# BLACK GOLD OF THE SEA

*Harnessing science to revive Philippine fishing communities*

By **USAID PUBLICATIONS**

JUNE 18TH, 2018

Lota Creencia was born and raised in Palawan — an island province in the Philippines. Growing up in a fishing community, Lota saw the people around her struggling to survive.

Driven to pursue a brighter future, Lota dreamed of becoming a scientist. She earned scholarships and studied marine biology and fisheries in college, eventually obtaining a doctorate degree and returning to become a professor at Western Philippine University.

## SEEKING SUSTAINABILITY

Over half of the Philippines' 1.6 million fisherfolk live below the poverty line. With dwindling fish populations, fisherfolk must work longer hours under rough conditions to feed their families.

Several years ago, Lota noticed fisherfolk harvesting a local species of abalone nicknamed "black gold of the sea." Abalone is a shellfish sold at high prices in Manila and international markets.

Enticed by extra earnings, the fisherfolk collected abalone at unsustainable rates, destroying abalone populations and habitat.

Lota tried to help by starting an abalone hatchery at the university.

*"If people could farm abalone, they would earn more money without harming the ocean," she explained.*

But she could not get abalone to survive in captivity. Her difficulty was ensuring that diatoms — single-celled algae that abalone feed on in the wild — survived in the lab. Without diatoms, abalone would not develop from larvae to juveniles.

## A SCIENTIFIC BREAKTHROUGH

In 2015, USAID partnered with RTI International to offer research grants for Filipino scientists and propel innovation-led, inclusive growth.

Lota applied for — and received — a grant to expand her research. With USAID funding, she hired five researchers, improved the hatchery facilities and procured better lab equipment.

"The grant enabled us to gather more data and meet the standards of the scientific community," said Lota. "It increased our credibility and confidence."

A year after receiving the grant, Lota and her team made discoveries that increased abalone survival rates by five times.

## BETTER LIVING

Lota started supplying fisherfolk with juvenile abalone and taught them how to grow and harvest them in the sea.

Today, over 50 local fisherfolk farm abalone as a result of Lota's research. Many have savings for the first time in their lives, including Marilyn Lagarda and her husband.

"When our daughter was hospitalized, we used our extra money to pay the bills," said Marilyn.

## DISCOVERIES THAT MAKE A DIFFERENCE

*"I always wanted to give back to my community," said Lota. "This grant allowed me to break from the confines of the lab and connect to people."*

Now, Lota is writing a manual so that others can adopt her technology. She also encourages youth to become scientists.

Lota has a challenge for her peers in the scientific community:

*"If we could each inspire 10 young people, we could multiply the number of scientists pursuing solutions that will better our world," she concluded. "That is my dream."*

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## ABOUT THIS STORY

*USAID, through its Science, Technology, Research and Innovation for Development project, has awarded approximately $5 million in collaborative science, technology and innovation grants to more than 20 universities to strengthen their research capacity and inspire more Filipinos to pursue careers in science and technology. It has also awarded scholarships to Filipinos to study in U.S. universities, brought in U.S. visiting professors, and better linked Philippine universities to local industries.*

*The project focuses on disciplines that contribute to high-growth sectors and is establishing a dynamic network of researchers who continuously innovate, and*

*entrepreneurs and investors who turn new ideas into products and companies. A more developed innovation landscape in the Philippines helps make jobs, improve people's lives, and contribute to the achievement of inclusive economic growth.*

**Footnotes**

*Contributions to written narrative by Jexter Javillonar, Sheila Pagurayan and Rossana Zetina-Beale. Photography by Paolo Pangan and Jun Poblador.*

**Palawan, Philippines**