



**GREENFIELDS**

# AGRISEXY

*Cherrie Atilano, UN Ambassador for Nutrition*



**Meet Cavite's Dragon Fruit King**

**22**

2020 Edition



March-April Issue  
No. 286

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an old farmer's soul**

# New Thinking for Agriculture

The Department of Agriculture, under the leadership of Secretary William D. Dar, pursues a development framework dubbed as the “New Thinking for Agriculture.” It is built around eight paradigms designed to increase productivity and profitability of farmers and fishers through sustainable, globally-competitive and climate-resilient technologies and practices.



## 8 PARADIGMS

### 1 MODERNIZATION

### 2 INDUSTRIALIZATION

### 3 EXPORT PROMOTION

### 4 FARM CONSOLIDATION

### 5 INFRASTRUCTURE DEVELOPMENT

### 6 HIGHER BUDGET AND MORE INVESTMENTS

### 7 LEGISLATIVE SUPPORT

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## MANDATE

The Department of Agriculture (DA) is the government agency responsible for the promotion of agricultural development by providing the policy framework, public investments, and support services needed for domestic and export-oriented business enterprises.

## VISION AND MISSION

The DA envisions a food-secure Philippines with prosperous farmers and fishers. It shall collectively empower them and the private sector to increase agricultural productivity and profitability, taking into account sustainable, competitive, and resilient technologies and practices. Hence, its battlecry is simply: “Masaganang Ani at Mataas na Kita!”





March - April 2020

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**Hall of Fame Awardee**  
Best Agricultural Magazine  
Binhi Agricultural Awards  
1985, 2002, 2006, 2010



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**RANILO M. MADERAZO**  
*President & CEO  
Chairman  
of Editorial Board*



**AFTER ALMOST TEN YEARS OF RETIREMENT,** I am once again back to the company that oriented me in the field of agriculture. Nothing seems to have changed — agriculture is still beset with many challenges; small land-holdings, climate change, outdated farming methods, and low production. I also believe that information is key to take agriculture to the next level.

Thus, I am happy to report that Greenfields, the longest-running and multi-awarded agricultural magazine in the country, is back.

This year also marks a milestone in the history of the magazine because it comes with some important enhancements. The first is that the magazine will have a new design and a new look. The second enhancement is we will publish excellent articles attuned to the eight paradigms of the “New Thinking for Agriculture” instituted by our current Agriculture secretary to level up Philippine agriculture.

We not only encourage the young agripreneur to contribute and participate in the selection of features for the magazine — but let us also discuss new ideas to unlock the potential of agriculture.

Definitely, exciting times are ahead of us.

**SalaMAT**



# AGRISEXY

BY JOHN M. ARAYAT

Millennial farmer Cherrie Atilano is the new face of agriculture

**T** **O LEVEL UP** Philippine agriculture, the sector must have a prominent figure whose life story and achievements can truly inspire more young people to take up farming. And from the ranks of the millennials, Cherrie D. Atilano has more than enough credentials to lead the exodus of the youth into the agriculture sector.

For one, Atilano was appointed last September by United Nations Secretary-General António Guterres to be a high-level ambassador of the UN Scaling Up Nutrition (SUN) Movement.

Also, the most popular line people that love to hear from Atilano is: “Let’s make farming sexy.” That is what she has been doing on a wider scale after founding Agrea Agricultural Systems International Inc., a Marinduque-based social enterprise that aims to uplift the social and economic standing of poor farmers and fisherfolk, resulting in poverty reduction.

Besides uplifting the lives of farmers and fisherfolk, Agrea also paves the way for rural women to uplift their

lives through agriculture and agribusiness, and has also initiated activities in Timor Leste. When she was in Timor Leste, Atilano witnessed how downtrodden rural communities were in that country, narrating that in one town they visited, no cats or dogs were non-existent as residents were desperate for food.

### Choosing to serve the poor

The 33-year old Atilano was born into a well-to-do family in Negros Occidental and graduated Magna Cum Laude with a Bachelor’s Degree in Agriculture, Major in Horticulture Specializing on Tissue Culture

### CHERRIE ATILANO

*left the corporate world to help poor farming families starting with Gawad Kalinga. She could have made a lot of money working for a corporation as she graduated Cum Laude from college. “I earned so much money, but I felt empty,” she said.*



from the Visayas State University in Leyte.

Atilano lost her father when she was only three-years old, but memories of her father putting up quarters for sugarcane farmers most likely influenced her to help agricultural smallholders.

“I saw farmers eating rice with salt and *bagoong*. And father put up quarters for sugarcane farmers. And at 12 years old, I started teaching farmers (on sustainable farming),” Atilano said.

And while her mother wanted Atilano to be a doctor, deep inside she still wanted to help farmers. Atilano was also no ordinary student, since she was also scholar in high school at 15 years old.

After graduating from college, Atilano worked on the garden projects for Ayala Malls, specifically for Greenbelt in Makati, Bonifacio High Street in Taguig, and Trinoma in Quezon. But while she was earning a lot, Atilano felt empty because the people she was working with were already rich.

“I earned so much money, but I felt empty. So I quit working for Ayala and joined Gawad Kalinga,” Atilano said.

At Gawad Kalinga, she took part in the Bayan-Anihan project, which is a family-based program where each family was given a 10-square meter plot where they

can produce vegetables to augment their food supply.

A scholarship offer to study abroad then landed on her lap, but she decided to stay in the country to continue helping agricultural smallholders.

### Starting from Marinduque

She then founded Agrea in Marinduque, the so-called “Heart of the Philippine Islands.” Besides addressing issues related to farm productivity, Atilano said Agrea through its projects also addresses challenges related to health and nutrition.

Agrea works through farming communities with a network of volunteers, including those from the youth. Atilano said her organization also aims to establish a “one-island economy” anchored on agricultural development, which would also help localities attain food self-sufficiency.

She observed that like other islands in the Philippines, food must be shipped from other places, and most of the poor people had nothing to eat but fish and rice.

However, Agrea’s projects and program does not stop in helping rural communities attain better agricultural productivity and a higher level of food self-sufficiency.

#### CHERRIE ATILANO

founded Agrea Agricultural Systems International Inc. in Marinduque, the “Heart of the Philippine Islands.” Today, Agrea has projects as far as Siargao, Surigao del Norte.



Atilano said her organization also links commercial establishments with farmers.

“We have linked 1,300 rice farmers with 127 hotels and cafes, and 200 [of the rice farmers] are in Siargao,” she added.

This means that Agrea has expanded its activities beyond Marinduque to places like Siargao, Surigao del Norte.

And in Southeast Asia, Agrea is working in Timor Leste to establish 3,000 hectares of coffee farms to help downtrodden communities there. Atilano said “a lot of work” still needs to be done in Timor Leste.

As UN Ambassador for Nutrition, Atilano is tasked to support 60 member-countries to scale up nutrition.

“I make my commitment to secure nutrition by securing food sufficiency and security. Always make farming sexy by mentoring a lot of young people to venture in agriculture, empower women in agriculture to make sure proper nutrition starts from home, work on multi-stakeholder partnerships on making sure nutrition will be a serious business to lower stunted growth and boost our human capital productivity, and invest in impactful agri-foods,” Atilano said in a statement after her appointment as UN Ambassador.

She will hold that position until 2021.

### Beyond her years

For her untiring efforts to help agricultural smallholders and disadvantaged rural communities, Atilano has been given numerous recognition and awards: Young Global Laureate 2014 by the International Youth Organization – Youth Action Net; The Outstanding Young Men and Women (TOYM) in 2018, first Awardee of Women of the Future Social Entrepreneur in Southeast Asia; and The Outstanding Women in the Nation Service (TOWNS) in 2016.

Also in 2017, Atilano was World Economic Forum Global Shaper and Advisory Board Committee Member.

From her list of achievements and the social impact of Agrea’s activities, it is obvious Atilano is way beyond her years. And she recalls one incident when she was young that surely inspired her to find her life purpose early. “At six years old, my mother asked me to stop planning Chinese garter,” referring to a popular kid’s game.

Today, there is no stopping Atilano from making a bigger impact on Philippine agriculture and beyond.

**WITH HER ACHIEVEMENTS,** awards and citations, Cherrie Atilano has demonstrated that she is beyond her years. And she fondly recalls what her mother said to her when she was a child. “At six years old, my mother asked me to stop planning Chinese garter,” she said referring to a popular kid’s game.



## ACPC AGRI-FISHERY CREDIT PROGRAMS

### VISION

The ACPC is the institution on agri-fishery credit policy and program development that promotes a sustainable and effective delivery of financial services to the countryside.

### MISSION

To develop and advocate agri-credit policies and orchestrate programs that would promote farmers' and fisherfolk's access to sustained financial services.

## KAYA PROGRAM

The Kapital Access for Young Agripreneurs (KAYA) Loan Program offers loans to finance working capital and/or fixed asset acquisition requirements of start-up or existing agri-fishery based projects of young entrepreneurs and agri-fishery graduates.

#### Features



Borrowers must be agripreneurs of 18 to 30 years old and are graduates of either formal or non-formal agri-fishery schooling



Zero-interest loans of up to Php 500,000.00 through Government Financial Institutions (GFIs) and Non-Government Financial Institutions (NGFIs)



Management fee of not more than 3.5% per annum



Payable up to 5 years based on projected cash flow



Documentary requirements are (a) one (1) government issued ID with picture, (b) loan application form, and (c) simple business plan



The ACPC shall engage State Universities and Colleges (SUCs), government agencies, and non-government Business Development Service Providers to extend business advisory/technical assistance services.

## AGRI NEGOSYO

The Agri-Negosyo Loan Program offers loans to finance capital requirements of agri-fishery based enterprises, including sole proprietors, partnerships, corporations, and cooperatives whose owners or members are marginalized, small farmers and fisherfolk (MSFF).

#### A. Micro Agri-Negosyo



Offers loans of up to Php 300,000 payable up to 5 years to micro agribusinesses through ACPC partner lending conduits.

#### B. Small Agri-Negosyo



Offers loans from Php 300,000 to Php 15 million to small agribusinesses through Government Financial Institutions (GFIs) and Non-Government Financial Institutions (Non-GFIs) with loan maturity depending on the loan purpose.





# How the 'New Thinking for Agriculture' supports agripreneurship

[Q+A with Agriculture Sec. William Dar]

BY JOHN M. ARAYAT

**QUESTION:** Although it is not directly stated in the eight paradigms, can you say that the 'New Thinking for Agriculture' also supports agripreneurship?

**Secretary Dar:** The answer to that question would definitely be a resounding "yes."

However, let me state first that the eight paradigms that make up the "New Thinking for Agriculture" provide a framework for the introduction and realization of the various solutions needed to bring farming and fisheries to the next level.

And that also means making Philippine agriculture both globally and regionally competitive, at least with its peers making up the Association of Southeast Asian Nations or Asean.

When it comes to making agripreneurship to take root in the local setting, the first two paradigms of modernization must continue and industrialization of agriculture is key are where agripreneurship also comes into play.

To illustrate, the modernization of agriculture would not be possible if we treat agriculture simply as

an activity to produce food for our growing population. If we want to modernize agriculture, treating it as a business is a must and this is where agripreneurship enters the picture.

However, being entrepreneurial does not simply mean engaging in business - it also means seeking solutions to a problem or a challenge. And in the case of agriculture, being entrepreneurial means seeking solutions to achieve improved productivity and higher income, or *Masaganang Ani at Mataas na Kita*.

Solutions such as technologization or the wider application of technology in agriculture should also be part of the agripreneurial mindset.

Moving to the industrialization paradigm, it is almost impossible to create agri-based industries without the agripreneurial mindset instilled from the producer of raw materials, to the processor, and to the companies that have access to the markets.

**Editor's note:**

For the maiden issue of the fifth-generation *Greenfields* magazine, Agriculture Secretary William D. Dar answers questions on how his "New Thinking for Agriculture" could play a big role in making agripreneurship thrive in the country.



**AGRICULTURE SECRETARY**

**WILLIAM D. DAR** on January 27, 2019 led the launching of two loan programs that have funds totaling to P2 billion to encourage young Filipinos to go back into farming. Under the management of the Agricultural Credit Policy Council (ACPC), the Kapital Access for Young Agripreneurs (KAYA) and Agrinegosyo loan programs will be of great help in promoting agripreneurship among the youth.

**AGRICULTURE SECRETARY**

**WILLIAM DAR** inspects on August 27, 2019 a corn field showcased during the Corn Derby cum Livestock Summit inside the compound of the Cagayan Valley Research Center in Ilagan, Isabela. The summit highlighted the success stories of corn farmers and livestock raisers who benefitted from government interventions.

**Question:** So this means agripreneurship should eventually enable farmers and agri-processors to export their products?

**Secretary Dar:** Yes, and the third paradigm under the “New Thinking of Agriculture” states that export promotion is a necessity.

With agripreneurship still not taking root in much of the country’s farming and fishing sectors, the country really lags behind in Southeast Asia when it comes to agricultural exports.

Vietnam, for example, has 13 types of agricultural exports that rake in at least \$1 billion annually, according to the United Nations Trade Map. The Philippines only has three types of agricultural exports or coconut products, fresh bananas, and nuts/ other fresh fruits earning at least \$1 billion annually.

What is quite appalling is Vietnam exports agricultural products that we can easily produce like cashew nuts, cassava, natural rubber, and spices. With agripreneurship, we definitely could also export those farm-based products, initially in modest quantities.

And of course, as I stated earlier, being agripreneurial should also result in seeking solutions

to improve productivity and increase incomes, with technology being one of those solutions.

**Question:** When it comes to technology, what are the best options currently available for agripreneurs?

**Secretary Dar:** There are a lot of exciting developments from the Fourth Industrial Revolution or 4ID.

With 4ID, we are witnessing the convergence of technologies from the physical, digital and biological realms, which could greatly change how things are done in businesses and industries. But the most dominant technologies in 4ID are from the digital realm.

When applied to agriculture, 4ID could transform everything being done from planting crops to marketing.

So, we should be open to the possibilities of applying 4ID technologies like artificial intelligence, robotics, data analytics and the Internet of Things in agriculture.

I would even say that mechanization is one good step to opening up the agriculture industry to the Fourth Industrial Revolution.

**Question:** One of the eight paradigms states the need for legislative measures. So, do you think there is a need for Congress to pass more laws to support agripreneurship in the Philippines?



**DR. WILLIAM  
D. DAR**  
*Agriculture  
Secretary*

*Smallholder farmers and fisherfolk should also be assisted to become agripreneurs. And if we have efficient producers of raw agricultural products because of agripreneurship, everybody benefits including the people doing business in the value chain.*

**Secretary Dar:** That should be studied carefully since there are certain measures I would like to put into place for agripreneurship like establishing a seed fund that graduates of agriculture or related courses can source for start-up capital. The idea here is graduates who have feasibility studies that are financially viable be granted seed capital and other forms of funding support.

I am also thankful that President Rodrigo Duterte signed in April 2019 the *Sagip Saka Act* or Republic Act (RA) 11231. This law will be very instrumental in building the momentum wherein farmers' associations and cooperatives will embrace the agribusiness way of doing things.

Also, the Department of Agriculture's (DA) Administrative Circular for the implementing rules and guidelines for RA 11231 has already been signed by yours truly.

So, the timing to have the *Sagip Saka* law implemented is very good, because the law supports the concretization of the DA's programs and projects that are in line with the pursuit of an inclusive agribusiness system.

**Question:** So, does that mean that inclusiveness also be part in the pursuit of agripreneurship?

**Secretary Dar:** Let us put it this way – there would be very little or no agripreneurship if there was no inclusiveness. I say this because agripreneurship should encompass everybody in agriculture, from the producers of raw materials to firms or cooperatives marketing raw or finished agricultural products here and abroad. So, the smallholder farmers and fisherfolk should also be assisted to become agripreneurs. And if we have efficient producers of raw agricultural products because of agripreneurship, everybody benefits including the people doing business in the value chain. For example, increased production of a certain crop at a lower cost by a farmer who is an agripreneur would also translate to better profit margins for processors.

Another good example is a farmer who is able to produce more and earn more will have more disposable income to acquire products like furniture and fixtures, vehicles and other durable items. In short, the industries or businesses not related to farming or fisheries also benefit if more farmers and fisherfolk learn to earn more because they are also agripreneurs.



**DURING HIS VISIT**

to the Bureau of Fisheries and Aquatic Resources-Masao Technology Outreach Station in Butuan City on September 17, 2019 to launch fishery projects, Agriculture Secretary William D. Dar also took part in dispersing 10,000 giant freshwater prawn (ulang) in the Masao River.

**AGRICULTURE SECRETARY WILLIAM DAR**

and Sen. Christopher Lawrence “Bong” Go assist President Rodrigo Duterte in distributing assistance to farmers, fisherfolk and rural people affected by the Taal Volcano eruption on January 14, 2020 at the Batangas City Sports Complex. Also in photo is Batangas Gov. Hermilando “Dodo” Mandanas (right).





# WORTHY OF EMULATION

After 42 years, FICOBank attains P4B in resources

BY LEANDER C. DOMINGO

**A** GROUP OF FARMERS in Isabela has proven that a cooperative rural bank (CRB) can attain a resource base worth billions of pesos, which is laudable and worthy of emulation by other cooperative and rural banks.

It all started 42 years ago when two cooperatives and 47 *samahang nayon* (community associations) that represented farmers joined hands, heads and hearts to organize the equitably-owned and democratically-controlled CRB, now known as the First Isabela Cooperative Bank (FICOBank).

“From a micro-cooperative rural bank that it opted to be, dating back to its emergence in the world of banking, FICOBank grew to a large cooperative bank now with a resource base of over P4 billion,” Lawyer Hubert E. Molina, FICOBank president and chief executive officer, said.

He added FICOBank’s journey to success began on September 10, 1976 with the primary purpose

of establishing a CRB to provide financing to small farmers who had limited resources and access to regular banking services.

Formerly known as the First Isabela Cooperative Rural Bank, Inc., the bank was registered with the Securities and Exchange Commission on February 14, 1979, and the Bureau of Cooperative Development of the Ministry of Local Government and Community Development on April 10, 1979.

FICOBank, now a popular brand in Isabela, was granted a Certificate of Authority by the Central Bank of the Philippines on December 29, 1979, to operate as a CRB. It formally started offering banking services to the public on January 2, 1980.

**THE HARDWORKING OFFICIALS** of FICO Bank seated from left: Aileen Gale Agcaoili (director), Pasencia Battung (vice chairperson) Erwin Tabucol (chairman) and Hubert Molina (president & chief executive officer). Standing from left: Eufemio Basuel (director) Roderique Obedoza (director), Ernesto Gamboa (director), Florentino Somera Jr. (former director), Wilfredo DC Antonio (director), Jefferson Mariano (director) and Rogelio Benitez (director).



**FICOBANK** also has employees who are satisfied working for the company, as they have faith in its board of directors and top management.



**HUBERT E. MOLINA**  
President & CEO  
FICOBANK

*From a micro-cooperative rural bank that it opted to be, dating back to its emergence in the world of banking, FICOBANK grew to a large cooperative bank now with a resource base of over P4 billion.*

**Evolving through the years**

Molina said that for about four decades since it started its banking operation, FICOBANK has slowly but surely evolved to deliver first-class community banking services to its over 100,000 clients who have made it their bank of first choice.

Today, FICOBANK has a network of 37 branches strategically located in the provinces of Isabela, Quirino, Nueva Vizcaya, Cagayan, Pangasinan, Tarlac, Nueva Ecija, Bataan, Pampanga, Bulacan and Kalinga.

“With these operating units that extend effectively its market reach and bolster its capability to service the banking public, providing financing to those who have limited resources and access to banking services, FICOBANK has never drifted away from its lofty purpose since time immemorial,” Molina said.

True to its form, he said the bank did not only find ways to put an end to the financial conundrums faced by its target markets but made things happen for their advantage and advancement.

“Right now, FICOBANK can ably offer its clientele in Regions 1, 2, 3 (Ilocos, Cagayan Valley, and Central Luzon) and the Cordillera Administrative Region with an extensive array of accessible and innovative financial services and solutions that are adaptive and responsive to their

multi-dimensional needs,” Molina added.

FICOBANK’s leadership said that they were able to do better than the other cooperative banks in the country and that the bank is admired for being number one with respect to financial performance and institutional capability.

Based on the latest reports of the Bangko Sentral ng Pilipinas and the Cooperative Development Authority, FICOBANK—for the nth time—is ranked number one in terms of resources, loan portfolio, net income, and net worth as well as number one in number of banking units and personnel.

One proof of this is FICOBANK recording a net income of P82.74 million in the first six months of 2019, or about 4-percent higher than the P77.42 million recorded in the same period of 2018.

Moreover, among the 457 rural and coop banks in the entire country, FICOBANK ranked number six into total assets.

“Of course, these will not be made possible without the live-wire dynamism and strong cooperation of the FICOBANK family, along with the never-fading support of our development partners and the ever-growing patronage of our clients,” Molina said.

He said their banking model is built on the bedrock of upright corporate governance, effective



risk management, efficient business operations, sound financial administration, strong stakeholder relations, and steadfast social responsibility.

“We continue to uphold FICOBank’s legacy of extraordinary service, with the tagline *‘Ang Bangkong may Puso,’* (The Bank with a Heart) which is ably exemplified by our corporate and branch-banking units, and personified by our more than 400 employees,” Molina said.

“Staying evergreen in the eye of the market expresses the institutional goal of FICOBank. Such a goal has been reverberating well across the entire organization creating a desire for everyone to support the bank’s causes,” he added.

Last year, FICOBank celebrated its 39th anniversary with the Department of Agriculture-Region 2 (Cagayan Valley) Director Narciso Edillo as the keynote speaker who challenged the bank’s officials and members to continue providing quality services to its clients in the region.

“Your existence means a lot to us in the agriculture sector since you are helping people transform their lives. We are thankful because your programs are related to ours such as giving agricultural loans to farmers. We are, therefore, partners in this endeavor as a conduit in our loan windows,” Edillo said.



**PHOTO ABOVE** shows the head office of FICOBank in Cauayan, Isabela, while photo below shows the bank’s branch in Concepcion, Tarlac.



# NEVER TOO OLD

This farmer chose to go back to school

By **JULIO P. YAP JR.**

**OBTAINING A COLLEGE DEGREE** was the ultimate dream for Diosdado G. Evangelista, Jr., a 65-year-old farmer from Barangay West in Candoni, Negros Occidental.

A farmer since his tender age, Evangelista had valid reasons for going back to school, like gaining self-satisfaction for earning his own college diploma. His four children are also all college degree holders and gainfully employed.

“Why can’t I?” he asked.

“Since I was already exposed to the challenges of farming ever since my childhood, and now have my own farmland to till, it is time for me to attain my ultimate dream – to have my own college diploma,” Evangelista said in the vernacular.

He wanted to become a mechanical engineer after graduating from high school, but his father enrolled him in an auto mechanic vocational course instead.

Evangelista tried to protest but his father told him “*Pareho lang ang mechanical at mekaniko* (A mechanical engineer and mechanic are the same).”

After completing his vocational training, he worked as an apprentice mechanic but due to lack of tools, Evangelista just went back tilling their land.

Evangelista continues to till the land he inherited from this father, which has 10 hectares devoted to endangered and endemic trees like

Apitong and Narra. Five hectares are planted to sugarcane and rice, and, another five hectares to cacao, gabi (taro) and ginger that are all naturally-grown as Evangelista prepares his own fermented fertilizers.

## Back to school

Evangelista is presently enrolled as the oldest first-year college student at the Candoni Campus of the Central Philippines State University (CPSU).

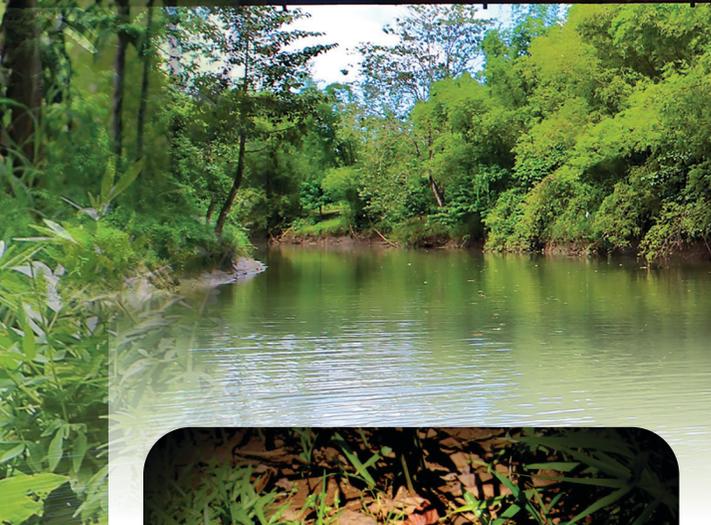
“Since Candoni is a remote community, the majority of the youth got married early, depriving them of the opportunity to study because their parents cannot afford to send their children to the main campus. Most residents are poor farmers,” CPSU President Dr. Aladino C. Moraca pointed out.

“This is bringing education to the doorsteps of the poor families,” Moraca added.

CPSU is now offering free college education to deserving students under Republic Act 10931 or the Universal Access to Quality Tertiary Education Act.

Truly, Evangelista is a role model also for the youth.

1. **DIOSDADO G. EVANGELISTA JR.** is lucky because his farmland is just beside a river – his source of water for irrigating his crops.
2. **EVANGELISTA SOURCES** his allowance for his studies from selling gabi, ginger, and cacao seedlings.
3. **EVANGELISTA POSES** with his classmates at the CPSU Candoni Campus, where majority of the students are married or have their own family to support.
4. **HUNDREDS OF ENDANGERED** and endemic trees thrive in Evangelista’s farm.





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 Pumpset and Generator Set

## Other Farm Solutions



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From banana leaves to salted eggs

# CREATING EGGCITEMENT

BY LOURDES E. TRIBDINO

**B**ARANGAY Buhanginan follows the shallow Sta. Cruz River to the edge of Nagcarlan in Laguna.

Decades ago, the livelihood of the small barangay's residents was producing charcoal. The surrounding forest cover, fallen trees and residue of the coconut industry were the perfect sources of raw material, which were incinerated in drums buried underground. Bananas, the *lakatan* and *saba* variety, were also plentiful but seasonal.

Then there were the banana leaves used for wrapping *suman*.

But charcoal making made more money.

"*Sa uling noon, araw-araw may kita kami* (We earned money daily making and selling charcoal)," said an old timer from the barangay.

But the implementation of the Clean Air Act of 1999 wiped out the barangay's only source of daily sustenance. They had to find another source of income, and it came from the next most available, non-seasonal source—banana leaves.

## BANANA AND BUHANGINAN

Binalot is a fast food restaurant chain famous for its classic Filipino meals wrapped in a banana leaf—stamping the traditional Filipino brand in a modern fast-food setting. It pioneered in processing banana leaves, cleaning, sanitizing and storing these for use in its over 36 stores nationwide.

When Typhoon *Milenyo* hit the Bicol Region and parts of Laguna, it wiped out most of the banana leaves supply that were being delivered to the fast-food chain.

"Banana leaves are very fragile and most of the trees and leaves were ripped by the strong typhoon. We were then forced to import our leaves from Iloilo but the costs were not sustainable. That was the time we decided to search for the source," Rommel Juan, chief executive officer of Binalot Fiesta Food Inc., recounted.

Juan searched for a more viable source of banana leaves after *Milenyo*'s wrath. That led him to Buhanginan, where, surprisingly, banana leaves were still being harvested.

"Vendors in the market told me to go to Nagcarlan. I found myself visiting the markets and

**RESIDENTS OF BARANGAY BUHANGINAN** now have a viable agribusiness undertaking from producing salted eggs for popular Filipino food chain Binalot.



*talipapa* in that town, asking where the leaves come from. Locals pointed me to the *dahunan* in Barangay Buhanginan,” Rommel said.

Protected by Mt. Banahaw to the east and Mt. Makiling to the west, the devastation was not as much as the rest of Luzon. It also helped that most of the bananas grew in clumps in between other sturdier trees.

When he arrived in Buhanginan, Rommel immediately asked who harvested and supplied the banana leaves for the market. He was then introduced to Rodney Oriel, a resident of the area, who then agreed to supply banana leaves for Binalot.

Thus, the decade-long relationship between Binalot and Buhanginan in Nagcarlan, Laguna started.

### DAHON IS NOT A LEAF

What started as an initial order of 120 bundles or 3,000 cut pieces of banana leaves evolved into a community livelihood program participated in by 30 families under Binalot’s corporate social responsibility (CSR) program dubbed “*Dahon*” (*Dangal at Hanapbuhay para sa Nayon*)—an ode to Binalot’s iconic banana-leaf packaging.

Buhanginan now regularly prepares 300 bundles of banana leaves or over 7,500 pieces weekly. Binalot’s commissary picks up the orders thrice a week.

From a group of four, Rodney’s main team now consists of 14 harvesters plus eight for cutting the leaves, and two designated to tie the bundles, with additional assistance received from Oriel’s family and the rest of the barangay.

Oriel acknowledges Dahon for changing the lives of many people in the community.

“Income was very difficult before as the supply of bananas from the wild trees was not steady year-round and work on the farm was not a regular arrangement. Back then, we were lucky if we were able to eat twice a day,” he said in Filipino.

“Today, we have more than enough to eat full meals and even *meriendas*. I have been able to send my kids to school, two of them are in college now while the youngest is still in high school. We’re fortunate we met Binalot,” he added.

For its achievements, Dahon has received several citations including the once-in-a-lifetime Centennial Prize in the worldwide 2007 UPS Out-of-the-Box Small Business Contest and the Intel-AIM Corporate Social Responsibility Award (IACRA) at the Asian Forum on Corporate Social Responsibility in 2010.

**ROMMEL JUAN**, chief executive officer of Binalot Fiesta Food Inc., looked beyond providing livelihood to residents of Barangay Buhanginan - he also transformed their lives and that of their children.

# Nature's natural packaging

## WRAPPING IT UP WITH BANANA LEAVES

BY GREGORY E. BAUTISTA

### BANANA LEAVES TO SALTED EGGS

But Binalot did not stop at the leaves.

Recently, it has partnered for a program called “Embrace” to introduce salted egg production to Buhanginan.

“We’ve thought of harvesting other vegetables and crops but we always hit a roadblock when it comes to finding a market for these products,” Irene Lucas, Binalot chief operating officer said.

Apparently, every meal Binalot serves had a salted egg.

“Why not salted eggs?” Lucas said as she narrated how a new “egg-citing” program developed and became the second source of income for Buhanginan residents.

In line with Embrace’s efforts to support the United Nations’ Sustainable Development Goals, Dahon acquired 30 salted egg starter kits and consulted the Department of Science and Technology for the production process for the project aptly called “Egg-citing Harvest.”

The starter kits were recently awarded to 30 families in Buhanginan, with 10 mommies empowered to manage the production and quality control. This enabled the community to supply Binalot with 1,000 trays (or 30,000 pieces) of fresh and high-quality salted eggs for its stores every month while receiving additional income from the livelihood program in the comfort of their community.

“The success of Binalot’s CSR program lies in its sustainability, and the way it’s sustainable is because we are the community’s direct market. Banana leaves are our primary packaging and we have salted egg with every Binalot meal. As long as there’s Binalot, it’ll be a continuous partnership and that’s our commitment to the community of Barangay Buhanginan,” Juan said.

**BANANA LEAVES** are so versatile. In almost every country where the banana tree thrives, its leaves are used as wrappers, sealants and umbrellas. Masterfully handled, banana leaves can be crafted into cups and circular containers. When layered and tied with strips of the rib of the leaf, it can hold several kilos. God may have created the banana tree also with packaging in mind.

When used to line a basket made of woven coconut leaves, it can preserve the moisture of fruits and vegetables. This is because the leaf is said to have self-sanitizing characteristics, which is also believed to be the responsible for imparting a certain aroma to the food wrapped in it.

Food that is served on banana leaves is said to take some of the flavor of the leaf. As packaging, it is not only environmentally friendly but is also healthy because it releases an enzyme—lipoxygenase—when hot food is placed on it. This catalyzes into a linoleic acid on the leaf, which is broken down and released onto the food and aids in digestion.

This same linoleic acid keeps away insects and even battles certain kinds of molds. Though there are no scientific studies yet back up the claim, restaurants and many traditional chefs swear to the food preservation qualities of the banana leaf—it seems that food wrapped and transported in it will last longer than those placed in plastic containers.

Rice steamed while wrapped in woven coconut leaves — *puso*, as it is in Cebu — has a totally different aroma from *suman* or *kakanin* of Laguna or Bulacan. The *pritong dulong* of San Pablo City in Laguna is spread like a pancake over a banana leaf and deep fried. In Batangas, tilapia is wrapped in banana leaves before it is grilled and in Bicol, it is used to contain a mixture of taro leaves, chillies and anchovies in a dish called *pinangat*. Also, another Bicolano dish, *laing*, is wrapped in banana leaves when cooked to take on a square shape and removed before serving.

Banana leaves can also be used for baking. The most popular food baked in a charcoal oven is *bibingka* — a rice cake poured into a flat mold lined with banana leaves. The flavor of *bibingka* cooked just on baking paper is not as delicious.

In Vietnam, a sausage called *cha lua* is steamed while wrapped in banana leaves. While in India, a dish on a banana leaf plate has rice, vegetables and a spicy curry is very popular. And an Indonesian dish called *pepes* is also cooked in a banana leaf vessel.

If the trunk is cut into portions, the outer trimmings can be used as plates. The trunk itself when lashed together can float and make a temporary raft, though it’s not sturdy for the rapids.

In the Philippines, a way of communal eating called “boodle fight” entails spreading whole banana leaves on a table and filling it with food. Rice is in the middle of the leaf, still hot and steaming when served. The rice is surrounded by viands. Boodle fights are done standing with the people eating with their hands. The tradition means collaboration and sharing, and has worked to unite warring factions in sports, politics and even actual war.

# THE 'DRAGON FRUIT KING' OF CAVITE IS TRULY AN AGRIPRENEUR

By **ANTONIO G. PAPA, PhD**



**E** **DILBERTO R. SILAN** is the epitome of an agripreneur. And being an agripreneur, as demonstrated by Silan, should translate to an agribusiness becoming sustainable and profitable. With those, it is no longer a surprise that Silan is also known today as the “Dragon Fruit King” in Cavite and one of the pioneers in cultivating the crop in the Philippines.

Twenty years after starting off with just 1.5 hectares of land, the Silan Agri Farm in Indang, Cavite now boasts of 20 hectares of farms primarily planted to at least three types of dragon fruit varieties.

Eight hectares of the farm are devoted to the Red Royal dragon fruit variety, which has given Silan handsome yields or 10 tons per hectare per cropping.

“Who says that dragon fruit farming has nothing to do with the country’s agriculture sector?,” Silan said.

He said the expansion of his farm was largely funded by its sustainable operations.

“All of our land acquisitions were made possible through the net income from dragon fruit farming,” said Silan, a former overseas Filipino worker who took

up and marine and mechanical engineering in college.

**Modest start**

Silan started dragon fruit farming in 1999 with a 1.5-hectare land he inherited from his parents in Tambo Munting Kulit, Indang. It was also a blessing that his first piece of farmland was located near springs.

While dragon fruit does not require irrigation, since the plant is categorized as a cactus, abundant water supply prompted Silan to start diversifying operations years later.

“My crop is not just confined with the Red Royal variety, I also have here the White and Yellow varieties,” Silan said, adding he devotes two hectares

**EDILBERTO R. SILAN'S** success in dragon fruit farming can also be attributed to his sourcing planting materials from abroad. He is known as the “Dragon Fruit King” of Cavite. Wife Shirley has been Edilberto’s inspiration.

**THE SILAN AGRIFARM** also has simple facilities that can make it a tourism destination in Indang, Cavite.

to the White Dragon variety that also gives him 10 tons per hectare per cropping.

Moreover, he has one hectare planted to the Yellow dragon fruit variety, and at the beginning of 2019, he started planting the Pink dragon fruit variety on an experimental scale.

Silan said he tried cultivating numerous varieties of dragon fruit but his experimentation led him to narrow his choices to just three or four. He also sourced the mother stocks of his plants abroad.

“When I was just starting in the dragon fruit farming business, I tried to plant at most 16 varieties of dragon fruit. I decided to maintain just three varieties, the Red Royal, where the mother plant was bought from Thailand in 1999. And the Yellow and White varieties (mother stocks) were procured from Taiwan and Israel, respectively,” he added.

To help expand dragon fruit cultivation in the Philippines, he sells planting materials of the crop at P100 per stem at his farm.

Silan assured that the planting materials that he sells have passed thorough quality control conducted by his trusted sentinel in the farm.

Thus, buying the planting materials from his farm could prove advantageous to those who are newbies in planting dragon fruit.

### Innovative farmer

Silan is also an innovative farmer as he also employs mono-cropping, intercropping and multi-story cropping. He also converts farm wastes into organic fertilizer through vermicomposting, enabling him to organically grow vegetables like tomato and eggplant.

He also practices integrated farming by raising *tilapia* in water tanks that store water for irrigation. And with the dragon fruit roughage from his farm, Silan can produce feed to raise native pigs and chicken, and cows.

With the Silan Agri Farm’s innovations and sustainable and profitable operations, it has been



**EDILBERTO  
R. SILAN**

*Intercropping is a practice in Silan Agri Farm. This is being done to also demonstrate the profitability of intercropping certain crops like papaya and coconut with dragon fruit.*



### THE SILAN AGRI FARM

*extensively practices Good Agricultural Practices from harvesting to packaging. Photo at the right shows Edilberto Silan placing newly harvested fruits in plastic crates, reducing postharvest losses. The photo at the left shows the fruits packed in cartons and ready to be shipped to the market.*

dubbed a Science and Technology-Based Convergence of Agriculture and Tourism (SciCAT) Project, a model farm being supervised by the Cavite State University, in cooperation with the Department of Science and Technology's Philippine Council for Agriculture, Aquatic and Natural Resources Research and Development (DOST-PCAARRD), Department of Tourism (DOT), and the University of the Philippines-Institute of Small-Scale Industries (UP-ISSI).

The proof of Silan's success could also be gleaned from his modern two-story residential house located in his farm that could also accommodate transient visitors.

A stroll in his vast farm is also a relaxing experience. Silan's farm could qualify as an agritourism site. And with Indang fast becoming another vacation or weekend destination for tired urbanites, the Silan Agri Farm could be called a landmark in the locality.

And it is also a landmark for the success of Silan the agripreneur.





**Joey Concepcion**  
Presidential Adviser for Entrepreneurship  
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# Technologizing PH Agriculture



**D**URING ITS 30TH AGRICULTURAL ENGINEERING WEEK on April 21 to 27, 2019 in Bacolod City, the Philippine Society of Agricultural and Biosystems Engineers (PSABE) invited Dr. William D. Dar, then a private citizen, to be one of its keynote speakers.

Now the Agriculture secretary, Dar discussed the potential of the Fourth Industrial Revolution (FIRE) to level up the country's agriculture sector. With PSABE adopting the vision of "PSABE as a world class Engineering Professional Organization," it has made "technologization" of the country's agriculture sector one of its battlecries.

PSABE was also one of the first private organizations to back the implementation of the projects and programs under the Rice Competitiveness Enhancement Fund (RCEF), as stipulated by the Republic Act (RA) 11203 or the Rice Tariffication Law.

"The manpower of PSABE, which is mostly made up of professional and licensed agriculture and biosystems engineers (ABEs), and pre-professional ABEs aspiring to be such, are ready to be part of the 'collective action' to make RCEF projects/programs succeed in its objective of making the Philippine

rice industry competitive in Asean (Association of Southeast Asian Nations), and to increase the production yield and eventually earnings of rice farmers," PSABE President Dennis I. Tactac said.

"PSABE as a whole is also ready to be a partner in the implementation of RCEF projects/programs such as the source of top-caliber resource persons during the conduct of training and seminars, serve as test engineers and inspectors/evaluators of the agricultural machinery and equipment, among others," he added.

Tactac said the programs and projects under RCEF will allow the country's rice sector to modernize and be as competitive as its counterparts in Southeast Asia. Thailand and Vietnam have the lowest production cost per kilogram (kg) of *palay* (unmilled rice) at P8.86 and P6.22, respectively. The average cost of producing palay in the Philippines is P12.72 per kg.

"Without RA 11203, the tariff collection from

**AGRICULTURE SECRETARY** William D. Dar (seated center), Philippine Society of Agricultural and Biosystems Engineers President Dennis I. Tactac (seated right), and Technical Education and Skills Development Authority Director General Isidro S. Lapeña (seated left) during the signing on December 17, 2019 of the agreement to train at least 300 agricultural and biosystems engineers to help advance farm mechanization in the Philippines.



imported rice would most probably go the general fund of government and not for the benefit of the country's rice industry or agriculture sector," Tactac said. "We should be thankful for those who crafted RA 11203, particularly Sen. Cynthia Villar."

### ABEs and FIRE

To further develop the country's agriculture sector, PSABE strongly believes technologies from FIRE be applied in farming and fishery.

Tactac said ABEs will play a major role, or even spearhead, the application of FIRE technologies in farming and fishery to improve the competitiveness of the country's agriculture sector, and conservation of the environment.

"We should be more aware on how the Fourth Industrial Revolution will heavily influence the conduct of operations and systems in agriculture and fishery in the future, and the Philippines cannot be in a position of catching up in its neighboring countries. And since PSABE is the only accredited integrated professional organization for ABEs, it is imperative that we mobilize the country's ABEs to be ready for the Fourth Industrial Revolution and how it will impact the nation's farming and fishery industries," he added.

### About PSABE

PSABE traces its roots to the Philippine Society of Agricultural Engineers (PSAE) that was founded in 1950 to advance the theory and practice of agricultural engineering.

However, with the challenges presented by climate change and extreme weather events, and globalization, Congress enacted the Philippine Agricultural and Biosystems Engineering Act of 2016 to align the local practice of agricultural engineering with the internationally recognized practice of agricultural and biosystems engineering.

So on July 21, 2016, the Philippine Agricultural and Biosystems Engineering Act of 2016 or RA 10915, was signed into law. That led to PSABE succeeding PSAE as the sole organization to advance the agricultural and biosystems engineering and related professions.

Besides mobilizing the ranks of agriculture and biosystems engineers, PSABE is also fostering the creation of chapters in colleges and universities to mobilize the youth to join the profession. A number of student-based chapters has since been holding their own forums/events to mobilize their colleagues to take up a significant role in the country's future growth and development by becoming ABEs.

### THE PHILIPPINE SOCIETY of

*Agricultural and Biosystems Engineers has a very active Young Engineers Section or YES, which has chapters in various state colleges and universities. It is led by engineer Raymond Andres (second from left).*

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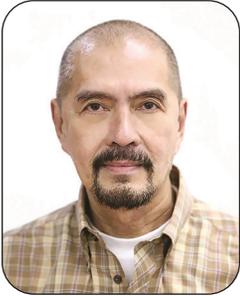
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# Finally, a locally-made engine for farm machines



By JULIO P. YAP JR.

**T**HE RESOURCEFULNESS of the Filipinos was clearly illustrated in the production of the “first-ever” diesel engine in the country.

Due to the ingenuity of Filipino engineers, manufacturers, technicians and inventors, we can now produce our own diesel engine without relying on the importation of costly units made by other countries.

The breakthrough for the manufacture of the Filipino-made diesel engine was realized after the Metal Industry Research and Development Center (MIRDC) partnered with Supercast Foundry and Machinery Corporation (SFMC), in collaboration with the Bacolod City-based R.U. Foundry and Machine Shop Corporation (RUFMSC).

The “first” locally-made machine is a single-cylinder type 12-horsepower diesel engine, which is tough and reliable to be mounted and utilized on different agricultural machinery.

The engine is expected to provide the required power to propel and/or operate different agricultural machinery and equipment, which can help hasten the implementation of the national government’s farm mechanization drive, which is being pursued primarily by the Department of Agriculture (DA).

## Filipino creativity

The locally-made engine was unveiled and displayed to the public during the conduct of the Regional Science and Technology Week (RSTW), which was held at the vast Iloilo Convention Center in Mandurriao, Iloilo City in October last year.

Initially, the locally-produced diesel engine is mounted on the RU Shredder which was manufactured by RUFMSC in order to test and evaluate the motor’s capacity, endurance and power output.

## Collaborative effort

The MIRDC, an attached agency of the Department

of Science and Technology (DOST), is the government entity that directly supports the metals and engineering industry in the country, with services designed to enhance its competitive advantage.

Meanwhile, SFMC has an advanced metal-casting plant that can produce world-class products with materials ranging from ferrous to non-ferrous alloys. The company also aims to serve the casting needs of the cement, mining, construction, sugar industries, aggregates, transportation, automotive and other allied industries through its line and jobbing capabilities.

On the other hand, RUFMSC caters to the casting, machining, and fabricating demands and requirements of the sugar industry, cement/mining factories, as well as agro-industrial companies in the Philippines.

RUFMSC also assists the country’s sugar industry in the development of local substitute for high-value imported products, with full support provided by MIRDC.

Its flagship product is the RU Shredder, which is a versatile agricultural and industrial equipment specifically designed to accelerate and hasten the decomposition of organic waste, greens and other biodegradable materials.

A facility in the Philippines producing locally-made engines can be advantageous to the local economy, as it can also lead to the creation of jobs for Filipinos.

## A realization

Majority of the parts used to produce the one-cylinder engine came from local manufacturers, and only few came from abroad.

But MIRDC emphasized that all the components to produce the local engine can soon be manufactured or fabricated in the country.

Following its debut at the Regional Science and Technology Week in Iloilo City, the locally-made engine was again featured in the celebration of the 26th National Inventors’ Week held at the Central Luzon State University (CLSU) in the Science City of Muñoz, Nueva Ecija in November last year.

The event was led by the Filipino Inventors Society Producers Cooperative (FISPC), in partnership with the DOST.

## Unique inventions

The four-day event, which is mandated under Presidential Proclamation No. 285 series of 1993, encourages local inventors, manufacturers and fabricators to showcase their unique and marketable inventions. It is also part of efforts to attain global recognition and commercialization of Filipino inventions.

During the event, no less than Science and Technology Secretary Fortunato de la Peña vowed to support the production of the Filipino-made diesel engine, which will benefit Filipinos, particularly farmers.

It is high time to believe in the competencies and inventiveness of Filipinos to manufacture different products and machinery, which can also become competitive in the global market.

**THE LOCALLY-PRODUCED DIESEL ENGINE** mounted on a shredder manufactured by R.U. Foundry and Machine Shop Corporation based in Bacolod City.



# Balancing tech and the nature of things

**T**HE PHILIPPINE AGRICULTURE industry has entered its transformative decade. With the advent of newer and more efficient technology enablers such as mobile apps, solar-powered water systems, drones, and other similar production and value-chain innovations, one must beg to ask – will technology take over the role of man?

My simple answer is Yes and No.

Yes, because there are roles within one's operations that technology has solved and left specific functions inefficient or obsolete. No, because one must still understand fundamental principles that govern the nature of things to be able to effectively adopt new technology that maximizes one's effort. In other words, we need to continually find ways to marry and merge the innovative mind of the young and understand the wisdom of the old. That is a powerful combination!

Allow me to share my two cents worth from the past few years of attempting to birth the idea of marrying technology with Philippine agriculture, and how to strike the balance of these two polar worlds.

## 1. Before innovation was hands-on work.

What will you innovate if you do not understand how the industry you are in works? Early on, I was always involved in certain parts of the food industry. When I was a young boy, my parents operated a fishpond in the southern Philippines, and I remember my father always brought us to the fishpond to help out, especially during harvest season. In my late teens, I was working in a farm-training center that allowed me to learn the hard truth about producing food. Waking up early, turning compost pits, collecting manure for fertilizer processing, land preparation, weeding, pruning, seeding and selling the harvest.

Then after, I started a food distribution business that moved Mindanao products to various markets, nationwide. But what people did not see was me driving a truck, picking up goods from the cargo area, waiting in line for the truck to enter the loading bay in the mall to deliver, coordinating schedules of meetings, finding opportunities for the next move and sales... all these were the building blocks to what I am doing today. Piecing these experiences together made me see actual pain points where I saw opportunities to potentially solve collectively.

Before you innovate, get your hands dirty first!

## 2. Designing a tech solution by understanding fundamental human issues.

Overwhelmed on how to start the quest to create a technology that could be of help to the agriculture industry, we spent a good amount of time going to different types of farms across the country. We went from the plantations in Mindanao to the highland farms of North Luzon to listen and deeply understand the nature of the business and behavior of people who operate across the food value chain.

We also took time to understand the angst and frustrations of food, hotel and commissary operators in the urban areas. One thing was certain – relevant and timely information was the driving force to get people moving.

Deciding on where to focus on became easier during the designing process. We were more precise and targeted while working on our solution.

It does pay to listen and understand first!

## 3. The heart of technology is to ENABLE and ACTIVATE.

We are in the business of enabling, activating our partner farms and buyers.

We can only succeed if we enable and guide the producing community through data-driven decisions and proper planning and communal execution of these plans. Technology increases agriculture productivity but only in the hands of an industrious farmer and tight cooperation of people along the value chain. The ones who integrate such technologies in their operations will feel the increase in operational yield with lesser friction and bottlenecks that tech has solved.

By activating the minds and entrepreneurial hearts of young people to work toward uplifting their own lives through agriculture, let us take advantage of the fact that in a click of a finger, we have the information we need. But that is only one key aspect – what is more important is we persevere by understanding how the nature of things around us work and simplify the lives of people operating in the value chain!

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BY JAIRUS FERRER



# Intelligent Drones FOR FARMING

**D**RONES ARE ONE OF THE LATEST GADGETS finding their way into farming. And in the Philippines, Harbest Agriculture Corporation is introducing the use of the Agila Drone to make more efficient the application of agro-chemicals over a vast farming area.

The Agila M12 and D10 Intelligent Agricultural Sprayer Drones have 10- and 12-liter capacity, respectively, enabling them to spray agro-chemicals over a vast farming area.

What makes the Agila drones intelligent is both models have autonomous and manual modes, enabling them to apply agro-chemicals over farms with a pre-set route. This is made possible through their Intelligent AB Point Mode and Programmed Spray Route features.

The drones can also avoid obstacles and go back to their pre-set route, through a feature called Voyage Obstacle Avoidance.

The Agila M12 and D1 models also adjust to the terrain through the Terrain Following Radar feature.

A feature called Cloud Management Platform is also installed in both drone models, which is a personal computer, web-based system and mobile app providing real time management for precision and smart farming.

When it comes to actual spraying, the Agile Drone M12 and D10 have a feature called Smart Spraying System, where front and rear nozzles work separately. The flow of the liquid can also be doubled up to 3.2 liters per

minute. The regular spray rate is 1.6 liters per minute.

The M12, obviously the higher model of the two drones, also has night operation mode. The following accessories also come with the M12: RTK stations; two fourth-generation (4G) remote controls; six pieces 16,000-mAh intelligent batteries; balance charger with two ports; and charger mate with five ports.

The M12 has an operational efficiency of 30 to 40 hectares per day.

On the other hand, the D10 has the following accessories: two 4G remote controls; six pieces 12,000-mAh batteries; and charger with two ports. It has an operational efficiency of 20 to 30 hectares per day.

Harbest sources its Agila Intelligent Agricultural Sprayer Drones from Eagle Brothers in China. The M12 is sold at P980,000 and the D10 at P780,000.

Harbest also offers a one-year warranty and aftersales service and spare parts for the Agila drones.

*For inquiries on the Agila drones, contact the Harbest customer hotline at [harbest@harbest.com.ph](mailto:harbest@harbest.com.ph), [harbestsales@gmail.com](mailto:harbestsales@gmail.com), 0917-520-3260 or 0917-3100131.*

# Adhering to ‘Honor, Service, Conservation’

BY JOHN M. ARAYAT

From UPLB is this young man  
with an old farmer’s soul

**R**ICHELLE ROYCE “Chi Chi” Tapulao is a proud “fratman.” And the fraternity he belongs to, the UP Zeta Beta Rho Honor Fraternity, is a scholar’s organization pursuing academic excellence in the field of forestry.

To this day, the Zetans are committed to the advancement of the forestry profession in the country. The fraternity and its sorority counterpart, the UP Mussaenda Honor Sorority, has expanded its membership through the organization of chapters in the Gregorio Araneta University Foundation, now De La Salle-Araneta University in Caloocan City; Central Mindanao University in Musuan, Bukidnon; Leyte State University (formerly VisCA) in Baybay, Leyte; Nueva Vizcaya State University in Bayombong, Nueva Vizcaya; and Western Mindanao State University in Zamboanga City.

“Alumni Zetans have contributed greatly in uplifting the history of the Fraternity that has withstood challenges in social, cultural and educational leadership throughout its 64 years of existence,” said the 21-year old Chi Chi, who headed the fraternity from 2018 to 2019.

Being a proud Zetan, Chi Chi enjoys studying forestry, even seeing it as vital to the progress of the country’s agriculture sector.

“The forests provide a vital role in the country’s agriculture sector by maintaining and restoring soil fertility, and improving soil quality. Agriculture is highly dependent on soil fertility and is a key ingredient for the continuous production of crops yielding food,” said Chi Chi, who is currently completing his BS Forestry Course at the University of the Philippines-Los Banos (UPLB).

“The continuous production of agricultural crops depletes soil fertility. However, trees are capable of improving the soil by nitrogen fixation, nutrient cycling, and providing organic matter.

Another problem to agriculture is soil erosion, resulting in the loss of topsoil, which is a source of nutrients. Inclusion of trees to agriculture minimizes soil erosion by intercepting raindrops and acting as shelterbelts or windbreaks,” Chi Chi added.

And then there’s agroforestry, which he said is the integration of trees, crops, and/or livestock to agriculture.

## Study with adventure

Chi Chi, who has a twin (Rieal Royce aka Ye Ye) and is one of four children to Richard and Lea, said that his studying forestry gave him a higher purpose, and opened opportunities for him to travel to various parts of the country, particularly those rich in nature and, of course, forests.

“Being a forestry student gave me a higher sense of purpose toward environmentalism and immersed me in different communities to deeply understand their social well-being. Lastly, after obtaining my Certificate in Forestry, I was able to work for different projects and companies while taking up my BS Forestry Course, giving me experience and additional income for my studies,” he added.

Among the places Chi Chi has traveled as a forestry student are Governor Generoso, Davao Oriental; Baguio City; and Banaue Rice Terraces, Ifugao.

His most memorable travel was when he did his thesis data collection in Davao.

“It was the farthest place I’ve been to. It was fun because we were able to immerse with the local indigenous people

residing in the study site,” he added.

Chi Chi is encouraging the youth to also take up forestry as the country faces numerous challenges from extreme weather changes, which would affect food production.

His message is: “Being a forestry student is a challenge and a privilege for me. It is a challenge in a way that we must spearhead the protection and conservation of the remaining forest lands and the resources it provides, as we know that there is a declining forest cover trend from the 1900s up to now. ‘Forest is a source of life’ is a famous line we know in our college. People cannot survive if the remaining forests are gone.”

Chi Chi has also played a major role in the recent staging of the National Forestry Olympiad (NFO). The event is held every two years by the UP Zeta Beta Rho Honor Fraternity and UP Mussaenda Honor Sorority.

He said the NFO is a scholastic competition involving students from forestry schools in the Philippines, where they can showcase their skills in the following: surveying; mensuration; taxonomy; identification of tree diseases; seed identification; and wood identification. The contestants also compete in a quiz on forestry and the environment. The NFO was launched in 1994 and is held at the UPLB College of Forestry and Natural Resources, Los Baños, Laguna.

The biennial competition also helps instill the values Chi Chi and Zetans hold so dear, as stated in the fraternity’s motto, which is “Honor, Service, Conservation.”



**PHOTO SHOWS** Richelle Royce “Chi Chi” Tapulao (left) with twin brother Rieal Royce “Ye Ye,” a chemical engineering graduate from the University of Sto. Tomas.



# TERNATEA



provides a healthy alternative

By JULIO P. YAP JR.

**IF WE WANT TO QUENCH OUR THIRST** but veering away from carbonated beverages or commercially-prepared juices, a healthier alternative is to prepare our own concoction by using flowers, better yet, the flowers of butterfly pea.

In many parts of Southeast Asia, butterfly pea flower tea is prepared using the flowers, which is then consumed hot or cold. Its taste could be “earthy” or similar to that of unsweetened green tea.

The *Clitoria ternatea L. plant*, which is also known as butterfly pea, blue pea, or Asian pigeon wings, is from the *Fabaceae* family that is commonly found throughout Southeast Asia and in the Philippines.

Its petals, which are bright blue, have been used as an ingredient in the preparation of herbal tea drinks for so many years.

Among those who promote the preparation of the butterfly pea flower tea is May Aileen S. Uy who owns May's Organic Garden in Barangay Pahanocoy, Bacolod City. She and her husband Ramon Uy Sr. are advocates of organic farming and healthy living.

This creeper plant is cultivated naturally for its very attractive flowers that can also can be eaten directly as part of a dish like salads. It can also be used for dyeing food items.

The butterfly pea plant can also thrive very well in the wild from its ability to grow even in poor soil.

According to Mrs. Uy, among the many health benefits of the butterfly pea include improved hair growth and skin. It is rich in antioxidants compared to green tea and could act as an analgesic.

It contains an antioxidant called proanthocyanidin,

which increases blood flow to the capillaries of the eyes, making it useful in the treatment of glaucoma, blurred vision, retinal damage or tired eyes.

Health researchers have indicated that butterfly pea has different benefits since it also could enhance memory and has nootropic, anti-stress, anxiolytic, anti-depressant, anti-convulsant, tranquilizing and sedative properties.

In traditional medicine, the plant has been found to have properties that could affect the female libido due to its similar appearance to the female reproductive organ.

During the earlier years, the flowers of the butterfly pea were imagined to have the shape of the human female genitals, hence, the Latin name of the genus “Clitoria,” from the word “clitoris.”

While the butterfly pea flower tea has been brewed for many years already, it was introduced only recently to health-conscious individuals in the Philippines.

Preparing the tea is simple: bring enough quantity of water to a boil then remove from the heat source.

Next is to add the flowers of the butterfly pea and allow it to steep in water until the beverage cools down. Be sure to remove the flowers before serving.

Pour to a glass then add the desired amount of honey and stir well. Fill with crushed ice, and add a squeeze of lemon if desired for a refreshing drink.



## THE FLOWER

of the butterfly pea plant is also attractive.

**TERNATEA** is usually served with the flowers but these should be removed before drinking it.

## MAY AILEEN S. UY

promotes butterfly pea flower tea as a healthy and refreshing drink. She is shown with granddaughter Cassie Cammayo.

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# Does the Philippine a some kind of revoluti

**D**R. WILLIAM DAR, the Filipino executive director of the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) based in India, believes so and has come up with a roadmap called “InangLupa” that will create a revitalized Philippine agriculture sector by 2020.

“Philippine agriculture is confronted with several daunting and overwhelming environmental challenges. The country’s population will continue to grow unabated to 2020 and beyond, and shall require greater food supplies, whereas the scope for expansion of farmland and availability of freshwater has narrowed considerably,” said a document detailing the InangLupa roadmap.

It added that agriculture will experience the greatest impact from climate changes, because of extreme weather events that was typified by Typhoon *Yolanda* (international name *Haiyan*) last year (2013).

To help revolutionize or transform the country’s farming sector, the paper advocates “social movement” which can be called the InangLupa Movement – that is to be fueled by ideas and knowledge “derived from the views and analyses articulated by volunteer scientist, farmers, entrepreneurs, non-government workers, people in the bureaucracy, and other stakeholders who are volunteers of the InangLupa Movement.”

The roadmap has three major objectives:

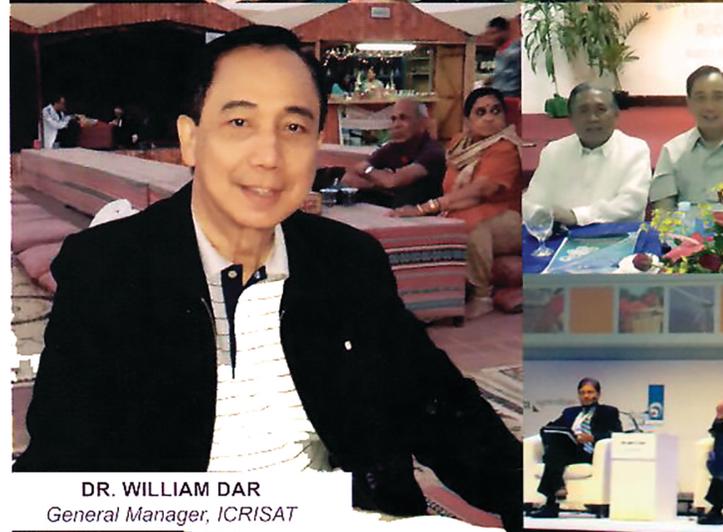
1. Reach a consensus on the important needs in transforming Philippine agriculture and the solutions required to satisfy those needs;
2. Provide an inclusive mechanism to achieve the identified objectives; and
3. Provide a common framework to plan and coordinate actions for development impact.

“The multiple goals of poverty reduction, food security, and nutrition security, improved livelihoods, and climate-smart agriculture, and social development cannot be achieved without a holistic approach that expands production and broadens markets, hand-in-hand with empowering people to move out of poverty, and preserving the sources of pride in Filipino culture,” the paper said.

“At the same time, through appropriate institutional mechanisms, soil, water and crop limitations will be addressed with appropriate policy interventions and strengthened institutions,” it added.

The InangLupa roadmap aims for five development outcomes:

## InangLupa road transform PH



DR. WILLIAM DAR  
General Manager, ICRISAT



# Agriculture sector need roadmap or transformation?

## Roadmap can transform farm sector

1. **Food sufficiency** - increasing supplies of key staples that will buffer communities against price rises and volatility, making food affordable for millions of poor people;
2. **Ensuring nutritional security** – improved crop varieties and diversified production systems will provide the nutrients often lacking from the diets of poor people, particularly women and children;
3. **Increasing per capita income** – improved productivity and better developed markets will deliver agricultural growth in which the rural poor participates;
4. **Climate-change smart communities** – only through this outcome can poor farmers benefit from healthy ecosystems and sustain high-level agricultural productivity, particularly in the light of climate change; and
5. **Social development** – social development is about putting people at the center of development. This means a commitment to the idea that development processes need to benefit people, particularly but not only the poor, with the recognition that people, and the way they interact in groups and community, and the norms that facilitates such interaction.

To achieve those development outcomes, the Inanglupa roadmap has outlined seven advocacies. The first four are: natural resources management given limited land supply, and the need to conserve water resources and to undertake soil and commodity mapping; championing appropriate policies for agriculture that will, among others, promote equitable sharing of costs and benefits of improved natural resources management; knowledge and information sharing that will tap science and technology; information from markets for various farm commodities; and building climate-smart communities that will require investment in agricultural research-for-development (as opposed to research and development).

The next three are: inclusive market-oriented agriculture that will highlight the power of market opportunities to offer more prosperous lives for smallholder farmers and their families; environmental protection to help farmers and other stakeholders in improving the environment while also expanding sources or revenues; and education/ capacity building that will lead to the empowerment of communities and individuals, and strengthening of institutions of stakeholders.

“The Inanglupa roadmap envisions a new Philippine agriculture that shall have a major role in reducing poverty, achieving food and nutrition security, economic prosperity, environmental sustainability, and upholding human dignity,” the roadmap said.

With Dar being the brainchild behind InangLupa, the roadmap is worth looking into by both the government and the private sector.

*(This article was published in a 2014 issue of Greenfields magazine)*



## [ PREVIEW FOR THE NEXT ISSUE ]

**AGRICULTURE SECRETARY WILLIAM D. DAR** will also give his thoughts on how to attract more of the youth into agriculture.

**SAN ISIDRO LABRADOR** is the Patron Saint of Farmers, and Greenfields reflects on the festivals in May honoring him, and the movements and organizations he has inspired.



**GREENFIELDS EXPLORES AGRITOURISM** and will recommend a number of excellent sites to visit in the coming summer and beyond. We also discuss why farming and tourism is an excellent combination.

**HOW IS COCO SUGAR MADE,** and why is it gaining ground in the local and international markets? Greenfields gives a glimpse and discusses why coco sugar could be a good proposition for agripreneurs.



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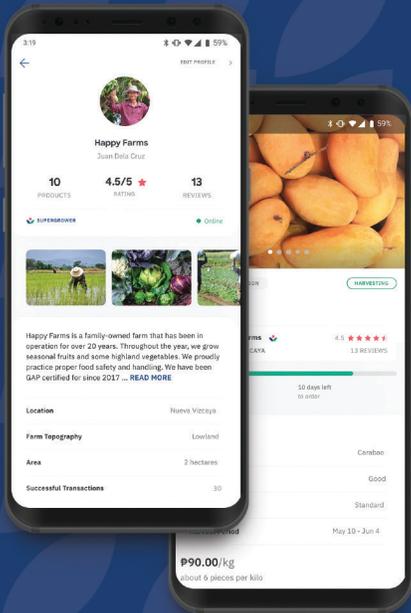
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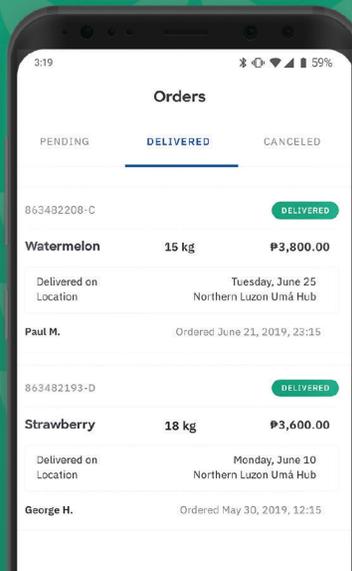


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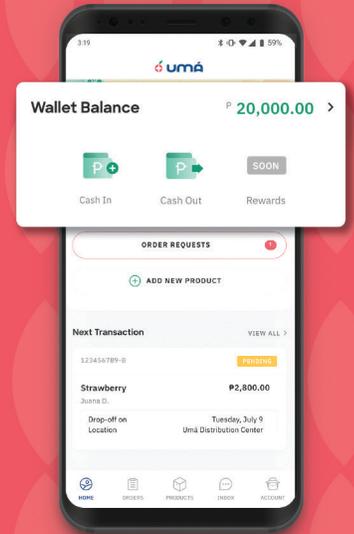
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