

Special issue

PhilRice Magazine

A quarterly publication of the
Philippine Rice Research Institute



RICE, YOUTH,
AND CLIMATE CHANGE





About the cover

Intersections among rice, youth, and climate change are not always talked about. The cover shows that these three can be interrelated, with young people at the center. We show that young people are forces to be reckoned with when it comes to addressing issues relating to the impacts of climate change on rice and/or vice versa. Engaging them can mean favorable impacts on our rice-farming communities.

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EDITOR'S NOTE



We know that what we have done will never suffice, given the already felt and the projected impacts of climate change on food production efforts.

From late 2013 to December 2016, we worked with the CGIAR Research Program on Climate Change, Agriculture, and Food Security on an initiative to mobilize high school students to serve as information providers on climate-smart agriculture for rice (CSA4Rice). The project took off from PhilRice's Infomediary Campaign, which started in 2012, an initiative to engage young people in agriculture.

We have documented quite a number of lessons from this Project, which we will share in this special issue of the PhilRice magazine. We show here how young people can be at the heart of efforts to enhance the adaptive capacities of rice farmers to climate change.

We write about how the students searched information on CSA4Rice that they shared with farmers in their rice-farming communities. We present to you some of our realizations on the information-seeking behavior of students as regards this subject.

As it stands, students have a high sense of empathy and actual personal involvement making them highly effective infomediaries. We know of more than 4,000 active student-texters in the PhilRice Text Center.

We also document the innovations of our participating schools in implementing the project like the version of the rice hull carbonizer by our partner in Baluan National High School in General Santos City.

We likewise pay tribute to some of our best teacher-implementers. We recognize that without them, we would still be doing some ivory tower-theorizing up to this point. They are the stars of this project.

We know that what we have done will never suffice, given the already felt and the projected impacts of climate change on food production efforts. Hence, through this magazine, we would like to entice some of your creative ideas on how else can we motivate rice farmers to adapt to climate change.

Moving figures

• MARY GRACE M. NIDOY

Unpredictable climate keeps rice farmers guessing on what technology to use to maintain a good yield. This story features our infomediaries who use the PhilRice Text Center (PTC) as a medium to retrieve credible information on CSA4Rice technologies. The information is put to good use by students' farmer-parents who listen.



*The PhilRice Text Center was developed by the Open Academy for Philippine Agriculture

Whether a status needs to be updated, a viral video, or a photo entices you to press the “like” button, millennials are always preoccupied with what’s trending on social media.

In Corazon C. Aquino High School in Gerona, Tarlac, students are likewise glued to the screens of their mobile phones – but for a different reason.

Nikka Zoila Gracilla, 15, narrates how her mobile phone helped her solve an assignment in a Technology and Livelihood Education (TLE) class.

“I sent an inquiry to the PTC on how to manage rats in the rice field. The agent replied with complete information on pest and disease management,” Gracilla says.

Her awareness of the PTC did not come as an accident. In 2014, when Gracilla was still a Grade 8 student, she registered with the text center through the Infomediary Campaign.

“Part of the campaign was to introduce the high school students to PTC, an SMS facility that caters to all queries on rice farming in the country,” says Jaime A. Manalo IV, campaign lead.

Text is one of the three main components of the campaign, along with read and surf.

“Part of the campaign was to introduce the high school students to PTC, an SMS facility that caters to all queries on rice farming in the country,” says Jaime A. Manalo IV, campaign lead.

PTC DATA

Since the campaign’s inception in 2013, the PTC has grown by leaps and bounds with more than 4,000 registered infomediary students, 62% of whom are girls.

Sharina Sultan, 16, of Baluan National High School in General Santos City, sent queries on new technologies and how to manage pests and diseases.



Most of the students’ parents in our community are farmers so I shared the PTC number to farmers.

• Sharina Sultan

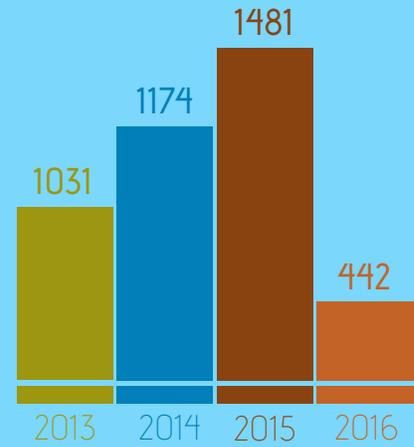


Figure 1. Number of student-texters who registered in the PTC, 2013-2016

“Most of the students’ parents in our community are farmers so I shared the PTC number to farmers,” Sultan reveals.

Gracilla, also a farmer’s kid, tells us how her father benefited from PTC. “My father is always thankful as I always share any information I get from PTC for our schoolwork. It solved some of the problems in his field like those on pests,” she says.

Most texters of PTC come from Tarlac.

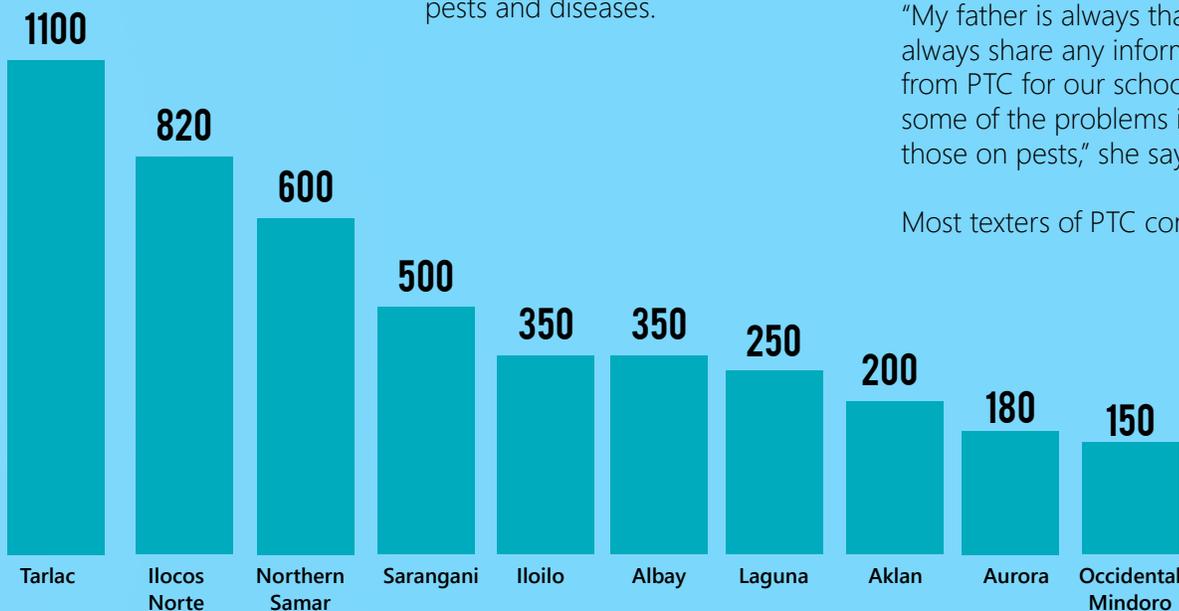


Figure 2. Top 10 provinces with most number of student-texters in the PTC, 2012-2016

Members of the campaign team also found that the top queries of infomediaries are related to seed quality and variety (55.2%), pest management (25.9%), general information and research (9.1%), nutrient management (3.4%), and seed availability (1.5%).

According to PTC technical experts, students send highly sensible text messages relating to agriculture as they are comparable with those by the farmers.

Averaging 349 text messages a month, the PTC is busiest during the beginning of the academic calendar for students and of the cropping season for farmers.

While it is logical that the PTC receives text messages when the students are in school (7:00am-5:00pm), the momentum stays from 5:00pm to 9:00pm.



Figure 3. Average number of messages sent by student-texters in the PTC per month, 2012-2016

“This indicates that the students also get information without intervention coming from their teachers. We can also presume that their farmer-parents are the ones who text the PTC,” Fredierick M. Saludez, a text center agent, adds.

THE AGRI TRACK

Sultan and Gracilla recognize that the PTC helps farmers in their respective communities to have better access to information.

They also give credit to PTC for igniting their interest in agriculture.

“I became interested in agriculture because of the Campaign. I find it unique from other subjects. I am happy that I no longer waste my time tapping the screen of my phone on less important things,” Gracilla says.

“Next school year, I plan to take the agriculture track in senior high,” Sultan admits.

Surely, Sultan’s and Gracilla’s stories are worth more than a virtual “like.” ●





BALUAN RICE HULL CARBONIZER

• ANNA MARIE F. BAUTISTA

This story discloses the laudable act of our infomediaries from General Santos City who turned valuable information into tangible output. The technology they innovated is a form of venture to help their rice-farming households become more productive in these changing times.

With accumulated ingenuity and resourcefulness, Grade 10 students of Baluan National High School (BNHS) in General Santos City fabricated a simple, open-type carbonizer that farming families can replicate in their own households.

Agri-crop students Joshua Padilla, Jenny Algarme, Arhon James Patricio, Selwyn Luayon, all 16, and Amie Lym

Dedel, 17, tell us that their version of the carbonizer first emerged as a school project after watching a video presentation on the said technology.

“Despite our meager resources, we had to accomplish our school project and produce a carbonizer that we can use for our school’s rice garden,” Algarme recounts.

In crafting their carbonizer, these young minds recycled 12 pieces of 370-ml milk cans, a 16-L used can of paint or oil, and scrap metal sheets. They invested P20.00 in rivet fasteners. Here's how they did it:

1. For the chamber, they removed one of the lids of the 16-L used can of paint. On the other side, they made a hole with a diameter similar to the milk cans.

Using a knife, they also bored holes around the chamber, each measuring 4×4 cm. Padilla says that the length of carbonization depends on the size of the holes: the smaller the holes, the slower the carbonization process.

2. For the chimney, they removed both lids of all milk cans and flattened each surface. They slightly compressed one end of each can to ensure that it can be easily inserted into the other. The connected cans looked like a long cylinder, open at both ends.
3. Then, they inserted the chimney into the hole of the chamber. To make the carbonizer sturdy and durable, they added braces using scrap metal sheets that hold the chimney and the chamber together. Three to four metal sheets were attached with the use of rivet fasteners.

"In an hour, we can produce three sacks of carbonized rice hull (CRH) from six sacks of rice hull, which we apply to 1-ha rice field during land preparation," Algarme explains.



In an hour, we can produce three sacks of carbonized rice hull (CRH) from six sacks of rice hull, which we apply to 1-ha rice field during land preparation

• Jenny Algarme

Taught about the use of CRH in their climate-smart agriculture subject, they use it as soil media in their *dapog* method of establishing rice seedlings.

They found that rice seedlings from the seedbed applied with CRH are easy to lift. They observe no golden apple snails (GAS). PTC agent Fredierick Saludez explains that CRH retains heat from the sun due to its natural black color and contains silica that irritates GAS.

CHANGE MAKERS

The Philippines produces about 3.1 million mt of rice hull every year, most of which is wasted.

In Baluan, Padilla observes that farmers and millers either throw away or burn rice hull.

PhilRice has shown different uses of CRH, such as being a substrate to organic fertilizer, soil conditioner, water purifier/ filter, base material for making microbial inoculants, pest control agent, and an odor suppressant.

Edmar Juanitez, Tech-Voc teacher at BNHS, recalls that the open-type carbonizer the students innovated was presented during the parents-teachers meeting in their school.

"Some of the parents show interest in this innovation, mainly because it is cheap and easy to fabricate. They also become aware that rice hull has plenty of productive uses. A number of our students have divulged to us that their farmer-parents are now using the carbonizer while some are already applying CRH to their farms," Juanitez reports. ●







Growing with the **NOBLEST** profession

Out of pleasant stewardship comes a desirable reward. For our partner-teachers featured in this story, serving their farming communities means not putting into waste their gained knowledge on CSA4Rice. Their good and faithful acts bear fruits that give joy to them and the people surrounding them.

• HANAH HAZEL MAVI B. MANALO

Sometimes, the grass doesn't look greener on the other side of the fence. One only needs an opportunity to grow but still stay where he or she is, just like the agricultural high school teachers whose professional lives have changed owing to the Infomediary Campaign.

TRAINING MEANT FOR AGRI TEACHERS

There had been no national training for agri-high school teachers for years, but the long wait was worth it for Lilybeth S. Nolasco of Albay, Rosalina Y. Saylan of Davao Oriental, Elizabeth T. Pajarillo of Occidental Mindoro, and Arnel C. Sabuco Jr of Ilocos Norte. They were participants in the first national training under the campaign, conducted in 2012.

Their training accorded them unexpected promotions. For 3 years, Nolasco of the Libon Agro-Industrial High School held the Teacher II position and was promoted to

Teacher III in 2016. Pajarillo of the San Jose National Agricultural and Industrial High School was promoted after 3 years to senior high school Teacher III in 2016. She also received the Agricultural Crop Production National Certificate Level III. Sabuco of the Ilocos Norte Agricultural College held the Teacher I and II positions from 2012 to 2014, and was promoted to Head Teacher III in 2015. He also acquired in 2014 the same certificate as Pajarillo's.

After 8 years, Saylan of the Bagumbayan Agro-Industrial High School moved from junior high school Teacher I to senior high school Teacher II in 2016.

She recalls that her principal relentlessly asked her to prepare the necessary documents for promotion but Saylan, 52, then told her, "I don't really mind being Teacher I for a lifetime as long as I am able to send my children to school. I have my small ornamental garden to depend on for additional income." Saylan

soon after realized that this was the kind of pressure that was hard to resist.

More than the promotion, the campaign has helped make them realize their worth as agriculture teachers. Pajarillo, 39, says, "At times, we also get tired of teaching but good thing, there's the campaign that never forgets to appreciate us. They recognize the big role that we play in rice agriculture. This matters to us most."

Saylan, Pajarillo, and Sabuco were duly recognized as the best implementers of the Infomediary Campaign.

PERFECT MATCH

Without the dedicated and responsible partners, implementing a well-intentioned program like the Infomediary Campaign could have been one of the government's futile attempts in helping to transform lives.



Lilybeth N. Nolasco



Rosalina Y. Saylan



Arnel C. Sabuco



Elizabeth T. Pajarillo



We share the same dream with the proponents of the Campaign.

• Lilybeth N. Nolasco

“The project has invested much on us (teachers) through the conduct of national training. We should return the favor. The sustainability of this project is in our hands,” Sabuco, 30, says it too well.

Sabuco proposed a five-year development plan to the school to continue the research on the Campaign while Pajarillo submitted to DA-Regional Field Office a campaign-related action research proposal.

Saylan, for her part, mentions “We will not put an end to an initiative like the Infomediary Campaign. In fact, our school has allotted an area for the use of horticulture students. Our school’s support is strong, especially from our principal. She even lent us money to have our own rice hull carbonizer that serves as the school’s source of income.”

Saylan happily tells us that through their income from selling CRH to farmers, they provide school supplies to their needy students free of charge. “You can see the smile on students’ faces while producing CRH,” Saylan adds. She hopes her students realize that truly there’s money in farming.

Nolasco, 56, speaks of the same values with Sabuco, Pajarillo, and Saylan. She said that they can’t afford to waste government funds. “We share the same dream with the proponents of the Campaign.

Sharing rice-related knowledge to the students and farmers is indeed a commitment. And it never dawned on me that teaching could be this happier.”

Pajarillo believes that the Campaign is not all about them and their students. Their efforts must go beyond the corners of their classrooms. She initiated an extension program where her students teach the farmers in their community about climate change and rice agriculture. Like Pajarillo, Saylan goes beyond what is expected of her. She extends her learning experiences and resources to non-participating schools interested in the Campaign.

The Campaign’s success could be attributed to the teachers who love their profession, and have the heart for farmers. Their success is also the campaign’s. ●



CATALYSTS of CHANGE

Introducing some of
the champion-teachers
in Youth & Agriculture

• ANNA MARIE F. BAUTISTA

Considered the champions of this initiative, following are the stories of our partner-teachers who have pulled every string to ensure that the youth are empowered, and the information on climate change and rice production reach their communities. Their efforts catapulted their schools to being regarded as the best implementers of the Campaign.

Catalysts of change come in many forms and sizes. In the Infomediary Campaign, the teachers enable high school students to become climate-smart rice agriculture information providers. These strong-willed, highly creative, resourceful, and open-minded teachers are the extension champions of their own rural rice-farming communities.



NORELYN R. DELA CRUZ

42, San Lorenzo, San Nicolas, Ilocos Norte
Batac National High School – Bungon Campus



BS in Agriculture,
Major in Animal Science
With Master of Arts (MA) units in
Educational Management/Education

Ma'am Norelyn pursued other occupations for 13 years. She was hired as a teacher in 2014 and handled Technology and Livelihood Education (TLE) students specializing in agriculture.

After her training at PhilRice in 2015, Ma'am Norelyn promised not to waste her learnings on climate-smart agriculture and rice production. Their campaign-related activities included training of students, farmers, and community stakeholders; quiz bee; and integration of the topic in various class subjects.

The school's adopt-a-lot program as an infomediary site was distinct. It is where the students practice rice production and integrate new technologies such as MOET, LCC, AESA, modified *dapog* system, and IPM. Another lot is to be adopted.

"I envision my students to become 'little technicians' in their own locality. As they embrace agriculture, they now become our partners in advocating new technologies and innovations in rice production," Ma'am Norelyn says.



ROSALINA Y. SAYLAN

52, Bagumbayan, Lupon, Davao Oriental
Bagumbayan Agro-Industrial High School (BAIHS)



Bachelor of Science (BS) in
Agricultural Education
NC II in Horticulture, Trainers'
Methodology I

Since her training at PhilRice in December 2012, Ma'am Rosalina has been persistent in teaching students about rice production. One of the challenges she faced was the perception of the community that the students cannot plant like farmers do, and are not knowledgeable enough on rice. Although this was discouraging, Rosalina was up to pursue the struggle.

Among her initiatives with her school included the establishment of a school rice garden that became the learning ground for both students and their farmer-parents; information drive on the benefits of carbonized rice hull, including its production and marketing; and information dissemination on climate change.

Ma'am Rosalina and her horticulture students were featured in a video produced by the Infomediary Campaign team and was recognized by the International Monetary Fund in India. The story showcased BAIHS' production of CRH that the farmers in their community adopted, and also became an income-generating project of the school.

"It is very important to let the young people be engaged in agriculture because it offers them a lot of opportunities and it also contributes to the progress and development of the country," Ma'am Rosalina says.

MILVIN I. ZABALA

38, Poblacion, Libacao, Aklan
Libacao National Forestry
Vocational High School

BS in Agriculture, Major in
Agricultural Economics 
With MA units in Education



MOET, LCC, ecological engineering, vermicomposting, modified dapog, seed selection, AESA, and many more - these learnings, for Sir Milvin, were fruitful enough that they must be re-echoed in his school and in their community. Although it was not easy, he tried to make things work.

Innovation was Sir Milvin's key to surpassing the scarce land resource in their school in Libacao. They did rice container gardening, where students were tasked to bring empty plastic bottles filled with 4kg of soil from the rice field to serve as their planting medium.

Also in support of the campaign were the students' and teachers' orientations, establishment of the LNFVHS Infomediary Students' Organization (LISTO), demo farm on modified *dapog*, Infomediary corner inside the classrooms, and active participation in the campaign's official facebook page.

"I hope that my students will be proud of their contributions in agriculture, especially in innovating, discovering, and sharing new technologies to their communities. May they become instruments in nurturing the minds of other young people," Sir Milvin wishes.



MANUEL L. HORNALES

60, Poblacion, Leyte, Leyte
Leyte Agro-Industrial School

 BS in Agricultural Education

The workloads that he had to accomplish could have stopped Sir Manuel from teaching climate change and rice production, yet he persisted in bringing the campaign and the knowledge to his school and to his students.

"I want to see these young people continue their hard work, and nurture their skills in farming to help our economy become sustainable," Sir Manuel stresses.

He began his work with all the TVE teachers in their school. He thought that starting with the teachers can bring the initiative to the students, then to their farmer-parents.

Of all the activities they have conducted, Sir Manuel recognized that the parents' and teachers' meetings were the most relevant. For him, it was a time for the students and their parents to learn from each other. It was also the best time for the students to prove that they were knowledgeable about rice production and the new technologies related to it.

"Of all the technologies they've heard of, improvised *dapog* system, MOET and reduced tillage were the ones adopted in our community. This is a representation of how we, the teachers and students, have worked hard, not only in implementing the campaign, but also in promoting agriculture as a productive field for high school students," Sir Manuel elaborates.



MA. ELMA A. AMPATIN

51, Maguling, Maitum, Sarangani
Maguling National High School



BS in Secondary Education,
Major in Filipino/English
MA in Educational Management

Her involvement in the Infomediary Campaign was a result of an outreach initiative of Malalag National High School's partner-teacher, Sir Onofre R. Labrador. He lobbied for the involvement of Ma'am Elma and their school in the Campaign that has now resulted into ripples of development.

Starting the campaign in her school was difficult for Ma'am Elma because of certain external and internal factors that pressured her.

She recollects that some of her co-teachers had negative feedbacks about the efficiency of the campaign. She also heard a few comments from farmers in their community that the initiative was similar to others, producing less impact in the community. Notably, Ma'am Elma was unsure if she had the capacity to teach climate change and rice production.

But she remains optimistic and prayerful. Ma'am Elma pushed for the implementation of a school rice garden, conducted lectures about the different technologies, and also tied up with their LGU for the students to become participants in the DA's farmer field schools. Several other activities were conducted through Elma's management, making MNHS one of the model schools campaigning for the youth, rice production, and climate change.

"Commitment and dedication are two quality traits that a teacher must have to be able to guide and nurture young people toward agriculture. After all, this is a noble calling," says Ma'am Elma.



ARIEL D. ORCULLO

37, Cambanogoy, Asuncion,
Davao del Norte
Asuncion National High School



BS in Agricultural Education, Major
in Crop Production
NCII in Horticulture
NC III in Agri-crop Production

Serving as crop production coordinator in their school, Sir Ariel knew that implementing the Infomediary Campaign was an uphill climb because of the unavailability of materials, lack of funds, students' attitude toward field work, and their lack of interest and negative concept about agriculture.

Yet, he was not flustered by the situation as he bore in mind that their community's livelihood relied on farming.

He made it a self-challenge to conquer the difficulties and give the students a chance to engage in rice production.

"We utilize every available resource we have. I let them use their gadgets to do their research. The use of power-point presentations and other integrated communication technologies during lectures makes learning more realistic, relevant, and interesting to my students. Every meeting, every activity was a new challenge and a discovery," he recounts.

As a farming educator and practitioner, Sir Ariel knows what the industry can offer to those who focus their interest in it.

"I hope that the young people change their negative outlook on agriculture because through that, they can explore the opportunities that this sector can offer economically to them and their families," Sir Ariel notes.



Commitment and dedication are two quality traits that a teacher must have to be able to guide and nurture young people toward agriculture. After all, this is a noble calling.

• Ma. Elma A. Ampatin



MARLO D. PARAZO

37, Ayson, Gerona, Tarlac
Corazon C. Aquino High School



BS in Computer Science
Master in Education –
Technology and Home Economics

Considered as the “awesome duo” of the Infomediary Campaign, Sir Marlo and Ma’am Marlene demonstrated how harmony can make a school in an urban area become inclined to agriculture.

Carrying different educational backgrounds, they made sure that their learnings from their training at PhilRice will not be put to waste. They put up a school rice garden, promoted the PTC, established an Infomediary Corner, and taught their students new farm technologies - all through their joint efforts, and with the help of their school officials.

Both consistently acknowledged each other’s efforts in doing the work – a key they held on to become among the notable implementers of the campaign. Their school was



MARLENE S. ARCIAGA

37, Pinasling, Gerona, Tarlac
Corazon C. Aquino High School



BS in Education, Major in
General Science
Master in Education – Technology
and Livelihood Education

also recognized for having the most number of registrants in the PTC.

According to them, agriculture teachers must possess a tinge of charisma, trustworthiness, become pro-active and compelling, and most especially, they must practice what they are preaching.

For Ma’am Marlene, Agriculture Secretary Manny Pinol’s decision to include agriculture in the high school curriculum is right.

“Through proper motivation and guidance of their teachers and parents, these youth will surely be the nation’s partners in providing the staple food in every Filipino household,” she envisions.



Sense thy CHANCES

• ANNA MARIE F. BAUTISTA

This story features some of the communities that allowed the infomediaries to reach them. They have opened their eyes and ears to what the youth can share to them about cost-reducing and yield-enhancing technologies. They have acknowledged that the young minds have something valuable to help them cope with the changing climate.

The old adage, 'To see is to believe,' summarizes the reaction of most Filipino farmers whenever new ideas or technologies are introduced to them. Whether or not this attitude recurs, it is sure to affect one's opportunity and willingness to improve.

But some farmers live in a paradox. They lay aside their hesitations and willingly open their minds to what others, even the young, can teach them.

TONGUES THAT SPEAK

People in Leyte, Leyte are used to experiencing weather extremes. They've suffered massive losses in rice everytime typhoons wreak havoc in their town. Sir Manuel Hornales saw a ray of hope when he attended the CSA4RICE training at PhilRice in 2013.

When he returned in LAIS, he initiated activities that aimed to enhance students' learning on rice production amid changing climate. He also experimented on ways to foster shared learning among students and their farmer-parents.

Teaching the ABC's of rice production was relatively easy for Sir Manuel, because his students were already engaged in their own farming households. Hence, they had in-depth discussions on different technologies and on strategies to better relay information to farmers.

It was during the parents-teachers assembly (PTA) that the students had the chance to brandish what they know to their farmer-parents.

"We have introduced quite a number of technologies. Reduced tillage and modified *dapog* system were adopted by farmers more because of their efficiency," says Sir Manuel.



He also learned that some farmer-parents have adopted the *Palayamanan* system upon hearing about it from the students.

"The students informed us that some of their parents have started planting vegetables in some areas in their fields, while some started raising chickens, swine and ducks," Sir Manuel reports.

Also, farmers in the area have visited the school garden and asked for rice varieties, which they now plant in their fields – NSIC Rc222 appears to be the most popular.

Meanwhile, he encourages the students to tell their parents to send queries to the PhilRice Text Center.

With the farmers adopting these technologies, Sir Manuel and the LAIS infomediaries are confident that this will help enhance their community's adaptive capacity to climate change.

EARS THAT LISTEN

"For us, a child who can ride a carabao can plant rice," says Eddie Dela Cruz of Ticulab, Maitum, Sarangani, as he recalls his life as a farmer.

He noted that planting rice during his father's time was easier. Practices were most likely natural and their harvest reached up to 130 – 140 cavans.

Through time, Eddie and his fellow farmers observed that their rice plant has become the rendezvous of a variety of insects, and the soil seemed inefficient to grow crops compared before.

Consequently, they started using synthetic fertilizers and insecticides. "The ability of these chemicals to sustain rice yield and control pests does not last long so we have to increase the dosage over time. Now, I can only harvest about 70 cavans," Eddie shakes his head.

In 2014, Eddie learned that Ma'am Elma Ampatin, a teacher at Maguling National High School (MNHS) near his household, went to a training in PhilRice Nueva Ecija. He approached her and asked about the technologies that farmers use in Maitum.

Ma'am Elma did not turn a deaf ear.

After introducing several new rice varieties to him and other farmers, Ma'am Elma relayed the lessons to their school officials, which triggered the establishment of their own rice garden. This became a learning field for their students to know more about rice farming, try new technologies, and echo their learnings to their farmer-parents.

The school also invited rice farmers in the community to witness students working in the school garden. They also distributed reading materials to farmers.

Eddie diligently listened to the students and read the materials.

Noticing that the soil has become inefficient, he got interested with the Minus-One Element Technique (MOET), which provides quick diagnosis relating to soil health. After doing his own MOET experiment, he learned that the soil had much nitrogen but lacked ammonium sulfate. In the next cropping season, he applied the MOET recommendations.

Eddie also learned how to make organic fertilizers from the reading materials he acquired from the school. Now, he prepares his own fermented fruit juice from available local materials in their surroundings.

He frolicked when his harvest increased from 70 to 120 cavans.

Eddie also tried doing Agro-Ecosystem Analysis (AESA) and planted rice varieties, which he



Eddie Dela Cruz

bought from the school. The varieties were also adopted by other farmers in their community.

For Eddie, being a veteran farmer does not entitle him to pretend as "Mr. Know-it-all" when it comes to planting rice.

"Things change. We have to admit that young people can help so we





Elviranida Manuel

Allan Tomas



Things change. We have to admit that young people can help so we must give them a chance. Let us listen to them.

• Eddie Dela Cruz

must give them a chance. Let us listen to them," Eddie admits.

EYES THAT SEE

Pulling strings together became the name of the game for the Claveria Rural Vocational School (CRVS) in Cagayan.

Like other partner-schools, CRVS was also confronted by a number of challenges when it decided to implement the Infomediary Campaign.

"The school did not have a land where to establish a rice garden. No funds were available to buy production inputs. Most disappointingly, farming was not

among the inclinations of most of our students," says campaign partner-teacher, Ma'am Elviranida Manuel.

It turned out that their challenges were blessings in disguise.

Ma'am Elvi's contagious passion rippled to their school principal Ma'am Corazon Llapitan and her co-teacher Sir Allan Tomas. With support from her colleagues, Ma'am Elvi liaised with their municipal local government unit (LGU) that lent them land for their rice garden, which sat beside the farmers' fields.

As documented in the book *Youth & Agriculture: The Infomediary Campaign in the Philippines*, CRVS

made a mark when the three rice varieties that the students planted outyielded those owned by the farmers in the area. The farmers then ran after the varieties and other information on CSA4Rice. The school also gave starter seed packs for several farmers to plant.

Further, CRVS conducted the very first Infomediary Field Day. The students, backed by LGU experts, discussed to farmers the different technologies they employed in their school garden.

Of course the farmers were fascinated at the view of young sons and daughters explaining new rice production technologies.

Today, Claveria rural rice farmers adopt certified seeds, such as NSIC Rc298, Rc300, and Rc302.

Plenty of other schools relate similar stories on adopting CSA4RICE technologies. It is human to wonder how many more farmers will they reach in the future, how many more lives will change because of their interventions, and how many more schools will be inspired by their stories. ●

THE TRIUMVIRATE THAT MAKES A CLIMATE-SMART COMMUNITY

• **SONNY P. PASIONA**

ILLUSTRATION BY ANDREI B. LANUZA

In a year, over 3 million metric tons of rice hull are dumped almost anywhere; some of it is openly and wantonly burned — leaving dark ashes on the ground and unfiltered smoke spiralling to the skies. Scientifically, these practices harm the environment and contribute to the negatively changing climate.

Mary Grace Amoy, 16, admits that they would normally ignore rice hull in their locality. But soon after she became an Infomediary, she found that this once unwanted by-product of rice is a valuable material in making rice and rice-based farming not only more profitable but also climate-smart and sustainable.

CRH IN SCHOOL

Mary Grace is a student of Ms. Rosalina Saylan, a horticulture teacher at the Bagumbayan Agro-Industrial High School (BAIHS) in Lupon, Davao Oriental.

As a partner-teacher of the campaign, Ms. Saylan trained on CSA4Rice at PhilRice in 2015. Equipped with knowledge and skills on new technologies and practices on CSA4RICE, she went back to her school fired up to spread learnings to her students.



Papa was very happy because CRH minimized infestation and the use of pesticides and chemical fertilizers.

• Mary Grace Amoy

With relevant information materials, Ms. Saylan lectured on CSA4Rice technologies and practices, particularly on Carbonized Rice Hull (CRH) production at BAIHS.

“Locals would normally just dispose rice hull along the roadsides and practice open-burning,” she explains why she is drawn to adopting CRH.

As Ms. Saylan talked about CRH, Mary Grace knew that what was being presented to her will be of great use to her father.

“I learned many benefits of doing CRH. We have a vegetable garden and a rice field back home so I found it really useful,” Mary Grace says.

With her classmates, they made an open-type carbonizer using readily available materials in school. They then used it as a soil conditioner in the rice garden and as a

potting media for vegetables and ornamentals. As a result, rice yielded better, vegetables grew bigger, and flowers blossomed prettier.

TO SEE IS TO BELIEVE

Ms. Saylan regards Mary Grace as one of her top-performing students. But the teenage girl proved her worth even further when she became an Infomediary champion, starting off with her father, Orcisio.

“I went back home excited to tell my father about CRH and its benefits. I may not be a farmer, but I knew that the information that I have is important as rice is vital in our daily lives,” Mary Grace recalls.

Mr. Amoy had a bit of hesitation upon learning about it from Mary Grace. He knew that he had to do some verification. What better way of believing it than unfolding the truth in his very eyes?

“I went to the school and asked the teacher-in-charge about it. It was true. I saw the vegetable crops incorporated with the CRH, they were really good. So I was convinced to try it out as well,” says Mr. Amoy.

The 53-year-old farmer then applied CRH in his rice and vegetable farm and it gave positive results. From her daughter, he also learned that excessive use of inorganic materials put risks to his health and the environment.

“Papa was very happy because CRH minimized infestation and the use of pesticides and chemical fertilizers,” the youngest child describes her father’s delight.

CRH adoption augmented the family’s livelihood as they sell their produce, mostly *okra* and eggplants, in the local market.

"I then realized that using organic fertilizer like CRH is a wise choice," Mr. Amoy attests.

Adopting CRH saved him P22,000 to P25,000 from chemical use in his 5-ha farmland. Most importantly, he made his little contribution in saving the environment, and in mitigating the ill impacts of climate change.

Next is to make this contribution bigger by engaging more farmers.

ENGAGING COMMUNITIES

Realizing the positive impact of CRH on the farming chores in school, Ms. Saylan decided to conduct a demonstration to promote the use of CRH among the parents of the infomediaries, which then sparked curiosities.

"They started asking questions on its uses and we were happy to testify about it, with proof on how effective and practical it is," Ms. Saylan says.

They also promoted vermicast and engaged farming communities through field days in the rice garden. Mary Grace often takes the lead on these activities while her father enthusiastically tells positive testimonies to his fellow farmers.

Furthermore, rice millers in their town have become donors of rice hull to the school, allowing them to produce more CRH and gaining profit from it. Right now,





they sell each sack of CRH at P60. Proceeds of this humble business by the teacher and the students go back to the students for their school needs such as basic educational materials.

“We display our CRH and vermicast products and when teachers from other schools and parents visit us, they become interested and they buy it,” says Ms. Saylan. The school has already adopted other CSA4Rice technologies and has also made innovations such as recycling plastic

bottles as pots for ornamental plants with a water-saving mechanism.

Other Infomediary sites across the country can also tell other success stories on practicing CSA4Rice. But the gist of their stories is similar to this — the triumvirate of Mary Grace, Ms. Saylan, and Mr. Amoy proved that the engagement among the teachers, students, and their parents could make a climate-smart community. ●



SIGNIFICANT figures



200,000+ Indirectly reached students or those who joined school-wide events relating to the Campaign



3 modules (Climate Change 101, CC Mitigation, and CC Adaptation) and a teaching guide developed

2 journal articles in international refereed journals



95 entries in a poster-making contest

600+ downloads for the article *"Integrating climate-smart rice agriculture into secondary-level curriculum: Lessons from three high schools in the Philippines"*



12 entries in a film-making contest

4,000+ student-infomediary texters in the PhilRice Text Center



2 international awards for photo and video

12,000+ messages in the PTC from infomediaries



5 videos produced

20 school-initiated events



8 newsblogs and **6** news stories

75 teachers reporting to have integrated CSA4Rice into their curricula



3 communication materials



225 teachers trained on CSA4Rice



9,000+ directly reached students or those who took crops production and/or horticulture

About the PROJECT

The Project chiefly mobilized high school students to serve as information providers (infomediaries) on CSA4Rice in their respective communities. It took off from PhilRice's Infomediary Campaign, an initiative to engage young people in agriculture, which started in 2012. We had 208 participating schools, mostly TecVoc, nationwide.

MAIN STRATEGIES



READ

Publications on CSA4Rice were circulated regularly among participating schools.

SURF

PinoyRice, an information portal on rice, was introduced to the participants



TEXT

PhilRice Text Center, an SMS facility for rice farming-related concerns, was made accessible to the participants.

PinoyRice and PTC were developed by then Open Academy for Philippine Agriculture (OpAPA).



Key ACTIVITIES

These were activities done by participating schools to hype up implementation of the initiative in their respective areas. These also ensured that they were able to address parochial concerns of their respective communities.



SCHOOL-INITIATED
COMMUNITY EVENTS



CAPACITY ENHANCEMENT FOR TEACHERS

A week-long training on *Climate change and Rice Production* was conducted at the Central Experiment Station of PhilRice in Nueva Ecija. They were also given three teaching modules on Climate Change 101, Climate Change Mitigation, and Climate Change Adaptation.



ESTABLISHMENT OF RICE GARDENS

All participating schools were encouraged to put up their rice gardens to showcase different technologies such as the use of early-maturing rice varieties, Minus-One Element Technique, and leaf color chart.



TEACHING CSA4RICE IN SCHOOLS

Participating schools were encouraged to integrate lessons from the training program in their respective curricula.



INFOMEDIARY QUIZ BEE

This was an activity to creatively gauge the knowledge of the students on CSA4Rice.

LEARNINGS

FROM THIS PROJECT

From the research studies we have published about this project, we wish to forward some of our learnings. The aim is for us to advance the discourse on infomediation, and to guide others who might have some interest in engaging high schools on disseminating CSA4Rice information.

ADVANTAGES

Can contain plenty of information; highly visual, which is good for retention; ready-to-teach material (useful for busy teachers)

Handy; can be used anywhere; highly visual; good for retention

Handy; audiovisual; good for retention; entertainment value is high; shareable to android phones and tablets, which will work for tech-savvy students

COMMUNICATION MATERIALS

PowerPoint



Flipchart (on tarpaulin)



Video



DISADVANTAGES

Requires equipment and electricity; issues on mastery, especially from the downloaded PowerPoint presentations

Can be expensive to produce; contains limited information

Requires electricity and equipment; outdoor setup (using a projector in a wide place during daylight) can diminish quality and retention

Manalo, J.A. IV., Balmeo K.P., Berto, J.C., Saludez, F.M., Villaflor, J.D., and Pagdanganan, A.M. (2016). Integrating climate-smart rice agriculture into secondary level curriculum: lessons from three high schools in the Philippines. *SpringerPlus* (p.6). Accessed from <https://link.springer.com/article/10.1186/s40064-016-3238-6>.

ADVANTAGES

Effective in driving home the key messages of the advocacy; retention; maximizes student involvement; trains students to become good public speakers; leadership skills of the students can be honed if they are given certain tasks to perform; opportunity for community engagement is high; increase awareness among students who are not directly involved in the campaign; create linkages and collaboration with the local government units and other partners

Highly visual; facilitates retention; does not need electricity or equipment; can be referred to anytime the students need information

Contains massive information; updated materials

Effective in actively engaging the students; increases confidence of the students to talk about rice-related technologies; can be an avenue to promote rice farming as fun and engaging; high retention because of experiential learning

COMMUNICATION MATERIALS

School program



Photos/posters



Internet



Field work



DISADVANTAGES

Requires a committed group of people willing to do many tasks; can be costly; resource-intensive; massive coordination needed

Lifespan variable; might be replaced every so often depending on how they are taken care of; limited information in one poster/photo

Internet connectivity is an issue in most rural communities; needs electricity and equipment; cost issues in access; information overload; information credibility is not always guaranteed

Wrong timing can lead to students not enjoying the activity; some costs involved (snacks and personal protective equipment of students and teachers); lack of farm equipment; unavailability of area for field work





Involving high school students will thrive best in:



an agricultural community



schools with high support from key school officials



schools with highly motivated, innovative, and trained teachers



ALERT

Be mindful of exogenous entities such as the mass media as they are among the powerful sources of information on climate change. These entities will help shape the views of the students and their teachers on climate change. Ensuring release of science-based information is crucial to the success of this initiative.



INFORMATION-SHARING



General types of information on CC were shared more as opposed to the mitigation/adaptation types. This is because the former were simply concepts that are reinforced in several science subjects while the latter require some technical knowledge as they are how-to's in nature.



But, students from rice-farming households, and who are actively engaged in rice farming can be relied on to explain even complex CSA4Rice technologies and practices.



For information-sharing to be effective, CSA4Rice messages must be reinforced in other means such as the mass media, members of the family, internet, etc. Multiple channels work best in hammering down CSA4Rice concepts, technologies, and practices.





CHARACTERISTICS OF CSA4RICE INFOMEDIARIES



Young ladies are more likely to share CSA4Rice information than gents.



Land ownership is not associated with the act of sharing.



Act of sharing CSA4Rice information is possible regardless of the livelihood source (farming or non-farming) of the student's family.



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RESEARCH PROGRAM ON
Climate Change,
Agriculture and
Food Security

