



# PHilMech

Quarterly Publication of the Philippine Center  
for Postharvest Development and Mechanization **NEWSLETTER**



*Covid-19 Response Project of PHilMech*

## FLUIDIZED BED DRYER

**IN THIS ISSUE:**

*Hope In Drying Times  
PHilMech kicks off 43rd Anniversary  
RCEF Mechanization website goes live*





# ON THE COVER

Operation of the Fluidized Bed Dryer by the Bagong Buhay ng Mabini Multi-Purpose Cooperative (BBMMPC), located in Brgy. Mabini, Sto. Domingo

Photo by Don Miguel C. Capariño

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## Fluidized Bed Dryer

One of the biggest source of grain losses after harvest is drying. Thus, saving on these drying losses will mean higher grain yield for the farmers.

To help mitigate the effect of the Covid 19 pandemic among farmers, PHilMech is implementing a Covid 19 response project entitled, "Improvement and Integration of Fluidized Bed Dryer to the Two-Stage Grain Drying Strategy of Rice Farmer-Cooperatives and Associations and

Local Government Units." With this project, the precious harvests of farmers are saved from losses through proper drying technology.

The PHilMech fluidized bed dryer hopes to address palay drying problems of the farmers and cooperatives. This is a "continuous flow dryer capable of handling large volumes of extremely wet grains with high levels of impurities." This dryer allows higher drying capacity and ensures less grain losses. Moreover, it

lessens anxiety of farmers when the rain comes.

This issue of the newsletter explores how the technology is helping the collaborators and partners in their drying problems and concerns. What is the potential of the technology in terms of acceptance? A glimpse of the technology's initial performance in the farmers' setting will give answers to these questions.





43rd PHilMech Anniversary and 22nd Postharvest Loss Prevention Week

## PHilMech marks virtual anniversary; highlights agricultural resilience

**THE 43RD PHILMECH** Anniversary and the observance of the 22nd Postharvest Loss Prevention Week commenced this morning with a virtual kick-off ceremony graced by Senator Cynthia A. Villar.

With this year's theme "Mechanization and Postharvest Loss Prevention: Key to Farmers' Competitiveness Amidst the Pandemic", the ceremony highlighted the resilience and continuous remarkable performance of the agriculture sector, especially the farmers despite the tough challenges that 2020 brought.

Director Arnel Ramir M. Apaga, overall chairperson of the anniversary committee and Director I of PHilMech, welcomed the participants

via Facebook livestream and zoom app.

He emphasized the need of saving postharvest losses and use of machinery in withstanding the challenges posed by the COVID-19 pandemic and making farmers competitive.

He also explained that the virtual activities prepared by PHilMech aimed at increasing the knowledge on mechanization and postharvest losses and be able to discuss how to resolve these issues.

Moreover, Dr. Baldwin G. Jallorina, Director IV of PHilMech, opened the week-long anniversary celebration.

"The worldwide health crisis caused by the COVID-19 pandemic has

turned the world upside down. Almost all of us were locked down in our homes and has been paralyzed in our economic activities, but not with our farmers. They took the risk, faced the dangers, and went out to the fields to continue their job of making food for the nation," Jallorina said in his opening remarks.

He emphasized that more than the bravery, resilience and relentlessness of the Filipino farmers, it is the duty of PHilMech to also make farmers competitive and productive amidst the pandemic.

"In this very challenging part of the history of mankind where the pandemic strikes, we believe that curbing postharvest losses and shifting to mechanized farming are the keys to make the Filipino farmers competitive," he said.

He encouraged everyone to join PHilMech in its virtual celebration and participate to its week-long activities.

Senator Cynthia A. Villar, chair of the senate committee on food and agriculture, served as the keynote speaker of the kick-off ceremony. In her video message, she lauded the efforts of PHilMech in helping the Filipino farmers especially in mechanization and postharvest interventions.

She emphasized how farmers inspired her to author laws, propose programs and initiate activities to help them improve their quality of life and increase their productivity.

The Techno-Talakayan on Agricultural Mechanization and Postharvest Loss Prevention was conducted via zoom and Facebook live streamed May 24 and 25.

■ **JMGSubaba**



## Two-day online techno-talakayan held

**THE PHILIPPINE CENTER** for Postharvest Development and Mechanization (PHilMech) conducted an online training entitled “Techno-Talakayan on Agricultural Mechanization and Postharvest Loss Prevention” on May 26-27 via Facebook livestream and Zoom. The Technology Management Training Division (TMTD) of PHilMech spearheaded the activity.

Ms. Helen Calica, the division head of TMTD, welcomed the participants and discussed the overview of the activity. The said training aimed to enhance awareness among the stakeholders on postharvest technologies as well as on reducing postharvest losses. Annually, TMTD conducts Techno-Talakayan as part of the celebration of PHilMech anniversary and postharvest loss prevention week

The two-day Techno-Talakayan online training had 656 registered participants composed of State Colleges and Universities (SCUs), Local Government Units (LGUs), National and Regional Government Agencies, Farmers Cooperatives and Associations (FCAs), manufacturers, and other industry stakeholders.

The module consisted of two parts. Module 1 featured Rice

and Corn with seven topics namely: Paddy postproduction loss situationer, effects of rice combine harvester on output, farm income, rural employment and exposure of rice farmers to climate risks and the Fluidized bed dryer for rice, PHilMech compact corn mill, PHilMech compact impeller rice mill, Grain probe moisture meter, and Support of RCEF on reducing losses).

The module 2 of the online lecture-discussion is about High Value Crops with six topics namely: Situationer on PH losses for selected fruits and vegetables, Participatory action research for the reduction of food losses and wastes, quality maintenance

and shelf-life extension of selected vegetables, Mango peels as source of pharmaceutical grade pectin and its application, Updates of PHilMech coco water processing technology, and Greenhouse solar dryer with biomass furnace.

During the closing program, Officer-in-Charge (OIC) Assistant Director of PHilMech, Dr. Michael A. Gragasin said, “Providing quality training and technology information dissemination are important things we must do as a premier research institution. Research technology and knowledge are not intended to be kept in lobbies, journal, or in the libraries rather these are meant to be shared to our stakeholders especially to our farmers, agricultural entrepreneurs, and extension workers.” ■ **MDAGutierrez**



Open forum together with project leaders



# PHilMech spearheads summit to address postharvest losses

**THERE IS ALSO AN URGENT** need to address the issue of postharvest and food losses in the Philippines, so farmers and fishers can earn more, and for the country to attain a higher level of food security.

This was the message of Philippine Center for Postharvest Development and Mechanization (PHilMech) Executive Director Badlwin G. Jallorina, during the Postharvest Loss Assessment Summit-Workshop spearheaded by the agency on Wednesday.

He said that postharvest losses among major farm commodities in the Philippines range from 10 to 50 percent.

“In the Philippines, postharvest losses of commodities represent a very significant loss of 10 to 50 percent of production output in developing countries. This means that 10 percent to 50 percent of all the land, inputs, and labor used to produce the commodities go to waste. And it also means that all of us here, involved in this summit, have a lot of work to do,” Director Jallorina said.

“If we can curb at least 1 percent of the losses at a time,

by generating appropriate and problem-oriented technologies and system for our farmers and stakeholders, then we can transform losses into profits, thereby achieving Masaganang Ani at Mataas na Kita for our farmers,” he added.

Department of Agriculture (DA) Undersecretary Evelyn Laviña who delivered a keynote message during the summit, said the summit is timely.

“Achieving high level of food production efficiency is paramount in our strategy. This summit is timely and urgent in addressing all attended issues and concern regarding this life and death issue. I urge everybody to draw up his [ or her] talent and experience, resources, and patriotism in developing a sensible pathway towards the achievement of this goal. And I express my gratitude to the officials and staff of PHilMech for leading the way for this challenging yet very exciting march toward mechanization and optimization of Philippine agriculture,” she said.

Experts from the Food and Agricultural Organization (FAO) said during the virtual summit that postharvest losses

can happen at any point of the agricultural value chain: production/harvest on farm postharvest including handling and storage, transportation to market, wholesaling including storage, and processing and packaging.

One of the experts who gave FAO’s presentation was Sangita Dubey.

The FAO has also placed emphasis on addressing postharvest losses issue as it designated on December 15, 2020 that 2021 be the International Year for Fruits and Vegetables that has an appeal to also reduce food loss and waste, citing that “50 percent of fruits and vegetables produced in developing countries are lost in the supply chain between harvest and consumption.”

Citing 2016 data, FAO said postharvest losses were highest worldwide in cereals and pulses, which includes rice and corn; and fruits and vegetables. In the Philippines, according to government data, losses in rice range as high as 25 percent more than 10 years ago, and is now between 10 percent to 20 percent as PHilMech accelerated the application of



postharvest interventions in the rice industry.

The FAO said that addressing postharvest losses in vegetables can help increase supply of vegetables for children, adding that in the Philippines based on United Nations data, 21.8 percent of children 5 to 23 months consumed zero fruits and vegetables.

Currently, FAO is building a Food Loss Index that will focus on 10 key commodities in five main groups.

PHilMech organized the Postharvest Loss Assessment

Summit-Workshop as part of its 43rd anniversary celebration, and to gather experts to discuss postharvest issues from FAO, state colleges universities, industry groups, and other government agencies like the Department of Agriculture, Department of Science and Technology, and Department of Trade and Industry.

“We learned, through the years, that in order to accelerate the postharvest industry, we need to double our efforts in identifying which part of the food chain cause a huge amount of losses, and from there we can develop relevant and effective

interventions,” Director Jallorina said.

“In the summit, we hope to assess the availability of food loss information, review outputs and methodologies involved in loss measurement for the different commodities and harmonize such methodologies in order to address the problem as one,” he added.

PHilMech has already developed numerous postharvest technologies for a host of commodities including rice, corn, cashew, coffee, cacao, cassava, coconut, mango, onion, soybean and various vegetables.

■ **PHilMech Communication Group**



Sec. Dar durig online summit spearheaded by PHilMech



# Mango cooperators, PHilMech ink MOA for mango pectin technology

**A MEMORANDUM OF AGREEMENT (MOA)** was signed between PHilMech and two mango cooperators as part of the agency's mission to help farmers mitigate the effects of the pandemic through its COVID-19 response project.

The project entitled "Mango Pectin Edible Coating to Extend the Shelf-life of Fresh Mango", is led by Dr. Ma. Cristina Gragasin of the Bio-Processing Enterprise Division. It aims to (1) extend the shelf-life of fresh mangoes up to 12 to 24 days under ambient and chilled storage conditions; (2) prevent the rapid ripening of fruits; and (3) prevent the development of disease in mangoes.

Two cooperators – the Pangasinan Tropical Fruits Multi-Purpose Cooperative from Manaoag, Pangasinan and the Association of Mango Industry in La Union, Inc. (AMILU) from Bauang, La Union, were selected to take part in this project.

During the activity, Gragasin demonstrated to the cooperators how the technology worked. The activity also allowed Gragasin to demonstrate the application of the mango pectin-based edible coating to fresh mangoes.

"We are happy to turn-over the equipment to your cooperative so that we could use this for our experiment, and eventually, once we have proven that the technology is working at your operation, you can use this until you break it," Gragasin lightheartedly said during the ceremony in Bauang, La Union.



MOA signing between PHilMech and Pangasinan Tropical Fruits Multi-Purpose Cooperative

Both cooperators were excited by the potential of this technology.

"With the help of this technology, postharvest losses will now be reduced and our net income will increase," Lito Arenas, adviser of Pangasinan Tropical Fruits Multi-Purpose Cooperative said.

"With an estimate of 30% loss from our mango produce during its transit, we (mango growers) are really hoping that this technology might address the problem" Pedro Corpuz, president of AMILU said.

Apart from the MOA signing, PHilMech also conducted a turnover of technologies during this event. Included in the turnover were

provisions of wash bins, treatment bins, drainer, drying rack and drying plates.

With the project, farmers hope to earn more from their produce with the delayed ripening stage. Farmers can also hope to reduce their postharvest losses as less produce would be considered "rejects" with the help of this technology.

This project is one of nine projects under the agency's COVID-19 response project.

The MOA signing and turn-over ceremony were virtually shown during the agency's Industry Day in celebration of its 43rd anniversary.

■ **JTPaulo**

# Manufacturers of PHilMech technologies sign license agreement

## A SIGNING OF MANUFACTURERS

License Agreement and awarding of License Certificates were organized and conducted by the Philippine Center for Postharvest Development and Mechanization – Technology Management and Training Division (PHilMech-TMTD) on May 14, 2021 via Zoom platform.

The REB-Greentech Systems Corporation from Calabanga, Camarines Sur and MachineSystems Corporation from Lapu-Lapu, Cebu City formalized

their partnership with PHilMech as licensed manufacturers of Hygienic Fermentary Box and Impeller Rice Mill, respectively.

The two manufacturers are granted with three-year non-exclusive license to manufacture of the said PHilMech technologies. These agreements are seen as a step forward in the promotion and commercialization of PHilMech technologies to potential adopters and ultimately support the agricultural mechanization of the country.

Present in the event were PHilMech Director Baldwin G. Jallorina, Mr. Jose Y. Mateo, MachineSystems- President and Mr. Reynaldo E. Bien, REB-Greentech- Manager together with their respective witnesses.

Dir. Jallorina congratulated the two new manufacturers and the signed agreements will be executed in the best interest of both parties.

■ LJSarmiento



LICENSE SIGNING

Director Jallorina signing of license agreement



# Pangasinan farmers avail of O&M machinery training

## THE TECHNOLOGY MANAGEMENT

and Training Division (TMTD) of PHilMech conducted two batches of the training course on the operation and maintenance (O&M) of rice machinery. These training activities were conducted in Pangasinan on April 5-9 and April 12-16, 2021 under the Rice Competitiveness Enhancement Fund (RCEF) extension services.

Mr. Mario Pascua, project leader of TMTD Luzon Cluster A and B facilitated the one-week activity. A total of 57 participants from 32 Farmer Cooperatives and Associations (FCAs) successfully completed the training course.

The operation and maintenance lectures were done in Calasiao, Pangasinan while the hands-on

activities were held in Bugallon, Pangasinan. A total of 25 male trainees from 15 FCAs attended the first batch of training in April 5-9. Meanwhile, 32 male trainees from the 17 FCAs attended the second batch of training in April 12-16.

The resource persons discussed the Rice Tariffication Law, Farm Machinery Safety and Operations and topics on the principles and methods of Land Preparation, Seedling Preparation, Mechanized Transplanting and Direct Seeding, and Harvesting and Threshing.

Umanday Lee Sim Cupang Tococ Farmers Irrigators' Association, Inc. assisted PHilMech during the hands-on activities where every participant had a chance to apply their learnings by operating the rice machinery.

*"Binigyan tayo ng pagkakataon. Binigay na ang lahat-- training, lugar, kaalaman, kaya ang gagawin na lang natin ay ibahagi sa ating mga kasamahan ang mga natutunan natin. 'Yun naman ang ating responsibilidad at tungkulin. (We were already given the chance. They (PHilMech) provided everything-- training, venue, and knowledge. Now, it is our role and responsibility to share what we have learned in this training to our fellow members (in the association)", said one of the participants, Mr. Jimmy Bandong of the Pinagkaisa Pangoloan Irrigators' Association, Inc.*

*"Kasabay ng pagtatapos niyo ay ang pagtanggap ng inyong mga responsibilidad bilang trained operators ng inyong FCAs, hindi po ito ang pagtatapos, kundi umpisa ng pagkikita-kita natin sa iba't ibang mga aktibidades ng pagsasaka kaakibat sa mechanization," (Together with the completion of this training is the acceptance of our responsibilities as trained operators of our respective FCAs. This is not the end, but the start of our meeting in these different activities related to mechanization), Mr. Pascua said during the training's closing program .*

The TMTD has many more scheduled training courses on the operation and maintenance of rice machinery in Pangasinan and other provinces. PHilMech's goal is to train more farmers so that they will embrace the positive effect of mechanization in improving their productivity and increasing their income as farmers.



TRAINING

Machine operation and maintenance training

JYSorza

# PHilMech equips new batch of trainers on drying, milling

## A TOTAL OF 25 PARTICIPANTS

who are members of Farmers' Cooperatives and Associations (FCAs), owners of farm schools, and staff of local government units (LGU) in Region 3 attended the Training of Trainers on Postharvest Technologies: Drying and Milling. The training course began today at the PHilMech Main Office, Science City of Muñoz, Nueva Ecija.

This training course is part of the efforts to equip and educate the farmers and stakeholders under the Rice Competitiveness Enhancement Fund Mechanization Program. Drying and milling contribute a huge chunk of losses in the production and postproduction of rice. Educating the farmers and intermediaries of the program could be instrumental in curbing postharvest losses and increasing productivity and profit of farmers.

Ms. Helen R. Calica, the division head of the Technology Management and Training Division of PHilMech, welcomed the participants and emphasized the role of the trainees in advancing the awareness and knowledge of farmers on drying and milling.

*"Ang manpower ng PHilMech ay kulang upang i-train ang lahat ng farmers sa bansa, kaya nandyan po kayo na mga itine-train namin upang makasama namin na magtrain pa ng mga kasamahan nating FCAs na benepisyaryo ng RCEF. Napakahalaga po ng inyong role sa pagpapalaganap ng kaalaman tungkol sa mga postharvest technologies sa drying at milling,"* Calica emphasized.

Dr. Baldwin G. Jallorina graced the opening ceremony of this five-day hands-on training course. He focused his message on the goal of the activity which is to strengthen the capacity, teaching and delivery of technical instructions of the trainer-participants. He also emphasized how the trainers are important partners in the successful implementation of the RCEF Mechanization Program.

Through a recorded video, Senator Cynthia A. Villar of the Senate Committee on Agriculture and Food shared her hopes for the participants to learn a lot from the training course and to value government support especially the RCEF Program under the Rice Tariffication Law. She also underscores the importance of

mechanical drying over highway drying in curbing postharvest losses.

*"Ang pagpapatuyo ng palay sa makina at hindi sa pagbibilad sa semento ay makakababa ng postharvest losses at hindi na ito tutubuan ng insekto at moist na makakasira dito. Hangad ko sana na marami kayong matutunan sa pag-aaral na ito at sana bigyan ninyo ng halaga ang tulong ng ating pamahalaan sa inyo sa ilalim ng rice tariffication law,"* the senator said.

By the end of the training, the participants are expected to learn about the principles and systems of drying and milling and the operation and maintenance of postharvest technologies under these operations. The training concluded on May 21.

■ **JMGSubaba**



Training of trainers on drying and milling technologies



## E-talakayan season 2 kicks off for Nueva Ecija FCAs

### THE PHILIPPINE CENTER

for Postharvest Development and Mechanization [PHilMech] began the 2nd season of its webinar, e-Talakayan: *Angat Ani sa Tamang Makinarya*, last April 21, 2021, via Facebook Live for the 2020-validated farmers cooperative and association (FCAs).

For the first batch of the season, 143 individuals from 77 validated FCAs of 2020 from Nueva Ecija attended the e-Talakayan.

Participants were 113 males and 30 females.

Dr. Aldrin E. Badua, chief of the Planning Management and Information Technology Division of PHilMech, led the webinar's discussion on the RCEF Mechanization Program and the benefits of the mechanization technologies. He attentively answered the questions of the participants.

The farmer-participants also joined in the *e-tanungan at*

*kasagutan* (question and answer) portion.

One of the participants, Plaridel Manuel from Munoz Traveler Multi-Purpose Cooperative expressed her gratitude, "*Maraming salamat po sa inyong programa para sa magsasaka, mabuhay po kayo!*"

During the opening program, Dr. Baldwin G. Jallorina, PHilMech Director IV, welcomed everyone with an optimistic message and gave an assurance that e-Talakayan will be an avenue for clarification and interaction for the RCEF Mechanization Program.

Meanwhile, Dr. Milagros B. Gonzalez, acting chief of the Applied Communication Division, briefly discussed e-talakayan's background and objectives.

The e-talakayan is one of the webinar series of PHilMech that started last year to reach the FCAs nationwide. It is part of the information dissemination support for the program to encourage the farmers to continue learning despite the pandemic. It airs exclusively per batch of participants every Wednesday from 9:00 to 11:00 AM **MTVCabuloy**



Behind the scenes of E-Talakan program

# PHilMech Radyo Eskwela enrolls 11,682 farmer-beneficiaries

**RADYO ESKWELA: ANGAT ANI SA Tamang Makinarya** of PHilMech gathered 11,682 farmer-beneficiaries from 892 farmers cooperatives and associations (FCAs) nationwide, in 2019 validated FCAs for RCEF Mechanization Program. This despite the challenges of the pandemic.

For the first batch of enrollees, 8,176 males and 3,506 females promised to brace the 30-minute educational awareness activity from March to June 2021.

The *Radyo Eskwela* airs every Wednesday and Saturday from 5:00 to 6:00 am in 27 AM stations and six FM stations of Radio Mindanao Network (RMN). It also streams in Radyo Eskwela PH's Facebook Page and YouTube Channel.

According to Erna Vista from Batu-Farmer Irrigators Association of Siay, Zamboanga; amidst poor radio signal in their area, they were able to catch up with the program's lessons through Facebook Live.

*"Marami po kaming natutuhan lalo na po sa mga makinarya. Naka-enrol din po sa programa ang mister ko at anak, kasama ko po silang nakikinig sa Radyo Eskwela,"* she added.



Farmers listening to Radyo Eskwela

The enrollees should expect six modules with three to four lessons per module. The topics range from Rice Tarrification Law (RTL), Rice Competitiveness Enhancement Fund (RCEF) Mechanization Program, to farm mechanization principles and machinery.

The lessons are simultaneously aired in Tagalog, Hiligaynon, Cebuano, Waray, Chavacano, Bicolano, and Iloco with RMN anchors and PHilMech technical experts in the field.

Aside from the FCA members, other non-enrollees showed interest and support to the Radyo

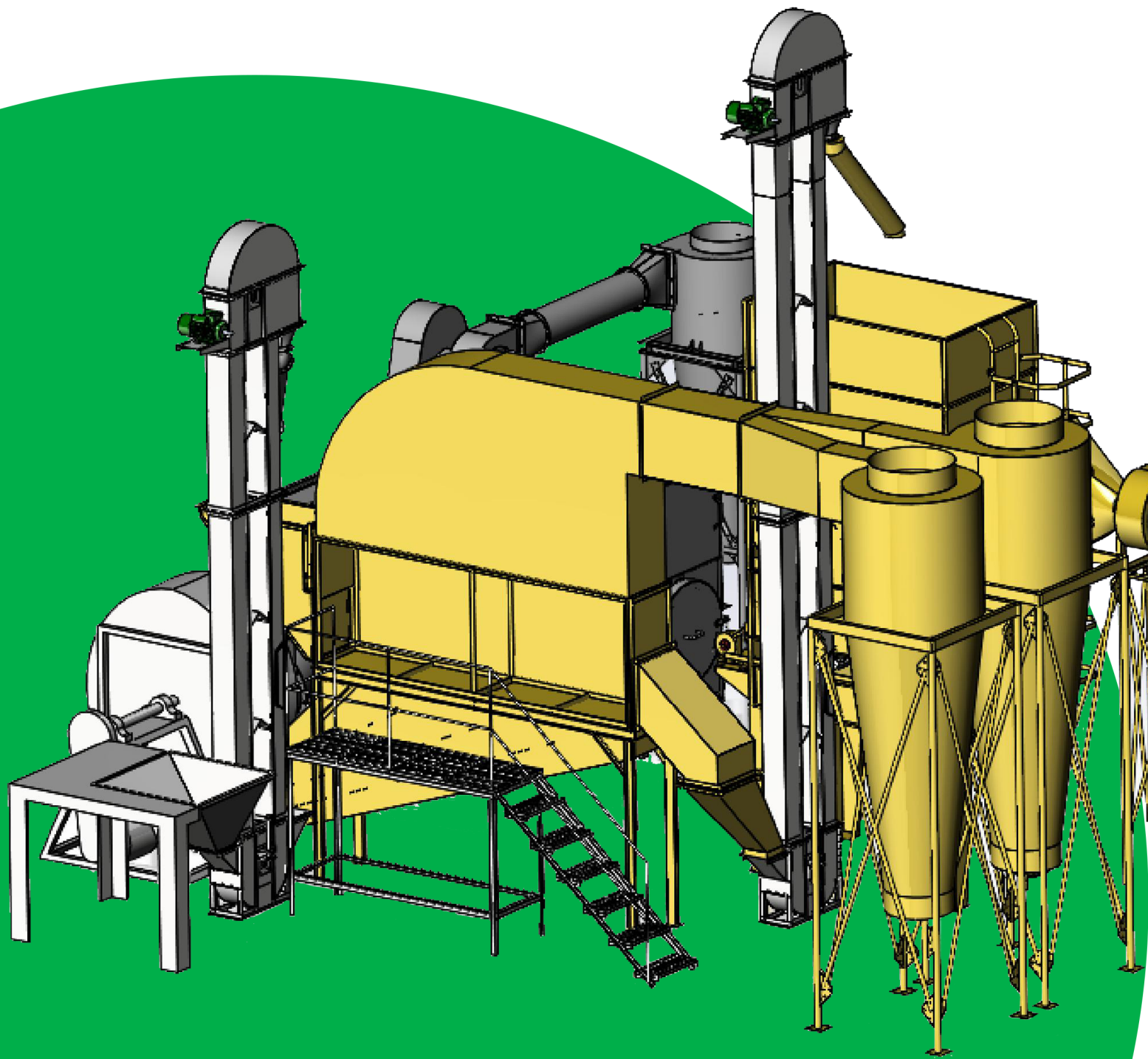
Eskwela by accessing the online platform.

One of these is Teodoro dela Cruz who expressed, "Thanks PHilMech at sa RCEF sana ma-extend pa ang mga programa n'yo para sa mga magsasaka [Thank you, PHilMech and RCEF, hope your program, will be extended to the farmers]."

Other interested audience can still catch the *Radyo Eskwela: Angat Ani sa Tamang Makinarya* through RMN stations and online platforms (<https://www.facebook.com/RadyoEskwelaPH>, and [<https://www.youtube.com/channel/UC0x58b8W10dhFcr3RJmJbmg>]).

■ **MTVCabuloy**

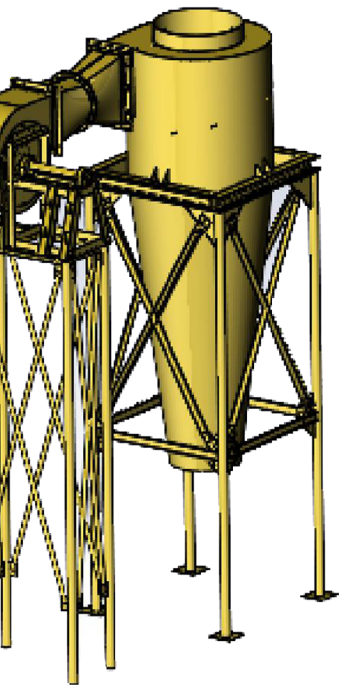




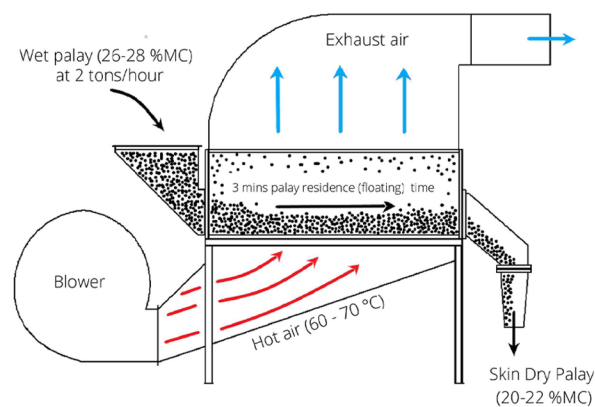
# THE FLUIDIZED BED DRYER

# TECHNICAL FEATURES

1. Rapid drying of freshly harvested palay to skin dry moisture content (18-22%)
2. Capacity of 48 tons per day (24hrs operation)
3. Biomass furnace and diesel burner for heating
4. Maintains milling and head rice recoveries
5. Moderate drying temperature of 60-70 °C



## PROCESS



The fluidized bed dryer is a continuous flow dryer capable of handling large volume of extremely wet grains with high level of impurities. The fluidized bed dryer will enable small to medium-scale farmer cooperatives and associations to potentially double their drying capacity by using dryer for the first stage drying of extremely wet grains to 'skin dry' condition.





# HOPE IN DRYING TIMES

*by Gio Anton T. Barroga*



**TYPHOON SEASON HAS TO BE** one of the most dreaded time for Filipino farmers.

Climate change has altered the arrival and intensity of the regular typhoon season, which makes prediction a daunting task. Missing the window for planting could prove to be disastrous for a farmer waiting for a return on their investment.

Some farmers face big losses during typhoon seasons. Saving crops before a typhoon becomes a big problem because of the shortage in labor when combine harvesters are absent. Often times, It's a battle between pulling the trigger early or being resilient.

Crops that are miraculously spared from the wrath of a destructive typhoon are left with another problem – drying. Addressing this particular problem, as well as addressing the effects of the pandemic in the agriculture sector is of top priority.

**RIISING TO THE CHALLENGE**

In response to the challenge set by the Department of Agriculture, PHilMech started its COVID-19 response program in September 2020. Most of the nine projects of the program focus on different commodities in an effort to improve the livelihood of farmers who are affected by the pandemic.

This also gives PHilMech the opportunity to improve the development of existing major technologies that are included in the program through pilot testing,

as well as getting feedback from the end-user.

One project from the program is on the PHilMech-developed Fluidized bed dryer, with the project titled “Improvement and Integration of Fluidized Bed Dryer to the Two-stage Grain Drying Strategy of Rice Farmer Cooperatives and Associations and Local Government Units.”

Drying palay that are extremely wet and with high impurities, known as the first stage drying, would be the ideal candidate for the fluidized bed dryer, according to the chief of the Agricultural Mechanization Division and head of the project, Dr. Romualdo Martinez.

“The idea (with the fluidized bed dryer) is to get extremely wet palay skin dried so that it doesn't spoil. This is the main advantage of the dryer because it's specially designed for this condition. Conventional dryers are not designed to handle extremely wet and high impurity palay because (conventional dryer users) can experience clogging,” Dr. Martinez said.

The fluidized bed dryer is a continuous flow dryer capable of drying large volumes of extremely wet palay and high levels of impurity. This is suited for small to medium-scale farmer cooperatives and associations to double their drying capacity.

Two Nueva Ecija-based cooperators out of 10 were selected to take part in this

project. The selection process for the cooperators was determined using a criterion which included the volume of wet palay procured, drying requirements, management and operation capabilities (including gender concerns), adequate 3 phase electricity line, sufficient transformer size to accommodate the technology.



*Fluidized Bed Dryer*



After careful evaluation and ranking of candidates throughout Nueva Ecija, the Nagkakaisang Magsasaka Agricultural Primary Multipurpose Cooperative (NMAPMPC), located in Brgy. Tabacao, Talavera, and the Bagong Buhay ng Mabini Multi-Purpose Cooperative (BBMMPC), located in Brgy. Mabini, Sto. Domingo, were chosen as the cooperators of the project.

*“Napakalaking tulong po nito para po mapabuti po namin ang pagpapatuyo ng mga palay dito sa aming kooperatiba sapagkat maraming palay po ang pinapasok ng mga miyembro, lalo na kung tag ulan. Hindi po namin ito napapatuyo ng mabuti. Sa fluidized bed dryer, mawawala na ang mga nasisirang palay dito sa aming kooperatiba,”* BBMMPC chairperson Pedro Cabanela said.

[“The (fluidized bed dryer) is a really big help for us because it will improve the drying of palay for the members of our cooperative because our members bring in a big volume of palay, especially when it’s rainy. We cannot dry this well. With the fluidized bed dryer, we can eliminate the spoiled palay here in our cooperative.”]

## SOLVING PROBLEMS

The delivery of the technologies to their respective cooperatives took place in April 2021. This was just in time for the dry season harvest of the cooperatives, which gave PHilMech the opportunity to conduct testing of the dryer’s performance.

With four tests conducted in both sites, Dr. Martinez and his team were able to get an idea on what needs to be improved. From their

observation, they were able to identify that the capacity of the dryer was lower than its target because of design-problems, as well as problems with the uniformity of the airflow inside the dryer which affected the drying.

Observation of the dryers after its delivery allowed Dr. Martinez and his team to modify the dryer to address the problems they had noticed earlier. This will also allow them to make sure that the dryer is working properly and efficiently, just in time for the wet season harvest.

With only a year left until the project ends, Dr. Martinez hopes that the results of the fluidized bed dryer will be positive, allowing them to demonstrate and develop a technically feasible and economically viable fluidized bed drying system that can be successfully and effectively integrated into the rice processing system of farmers’ cooperatives.

Despite the near-end of the program, PHilMech will continue to provide support to the two cooperators. Dr. Martinez says that a transitional strategy will be put in place in order to maintain the sustainability of the system’s set up, not just for this project, but for all the projects under the COVID-19 response program.

With the availability of fluidized dryers, farmers now have a better chance of increasing their income during the wet season giving them hope in what was once a trying time.



Operation of the Fluidized Bed Dryer





Uploaded by: Dimple Durias  
Albuera Leyte



Uploaded by: Dexter Landicho  
Lucena City, Quezon



Uploaded by: Deon Castillo  
Hermosa, Bataan

**Join the challenge!**  
**Take a selfie with machines,**  
**Post on FB and use the hashtag:**

**#makiselfiechallenge**



# ANNOUNCEMENT

## CALL FOR **PAPERS!**



Do you have any recent Postharvest and Mechanization-related findings in Biology, Chemistry, Engineering, Social Sciences and Economics?

## *Asian Journal* OF POSTHARVEST AND MECHANIZATION

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# RCEF mechanization website goes live

**AS THE LEAD AGENCY OF THE** Rice Competitive Enhancement Fund (RCEF)-Mechanization Program, PHilMech launched its website at <https://rcef.philmech.gov.ph> during the conduct of its virtual anniversary celebration day via Facebook livestream in May 27.

Leading the ceremonial launching were PHiMech Director IV, Dr. Baldwin G. Jallorina, Director I Arnel Ramir M. Apaga and OIC-Assistant Director, Dr. Michael A. Gragasin. This launching is part of the agency's efforts in order to extend and make its services more transparent and accessible to the farmers and stakeholders.

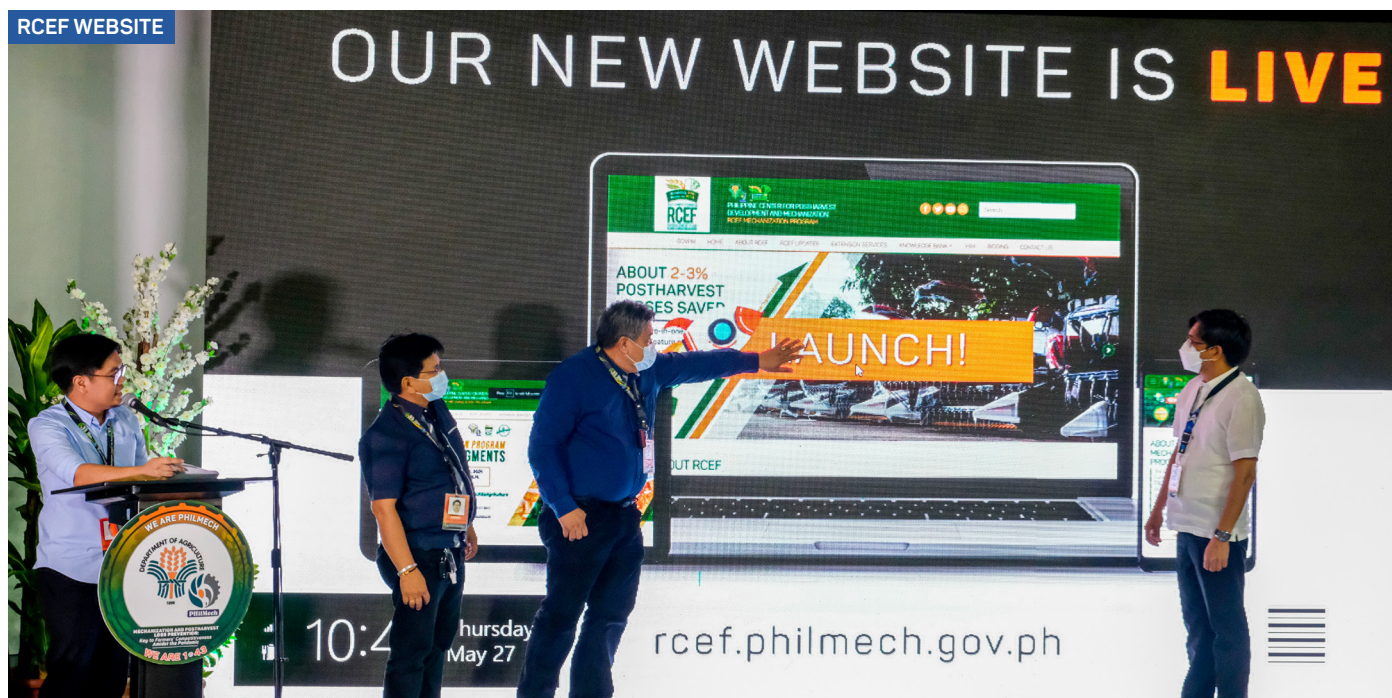
The RCEF Mechanization website aimed to reach a wide array of audiences using the world wide web and the digital platform. It contains information about the program such as goals, benefits, beneficiaries, available machinery, requirements and process on how to avail, and data analytics that feature the agency's transparency on the number of granted machinery and Farmers' Cooperative and Association (FCA)-beneficiaries per region.

The newly designed website also featured updates on the program through news and feature articles, audio-visual presentation of machinery distributions and

testimonials of some members of the FCA-beneficiaries.

Moreover, the website highlights one of the interventions of the agency in order to adapt to the new normal—the PHilMech RCEF Mechanization Virtual Exhibit. This virtual exhibit was also embedded in the website and is designed to replicate an actual exhibit room experience where visitors can explore information on rice-related knowledge and farming strategies.

Currently, the Applied Communication Division (ACD) and the Information Communication Technology Section (ICTS) of PHilMech are working on the content updates of website's navigation menu. This website is compatible on all platforms including mobile phones. ■ **CVAng**



*PHilMech Directors launching the RCEF website*





MOA SIGNING

*Signing of MOA between CDA and PHilMech*

## PHilMech, CDA ink MOA under RCEF Mechanization

**TO IMPROVE THE ENTREPRENEURIAL** capabilities of the RCEF Mechanization Program beneficiaries, PHilMech and the Cooperative Development Authority (CDA) officially inked a Memorandum of Agreement (MOA) during the agency's 43rd anniversary celebration on May 27.

The MOA on the project "Entrepreneurial Capability Enhancement of the FCA Beneficiaries of the RCEF-Mechanization Program" was signed to help both parties in the attainment of mandates, ensure sustainable operation and utilization of distributed farm machinery under the program. Provision of Memorandum of

Understanding (MOU) was signed last March 10, followed by joint project development workshops which identifies the areas of cooperation of PHilMech and CDA. This includes the (1) conduct of collaborative studies and research on postharvest technology and agri-machinery development and application; (2) conduct and facilitation of workshops, training courses, learning sessions, and exhibitions; (3) exchange of experts or provision of technical support and other related activities.

The project will conduct capability enhancement activities to enhance Farmers' Cooperatives Associations' capability to operate

and manage the Farm Machinery Service Provider (FMSP) and soon become a sustainable social enterprise.

As part of the agreement, a joint project management team will be created to oversee the implementation of the said project. The Enterprise Development Division of PHilMech will spearhead the activity.

Furthermore, the MOA was signed by Director Baldwin G. Jallorina of PHilMech and Undersecretary Joseph B. Encabo represented by Asec. Virgilio R. Lazaga, Board Member III and Agriculture Cluster Head of CDA. ■ **JKBSantiago**

# PSABE, PHilMech ink MOA for Agricultural Engineering Week celebration

## EVERY FOURTH WEEK OF

April, Filipino engineers rejoice to celebrate the Philippine Agricultural Engineering Week. This year, the event was commemorated on the 27th and 28th of April via the virtual platform .

The celebration of the 32nd Philippine Agricultural Engineering Week was highlighted by the 70th PSABE annual convention and the 17th International Agricultural Engineering Conference with the theme, “Harnessing Industry 4.0 for the Agricultural and Biosystems Engineering.”

The Philippine Society of Agricultural and Biosystems Engineers (PSABE) and the Philippine Center for Postharvest Development and Mechanization (PHilMech) signed a Memorandum of Agreement

(MOA) to jointly host the convention. Engr. Dennis Tactac, PSABE president and Dr. Baldwin Jallorina, PHilMech director, inked the MOA.

Under the agreement, PSABE will lead in the over-all conduct and promotion of the PSABE convention. PHilMech, on the other hand, will support in the preparation and conduct of the activities particularly the Zoom meetings. PHilMech engineers will also be allowed participation in the convention.

Department of Agriculture Secretary Dr. William Dar gave the keynote address during the opening ceremonies of the annual convention. Engr. Ariodear Rico, Director of the Bureau of Agriculture and Fisheries Engineering (BAFE) also gave a message.

On the second day of the convention, House deputy speaker Loren Legarda of the House of Representatives gave the keynote address. Meanwhile, Commissioner Jose Y. Cueto Jr. of the Professional Regulations Commission gave his message.

After the opening program and prior to the closing program, technical paper presentations and discussion will followed. Respected resource persons will present topics on how Industry 4.0 can be harnessed in various aspects of agriculture and biosystems engineering.

Outstanding agricultural and biosystems engineers and presentors were awarded during the closing program. General assembly, election and oath taking of PSABE officers for 2021-2022 will also took place.

Pursuant to Presidential Proclamation No. 399 dated 10 April 1989, the PSABE is mandated to organize the celebration of the Philippine Agricultural Engineering Week every fourth week of April. PHilMech, whose engineers are mostly members of PSABE, provided full and unwavering support to this undertaking.

■ MBGonzalez

MOA signing between PSABE and PHilMech





# Accomplishments of PHilMech highlighted on Industry Day



RCEEF Mechanization Program 2020 Accomplishments

**DURING THE CONDUCT OF ITS** virtual Industry Day via Facebook live on May 27, PHilMech's interventions and remarkable accomplishments were highlighted. This is part of the agency's week-long anniversary celebration with the theme, "Mechanization and Postharvest Loss Prevention: Key to Farmers' Competitiveness Amidst the Pandemic".

"I believe that PHilMech remains a winner in this situation. Because amidst the pandemic, our efforts on agricultural mechanization and postharvest loss prevention through our programs and projects, have made our farmers competitive and productive," Dr. Baldwin G.

Jallorina, PHilMech director IV, said in his opening remarks.

Dr. Jallorina believed that PHilMech has done its role in delivering its services in the aspects of postharvest loss prevention and mechanization amidst the pandemic and despite its limitations and danger.

Dr. William Dar, Secretary of the Department of Agriculture served as the keynote speaker during the Industry Day.

"We want an inclusive technology-based mechanization transformation where no farmer is left behind. Let us deliver more inputs, more demos, training, and technical support – and show farmers how latest technologies

not only enhance the value of their work but also promote their safety and removes the drudgery of toiling in the farm" Sec. Dar challenged PHilMech during his keynote message.

The highlight of the event were the following: the director's report of PHilMech's accomplishments for the year 2020, the Rice Competitiveness Enhancement Fund (RCEF) mechanization program report, the presentation of the PHilMech's COVID-19-Response Program, and the memorandum of agreements (MOA) between PHilMech and its partners like the Cooperative Development Authority (see separate article).

Moreover, under the RCEF Mechanization program, PHilMech officially launched the "Arangkada" campaign song (see separate article) to promote the program to the farmers and to the youth; the RCEF virtual exhibit; and the RCEF Mechanization Program Website (see separate article) to provide easy-access of information about the program.

Lastly, PHilMech also recognized its employees who has exemplified meritorious performance and qualified for the agency's Natatanging Kawani for 2020 (see separate article). Eight employees were awarded for their exemplary service, dedication, and passion towards work. ■ **PCESoliven**

# PHilMech recognizes *Natatanging Kawani, Dangal ng PHilMech*

**IN ITS 43RD ANNIVERSARY**, the Philippine Center for Postharvest Development and Mechanization (PHilMech) recognized its *Natatanging Kawani* for their outstanding performance in the year 2020.

## 2021 AWARDEES

- *Natatanging Kawani* for Technical Support (1st Level): **Daisy O. Tesorero**, *Science Research Assistant from the Socio-economic and Policy Research Division (SEPRD)*;
- *Natatanging Kawani* for Administrative Support (1st Level): **Edgardo S. Ligisan**, *Computer Operator II from the Planning, Management and Information Technology Division (PMITD)*;
- *Natatanging Kawani* for Support Services (Junior Category): **Junnifer M. Mabanto**, *Accountant I from Finance Division (FD)*;
- *Natatanging Kawani* Support Services (Senior Category): **Engr. Billy T. Belonio**, *Information Technology Officer II from Planning, Management and Information Technology Division (PMITD)*;
- *Natatanging Kawani* for Training and Extension (Junior Category): **Jett Molech G. Subaba**, *Science Research Specialist II from the Applied Communication Division (ACD)*;
- *Natatanging Kawani* for Training and Extension (Senior Category): **Bezt Gee S. Magararu**, *Senior Science Research Specialist also from the ACD*;
- *Natatanging Kawani* for Research and Development (Junior Category): **Engr. Aileen R. Ligisan**, *Science Research Specialist I from the Bioprocess Engineering Division (BPED)* and
- *Natatanging Kawani* for Research and Development (Senior Category): **Dr. Gigi B. Calica**, *Senior Science Research Specialist from the Socio-economic Policy Research Division (SEPRD)*

Dr. Baldwin G. Jallorina, PHilMech Director IV, together with Arnel Ramir M. Apaga, Director I and Dr. Michael Gragasin, Asst. Director, led the awarding ceremony on May 27, 2021 during the agency's blended online and physical celebration via Zoom platform and at the PHilMech Auditorium.

The *Natatanging Kawani* of PHilMech is an annual search of outstanding employees of PHilMech. It is a means of paying tribute to employees' outstanding performance contributing to the agency's fulfilment of its mandate in terms of Research & Development, Training and Extension, and Support Services. Engr. Billy T. Bilonio, an awardee for *Natatanging Kawani* for three years (2013, 2016, 2020) under the Administrative Support Services (Senior Category) received this year's Hall of Fame award.

From among the *Natatanging Kawani*, the Management Committee select the *Dangal ng PHilMech*. The *Dangal*

*ng PHilMech* Award is given to the *Natatanging Kawani* who embodies PHilMech's corporate values of Creativity, Integrity, Teamwork, Excellence and Spirituality.

Mr. Jett Molech G. Subaba from the ACD was hailed as this year's *Dangal ng PHilMech*. Subaba is a project leader of RCEF-Mech communication support under the Science and Technology Information Packaging Section (STIPS). He spearheads the promotion of effective communication mechanisms to cascade technology innovations and development down to the grassroots level.

"We are doing this not just for ourselves, not just for the farmers but also we are doing this for the next generations. May we never give up and never stop in our efforts until we see our farmers become competitive in their lives, and have improved. This way, the next generation can see an easy and comfortable path in agriculture" PHilMech Director Jallorina said. ■ **JLPMina**



Jett Molech G. Subaba, *Natatanging Kawani* and *Dangal ng PHilMech*





PHILMECH ANNIVERSARY

Online training course of PHilMech on mechanization and postharvest technologies for corn and cassava



Director Jallorina on his speech



Employees Day



PHILIPPINE CENTER FOR POSTHARVEST DEVELOPMENT AND MECHANIZATION  
PROGRAM ON AWARDS AND INCENTIVE FOR SERVICE EXCELLENCE (PRAISE)

*El Retiro*

THE RETIREMENT



© Lovelle Ramos

## THE RETIREES

### **RAUL R. PAZ**

*Director III*  
Office of the Director

**37** years in service  
March 5, 1984 entrance of duty  
April 27, 2021 retirement

### **ANGELITO G. DE GUZMAN**

*Senior Administrative Assistant I*  
Administration Division

**31** years in service  
May 16, 1990 entrance of duty  
July 1, 2021 retirement

### **CECILIO B. TAN**

*Administrative Aide IV*  
Technology Management and Training Division

**25** years in service  
March 2, 1995 entrance of duty  
February 1, 2021 retirement

### **DIOSCORO L. JAMORA**

*Administrative Aide IV*  
Enterprise Development Division

**34** years in service  
April 29, 1986 entrance of duty  
January 15, 2021 retirement

### **ROLANDO D. MARES**

*Administrative Aide VI*  
Office of the Director

**27** years in service  
January 11, 1994 entrance of duty  
March 8, 2021 retirement

*\*The program and awarding of plaques  
was held via zoom meeting in honoring the  
great services of the PHilMech retirees.  
Token was also provided.*

*Thank you for your  
service!*



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