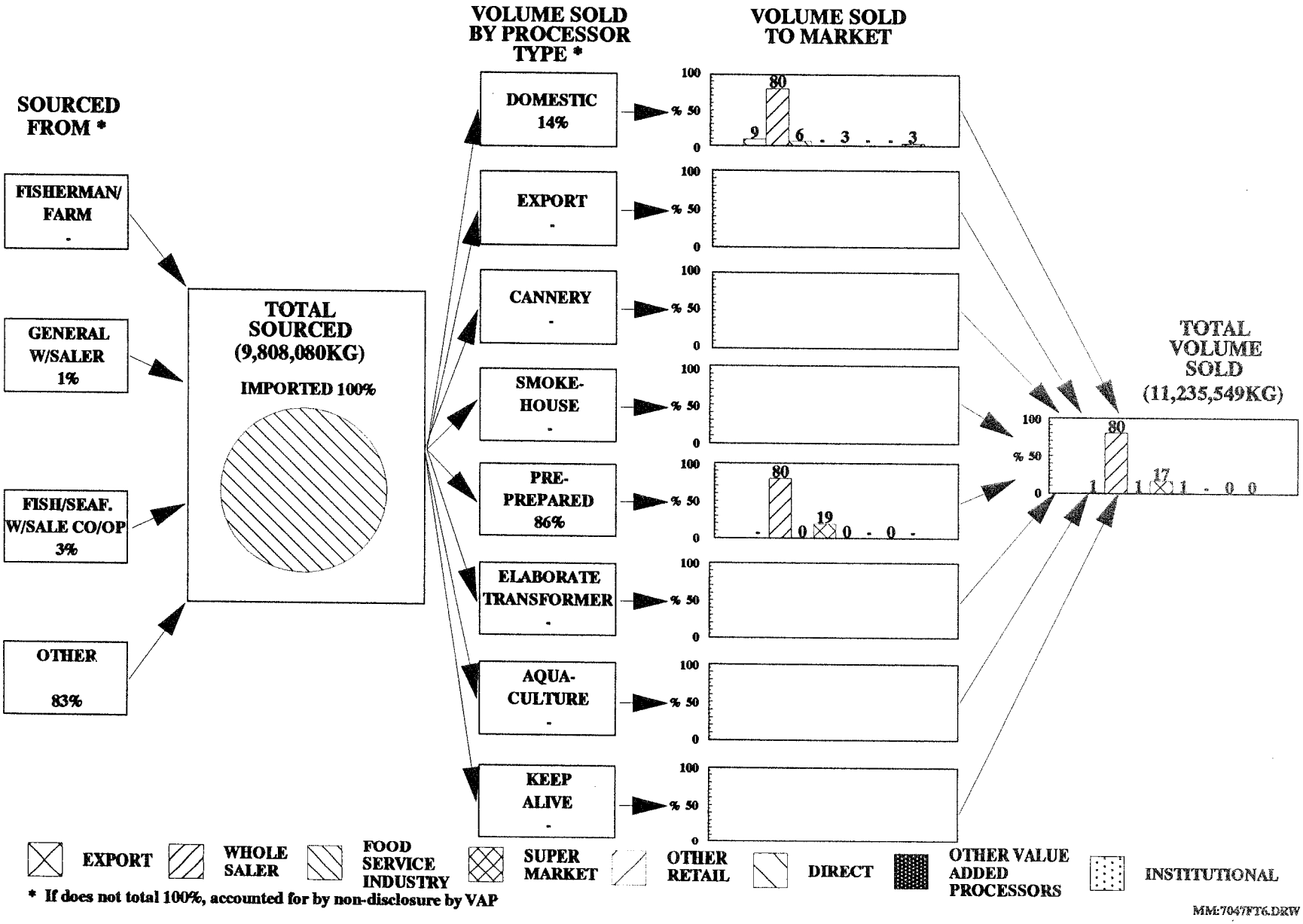
Base: Volume Sold (kg) in 1990/91 FY
(679 Forms out of 783 Forms Sold)

	TOTAL SOLD (kg)	LIVE	FRESH	CHILLED	FROZEN	CANNED	SMOKED	DRIED	GLASS BOTTLE	OTHER	NO ANSWER	TOTAL
		%	%	%	%	%	%	%	%	%	%	%
TOTAL FISH AND SEAFOOD	64,888,060	3	4	12	68	11	0	0	0	0	1	100
TOTAL FISH	37,492,276	0	6	20	59	14	1	0	-	-	1	100
TOTAL MOLLUSCS	5,105,436	5	1	1	53	38	-	0	0	1	0	100
TOTAL CRUSTACEANS	22,243,784	8	2	2	88	0	0	0	-	0	0	100
HAKE	11,235,549	-	2	1	97	-	-	-	-	-	-	100
TUNA (UNSPEC)	4,847,700	-	0	17	3	75	-	-	-	-	6	100
ORANGE ROUGHY	2,006,351	-	9	-	91	-	-	-	-	-	0	100
RAINBOW TROUT	815,050	0	26	44	21	-	8	-	-	-	1	100
MULLET	460,456	-	23	1	75	-	-	-	-	-	-	100
SCALLOPS	1,907,917	-	0	-	100	-	-	0	-	-	0	100
ABALONE	2,363,018	2	1	1	14	81	-	1	-	0	-	100
OYSTERS	2,363,018*	71	11	13	4	-	-	-	0	-	-	100
SQUID/CALAMARI	259,701	-	2	-	98	-	-	-	-	-	-	100
PRAWNS	14,060,366	0	1	1	98	0	0	-	-	-	0	100
CRAYFISH	7,941,003	22	3	3	70	0	-	-	-	0	0	100
CRABS	159,225	16	25	5	55	-	-	-	-	-	-	100

*As the greatest volume is sold through aquaculture

Source: Computer Printout "7047F" Tables 1-13; Pages 1-37

FLOW THROUGH OF HAKE FROM VAP - 1990/1991



* If does not total 100%, accounted for by non-disclosure by VAP

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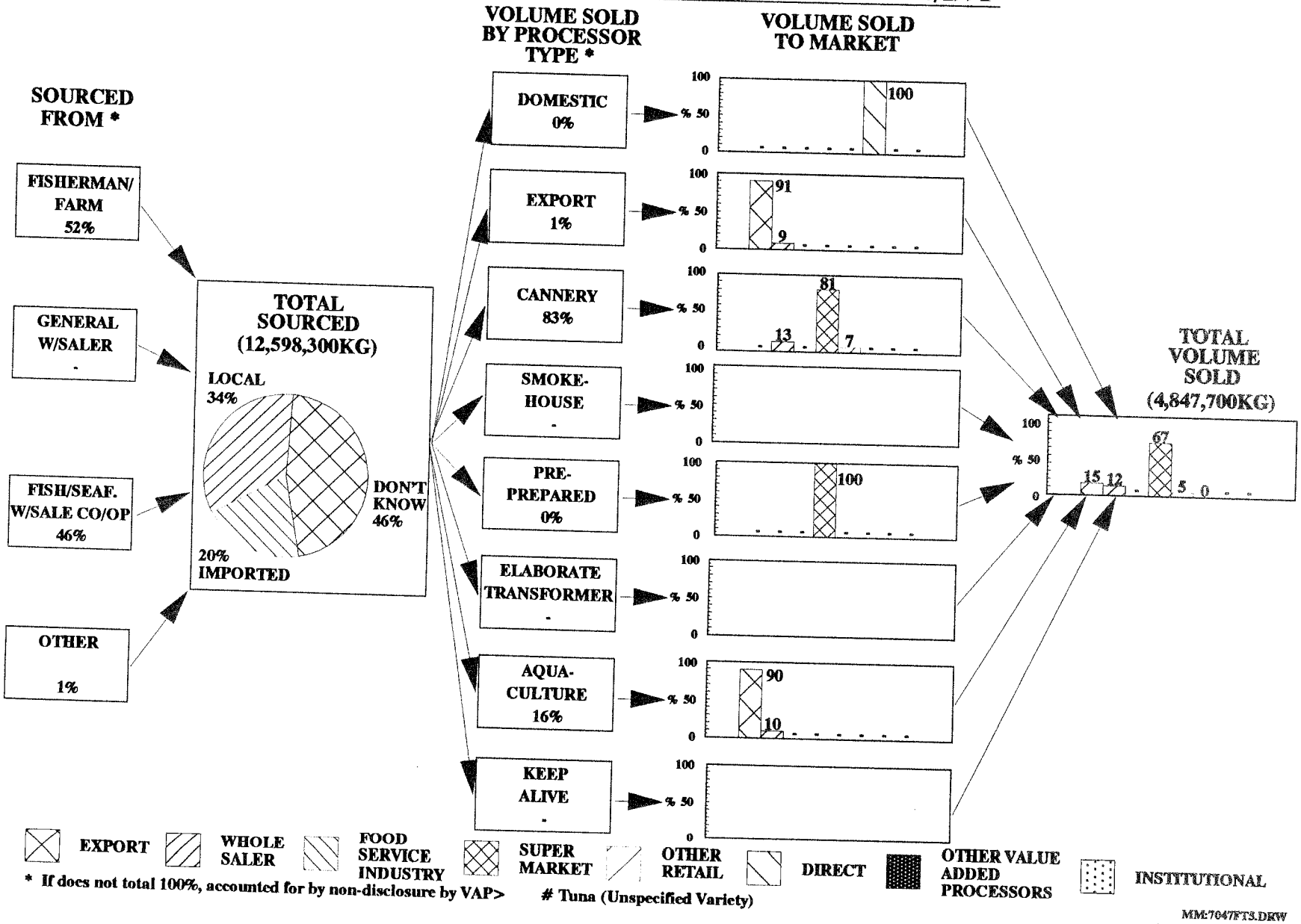
FLOW THROUGH OF TUNA (#) FROM VAP - 1990/1991

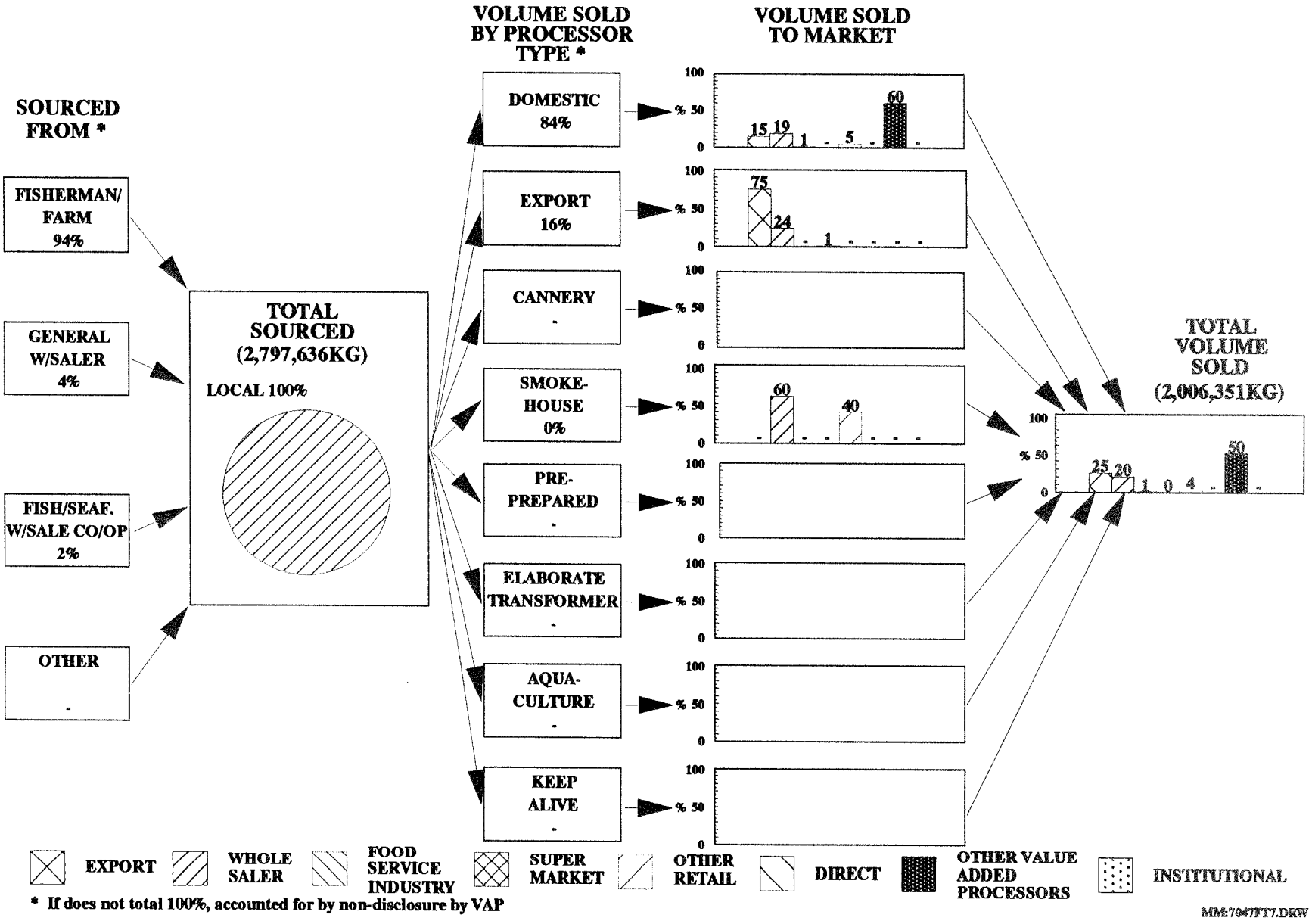


* If does not total 100%, accounted for by non-disclosure by VAP>

\# Tuna (Unspecified Variety)

MM:7047FT3.DRW

FLOW THROUGH OF ORANGE ROUGHY FROM VAP - 1990/1991



* If does not total 100%, accounted for by non-disclosure by VAP

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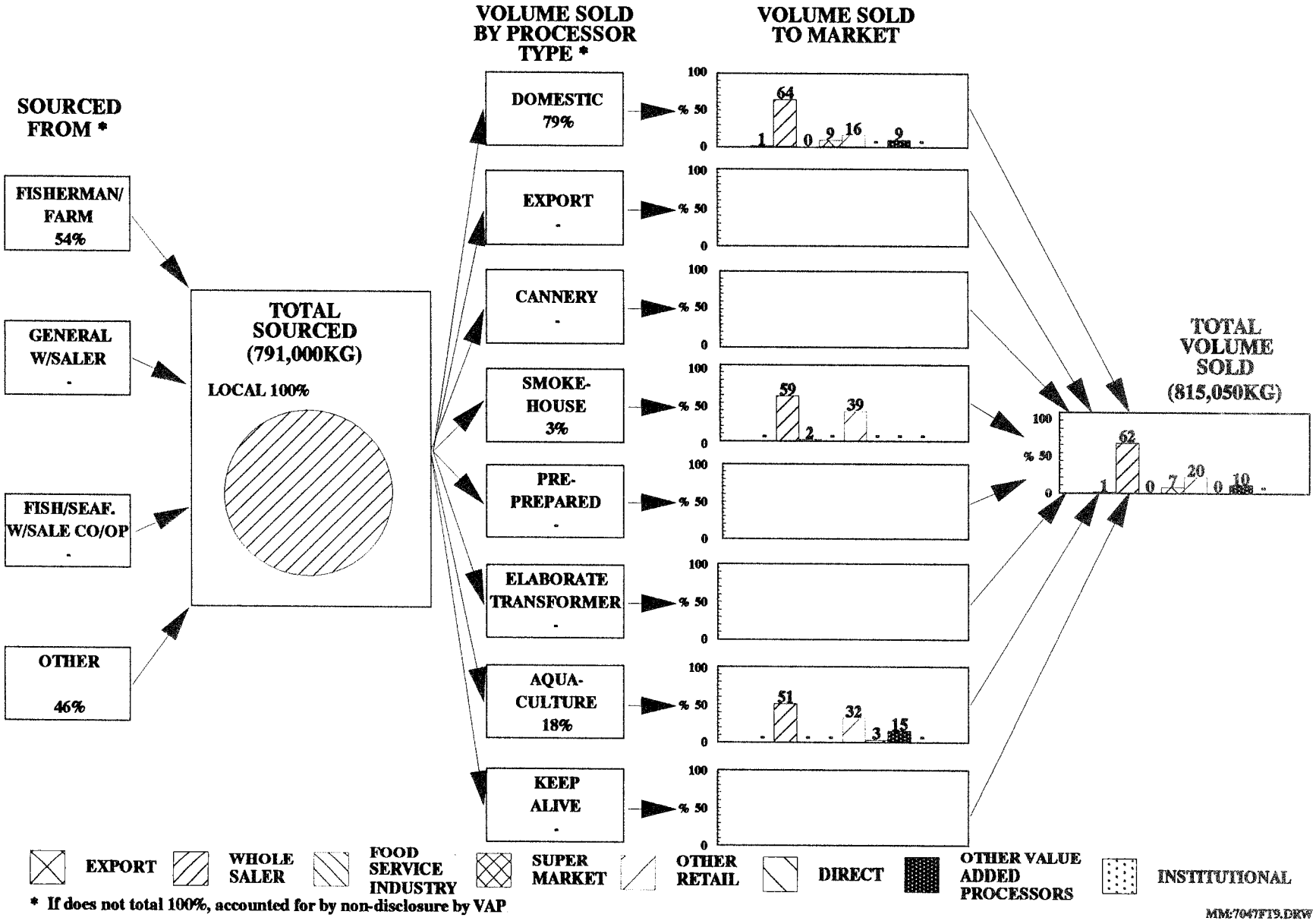
FLOW THROUGH OF RAINBOW TROUT FROM VAP - 1990/1991



* If does not total 100%, accounted for by non-disclosure by VAP

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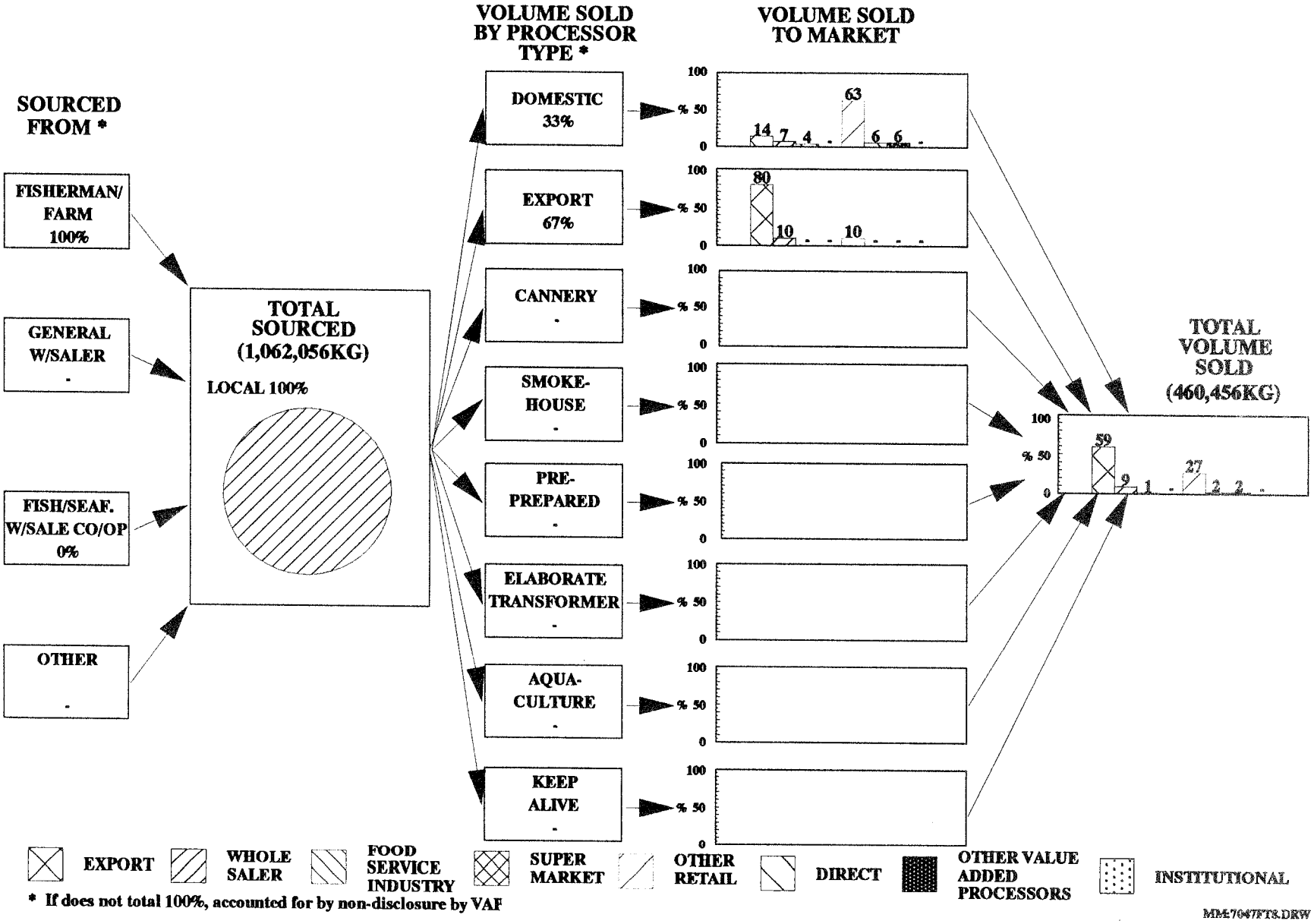
FLOW THROUGH OF MULLET FROM VAP - 1990/1991



* If does not total 100%, accounted for by non-disclosure by VAF

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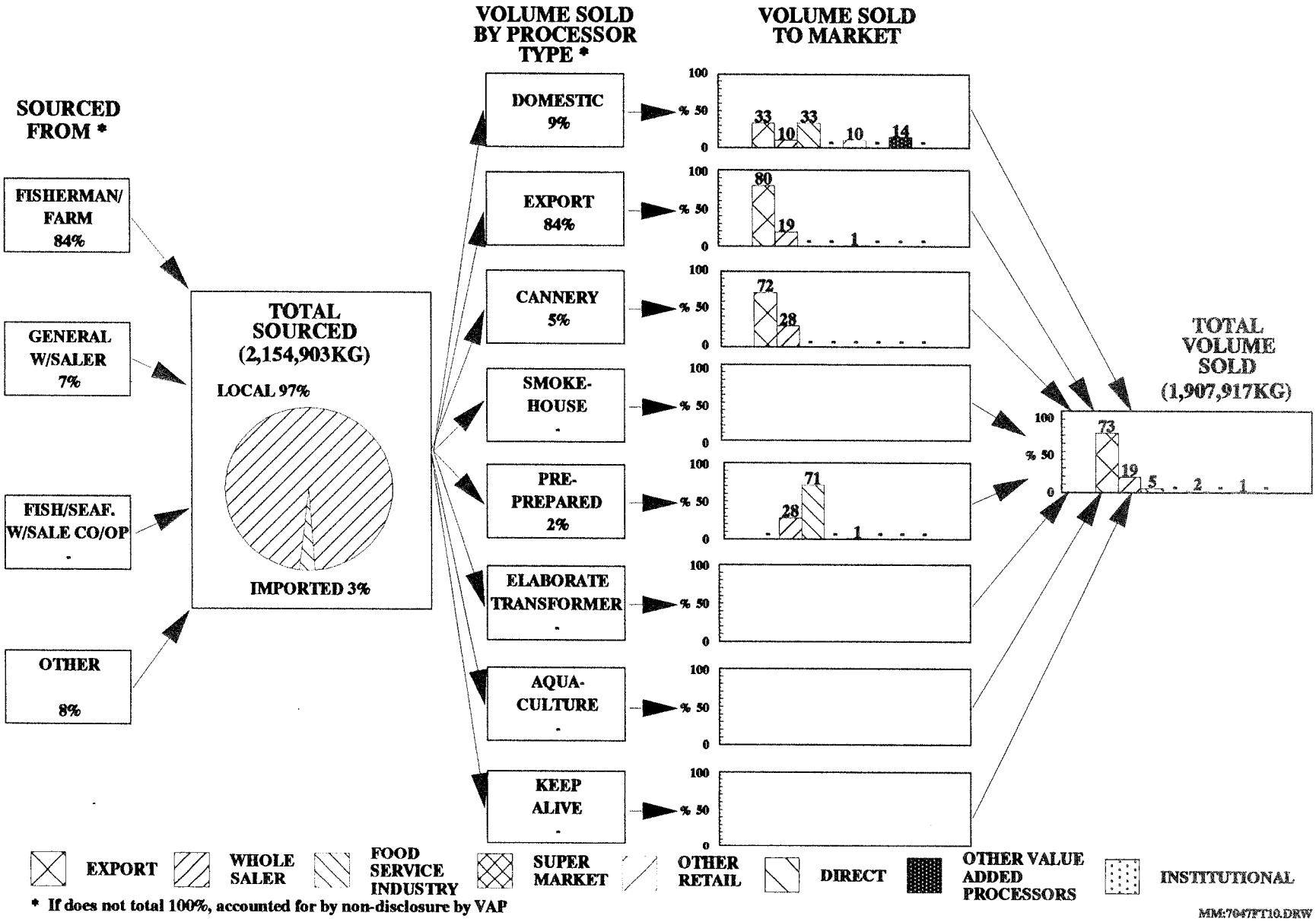
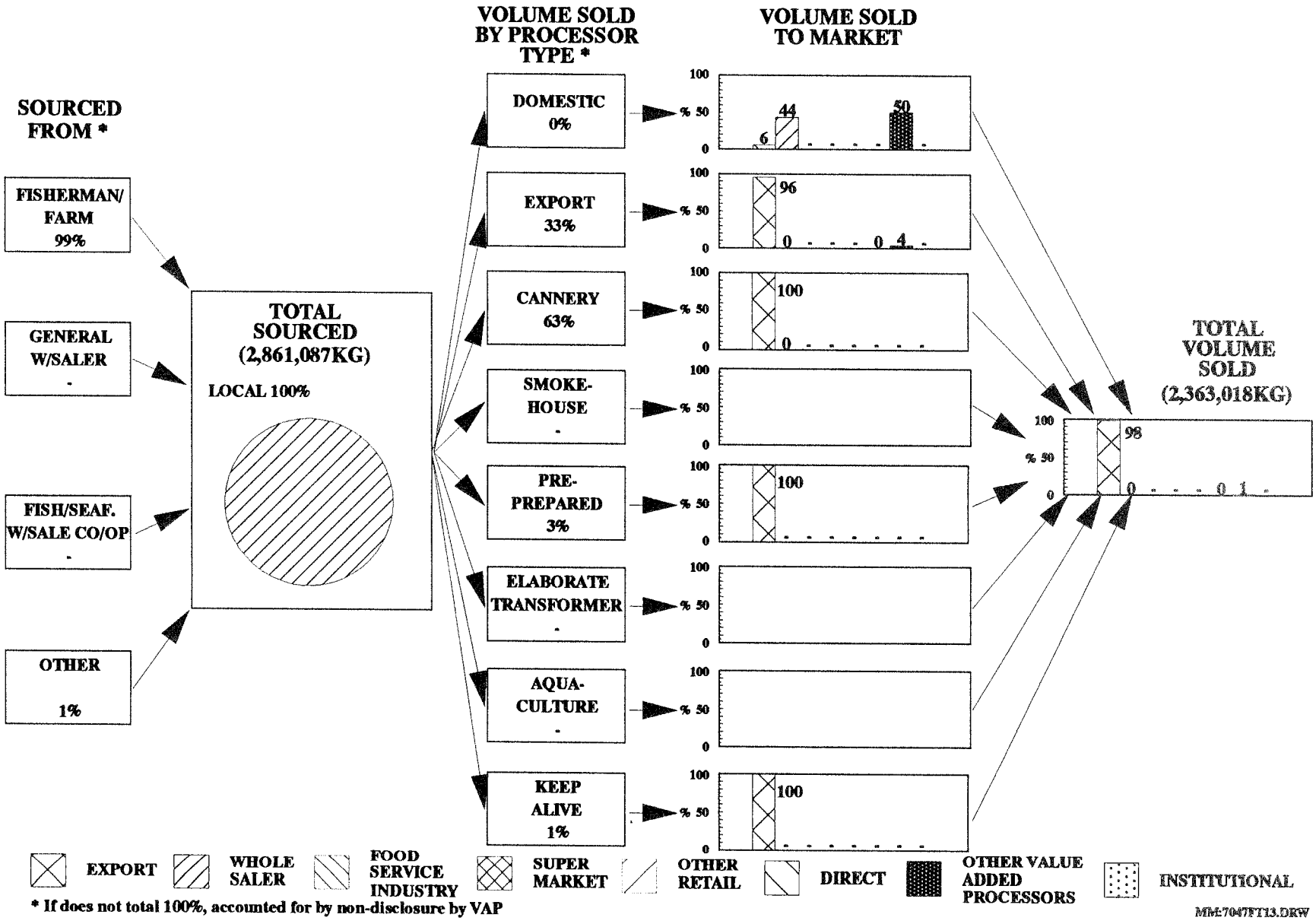
FLOW THROUGH OF SCALLOPS FROM VAP - 1990/1991



FLOW THROUGH OF ABALONE FROM VAP - 1990/1991



* If does not total 100%, accounted for by non-disclosure by VAP

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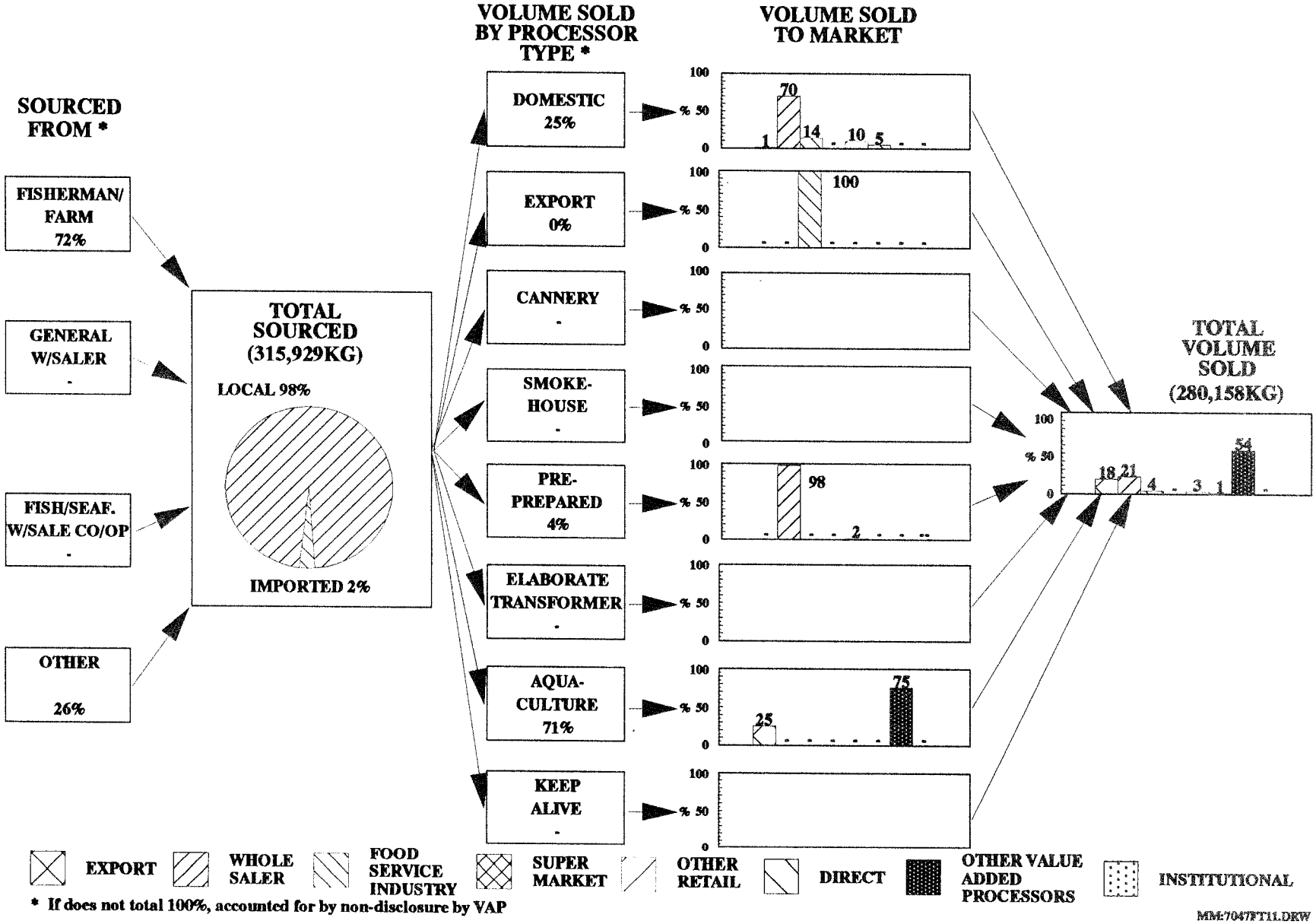
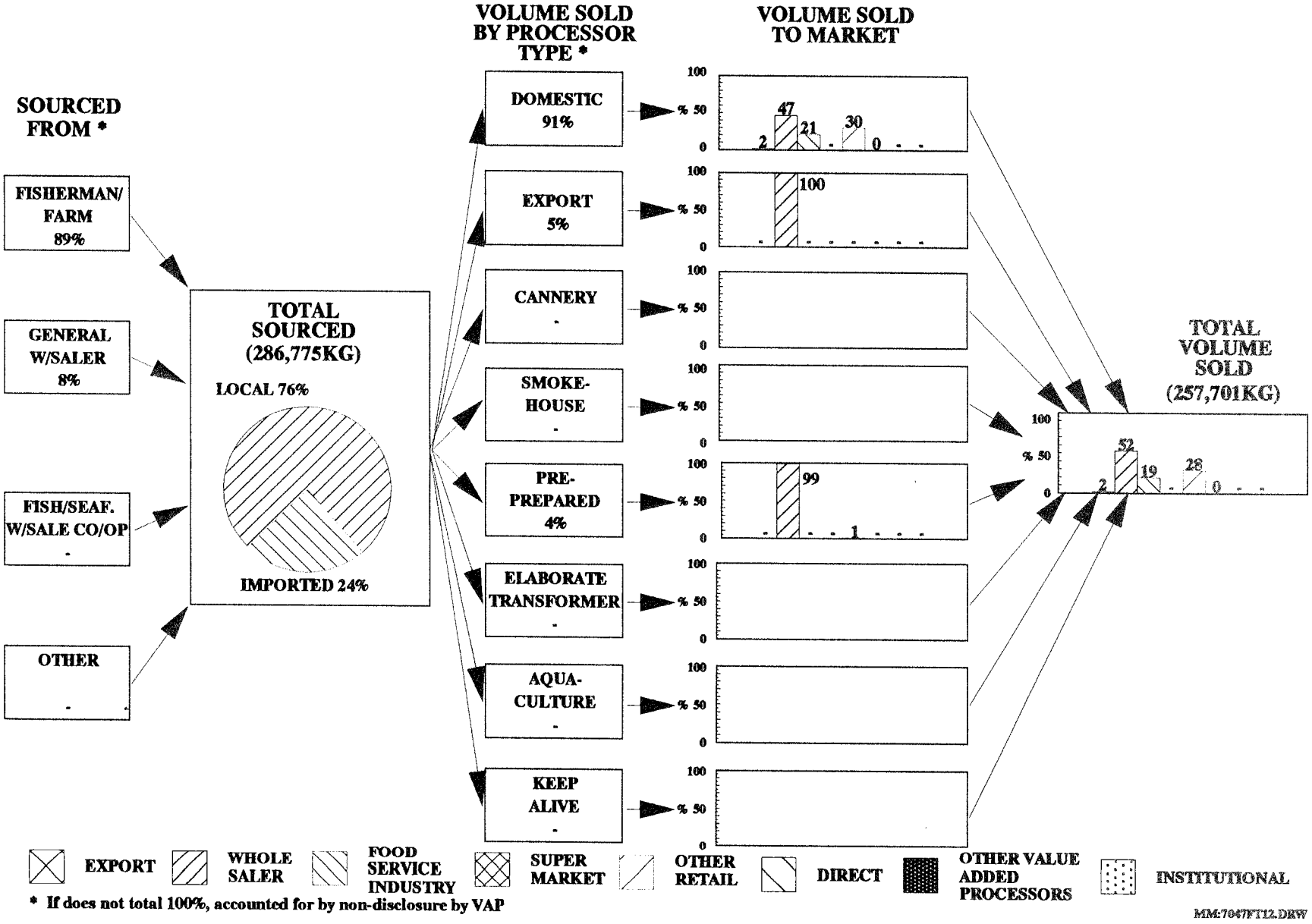
FLOW THROUGH OF OYSTERS FROM VAP - 1990/1991



* If does not total 100%, accounted for by non-disclosure by VAP

MM:7047FT11.DRW

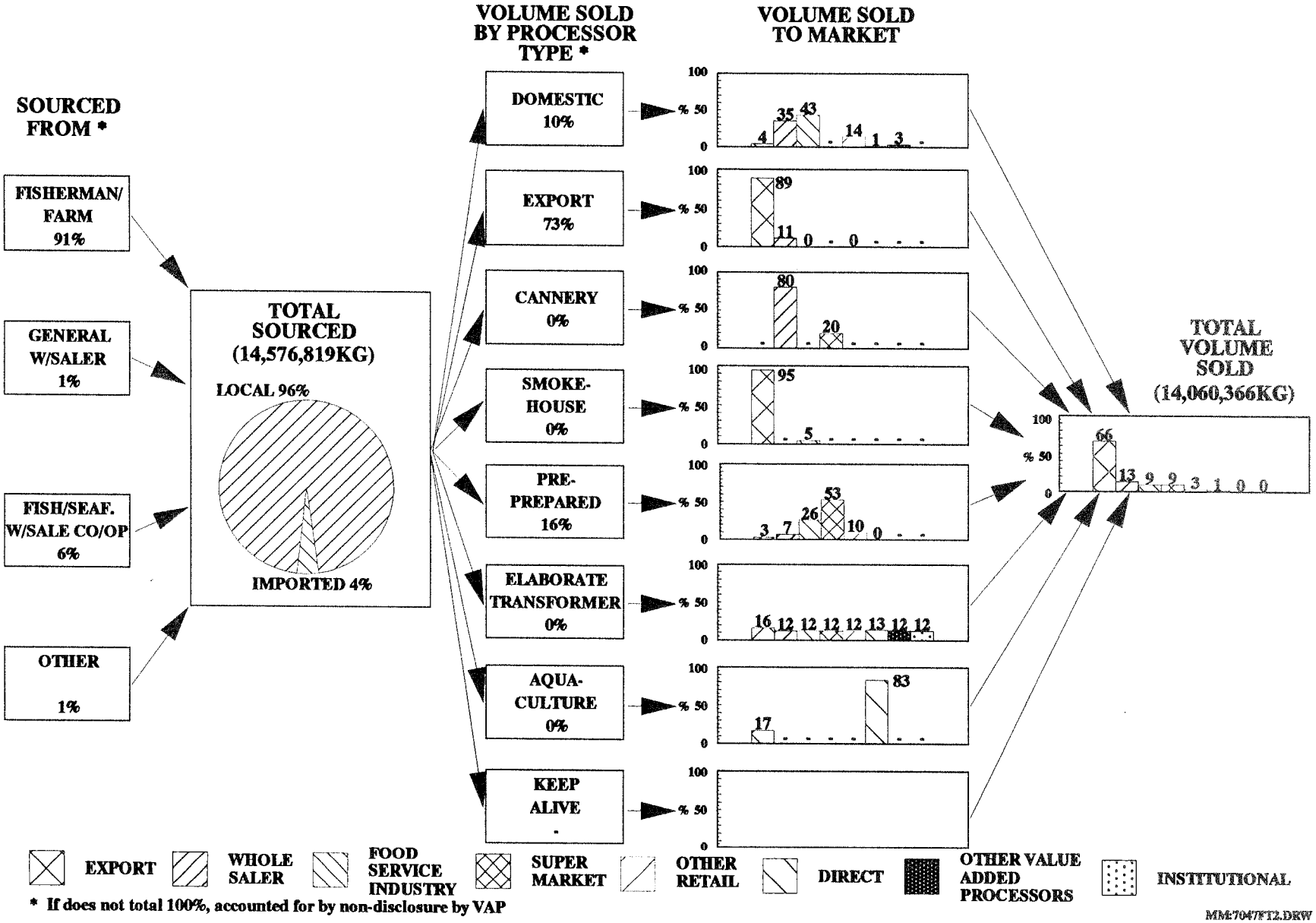
FLOW THROUGH OF SQUID/CALAMARI FROM VAP - 1990/1991



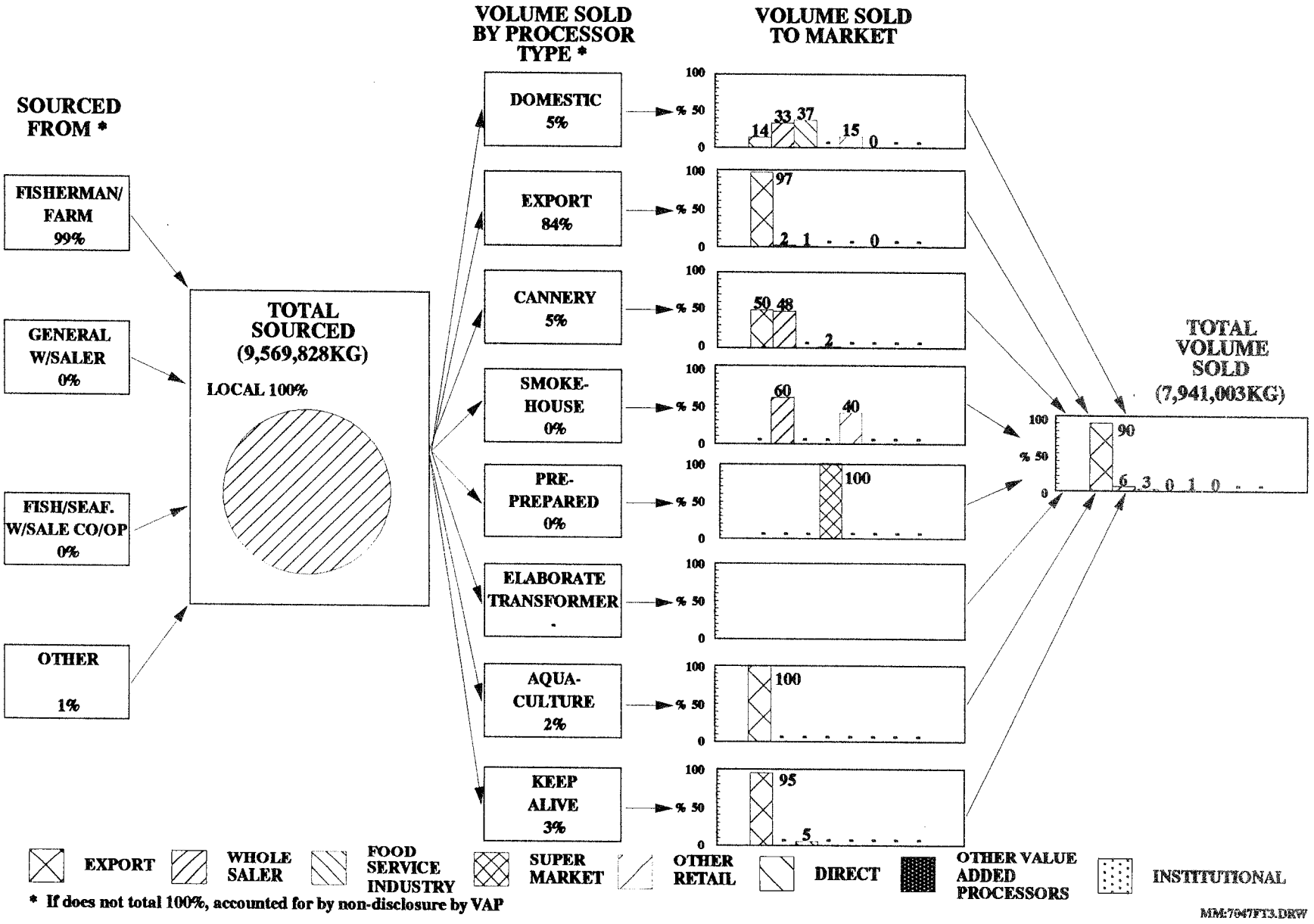
* If does not total 100%, accounted for by non-disclosure by VAP

MM:7067FT12.DRW

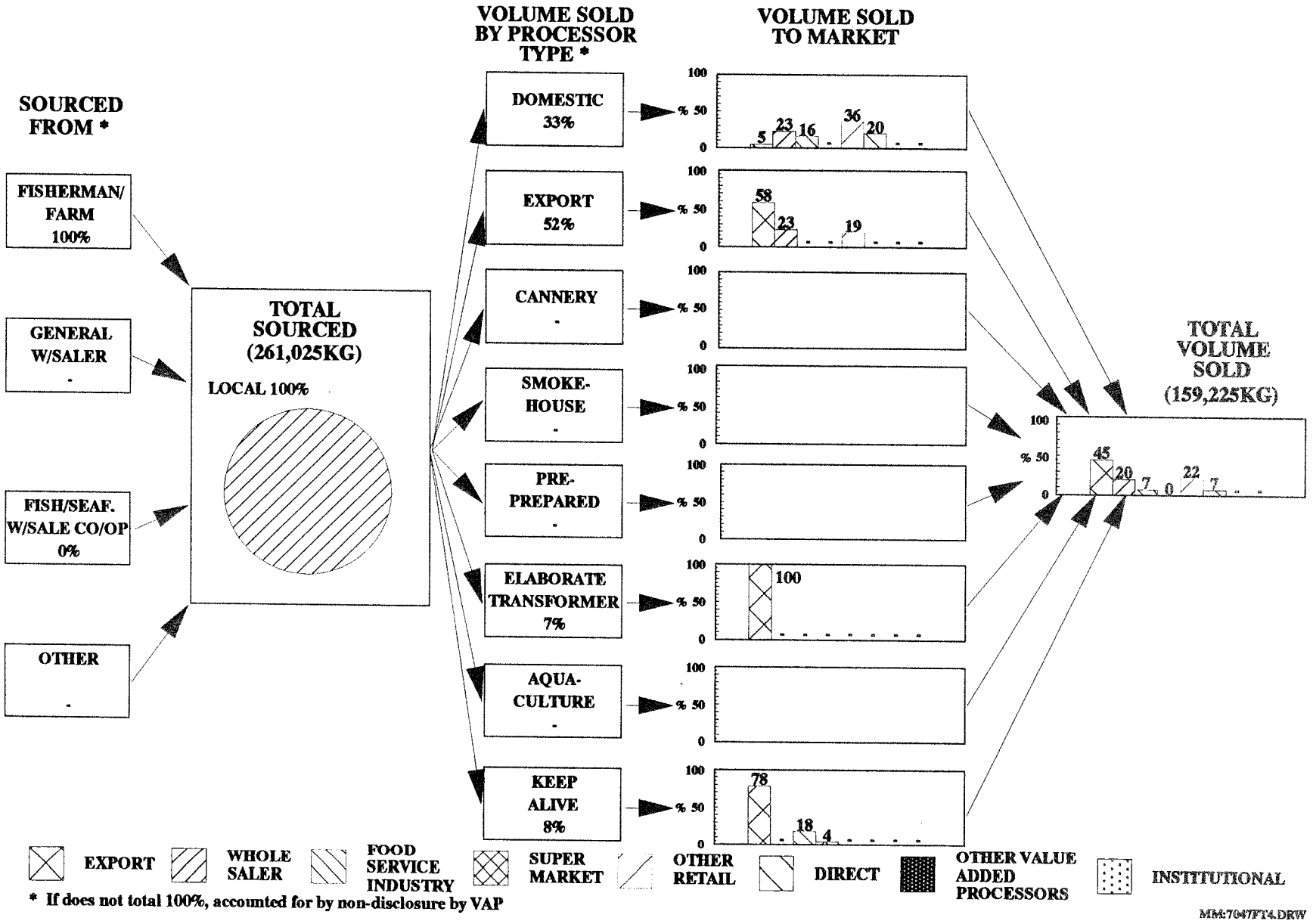
FLOW THROUGH OF PRAWNS FROM VAP - 1990/1991



FLOW THROUGH OF CRAYFISH FROM VAP - 1990/1991



FLOW THROUGH OF CRABS FROM VAP - 1990/1991



* If does not total 100%, accounted for by non-disclosure by VAP

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APPENDICES

APPENDIX 1 - Questionnaire for In-Depth Interviews

VALUE-ADDED PROCESSOR
DISCUSSION FORM

JOB NO: 7047

COMPANY NAME: _____

RESPONDENT NAME: _____

POSITION: _____

STATE: _____

Q.1 **Ensure recording sheet is completed. If imported product is used determine the main reasons for sourcing product from overseas rather than Australia?**

_____

_____

_____

_____

_____

_____

Q.2 **And who specifically are their main sources of supply?** NOTE ON RECORDING SHEET IF POSSIBLE (BY SPECIES)

FISHERMAN/FARM	=	1
GENERAL WHOLESALER	=	2
FISH/SEAFOOD WHOLESALER/CO/OP	=	3
WHOLESALE FISH MARKET	=	4
RETAILER	=	5
OTHER	=	6

GENERALLY: _____

_____

_____

_____

_____

Q.3 **Recent developments in products manufactured and sold?** PROBE FOR REASONS WHY

Q.4 **Likely future trends in products manufactured and sold?**

Q.5 **Implications of these developments and trends on the purchasing of fish and seafood species and form from Australia or overseas** (TYPES TO BE BOUGHT AND FORM).

Q.6a **There are various species of fish and seafood which have been identified by the fishing industry as being under utilised. READ OUT For businesses like this, which types do you consider to have the greatest potential for increased sales? And why?** RECORD BELOW

		Q.6a REASON
WILD SPECIES		
JACK MACKEREL (NOT JUST MACKEREL OR ANY OF THE OTHER TYPES)	01	
SQUID (OR CALAMARI)	02	
PILCHARDS OR SARDINES (NOT CANNED)	03	
AUSTRALIAN HERRING/ TOMMY RUFF	04	
SILVER TREVALLY/SKIPPY (NOT JUST TREVALLY)	05	
"FARMED" SPECIES		
FARM PRAWNS (NOT JUST PRAWNS)	06	
RAINBOW TROUT (FRESHWATER)	07	
ATLANTIC SALMON (FRESH NOT SMOKED)	08	
MUSSELS	09	
OYSTERS	10	
FARM BARRAMUNDI	11	
NONE	12	
DON'T KNOW	13	

Q.6b **Are there any other species that you see as having potential for value-added product? And are they Australian or overseas species?**

Q.7 **What future do they see for the Australian aquaculture industry as a source of supply?**

Q.8a **What are the main barriers that are inhibiting the expansion of the value-added processing of fish and seafood product?**

Q.8b **And what are the main barriers <u>within your business</u> which inhibit the further expansion of the value added processing of fish and seafood?**

Q.9 **How can these barriers be overcome?**

Q.10 **What else needs to be done to increase the consumption of Australian made value-added fish and seafood products?**

Q.11 **In what ways can productivity and efficiency of fisheries resources be enhanced?**

Q.12 **In what ways does expertise within the industry need to be up-graded?**

Q.13 **In what ways can post-harvest technology for processing and product development be improved?**

Q.14 **What opportunities are there for increasing returns and lowering costs?**

Q.15 **What other opportunities are there for value-adding and trade in manufactured fish and seafood products?**

Q.16 **What are the greatest threats likely to be faced in the future by the value-added fish and seafood industry?**

Q.17a **Compared to overseas countries what are the main strengths of the Australian value-added industry?**

Q.17b **And what are its main weaknesses?**

Q.18 **Who are your main competitors for value-added fish and seafood?**

Q.19 **Company details:**

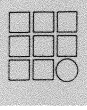
NUMBER OF SITES IN STATE: _____

NUMBER OF EMPLOYEES IN STATE: _____

OTHER STATES OF OPERATION _____

NUMBER OF EMPLOYEES _____

APPENDIX 2 - Questionnaire for the Survey of Value-Added Processors



YANN CAMPBELL HOARE WHEELER
MARKET RESEARCH
11 PRINCES STREET
ST KILDA VIC 3182
PHONE: 537 2255

TERMINATION:	NOT VAP	
	REFUSED	

START TIME: _____

FINISH TIME: _____

STATE:

VIC	1
NSW	2
Q'LAND	3
SA	4
WA	5
TAS	6

VALUE-ADDED FISH AND SEAFOOD PROCESSORS **JOB NO: 7047**

Good morning/afternoon. My name is ..... from Yann Campbell Hoare Wheeler Market Research. Today we are conducting the first ever survey to determine the size of the Australian value-added fish and seafood processing industry. And to explore what barriers exist and the opportunities for the future development of the industry.

Could I please speak with the person who has the detailed knowledge about the activities of this business?

IF NOT CONVENIENT. ARRANGE CALL BACK TIME

RECORD FOR ALL RESPONDENTS

COMPANY NAME: _____

RESPONDENT NAME: _____

POSITION: _____

TELEPHONE: _____ FAX: _____

CALL BACK DATE: _____ TIME: _____

REPEAT INTRODUCTION IF NECESSARY

Firstly, is this business involved in value-added processing (VAP) of fish or seafood. By this we mean those situations where fish or seafood raw materials are put through a process which increases their value (even where the extra costs outweigh the incremental revenue earned).

It may include where the natural raw material is changed in flavour (e.g. smoking, sauce) or description (e.g. battering) or where the value of the raw material is maximised (e.g. kept alive, fed special diet, filleted, boned). It could involve repacking fish or seafood, but not just transferring it from one place to another.

	YES	1
TERMINATE & TALLY _____	NO	2

IF NOT ELIGIBLE: ON CALL SHEET RECORD BRIEF DESCRIPTION OF THE ACTIVITIES OF THE BUSINESS I.E. IF WHOLESALER, IMPORTER, EXPORTER, DISTRIBUTOR OR AGENT BUT NOT FISH OR SEAFOOD PROCESSOR.

_____

SECTION A:

Q.1(a) **First of all, could you please describe the main business activities of this company/organisation?**

_____

_____

_____

Q.1(b) **Is this business just involved in processing fish and seafood or in other activities also (such as: general wholesale of fish and seafood, importer, exporter, retailer)?** SINGLE RESPONSE ONLY.

GO TO Q.1(d)	JUST PROCESSING	1
GO TO Q.1(c)	OTHER ACTIVITIES	2

Q.1(c) **And in what other activities is this business involved?** MULTIPLE RESPONSE ALLOWED.

GENERAL WHOLESALER	01
IMPORTER	02
EXPORTER	03
RETAILER	04
OTHER (SPECIFY) _____	05

Q.1(d) **Which of the following statements best describes the main processing activity for fish and seafood undertaken by your business?** READ OUT. SINGLE RESPONSE ONLY.

GENERAL PROCESSOR, (E.G. FILLETING OR PACKING) MAINLY FOR DOMESTIC	01
GENERAL PROCESSOR, (E.G. FILLETING OR PACKING) MAINLY FOR EXPORT	02
CANNERY	03
FISH & SEAFOOD SMOKEHOUSE	04
PRE-PREPARED FISH & SEAFOOD MEAL PRODUCER	05
"ELABORATE TRANSFORMATION" PROCESSOR	06
AQUACULTURE PROCESSOR	07
PROCESSOR MAINLY KEEPING PRODUCT ALIVE	08
OTHER (SPECIFY) _____	09

Q.1(e) **Is fish and seafood the only product processed by this business?**

GO TO Q.2	YES	1
GO TO Q.1(f)	NO	2
GO TO Q.2	DON'T KNOW	3

Q.1(f) **Which other products are processed and sold by this business?** WRITE IN

_____

_____

_____

Q.2
MAIN SPECIES OF FISH AND SEAFOOD USED FOR V.A.P.

1. _____ 31. _____

2. _____ 32. _____

3. _____ 33. _____

4. _____ 34. _____

5. _____ 35. _____

6. _____ 36. _____

7. _____ 37. _____

8. _____ 38. _____

9. _____ 39. _____

10. _____ 40. _____

11. _____ 41. _____

12. _____ 42. _____

13. _____ 43. _____

14. _____ 44. _____

15. _____ 45. _____

16. _____ 46. _____

17. _____ 47. _____

18. _____ 48. _____

19. _____ 49. _____

20. _____ 50. _____

21. _____ 51. _____

22. _____ 52. _____

23. _____ 53. _____

24. _____ 54. _____

25. _____ 55. _____

26. _____ 56. _____

27. _____ 57. _____

28. _____ 58. _____

29. _____ 59. _____

30. _____ 60. _____

Q.2 **Which are the main species of fish or seafood that you buy, obtain or grow <u>for value-added processing</u>?** RECORD OPPOSITE.

<u>IF UP TO TEN SPECIES ARE BOUGHT, CONTINUE ASKING Q.3 TO Q.10(a) - USE RECORDING SHEET; OTHERWISE SAY</u>

As previously explained, this is the <u>first ever survey</u> to determine the size of the Australian value-added fish and seafood processing industry. To do this, it is <u>critical</u> that accurate data is collected in relation to the species processed and how these are transformed, the volume purchased and the markets into which they are sold.

We do not want to take too much of your time now. But we will fax you a form to complete or we could go through the questions over the phone now. Naturally, all information you provide will be treated in the strictest confidence, aggregated with all other data and used for statistical purposes only.

METHOD OF RECORDING SHEET COMPLETION	TELEPHONE	1
	FAX SENT	2

<u>IF FAX:</u>

There are a number of more general questions that I would now like to discuss with you in regard to the value-added fish and seafood processing industry. GO TO Q.10(b).

<u>FOR EACH SPECIES (USED FOR **PROCESSING** FROM Q.2) ASK Q.3 TO Q.10(a) AND RECORD ON SEPARATE SHEETS</u>

Q.3 **Do you buy** (READ OUT SPECIES) **live, whole, filleted, cutlet, headed and gutted, smoked or in some other form?** MULTIPLE RESPONSE ALLOWED BUT RECORD EACH <u>CODE</u> ON A SEPARATE LINE.

Q.4 **In the 1990/91 financial year, how many kilograms of** (READ OUT TYPE AND FORM) **were bought for <u>processing</u> for this business?** PROBE FOR BEST ESTIMATE. IF MORE THAN ONE FORM REPEAT QUESTION.

Q.5 **Who do you generally purchase this from** (NAME OF SUPPLIER) **and would you describe this supplier as a fisherman/farm; general wholesaler; fish or seafood wholesaler or co-op; or a retailer?** RECORD NAME OF SUPPLIER AND APPROPRIATE CODE. IF MORE THAN ONE FORM REPEAT QUESTION.

Q.6 **And what proportion of** (READ OUT TYPE AND FORM) **that was bought for processing last year was imported and what proportion was caught in this state and in other states?** ENSURE TOTAL IS 100%

Q.7 **How is the** (READ OUT TYPE AND FORM) **processed, that is, what final product or pack is produced?** DESCRIBE IN DETAIL INCLUDING (IF RELEVANT) PACK SIZE AND TYPE (CONSUMER OR TRADE PACK). MULTIPLE RESPONSE ALLOWED, BUT RECORD EACH FINAL PRODUCT, PACK SIZE AND TYPE ON A SEPARATE LINE.

Q.8 **Is this** (READ OUT PROCESSED PRODUCT) **sold, live, fresh, chilled, frozen, canned, smoked, dried or in a glass bottle?** SINGLE RESPONSE ONLY.

Q.9 **In the 1990/91 financial year, how many kilograms of** (READ OUT PROCESSED PRODUCT) **was sold by this business?** PROBE FOR BEST ESTIMATE.

Q.10a **What proportion of** (READ OUT PROCESSED FISH OR SEAFOOD PRODUCT) **was sold to the following markets?** READ OUT.

EXPORTED

<u>DOMESTIC MARKET : (LOCAL/INTERSTATE)</u>

OTHER VAP MANUFACTURER
WHOLESALER
INSTITUTIONAL SECTOR
FOOD SERVICE INDUSTRY
RETAIL SUPERMARKET
OTHER RETAILER
DIRECT TO CONSUMER

OFFICE USE ONLY:	
EXPORT	1
IMPORT	2

IF EXPORT PRODUCT (SEE Q.10(a) ON RECORDING SHEET) ASK Q.10b; OTHERWISE RECORD CODE 17 IN Q.10(b) AND GO TO Q.11(a)

Q.10b **To what countries do you export processed fish and seafood and what proportion of your processed product would be sold into ...** READ OUT COUNTRIES WHERE EXPORT.

	EXPORT	PROPORTION
CHINA	01	_____%
GERMANY	02	_____%
FRANCE	03	_____%
HONG KONG	04	_____%
ITALY	05	_____%
JAPAN	06	_____%
KOREA	07	_____%
NEW ZEALAND	08	_____%
SAUDI ARABIA	09	_____%
SINGAPORE	10	_____%
SOUTH AFRICA	11	_____%
SPAIN	12	_____%
TAIWAN	13	_____%
THAILAND	14	_____%
UNITED STATES	15	_____%
OTHER (SPECIFY) _____	16	_____%
DO NOT EXPORT	17	**MUST ADD TO 100%**

Q.11(a) **For how many years has this business been established?** RECORD YEARS IN BUSINESS OR COMMENCEMENT DATE.

YEARS IN BUSINESS: _____ YEAR COMMENCED BUSINESS: _____

Q.11(b) **Has this year's sales revenue from value-added processed fish or seafood products increased, decreased or remained the same compared to last year?** RECORD BELOW.

Q.11(c) **And has this year's sales revenue from value-added processed fish or seafood products increased, decreased or remained the same compared to five years ago?** RECORD BELOW.

Q.11(d) **Thinking in the next five years, do you consider that the business' sales revenue from value-added processed fish or seafood product will increase, decrease or remain the same?** RECORD BELOW.

	Q.11(b) TO LAST YEAR	Q.11(c) TO LAST 5 YEARS	Q.11(d) NEXT 5 YEARS
INCREASE	1	1	1
DECREASE	2	2	2
REMAIN THE SAME	3	3	3
DON'T KNOW	4	4	4
NOT RELEVANT/NOT IN BUSINESS	5	5	5

Q.12(a) **At how many separate sites does this business conduct value-added processing of fish and seafood in this state?** RECORD BELOW FOR APPROPRIATE STATE.

Q.12(b) **And how many full-time and part-time/casual workers are employed in the value-added processing of fish and seafood in this state?** RECORD BELOW.

Q.12(c) **Does this business operate in any other state?** ASK Q.12(a) AND Q.12(b) FOR EACH STATE

YES 1

NO 2

	(Q.12(a) & Q.12(c)) STATES OPERATE IN (RECORD BELOW)	Q.12(a) NUMBER OF SITES	Q.12(b) EMPLOYEES FULL-TIME	PART-TIME/ CASUAL
VICTORIA	1	_____	_____	_____
N.S.W. (INCL. ACT)	2	_____	_____	_____
QUEENSLAND	3	_____	_____	_____
SOUTH AUSTRALIA	4	_____	_____	_____
WESTERN AUSTRALIA	5	_____	_____	_____
TASMANIA	6	_____	_____	_____
NORTHERN TERRITORY	7	_____	_____	_____

IF SECTION A RESPONDENT ONLY THANK RESPONDENT FOR HELP.

THANK YOU VERY MUCH FOR YOUR HELP, AS I SAID, I AM FROM YANN CAMPBELL HOARE WHEELER MARKET RESEARCH. IF YOU WOULD LIKE TO CHECK THE BONA FIDES OF THIS COMPANY. PLEASE CALL OUR COMPANY ON (03) 537 2255 DURING OFFICE HOURS.

I certify this is a true, accurate and complete interview, conducted to the best of my ability and in accordance with my instructions. I also agree to hold in confidence and not disclose to any other person the content of this questionnaire or any other information relating to this project.

INTERVIEWER SIGNATURE: .....

DATE: ..... INTERVIEWER NO.: .....

OTHERWISE COMPLETE SECTION B.

SECTION B

ENSURE RECORDING SHEETS ARE COMPLETED. IF IMPORTED PRODUCT IS OBTAINED FOR PROCESSING (Q.6 ON RECORDING FORM) ASK:

Q.13 **What are the main reasons for sourcing** (READ OUT IMPORTED SPECIES) **from overseas rather than from Australia?** REPEAT FOR EACH IMPORTED SPECIES.

(RECORD SPECIES) REASON BUY

( ):_____

_____

( ):_____

_____

( ):_____

_____

( ):_____

_____

( ):_____

_____

( ):_____

_____

( ):_____

_____

( ):_____

_____

Q.14(a) **What are the major recent developments in the types and ways in which products are processed and sold by your business?** PROBE FOR PRODUCT CHANGES, PACKAGING, TECHNOLOGY, ETC.

_____

_____

_____

_____

Q.14(b) **And what developments or advancements in the types and ways in which products are processed and sold are likely for your business in the next five years?** PROBE FOR PRODUCT CHANGES, PACKAGING, TECHNOLOGY, ETC.

_____

_____

_____

_____

Q.15 **What are the implications of these developments and trends on your purchasing of fish and seafood species and forms from Australian suppliers, and from overseas suppliers** (PROBE FOR TYPES TO BE BOUGHT AND FORM)?

_____

_____

_____

Q.16a **There are various species of fish and seafood which have been identified by the fishing industry as being under utilised. READ OUT For businesses like this, which types do you consider to have the greatest potential for increased sales through value-added processing?** RECORD BELOW

FOR THOSE IDENTIFIED AS HAVING POTENTIAL (Q.16a CODE 1) ASK:

Q.16b **And what are the main reasons for believing that the potential lies with** (READ OUT EACH TYPE MENTIONED IN Q.16a)?

	Q.16a			Q.16b
WILD SPECIES	**YES**	**NO**	**DON'T KNOW**	**REASONS**
JACK MACKEREL (NOT JUST MACKEREL OR ANY OF THE OTHER TYPES)	1	2	3	_____
SQUID (OR CALAMARI)	1	2	3	_____
PILCHARDS OR SARDINES (NOT CANNED)	1	2	3	_____
AUSTRALIAN HERRING/ TOMMY RUFF	1	2	3	_____
SILVER TREVALLY/SKIPPY (NOT JUST TREVALLY)	1	2	3	_____
"FARMED" SPECIES				
FARM PRAWNS (NOT JUST PRAWNS)	1	2	3	_____
RAINBOW TROUT (FRESHWATER)	1	2	3	_____
ATLANTIC SALMON	1	2	3	_____
MUSSELS	1	2	3	_____
OYSTERS	1	2	3	_____
FARM BARRAMUNDI	1	2	3	_____

Q.17(a) **Are there any <u>other</u> under utilised species that you consider to have potential <u>for value-added processing</u> in your business?** RECORD BELOW.

Q.17(b) **Would** (READ OUT SPECIES) **be mainly sourced from Australian waters or from overseas?** SINGLE RESPONSE ONLY.

	Q.17(a)	Q.17(b) AUSTRALIA	Q.17(b) OVERSEAS
1.		1	2
2.		1	2
3.		1	2
4.		1	2
5.		1	2
6.		1	2
7.		1	2
8.		1	2
9.		1	2
10.		1	2

Q.18 **What future do you see for the Australian aquaculture industry as a source of supply for <u>your value-added processing activities</u>?**

_____

_____

_____

Q.19 **What are the <u>main barriers</u> that are inhibiting the expansion of the value-added processing of fish and seafood products <u>in Australia</u>?** PROBE THOROUGHLY. MULTIPLE RESPONSE ALLOWED.

COST OF LABOUR	01
COST OF POWER	02
COST OF EQUIPMENT/MACHINERY	03
COST OF AUSTRALIAN RAW MATERIAL (PRICE)	04
GOVERNMENT CHARGES (E.G. DPIE) (SPECIFY) _____	05
GOVERNMENT INTERVENTION (E.G. ITQ'S AND TAC)	06
UNRELIABILITY OF SUPPLY	07
LACK OF TRAINING	08
LIMITED SIZE OF AUSTRALIAN POPULATION	09
POOR MANAGEMENT ATTITUDE/PRACTICES/EXPERTISE	10
LIMITED DOMESTIC RESOURCE/SMALL FISHERIES/ VOLUME	11
LIMITED OVERSEAS RESOURCE	12
DIFFICULTY ACCESSING UP-TO-DATE TECHNOLOGY	13
OTHER (SPECIFY) _____	14
DON'T KNOW	15

Q.20(a) **And what are the main barriers within your business which inhibit the further expansion of the value-added processing of fish and seafood?**

FOR EACH BARRIER, ASK Q.20(b)

Q.20(b) **How can** (READ OUT BARRIER) **be best overcome?**

Q.20(a) BARRIERS	Q.20(b) HOW TO OVERCOME

Q.21 **What opportunities are there for increasing net returns for value-added processing businesses like this?**

Q.22 **As it relates to your business, in what ways can the supply of Australia's fisheries resources be enhanced?**

Q.23 **In what ways does the expertise of personnel within the industry need to be up-graded for the value-added processing sector?** PROBE FOR SPECIFIC INFORMATION

Q.24 **In what ways can technology for processing and product development in Australia be improved?**
PROBE FOR SPECIFIC INFORMATION

Q.25(a) **What needs to be done to increase the demand for Australian made value-added fish and seafood product within Australia?**

Q.25(b) **And what needs to be done to increase the demand for Australian made value-added fish and seafood products in the export market?**

Q.26 **What other opportunities are there for value-adding and trade in manufactured fish and seafood products by Australian businesses?**

Q.27 **What are the greatest threats likely to be faced in the future by the value-added fish and seafood industry in Australia?** PROBE THOROUGHLY. MULTIPLE RESPONSE ALLOWED.

HIGH COST OF AUSTRALIAN RAW MATERIAL	01
HIGH COST OF AUSTRALIAN LABOUR	02
HIGH COST OF EQUIPMENT/MACHINERY	03
COMPETITION FROM OVERSEAS/ IMPORTING OF PRODUCT	04
COMPETITION FROM OVERSEAS/DUMPING OF PRODUCT	05
LIMITED DOMESTIC RESOURCE/PRODUCT	06
LIMITED OVERSEAS RESOURCE	07
UNRELIABILITY OF SUPPLY	08
HIGH PRICE OF AUSTRALIAN PRODUCT	09
DIFFICULTY ACCESSING UP-TO-DATE TECHNOLOGY	10
ENVIRONMENTALISTS/GREEN LOBBY	11
GOVERNMENT CHARGES	12
GOVERNMENT INTERVENTION	13
OTHER (SPECIFY) _____	14
DON'T KNOW	15

Q.28(a) **Compared to overseas countries what are the main strengths of the Australian value-added fish and seafood industry?**

CLEAN WATER	01
ADVANCED TECHNOLOGY	02
QUALITY RESOURCE (FISH & SEAFOOD)	03
ABUNDANT SUPPLY	04
STRICT HEALTH REGULATIONS (DPIE)	05
OTHER (SPECIFY) _____	06
_____	
NONE	07
DON'T KNOW	08

Q.28(b) **And what are the main weaknesses of the Australian value-added fish and seafood industry?**

COST OF LABOUR/WAGE STRUCTURE	01
COST OF EQUIPMENT/MACHINERY	02
LACK HIGH VOLUME OF RAW MATERIAL (FISH & SEAFOOD)	03
COST OF AUSTRALIAN RAW MATERIAL	04
LACK OF VISION/INTEREST BY BUSINESSES	05
LIMITED KNOWLEDGE OF CONSUMERS	06
SUBSTITUTION OF SPECIES	07
LITTLE/CO-OPERATION IN SUPPLY CHAIN	08
UNRELIABILITY OF SUPPLY	09
NOT MARKET DRIVEN	10
LACK OF MANAGEMENT EXPERTISE	11
OTHER (SPECIFY) _____	12
NONE	13
DON'T KNOW	14

Q.29(a) **Finally, thinking about the value-added fish and seafood products sold by this business, within Australia, who are your main competitors?** PROBE FOR NAME (COMPANY) OF IMPORTERS AND DOMESTIC (AUSTRALIAN) V.A.P.

_____

_____

_____

NONE 01

DON'T KNOW 02

ASK ONLY IF EXPORT PRODUCT (SEE Q.10(a) ON OUTPUT RECORDING SHEET

Q.29b **Thinking of the value-added product which the business exports, which markets represent the greatest competition?**

Q.29(c) **And which markets offer the greatest potential?**

	Q.29(b) COMPETITION	Q.29(c) POTENTIAL
CHINA	01	01
GERMANY	02	02
FRANCE	03	03
HONG KONG	04	04
ITALY	05	05
JAPAN	06	06
KOREA	07	07
NEW ZEALAND	08	08
SAUDI ARABIA	09	09
SINGAPORE	10	10
SOUTH AFRICA	11	11
SPAIN	12	12
TAIWAN	13	13
THAILAND	14	14
UNITED STATES	15	15
OTHER (SPECIFY) _____	16	16
NONE	17	17
DON'T KNOW	18	18

THANK YOU VERY MUCH FOR YOUR HELP, AS I SAID, I AM FROM YANN CAMPBELL HOARE WHEELER MARKET RESEARCH. IF YOU WOULD LIKE TO CHECK THE BONA FIDES OF THIS COMPANY. PLEASE CALL OUR COMPANY ON (03) 537 2255 DURING OFFICE HOURS.

I certify this is a true, accurate and complete interview, conducted to the best of my ability and in accordance with my instructions. I also agree to hold in confidence and not disclose to any other person the content of this questionnaire or any other information relating to this project.

INTERVIEWER SIGNATURE: .....

DATE: ..... INTERVIEWER NO.: .....

COMPANY NAME: _____

STATE: _____

VALUE-ADDED PRODUCT (VAP) INPUT
1990/91 FINANCIAL YEAR

INPUT FORM

CODE TO REC. ON OUT-PUT FORM	Q.2 SPECIES BOUGHT/ OBTAINED/ GROWN	Q.3 FORM							Q.4 VOLUME SOURCED (KG) IN 1990/91 FY	Q.5 NAME OF MAIN SUPPLIER	TYPE OF SUPPLIER					Q.6 MUST ADD TO 100%			
		LIVE	WHOLE	FILLET	CUTLET	HEAD & GUTTED	SMOKED	OTHER			FISHER-MAN/ FARM	GENERAL WHOLE-SALE	FISH/ SEAFOOD WHOLE-SALER/ CO-OP	RETAILER	OTHER	IMPORTED %	THIS STATE %	OTHER STATE %	DON'T KNOW
1	_____	1	2	3	4	5	6	7	_____ KG	_____	1	2	3	4	5	_____	_____	_____	101
2	_____	1	2	3	4	5	6	7	_____ KG	_____	1	2	3	4	5	_____	_____	_____	101
3	_____	1	2	3	4	5	6	7	_____ KG	_____	1	2	3	4	5	_____	_____	_____	101
4	_____	1	2	3	4	5	6	7	_____ KG	_____	1	2	3	4	5	_____	_____	_____	101
5	_____	1	2	3	4	5	6	7	_____ KG	_____	1	2	3	4	5	_____	_____	_____	101
6	_____	1	2	3	4	5	6	7	_____ KG	_____	1	2	3	4	5	_____	_____	_____	101
7	_____	1	2	3	4	5	6	7	_____ KG	_____	1	2	3	4	5	_____	_____	_____	101
8	_____	1	2	3	4	5	6	7	_____ KG	_____	1	2	3	4	5	_____	_____	_____	101
9	_____	1	2	3	4	5	6	7	_____ KG	_____	1	2	3	4	5	_____	_____	_____	101
10	_____	1	2	3	4	5	6	7	_____ KG	_____	1	2	3	4	5	_____	_____	_____	101
11	_____	1	2	3	4	5	6	7	_____ KG	_____	1	2	3	4	5	_____	_____	_____	101
12	_____	1	2	3	4	5	6	7	_____ KG	_____	1	2	3	4	5	_____	_____	_____	101
13	_____	1	2	3	4	5	6	7	_____ KG	_____	1	2	3	4	5	_____	_____	_____	101
14	_____	1	2	3	4	5	6	7	_____ KG	_____	1	2	3	4	5	_____	_____	_____	101
15	_____	1	2	3	4	5	6	7	_____ KG	_____	1	2	3	4	5	_____	_____	_____	101
16	_____	1	2	3	4	5	6	7	_____ KG	_____	1	2	3	4	5	_____	_____	_____	101
17	_____	1	2	3	4	5	6	7	_____ KG	_____	1	2	3	4	5	_____	_____	_____	101
18	_____	1	2	3	4	5	6	7	_____ KG	_____	1	2	3	4	5	_____	_____	_____	101
19	_____	1	2	3	4	5	6	7	_____ KG	_____	1	2	3	4	5	_____	_____	_____	101
20	_____	1	2	3	4	5	6	7	_____ KG	_____	1	2	3	4	5	_____	_____	_____	101

COMPANY NAME: ____________________

VALUE-ADDED PRODUCT (VAP) OUTPUT
1990/91 FINANCIAL YEAR

OUTPUT FORM

STATE: ____________________

PRODUCT OUTPUT

WRITE IN CORRES-PONDING CODE	Q.7 PROCESSED PRODUCT PRODUCED	Q.8 FORM SOLD: LIVE	FRESH	CHILLED	FROZEN	CANNED	SMOKED	DRIED	GLASS BOTTLE	OTHER	Q.9 VOLUME SOLD (KG) IN 1990/91 FY	Q.10 PROPORTION (%) OF VOLUME WHERE DISTRIBUTED - MUST ADD TO 100%: EXPORT	OTHER VAP MANUFAC-TURER	WHOLE-SALER	INSTITU-TIONAL	FOOD SERVICE INDUSTRY	RETAIL SUPER-MARKET	RETAIL OTHER	DIRECT TO CONSUMER	D/K
____	____	1	2	3	4	5	6	7	8	9	____KG	___%	___%	___%	___%	___%	___%	___%	___%	101
____	____	1	2	3	4	5	6	7	8	9	____KG	___%	___%	___%	___%	___%	___%	___%	___%	101
____	____	1	2	3	4	5	6	7	8	9	____KG	___%	___%	___%	___%	___%	___%	___%	___%	101
____	____	1	2	3	4	5	6	7	8	9	____KG	___%	___%	___%	___%	___%	___%	___%	___%	101
____	____	1	2	3	4	5	6	7	8	9	____KG	___%	___%	___%	___%	___%	___%	___%	___%	101
____	____	1	2	3	4	5	6	7	8	9	____KG	___%	___%	___%	___%	___%	___%	___%	___%	101
____	____	1	2	3	4	5	6	7	8	9	____KG	___%	___%	___%	___%	___%	___%	___%	___%	101
____	____	1	2	3	4	5	6	7	8	9	____KG	___%	___%	___%	___%	___%	___%	___%	___%	101
____	____	1	2	3	4	5	6	7	8	9	____KG	___%	___%	___%	___%	___%	___%	___%	___%	101
____	____	1	2	3	4	5	6	7	8	9	____KG	___%	___%	___%	___%	___%	___%	___%	___%	101
____	____	1	2	3	4	5	6	7	8	9	____KG	___%	___%	___%	___%	___%	___%	___%	___%	101
____	____	1	2	3	4	5	6	7	8	9	____KG	___%	___%	___%	___%	___%	___%	___%	___%	101
____	____	1	2	3	4	5	6	7	8	9	____KG	___%	___%	___%	___%	___%	___%	___%	___%	101
____	____	1	2	3	4	5	6	7	8	9	____KG	___%	___%	___%	___%	___%	___%	___%	___%	101
____	____	1	2	3	4	5	6	7	8	9	____KG	___%	___%	___%	___%	___%	___%	___%	___%	101
____	____	1	2	3	4	5	6	7	8	9	____KG	___%	___%	___%	___%	___%	___%	___%	___%	101
____	____	1	2	3	4	5	6	7	8	9	____KG	___%	___%	___%	___%	___%	___%	___%	___%	101
____	____	1	2	3	4	5	6	7	8	9	____KG	___%	___%	___%	___%	___%	___%	___%	___%	101
____	____	1	2	3	4	5	6	7	8	9	____KG	___%	___%	___%	___%	___%	___%	___%	___%	101

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