
Engaging with Academia and Research Institutions (ARIs) to support Family Farmers and Food System Transformation During and Post COVID-19 Pandemic in Asia
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Reinvigorating the Seaweed Industry Through The Application of an Improved Drying Technology

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Seaweed Production and Market

- Seaweeds is the top aquaculture commodity in the Philippines followed by milkfish and Tilapia (Philippine Statistics Authority)
- Phil. as the largest producer of carrageenan

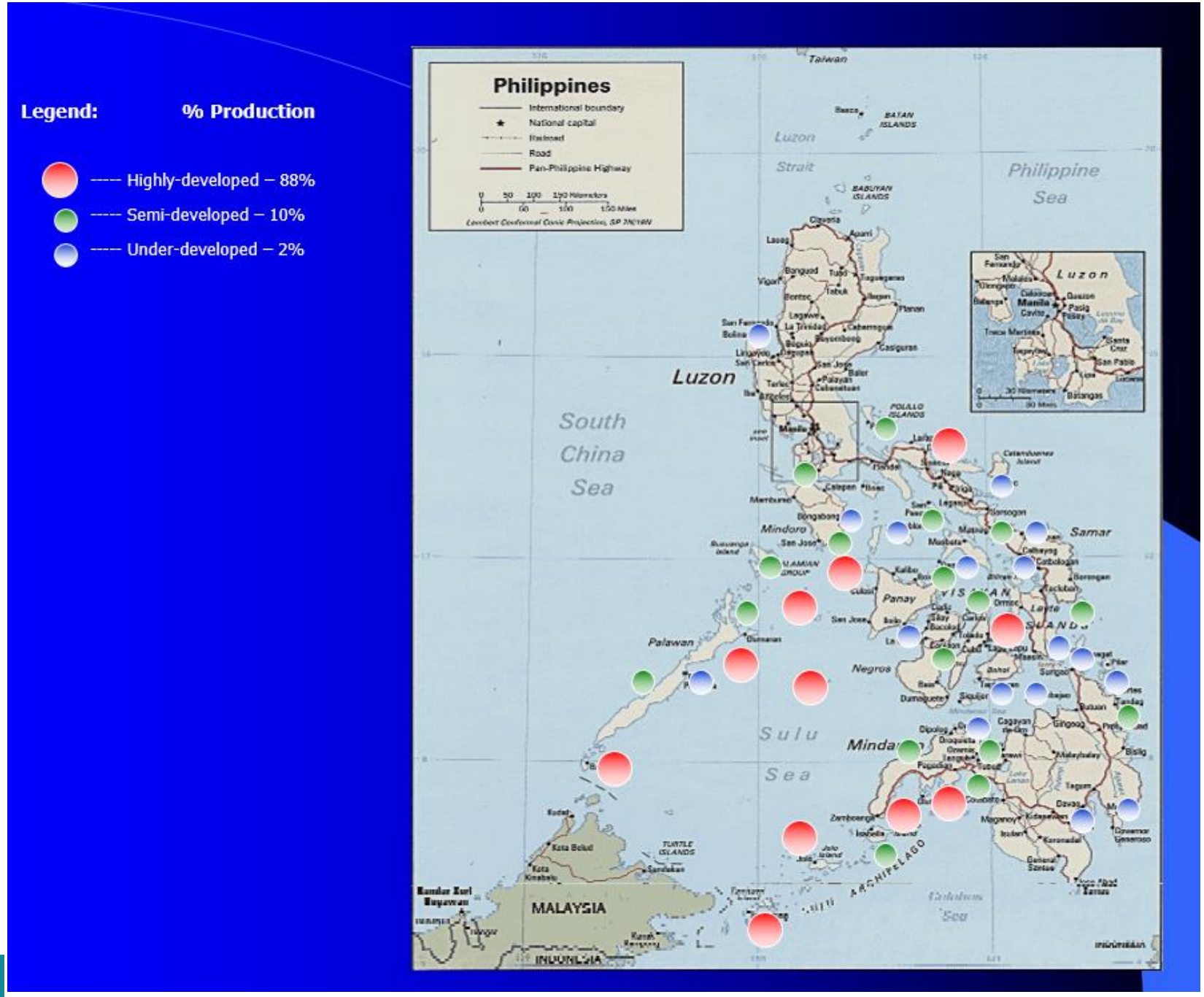
  (77% of global supply) = US$147M

  (Source: Coloner, DTI/Business Mirror,2021)
- 2015, Phil. Export registered US$250-270 million, almost the same in 2016 (Mr. Ricohermoso. The Freeman. April 7, 2017)

Seaweed farming situation

- Areas farmed = 60,000 hectares along coastlines involving >200,000 fisherfolk families
- Available areas = 200,000 hectares (along coastlines)
  = 500,000 hectares (deep sea)

Source: Seaweed Industry Association of the Philippines (SIAP)



(Source: Seaweed Industry Association of the Philippines)

- SIAP Industry situationer on
  raw dried seaweed production (Dec. 2016)

Philippines	=	80,000-100,000 metric tons
Imports	=	15,000 - 20,000 metric tons
Total Requirements	=	120,000-163,000 metric tons

In 2019, Volume of seaweed production =

1.5 M tons = P11.8 Million (PSA)
Around **150,000** metric tons of RDS

Existing practices

Sun drying

Hauling and hanging when weather permits until dried

Sun drying practices

On platforms or ground level

Drying hitches

- Variable climatic conditions
- Adulteration (addition of salt)
- Poor quality products leading to lower buying price

Sun drying

Using the dryer

PHILIPPINE NATIONAL STANDARD FOR RAW DRIED SEAWEEDS (RDS)

Moisture Content (%):		40% *Kappaphycus spp*. 38% *Eucheuma spp*.
Impurities (% max)	:	3%
Salt as KCl (% max)	:	25% *Kappaphycus spp*. 20% *Eucheuma spp*.
Sand (% max)	:	1%
Color	:	Definitely not black

BFAR to craft roadmap to put PH back in global seaweed market

BY JAMES KONSTANTIN GALVEZ, TMT ON APRIL 6, 2017, MANILA TIMES

Agriculture Secretary Emmanuel Piñol said that the DA through BFAR will establish a **National Seaweed Program** to prepare local farmers to meet the growing demand in the world market for locally grown seaweed

To accomplish this, Piñol said that the DA and BFAR will craft a roadmap to implement the program that would pave way for a more aggressive seaweed farming in the country in the next five years

BFAR implemented three key programs for the seaweeds sector namely: **Mas Saganang Anihan** (training for farmers and production of climate-resilient species), **Mas Siglang Samahan** (seaweed farmers were trained to be entrepreneurs), and **Mas Saganang Sama-Sakang Kalakalan** (promoting community-based product champions)



Drying Hitches (continuation)

- Inefficient drying structures/practices
- Lack of drying facilities that farmers are hesitant to plant all year round
- Presence of sand, dirt and other impurities on the dried products
- Moisture content is still high
- Small farmers (limited purchasing power)
- Fluctuations in buying prices – quality, source, volume

Modified and Improved Seaweed Dryers

Modified/Improved version of the Floating-Type Dryer

Modified and Improved Seaweed Dryers

Modified/Improved version of the Permanent-Type Dryer

ESTABLISHED SEAWEED DRYER SITES IN THE PHILIPPINES

Magsaysay, Occidental Mindoro

Calatagan, Batangas

San Jose, Occidental Mindoro

Perez, Quezon

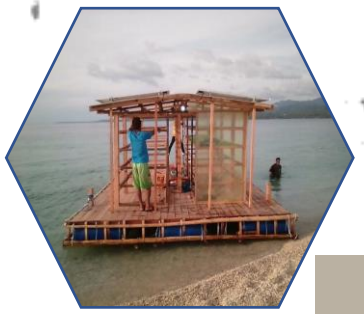
Puerto Princesa City, Palawan

Looc, Romblon

Quezon, Palawan
8 units

Talibon, Bohol

Gasan, Marinduque



Zamboanga
6 units

Impact and possible outcomes of the developed technology

- Twenty two (22) units were already constructed and used by farmers in different seaweed growing areas (funding from GO and NGO)
- Created awareness among farmers and other agencies thru techno-fora in different regions and exhibits
- 27 units for construction thru DOST IX (GIA program), CRAs with MSU and PSU
- Farmers can now plant seaweeds all-year round/increase area
- Farmers can attain the required quality and volume
- Sustainable seaweed production

Summary

- The developed drying system can hold 2 tons fresh seaweeds
- It can be used both for solar drying and air-drying
- Faster drying thereby reducing losses due to molds
- Farmers can plant all year round – sustainable income source
- Drying is accomplished in a hygienic and sanitary way
- Profitable to use
- The floating-type dryer can be towed near production areas to save on hauling cost
- It is simple and easy to use
- Technology Readiness Level - Commercialization stage

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