

New Opportunities for Seafood Processing Waste

Appendix 14: Small Seafood Retailers: Waste Survey and Options

**Honey and Fox
October 2016**

FRDC Project No 2013-711.40



Honey & Fox

FINAL REPORT

UNDERSTANDING SMALL SEAFOOD RETAILERS

WASTE SURVEY

17th October 2016



Background

Honey and Fox Pty Ltd were approached in August 2016 to undertake a survey on seafood waste with Australian seafood retailers to better understand how waste is utilised and disposed of in a retail setting. The survey results would also assist in identifying research opportunities on seafood waste.

The aim was to receive a minimum of 40 responses from retailers to ensure data could be statistically valid.

To ensure the greatest level of response to the survey and as a compensation of time for those participating in the survey, Honey and Fox coordinated two prizes (2 x 20cm Victorinox brand, flexi fish filleting knives valued at \$40 +GST each) to those that took part.

This project's Account Manager was Emily Mantilla, Senior Partner with Honey and Fox Pty Ltd.

Methods

Honey and Fox provided two rounds of comments/input on the draft survey developed by Curtin University to create a final survey. We also updated the survey to include the competition details and created a response box in which retailers could leave their entry nominations.

The survey was then distributed via Honey and Fox's Mailchimp retailer database in the format/style of an e-news. Industry contacts were also notified of the opportunity to encourage participation of retailers nation-wide. The industry contacts included:

- Sydney Fish Market (sent once)
- Master Fish Merchant's Association (no response)
- The Fisheries Research and Development Corporation (not sent)

This first survey distribution resulted in a total of 18 responses.

The second stage of advertising the opportunity resulted in Honey and Fox sending direct emails and calling retailers in which we had a good, professional working relationship with.

This second distribution/contact resulted in a total of 10 responses.

The final stage of advertising saw Honey and Fox send out a reminder to the entire H&F retailer database again and the following industry contacts were asked to distribute and make their members/retailers aware of the opportunity. These industry contacts were:



- Sydney Fish Market (sent out again)
- Melbourne Seafood Centre (sent once)
- Seafood Industry Victoria (no response)
- Northern Territory Seafood Council (no response)
- Master Fish Merchant's Association (no response)
- The Fisheries Research and Development Corporation (sent once)

This final attempt resulted in 17 responses.

As a result, a total of 45 responses were collected, five responses more than the anticipated target of 40.

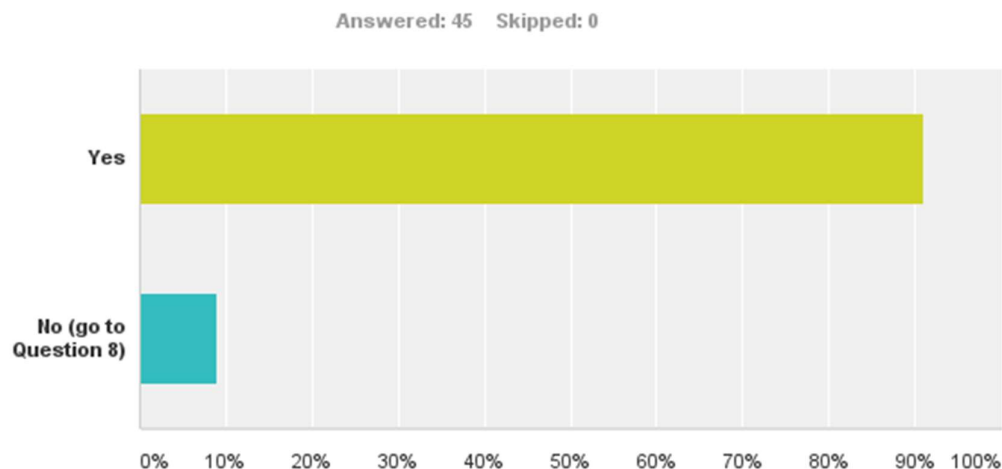
Those retailers who entered the competition left their contact details at the end of the survey (24 in total). These names were transferred to post it notes and placed in a box. The two winners were drawn randomly "from the hat" by a non- Honey and Fox partner to ensure complete non bias.

The survey closed at 12pm Adelaide time on the 17th October 2016.

Results

PART A: CURRENT STATUS OF WASTE MANAGEMENT

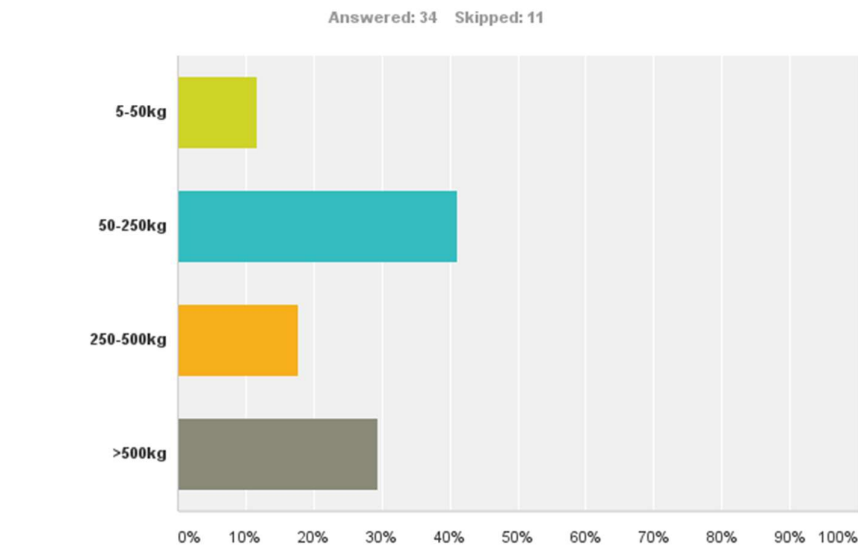
Q1. Do you fillet fish at your shop?



| Answer Options | Response Percent | Response Count |
|-----------------------|------------------|----------------|
| Yes | 91.1% | 41 |
| No (go to Question 8) | 8.9% | 4 |
| Answered question | | 45 |
| Skipped question | | 0 |

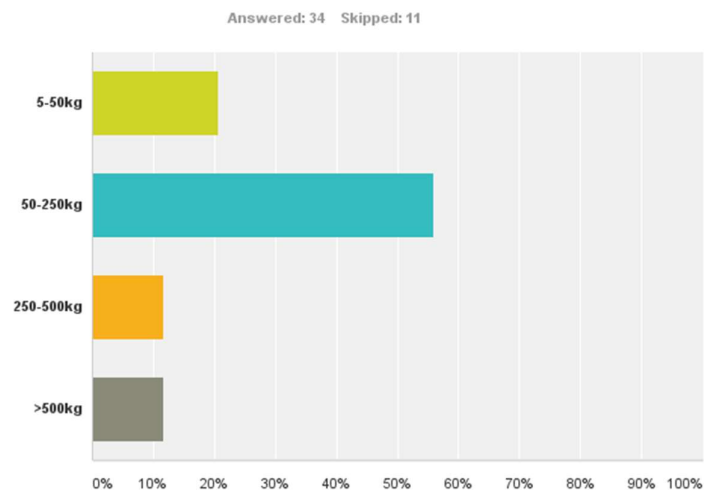


Q2. How many kilograms of whole fish do you receive each week to be processed/filleted?



| Answer Options | Response Percent | Response Count |
|-------------------|------------------|----------------|
| 5-50kg | 11.8% | 4 |
| 50-250kg | 41.2% | 14 |
| 250-500kg | 17.6% | 6 |
| >500kg | 29.4% | 10 |
| Answered question | | 34 |
| Skipped question | | 11 |

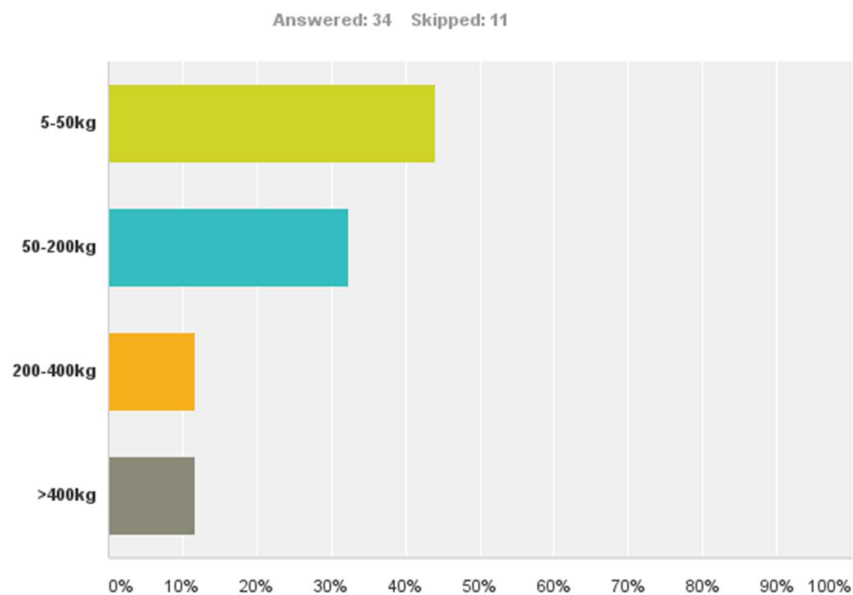
Q3. How many kilograms of fillets do you produce each week?





| Answer Options | Response Percent | Response Count |
|-------------------|------------------|----------------|
| 5-50kg | 20.6% | 7 |
| 50-250kg | 55.9% | 19 |
| 250-500kg | 11.8% | 4 |
| >500kg | 11.8% | 4 |
| Answered question | | 34 |
| Skipped question | | 11 |

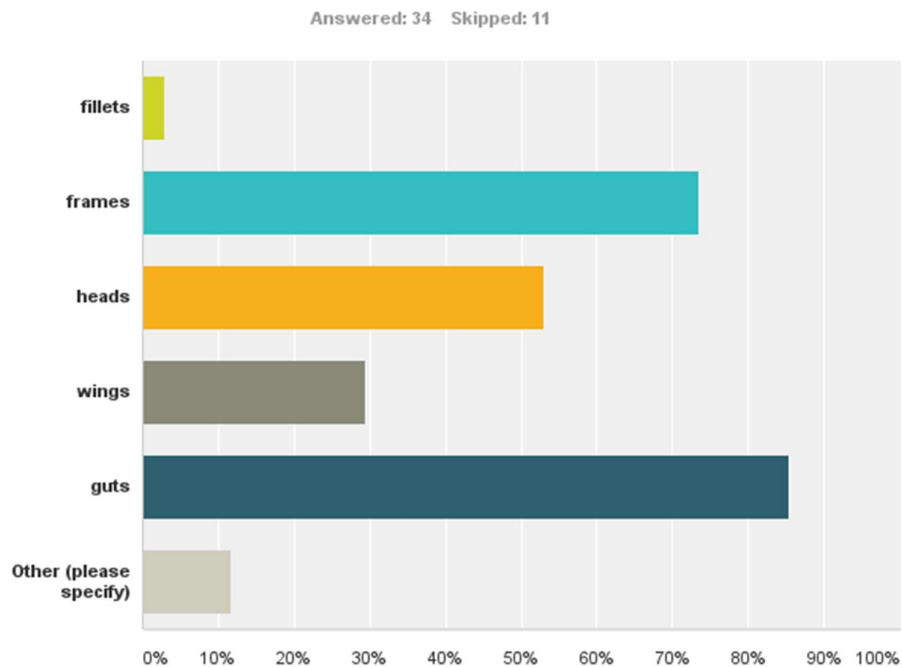
Q4. How many kilograms of finfish waste do you discard each week?



| Answer Options | Response Percent | Response Count |
|-------------------|------------------|----------------|
| 5-50kg | 44.1% | 15 |
| 50-200kg | 32.4% | 11 |
| 200-400kg | 11.8% | 4 |
| >400kg | 11.8% | 4 |
| Answered question | | 34 |
| Skipped question | | 11 |



Q5. Which parts of the fish (if any) is discarded?



| Answer Options | Response Percent | Response Count |
|------------------------|------------------|----------------|
| fillets | 2.9% | 1 |
| frames | 73.5% | 25 |
| heads | 52.9% | 18 |
| wings | 29.4% | 10 |
| guts | 85.3% | 29 |
| Other (please specify) | 11.8% | 4 |
| Answered question | | 34 |
| Skipped question | | 11 |

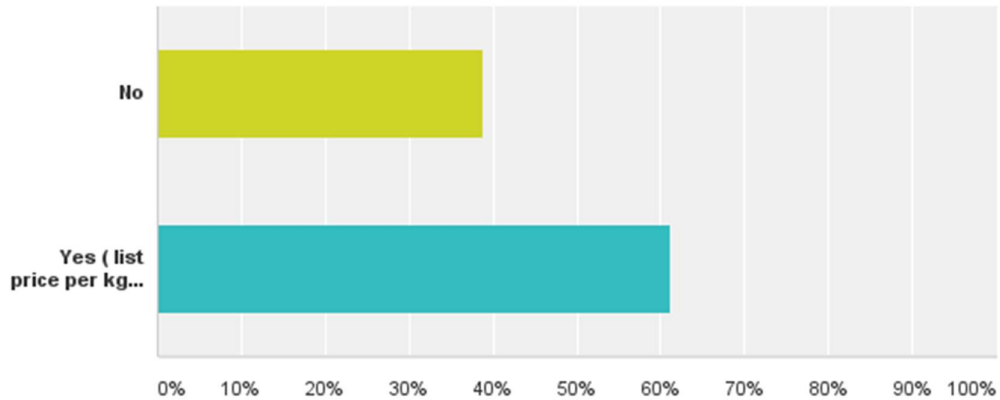
Responses for Other:

- Nothing the fish is gutted and the rest is sold
- Blood, vein and skins
- None
- Very little is discarded. Waste kept for crab bait



Q6. Do you sell fish heads in store?

Answered: 36 Skipped: 9



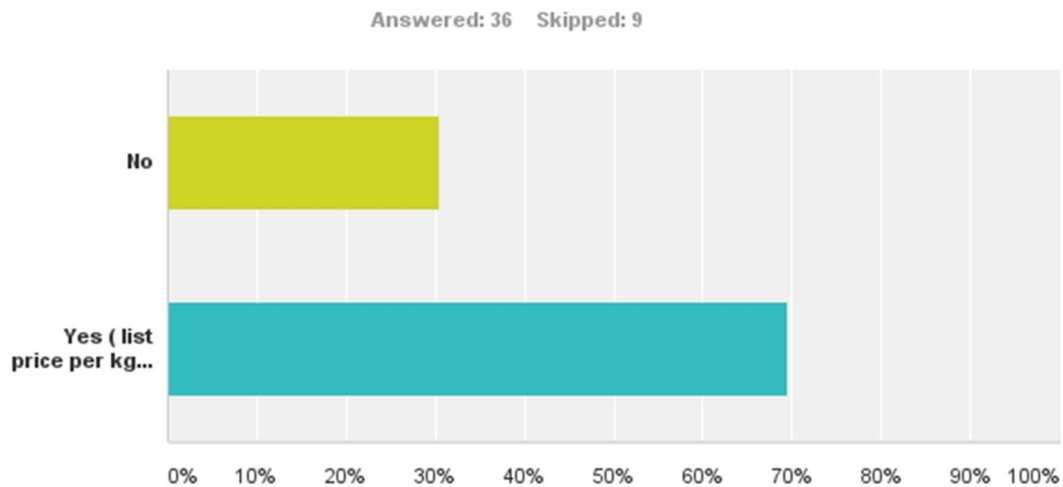
| Answer Options | Response Percent | Response Count |
|------------------------------|------------------|----------------|
| No | 38.9% | 14 |
| Yes (list price per kg sold) | 61.1% | 22 |
| Answered question | | 36 |
| Skipped question | | 9 |

Responses for price per kg sold:

- \$4.00
- \$5.00
- \$2 each
- \$2.00 per kg
- \$6.99
- \$3.50
- \$10
- \$4.99
- \$5.00
- \$4.99
- \$9.99/kg
- \$5.00
- variable
- \$6.50
- \$5/kg
- \$1.00
- \$2 per head
- CLEANED \$3.99/kg
- \$4.00
- \$5/kg
- \$10.00
- \$4.99



Q7. Do you sell fish frames in store?



| Answer Options | Response Percent | Response Count |
|------------------------------|------------------|----------------|
| No | 30.6% | 11 |
| Yes (list price per kg sold) | 69.4% | 25 |
| Answered question | | 36 |
| Skipped question | | 9 |

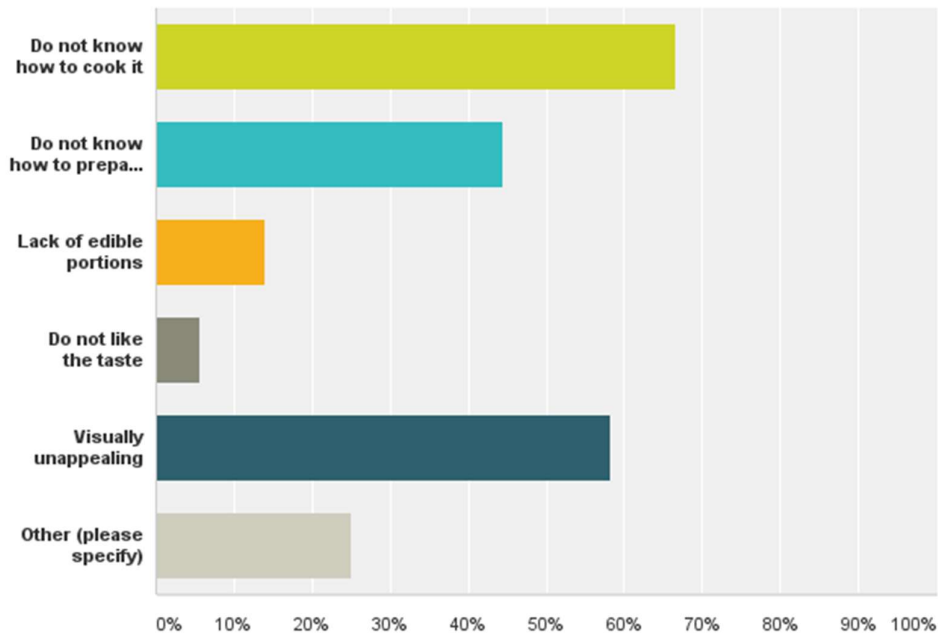
Responses for price per kg sold:

- \$4.00
 - \$5.00
 - (sold) with the heads
 - \$3.00 per kg
 - \$3.99
 - \$3.50
 - \$10.00
 - Free
 - \$4.99
 - \$5.00
 - \$4.99
 - \$9.99/kg
 - \$5.00
 - variable
 - \$6.50
 - \$2.00
 - \$1.00
 - \$2 per head
 - CLEANED \$3.99/kg
 - \$4.00
- \$2/kg
 - give away free
 - \$2.00
 - \$10.00
 - \$4.99



Q8. Why do you think consumers do not buy fish heads, frames and wings?

Answered: 36 Skipped: 9



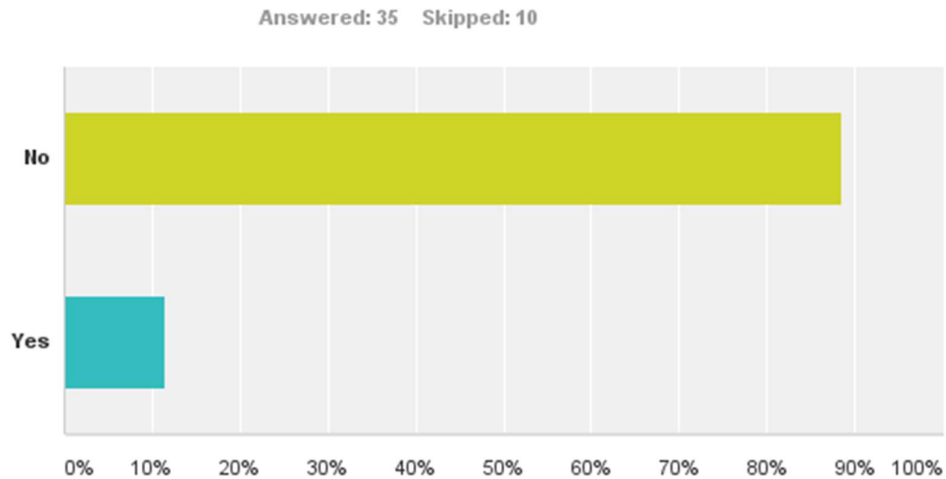
| Answer Options | Response Percent | Response Count |
|--------------------------------------|------------------|----------------|
| Do not know how to cook it | 66.7% | 24 |
| Do not know how to prepare/ clean it | 44.4% | 16 |
| Lack of edible portions | 13.9% | 5 |
| Do not like the taste | 5.6% | 2 |
| Visually unappealing | 58.3% | 21 |
| Other (please specify) | 25.0% | 9 |
| Answered question | | 36 |
| Skipped question | | 9 |

Responses for other:

- messy
- our consumers buy and heads, frames, guts they can get their hands on. For crab bait, worm bait, fish stocks etc
- not part of our culture
- not educated in cooking and utilising the heads, wings and frames. probably due to nationality and culture
- they think only the fillet is edible
- high Anglo Saxon customer base, have requests from Asians and Mauries of which we give them free as the demand is very low.
- not aware / educated
- they do
- we sell fish stock



Q10. Do you discard any waste from bivalves (oysters, mussels, scallops)?



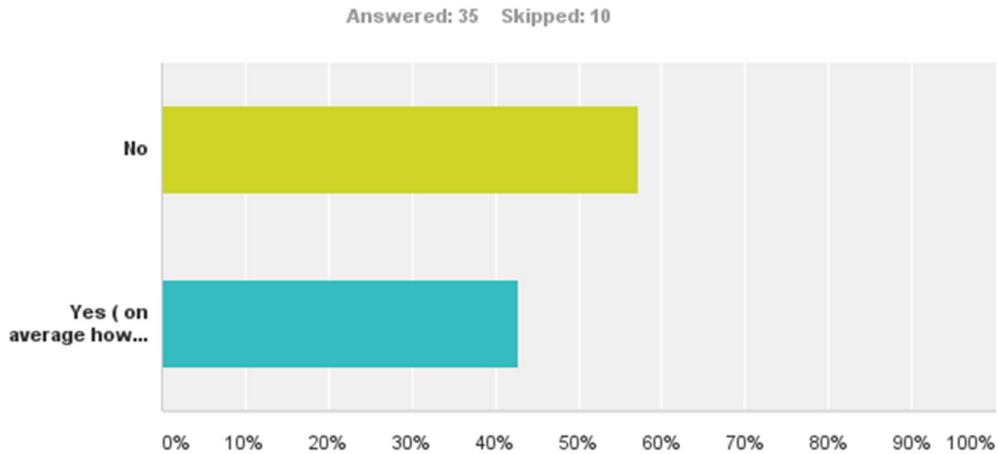
| Answer Options | Response Percent | Response Count |
|---|------------------|----------------|
| No | 88.6% | 31 |
| Yes | 11.4% | 4 |
| Yes (on average how many kilograms a week?) | | 8 |
| Answered question | | 35 |
| Skipped question | | 10 |

Responses to on average how many kgs per week:

- 100kg
- 30kg
- 20kg
- 10kg
- 200kg
- use in fish stock
- 1,000kg
- 20 kg week



Q11. Do you discard crustacean processing waste (prawns, crabs, lobsters)?



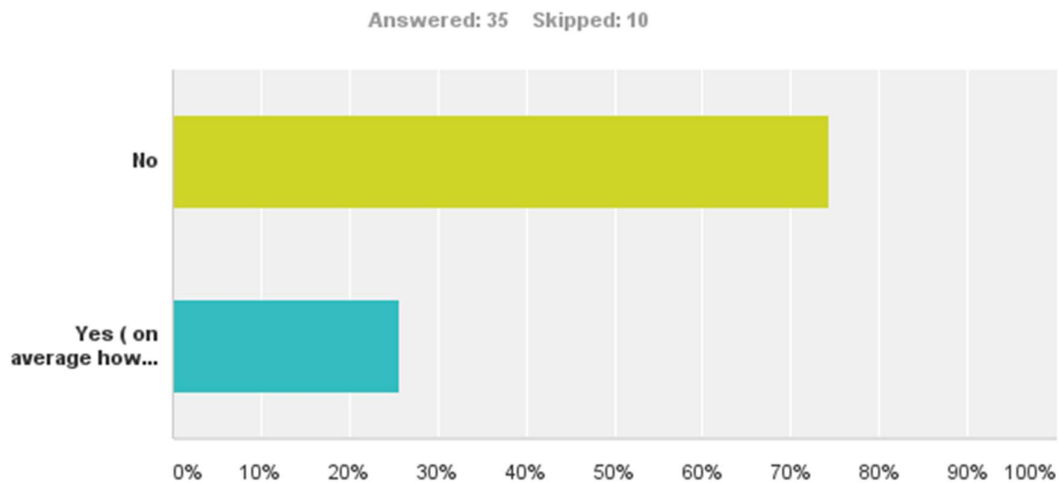
| Answer Options | Response Percent | Response Count |
|---|------------------|----------------|
| No | 57.1% | 20 |
| Yes (on average how many kilograms a week?) | 42.9% | 15 |
| Answered question | | 35 |
| Skipped question | | 10 |

Responses to on average how many kgs per week:

- 10kg
- 200kg
- 100kg
- 5kg
- probably less than 5kg - just peeling 1 or 2 kg for customers upon request
- its minimal, approx 2kg prawn shells
- 10kg
- 10kg
- 10kg
- 20kg
- 5kg
- 10kg
- use in fish stock
- 200kg
- 5kg



Q12. Do you discard squid/octopus processing waste?



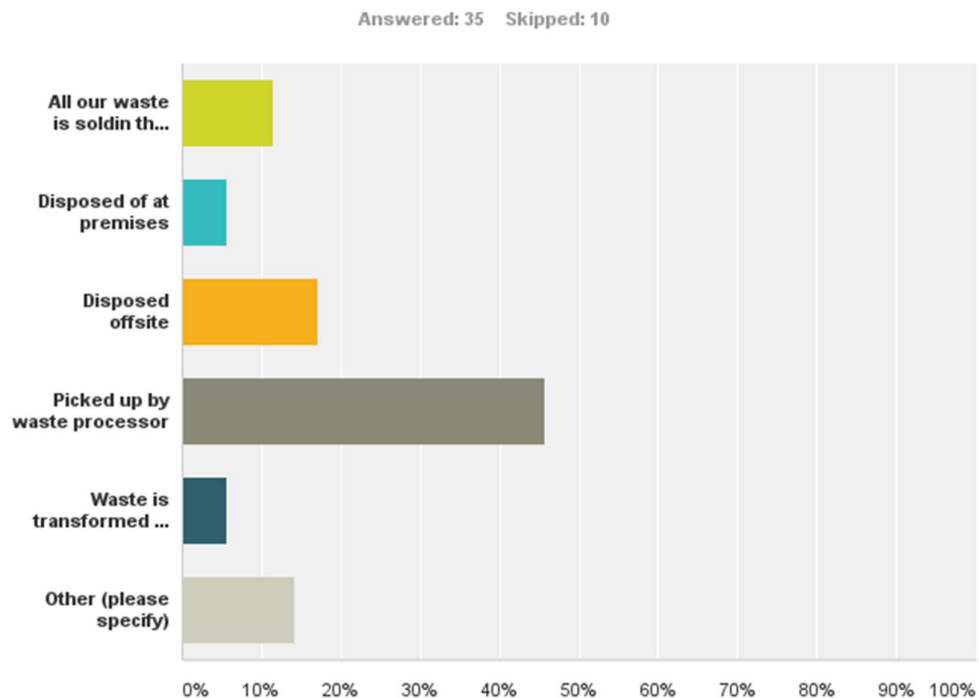
| Answer Options | Response Percent | Response Count |
|---|------------------|----------------|
| No | 74.3% | 26 |
| Yes (on average how many kilograms a week?) | 25.7% | 9 |
| Answered question | | 35 |
| Skipped question | | 10 |

Responses to on average how many kgs per week:

- 50kg
- less than 1kg
- Prob less than 5kg - just cleaning 1 or 2 kg for customers upon request
- 1kg
- 10kg
- 5kg
- 5kg
- use in stock
- 5kg
- ?
- 1kg
- 5kg



Q13. How do you manage seafood processing waste in your shop?



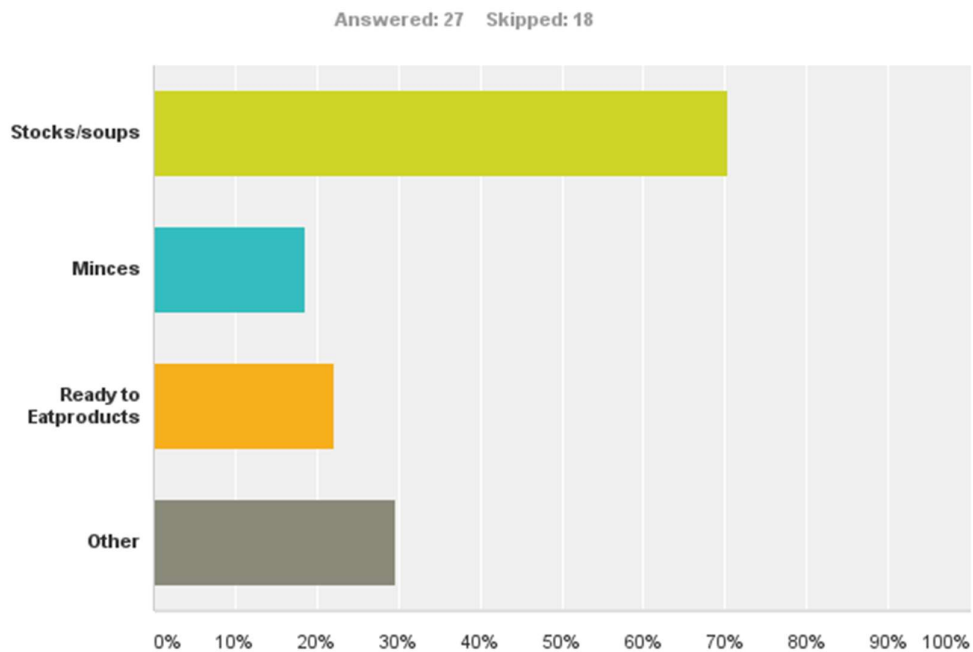
| Answer Options | Response Percent | Response Count |
|---|------------------|----------------|
| All our waste is sold in the shop | 11.4% | 4 |
| Disposed of at premises | 5.7% | 2 |
| Disposed offsite | 17.1% | 6 |
| Picked up by waste processor | 45.7% | 16 |
| Waste is transformed to retail products | 5.7% | 2 |
| Other (please specify) | 14.3% | 5 |
| Answered question | | 35 |
| Skipped question | | 10 |

Responses for other:

- further process where possible eg, use fish heads and frames to produce fish stock for sale
- commercial fishermen take some as crab bait
- collected by recycling/reclaiming processor
- sold, used for lobster bait, picked up to be made into fertilizer



Q14. If transforming waste, what types of products are being developed?



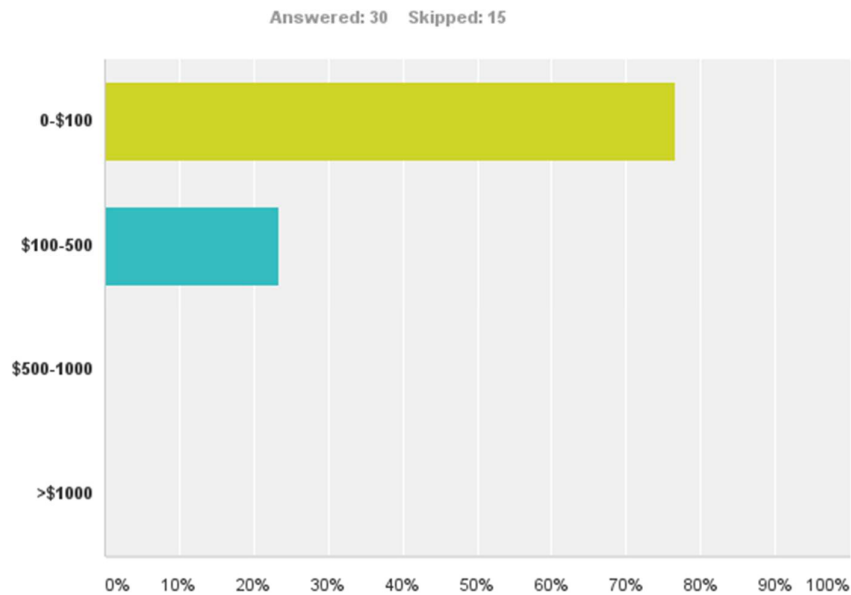
| Answer Options | Response Percent | Response Count |
|------------------------|------------------|----------------|
| Stocks/soups | 70.4% | 19 |
| Minces | 18.5% | 5 |
| Ready to Eat products | 22.2% | 6 |
| Other | 29.6% | 8 |
| Other (please specify) | | 9 |
| Answered question | | 27 |
| Skipped question | | 18 |

Responses for other:

- bait
- fertilizer
- bait
- This just applies to salmon frames, because there's still quite a lot of meat left on the frame
- cat food
- none of the above
- bait
- prawn heads

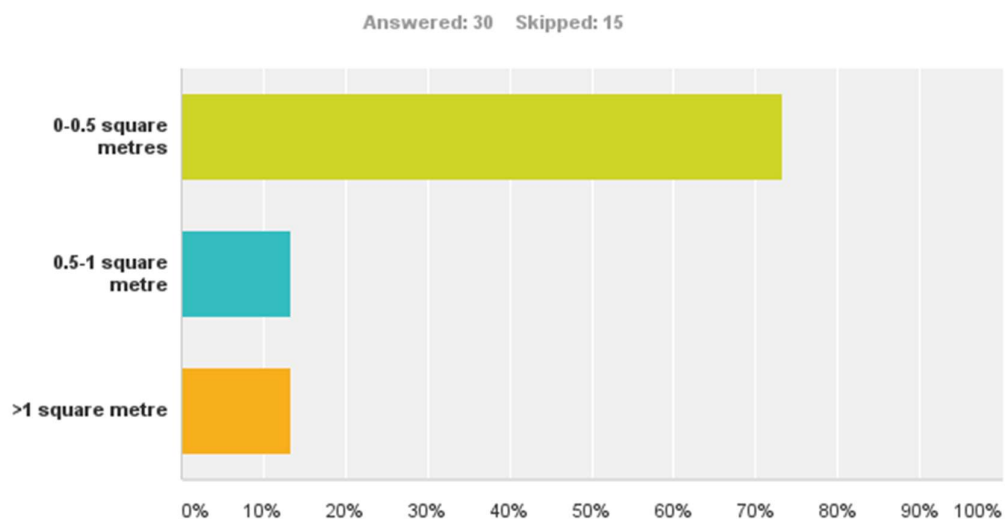


Q15. Approximately how much does it cost to dispose of the waste per week?



| Answer Options | Response Percent | Response Count |
|-------------------|------------------|----------------|
| 0-\$100 | 76.7% | 23 |
| \$100-500 | 23.3% | 7 |
| \$500-1000 | 0.0% | 0 |
| >\$1000 | 0.0% | 0 |
| Answered question | | 30 |
| Skipped question | | 15 |

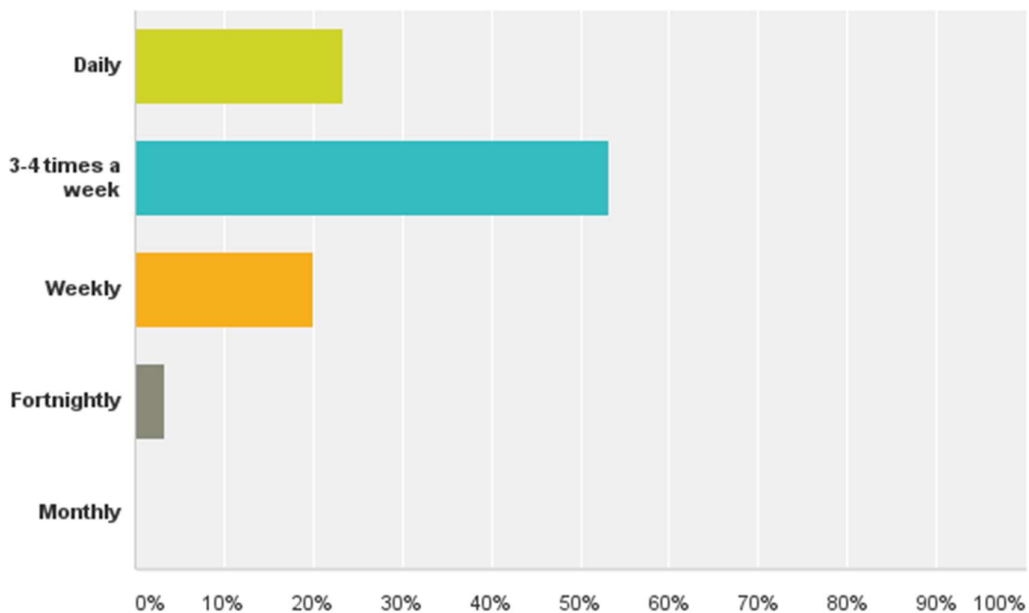
Q16. How much freezer space does the waste take up each week?





| Answer Options | Response Percent | Response Count |
|---------------------|------------------|----------------|
| 0-0.5 square metres | 73.3% | 22 |
| 0.5-1 square metre | 13.3% | 4 |
| >1 square metre | 13.3% | 4 |
| Answered question | | 30 |
| Skipped question | | 15 |

Q17. How often is the waste removed?

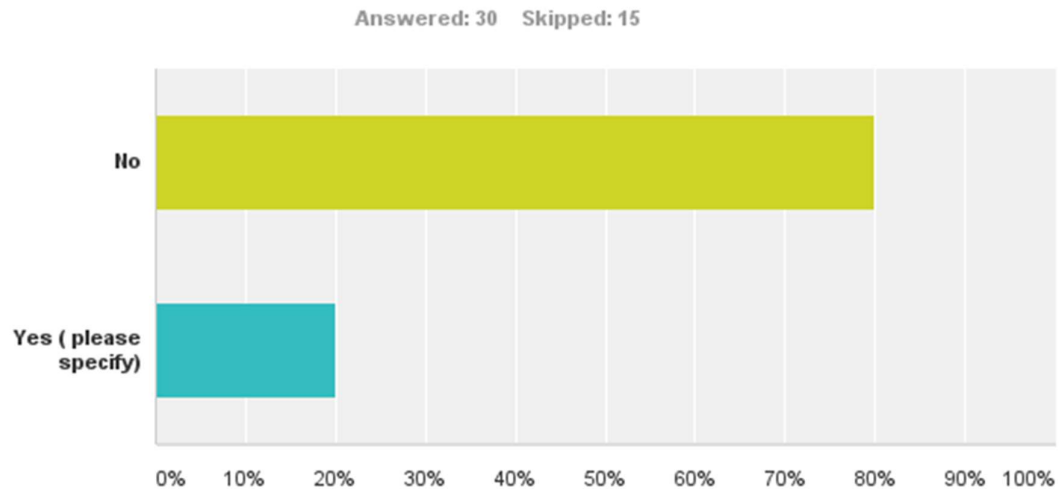


| Answer Options | Response Percent | Response Count |
|-------------------|------------------|----------------|
| Daily | 23.3% | 7 |
| 3-4 times a week | 53.3% | 16 |
| Weekly | 20.0% | 6 |
| Fortnightly | 3.3% | 1 |
| Monthly | 0.0% | 0 |
| Answered question | | 30 |
| Skipped question | | 15 |



PART B: DRIVERS FOR WASTE MANAGEMENT CHANGE

Q18. Have you considered other options to handle the waste?



| Answer Options | Response Percent | Response Count |
|----------------------|------------------|----------------|
| No | 80.0% | 24 |
| Yes (please specify) | 20.0% | 6 |
| Answered question | | 30 |
| Skipped question | | 15 |

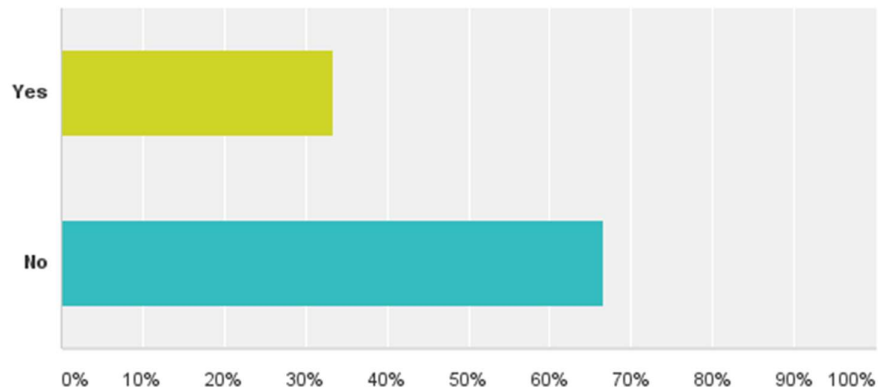
Responses to please specify:

- Produce stocks
- Value adding
- produce fertilizer but not economically viable on a small scale. Sell heads and frames for crayfish and crab bait
- composting / pallettiser
- garden composting
- we use all fish waste in stock for seafood chowder



Q19. Do you think waste is a problem in your store and more could be done to minimise waste?

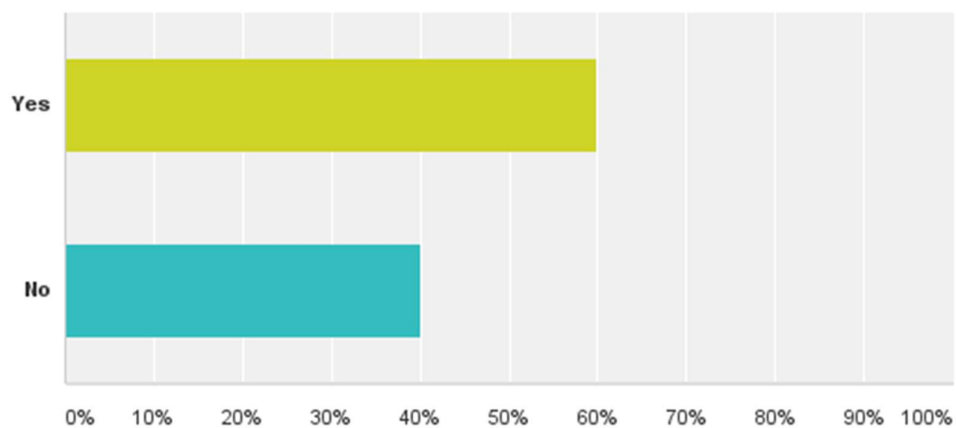
Answered: 30 Skipped: 15



| Answer Options | Response Percent | Response Count |
|-------------------|------------------|----------------|
| Yes | 33.3% | 10 |
| No | 66.7% | 20 |
| Answered question | | 30 |
| Skipped question | | 15 |

Q20. Would you invest in other options for handling the waste?

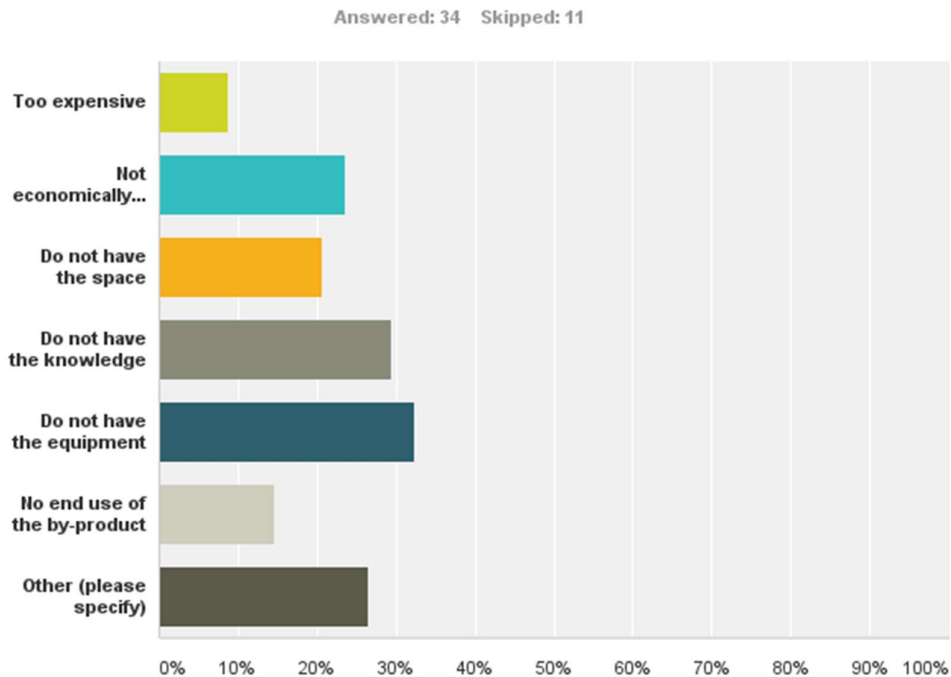
Answered: 30 Skipped: 15



| Answer Options | Response Percent | Response Count |
|-------------------|------------------|----------------|
| Yes | 60.0% | 18 |
| No | 40.0% | 12 |
| Answered question | | 30 |
| Skipped question | | 15 |



Q21. What is the reason for your answer?



| Answer Options | Response Percent | Response Count |
|--------------------------------------|------------------|----------------|
| Too expensive | 8.8% | 3 |
| Not economically viable for business | 23.5% | 8 |
| Do not have the space | 20.6% | 7 |
| Do not have the knowledge | 29.4% | 10 |
| Do not have the equipment | 32.4% | 11 |
| No end use of the by-product | 14.7% | 5 |
| Other (please specify) | 26.5% | 9 |
| Answered question | | 34 |
| Skipped question | | 11 |

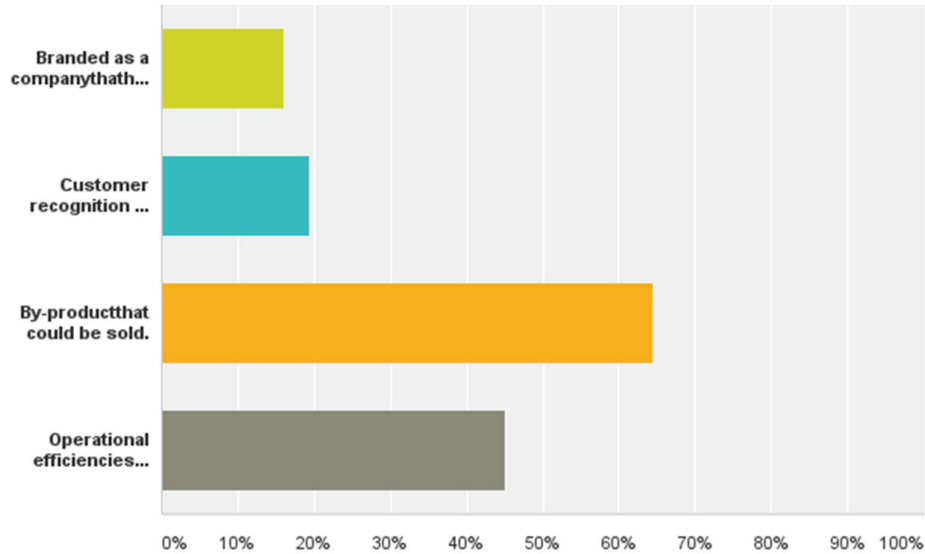
Responses to other:

- do not have the time
- use for stock
- we use all our waste
- the only option would be to make fish stock, but then you still have the fish frame to dispose of
- we are commercial fishing also and reuse the frames for bait
- current process works well at minimum cost
- get rid of waste to fishermen for bait
- no waste
- no waste in our shop. All is used in chowder



Q22. Which of the following might influence you to investigate other options?

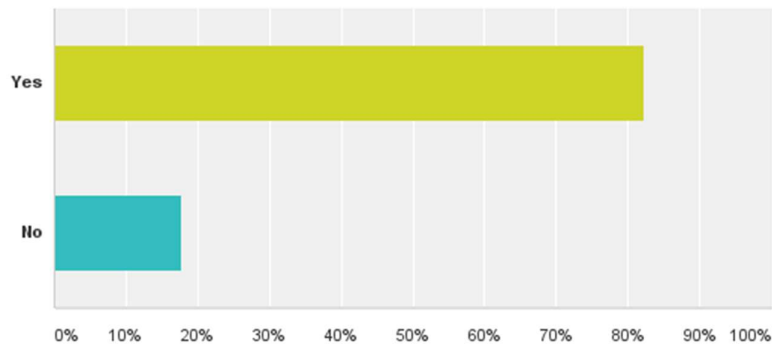
Answered: 31 Skipped: 14



| Answer Options | Response Percent | Response Count |
|---|------------------|----------------|
| Branded as a company that has invested in improved waste management | 16.1% | 5 |
| Customer recognition of improved waste management | 19.4% | 6 |
| By-product that could be sold. | 64.5% | 20 |
| Operational efficiencies (space, freezer costs etc) | 45.2% | 14 |
| Answered question | | 31 |
| Skipped question | | 14 |

Q23. Would you be interested in customer resources that documented recipes etc. for waste products (e.g. frames, heads etc).

Answered: 34 Skipped: 11





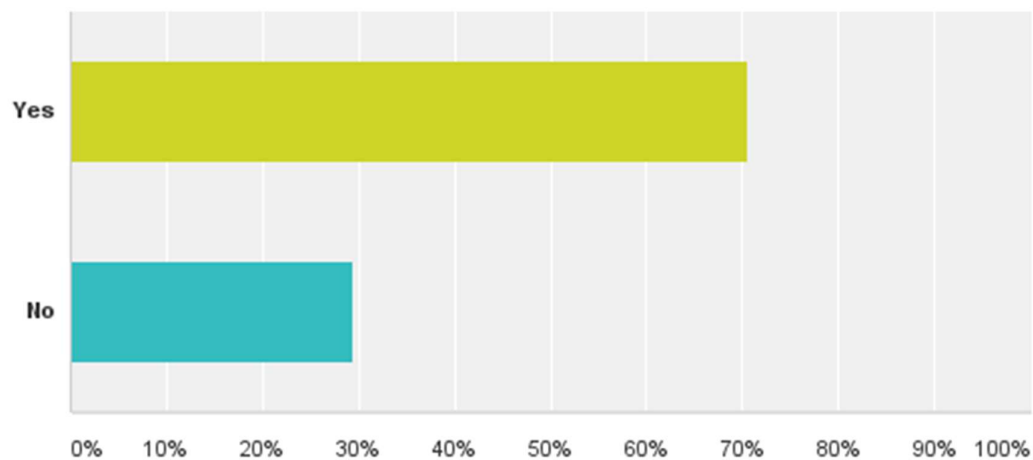
| Answer Options | Response Percent | Response Count |
|-------------------|------------------|----------------|
| Yes | 82.4% | 28 |
| No | 17.6% | 6 |
| Comments | | 1 |
| Answered question | | 34 |
| Skipped question | | 11 |

Comments:

- No longer own my seafood business

Q24. Would you be interested in a stand-alone piece of equipment (<\$5000) (<1 metre in floor space, heats to 50 C) that could be used to change finfish waste to liquid fertiliser?

Answered: 34 Skipped: 11



| Answer Options | Response Percent | Response Count |
|-------------------|------------------|----------------|
| Yes | 70.6% | 24 |
| No | 29.4% | 10 |
| Comment | | 0 |
| Answered question | | 34 |
| Skipped question | | 11 |

PART C: COMPETITION WINNERS

The two winners randomly drawn to win the Victorinox, 20 cm, flexi fish filleting knives were:

- James Ashmore
- Anthony Manks