


From plant wastes to sustainable aquafeeds - Novacq™ case history

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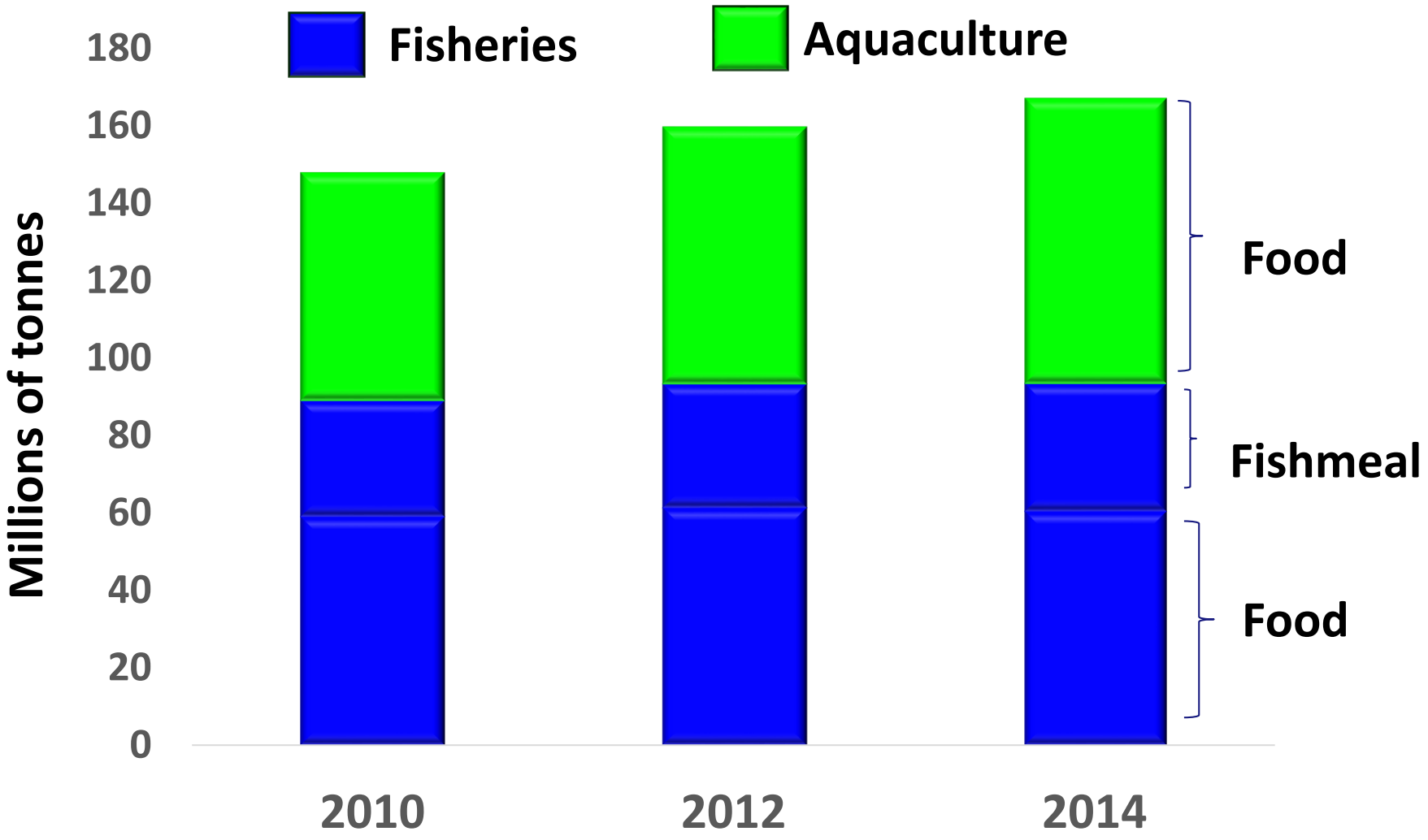
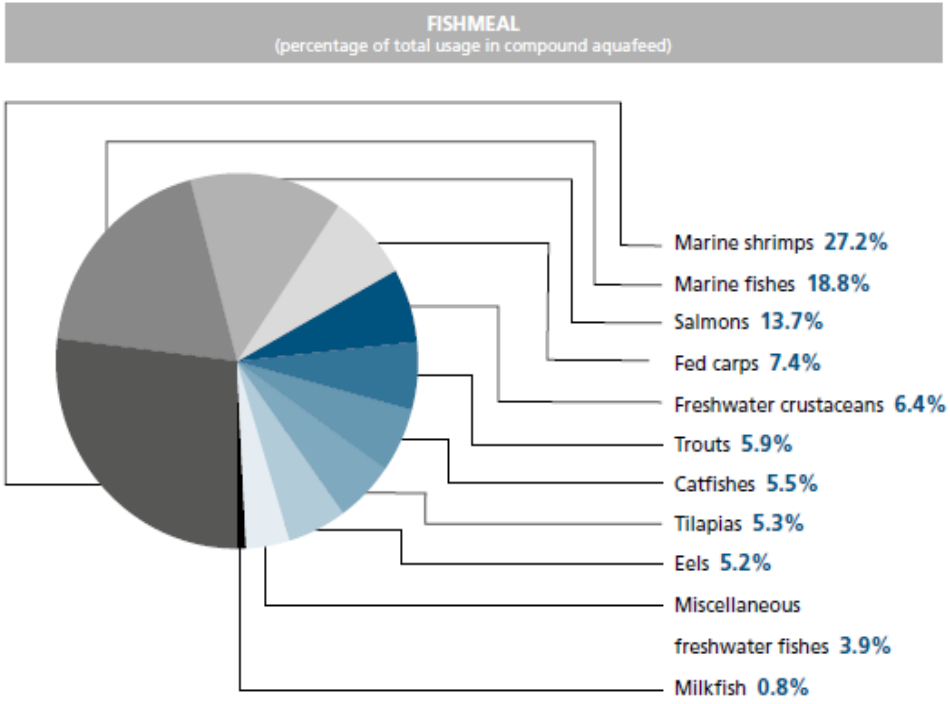
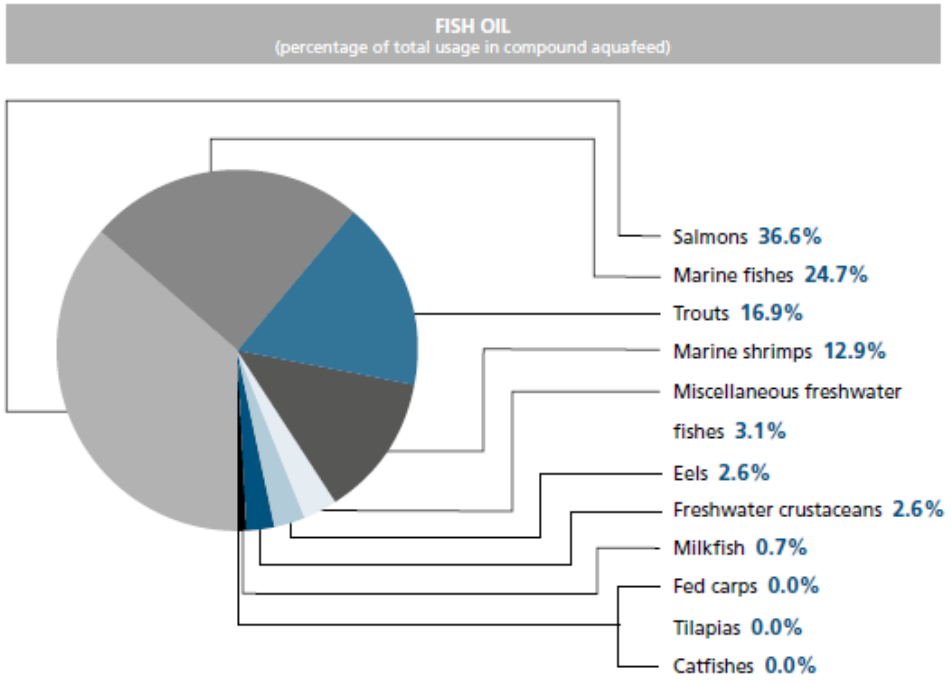
Global seafood production



One third of the annual global fish catch is used to produce aquafeeds. Sustainable alternatives are urgently needed

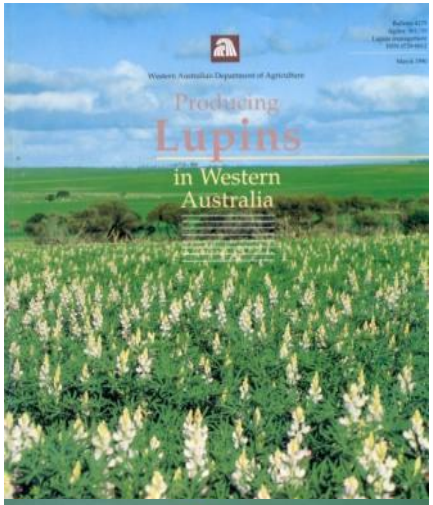
Reliance on fishmeal and oil





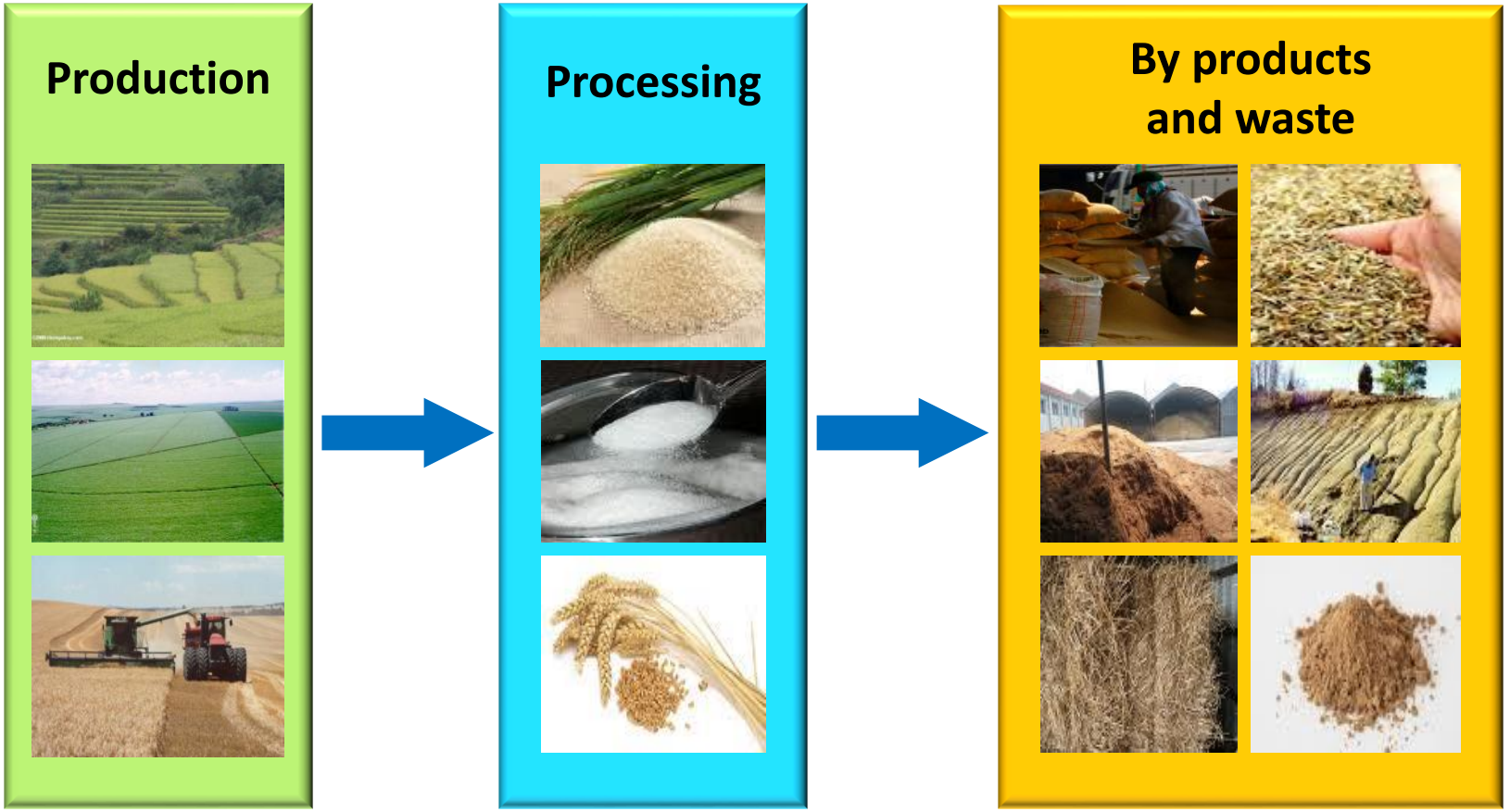
The use of wild harvest fishmeal and fish oil is most pronounced in higher value species such as salmon, other carnivorous marine fishes and prawns

Legume and grain substitutes for fishmeal proteins



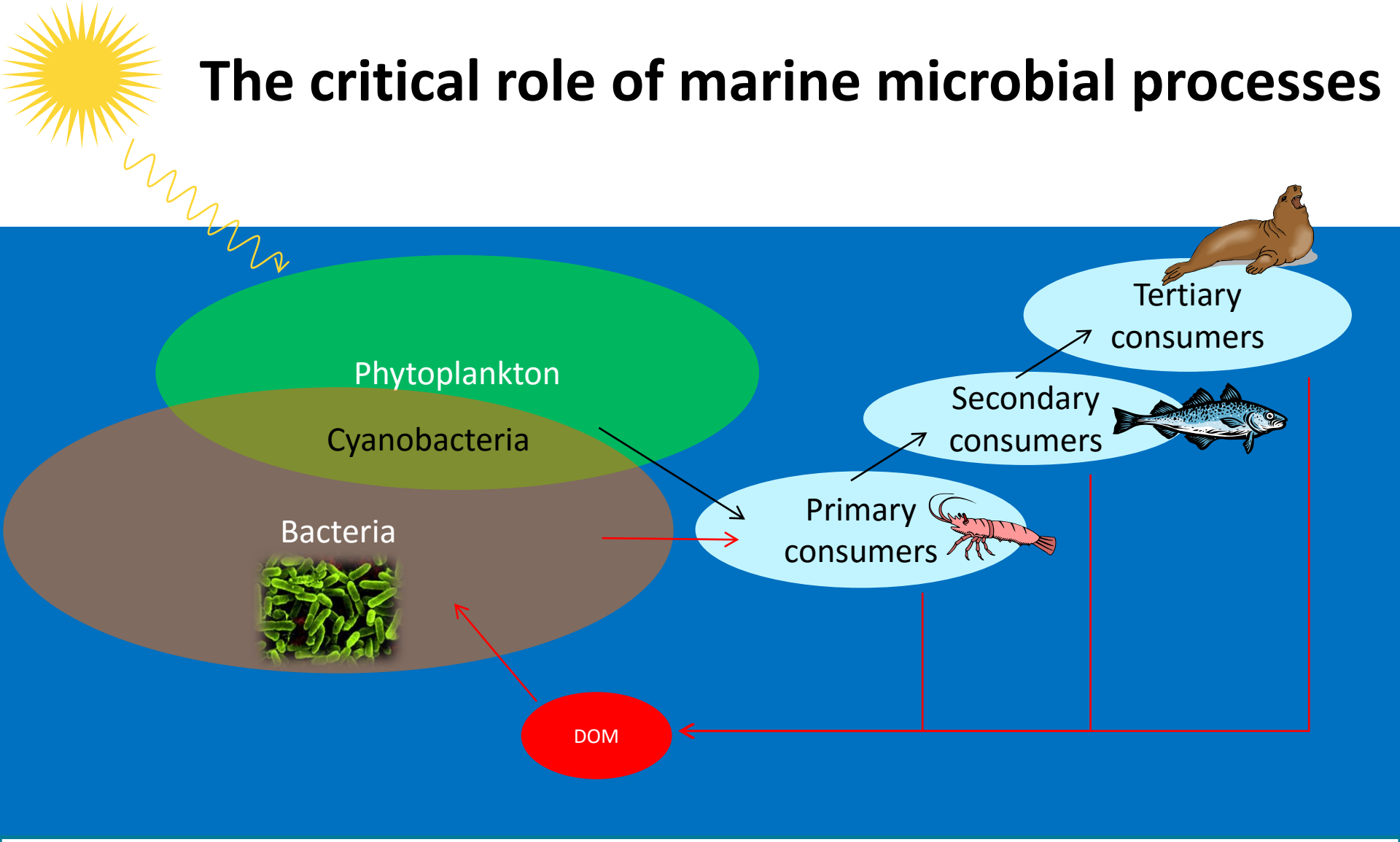
Legume and grain proteins lack the bioactive nutrients of fishmeal

Plants are also a source of waste carbon



Plant wastes from harvesting and processing of the world's major crops provide a cheap and abundant source of carbon

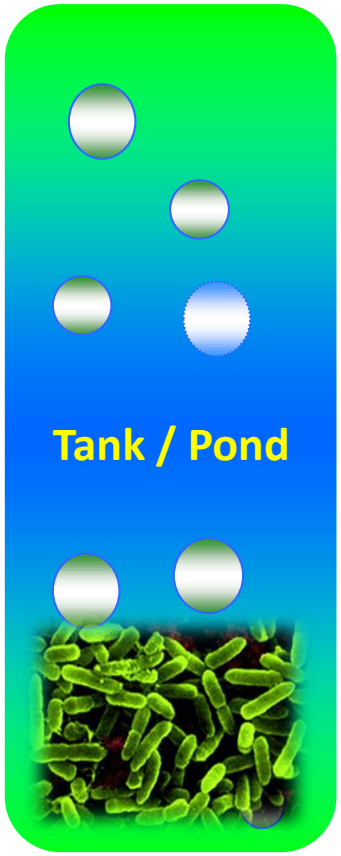
The critical role of marine microbial processes



Marine microbial processes play a dominant role in marine nutrient cycles. Marine microbial biomass is greater than the biomass of all the plants and animals in the world's oceans

CSIRO scientists discovered a way to use marine microbial processes to convert waste carbon from agriculture to a novel, bioactive aquafeed ingredient (Novacq™)

Solid or liquid waste



Bioconversion to aquafeed (Novacq™)

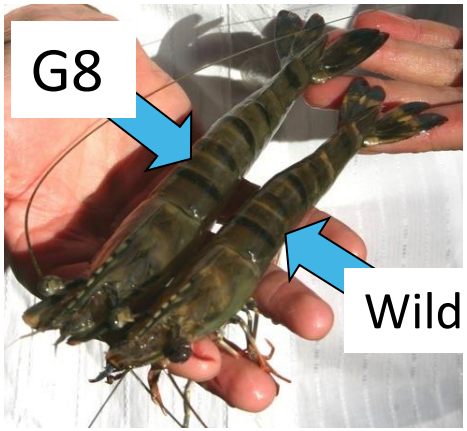
Novel feed ingredient

Novacq™

Prawn feed

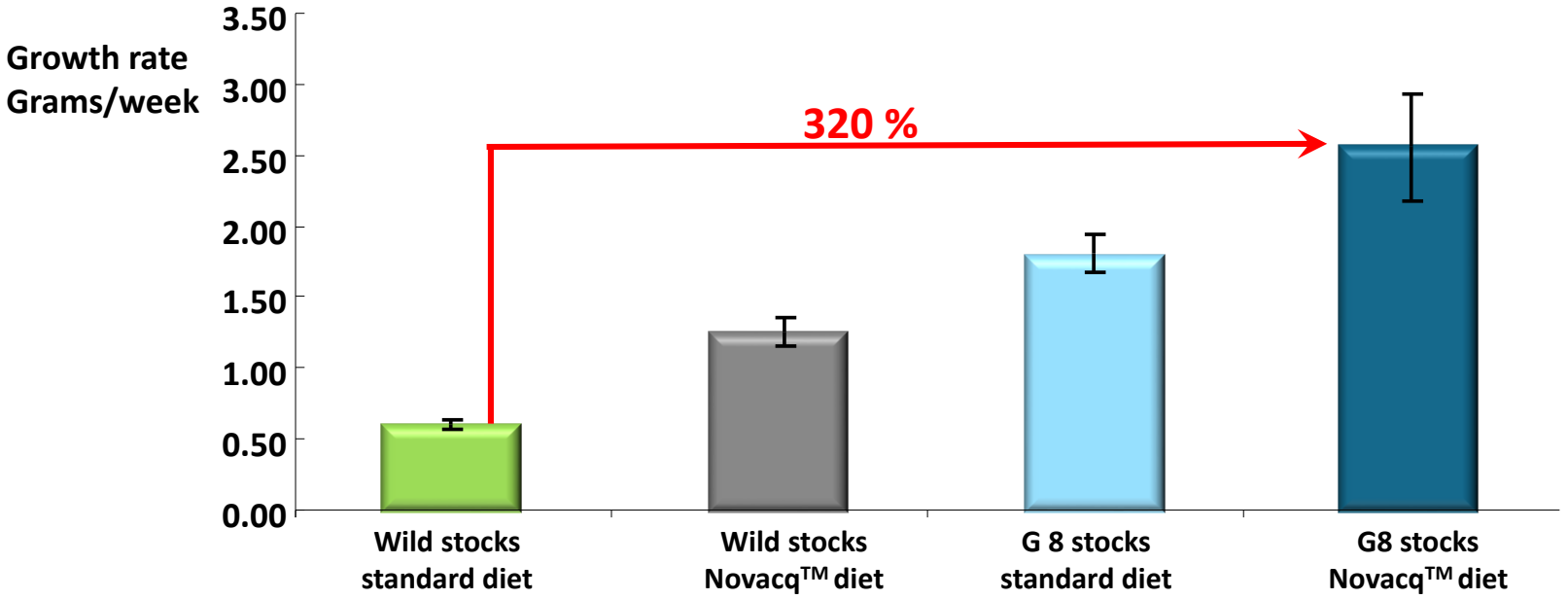
Novacq™ is a natural bioactive that improves the growth and health of farmed prawns and eliminates the need for any wild harvest fishmeal in prawn feeds

Combining Genetics and Diet



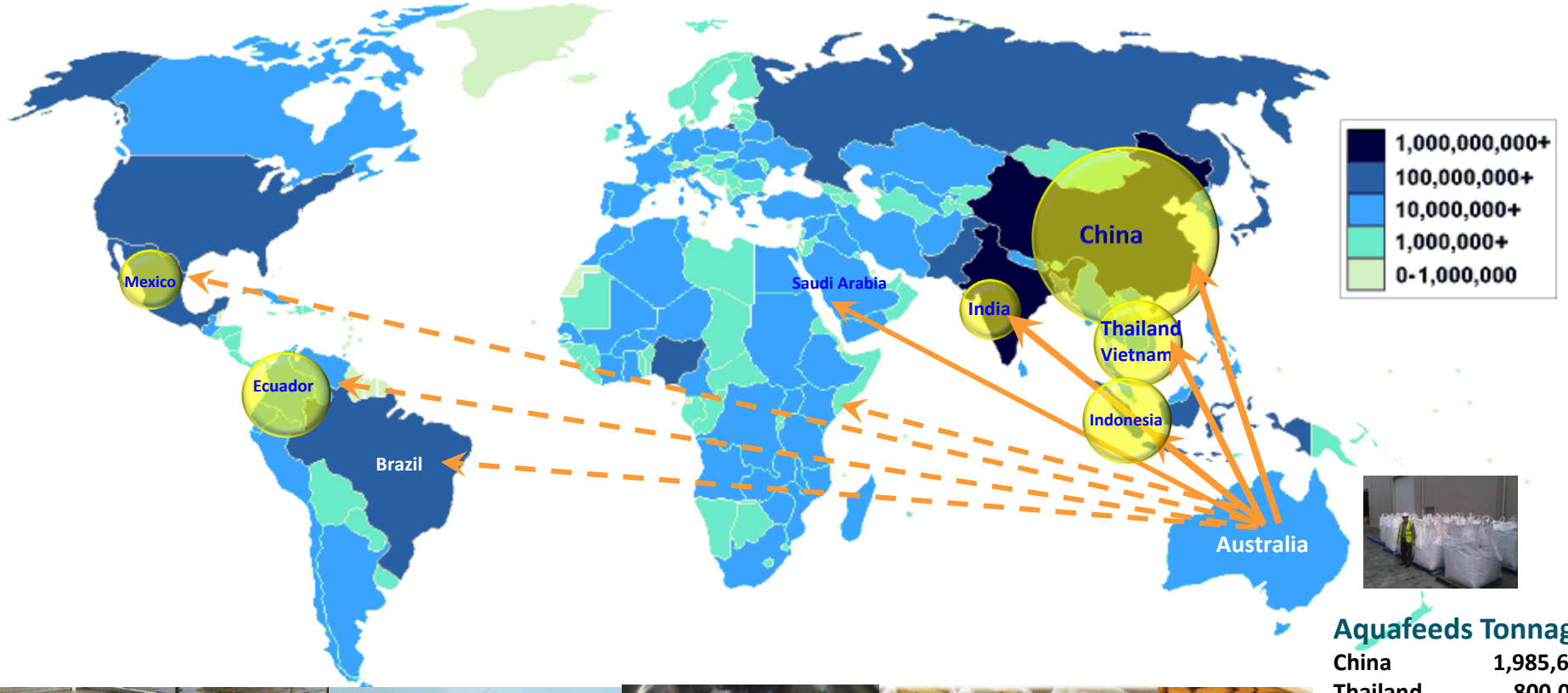
Standard diet

Novacq™ diet



Scalable technology

Global distribution of Novacq™ technology



Aquafeeds Tonnage

China	1,985,600
Thailand	800,000
Vietnam	720,000
Indonesia	480,000
Mexico	200,000
India	197,880
Ecuador	136,000
Brazil	73,600
Australia	6,400





CSIRO and its partners are committed to optimizing global adoption of Novacq™ technology to enhance the sustainability of the aquafeed industry and reduce pressure on wild fish stocks