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GUAM DAILY POST • MONDAY, MAY 6, 2019

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Former Guam chief planner joins Matrix

Marvin Aguilar, the former territorial chief planner for Guam and natural resource specialist, is joining Matrix Design Group Inc. as the company plans to expand on the island.

"We are excited to integrate Marvin's in-depth institutional knowledge and expertise in policy and regulatory land use planning and in land development," the company announced in a news release Thursday.

Matrix is an award-winning consulting firm that provides planning, engineering, environmental and program management services with an office on Guam and 11 offices on the mainland.

Matrix has more than 10 years of assisting Guam in planning and engineering efforts.

(Daily Post Staff)



Marvin Aguilar

Pathogen-free shrimp could become export product

By Kevin Kerrigan kevin@postguam.com

Tucked away off the back road to Andersen Air Force Base is the Guam Aquaculture Development and Training Center, where the Fadian Hatchery is located.

It was originally built as a private facility designed to produce fish and eel fry for the Asian market. In 1986, it was transferred to the government of Guam. In 2001, it was turned over to the University of Guam. It is the largest and oldest aquaculture center in the Western Pacific.

This is where GovGuam hopes to launch an aquaculture industry that could become the island's first real export, pathogen-free shrimp.

"It's a gold mine," said Gov. Lou Leon Guerrero who signed an executive order Tuesday creating the Guam Aquacultural Task Force to help make that goal happen. "Asia is looking for pathogen-free shrimp," she said.

Research scientist Hui Gong Jiang runs the Fadian Hatchery. She and her team have been able to breed varieties of shrimp that are free of pathogens.

At the news conference announcing the creation of the task force, Lee Yudin, the dean of UOG's College of Natural and Applied Sciences, which oversees the hatchery, said pathogen-free shrimp are in high demand throughout Asia.

"The big issue has been that we've never had enough money," Yudin said, to create a facility capable of producing a marketable quantity of patho-



SHRIMP: Hui Gong Jiang and her team have been able to breed modified varieties of pathogen-free shrimp. Photos courtesy of the University of Guam



SHRIMP: Asia is looking for pathogen-free shrimp, such as the ones shown.

gen-free shrimp for export.

Recently, however, UOG, in cooperation with the Guam Economic Development Authority, put out a request for proposals in search of an investor with the funds and expertise to convert this research hatchery into an export-driven facility.

"We have a very interested party who successfully submitted their

proposal to us," Yudin said.

The proposal is being evaluated and it looks promising, Yudin said. But he declined to name the investor saying, "We're not quite there yet."

"It will be a public-private partnership," said Cathleen Moore-Linn, executive director of the Research Corporation of UOG. She is working to secure grant funding to develop a state plan for aquaculture.

Moore-Linn said the hatchery has already developed pathogen-free juvenile fish known as "fry" and the fully grown shrimp, known as broodstock, which are used in aquaculture for breeding purposes.

The plan is to offer the fry and broodstock to local residents interested in launching their own aquaculture farm "so we can realize the governor's vision of expanding this beyond the university."

"This is just the beginning," Yudin said. "We hope to look at other fish, but this is a good start."

CIVIL SERVICE COMMISSION Notice of Meeting

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The CSC will meet at Suite 201, 710 W. Marine Corps Dr., Hagåtña, Guam on Thursday, May 9, 2019, at 5:45 p.m. For special accommodations, contact Eric Miller/ADA Coordinator at 647-1855. See agenda, at csc.guam.gov.

GUAM BOARD OF MEDICAL EXAMINERS

Regular Board Meeting, Wednesday, May 8, 2019 at 4:00 PM

at the Guam Memorial Hospital Authority Board Room, 850 Carlos G. Camacho Road, Tamuning, Guam.

For more information please contact the Board office at 735-7405 thru 11. Persons with disabilities needing special accommodations may call Director's Office at 735-7172 or the telecommunication device for the Hearing/Speech Impaired (TDD) at 649-1801. Executive meeting may be called if necessary.

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5 day

As rain grows patchier, Andaman and Nicobar island farmers adapt

By Colin Daileda
Thomson Reuters Foundation

CHOULDARI, India - Tapan Mondal used to grow rice, when the rainfall over India's Andaman and Nicobar islands was still reliable in the dry season, showering the thin layer of island soil with enough moisture for crops to survive until the monsoon.

Now, however, the 49-year-old's island is much drier, and what he is growing has changed.

Near a pond dug into his fields to trap rainwater, chilis, tomatoes, cauliflower and other vegetables now sprout. The pond, covered with a tarp to ward off evaporation, also allows him to raise fish to eat and sell.

Water seeping from the pond into surrounding soil nourishes banana and papaya trees as well, with long roots that can suck up scarce moisture.

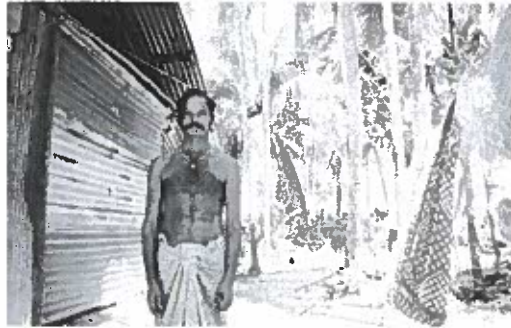
The changes mean he now earns more than he used to from growing rice - but crop quality has declined, he said, perhaps because of higher temperatures and longer dry spells.

As climate change takes hold, the Andaman and Nicobar Islands, in India's Bay of Bengal, are seeing more irregular rainfall.

It's an enormous problem for farmers no matter where they sow their crops - on the thin coastal soil of the Andamans, or the porous coral soil of the Nicobars. Both struggle to absorb and hold much water.

The number of rainy days and the amount of rainfall the islands receive during the dry winter season have dropped in recent years, according to data from 1949-2014 compiled by scientists at the India Meteorological Department and the Central Island Agricultural Research Institute.

In these islands, said Ayyam Velmurugan, a soil scientist with the institute, two weeks of sunshine can suck the soil dry, turning a flood quickly into a drought.



ADAPTING TO CHANGE: Tapan Mondal stands on his farm, where he grows pumpkins, papayas, areca nuts, and more, in Chouldari, India, on March 6. Photos by Colin Daileda/ Thomson Reuters Foundation



PRAYING FOR RAIN: Cracked soil waits for rain at Tapan Mondal's fields.

Farmers on India's mainland can sometimes dig for groundwater to make up for a lack of rain, but coastal Andaman soil isn't deep enough to hold much water, and digging into the coral soil of the Nicobar islands can flood a field with saltwater, scientists say.

All this is creating challenges for the 380,000 people who live on the archipelago, more than a quarter of them in the capital, Port Blair, according to data from the last nationwide census in 2011.

Rain woes

One of the problems facing the drying Andaman islands is that the deepest soil - that's good at soaking up rain - lies in the interior regions that are largely mountainous, forested and undeveloped, Velmurugan said.

Moving water from inland areas to the coast is too costly, he said.

In total, rainfall over the Andaman and Nicobar Islands still hovers near its historical average, Velmurugan said - but now more of it comes during the monsoon, often in heavy cloud-bursts. The Indian Ocean has warmed more consistently than the Atlantic and Pacific, according to Roxy Koll, an Indian Ocean warming expert at the Indian Institute of Tropical Meteorology who is currently a visiting scientist at the U.S. National Oceanic and Atmospheric Administration.

The warming waters increase evaporation and cause bursts of rain that can erode away soil, scientists say.

This is a constant problem on the Andaman and Nicobar Islands, where morning droplets of rain can flow out to sea by afternoon.

As warming continues, "you can expect this over most of the islands over the Indian Ocean," Koll warned. "It will only add to the agriculture woes."

Forecasting

Velmurugan pulled his office door shut on a recent March evening and walked down the hallway, shuffling papers holding district-level weather predictions for the islands' next three days.

The predictions are blasted out twice a week via Whatsapp and text, and broadcast on local radio and tele-

FARMERS continued on page 17

London Marathon tests edible seaweed pouches

By Peter Holley
The Washington Post

As participants in the London Marathon entered mile 23 on Sunday, they were greeted by a new kind of refreshment: Golf ball-size pouches made from seaweed and filled with a sports drink.

The squishy pods - which look like tiny pillows and were handed out to thousands of passing runners - gave race organizers a chance to cut down on the flood of plastic waste that accompanies major sporting events.

Created by a London-based startup called Skipping Rocks Lab, the seaweed pouches, known as Ooho, are edible and biodegradable, dissolving in about a month when discarded, according to the company. To access the ounce of liquid inside each pouch, runners merely have to bite into the pouch or place the entire pod inside their mouth and start chewing.

Video taken during the race showed runners doing exactly that, offering race organizers and company officials a mass experiment in the use of an alternative sustainable material.

"What we use is the building blocks of seaweed," Rodrigo Garcia Gonzalez, a Skipping Rocks Lab founder, told CNN, referring to the pouches' thin outer membrane. "We remove all the green stuff and the smelly stuff."

"The marathon is a milestone. ... We are hoping we will demonstrate that it can be used at scale in the future," Gonzalez added.

Key environmental challenge

Most kinds of plastic water bottles are recyclable, but their use has accelerated so much in recent years that efforts to reuse the material have failed to keep up, according to the Guardian. The paper reports that 1 million plastic bottles are purchased around the world every minute, a rate that is expected to increase in the coming years as demand for the bottles skyrockets in Asia.

Scientists have called plastic litter, which is being dumped in the ocean at alarming rates, "one of this generation's key environmental challenges."

Race organizers say they're attempting to cut down on the use of plastic and assured critics on Twitter this weekend that bottles used in the event would be recycled. In total, CNN reported, the number of plastic bottles was reduced from 920,000 in 2018 to 704,000 this year.

"The changes and the trials we're introducing for this year have the potential to change how mass participation events are delivered in future," Hugh Brasher, the marathon director, told CNN.

GUAM BOARD OF ALLIED HEALTH EXAMINERS

Regular Session Meeting,
Friday, May 3, 2019 at 12:00 PM
at the Terlaje Professional Building, 194 Hernan Cortez Avenue, 2nd Floor, Suite 209 Health Professional Licensing Office Board Conference Room, Hagåtña, Guam.

For more information please contact the Board office at 735-7405 thru 12. Persons with disabilities needing special accommodations may call at 735-7172 or the telecommunication device for the Hearing/Speech Impaired (TDD) at 649-1801. Executive meeting may be called if necessary.

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