

FISHMEAL & FISH OIL ITS ROLE IN SUSTAINABLE AQUACULTURE

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**Symposium on Perspectives for
Fishmeal and Fish Oil**

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IFFO is the global trade association representing marine ingredient producers and others in the supply chain.



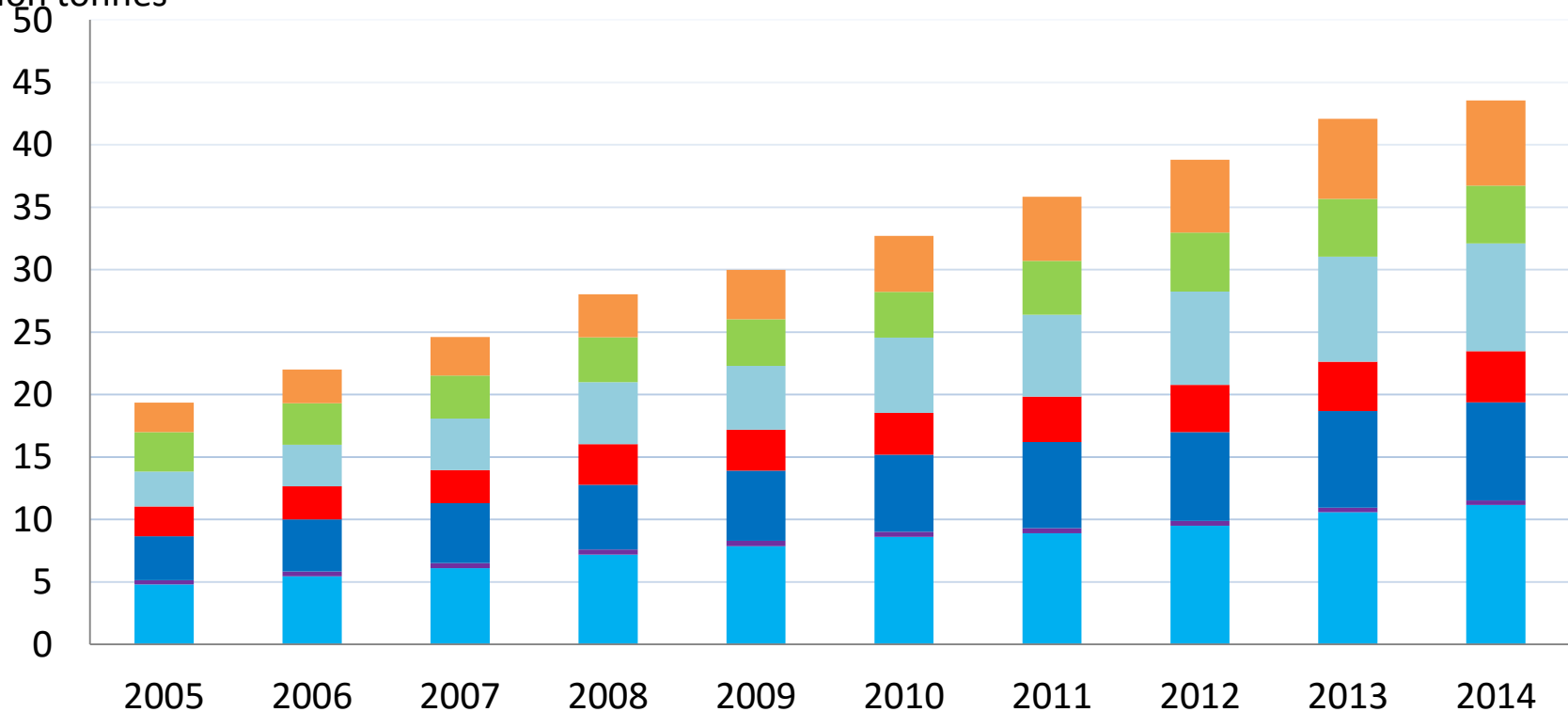
IFFO RS is an independent third party audit and certification programme that assures the value chain of marine ingredients that are responsibly sourced and responsibly produced



AQUACULTURE FEED PRODUCTION BY GROUP

■ Cyprinids ■ Eels ■ Crustaceans ■ Marine fish ■ Other Freshwater Fish ■ Salmonids ■ Tilapias

million tonnes



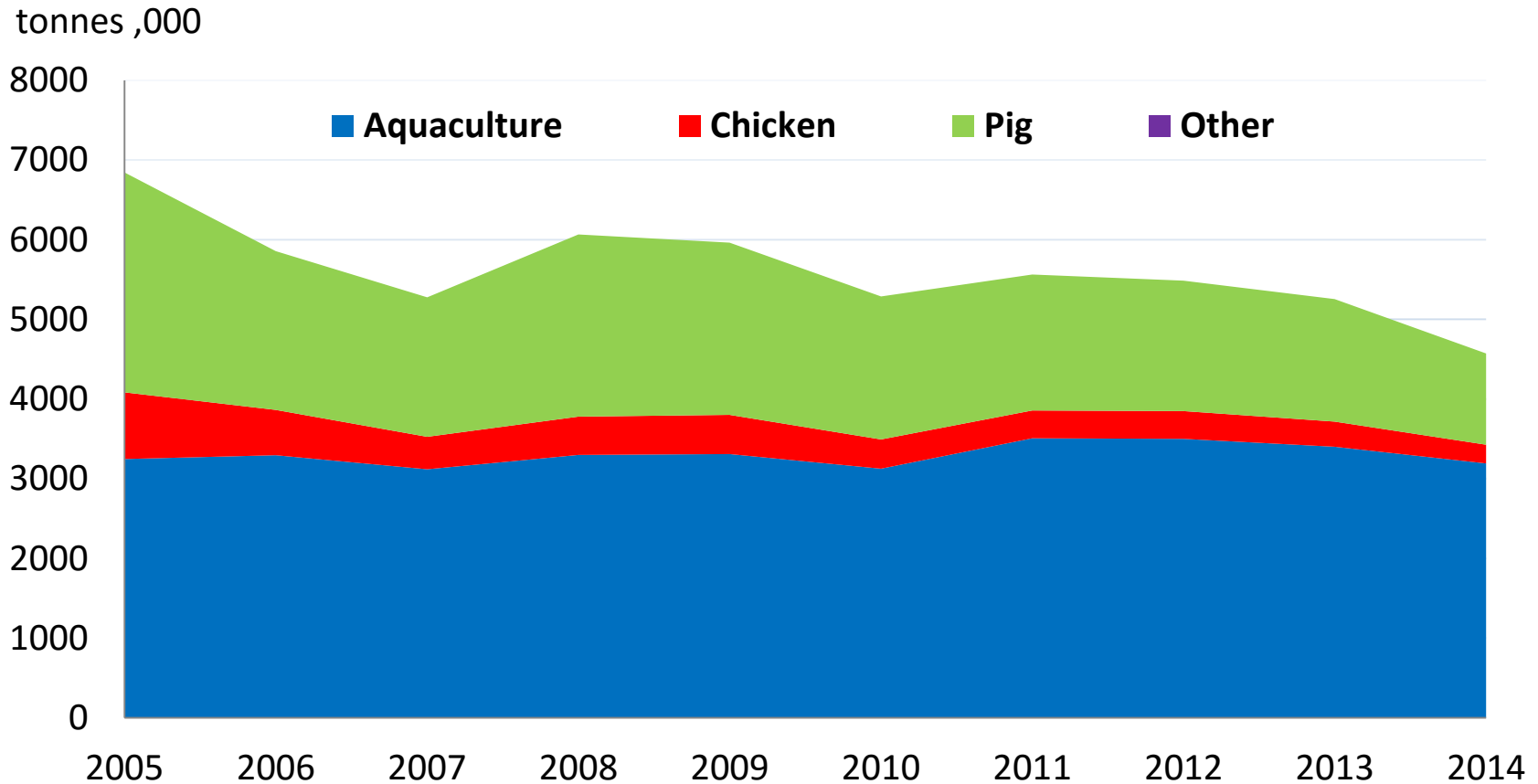
source: FAO and IFFO

AQUACULTURE FEED TRENDS

- Aquaculture is continuing to grow strongly
- Growth is strongest in species requiring feed
- Aquaculture is becoming more intensive so less reliance on natural productivity of the water
- The result is that demand for aquaculture feed is increasing rapidly particularly in Asia



USE OF FISHMEAL OVER THE LAST 10 YEARS

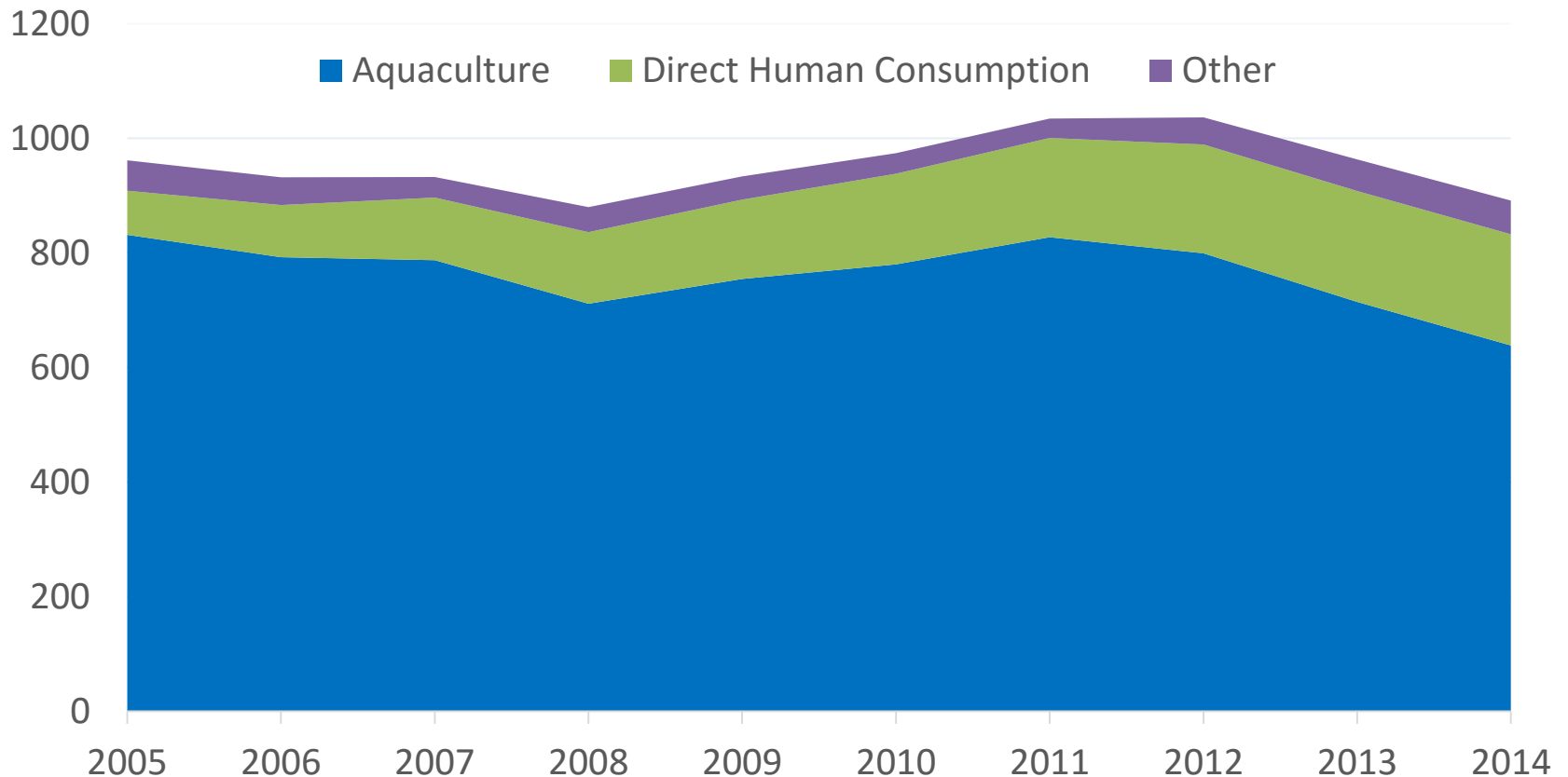


Around 70% of fishmeal is used is aquaculture

Source IFFO



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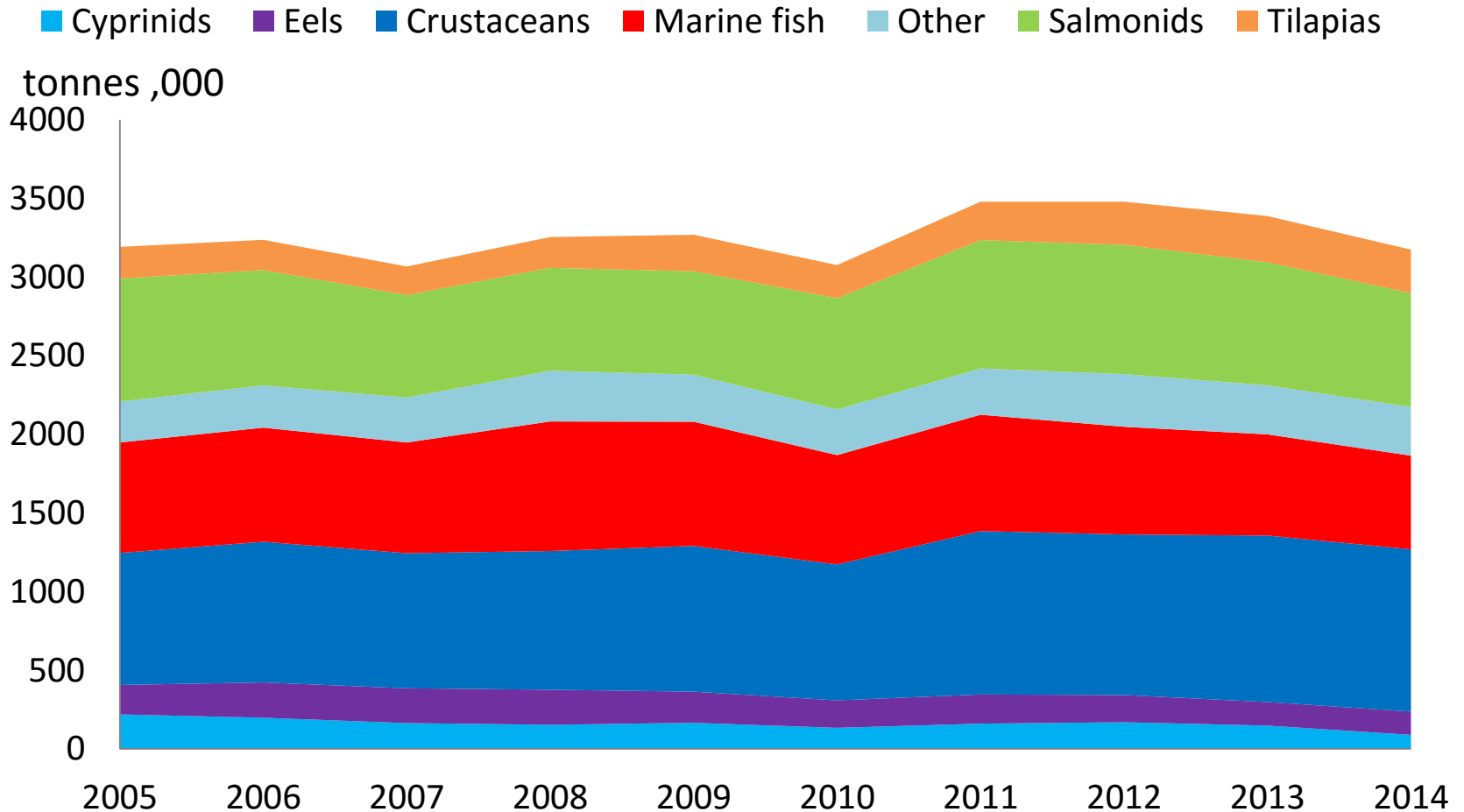


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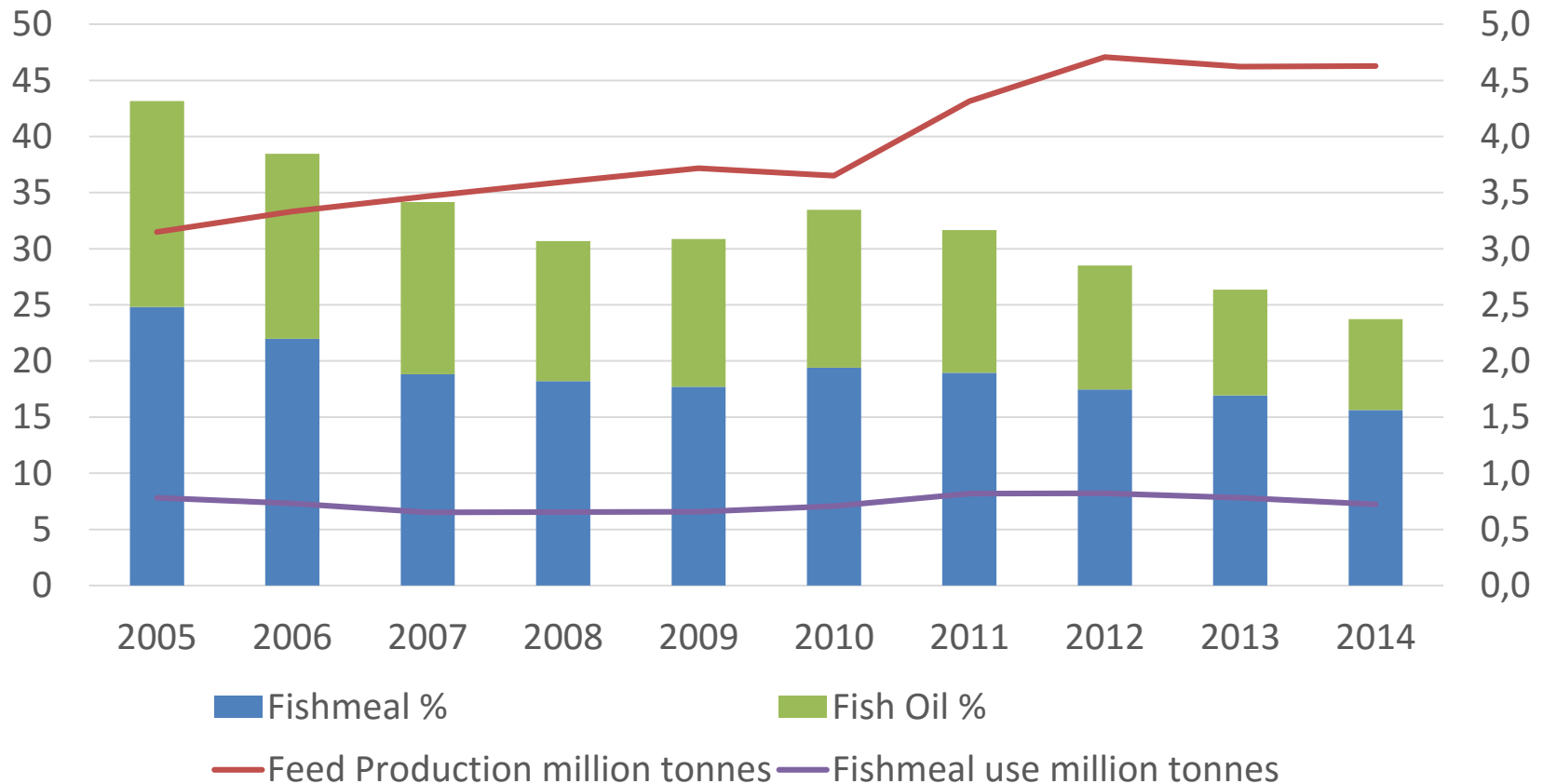


FISHMEAL USAGE IN AQUACULTURE



Source IFFO

MARINE INGREDIENT INCLUSION IN SALMONID DIETS



As feed volumes increase inclusion % of marine ingredients decreases



Source IFFO

MARKET TRENDS FOR SUSTAINABLE USE OF M.I. IN AQUACULTURE FEEDS

- **Economical** – increasing price is reducing inclusion levels in grower diets. Improving FIFO ratios
- **Environmental** – A growing need to show responsible fisheries management – big concern in Asia over lack of control
- **Nutritional** – increasing intensification, demand for high performance diets to optimise output from fixed assets, new farmed species feeds often optimised using fishmeal



INTENSIFICATION OF FARMING

- **Almost all fish are carnivorous when small even species such as Grass Carp**
- **Require high protein and balanced amino acid profile diets to optimise performance in the hatchery**
- **Whilst fishmeal levels in grower diets are decreasing, fishmeal will continue to play an important role in fry diets**



TUNA FARMING



You Tube Completely farm raised bluefin tuna



Market for tuna over 6 million tonnes nearly double salmon market
Tuna highly carnivorous and require special diets with high marine ingredient inclusion – think salmon 50 years ago



CONCLUSION

There is going to be a continuing demand from sustainable aquaculture for high quality marine ingredients that are produced in a responsible manner, but increasingly the demand will be in Asia

