SUMMARY REPORT ON EXISTING SEAWATER PRODUCTS AND MARKETING

I have just realized that many people we have met in the last few years do not know the efforts that have gone into product development, market analysis of both need and placement, and possibilities we looked at for Seawater Works and associated entities and those not yet thought of, independent downstream businesses. These are particularly important as we look at worldwide, seawater communities that will provide products, jobs, and necessary village and a town infrastructure like hospitals and schools, markets and restaurants to accommodate the citizens of these new seawater towns. We, the collective planetary citizens, need to provide worldwide, these amenities for another 2 billion people. Some will be displaced people because of war, because of climate change and sea level rise and because of human danger from poverty and just increased populations. Where will they live, what jobs can they have, what will they eat, how happy can they be?

We, Seawater Works and our associates (we will need associates, this is so big it will take a worldwide village) can begin to address these issues. We can help alleviate war by making available livelihoods from seawater companies; when you have enough and don't feel threatened you can live at the possible positive edge, not in fear. We can help slow and stop sea level rise by bringing the seawater inland to make rivers of seawater that provide, as rivers and coasts always have, good places to work and prosper. That contributes to lowering the number of climate refugees. We can make goods that employ people and provide those products closer to home, cutting transportation costs and utilizing our seawater rivers as a method of moving our products. We can tackle unique maladies like covering the toxic dust at the Salton Sea for health reasons and to reinstate the communities around the Sea, and know if we encounter a similar situation, we have a solution. And we can encourage entrepreneurs to provide to the community services and products we have not even thought of yet. We can have specific, almost manuals, of how to use seawater for farms and further, to enhance living communities.

So let me share some of the efforts we have made along the line, been successful (and some not) but ones we plan to employ when we are at full steam.

The front end of aquaculture has always provided the economic boosts of a nutritionally positive protein, especially in areas where protein is expensive or hard to find and, in some cases, hard currency is needed. It shares the cost of pumping seawater onto the land and produces a healthy, natural fertilizer for field crops of halophytes as it exits the aquaculture facility; it brings inland rivers of seawater, the most abundant natural resource of the planet. Using the effluent from aquaculture enhanced the natural farming aspect of the salicornia and its products as well as the man-made wetlands we designed to bring birds and animals, marine and terrestrial back to barren lands. Attachment 2 (Electronic Versions) is a brochure that identifies products we have tested, manufactured as trial runs and are certain we can reproduce the results. You will see the name Seaphire which was a TM used for all salicornia products at that time. It was a play on the British name for salicornia, Samphire and the sea.

Our Perfect Shrimp from Eritrea

The field crop of salicornia, as you all know, is an unusually versatile crop. The green tips or sprouts, cut just a few weeks into growing, are sold as a gourmet vegetable. Many chefs in the United States now know the tips and use them as frequently as they can. Until we started

growing them in our fields, they were wild harvested in Europe at the time of early growth. They were very dear and only available in season. In July of this year, Salicornia Tips were sold in San Diego for $8 per pound foraged from the seashore. We worked with Melissa's produce out of Los Angeles to introduce our tips and to market them both to restaurants and to repack in small quantities and sell to individual consumers.

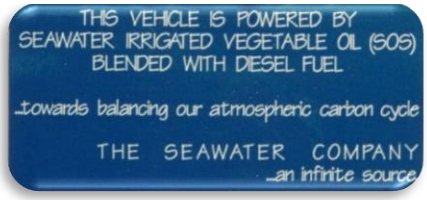
Sea Bean Salicornia
July 2016 $18.20

In Michoacán Mexico, we worked with a canning company to develop salicornia tip salsas and found we could produce a jar of pesto with pine nuts, basil and salicornia tips, and several vegetable salsas using the tips as flavor and saltiness. And we developed dozens of recipes using the tips with fish, shrimp and many vegetable dishes. Candied almonds tossed with salicornia to fill baked and buttered Acorn Squash. Corn with Gruyère cheese and cream, with salicornia tips as the saltiness and green sparkle. Tips in an avocado half with olive oil and fresh lime juice. Sole in brown butter with capers and tips – no salt needed. Arugula and salicornia salad – natural salt and pepper, with light lemon dressing.

When grown to full maturity, the seed of salicornia contains an edible oil closest in quality to Safflower oil. Consumption of vegetable oils were at 117 million metric tons in 2015-2016. It is a commodity traded around the world. That same salicornia oil has lubricant qualities that make it an excellent candidate for cosmetics. We worked with Arizona Natural Resources and their chemists to develop hand creams, face oils, and face care items. Their labs also pack and ship the products. And as an incredible fortuitous action, Arizona Natural Resources purchased a candle company and supply candles they produce. Later, IKEA contacted us to provide oil for their candle making operation. We were able to tell them we could not supply the amount of oil they required (IKEA is the largest supplier of candles in the world and they wanted to be able to market our story along with the candles) but that we knew from Arizona Naturals the oil was suitable for that purpose.

Pure Salicornia Oil

IKEA Candle Area



Along with the airline industry we examined the use of oil for jet fuel. Even earlier, we drove a Ford Escort around Phoenix for a year on Salicornia oil and diesel. Countries, farms and farmers can select the use of their harvest for their local needs and greater benefit both financial and cultural.

After expelling the oil from the seed, there is a meal or flour that is approximately 40% protein which makes it an excellent base for animal feed (humans as well, we made cookies Marlon Brando introduced on the Larry King show). And in Eritrea, we developed feed and worked with Mercy Corps to carry out feed trials for ruminants. This provided excellent feed for the goats, sheep, cattle and camels during the often extended droughts that plague Africa (and other parts of the world). The trials were duplicated in Mexico and again, the goats were healthy, had weight gain, healthy babies and minimum difficulties within the herd. By using halophyte feed, the villages and families had milk, yoghurt and cheeses they would have sacrificed if feed for the animals were not available.

Salicornia Meal upon separation from Oil

First Goat Feed Trials

The straw left after the salicornia harvest can be used for making fiber board and even fire logs. The long staple fibers make it incredibly strong for boards and can burn over 5 hours in a fireplace. And we hand-made paper as an environmental project (also printed menus for an extravaganza of a roll out of tips at Hacienda de los Morales restaurant in Mexico City), and wall paper for interior design.

In all these products, the environmental story is an integral part of the marketing. The jobs, the people in former inhospitable areas that need jobs and dignity, and the obvious broad health to the planet make the products all the more marketable.

Salicornia Straw Fire Log, Paper Samples and Fiber Board

After the seawater irrigates the salicornia, we use the water for mangrove trees in what we devised as mangrove forests with a determined harvest of 50% of the trees each year. That allowed us to plant seed in tight configurations, irrigate, and at the end of every year harvest every other row, bringing product

Mangrove Fields First Year and New Starts

and cash to the foresters, keeping the canopy of the forest completely covering the ground for maximum photosynthesis and carbon sequestration. The leaves of the harvested mangroves and the bottom leaf pruning of the remaining trees become animal feed, and the carbon sequestration below ground in the roots and above ground in the remaining trees were documented for the United Nations and the World Bank.

Each year the straight tree trunks are larger than the year before. The first year they are but one meter long wood stakes that will work for palapa spines or fencing. By year two they are two meter long poles and by year three, ready to be used as lumber. The wood is a fine wood almost gray-purple hued for art, or wooden bowls and vessels. The mangroves grow about a meter a year, as they are cleaned out in harvest, the area does become a forest. One that enhances the land, and can be turned into parks and even housing developments, now green and shady, still sequestering carbon.

First Year Harvest

There are many ornamental halophytes that can both help produce quality fodder or feed but also provide green ground covers, plantings around seawater fountains, vines cooling walls and making empty non-habitats into thriving green communities. Looking at the systems picture, this gives families jobs, dignity and eliminates the need to immigrate to other, “greener pastures” when they are part of conceiving and building their own. And those that have already built green seawater communities can be the mentors and trainers for the next ones.

A big part of those communities will be seawater wetlands and gardens. In Eritrea we started by identifying 12 species of birds on our 1000 HA of land. And with our wetlands where fish and marine animals thrive, and seawater now waved over roots of mangrove forests and nesting and hiding places abound, we identified with photos and sightings over 200 species of birds. Our environmentalist (now continuing that work in India along the salt fields in Gujarat) was scientifically accurate with his spottings and notations.

As the seawater moves along the community, it becomes more salty because of evaporation and use. The community is designed and laid out for each waystop to use the seawater at the proper salinity. After the first aquaculture, the field crops and the wetlands, there are possibilities for growing high salinity algaes and artemia. We grew D. salina in Puerto Peñasco.

D. salina Raceway

Harvester and Processor

Processed Product

Dunaliella salina is a type of halophile green micro-algae especially found in sea salt fields. Known for its antioxidant activity because of its ability to create large amount of carotenoids, it is used in cosmetics and dietary supplements. Few organisms can survive like D. salina does in such highly saline conditions as salt evaporation ponds. To survive, these organisms have high concentrations of β-carotene. And in Eritrea, at the penultimate use of water, high salinity, we grew artemia, a high value variety of brine shrimp. This is an example of how to handle high saline water.

And then – salt. We did bag and sell salt around the countries in east Africa.

Salt Ponds at Almost Harvest

Bagging and Shipping Salt

And that salty water, as it travels along the waterways, lined with mangroves for beauty and eventual shade, and getting more saline every day and mile, can be used for the oldest process on the planet; Evaposynthesis. Before there was land and before there were plants, there was a process; we named it evaposynthesis. As both the sun and wind shined on and blew across the water covered earth, it evaporated and became even more salty. Over the millions of years ongoing, the tectonic plates formed and moved, the land came above the sea and many salt

deposits were formed and fossilized. Eventually (millions of years) plants came on the earth, and what we recognize as photosynthesis made carbon based deposits we use for fuel. Evaposynthesis naturally created non-carbon energy by two methods the planet's scientists and environmentalists are touting today, wind and solar energy. But evaposynthesis, both in stored underground salt vaults and being currently produced by the use of the seawater at our communities can be used to generate power, clean power, non-carbon power. We call that ENC Energy, Evaposynthesis Non-Carbon Energy. More on that later. It is the final component to make the seawater communities bring an entire new WATER-ENERGY-FOOD-CLIMATE Nexus to life.

And last, but not least are the anthropomorphic wild cards. The intelligence of humans who see a need, and simply fill the void and share the results. Hopefully it will be for a profit for them and hopefully it will be for a feeling of accomplishment and the bettering of the community. Here are a few of my favorite examples.

A favorite event for me is one that did not grow because of any of our technologies. But one that grew of necessity because of our seawater community that was Seawater Farms Eritrea. We started with Carl, Rahul Chaturvedi and Jerry Farrell on empty land along the seacoast near Massawa, Eritrea. Carl brought Fernando Martinez who had worked with Carl in Puerto Peñasco, Sonora and Baja California Mexico as well as Egypt and the Middle East, and knew how to grow shrimp, fish, salicornia, mangroves and many ornamental halophytes. They had a core, only a handful, of young University of Asmara graduates in marine biology and a few in business. But they started. A hand dug well along the coast provided the clean seawater with only a small pump necessary. Two raceways were dug, lined and filled with shrimp Post Larvae from our aquaculture in Puerto Peñasco. The water flow was continuous and the effluent as it exited the aquaculture, was used to grow Rahul's plots of salicornia, as you would in any bioassay trials, to discover all the things you need to know of a new site. After eight months, on one HA of land, we had shrimp to harvest, salicornia to be cut and mangrove plots ready to be planted. And we had 50 students as Summer Campaigners to help, a project for all high school and university students in Eritrea to be assigned to a project. Here is Carl's summary of that first beginning: https://www.youtube.com/watch?v=jr_N-5gl4qM

Land on which Seawater Farms Eritrea was built

Now, all those workers, Eritreans, Mexican, Indian, Israeli and American needed to eat in the middle of the day. The closest place was a mile up one road to an expensive (relatively) beach hotel to the east and two miles to the west. In came Lula. One day she showed up with an Eritrean tin fire stove, about a foot wide, a foot long and a foot high. She built a fire and started traditional coffee for anyone who wanted to pay a small amount. Then seeing breakfast and lunch as a need, she started her under-the-tree restaurant. It grew as the farm grew. And walking over the 1000 HA was not feasible for a short lunch break, so she started 3 more "restaurants" along the way. The Coca Cola truck delivered drinks and she and her now growing series of

staff cooked about 200 meals a day. Everyone knew Lula. How she got to the farm and hired her staff was a mystery. She was a big part of Seawater Farms Eritrea and no part of our plan or system.

Another instance was the leather industry in Eritrea. An Italian colony for many years, leather curing and fashion was prevalent in Asmara, the capital city. As we sent tilapia, grown on seawater, to the fish market, the skins were gathered by the leather processors. They turned the small pieces of skin into an incredible tough but soft, pliable leather with a pattern of the scales and into some remarkable colors.

While the skins were small they were made into key fobs and wallets and sewn together into other pieces of clothing such as vests and jackets. No one showed the women who process the skins how to do so and no one had ever done so with fish before in Eritrea. But we now had another leather for the shops, one that was uniquely Eritrean.

I see indoor plantscaping with seawater and marinas that use halophytes for dock and even boat container gardens. I see aquariums in houses that get live fish and shrimp for dinner and keep it in the water for freshness. I see things I don't yet see as businesses and offerings to make these seawater communities rich in culture, beauty and jobs. The Works, or our ongoing companies, will not have to worry about the ideas, or the companies, they will invent themselves as clever people see a need in these vital new communities and fill it, many times over.

All my best, I'm here if there are any questions about the products,

Beth

PLEASE SEE SOME IDEAS FOR SALICORNIA TIPS WE ENJOY

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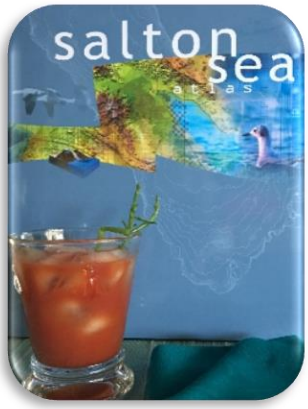
The watermelon, salicornia and feta is something we shared all summer in Puerto Peñasco and indeed in Arizona too. It is the colors of the Mexican flag and always feels festive. The crunch and burst of salty salicornia, the crisp sweet watermelon and creamy feta are perfect mouth feel.

And I've shown a glass of spicy vegetable juice to which you could add vodka if you prefer; and it is always good chopped and added to salt rims and garnish with a margarita. I believe in the United States there is a bar business for the tips. So many restaurants and bars now have a mixologist to devise new recipes for cocktails, I believe there can be a bar pack of salicornia sold for the bartender in addition to the chef.



My Spicy Vegetable Stew is a staple and if you (as with all these dishes and others to which we add salicornia) eliminate the salt in the recipe that dissolves in the soupiness, with salicornia stirred in just before eating gives you a burst of "crisp sea salt" straight from the sea, with no processing, a natural element into dish.

In Peñasco, at the beach we had ready access to our farm's shrimp and the oceans fish and often had a rice dish with lemon and salicornia and a salad to complete the meal.

And for tomorrow's breakfast, Carl and I will enjoy avocado toast with salicornia, simple Dijon eggs with chopped salicornia instead of salt and wonderful in-season tangerines.