‘If the land is well and the sea is well, the people will thrive’

Investigating why environmental sustainability is so critical to aquaculture

Curriculum Areas: Social Sciences, Science, Health

- Place and Environment
- The Economic World
- Living World – Ecology
- Home Economics – Food and Nutrition

Links to: English and Technology
Levels: Best suited to levels 2-4

What is Environmental Sustainability?

• Share the Māori proverb quotation in the heading with the students. Can they explain what it means? What do they think is meant by the ‘land being well’ and the ‘sea being well’? Can they think of any ways that we can keep these places well?

• How many students have heard or know about the phrase ‘environmental sustainability’? Do they know what it means? Can they define it?

• Share and discuss the following simple definitions of environmental sustainability:
  - taking care of the planet and all its creatures
  - something that lasts for a long time - maybe forever - like a circle, it goes around and all is re-used
  - sharing what we have with others and not taking more than our share
  - taking care of the air, water, land and those who live there
  - sustainability is not just cleaning up your own room – it’s about keeping tidy an even bigger room that belongs to everyone!

• Can students come up with the very basics that all humans need to live? Did their answers include food, water and shelter?

• To illustrate the consequences for our environment of taking more than we need, discuss the following:
  - how do we ensure that we will always have enough wood to construct the houses we live in?
  - why is there a limit of 3 trout (of a certain size) per day, per person able to be caught in Lake Taupo?
  - what would be the consequences if we were all allowed to catch as many fish and gather as many shellfish as we wanted, whenever and wherever we wanted?
  - why are farmers not allowed to cut down our native forest reserves to grow crops and farm sheep and cows?
  - why can’t we leave sprayers on all night during a drought?

Aquaculture in New Zealand

(For further revision see ‘Introducing New Zealand Aquaculture in starters&strategies, Term Three, 2009 or download at: www.teachingonline/termThree09.html)

• Use data projector or print out Aquaculture in NZ Student Fact Sheet at: www.teachingonline.org/aquaculture.pdf and discuss the facts on the sheet.

• Ensure that students understand that ‘aquaculture’ means the farming of marine creatures and that Greenshell™ Mussels, King Salmon and Pacific Oysters are the three main species that we farm in New Zealand.

Primary Products and Comparative Advantage

• Conduct a quick classroom survey to find the country where common classroom and school equipment was made. How many different countries are represented. Introduce the idea that trading with other countries is a good idea because it lets us buy things we need that other countries produce better and cheaper than we can and lets us concentrate on producing and selling goods that we do better (and more cheaply) than other countries. Can the students come up with a list of the main goods that we sell to other countries? eg milk products, forestry, lamb and beef, fruit, fish, wine …
Did students know that these are called primary products because they are produced from our natural resources?

How much does it say that aquaculture is worth to the New Zealand economy and how much will it be worth to our economy by 2025? Tell students that aquaculture is fast becoming one of our most important primary industries.

Did students know that chefs and owners of restaurants all over the world rate our aquaculture products amongst the purest and most delicious in the world? Can students make any suggestions as to why we are able to produce such highly-regarded products? Can they think of any advantage that New Zealand’s salt water environment would give us? Have they heard of our ‘clean green image’ that we use to promote our products to the world? How would this help?

Did students know that these are called primary products because they are produced from our natural resources?

Feeding New Zealand’s Future

www.aquaculture.org.nz > Select Aquaculture in New Zealand > Select Feeding New Zealand’s Future > Select Guardians of the Waterways

Discuss what is meant by environmental sustainability not being an option for aquaculture. Have students focus on the important relationship between aquaculture and water quality and who ‘thrives’ if we care for our waterways.

Did students know that Māori play a very important part in the aquaculture industry? Invite a local kaumatua to talk to the class about traditional management of waterways and the concept of kaitiakitanga – and what the harvesting of seafood and water purity means to them.

Concluding Activities

Have each group/or student prepare an oral and written presentation to give to the class that details the special environmental sustainability measures taken to ensure that aquaculture continues and thrives as an industry.

Groups become advertising creatives tasked with producing a multi-media campaign to promote our aquaculture products using sustainability as the main idea to promote them.

Create a poster that promotes one of our aquaculture products based on an environmental sustainability theme.

Mind-map the consequences for New Zealand aquaculture if the world saw it as no longer environmentally sustainable.

Revisit the introductory Māori proverb of the unit. Is it true to say that aquaculture in New Zealand is a good example of this? Discuss.