



PHilMech

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



Covid-19 Response Project of PHilMech

CACAO POD HUSKS BRIQUETTING

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RD&E projects recognized at 42nd in-house review
GAD campaigns get solid support from PHilMech*



ON THE COVER

Demonstration of process on creating cacao briquettes using PHilMech technology with FCA members from Baguio District, Davao City

Photo by Gio Anton T. Barroga

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Utilizing Cacao and Sugarcane Wastes

Cacao and sugarcane generate numerous wastes left on the field after harvest. Not only are these unsightly, these cause problems on the environment.

The Philippine Center for Postharvest Development and Mechanization (PHilMech) under its Covid-19 response projects, is providing interventions to utilize wastes of both cacao and sugarcane. This will not only provide added income for cacao and sugarcane farmers, it will also help solve problems in the environment.

The project, Establishment of Pilot Briquetting Enterprise for Cacao Pod Husks and Other Related Biomass, is one of the Covid-19 response projects of PHilMech. This project aims to add value to cacao pod husks by turning them into briquettes. This will be done with a pilot briquetting enterprise established with a cooperator of PHilMech.

Another on-going Covid-19 response project of PHilMech is the Establishment of Pilot Sugarcane Wastes Silage and Pelleted Feeds Processing

Enterprise. It aims to add value to the sugarcane wastes by converting these into silage and pellets for feeds for consumption of animals. PHilMech collaborates with a cooperator so that a sugarcane wastes silage and pelleted feeds processing enterprise can be established.

Waste utilization of crops remains one of the Research and Development (R&D) agenda of PHilMech. It is PHilMech's way of increasing productivity of farmers and empowering them to become agripreneurs.

R D&E projects recognized at 42nd in-house review

PROJECTS UNDER RESEARCH, Development, and Extension (RD&E) went through evaluation as the Philippine Center for Postharvest Development and Mechanization (PHilMech) held its 42nd annual in-house review last October 11, 2022.

Eleven (11) projects with area of topics on Agricultural Mechanization, Bio-Process Engineering, Socio-Economic and Policy Research, and Food Protection and Laboratory Research composed this year's evaluation process.

Four (4) projects were awarded

the best paper based on the achievement of objectives, use of appropriate methodology and identification of problems encountered that should be resolved to improve the delivery of its outputs.

These winning projects included (1) Field Testing of CVS-based Mango Sorting Machine by Engr. Arlene C. Joaquin, Dr. Romualdo C. Martinez, and Engr. Richard P. Avila (this was also granted the Earliest Bird Award for being the earliest paper submitted); (2) Production of Moringa (*Moringa oleifera*) Powder Using Multi-Commodity Solar Tunnel Dryer

by Dr. Ofero A. Capariño, Engr. Christian Rod C. De Vera, and Dr. Ma. Cristina B. Gragasin; (3) Molecular Identification of Insects and Mites by Angelo A. Dela Fuente, Nea Ciara P. Fabaleña, and Mark Anthony A. Mangoba; and (4) Brown Rice Processing Enterprise Showcasing PHilMech Impeller Rice Mill Technology by Dr. Michael A. Gragasin, Engr. John Rey A. Cargamento, and Engr. Genaro M. Tolentino.

Guest panel of evaluators from the University of the Philippines–Los Baños (UPLB), Central Luzon State University (CLSU), and former PHilMech director III



INFO-HUB

Awardees in the 42nd agency in-house review



Socio-economic and Policy Research Division (SEPRD) researchers present their R&D project for review

assessed the selection of best papers.

PHilMech Director IV Dionisio G. Alwindia emphasized the significance of research as it is a vital component in the implementation of the agency's mandate.

"The backbone of PHilMech is research and development. Let us make our research studies relevant in order to create impact and produce promising results for the benefit of our stakeholders," he said.

Dr. Alwindia further encouraged the 'young blood' in the RD&E sector.

"May this activity inspire our young researchers to conduct and

conceptualize such studies that can generate technologies to help address the problems, needs, and concerns of the farmers," he added.

Other projects presented and evaluated include the following: (1) Establishment of Rubber Sheet Processing System for Farmers of Kidapawan City, North Cotabato; (2) Establishment of Abaca Fiber Processing System for Farmers of North Cotabato; (3) Profiling and Characterization of Precursors Responsible for Flavor and Aroma Development in Local Cacao Beans; (4) Verification of Different Preservation Techniques on the Viability and Stability of Short and Long-Term Storage of Microorganisms; (5) Establishment of Rubber Sheet Processing System for

Farmers of Kidapawan City, North Cotabato (VCA and Piloting); (6) Establishment of Abaca Fiber Processing System for Farmers of North Cotabato (VCA and Piloting); and (7) Establishment of Baseline Information and Organization of Technology Used in the Production and Postproduction of High Value Crops.

Interim Director for RD&E, Dr. Romualdo C. Martinez together with Engr. Genaro M. Tolentino, acting chief of Planning, Management, and Information Technology Division (PMITD) led the opening of the project review.

The Evaluation and Management Services Section (EMSS) under PMITD of PHilMech organizes the activity annually. ■ **NSMarianoJr.**

PHilMech holds 2nd batch of technical conference

A TOTAL OF 36 PARTICIPANTS

attended the second batch of Technical Conference on Agricultural Mechanization and Postharvest Technologies of PHilMech conducted by the Technology Management and Training Division (TMTD) on November 21 to 22, 2022.

The attendees were trained RPs from the Department of Agriculture-Regional Field Offices (DA-RFOs), State Universities and Colleges (SUCs), Provincial and Municipal Local Government Units (P/MLGUs) attended the conference with 21 males and 22 females participants, two of whom are members of IP group.

During the session, the Coconut Farmers & Industry Development Plan – Shared Processing Facility (CFIDP-SPF) and Rice Competitiveness Enhancement Fund (RCEF) were presented by Dir. Arnel Ramir M. Apaga and Dr. Michael A. Gragasin, respectively.

Dir. Apaga discussed the Republic Act 1154, an act creating the coconut farmers and industry trust fund, providing for the management and utilization, reconstituting for the purpose the Philippine Coconut Authority Board, and for other purposes.



Participants of the techno conference observing the grain probe moisture meter

Also, Dr. Gragasin updated the participants regarding the implementation of RCEF Mechanization Program. He presented the labor input, reduction postharvest losses, level of mechanization, FCAs Enterprise Development and the Rice Processing System (RPS).

Five PHilMech technologies were highlighted during the conference namely the Grain Probe (Buriki) Moisture Meter for Paddy and Corn presented by Engr. Arlene

Joaquin; Brown Rice Micro Mill presented by Dr. Michael Gragasin; Fluidized Bed Dryer and Greenhouse Solar Dryer with Biomass Furnace presented both by Dr. Romualdo Martinez; and Cacao Bean Processing and By-Product Utilization presented by Engr. Andres Tuates.

After the different technology discussion, issues and concerns brought up during the open forum were clarified by the project heads. Similarly, the group was

able to realize that some of their agricultural mechanization and postharvest activities can complement with the other agencies. With this, one agency can get assistance from the other and start partnership.

After the lecture-discussion, Engr. Richard Avila, Engr. Geraldine Palado and Engr. Irish R. Arambulo led the briefing of different technologies at the Demonstration Center of PHilMech. These include the Corn Mill, Impeller Mill, Pneumatic

Corn Planter, Cashew Nut Sheller, Soybean Sorter/Cleaner and PHilMech MROS.

Ms. Helen R. Calica expressed gratitude to the participants for actively participating during the conference and for giving positive impressions. She congratulated everyone for the success of the two-day activity.

The output of the conference, which is the ToR of the Mechanization Postharvest Specialist Network (MPSHN)

would be a very good start for the re-establishment and strengthening of the Network. She is hopeful for the continuous partnership between PHilMech and the participants' respective agencies.

The TMTD resumed its face-to-face trainings during the first semester of 2022. This activity was conducted to give an update or awareness about the technologies that were developed by PHilMech as well as to convene the trained RPs. ■ **AMCMiranda**



DA-RFOs members checking the PHilMech-KAMICO designed onion seeder

Calitan MPC-Radyo Eskwela's Outstanding FCA in Visayas

THE CALITAN MULTI-PURPOSE

Cooperative (MPC) of Visayas region topped the graduates of the Philippine Center for Postharvest Development and Mechanization's (PHilMech) Radyo Eskwela: "Angat Ani sa Tamang Makinarya" Season 2. The cooperative garnered 100 farmer-graduates, the highest enrollees and graduates for the season.

To recognize the cooperative's support and participation, PHilMech's Applied Communication Division-Science and Technology Information Dissemination Section (ACD-STIDS) with its partner radio network, Radio Mindanao Network (RMN) conducted a face-to-face graduation ceremony in Calitan, Panay, Capiz last December 13, 2022.

Chair Mabini Besiño in his interview commended PHilMech and its

Radyo Eskwela program for the efforts to bring the knowledge to the farmers in a most convenient manner. "Dito nga ako saludo sa PHilMech kasi ang PHilMech dapat distribution lang ng mga farm machineries pero nagkaroon pa sila ng programa sa Radyo Eskwela, kung saan ay yung mga magsasaka hindi na kailangang pumunta pa sa eskwelahan o sa learning sites para mag-aral. Sa pamamagitan lang ng radyo kahit nasa bukid p'wede na siyang (farmers) matuto ng mga makabagong pamamaraan sa pagsasaka at araw-araw niya itong masubaybayan."

PHilMech Director, Dr. Dionisio Alvindia, congratulated the graduates and thanked RMN. "Kami po dito sa Philippine Center for Postharvest Development and Mechanization o PHilMech ay lubos na bumabati

sa ating mga magtatapos. At kami rin po ay nagpapasalamat sa Radio Mindanao Network, sa oportunidad na ibinigay sa PHilMech para po itong pagsasanay natin sa RCEF-Mechanization ay maisakatuparan sa magandang layunin upang mapataas ang ani at kita ng ating magsasaka."

The municipal administrator of Panay, Mr. Vincent Emmanuel Bermejo, OIC-Municipal Agriculture Office, Ms. Editha Dollete, representative of the provincial agriculturist, Engr. Windel Laging, and DYVR-RMN station manager, Mr. Elizer Abarra, attended the graduation and awarding ceremony.

Municipal Agriculturist Dollete, talked about the advantage of Radyo Eskwela as it uses radio to educate farmers on the new machinery. Engr. Windel Laging pointed out how vital embracing new technologies taught by the Department of Agriculture (DA) and local technicians. Mr. Abarra of DYVR-RMN emphasized the importance of adopting the latest farming practices to be globally competitive.

The RMN distributed transistor radios to the farmer-graduates as special tokens.

Radyo Eskwela is a continuous program of PHilMech-ACD which aims to deliver knowledge to the FCA members about the Rice Competitiveness Enhancement Fund (RCEF)-Mechanization Program and the latest technologies utilizing radio as a media channel. **VDPallar**



RADYO ESKWELA

Farmer-graduates of the cooperative in Calitan



FCA members witness the ceremony



Awarding of eligibility certificates to the FCAs on coconut farming

PHilMech awards certificates of eligibility to coconut FCAs

THE PHILIPPINE CENTER FOR Postharvest Development and Mechanization joined the first Coconut Farmers and Industry Development Plan (CFIDP) Regional rollout at the Provincial Capitol of Mati, Davao Oriental on November 3, 2022.

The agency's Arnel Ramir M. Apaga, Director I; Dr. Michael A. Gragasin, Interim Director for Operation; and Dr. Ofero A. Capariño, Technical Head are present during the event.

Hundreds of farmers from different associations participated and received certifications from different partner agencies in the implementation of the CFIDP.

Certificates of eligibility were awarded to the identified Farmer Cooperatives Associations (FCAs) in Davao Oriental by different implementing agencies including PCA, PHilMech, ATI, CDA, BAI, DTI, NDA, HVCDP, RFO XI, LBP/DBP, DOST-PCAFNRRD, PCIC, TESDA, and CHED

PHilMech identified two cooperatives in Davao: the Limbahan Small Coconut Farmers and Women's MPC and the Crispin Farmers Development MPC.

Ms. Ruth Natividad-Angeles, Planning Officer III and the Interim Head of STRATCOM unit, discussed the overview and

program benefits of CFIDP Shared Processing Facility.

The governor of Mati, Hon. Gov. Corazon N. Malanyaon, gave her greetings and appreciation to the participants. The PCA Administrator, Benjamin R. Madrigal, Jr. gave an overview of the CFIDP. Also, Sen. Cynthia Villar gave her message through a recorded video.

After the awarding, a response from the representative of the beneficiaries was given by Mr. Basilio V. Adlawan, Jr. from Davao Oriental. Regional Manager, Juvy T. Alayon gave the closing remarks. **DMCCapariño**

Smart TVs for Info-hubs distributed

AWARDING



Distribution of Smart TV and awarding of certificates to the model FCAs



Interim Director for Field Operations, Mr. Dator

EIGHTEEN OF 40" SMART TVs were donated to model FCAs in Luzon during the turn over ceremony last December 20, 2022 at PHilMech, Science City of Muñoz, Nueva Ecija.

The donation of Smart TVs is part of RCEF-RESP Info-hub convergence project which aims to offer easy to access information, education, and communication materials (IECM). It is a venue for knowledge sharing, and learning activities (KSL) to model FCAs nationwide on RCEF, rice production, postharvest and mechanization.

Around 50 FCA members from CAR, Region I, II, III, IV-A and IV-B participated in the ceremony.

Dr. Ofero A Capariño, OIC, Assistant Director challenged each cooperative to use the smart TVs in enhancing their knowledge and become competitive. He also stated that PHilMech will continue to provide knowledge that will help them to progress and prosper as an FCA.

During the ceremony, technical consultant Dr. Rodolfo Estigoy discussed the process of conducting KSL activities using

the Smart TV and its importance to the FCAs

"Nagpapasalamat kami sa PHilMech para sa TV na natanggap namin dahil ito ay makakatulong na mas matuto pa ang farmer-members namin tungkol sa RCEF at mechanization", Mr. Rufino Nocedal, chairperson of Cupang West Multi-Purpose Cooperative said.

Jett Molech Subaba also shared about the Youth for Mechanization (Y4M) campaign to engage the youth in farming and agriculture. The Y4M campaign will become part of the KSL activity of info-hubs. ■ **JABPoco**

PHilMech capacitates RPS recipients

THE PHILIPPINE CENTER FOR Postharvest Development and Mechanization (PHilMech) is currently conducting a series of orientation and planning workshops on the preparation of feasibility study (FS) for the establishment and upgrading of the Rice Processing System (RPS) under the RCEF Mechanization Program.

The workshop aims to capacitate various Farmers' Cooperatives and Associations (FCAs) and Local Government Units (LGUs) who are recipients of the RPS. An FS is a major requirement in availing the facility.

The RPS recipients were required to accomplish and submit their FS after the workshop. This would ensure proper management of the facility in the aspects of technical, marketing, organization and management, financial and socio-economic/political.

At present, the RPS team of PHilMech has already conducted three batches of workshops with participants from 34 FCAs and LGUs in Regions I, II, and III.

Recipients from Regions IV-A, IV-B, V, in Visayas and Mindanao are set to be equipped this January 2023.

Meanwhile, the RPS is a state-of-the-art drying and milling facility which aims to produce quality milled rice and curb postharvest losses. It plays a vital role in attaining the benefits of mechanization by complementing the rice production technologies distributed during the first three years of the RCEF implementation.

PHilMech targets to establish 300 RPS nationwide before the program ends in 2024. As of today, 14 RPS were already installed while 54 more are targeted to be delivered by December 2022.

■ CVAng

WORKSHOPS



FS orientation and planning workshop on RPS among FCA participants

PHilMech joins Agrilink, Foodlink, Aqualink 2022

AFTER TWO YEARS, THE

Philippine Center for Postharvest Development and Mechanization (PHilMech) is back at Agrilink, showcasing its programs to strengthen agricultural mechanization in the country. The event was staged at the World Trade Center, Pasay City, last October 6-8, 2022.

President Ferdinand Romualdez Marcos Jr., who is also the secretary of the Department of Agriculture (DA), opened the international trade fair. In his speech, President Marcos Jr. stated that “the government has provided inputs such as seeds, fertilizers, machinery, equipment, facilities, as well as fingerlings and livestock to help our farmers, our fisher folk, and our livestock growers.” He similarly stressed, “the strengthening of the agricultural sector is the strengthening of survival, the strengthening of life.”

Meanwhile, Dr. Romualdo C. Martinez, PHilMech interim director for Research, Development, and Extension pointed out the importance of modernization in Philippine



Full-view of PHilMech 's exhibit on the Agrilink 2022

agriculture, “*Ang modernisasyon sa agrikultura ay una, nareduce yung drudgery ng ating mga magsasaka kasi ‘di rin gan’on kadali ang magsaka, sabi nga, “magtanim ay ‘di biro.” Sa pamamagitan ng machine, mareduce ang drudgery. Pangalawa, tataas ang productivity natin kasi may mga pag-aaral na kapag tayo ay gumamit ng mga bagong makinarya ay tumataas din ang productivity ng ating pananim.”*

Dr. Martinez also noted that PHilMech is a conduit or

agent of development in the agricultural sector. “*Yun ang aming aspirations, yun ang aming tinitignan. Kaya sa tingin naman namin with the proper funding and support ay makakarating tayo ro’n (modernization of agriculture).”*

The Agrilink’s theme is “Inclusive Growth in Agribusiness Chain: Key to Stability,” emphasizing the importance of every participant in the chain being-- “well represented, accounted for, and worked together.”

For this year, PHilMech showcased the RCEF-Mechanization Program's Rice Processing System (RPS), CFIDP's Shared Facilities for Processing (SFP), and COVID-19 Response Projects of PHilMech.

For the RPS, batch recirculating dryers and multi-stage rice mills were presented.

For the Shared Facilities for Processing (SFP) under the Integrated Coconut Processing and Downstream Products of Coconut Industry Development Plan (CFIDP), its objectives, beneficiaries, and sample

processing facilities were exhibited.

For the COVID-19 Response Projects, nine technological interventions to access and sustain food availability during pandemic were displayed.

PHilMech also conducted seminars on RCEF-Mechanization Program, CFIDP-SFP, and Onion-seeder technology. These are some of the COVID-19 Response projects/interventions.

Dr. Michael A. Gragasin, interim director for operation under

the RCEF-Mechanization Program, presented the RCEF-Mechanization Program. Dir. Arnel Ramir M. Apaga, PHilMech director I, talked about the Shared Facilities for Processing. Meanwhile, Dr. Ma. Cecilia R. Antolin, senior science research specialist, provided insights on using the PHilMech Multi-Row Onion Mechanical Seeder (MROS) for mechanized planting of onion and other vegetables.

The Applied Communication Division (ACD) designed and manned the PHilMech booth at Agrilink. ■ **GATBarroga**



Visitors lining up in the PHilMech booth



Visitors received souvenirs and IEC materials from PHilMech

cacao & sugarcane

a Covid-19 Response Project of PHilMech

by-products



The **cacao pod husks** are used as materials to create briquettes providing alternate material for charcoals producing fire.

The **sugarcane tops** are used as materials to create feeds for animals providing alternative animal food supply to lessen food consumption.

Both of these agricultural wastes, **cacao pod husks and sugarcane tops**, are projects under the **Covid-19 Response Program** of PHilMech. These projects are entitled **(1) Establishment of Pilot Briquetting Enterprise for Cacao Pod Husks and Other Related Biomass** and **(2) Establishment of Pilot Sugarcane Wastes Silage and Pelleted Feeds Processing Enterprise**. It is spearheaded by the Bio-Process Engineering Division (BPED) processing wastes to other useful products that would help farmers increase their income towards a sustainable livelihood during the pandemic.

Sugarcane tops-based silage

Benefits

- **source of feed** for small, large ruminants
- **alternative feed** during wet/rainy days
- **easy to store** and last up to 12 months
- **value adding** to sugarcane wastes
- **increase income** of sugarcane growers

intervention

This project aims to assess the technical and socio-economic performance of the sugarcane waste-based feed processing system under cooperators' level of operation. By turning sugarcane waste into silage and pelleted feeds for animal consumption, the project expects to add value to sugarcane waste and generate additional income for sugarcane growers and livestock growers.



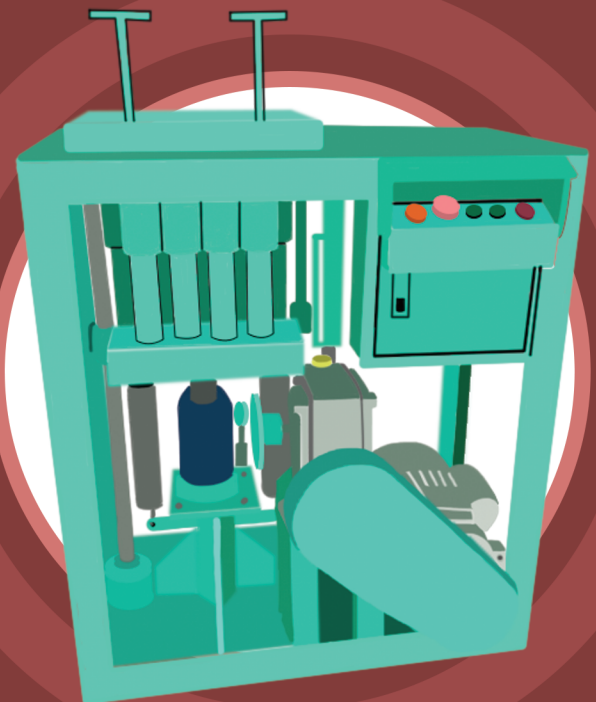
Batch-type briquetting machine

Specifications

- Capacity: **50-60 kg/day**
- Primemover: **2 hp electric motor**
- Hydraulic jack capacity: **20 tons**
- Machine type: **Piston-type**
- Estimated cost: **P77,000.00**

intervention

The project aims to add value to cacao pod husks and other related biomass by turning them into briquettes through the establishment of a pilot briquetting enterprise – a cleaner way to dispose cacao pod wastes. This would then provide additional income for cacao growers and processors.



When WASTES Turn GOLD

by Gio Anton G. Barroga



Producing goods for the purposes it may serve later often comes with materials that are no longer needed or at least considered scrap material. Repurposing these scrap materials, however, provides a new avenue for producers to earn more from their single product.

Limiting waste in food production is another example that falls in the same category. The Philippine Center for Postharvest Development and Mechanization (PHilMech), which specializes in postharvest research and development, has enabled the farmers such as those from the sugarcane and cacao industry to have a new source of income.

COVID-19 RESPONSE PROGRAM

A challenge set by former Department of Agriculture (DA) Secretary William D. Dar for the agencies under DA was to help farmers who have been gravely

affected by the effects of the pandemic. PHilMech's initiative led to the creation of nine projects dubbed the "COVID-19 Response Program."

Most of these nine projects are based on existing agency technologies that will eventually be pilot tested throughout the program's duration, so that its developers may work around and improve the quality of the technology and/or system based on the end user's feedback.

It is also worth noting that these nine projects are tagged in the agency's Gender and Development program, which takes into consideration the inclusion and empowerment of women involved in the projects.

Two of these projects include commodities of sugarcane and cacao, with sugarcane wastes being turned into silage and pellets for animal consumption, and cacao pod husks repurposed as cacao

briquettes. Both of these projects are led by PHilMech's Bio-Processing Engineering Division's Engr. Lorena Miranda. Engr. Miranda is a Senior Science Research Specialist whose focus revolves around Agricultural and Bioprocess Engineering.

SUGARCANE WASTES AS FEEDS

Often, the production of sugarcane is associated with sugar. It's a product mainly used to sweeten food and drinks. PHilMech, on the other hand, has come up with a way for farmers to earn more with sugarcane utilizing sugarcane tops (SCT) which are often discarded during harvesting.

With its COVID-19 Response Program, PHilMech is looking at the possibility of creating silage and pellets from sugarcane tops (SCT) and then using it as feed for livestock. Without this process, SCTs are usually discarded or burned after harvest as it is usually the stalk that is sought after.

Using PHilMech-developed systems and technologies, the agency has been able to create a formula for pellets and silage that would benefit sugarcane farmers and livestock owners when natural feeds are unavailable.

In creating silage, PHilMech utilizes a forage chopper that cuts the SCTs to a desired length. The SCTs are then mixed with a formula consisting of molasses and rice bran before the mixture is fermented in an air-tight container for a few days.

In creating pellets, however, PHilMech was able to hire technical experts from the Central Luzon State University (CLSU) to come up with a formula that would be beneficial for livestock consumption. Using an agency-developed pelletizer, a formula is mixed with the SCTs in order to create the pellets.

CACAO POD HUSKS AS BRIQUETTES

Cacao’s end-product is chocolate. The story behind the creation of chocolate comes at the expense of many cacao pod husks (CPH) that usually serve no purpose. In a similar fashion to creating pellets and silage from SCTs, the COVID-19 Response Program has allowed PHilMech to develop a system that would help cacao farmers earn more by turning CPH into briquettes.

The CPH is rich in lignin and cellulose – the main components of briquettes. After sun drying the CPH to its desired moisture content, the CPH is ground to a fine powder and mixed with a binding solution before it is pressed using a PHilMech-developed briquetting machine. After sun drying the briquettes, they can be sold to restaurants or private establishments that require charcoal as their main cooking component.

Not only are briquettes a good additional source of income for cacao farmers, but these are also generally cleaner sources of fuel as briquettes have lower carbon footprints as compared to traditional wood charcoal. These are also sustainable as it does not require trees to be cut in order to create the briquette. Discarded CPH during chocolate processing is used for the briquettes to be made. Cacao briquettes are also organic, burn cleaner, and longer compared to traditional charcoal.

PHILMECH CONDUCTED ACTIVITIES

Different sugarcane and cacao cooperatives in Luzon and Mindanao, respectively, where the concentration of both of these commodities lie have been pilot tested as the program progressed.

Feeding trials have been conducted with the sugarcane project with cooperatives from Luzon. Both the pelleted feeds and silage have

yielded promising results from livestock owners. However, full data regarding the project is yet to be disclosed.

In a similar fashion, the cacao project is also being trialed with businesses that sell roasted chicken in Davao City. The cooperative responsible for this leg of the project is the FARDECO Agri Multipurpose Cooperative (FARDECO) from Baguio District in Davao City. Prior to PHilMech’s intervention, FARDECO has been producing cacao products, making them an ideal partner for the project.

Together, it is expected during the end of the program that the selected cooperatives would excel in their respective productions, allowing them to earn more from their postharvest processes. It is also expected that once these cooperatives have been established and settled in their production, PHilMech can encourage more cooperatives to take on the practice.



Training on Cacao Briquetting among FCAs in Isabela

COCO



TANUNGAN



CFIDP

Coconut Farmers and
Industry Development Plan

Ano ang mga layunin ng shared facilities?

Pangunahing layunin: Mapataas ang kita ng mga magniniyog sa pamamagitan ng pagpoproseso at pagdadagdag-halaga sa kanilang produkto.

Mga tiyak na layunin:

- Maitatag bilang "community-based o integrated coconut processing enterprises" ang mga shared facilities;
- Mapaunlad ang mga value chains na magpapabuti sa kalidad ng mga produkto ng niyog; at
- Malinang ang mga kakayanan ng mga magniniyog para maisulong at maitaguyod ang pagpoproseso ng niyog bilang enterprise o negosyo.

**COCONUT
TAYO!**



CFIDP implementers participate in study tour, benchmarking activity

IMPLEMENTERS OF THE COCONUT

Farmers and Industry Development Plan (CFIDP)- Integrated Coconut Processing and Downstream Products or Shared Facilities participated in a study tour and benchmarking activity in Zamboanga City on November 9-11, 2022.

The activities were conducted for the smooth implementation of the Shared Coconut Processing Facilities spearheaded by PHilMech to provide the much-needed assistance to the 2.5 million coconut farmers in the country.

Mr. Luisito Penamora, acting center manager III of the Philippine Coconut Authority (PCA) Zamboanga Research Center welcomed the participants.

“The National Research Center here in Zamboanga is the biggest among the three research centers in the Philippines. It has the biggest depository of coconut in the world. It houses about 163 coconut varieties used in hybridization under PCA,” Mr. Penamora said.

PHilMech Director I and interim head of the Coconut Trust Fund – Field Management and Operations Division (CTF-FMOD) Arnel Ramir Apaga, discussed the purpose of the study tour and benchmarking activity.

“The objective of this activity is to equip all units of PHilMech with appropriate approaches and technical expertise that will be used to implement the shared facilities,” Director Apaga said.

Provincial Director of DTI Aurora, Mr. Aldrin Veneracion, also briefed the PHilMech staff. Meanwhile,

a representative from the PCA Zamboanga Research Center oriented the group on the different activities and facilities that will be demonstrated during the site visit.

Participants actively participated in the study tour and hands-on demonstration of facilities and technology systems. The decortivating machine, young coconut trimmer-puncher, biomass and biofuel, and different products from coconut like coco boards, coco peat, charcoal briquettes, virgin coconut oil, perfume, hand sanitizer, coco sugar, coco flour, coco wine, etc were showcased. This activity was conducted to introduce the PCA processing facilities/centers.

A PCA-assisted cooperative, the Lumayang Farmer’s Beneficiaries Cooperative – Lumfarbenco expressed high hopes for the implementation of the shared facilities under CFIDP as this will be a welcome addition to their cooperative’s income-generating projects.

Representatives from different divisions of PHilMech shared their insights and experiences.

“Mahalaga na ma-establish ang ating integrated coconut shared facilities sa mga food and non-food products dahil nakita natin na meron pa ring by product na natitira sa coconut na pwede pang i-develop gamit ang shared facilities,” Mr. Romar A. Areno, Head, FMFOD Visayas Cluster said.

“Grateful kami dahil impressive ang mga discussions, dahil from experts ito, lahat ng staff dito (PCA) ay experts at alam ko na magagamit namin sa implementation ng shared facilities,” Engr. Von Eliel Camaso of the Enterprise Development Division shared.

“Nagpapasalamat ako na nakasama ako sa activity na ito dahil madami talaga akong natutunan na magagamit ko sa aspeto ng enterprise, na part naman po ng aming contribution sa project,” he added. ■ **JTPaulo**



PHilMech project implementers joined the study tour and benchmarking in Zamboanga

RCM held in PHilMech for the first time

THE PHILIPPINE CENTER FOR Postharvest Development and Mechanization held its first Regional Consultative Meeting (RCM) on CFIDP-Shared Processing facilities for Regions I and III on October 18 and 19, 2022 at the Training Hall, PHilMech Main Office.

Out of the 15 scheduled meetings, the 11th and 12th RCM was held together with the partner agencies from respective regions including PCA, DTI, LBP, ATI, DOST- PCCAARD, TESDA, CDA, NDA, DPWH, DA-RFO, DBP and TESDA via face-to-face. Some of the participants attended via zoom meeting.

Director Arnel Ramir Apaga gave his opening remarks expressing his gratitude as PHilMech host for the first time the RCM on CFIDP during this 11th batch.

“Hindi tayo makakapagtayo ng isang viable and sustainable processing facility kung wala kayo so I think the involvement of each and every one is very important in order to attain the objective of this program towards increasing the income of our small coconut farmers.” Director Apaga said.

Mrs. Remellie Hermoso, Supervising Science Research Specialist of Technology Management and Training Division

(TMTD) discussed the objectives of Shared Processing Facility which is to formulate and harmonize the implementing guidelines for those small coconut farmers who will be benefitting from the program.

“Kinakailangan nating maharmonize lahat dahil kagaya nga ng sinabe ni Direktor. Apaga, this is a convergence program. Lahat po tayo ay may kanya kanyang ambag para sa ikatatagumpay ng ating programa.” Mrs. Hermoso said.

Suggestions and clarification were given by the partner agencies to perfect the application of guidelines including the concerns from the training, marketing, budget and construction.

All the roles for each agency were finalized during the meeting as well as the identification of members of the technical working group for the regions I and III who will be involved in the CFIDP operation.

The RCM aims to present and discuss the program among the different implementing agencies so as to harmonize the objectives for the implementation of the Coconut Farmers and Industry Development Plan (CFIDP). PHilMech is responsible for the Shared Processing Facility. It seeks assistance including trainings, financial, marketing and so on from different agency for a successful implementation. ■ **GATBarroga**



Dir. Apaga on his opening reamarks during the regional consulatative meeting

Delegates from PHilMech join international training program

THE PHILIPPINE CENTER FOR

Postharvest Development and Mechanization (DA-PHilMech) participated on the Training Program on “Enhancing Local Capability to Design, Develop, and Manufacture Agricultural Machineries to Accelerate Mechanization of Philippine Agriculture Project.” The Korean Institute for Development Strategy (KDS) and Korea Agricultural Machinery Industry Cooperative (KAMICO) facilitated the training course from December 4 to December 13, 2022 in multiple provinces and cities of South Korea.

Dir. Dionisio Alwindia, Director IV of PHilMech, Dr. Romualdo Martinez, Interim Director for Research Development Extension, Engr. Arlene Joaquin, Senior Science Research Specialist, and Engr. Terence Angceta, Science Research Specialist from Agricultural Mechanization Division (AMD) participated in the 10-day training.

The capacity building program on the Agricultural Mechanization Design and Prototyping Center (AMDPC) was designed to create an action plan and to set up a favorable environment for the development of the agricultural machinery industry following the establishment of AMDPC. Also, the course aims to develop local option plans and increase education effectiveness through training in order to develop instructors and technical personnel.

In addition, the program also envisioned the improvement on

TECHNO TOUR



Dir. Alwindia together with other delegates tour on technologies of Korea

the ability to operate policy on agricultural machinery development and field visits to smart farm as well as the establishment and dissemination of model for fostering manufacturers for the development and distribution of agricultural machinery.

Five curriculum modules and one extra-curriculum were developed including the (1) Agricultural Mechanization Policy, (2) Agricultural Development Policy and ODA Project, (3) Capacity Enhancement of Agricultural Machinery Development, (4) Agricultural Machinery Test and Technology Transfer, (5) Action Plan: Recognition of Problem and Solution Suggestion, Establishing Action Plan, and (6) Mutual Understanding and Cooperation Partnership:

Understanding Korean History, Field Trip. These modules aimed to improve the understanding of the delegates in the field of modern agriculture.

Aside from PHilMech, other key personnel from the Department of Agriculture (DA) and other stakeholders from relevant institutions like PhilRice, PCC, BAFE, and DOST-MIRDC participated.

Prior to the training program, PHilMech conducted an Invitational Training Orientation together with Korean partners and selected DA attached agencies at the Department of Agriculture Central Office, Quezon City last November 18, 2022. ■ **DMCCapariño**

Korean partners, PHilMech conduct 1st TWG

WORKSHOP



Technical Working Group (TWG) of the project with Korean partners and PHilMech

THE 1ST TWG WORKSHOP ON

“Enhancing Local Capability to Design, Develop, and Manufacture Agricultural Machinery to Accelerate Mechanization of Philippine Agriculture” was conducted in November 21, 2022. Key partners including DOST and DA attached agencies PhilRice, PCC and BAFE attended the activity at PHilMech main office, Nueva Ecija.

Ten technologies will be produced to ensure high quality production. Five technologies were chosen to be developed starting 2023 to 2024. These include the Cassava Planter, Coffee Depulper, CVS Mango Sorter, Coffee Sorter, and Bailing Machine.

Five more technologies will be added to this project and some of the recommended technologies by different agencies and PHilMech divisions were automated fermenter, copra moisture meter, cassava granulator, silage compactor, hole digger, sugar cane cultivator, ethanol distiller, cooler, ohmic pasteurizer and many more.

According to Dr. Chang Young Chang, KOICA-PMC project leader, the TWG will run for 5 years and they are open for suggestions and opinions. During the first workshop, he aimed to see the direction of the project and what other options are to be considered aside from the first 5 technology selected out of 10.

“First task is to suggest remaining five technologies to be developed then refine these technologies. We would need your advice even though you are not related on the development itself, still you can give advice or direction in the process of development.” Dr. Chang emphasized.

Dr. Romualdo Martinez, Interim Director for RD&E together with experts from different divisions and agencies, suggested alternative measures to help in the identification of the remaining technologies to be included in the project.

“The priority is mechanization since the center is supposed to be a mechanization expert. We prioritize something that is already in the works in which the center could provide the necessary equipment or process that could accelerate the process to commercialize these technologies.” Dr. Martinez said.

The TWG focused on the presentation and selection of proposed technologies to be part of the project followed by the suggestions from the experts. Korean partners are open for additional proposals and highly encourage recommendations addressing the mechanization of Philippine agriculture.

■ **DMCCapariño**

Radyo Eskwela exceeds target, 8,762 FCA members enroll

THE RADYO ESKWELA: ANGAT

Ani sa Tamang Makinarya of the Philippine Center for Postharvest Development and Mechanization (PHilMech) recorded 8,762 RCEF Mechanization farmers' cooperative and association (FCAs) members enrolled nationwide, surpassing its target of 7,500 FCA members per season.

The highest registry was recorded in Luzon with 6,135 FCA members, followed by Mindanao with 1,489 members and Visayas with 1,138 registered.

Radyo Eskwela Season 3's new set of ka-eskwela, promised to brace the 30-minute educational program for three months. The program was launched last November 9, 2022 - live streamed at Radyo Eskwela PH Facebook Page (<https://www.facebook.com/RadyoEskwelaPH>) and YouTube Channel (<https://youtube.com/@RadyoEskwelaPH>). This was simultaneously aired in 27 AM stations and six FM stations of Radio Mindanao Network (RMN).

During the launch, DA representative, Assistant Secretary for Consumers Affairs, Kristine Evangelista acknowledged PHilMech and RMN's effort in promoting modernization and mechanization among the farmers.

Assistant Secretary Evangelista, also mentioned that promoting these aspects in agriculture is one of the priorities of the government. This compressed the whole topic range of Radyo Eskwela - farm mechanization

REGISTRATION



Online registration of FCAs on Radyo Eskwela- Angat Ani sa Tamang Makinarya

principles and machinery in mechanized farming.

There are six modules with three to four lessons per module that will be aired in five regional languages such as Tagalog, Hiligaynon, Cebuano, and Iloco with RMN anchors and PHilMech technical experts in the field.

Aside from modules, the Text Quiz was one of the most awaited part per episode of Radyo Eskwela. This portion gives a chance to the 15 ka-eskwela to win a P100 load if they got the correct answer to the featured question on the episode.

For this season of ka-eskwela, 8,322 members are from 668 FCAs of 2021 validated FCAs, 7 FCAs with 282 members from PHilMech's 50 FCA

Models, and 19 FCAs with 282 FCA members in 2020 validated FCAs who were not able to enroll at the previous season of the program. The ka-eskwela farmers are composed of 5,812 males and 2,950 females.

The Radyo Eskwela: Angat Ani Sa Tamang Makinarya first season started last March 13, 2021. It catered to 11,682 farmer-beneficiaries which produced 9,097 graduates. During its second season, 14,783 farmers enrolled and 12,064 farmers graduated.

Radyo Eskwela aims to effectively reach out to FCAs, using the diverse communication channels like television-radio and social media each episode aired every Wednesday and Saturday from 5:00 AM to 6:00 AM. ■ **MTVCabuloy**



CAMPAIGN

PHilMech heads, GAD-TWG and other other employees join the EVAW campaign

GAD campaigns get solid support from PHilMech

In support to the 2022 18-day campaign to End Violence against Women, the Philippine Center for Postharvest Development and Mechanization (PHilMech) conducted multiple programs and activities.

The PHilMech GAD Unit spearheaded the activities from November 25 to December 14, 2023 at the PHilMech headquarters.

During the kick off program in November 25 and hosted by Mr. Jerwin Soriano and Ms. Joyce Ann Alcantara, Dir. Arnel Ramir M. Apaga, Director I and GAD ExeCom Chairperson, gave his welcome remarks. He also announced the

upcoming GAD Awards for GAD-tagged projects.

Dir. Ronaldo Sebastian R. Reyes, Director III of PHilMech, gave his inspirational message to the audience.

Meanwhile, Dr. Ofero A. Capariño, Bioprocess Engineering Division Chief and Committee on Decorum and Investigation (CODI) member, gave the closing remarks and expressed his appreciation for the conduct of the activity.

The Republic Act 10398 or the Act declaring November 25 of every year as the National Consciousness Day for the Elimination of Violence

against Women and Children (VAWC) mandates all government agencies to raise awareness on the problem of VAW. The Philippine Commission on Women (PCW) encourages all government agencies to participate the 18-day campaign to end VAW and uphold the law.

After the flag ceremony, an Orientation on Men Opposed to VAW Everywhere (MOVE) and Safe Spaces Act Forum was conducted.

On November 28, a lecture about gender-based, violence against women sexual harassment, VAW related laws, and the difference between R.A. No. 7877 (Sexual Harassment Act) and R.A. No. 11313 (Safe Spaces Act) was presented by Mr. Reynaldo G. de Guia, National Chairperson of MOVE Philippines. He also talked about where victims of gender-based sexual harassment (GBSH) in public spaces can seek assistance. He suggested steps in saving digital evidence, duties of employers, and role of the CODI.

For the second part of his presentation, Mr. Guia oriented the participants about MOVE – an organization of men who committed themselves to be actively involved in the elimination of VAW. It is also a group of caring, proactive and principled men who are dedicated to the cause of making the Philippines free from VAW. Also, he talked about the importance of men's involvement to women empowerment and discussed how MOVE is organized and why it was organized, its vision, mission, objectives, and core values.

Mr. Guia introduced the MOVE National Coordinating Council and presented the Inter-agency Council on Violence against Women and their Children (IACVAWC) Resolution No. 1-2019. Some of its provisions included (1) the charging of activities on male involvement to the GAD budget insofar as these are in line with the objectives to end VAW, (2) allowing the activities of MOVE members and other male organizations in the agency, if any, in addressing VAW, (3) gender equality to be done on official business, and (4) inclusion of GAD activities among the agency/LGU commitments to GAD and to the employees' deliverables and performance commitments.

Mr. de Guia also presented MOVE accomplishments from 2008 to 2019 and their ways forward and directions. He asked everyone to stand up and recite the MOVE Pledge to show their participation as a firm advocate and partner to eliminate VAW.

As support to #VowToEndVAW, PHilMech employees posed with END-VAW gesture as the program concluded.

PHilMech also introduced its new Committee on Decorum and Investigation (CODI) officers pursuant to Republic Act 7877 (otherwise known as the Anti-Sexual Harassment Acts of 1995).

On December 7, a meeting was held together with GAD experts from Department of Agriculture-Gender and Development Focal Point System (DA-GFPS) and selected members of the GAD

Executive Committee, GAD Technical Working Group, and project staff of GAD-tagged projects of PHilMech.

GAD Focal Person Dr. Helen Martinez welcomed the participants and thanked them for taking part in the activity. The Director I and GAD ExeCom Chairperson, Dir. Arnel Ramir Apaga and the OIC Assistant Director, Dr. Ofero Caparino attended the meeting.

Two GAD tagged projects were chosen to be presented during the meeting to share their best GAD mainstreaming practices and activities. Dr. Ma. Cristina B. Gragasín of the Bioprocess Engineering Division (BPED) and Ms. Maria Elizabeth V. Ramos of the Agricultural Mechanization Division (AMD) were the presenters during the meeting.

Dr. Gragasín shared the best practices of CVD6 - Application of Mango Pectin-based Edible Coating to extend the Shelf-life of Fresh Mangoes. Meanwhile, Ms. Ramos presented the best practices of CVD2 - Improvement and Integration of Greenhouse Solar Dryer with Biomass Furnace and Multi-Tray Drying Cabinets to the Processing system of Small-Scale Agribusiness Enterprises.

Aside from the national and regional GAD Focal Persons, the Program Director for DA-Gender Equality and Social Inclusion (GESI) Dir. Annray Villota Rivera also attended the meeting.

The participants visited the GAD Corner and TMDC wherein the projects tagged to GAD were displayed and explained by their respective project implementers.

■ CTVAlmonte



GAD ExeCom Dir. Apaga together with GAD Focal person, Dr. Martinez and the project team

AWARDING



CSC awarding of certificate to Dir. Alwindia as PLB semi-finalist

PhilMech Director makes it to PLB semi-finals

The Civil Service Commission (CSC) Regional Office III recognized PHilMech Director IV, Dr. Dionisio G. Alwindia, for making it to the semi-finals of the 2022 Presidential Lingkod Bayan (PLB) Award. The event took place on December 28, 2022 at the PHilMech Auditorium, Science City of Muñoz, Nueva Ecija.

The PLB is conferred to individuals/groups with exceptional contributions to society on a national level, impacting public interest, security, and patrimony.

The Department of Agriculture recognized Dr. Alwindia's role as the then-director of the Philippine Integrated Rice Program (PIRP) of DA as crucial in the uptrend in rice production of the country with 19.96 million metric tons.

Moreover, as a scientist, his discoveries of non-chemical and eco-friendly biocontrol agents and biopesticides among various crops are now commercialized by local and international companies.

Lastly, his contributions to various universities in the country like the

Central Luzon State University (CLSU) and De La Salle University (DLSU) were notable as he shares his expertise in research among postgraduate students for free.

The annual search for outstanding government workers is part of the CSC's Honor Awards Program (HAP). It aims to strengthen the merit and rewards system in the civil service by recognizing and honoring government officials and employees for their outstanding contributions and achievements in the delivery of public service.

JMGSubaba

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