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PHILIPPINE CARABAO CENTER AT 30



FEATURES

PCC after 30 years

The DA-Philippine Carabao Center's 30 years of existence as an R&D institution is a milestone that the DA-PCC family is proud of. The agency has gone this far because of a very solid and focused direction and accompanying strategies as translated

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DA-PCC celebrates Pearl Anniversary

By Ronaline C. Canute

To honor the pillars and pioneers who contributed to the institutionalization of the National Carabao Development Program and continue carrying out the legacy of service excellence are the main objectives of the upcoming 30th anniversary of the DA-Philippine Carabao Center (DA-PCC).

Bearing the theme, "PCC at 30: Continuing the Legacy of Service Excellence and Synergy," the agency will pay tribute to a phalanx of individuals for their significant contributions in building DA-PCC even when it was yet to breathe life and shape up.

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Kardeli All Day Breakfast Diner opening soon

By **Ronaline Canute**

Another ‘must try’ food dining is set to be launched at the DA-PCC dairy hub in the Science City of Muñoz, Nueva Ecija which will house and mainstream DA-PCC’s own brand of premium carabao meat, the Kardeli (carabao+deli).

Said dining will be dubbed as ‘Kardeli all day breakfast diner’, a fast casual style restaurant which will showcase carabeef by offering pre-packed choice cuts, gourmet sausages, and quick meals and snacks in affordable prices.

Some of the items in the menu are various meat dishes partnered with fried rice and egg (sinangag itlog or “silog” such as tapsilog (carabeef tapa), tocilog (carabeef tocino), sausilog (carabeef sausage), cornsilog (corned

DA-PCC celebrates ...

from page 1

“Scanning the recently flipped pages in the book of DA-PCC’s history, one thing should be noted with caution - the agency is slowly losing ALL of its pillars, primarily through retirement,” said Patrizia Camille Saturno, the event’s overall chairperson.

The anniversary’s theme is symbolized by a burning torch. A fire forming the number 30 represents the 30 years of burning passion towards service while the interlay of various fire colors symbolizes the effect of synergy, which DA-PCC was able to access in harnessing the impacts of its programs to its stakeholders.



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carabeef), meatloaf silog (carabeef meatloaf), and longsilog (carabeef longanisa), along with pares (Filipino braised carabeef dish), and goto but wait – there’s more. The next pages of the menu contain refreshing flavored drinks and Filipinos’ comfort food that are surely satisfying.

This carabao-based retail store business model was designed and conceptualized by DA-PCC through the Business Development and Commercialization Unit (BDCU) intended to provide a venue for buffalo products coming from buffalo meat value chain players. Said business model is consistent with PCC’s advocacy of assisting smallholder Carabao farmers in increasing their income through buffalo-based enterprises.

Any qualified cooperatives who signified their intent to adopt the retail store business model will enter into a memorandum of agreement with PCC. They are required to follow the product standards for Kardeli All Day and all major strategies set by DA-PCC.

A steady carabao’s meat supply is guaranteed from partner meat processors in PCC at University of the Philippines Los Baños (UPLB) and PCC at Central Luzon State University (CLSU). **B**

The celebration will take place from March 27 to March 31, 2023 at the DA-PCC National Headquarters and Gene Pool in the Science City of Muñoz, Nueva Ecija. Highlights include the official soft opening of Kardeli Diner, a fast-casual restaurant that features carabeef by offering pre-packaged choice cuts, gourmet sausages, and quick meals and snacks; K-Talks, a speaking event where selected speakers share various stories of struggles and triumphs relevant to the agency; and the main anniversary program, where the agency’s milestone coffee table book and corporate AVP will be released.

Senator Cynthia Villar, Chairperson of the Senate Committee on Agriculture, Food, and Agrarian Reform, was invited as the keynote speaker.

The DA-PCC was established by virtue of Republic Act No. 7307 in 1992. The organization’s mission is to “conserve, propagate, and promote the carabao as a source of milk, meat, draft power, and hide to benefit rural farmers.” It began operations in 1993 with a small central office in Quezon City, supported by a small network of regional centers. Later, in 1998, it established its

national headquarters and gene pool facilities in the Science City Muñoz, Nueva Ecija.

Currently, the DA-PCC has 12 regional centers spread across the country that collaborate to achieve its noble mission of improving the plight of its primary stakeholders, the smallholder farmers, while also assisting other actors in the carabao industry value chain. **B**



Continuing the legacy of
**SERVICE
 EXCELLENCE
 AND SYNERGY**

A salute to the leaders of DA-PCC through the years

Executive Directors



DR. LIBERTADO C. CRUZ 1993-2014



“Would any country, even the developed ones, be able to invent a machine which, if fed with grass, would give you milk? Would there be any machine in the next century which, if fed with rice straw, would give you meat? This is the carabao we are talking about—a symbol of backwardness to most, but if given enough support would be a tool for progress.”

Upon the institutionalization of PCC, then President Fidel V. Ramos appointed Dr. Libertado C. Cruz as the first executive director of the agency. Dr. Cruz served the DA-PCC for some 20 years before retiring in 2014.

His commitment to research and development in enhancing technologies that conserve, propagate, and promote the carabao as a source of draft animal power, meat, milk, and benefits to rural farmers has earned him utmost respect from both national and international scientific communities and administrative bodies.

Under his helm, DA-PCC has laid the foundations and directions for a national animal biotechnology program focused on increasing the genetic quality of breeding animals. The center, which he steered for two decades, is also acknowledged for its remarkable endeavors in implementing the National Carabao

Development Program (CDP) which includes production of good quality semen and refined artificial insemination technology.

Looking back at his service at DA-PCC, he is credited with the full operationalization of DA-PCC and its network of then 13 regional centers, and the institutionalization of the CDP, including the establishment of the National Impact Zone (NIZ) along with the Regional Impact Zones (RIZs).

Under his watch, the DA-PCC also established its national headquarters and gene pool, world-class research facilities, extension network, and local and international linkages.

Because of his unwavering passion and commitment, the DA-PCC has helped improve the general well-being of rural farming communities thru carabao genetic improvement, and establishment of carabao-based enterprises.



An animal nutritionist, Dr. Del Barrio rose to the ranks of Researcher, Supervising Science Research Specialist, Center Director of DA-PCC at University of the Philippines Los Baños (DA-PCC at UPLB), Scientist I, Acting Executive Director, and Executive Director III. Dr. Del Barrio took his oath of office as executive director on June 24, 2014 with then DA Secretary Proceso J. Alcala.

Dr. Del Barrio's staunch advocacy efforts in progressing not only the carabao but also the dairy industry paved the way to monumental projects such as the Carabao-Based Business Improvement Network and Coconut-Carabao Development Project (CCDP). During his tenure as DA-PCC's Executive Director, he also initiated and crafted the



DR. ARNEL N. DEL BARRIO 2014-2020



“In my years of service, I was able to carry out my duties well as the agency’s head because of DA-PCC’s culture where everyone works hand-in-hand despite differences. Surely there is harmony in diversity as depicted by how well we work together towards a common goal of helping our farmers. I hope the agency continues to nurture such practice.”

National Carabao Conference, an annual event where carabao keepers and other industry players gather and exchange technologies, ideas, and best practices.

His notable leadership as Executive Director steered the organization to become a more pragmatic R&D institution, utilizing science, technology, and innovations in engaging all stakeholders of the carabao industry value chain, particularly smallholder farmers toward improved productivity and profitability. Due to Dr. Del Barrios’ exemplary contributions to science and technology, he was also elected as Academician by the National Academy of Science and Technology.



DR. LIZA G. BATTAD 2022- Jan. 2023

(Assigned to PCAF as Technical Adviser)



“We are destined to serve the purpose of our existence. Let’s be felt as catalysts of significant reforms for our clients. It’s not about us at PCC, it’s about the result of the carabao development program for the welfare of the clients.”

Dr. Battad took her oath of office before then DA Secretary William Dar on June 9, 2021. She was appointed following the retirement of Dr. Arnel Del Barrio, who had held the position of executive director for more than six years.

Before filling the position, she had served as DA-PCC’s chief administrative officer and planning officer. Most recently, Dr. Battad served as the acting executive director of the Philippine Council for Agriculture and Fisheries and was also designated, in a concurrent capacity, as DA Assistant Secretary for regulations. Her first stint at DA-PCC started as a Project Development Officer II in 1996.

Her mettle and exemplary performance in government service is manifested by her notable accomplishments as DA-PCC’s planning officer; as lead for partnership development and international cooperation; and as head of the agency’s business development and commercialization unit.

Dr. Battad’s leadership focuses more on improving the carabao industry through policy research, policy development, policy advocacy and co-implementation of programs and projects with the right industry partners and stakeholders. She underscores the importance of aligning the agency’s programs and projects to the Value Creation for Improved Productivity, Profitability, and Sustainability (VIPPS) concept which serves as the agency’s strategic plan to impact on the industry. Such felt relevance is manifested in the increased number of services to clients, production of genetically improved calves, volume and value of milk production, and a vibrant local milk production in the country.

She also emphasizes on fostering an enabling work environment such that the agency’s human resource can co-create productively guided by a “happy pressure” attitude, which could ultimately translate to the overall performance of the agency to serve its clients meaningfully.



DR. CARO B. SALCES Jan. 2023 - Present

As the lead research and development institution in the livestock industry, PCC renews its commitment to inspire a vibrant carabao sector by serving our publics and our partners with PCC's mark of excellence, professionalism and integrity, innovativeness, commitment, and socio-ecological responsibility. This is the core values of PCC in which we operate as we measure up to the challenges of implementing the Carabao Development Program.

Dr. Salces was designated as the DA-PCC's Officer-in-Charge (OIC), Executive Director on January 19 pursuant to the Department of Agriculture Special Order No. 44 Series of 2023 and Special Order No. 56 Series of 2023 designating DA-PCC Executive Director Dr. Liza Battad as Technical Adviser to the Executive Director of PCAF issued by Senior Undersecretary Domingo Panganiban.

Dr. Salces has been with the DA-PCC since its creation in 1992. He is also among the pioneers in the implementation of national carabao development program having served as a researcher under the Philippine Carabao Research and Development Center (PCRDC), a precursor of DA-PCC.

Dr. Salces is the DA-PCC's deputy executive director for administration

and finance. He also served as the center director of DA-PCC at USF from 1994 to 2018.

As a researcher, he has conducted more than 20 studies in the fields of animal nutrition and agriculture. He also received the "Gawad Saka Award" of the Department of Agriculture for applied research in 2000-2001. He is currently the president of the Philippine Society of Animal Science. Dr. Salces finished his Bachelor of Science Degree in Agricultural Education at the Bohol Agricultural College in 1983 with Latin honors. Seven years later, he earned his Master's Degree in Animal Science at the University of the Philippines Los Baños. In 2000, he earned his Doctor of Philosophy in the same field also at the UPLB.

Officer-In-Charge, Executive Directors



DR. CLARO N. MINGALA 2020



DR. RONNIE D. DOMINGO January 2021 to June 2022



Deputy Executive Directors

- DR. ONOFRE S. BONIFACIO-1993 to 1996
- DR. ZOSIMO M. BATTAD-1996 to 1999
- DIR. ROBERT V. DULAY 2001
- DR. FELOMINO V. MAMUAD-2001 to 2017
- DR. CARO B. SALCES-2018 to present (DED for Administration and Finance)
- DR. CLARO N. MINGALA- 2021 to present (DED for Production and Research)



Center Directors

DA-PCC at Central Luzon State University

- DR. FELOMINO V. MAMUAD 1993 to 2011
- DR. EDWIN C. ATABAY 2011-2015
- DR. DANIEL L. AQUINO 2016 to 2020
- DR. PEREGRINO G. DURAN 2020 (OIC)
- DR. ERICSON N. DELA CRUZ 2021 to present

DA-PCC at Cagayan State University

- PROF. FRANKLIN T. RELLIN 1993 to 2020
- DR. ROVINA R. PIÑERA (OIC) 2021 to present

DA-PCC at University of the Philippines Los Baños

- DR. BENITO A. OLIVEROS 1993-1996
- DR. ARNEL N. DEL BARRIO 1997 to 2014
- DR. JESUS ROMMEL V. HERRERA (OIC)- 2020
- DR. THELMA A. SALUDES 2021 to present

DA-PCC at Don Mariano Marcos Memorial State University

- DIR. CHARITO C. COLLADO 1994 to 2008
- DIR. GLORIA M. DELA CRUZ 2009 to 2020
- DIR. VILMA C. GAGNI 2021 to present

From page 1

PCC after 30 years

and implemented by its workforce and partner-agencies and individuals. Through the years since its institutionalization, the agency scored laudable improvements along growing piles of hard-earned achievements to uplift the carabao industry in the country.

But all these would not have been possible if not for the very foundation that the “pillars” and “pioneers” of carabao development have laid prior to the creation of DA-PCC in 1992 and during its early years. Their significant contributions to the development of the local carabao industry and the institutionalization of the National Carabao Development Program will never be forgotten.

1993-1997: THE FORMATIVE YEARS

These are the developmental years of the Philippine Carabao Center (PCC). Its operationalization started in 1993, after the Republic Act 7307, otherwise known as the Philippine Carabao Act of 1992, was signed into a law on March 27, 1992, and after former President Fidel V. Ramos launched the National Carabao Development Program in the same year.

Originally, the center had 6 regional centers across the country until seven regional centers were added in 1994. During these years, the center also imported 220 heads of American Murrah Buffaloes and 403 heads of Bulgarian Murrah Buffaloes. “Test-tube” calves from in vitro/ fertilized matured embryos were also produced, and the national headquarters and gene pool facilities in Nueva Ecija were also constructed.

Other activities conducted were hosting of the 2nd Asian Buffalo Congress and launching of Carabao-based Dairy Enterprise Development (CBED) Program.

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DA-PCC at Mariano Marcos State University

DR. ZOSIMO M. BATTAD 1993 to 1996
 PROF. GRACE MARJORIE R. RECTA 1996 to 2022
 DR. CATHERINE P. DABALOS (OIC)- 2022 to present

DA-PCC at Ubay Stock Farm

DR. CARO B. SALCES 1993 to 2018
 DR. GUNDOLINO P. BAJENTING (OIC)- 2018 to 2019
 DR. MARIA DINAH R. LOCULAN 2020 to present

DA-PCC at La Carlota Stock Farm

DIR. DOMINADOR B. PEÑA 1993
 DIR. FEDERICO D. BUENAFE 1993 to 2013
 DIR. ARIEL L. ABAQUITA 2013 to 2021
 DIR. EVA C. ROM 2022 to present

DA-PCC at West Visayas State University

DR. VICTOR A. DELA CRUZ 1995 to 2002
 DR. ANNABELLE S. SARABIA 2002 to 2020
 DIR. ARN D. GRANADA OIC from 2008 to 2019; center director from 2020 to present

DA-PCC at Visayas State University

DR. OSCAR B. POSAS 1994 to 2002
 DR. LOLITO C. BESTIL 2002-2005
 DR. SERENA L. SANCHEZ 2005 to 2008
 PROF. FRANCISCO G. GABUNADA JR. 2008 to 2013
 DR. JULIUS V. ABELA 2013 to 2017
 DR. IVY FE M. LOPEZ (OIC) 2018 to 2020
 PROF. FRANCISCO G. GABUNADA JR. 2020 to present

DA-PCC at Central Mindanao University

PROF. ROSENIO L. ANACLETO 1993 to 2007
 DR. LOWELL C. PARAGUAS 2007 to present

DA-PCC at University of Southern Mindanao

DIR. MANUEL G. SABUTAN 1994
 PROF. CORNELIO P. SUBSUBAN 1995 to 2000
 DIR. BENJAMIN JOHN C. BASILIO 2000 to present

DA-PCC at Mindanao Livestock Production Center

DIR. GEORGE M. REALIZA 1994 to 2014
 DR. CECELIO G. VELEZ 2014 to present

DA-PCC at Mindanao State University

DR. HERNIE C. TIAMTING 1994
 DR. PENDATUN R. MASANANG 1995 to 2012
 DIR. SIMBANATAO S. BATUGAN 2012-2013
 DR. JANE B. TRANQUILAN 2013 to 2016

2018-2022:

SHARED VALUE CREATION IN CARABAO INDUSTRY AND DIGITALIZATION OF SERVICES

The agency has collaborated with some 60 provincial governments and conduit farmers' cooperatives covering 80 project sites for a provincewide and a value chain approach to CBED implementation via the Carabao-based Business Improvement Network (CBIN) and Coconut-Carabao Development Project (CCDP). The two projects received funding assistance from the Office of the Senate Committee on Agriculture, Food, and Agrarian Reform. Likewise, with the signing of RA 11037 (Masustansyang Pagkain Para sa Batang Pilipino Act) in 2018, the PCC has partnered with the Department of Education (DepEd) and the Department of Social Welfare and Development (DSWD) to support the implementation of the RA's National Milk Feeding Program component, which addresses the malnutrition issues among kids from grade schools and day-care centres and at the same time provides an institutionalized market for local dairy producers. In consultation with industry stakeholders, the agency has also crafted its Carabao Industry Road Map (2022-2026), a medium-term strategic plan that sets out the agency's actionable and transformative measures to develop further the carabao industry through genetic improvement, enterprise development, and research for development.

The period also saw the digitalization of PCC's frontline services, which include the iREB client dashboard (an online interface that displays business performance data of enrolled dairy buffalo

farmers); Knowledge Portal (a one-stop online platform for PCC's knowledge products); Cara-Aralan Webinar Series (live-streamed via Facebook); and piloting and rolling out of KBGAN (Knowledge Brokerage, Guidance, and Advisory Network) mobile apps for use by extension professionals and farm managers, which include iHealth (for carabao disease diagnosis and health management) and iFeed (for least cost feed formulation).

Other milestones during the period include the following: launching of the agency's Intellectual Property and Technology Business Management Office in partnership with the DOST-PCAARRD, which coordinates the registration of the agency's IP rights (from generated technologies or R&D outputs) that include patents, designs, trademarks, and copyrights; launching and hosting of the National Livestock Cryobank; and launching of the home-grown "Philippine buffalo" breed also called "Pinoy Buffalo", which is a product of crossbreeding and successive backcrossing over four generations. Currently, bulls of this kind, join the roster of semen donors for the agency's intensified AI program. Meanwhile, the institutional herd at PCC at Cagayan State University became the first ever government-operated carabao farm to have secured a National Good Animal Husbandry Practices (GAHP) Certification from DA-BAI. In accomplishing all these, the PCC was an annual recipient of various fiscal management and compliance recognition given by the DA-AFD.

1998-2002:

INSTITUTIONALIZATION OF THE CARABAO UPGRADING AND ENTERPRISE DEVELOPMENT

These years marked the institutionalization of CBED through the second phase launching of the Carabao Development Program, which was spearheaded by President Joseph E. Estrada.

Other markers were the importation of 1,078 Bulgarian Murrah Buffaloes; groundbreaking ceremony and inauguration of PCC's research and training facilities; partnership between the Philippines (PCC and BAI) and Japan through signing of the Water Buffalo and Beef Cattle Improvement Project (WBBCIP), which aims to improve the productivity of both animal species; establishment of a satellite laboratory for reproductive biotechnologies in buffaloes in Frigorifico Allana Limited, Aurangabad, India; and transfer of Vitrified IVM/IVF-derived embryos produced from India to the BMB cows at the PCC's national gene pool and nearby village. These years also marked the birth of GLORY---world's first calf from in-vitro produced-vitrified-warmed embryo. The calf was named after President Gloria M. Arroyo.



2003-2007:

ADHERENCE TO
INTERNATIONAL QUALITY
STANDARDS

These are the years when the PCC was accredited to the International Organization of Standardization (ISO) 9001:2000. The agency passed the rigorous audit conducted by SGS (Societe' Generale Surveillance) Philippines.

Other milestones of the agency during these years were the birth of twin buffalo calves from embryos fertilized in vitro; hosting of 7th World Buffalo Congress; acquisition of a manufacturing license for milk and cheese from DFA; launching of the projects on "Expanding the Reach of AI Program for the Acceleration of Dairy Herd Build-Up" and "Environmental Animal Health Management"; launching of "Changing Lives... Beyond the Draft Carabao" book; heightened efforts in research activities, especially in the area of reproductive biotechnology; and the establishment of the PCC's Molecular Genetics Laboratory (MGL).

The PCC also started technical cooperation with the Korea International Cooperation Agency (KOICA) during these years.

2008-2012:

ASSERTION AS A LEADING
LIVESTOCK R&D
INSTITUTION

These are the years when the PCC started engaging in biotechnology R&D in other livestock species as a result of its additional mandate from DA.

Other milestones of the agency during these years were the expansion and strengthening of their collaborative projects with KOICA; infusion of genetic materials for dairy buffaloes; launching of International Buffalo Knowledge Resource Services (IBKRS); membership of the PCC to the International Buffalo Consortium; provision of international study program on livestock under JICA-TCTP; inauguration of Central Milk Collecting and Processing Facility; Opening of Milka Krem dairy outlet to public; conduct of third country training program for Myanmar; hosting of ARBS conference; and inauguration of new PCC facilities. It was also in 2008 when the PCC was given the "Tanglaw Award" by PCAARRD as an outstanding research institution.

2013-2017:

RATIONALIZATION AND
STRATEGIC SHIFT IN
PROGRAM IMPLEMENTATION

These are the years when the PCC started to rationalize and shift its focus from being an "R&D institution" to "R4D agency" in line with the change occasioned by the rationalization program of the Department of Agriculture.

Aside from refocusing its agenda in research, Dr. Arnel N. Del Barrio succeeded Dr. Libertado C. Cruz, the agency's executive director for 21 years, after he retired mandatorily from his position in 2014.

During these years, the PCC also imported Italian Mediterranean buffaloes; established and inaugurated facilities i.e., three AI Bull Farms, Semen Laboratories and Livestock Innovations and Biotechnology Complex; launched the dairy buffalo multiplier farm module, milk supplementation program, Dairy Box, Milka Krem outlet in Laguna; hosted and conducted national carabao conference, international training on reproductive biotechnology, national knowledge sharing forum and international carabao conference on CBED; piloted farmer livestock school on dairy buffalo production, among others.





PCC
through the
YEARS

1998-2002
INSTITUTIONALIZATION OF
THE CARABAO UPGRADING AND
ENTERPRISE DEVELOPMENT

launching of the project on “Expanding the Reach of AI Program for the Acceleration of Dairy Herd Build-Up”

transfer of Vitrified IVM/IVF-derived embryos produced from India to the BMB cows at the PCC’s national gene pool and nearby village commenced



national headquarters and gene pool facilities in Nueva Ecija were constructed

“Test-tube” calves from in vitro/fertilized matured embryos were produced

PCC imported 1,078 Bulgarian Murrah Buffaloes

GLORY-world’s first calf from in-vitro produced-vitrified-warmed embryo was born. The calf was named after then President Gloria M. Arroyo.

1993-1997
THE FORMATIVE YEARS

2003-2007
ADHERENCE TO
INTERNATIONAL QUALITY
STANDARDS

2008-2012

ASSERTION AS A LEADING LIVESTOCK R&D INSTITUTION

2018-2022

SHARED VALUE CREATION IN CARABAO INDUSTRY AND DIGITALIZATION OF SERVICES

PCC acquired manufacturing license for milk and cheese from DFA

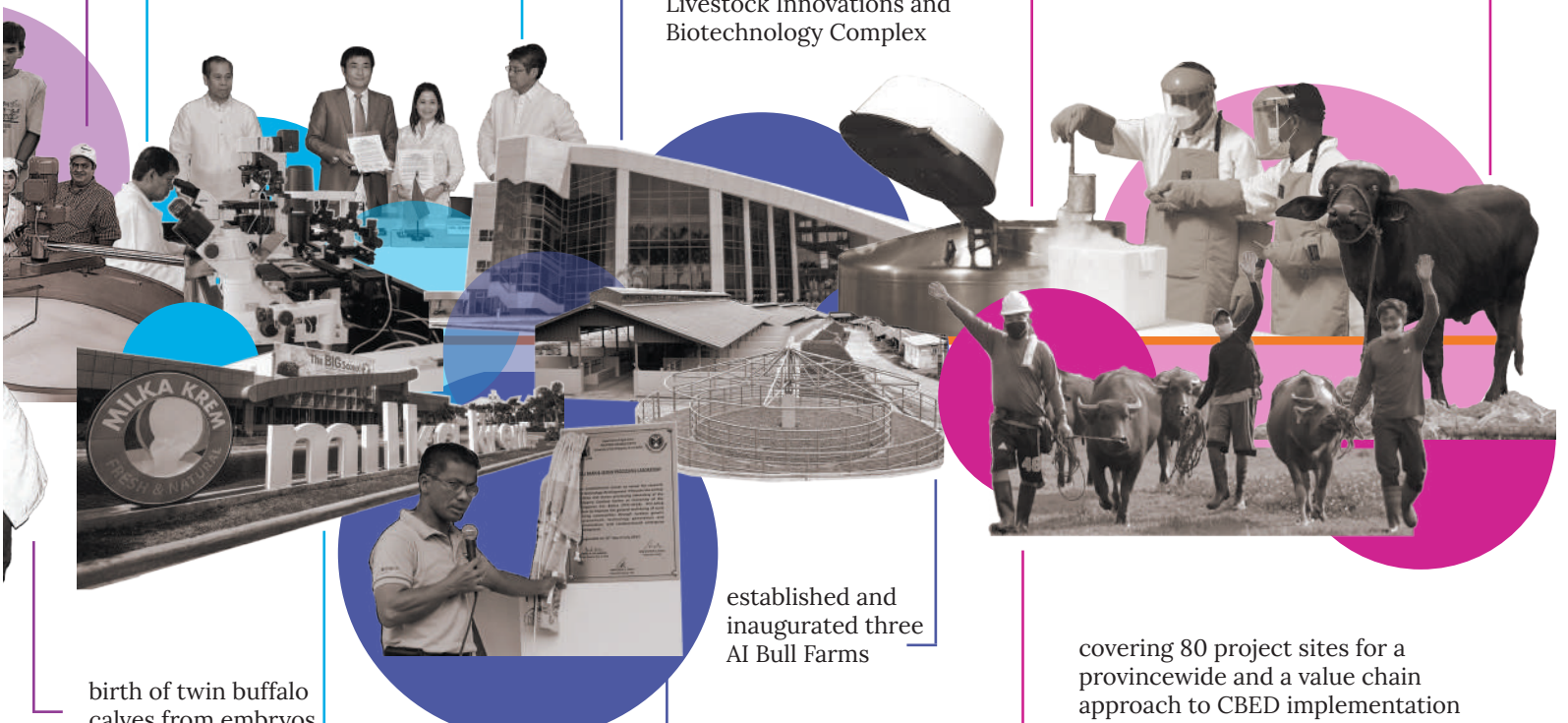
PCC started engaging in biotechnology R&D in other livestock species as a result of its additional mandate from DA

expansion and strengthening of collaborative projects with KOICA

established and inaugurated Semen Laboratories and Livestock Innovations and Biotechnology Complex

launching and hosting of the National Livestock Cryobank

launching of the home-grown "Philippine buffalo" breed also called "Pinoy Buffalo"



birth of twin buffalo calves from embryos fertilized in vitro

established and inaugurated three AI Bull Farms

established semen laboratories

covering 80 project sites for a provincewide and a value chain approach to CBED implementation via the Carabao-based Business Improvement Network (CBIN) and Coconut-Carabao Development Project (CCDP)

Opening of Milka Krem dairy outlet to public

2013-2017

RATIONALIZATION AND STRATEGIC SHIFT IN PROGRAM IMPLEMENTATION

Pillars

DR. ALFONSO N. EUSEBIO ^(†)



The late Dr. Alfonso N. Eusebio, then an instructor in the College Department of Dairy Production and Sciences of CLSU, started the research and development on carabaos in 1955 when focus on buffalo livestock R&D was still minimal. He later became the director for research in CLSU and eventually the director of the Livestock Research Division of PCAR (Philippine Council for Agricultural Research). Under his leadership, the National Carabao Research team was created on November 21, 1975. He also allowed an intensified regional and international support to strengthen its research capabilities. He also facilitated the provision of additional funding for the construction of facilities at the CLSU ranch in Digdig, Carranglan, Nueva Ecija.

DR. JOSEPH C. MADAMBA ^(†)



Dr. Joseph C. Madamba, a livestock expert, spearheaded the endorsement of the national carabao research program that was designed to improve the productivity of the Philippine carabao beyond its use for draft. As a result of these efforts, between 1978 and 1981, several research infrastructures were constructed [under USAID loans Phases I & II] including the bull farm at the Digdig ranch in Carranglan, Nueva Ecija.

DR. AMADO C. CAMPOS ^(†)



Dr. Amado C. Campos, who was then the CLSU president circa 1977, allowed the conversion of the university's 1,500-hectare cattle ranch in Carranglan, Nueva Ecija into the National Carabao Research and Development Center to provide full support to carabao research and development pursuits.

DR. LEOPOLDO S. CASTILLO ^(†)



Considered as a guru in the field of animal nutrition, Dr. Leopoldo Castillo was a well-respected scientist, professor, and advocate of livestock R&D. His remarkable accomplishments as team leader of the National Beef and Carabeef Commodity Research of PCAR (now PCAARRD), has contributed greatly to the eventual creation of PCC. His service as a national consultant on animal nutrition to the PCRDC from 1981 to 1984 has made significant contributions to the furtherance of science in feeds and feeding system.



JOSEPH "ERAP" EJERCITO ESTRADA

He provided the impetus for the creation of the Philippine Carabao Center by sponsoring in 1989 as Senator of the Republic of the Philippines Senate Bill 1165 "An Act Creating the Philippine Carabao Center to Propagate and Promote the Philippine Carabao and for other Purposes", which was ratified into a law on March 27, 1992 as Republic Act 7307, the Philippine Carabao Act.



DR. FORTUNATO A. BATTAD

His unwavering support to convince the Board of Trustees and his constituents as CLSU President has paved the way for the agency to have a 40-hectare land where the Philippine Carabao Center National Headquarters and Gene Pool facilities were built on. He concretized his commitment to the Carabao Development Program (CDP) by way of institutionalizing human resource complementation and administrative oversight as Advisory Board Member. He also championed the CDP across the country as Chairman of the PRC's Board of Agriculture.



LETICIA RAMOS-SHAHANI (†)

Her strong advocacy for the WHITE REVOLUTION aimed to improve the local dairy industry in the Philippines influenced the continuing development of dairy impact areas using existing ruminant dairy species. She was also a very active supporter of the agency's Carabao-based Enterprise Development Program. Through the partnership between PCC and her BUDHI Foundation, the very first 25-cow dairy buffalo module in the country was launched in Tulong, Urdaneta, Pangasinan.



LINO E. NAZARENO (†)

He steadfastly supported the operationalization of the Carabao Development Program as the then Assistant Secretary for Livestock of the Department of Agriculture.



DR. PATRICIO S. FAYLON (†)

He was sincerely committed to sectoral growth of carabao communities starting from the UNDP project in 1980 "Strengthening of the Philippine Carabao Research and Development Center (PCRDC)" as its project leader. He demonstrated continuing and proactive support to the Carabao Development Program as former Director of PCAARRD's Livestock Research Division and then as its Executive Director by way of R&D project grants, scholarship, and police-related support as member of the Advisory Board of PCC.



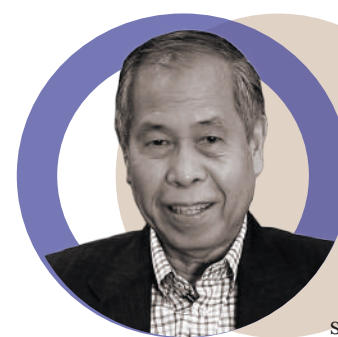
DR. SURENDRA K. RANJHAN

He was actively involved as FAO consultant and chief technical adviser in the UNDP project "Strengthening of the PCRDC".



DR. VICENTE G. MOMONGAN (†)

He served as the program leader of the FAO-UNDP project "Strengthening of the Philippine Carabao Research and Development Center" (PCRDC) from 1980 to 1990. He advocated the institutionalization of the effects of the PCRDC project across the country through Senate Bill "An Act Creating the Philippine Carabao Center".



DR. LIBERTADO C. CRUZ

He was appointed by then President Fidel V. Ramos as the first executive director of the agency. He served the agency for 21 years until his mandatory retirement in 2014. His commitment to research and development in enhancing technologies that conserve, propagate, and promote the carabao as a source of draft animal power, meat, milk, and benefits to rural farmers has earned him utmost respect from both national and international scientific communities and administrative bodies. Under his helm, PCC has laid the foundations and directions for national animal biotechnology program focused on increasing the genetic quality of breeding animals. The center is also acknowledged for its remarkable endeavors in implementing the National Carabao Development Program which includes production of good quality semen and refined artificial insemination (AI) technology. Because of his unwavering passion and commitment, the PCC has helped improve the general well-being of rural farming communities thru carabao genetic improvement, and establishment of carabao-based enterprises.



TOMAS N. JOSON III (†)

He was the provincial governor of Nueva Ecija when the province was declared as the National Impact Zone for Dairy Buffalo Enterprise.

They endured the pain, savored the gain in carabao R&D

By **Khrizie Evert Padre, Ma. Cecilia Irang-Mariano, Ronaline Canute**

Birth signifies new beginning. In the case of DA-PCC, its beginning augured significant history in the country's livestock industry. As it went on, its past reflected the breadth and depth of passion of the individuals who made sure that the agency's achievements are relevant and lasting.

Looking back will give us the privilege to appreciate the works done by the pioneers who helped shape PCC to what it is today.

Until 1975, research and development in carabao was least attended to. Later, there was a felt need to institutionalize research and development for this lowly animal.

In 1978, the Philippine Council for Agriculture and Resources Research and Development (PCARRD) initiated the proposal to establish the Philippine Carabao Research and Development Center (PCRDC).

The proposal was submitted to the United Nations Development Program (UNDP) for funding assistance.

The proposal was approved on June 19, 1980. Its operationalization started on February 1, 1981 and Dr. Surendra K. Ranihan from India became the project manager.

During the first phase of the project, six partner-institutions

were designated as experiment stations for the national program. These included University of the Philippines, Los Banos (UPLB), Central Luzon State University (CLSU), Ubay Stock Farm (USF), Central Mindanao University (CMU), La Carlota Stock Farm (LCSF) and Cagayan State University (CSU), which now host six of the regional centers of PCC all over the country.

This PCRDC network was tasked to generate technologies addressing issues in carabao production, promote the growth and development of its industry and produce a breed of carabao with superior traits in draft, milk and meat aspects under backyard production for smallhold farmers and commercial ranch production systems.

Extension services suited to the needs of carabao owners in different regions were also provided to ensure that deliverables are met.



EDUEDO MAGBOO (†)

"The farmers were not as optimistic about dairy buffaloes because the animals were not as tame as cattle. But now, they look at buffaloes not as a mere ally for work but as a source of income thru their milk, and that is PCC's greatest contribution."

Then working with PCARRD (now PCAARRD) as program specialist and commodity expert for buffalo, Mr. Eduedo Magboo was tapped to extend his expertise into the newly formed Philippine Carabao Research and Development Center (PCRDC), the forerunner of PCC. He was tasked in the planning and implementation of all researches and proposals for the project.

Working alongside with the heads of the six satellite stations of PCRDC then, Mr. Magboo essentially served as assistant to the program manager based in PCARRD, Dr. Patricio S. Faylon. As early as 1987, Mr. Magboo helped in conceptualizing the bill that was to become the "Carabao Act of 1992" and helped in lobbying at the House of Representatives for a law to create the PCC.

Working with PCARRD, Magboo's key role in the formative years of PCC was supplementing its effort in providing artificial insemination services in the country. Thru a project formulated by PCARRD, he spearheaded the conduct of AI services to provinces outside the area of PCC satellite offices. He also provided resources and technical trainings needed for the program.

DR. ARTURO ARGANOSA

"When we are doing research, it is always a challenge on how to sustain the results or on how to eventually make the results applicable or adopted by the clients. If there is one research





activity that was eventually adopted by the farmers it is the concept of the Philippine Carabao Center because it was enacted into a law. It was funded, the activity was continued and more farmers became part of the program. If it were not enacted, then all the things that we had done would have gone to waste. This was PCRDC's contribution. It became a continuing program thru what is now the Philippine Carabao Center."

Dr. Argañoso came into the picture when he was assigned as the national coordinator of PCRDC. He was also the officer-in-charge of the Livestock Research Division of PCAARRD.

As part of the PCRDC team, Dr. Argañoso participated in lobbying for the creation of the Carabao Act of 1992. If there is one thing Argañoso is very proud of about PCRDC, it is the fact that it paved the way for the creation of PCC.

DR. FELOMINO MAMUAD (†)

"I was appointed in 1974 by Dr. Amado Campos, then CLSU president, to be in-charge of the buffalo dairy project of the university.

Over the years, I knew there is so much to benefit from the buffalo," Dr. Felomino Mamuad said.

It was only then that he started to get involved in the dairy project and recognized the benefit he could get from the research project on buffalo.

He also got involved in the improvement of the pastures in Digdig, Carranglan, Nueva Ecija. Dr. Cruz appointed him to manage the place, which is now, the national bull farm.

In July 1984, thru his initiative, Dr. Mamuad established the semen processing laboratory in the ranch. In time, it began to produce frozen buffalo semen in commercial quantities which were sent out to the PCRDC stations and to the National Artificial Breeding Center (NABC).

"We were able to see that the crossbred buffalo was bigger by about 250% than the native carabao and its milk production was higher by 75%. In 1989, we transferred the buffaloes to CLSU where big quantities of milk were produced for sale to the public," Dr. Mamuad said.

When PCC became operational, Dr. Mamuad became the center director of PCC at CLSU. On December 13, 2001, he was appointed Deputy Executive Director of PCC until his retirement in 2017.

DR. ALFREDO VENTURINA (†)

"I was one of the few witnesses to the conscientious efforts of those people who pushed for PCC to become what it is today."

Alfredo Venturina was one of the first few staff who assisted in the ranch-type system of the carabao research project under the UNDP-FAO-assisted project.

Venturina became the farm supervisor at the Digdig ranch until he retired in December 1999. The ranch occupied more than 1,000 hectares of mountainous areas.

He said they only had cogon-roofed cottages and sawali walls then. They were tormented by calamities--typhoon and flood but they endured.

"We've gone through a lot of hardships back then, there came even a point Dr.

Cruz advised us to look for another work since the project was to end soon. Thus, we were grateful that the law that created PCC came into being and Dr. Cruz was appointed as the executive director," Mr. Venturina said. Institutionalization, he said, played a big role in helping the smallhold farmers own crossbreds and purebreds.

"When Dr. Cruz asked me how I can assess the contribution of PCC to the farmers, I said crossbreds are now in most of the barangays we went to, this is a proof that the program of PCC is succeeding," Mr. Venturina said.

DR. ZOSIMO BATTAD

"The PCC has evolved progressively. We can see lots of successes for those we started.

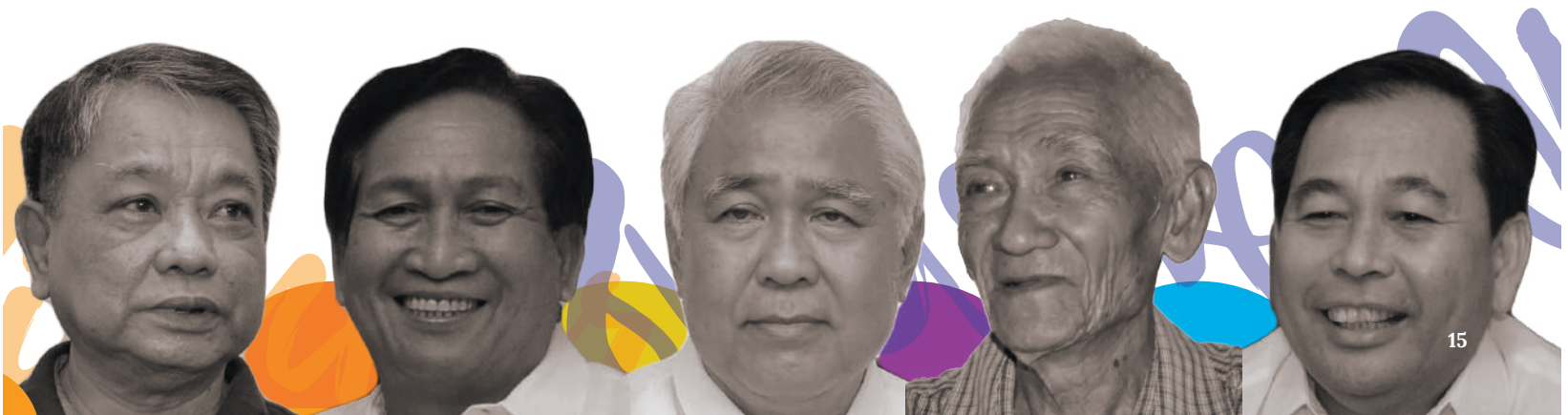
We have changed the image of carabaos from being just ordinary animals to dairy animals. Before we only had ordinary pastillas but now you can see well-packaged milk, cheese, yogurt and others. They are already world-class."

In 1992, Dr. Zosimo Battad was appointed as the first center director of the PCC at Mariano Marcos State University (MMSU). Later, he was also assigned as coordinator for research. He helped draft the 10-year R&D plans of PCC and the long-term research development strategic plan of PCC. In 1996, he was appointed deputy executive director.

In 1999, he led three technical teams in Bulgaria where subsequently, 6, 100 dairy buffaloes came and were quarantined at Central Mindanao University (CMU).

He also contributed a large part in the realization of the buffalo-based dairy enterprise by drafting the concept of the

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National Impact Zone (NIZ) which was developed in 1998.

The first 1,000 female buffaloes were distributed to 35 dairy cooperatives in Neva Ecia which is now called the National Impact Zone. Farmers were trained first before they received the animals.

DR. CARO SALCES

"As of the first generation of PCC workforce, way back PCRDC times, we saw how PCC has transformed into what it is now. The very thing that helped us come this far is dedication and we hope to instill this to the present and coming generations of PCC staff members."

Dr. Salces who worked as a research coordinator before heading the PCRDC project in USF, became the first director of PCC at USF in 1994.

Like in any other new institutions, he recalled that their beginning years were very crucial and tough.

Organizing the staff, sourcing out funds and keeping the station going to achieve its goals were most trying, he said.

Under his leadership, he helped turn the PCC at USF as the "Best Performing Center" in 2015 and "Outstanding Regional Center" in 2018. The center was issued ISO certification in 2012 and has thus served as a driving force towards the envisaged transformation of the Province of Bohol, as the "Dairy Capital of the Philippines".

It was also under his leadership that the center was successfully transformed into self-liquidating farm and enterprise operation with milk production in the area of coverage from zero to 1000 liters of milk yield per day with annual sales of Php36 million in four Dairy Box outlets.

Dr. Salces is currently designated as Officer-In-Charge, Executive Director of DA-PCC in concurrent capacity as Deputy Executive

Director for Administration and Finance.

DR. ARNEL DEL BARRIO

"It was a long journey. I guess all the challenges were there during that time, from lack of budget to inadequate facilities, and equipment. But we all worked hard and fully dedicated ourselves to the success of the program. As a result, look at how far we have gone,"

Dr. Arnel del Barrio started as a science research specialist under the PCRDC project in UPLB in 1983.

He recalled that during the PCRDC time, they proved to everyone that the native carabao can be foundation parent for the production of crossbred buffaloes which have potentials to become a good source of milk, meat and draft. They used 100 native heifers bought from the farmers. Artificial insemination was employed as the reproductive technique. The doses of semen used were derived from the breeds of Murrah buffalo and Nili Ravi.

Dr. Del Barrio became the center director of PCC at UPLB in 1997, and later became the agency's executive director from 2014 to 2020.

PROF. FRANKLIN RELLIN

"For me, it is the virtues of hard work, determination and sacrifice that I can share to the future leaders of PCC in order to succeed. When we started the project, we didn't have the mobility and resources to easily implement the program. We even had to walk miles after miles just to reach our clients. But with our determination, we can see how the communities are working with us today to achieve our goals,"

Prof. Rellin started also in the lower ranks of leaderships in the PCRDC project at the Cagayan State University (CSU). He was hired by PCAARD as a research specialist.

He said they started with 30 head of native carabaos. Through his initiatives, he was able to jump start the project by developing the 300 hectares allotted by the university for their operationalization.

It was Dr. Patricio Faylon, one of the program leaders of PCAARD who introduced the Artificial Insemination (AI) Program in the area.

"After several years of operation, we were able to produce 150 head of crossbreds thru artificial insemination," Prof. Rellin said. "The first crossbreds in the area were born in 1985," he added.

DR. ANNABELLE SARABIA

"PCC is always in my blood. It is part of my life. Most of the productive years in my life were spent with PCC. So I saw how the agency gradually grew. The development of the program was really tremendous and I hope that we can maintain this.

We owe it to the farmers because they are our primary clientele. With the kind of leadership that we had under Dr. Cruz, we can see that we have made tremendous impact in the livestock industry".

In June 1982, Dr. Annabelle Sarabia started as a science research specialist who assisted in several carabao-related researches under the PCRDC project in UPLB. She was one of the pioneer researchers during their time in which Dr. Momongan was the head and project leader of PCRDC in UPLB.



The said first phase of the project aimed to increase the population of the crossbreds. At the farm level, they were able to increase them from 20 to 25 heads.

Then they decided to extend the AI services to the villages at the level of the smallhold farmers. They identified the municipalities within Laguna which have numerous animals for their research works to observe the production level of the crossbreds.

The second phase focused on strengthening the Philippine carabao research center. Dr. Sarabia continued in carabao R&D under PCC.

She became the center director of PCC at West Visayas State University where she planned, organized and facilitated the implementation of the carabao development program (CDP) in Region 6 covering the Islands of Panay and Guimaras before eventually becoming the chief of the operations group under the PCC Office of the Executive Director.

DR. DANIEL AQUINO

"Success was seen through the outputs made from the PCRDC project funded by the United Nation Development Programme (UNDP) and Food Authority Organization (FAO). We were able to increase the growth rate of native carabaos up to 70% through the crossbreeding program and the same is true with the milk production. From only one to two liters, we were able to improve it up to four to six liters. These were the tangible outputs during our PCRDC times."

It was February 1982 when Dr. Daniel Aquino was employed as a research

assistant in PCRDC at CLSU. He is an animal science nutritionist by profession.

He was one of the first staff members at CLSU who worked under the carabao-based research and extension activities of the PCRDC project in 1981.

Aside from the extension activities that they conducted, they also did some research on establishing the nutritive values of native pastures in the ranch.

It was Dr. Ling, a consultant from Australia, who introduced the process of making Urea Molasses Mineral Block (UMMB) using the hot process method, he said. After series of experimentations and trials, he added, they were able to modify the formulation using cold process technique.

Growing, pregnant and lactating animals responded positively using the UMMB. It was during the PCRDC that the use of cold process in making UMMB was established.

DR. ROSALINA "BABY" LAPITAN

"Looking back, we, the workers, became the instruments to improve the awareness of the farmers on our intended objectives. We were able to showcase to them that carabao can be more than just a draft animal but also an important source of income. With that, I can proudly say that I am a part of making the Filipinos realize how important the carabaos are."

The early years of PCRDC were very tough for the team of Dr. Lapitan. They had to work even during weekends on a rotational basis to make sure there would be no problems in the center or in the farm.

Later, Dr. Lapitan together with Dr. Aquino were sent to India for a training on dairy production.

In 2014, Dr. Lapitan was conferred the rank of Scientist I under the Scientific Career System (SCS) by the Department of Science and Technology (DOST) and the Civil Service Commission (CSC). She initiated the production of high end sausages to improve farmer's income and remove the prejudice that carabao meat is inferior to beef.

Dr. Rosalina "Baby" Lapitan worked as a supervising science research specialist of PCC at UPLB until she retired from government service in 2015. She specializes in animal nutrition.

DR. PEREGRINO DURAN

"I, along with Boying and Dr. Mamuad, were overjoyed every time a calf was born as a result of us administering AI; I consider myself extremely fortunate to have been a part of PCC's transformative years and the trailblazing role the agency has played in the lives of farmers over the years."

Dr. Peregrino Duran first joined the Philippine Carabao Research and Development Center (PCRDC) in 1981 as a research assistant in the field of physiology. He has also engaged himself in the reproduction and breeding of buffaloes and led the PCC's Dairy Herd Improvement and Enterprise Development Program.

He was one of the pioneering artificial insemination technicians who extended AI services to the carabaos of smallholder farmers in Nueva Ecija.

Dr. Duran received the PSAS "Animal Science Extension Award" during his time at the PCRDC in recognition of his achievements as an exemplary extensionist.

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In 1988, Dr. Duran served as a farm supervisor in Digdig, Carranglan while Dr. Mamuad was on study leave. His versatility was also demonstrated when he was assigned to various functions such as GIP coordinator, Gene Pool coordinator, research and development coordinator, and acting center director of DA-PCC at CLSU among others.

Dr. Duran rose to the ranks of Research Assistant, Science Research Specialist, and Supervising Science Research Specialist. He was also conferred a rank of Career Scientist I by SCS in 2013.

Currently, Dr. Duran works as a R&D coordinator and designated accountant of the DA-PCC at CLSU.

DR. EDWIN ATABAY

"I should stay here at PCC. I have to help improve the low efficiency of AI. And I am happy now that I am seeing the positive changes. Of course, this is not possible without the collective efforts of the team."

If there are individuals who have witnessed the transition of PCC, Dr. Edwin Atabay is one of them. After completing his degree in veterinary medicine, he was absorbed by PCRDC at CLSU in 1985.

"Dr. Campos told me to serve in the ranch (referring to Digdig, Caranglan) because you have dark skin, and all dark-skinned people are hardworking people. So, are you willing to go to Digdig?" Dr. Atabay spoke in a sentimental voice.

He utilized his time at the ranch expanding his work in the areas of animal and management production. He also underwent training on artificial insemination (AI) and advanced his skills and knowledge on semen collection. His training outside the country has

escalated his career and provided additional development in his work in in vitro fertilization (IVF), embryo transfer, and cloning.

His training and work in the field made him realize that there was more he could offer to the agency and the community it serves.

Asked if he has something to advise to PCC's younger generation, this was his response.

"Be humble, be focus in the tasks, be dedicated, and always aim for a quality service."

True to this, he became the Center Director of PCC at CLSU in 2011 and later conferred as Scientist I in 2014. He was again conferred Scientist II rank in 2021.

DR. EUFROCINA ATABAY

"My past was at UPLB, my present is at NHQGP, and my future may be at home, but by then, PCC spirit will always be in me... My prayer for PCC, may the agency be able to maintain its reputation as a renowned research institution. I am thankful and proud that I am a PCCean."

Dr. Atabay has spent 35 years at PCC. She joined the PCRDC at UPLB in 1986, shortly after earning her degree in veterinary medicine at CLSU. Her first work assignment was the processing of fresh and frozen buffalo semen as well as AI.

"I had a good start in research because I have seniors who were excellent in the field. They had a positive impact on my career. I was taught to value effort and critical thought, and high quality output."

Dr. Atabay's PCC represents her past, present, and future, illustrating how

she planned the course of her career in the agency from the very beginning. She first met Dr. Edwin Atabay, her husband, while she was having her study in Japan. She viewed their relationship as a match made in heaven because their professional careers worked well together. They had a love for reproduction and research, which is why they are frequently referred to as a "power couple."

She said that she and her husband are confident to leave PCC anytime because they have prepared the younger generation of RPS to take over their role.

At present, Dr. Atabay is Scientist II in concurrent to her designation as head of the Reproduction and Physiology Section of the Research and Development Division. She and her husband, Dr. Atabay, brought pride and honor to PCC and continually excelling in their own fields.

DR. DANILDA DURAN

"We are working as a family here at PCC. We have a shared vision of developing the carabao as a multipurpose animal to rescue it from being extinct especially now with the advent of farm mechanization. I always keep in my mind that we are not working for the people of PCC, but for the people that PCC serves."

During the Phase 2 of the PCRDC project, Dr. Danilda "Dang" Duran started as a science research aide at the nutrition laboratory and as an extension coordinator of the carabao upgrading program (CUP) particularly the artificial insemination service in 1987.

She assisted in several PCRDC-related activities at the village-level farm in Nueva Ecija through coordination and orientation of the farmers about the CUP.



She was also lauded by the management for her good record keeping skills by crafting a columnar pad to efficiently monitor the reproductive physiology data of animals in particular.

After the Phase 2 of the project, the PCRDC team conducted an impact assessment of CUP in collaboration with CLSU, as to which Dr. Dang served as the head of the enumerators for the research.

The impact assessment, which showed improvement on the general well-being of crossbred carabao owners, was later published in a book and was used as a supporting document for the institutionalization of PCC. Since 1994, Dr. Dang has been engaged in the livestock biotechnology research and development program of PCC. She was the project leader of the DA-BAR-funded research titled "Production of Genetically Superior Water Buffaloes through the Use of Reproductive Biotechnologies" such as In Vitro Fertilization, which led to the birth of "Glory", the first embryo-transfer calf produced from IVF-derived and cryopreserved embryo from India in 2002.

To date, Dr. Dang is a senior agriculturist under the Reproduction and Physiology Section of the DA-PCC. She was also recently upgraded to Career Scientist II by SCS.

HERNANDO "BOYING" VENTURINA

"I feel very grateful that I was able to be a part of the early years of the PCRDC project. There were innumerable problems encountered. But today, I realize that we are all here for a purpose- that is to serve farmers thru training and producing more efficient AI technicians in the country."

Hernando "Boying" Venturina served as one of the pioneering mentors of the village-based artificial insemination technician program.

He was the genetic improvement program coordinator of the DA-PCC at CLSU until he retired from three decades of government service in 2022.

PROF. ROSENIO ANACLETO

"Everytime I look back, I feel nothing but fulfillment and pride—from the services to the people who showed team play and commitment. Today, I feel more proud looking at how PCC at CMU and the whole of PCC has transformed into a very important agency in the Philippine government."

Anacleto became the center director at PCC at CMU. With only few staff and meager finances to begin with, he and his team managed to hurdle the problems and challenges they met along the way.

To sustain the feeding of animals, he also took the initiative of tilling the land while his workers, including the female staff, planted the pasture area with needed forage. After four months, they were able to let the animals graze in the pasture area.

Anacleto initiated milk collection from his herd. He pioneered milk collection in the Mindanao cluster of PCC's regional centers.

The number in the herd and milk collection doubled. To cope with the increased milk production, he decided to use the waiting shed along the highway as a temporary outlet. They were able to generate an income of Php400,000 a month which they remitted to the PCC head office.

The small initiative of Anacleto has gone a long way as the PCC at CMU under its new leadership continues to generate income as it attracts more patrons in the Mindanao area.

DR. ANTONIO OBSIOMA

"My involvement with PCC helped develop my leadership abilities. It helped me connect with other people, be it a farmer, a subordinate, or superior. It was with PCC where I found my passion for working with farmers who greatly depend on the carabao as a source of better livelihood."

Dr. Antonio R. Obsioma served as one of the science research specialists of the PCRDC project in UPLB. He was tasked to supervise the PCRDC farm operations and research facilities. From 1993 to 1996, he became the head of the Extension Division of PCC at UPLB.

He later became the first chief of the Program Monitoring and Evaluation Division of PCC, covering the whole operations of its 13 regional centers.

DR. PERLA FLORENDO

Specializes in animal nutrition. Supervising Science Research Specialist at PCC at CLSU

NOMER GARCIA

Specializes in feeding management, pasture and forage.

EMMA VENTURINA

Specializes in semen processing

DR. FLOCERFIDA AQUINO

Specializes in Physiology

DR. FE VENTURINA

Specializes in animal health, carabao's draft power.



GOT QUESTIONS OR SUGGESTIONS? CONTACT US



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