

# The Seaweed Harvesters of Alao

**While archaeological evidence confirms that inhabitants of the Chiloe archipelago used sea-plants for food and medicine, today's islanders sell off all the harvest. A fun workshop brings back to the island its ancient practices**

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In February 2011, I travelled from Prince Edward Island, Canada, where I live, to the archipelago of Chiloe, off the southern coast of Chile. As the Director of the Institute of Island Studies at the University of Prince Edward Island (<http://www.islandstudies.com>), my purpose was to meet with representatives of the ARCIS Patagonia University as well as an indigenous tribal council, the Williche Council of Chiefs, who have been our partners in research projects since 2005. I was taken to the Quinchao group of islands, which lie along the eastern flank of Chiloe, to visit the tiny island of Alao. Alao is home to only a few hundred people, many of whom are considered to be poor; they often rely on harvesting seaweeds for cash income.

On arrival at the wharf in Alao we were greeted by the sight of a local farmer-fisherman driving a pair of oxen. Pigs and chickens and an assortment of dogs roamed through the hamlet next to the wharf where the island's school, the medical clinic, a dilapidated church and a small number of houses were located. Our boat had brought to Alao its paramedic, who looks after the clinic. From the wharf that we had alighted, a ferry boat transports the people of Alao to other islands nearby. There is only one tiny shop on the island selling a few basic supplies such as cooking oil, rice and sugar, but a wider selection is available on the other islands.

The dominant sea-plant harvested on Alao is the large, fleshy, red *luga* (*Gigartina scottsbergii*). *Luga* is dried on the beach, stuffed into bags and transported to the mainland to be sold to factories that extract carrageenan. Carrageenan is used in a wide variety of food

processing and pharmaceutical applications. It is the natural gum that, among other things, holds the chocolate in suspension in chocolate milk and keeps the medicine together in pills. It also makes ice cream creamy and factory chickens juicy. Another sea-plant, which is cultivated for commercial sale on Alao, is *pelillo* (*Gracilaria chilensis*). This is valued for its agar content and is also sold to factories that extract the agar for use in a variety of industries.

Seaweed harvesting was not always such a dominant feature of Alao's local economy. Twenty years ago a visitor would have seen many small fishing boats actively catching a wide variety of fish. But then, say the locals, dragger boats came from the mainland, tore up the bottom and caught all sorts of fish indiscriminately and in large quantities. Today, fishers report that there is no fish stock left that is worth the effort of fishing commercially. A few boats still go out to sea, but only to catch a few fish to feed their families, and only when there is nothing else to do.

On Alao, it seems there is always something important to do to support a family. There are vegetable gardens to tend, which produce the small red, white, yellow and blue native potatoes and the giant bulbs of garlic for which Chiloe is famous. There are pastures with livestock, especially beef cattle and the oxen and ponies that are called on to transport

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goods from place to place—there being only one truck and no cars on the island. And of course there is seaweed to pick, especially on the rocky north shore where *luga* is abundant. On this shore, there are also ancient *corrales de pesca*, or fish traps built of stone, which the aboriginal people used for fishing thousands of years ago.

Because I have expertise in marine botany and run a small business making and selling sea-plant products on Prince Edward Island, I was asked to provide a training workshop for the people of Alao on how to use seaweeds for food and medicine. This is something I have done on many small islands of the world where people are engaged in harvesting sea-plants for sale to international corporations because often, the harvesters do not recognize that these same plants can be used in other ways to support the health, nutrition and income of their families. The harvesting, drying and transporting of seaweeds is back-breaking labour, which usually earns very little money. The fishing families involved often suffer from poor health and food insecurity because of their marginal incomes, so it is important for them to understand how to maximize the benefits from the seaweeds they harvest.

On Alao, as in Chiloe generally, people commonly eat only two seaweeds. *Cochayuyo* (*Durvillea antarctica*) is a large, brown, leathery sea-plant, harvested from the cold waters of the Pacific coast, and can be found in many traditional soups and stews. *Luche* (*Porphyra columbina*) appears as small, translucent blades in shallow, sheltered waters and is a common feature in shellfish soup. Many rural people also remember how some other species were used by their ancestors. For example, the green sea lettuce, called *lamilla* (*Ulva lactuca*) was traditionally used as fertilizer for growing potatoes but is now a neglected resource since most farmers have shifted from organic to chemical methods. *Llapin* (*Nothogenia fastigiata*), another red algae containing carrageenan, is still sometimes used by farmers to feed young pigs who are not growing well. Finally, there is a kelp called *sargazo* (*Macrocystis pyrifera*) that the aboriginal Williche people would use to heal broken bones. Modern science and the rapidly growing health food movement recognize that all these species and many more that can be seen on the shores of Alao are edible and/or medicinal, yet most of these resources are either entirely ignored or used in a very limited way. Recent research on Chiloe suggests that the tradition of using sea-plants is a cultural asset that is in danger of fading away.

I found that on Alao the use of sea-plants for food or agriculture is rare, and medicinal uses are non-existent. No one makes any use of the *luga* and *pellilo* that they harvest for

sale. This is a pattern I have noted among seaweed harvesters in many small islands of the world, but it is perhaps more surprising in the Chiloe archipelago when one considers the archaeological evidence of seaweed use over thousands of years. In 2008 it was reported that nine species of marine algae were recovered from hearths and storage spaces of ancient homes unearthed at Monte Verde II, on the mainland of Chile close to the Chiloe archipelago. These remains were dated to be from between 14,220 and 13,980 years before the present, indicating the use of seaweeds by the people who lived at the site at that time. The seaweeds were mixed together with medicinal herbs in half chewed cuds, leading the archaeologists to conclude that they were used for both food and medicine. It is most likely that the original occupants of the Chiloe archipelago shared the sea-plant knowledge and practices in evidence at near-by Monte Verde. Yet today, people are unaware that many of those species found at Monte Verde, including *luga*, have any potential use as food or medicine.

We started our work on Alao by moving about meeting women and inviting them to a workshop to be held the following day. When we learned that there was already a workshop on how to build a greenhouse scheduled for the afternoon, we decided to start our workshop mid-morning with the intention of preparing a lunch featuring a variety of seaweed dishes for all of the workshop participants. Participants were invited to show up at 10 am and bring some food to share—either a few vegetables, some shellfish or smoked fish. Then we went out to the beach to harvest some of the most commonly available edible and medicinal sea-plants. In no time we had bags of *luga*, *llapin*, *lamella*, *luche* and *sargazo*, which we carefully washed to remove all sand and bits of debris, and then laid out to dry. The larger plants were pegged onto clotheslines, to the bemusement of the locals. The smaller ones were spread on clean newspapers on top of chairs and tables in the clinic, where we were to spend the night. That evening we perched our teacups in the small spaces between fronds of seaweed on the desk we were using as a dining table.

The next morning we took over the kitchen of the school, which opened into a dining room with long wooden tables perfect for displaying our marine treasures. As participants filtered in, they were set to work washing, peeling and chopping vegetables and seafood, and preparing bread dough. Once the room was full, we started talking about the different seaweeds, how they could be used, their nutritional value and medicinal properties. Recipes for the day were written on craft paper

and hung on the wall so that everyone could make their own copies. I told stories about seaweeds from other islands, including the one about Jamaica where young men believe that the seaweeds containing jelly have aphrodisiac properties. That's always a good one for breaking the ice!

First we oven dried three different sea-plants—one red, one green and one brown—to make them crispy, after which some of our child participants gleefully crumbled them into small flakes using a rolling pin. These flakes were sprinkled into the bread dough to make vitamin-and mineral-enriched rolls. Then we tossed *luga* and *llapin* into pots of hot milk and cooked them until they disappeared and the milk became very thick. Half of the milk jelly was mixed with honey and vanilla and poured into a pan to cool into a delicious pudding. The other pot of thickened milk was mixed with smoked fish, smoked mussels, sautéed onion and garlic and a handful of

crushed smoked chillies. This was also poured into a pan to cool and set into a jelly. Finally, we boiled up a huge pot of fish and vegetables and tossed in every sort of seaweed available. The results were delicious and we were especially happy to hear the women asking if they could use milk from their cows to make the pudding. Of course they can, and we hope they will, because at this point no one on Alao milks their cows. They claim that the children don't like milk so they get very sugary tea or Nescafe instead, together with white bread—the standard meal on Alao. But the kids at our workshop certainly did not object to the *luga* pudding!

One mother had a child with a nasty case of herpes on his face. Because carrageenan is anti-viral against herpes, we took time to whip up a *luga*-based skin cream, which everyone enjoyed slathering themselves with. All in all, a wonderfully fun and productive day. Thanks, Alao! 🍷