



**Asia-Pacific
Economic Cooperation**

2015/HLPD-FSBE/005

Session: 2

Changing the Way New Zealand Fishes

Purpose: Information
Submitted by: ABAC New Zealand



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PHILIPPINES
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**High Level Policy Dialogue on Food Security and
Blue Economy
Iloilo, Philippines
4-6 October 2015**

APEC HIGH LEVEL POLICY DIALOGUE ON FOOD SECURITY AND BLUE ECONOMY

Session 1: Blue Economy towards sustainable food supply chains for food security

Sustainable fishing technologies (sharing of best practice from ABAC / Private Sector New Zealand)

Changing the way New Zealand Fishes - Presented by ABAC PPFS Co-Chair Mr Tony Nowell of ABAC New Zealand

EXECUTIVE SUMMARY

Precision Seafood Harvesting – an initiative of the New Zealand fishing industry in partnership with the New Zealand Plant & Food Research Institute (PFR) and the New Zealand Ministry of Primary Industries' (MPI) Primary Growth Partnership (PGP) scheme.

This completely new approach to harvesting does away with traditional trawl nets and, instead, harvests fish so they are contained and swimming comfortably underwater inside a large flexible PVC liner where they can be sorted for the correct size and species before being brought on-board the fishing vessel.

The break-through design of the harvesting system allows fishing vessels to target specific species and fish size and greatly increases protection for small fish that can swim free through 'escape portals' and non-target fish (by-catch), which are released unharmed. Once on the deck, the fish are still swimming inside the liner, in perfect condition, meaning fresher, more sustainable fish for consumers and higher value products for fishing companies using the technology.

The Precision Seafood Harvesting (PSH) system has been shown to be successful in allowing large quantities of fish to be captured in perfect condition, with survivability on a par with hook and line fisheries.

This unique new system of harvesting wild fish is designed to be used on-board existing trawl type vessels. It has been developed in a partnership made up from three NZ co-investor fishing companies (Aotearoa Fisheries, Sealord and Sanford) as the industry partner to a NZ Government funded Primary Growth Partnership (PGP) scheme. This scheme is administered by the NZ Ministry for Primary Industries.

The programme has taken a series of concepts that were first developed by scientists at Plant & Food Research and progressively scaled these up for use in the NZ commercial fishing sector. These concepts have been developed into a range of different sized modular harvest systems (MHS) for different sized fishing vessels and target species. The commercial testing at-sea now includes a range of fishing vessels from small sized in-shore vessels up to off-shore factory trawlers 64 mtrs in length.

The PSH programme has shown the potential for significant gains to be achieved in the sustainability performance during wild fish harvesting. The primary objective being to substantially reduce the mortality rates in unintended catch. This includes juvenile (or undersized) target species and by-catch species. The sustainability performance is being measured in terms of both survivability (survival rates for juvenile fish returned to sea) and selectivity (avoiding the catch of by-catch species and juvenile fish). The initial results of the survivability performance have been released and demonstrate significant gains in the survival rates of juvenile snapper (as an exemplar species)

compared to traditional trawl gear. The results will be used to evaluate the success of the new designs and for possible changes to the regulatory environment that is currently structured for mesh based trawl systems.

The new technology has also opened up new opportunities for the marketing of very high quality seafood outcomes and this has led to further work into developing new on-board fish handling systems to preserve and maintain this fish quality. The encouraging results during the commercial testing of the new MHS designs have led to optimism about the commercialisation prospects of the PSH systems in wider industry application.

Supporting documents and media:

PowerPoint Presentation: Changing the Way New Zealand Fishes

Video (1): New Zealand Story Seafood Sector Video Final v2.mp4

Video (2): NZ Precision Seafood Harvesting Trailer.mp4



Ministry for Primary Industries
Manatū Ahu Matua



Plant & Food
RESEARCH
RANGAHAU AHUMĀRA KAI



Changing the way New Zealand Fishes

THE PRECISION SEAFOOD HARVESTING PRIMARY GROWTH PARTNERSHIP
PROGRAMME

The Vision

*Imagine if every fish landed on a vessel was alive – **in perfect condition** – and small fish and other species could be safely released underwater before a catch was lifted on-board.*

PSH: The programme and partners

- » 6 year Primary Growth Partnership (PGP) programme sponsored by MPI (currently in year 4)
- » \$24M from industry partners, \$24M from MPI
- » Plant & Food Research – Research Provider

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SEALORD

we live for the sea



AOTEAROA
fisheries limited

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SANFORD LIMITED
SUSTAINABLE SEAFOOD

Development of the technology

» The 'a-ha' moment

- » Why do we have to **strain** the fish out?
- » Why do we have to **exhaust** them?
- » Why are we **damaging** them during harvest?

» The answers led to **Precision Seafood**

Harvesting the commercialisation phase of nearly ten years of research

» Programme looks at sustainability, quality and value gain objectives together with validation requirements

» The biggest step forward for commercial fishing in

150 years!

What are we doing?

- The technology creates a calm environment within the harvesting process that cares for the fish
- It individualises the fish, gives control back to the fish. It lets us land fish in pristine condition, allowing maximum value to be extracted whilst allowing survivability and selectivity of non-intended catch
- A considerable amount of post harvest validation work is carried out to measure the **quality** of fish landed to the back of the boat. Specific product **demand** and market prices also indicate we are on the **right** track

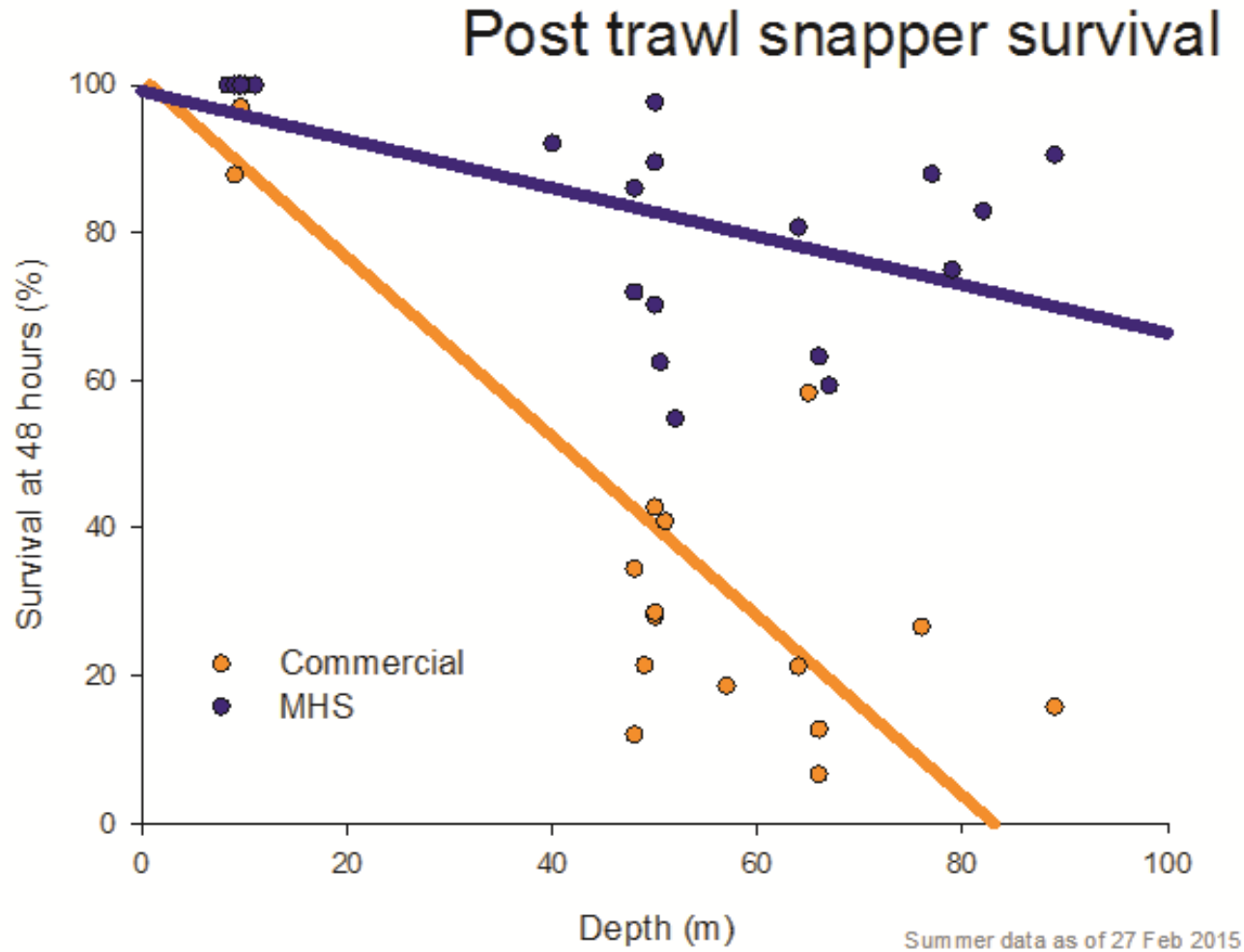
What are we doing?

- » Our post harvest assessment team document the **composition** of the catch, the **size** of the catch, and the **quality** of the fish.
- » Following on from this is the **development** of handling and storage systems to **maintain** the quality of the fish. The focus remains **always** on the fish
- » The significant amount of data collected is being used to support the regulatory change required to commercialise the harvesting system

What does this mean?

- » Three current programme objectives in the snapper fishery
 - » Improved survival rate **potential** of non-intended catch (juvenile fish and by-catch)
 - » Increased value of target fish that are landed / distributed to market
 - » Improved handling and sorting systems to **realise** survival rate potential in commercial application
- » Two current programme objectives in the hoki fishery
 - » Improved potential of hoki quality at back deck
 - » Realise market quality through to market
- » Sponsor companies are already seeing gains in the market with higher values being paid for higher quality animals and MPI estimates of an uplift in GDP of \$43.6m pa by 2025 is definitely achievable

What does this mean?



Regulatory considerations

Regulatory change is required for the PSH modular harvesting system gear to be introduced commercially.

- » The role of MPI
- » Considerations include:
 - » Must be better than or equivalent to the current system
 - » Gear currently fished under special permit
 - » By-catch – amount and survival rates
 - » Need for an ‘empowering regulatory framework’

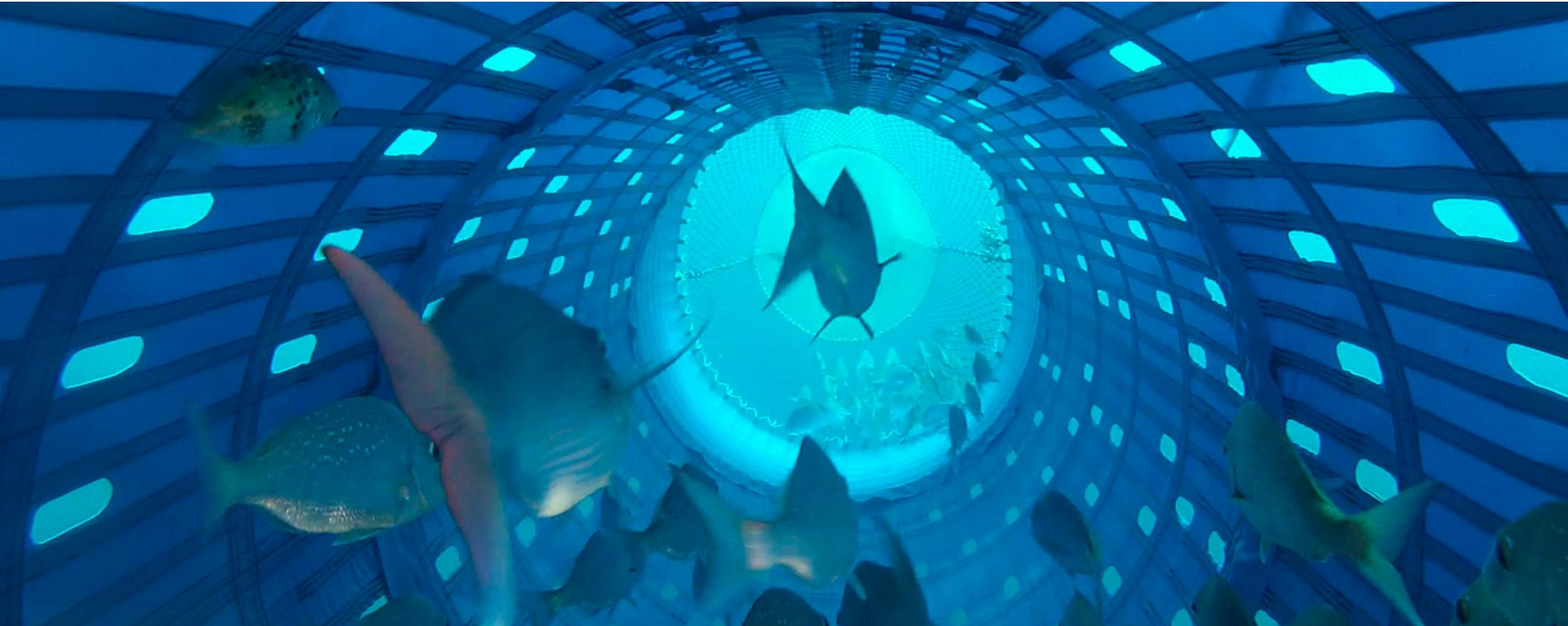


Precision
Seafood
Harvesting

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