CENTER FOR TROPICAL AND SUBTROPICAL AQUACULTURE

Regional e-Notes ~ August 2019 ~ Volume 11, Issue 8

Letter from the Director

Aloha!

Teamwork is always a top priority of mine when I set out to accomplish tasks, particularly those related to aquaculture development. If you are a long-term reader of this newsletter, you know that I regularly use my 'Letter from the Director' platform to discuss the importance of working together to achieve our shared goals. In last month's Letter, I mentioned one of the CTSA project leaders, Ryan Murashige, who has been working together with the COM Land Grant Program under Dr. Singeru Singeo's supervision to provide training for Marshallese aquaculture technicians. This month's issue features an article highlighting my recent trip to check in with Ryan and the important collaborative work they are doing in Majuro.

The topic of collaboration is one that resonates across the science world. Last week, I had the great pleasure of attending a two-day "World Laureates Sanya Forum" in Hainan, China. The theme of this forum was "Smart Ocean and Future Agriculture." It was the first time I have attended this type of high power event, and it was a joy to meet and listen to presentations from 12 Nobel Prize laureates, two Turing Award laureates, one Fields Prize laureate, two Lasker Award laureates, and four Wolfle Prize laureates in agriculture. I also had the opportunity to share a presentation about our work in Hawaii and the U.S. affiliated Pacific Islands. During the forum, Nobel Prize laureate Dr. Randy Schekman called for "science without boundaries," and promoted cooperation as essential for success. At the end of my own presentation, I included the following quote from Kate Vitasek: "innovation and collaboration are not an "either-or" proposition, but rather are intimately linked."

As we do each year, CTSA is working with many researchers to develop our FY2019 Plan of Work (POW). Everyone plays different roles during this process to make sure that we prepare the best POW to help the development of the aquaculture industry in our region. This month, our team is processing the FY19 proposals and distributing them for external and... **Read More**

Working Together to Go Farther: An Update on CTSA Supported Aquaculture Activities in the Marshall Islands

By CTSA Executive Director Dr. Cheng-Sheng Lee and Meredith Brooks

Partnership and travel are two hallmarks of operating the Center for Tropical and Subtropical Aquaculture. The territory we cover is broad, spanning thousands of miles between remote --and oftentimes, small-- Pacific Islands. Strategic partnership between islands and leveraging of resources is an essential element to the successful development of any industry in this region. Accordingly, whenever our staff travels, we go to great lengths to open our arms to those who share the same mission to sustainably develop aquaculture. In my capacity as Executive Director of CTSA, I try to meet with as many stakeholders as possible within our territory. Last month, I had the pleasure of packing several important meetings into a three-day trip to Majuro, the main purpose of which was to check in with ongoing CTSA-funded projects.

On this short trip, I went straight from the airport to meet with Ramsey Reimers, a Marshallese businessman and entrepreneur responsible for several successful enterprises in the RMI. I have known Ramsey for a long time. Many years ago, CTSA worked together with him on aquaculture of giant clams. He was the first person who CTSA partnered with in the RMI, and the first to express interest in aquaculture in the RMI as a means to increase the available supply of sustainable seafood. Although he is not currently active in fish farming, Ramsey sees value in investing in sustainable technologies and is excited about the future of aquaculture in Majuro. After our meeting, Ramsey brought me to the local fish market to see how the ocean fish harvest has changed over the years in terms of species and size. According to his observations, there has been a gradual yet significant decrease in the size of wild-caught fish. I completely understand his concerns. Like in many areas of the Pacific, the natural resources are being depleted at a high rate. This was a topic of my discussion with local government and college officials later the same day.

Throughout my discussions, I always return to the theme of partnership. Aquaculture can be an important solution in addressing the issue of natural resource depletion from multiple angles, but in order to establish a successful aquaculture operation, multiple partnerships need to occur. Capacity must be built through partnerships in research, demonstration, education and training. This is followed by partnerships between capacity builders and industry developers, or the business leaders who will finance the operation. Finally, any operation needs public support and partnership with governments throughout the duration of the process. It helps to ensure a clear regulatory framework. To this end, I met with local government officials Glen Joseph of the Marshall Islands Marine Resources Authority (MIMRA) and John Silk, Minister of Resources and Development, as well as Dr. Theresa Koroivulaono, President of the College of the Marshall Islands (CMI). We all agree that strategic partnership among our agencies and local farmers is the most effective way to develop sustainable aquaculture, reduce depletion of natural resources, and increase food security in the RMI.

While in Majuro, I also met with colleagues at the Republic of China (ROC) embassy, who informed me they are welcoming a fisheries and aquaponics expert to the RMI this month. It was my pleasure to link them together with CMI to help continue building local capacity for aquaculture in Majuro

The primary purpose of my trip was to check in with researcher Ryan Murashige, the PI of an ongoing CTSA project on marine finfish aquaculture, and to observe the intensive rabbitfish training workshop that he was leading with researchers Sergio Bolasina of CMI, Miguel de los Santos of Palau Community College, and Manoj Nair of The College of Micronesia (COM). Both the long-term project and short-term workshop are great examples of partnership in action. The multi-year marine finfish project --a collaborative effort between CTSA, ATMI, and the government of Rongelap-- is focused on establishing local farming of rabbitfish and moi, two popular fish that have been overfished throughout the region. The two-month intensive workshop --a collaborative effort between CMI, the COM Land Grant Program, CTSA projects, and Aquaculture Technologies of the Marshall Islands (ATMI)-- brought together researchers from

Palau, Pohnpei and Marshall Islands to train technicians in rabbitfish hatchery and rearing techniques.

During the workshop, I was able to witness firsthand the dedication that Ryan is putting into his work in the RMI, as well as aquaculture development across the region. He led the demonstrations in all aspects of running a successful rabbitfish enterprise from hatchery to harvest, including feed manufacturing. Feed formulation and manufacturing of feed is key to the success of aquaculture in the RMI and the region. Ryan has established an efficient multi-species feed mill to produce quality local feeds that can sustain multiple livestock industries... **Read More**

Recap of Hawai'i Aquaculture and Aquaponics Association 2019 Meeting on O'ahu

On August 12, the Hawai'i Aquaculture and Aquaponics Association (HAAA) held its 2019 Conference at Kapiolani Community College. This year's conference focused on "Innovation and Collaboration," and featured eleven speakers, including three visiting guest speakers.

The first guest speaker Georg Baunach, Managing Partner and Co-founder of HATCH Blue, discussed the upcoming HATCH cohort in his presentation "Acceleration of Aquaculture Innovation." Among other goals, HATCH hopes to help innovate and reinvigorate aquaculture in the Hawaiian Islands. Other guest speakers shared information relevant to Hawaii farmers, ranging from tilapia disease to food safety in aquaponics production.

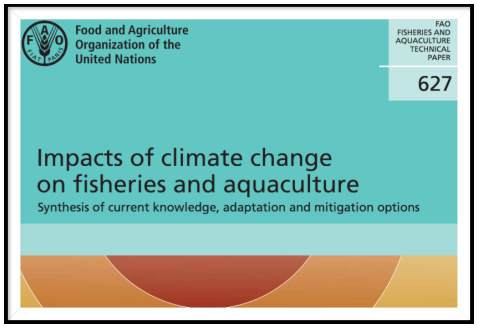
"I felt it was a very diverse program well supported by sponsors and well received by attendees, many of whom shared very positive feedback," stated Ron Weidenbach, President of HAAA. "The presentations were strong and the presenters were well prepared and on target for the audience."

Multiple conference presentations were focused on disseminating CTSA-funded research results. CTSA Principal Investigator RuthEllen Klinger-Bowen, a Fish Disease Specialist with the University of Hawaii, presented on the recently completed CTSA project "*Francisella noatunensis* subsp. *orientalis* prevalence and genetic assessment of feral tilapia populations in Hawaii." In addition, Dr. Chad Callan, the Director of the Finfish Program at Oceanic Institute of Hawaii Pacific University, discussed his ongoing CTSA-funded work in his presentation "Recent improvements in advancing the culture of yellow tang (*Zebrasoma flavescens*): an update on progress at Oceanic Institute."

"The HAAA conference is a great opportunity for our local industry to gather and share updates," stated CTSA Executive Director Cheng-Sheng Lee. "It is also a good platform for CTSA PI's and other local researchers to share the results of their latest research, which is often very relevant to the people in attendance."

"I was particularly happy to hear about developments at UH Hilo PACRC, which is starting to conduct research on food fish and marine ornamentals in Hawaii," he continued...**Read More**

AquaClip: New FAO Report Predicts How Climate Change Will Impact World's Fisheries & Aquaculture



Climate change will decrease the world fisheries' overall maximum catch potential between 2.8% and 12.1% by 2050 based on different greenhouse gas emission scenarios, with the tropics, especially the South Pacific region, getting hit the hardest, says a team of technical experts organized by the United Nations' Food and Agriculture Organization (FAO).

It's not just the oceans either. As water becomes more scarce, inland fisheries will be undervalued. Pakistan, Iraq, Morocco and Spain are all highlighted as countries that are currently facing high stresses that are projected to become even higher in the future.

That's just a sample of the findings in "**Impacts of climate change on fisheries and aquaculture**," a 654-page paper released this week by FAO. The paper, which was nearly three years in development, has 28 chapters addressing various aspects of climate change on the seafood industry.

Source: UnderCurrentNews.com / **Read Article**

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The Center for Tropical and Subtropical Aquaculture (CTSA) is one of five regional aquaculture centers in the United States established and funded by the U.S. Department of Agriculture's National Institute of Food and Agriculture (NIFA) under grants 2014-38500-22241, 2016-38500-25751, and 2018-38500-28886. The regional aquaculture centers integrate individual and institutional expertise and resources in support of commercial aquaculture development. CTSA was established in 1986 and is jointly administered by the Oceanic Institute of Hawaii Pacific University and the University of Hawaii.

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