



Grains 2019
Central Luzon State University
ANNUAL REPORT

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Editor-in-Chief: **MS. MARIA ADRIELLE S. ESTIGOY**

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Research, Extension and Training

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Academic Affairs

DR. PABLO J. RAFAEL, JR.
Business Affairs

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MR. JOMAR S. GARABILES

Graphic Artists: **MR. HAROLD D. DELA ROSA**

Photographers: **MR. GERARDO G. GANTIOQUE**
MR. DARWIN G. DELA CRUZ

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Production: **DR. JOEL M. TORRES**
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Circulation: **MS. JULIETA P. BURNOT**
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Editorial Consultants: **DR. EDGAR A. ORDEN**
DR. RENATO G. REYES
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THE COVER:

A key signifies power - it gives the right to choose whether to close and open 'doors'.

This year's Annual Report opted for the 'key' as a cover page since in Central Luzon State University, the key is being passed on during ceremonial transfer of leadership indicating the end of one's presidential term and the start of a new administration. This representation was adopted since it marks the opening of a new leadership in late 2019 - a transitional year for the University. The idea of welcoming new leadership involves going through transformation which opens more opportunities for the University to continue to excel in academic performance and in research and development initiatives.

Moreover, it also features the resembling colors of the earth as a humble reminder to everyone especially the university officials, faculty, staff and students to stay grounded despite achieving and contributing significantly for the community and the country.

With this in hand, the collective efforts of the CLSU's major thrusts – Academic Affairs; Research, Extension and Training; Business Affairs; and General Administration and Support Services, will continue to unlock potentials and unleash excellence in all its future endeavours.



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PHILOSOPHY

The ultimate measure of the effectiveness of Central Luzon State University as an institution of higher learning is its contribution to and impact on the educational, economic, social, cultural, political and moral well-being and environmental consciousness of the peoples it serves.



VISION

CLSU as a world-class National Research University for science and technology in agriculture and allied fields.



MISSION

CLSU shall develop globally competitive, work-ready, socially-responsible and empowered human resources who value life-long learning; and to generate, disseminate, and apply knowledge and technologies for poverty alleviation, environmental protection, and sustainable development.

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Innovation

BAYANIHAN 55

Bayan ni Juan

Paskong CLSU 2019





9,660
students enrolled
during 2nd Sem 2018 - 2019

10,366
students enrolled
during 1st Sem 2019 - 2020



2,897
Graduates



3
Board Topnotchers

CLSU at a *Glance*



4.23M
Income Generated



155M
Funds Generated
for R&D



299
Forged Linkages



6,488
People Trained



21,164
Clients provided with
Technical Advisory and
Consultancy Services



33
Established
Techno-Demo



191
Completed and
Ongoing Researches



79
Developed
Knowledge Products



29
Assisted IPR
Applications



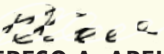
Transfer of key of responsibility

Messages

The long and winding but worth-sharing academic journey of our beloved Central Luzon State University can be traced back to 1907. For over 112 years, we faced a lot of challenges and adversities, but all those did not deter us from achieving what we have and where we are at today. Indeed, we owe our hard-earned excellence to our predecessors' commitment, toil, and hard work driven by a common vision of taking CLSU to greater heights. As we work harder in our continued pursuit of excellence, may we remain true to our values, preserve our academic integrity, and keep our feet grounded without ever forgetting to look back to our humble beginnings.

It is with great honor and pleasure to be of service to Central Luzon State University for four remarkable years. I extend my appreciation and gratitude to all our faculty members, staff and students for your enormous support and noteworthy contributions to this administration. The collective work, persistence and resilience of our workforce in fulfilling our individual duties and responsibilities greatly contributed to the overall success of this institution.


As we welcome the dawn of new leadership, may we all continue to give our unwavering trust and utmost support to our incoming leaders who are one with us in bringing the institution's vision to fruition. Together, let us do our best to take part in this continued mission, that is promoting and making positive change for the future generation.


TERESO A. ABELLA
President, CLSU
2015-2019

It is humbling and heartwarming to accept the support, confidence and trust granted to me by the CLSU community to become the next president who will lead and carry on the culture of excellence that our respected past administrators have started and sustained. With great pride and honor, I wholeheartedly take the responsibility of nurturing this great institution as a frontier university and a leading partner for society's inclusive and sustainable growth.

This vision, combined with the collective efforts of the academic and non-academic sectors, and the flourishing collaboration with our partner institutions and stakeholders, can be achieved through the development of curricula that is responsive to industry's needs, continued production and development of cutting-edge research and development projects, improvement of facilities for the students, faculty, and staff to enjoy more favorable and conducive environment to increase productivity, enhancement of international engagements, expansion of innovation corridors and support to entrepreneurial activities, strengthening the human capital, and ensuring sustained funding support. These goals adhere to the university's existing programs and initiatives that we all aim to continue and realize in the coming years.

I am fully committed to be of service to the CLSU Community especially to our dedicated faculty members, staff, students, and other clientele we cater. Rest assured that I am with you in giving importance to our shared successes, experiences, values, and roots. Let us all work hand-in-hand to accomplish new goals for our beloved Central Luzon State University.

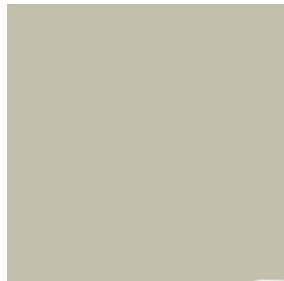

EDGAR A. ORDEN
President, CLSU
2019-present





Leadership in
**AGRICULTURAL SCIENCE
& TECHNOLOGY**

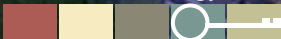
In developing countries like the Philippines, implementation of the advancement in S&T will greatly impact the agricultural industry. As such, the Central Luzon State University (CLSU) has contributed in the realization of this since for the past decades it continues to remain as one of the lead institutions in agricultural S&T.



CLSU as Country's First "Green University"

CLSU is renowned as the country's first "green university" through the value adding service provided by First Gen Energy Solutions, Inc. (FGES). The rooftop solar power is currently installed in three buildings inside the campus: the Central Luzon ICT Research, Development and Training Center (CLIRDEC); the

FPJ Communication Hall of the Department of Development Communication; and the College of Agriculture. The project reaffirms the university's mission to apply knowledge and technologies for environmental protection and sustainable development.



CLSU as Lead Center for Drug Discovery Research

The Philippine Council for Health Research and Development (PCHRD) named Central Luzon State University as one of the leading centers for drug discovery in mushroom. It is the only Tuklas Lunas Development Center (TLDC) focusing on the use of mushrooms in developing medicinal solutions on the countries' pressing medical needs.





BS in Meteorology: Newest Undergraduate Program

To fill the need for an intense atmospheric science and education, CLSU started to offer the course Bachelor of Science in Meteorology during the 1st Semester of SY 2019-2020 the course Bachelor of Science in Meteorology. This is in response

to the challenge set by the Commission on Higher Education (CHED) and the Department of Science and Technology (DOST) to produce meteorological scientists and to strengthen the capability building of weather forecasting and research in the country.





Embracing the Digital Platform for Teaching and Learning

To create a platform that intends to cater both teachers and learners a more convenient way to learn, teach and access modules, the University developed and launched its first virtual learning environment platform dubbed as Central Luzon State University Digital and Distance Learning Environment (CUDLE).

CUDLE used the MOODLE framework, which the developer

highly recommends as it offers the most complete-based learning management system.

A series of trainings and workshops were done participated by selected representatives from the five colleges - College of Education, College of Arts and Sciences, College of Engineering, College of Business Administration and Accountancy, and College of Veterinary Science and

Medicine, and was facilitated by the CLSU Department of Information Technology (IT) and the Distance, Open, and Transnational University (DOT-Uni).

The said platform can now be accessed online through cudle.dotclsu.edu.ph where the user can view the different courses and subjects available.

Shared Service Facility Project with DTI

The University, through the Department of Food Science and Technology – College of Home Science and Industry, forged a collaboration with the Department of Trade and Industry – Region III (DTI-Region III) for the implementation of the Shared Service Facility (SSF) for Food Processing Project.

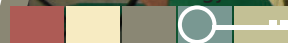
The establishment of SSF for food processing is instrumental in promoting the country's innovation system, facilitating

inter-firm and academe-industry collaboration in high technology activities, and encourage innovation and adoption of new technologies, and streamlining the industry and services sector through product optimization.

The SSF project encourages the graduation of cooperators, especially micro, small, and medium enterprises (MSMEs) to the next level where they could tap a better and wider market share and be integrated

into the global supply chain. A set of machinery, equipment, tools, systems, accessories, and other auxiliary items were provided by the DTI-Region III for the common use of qualified beneficiaries.

Also, set of modern facilities such as vacuum fryer, freeze dryer, spray dryer, and vacuum packaging machine with inert gas flushing feature will be provided by the DTI-Region III.



ITIK for LIFE

CLSU leads the implementation of the program dubbed as “Philippine Duck Industry-Focused Technologies, Innovations and Knowledge for Livelihood, Income and Food Supply Enhancement (ITIK for LIFE) Program for Sustainability” funded by the Department of Science and Technology (DOST) and monitored by the Philippine Council for Agriculture, Aquatic and Natural Resources Research and Development (PCAARRD).

The project, now on its third year, is currently working on the

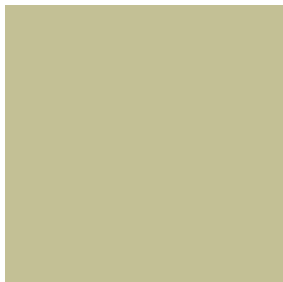
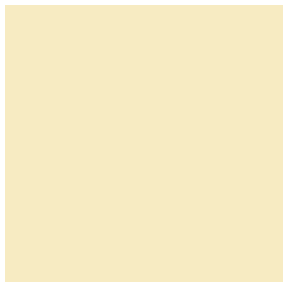
commercialization of Itik-Pinas (IP) lines, a genetically superior line of “Pateros” ducks. The program ensures the availability of high-quality IP ducklings in the market as it also utilizes the newly-developed Philippine native duck breed in creating livelihood opportunities for duck egg producers, processors and distributors. Moreover, it ensures food quality and safety of balut and other duck egg products by developing processing and packaging methods.





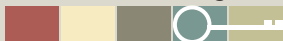
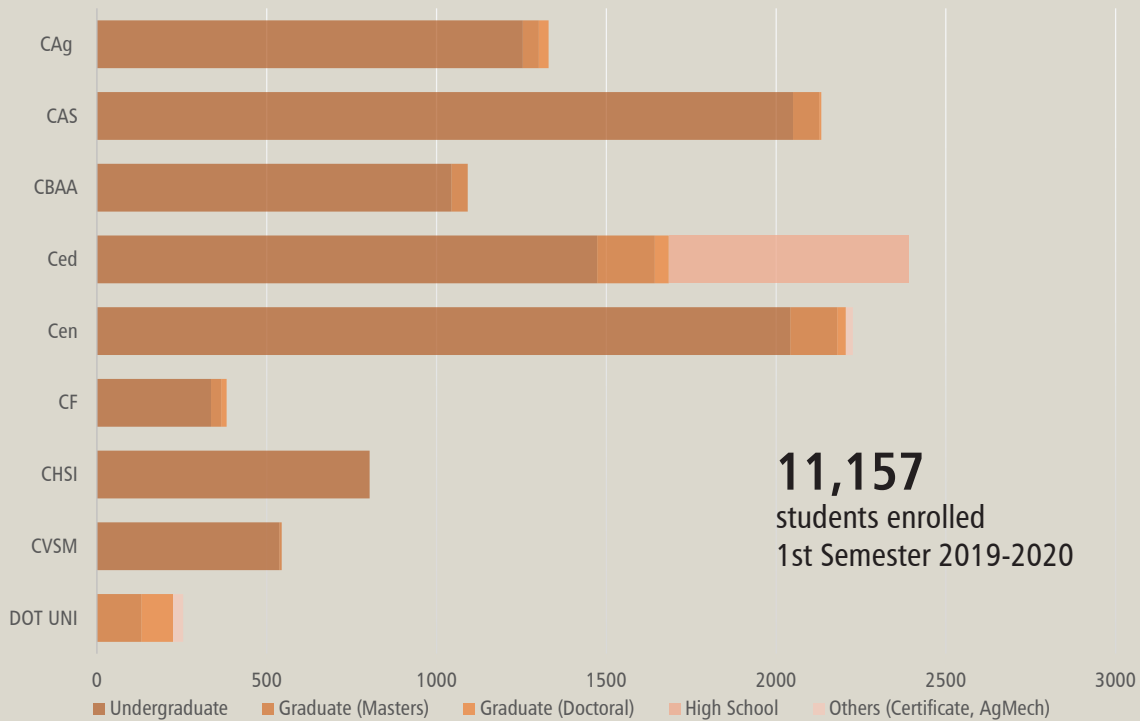
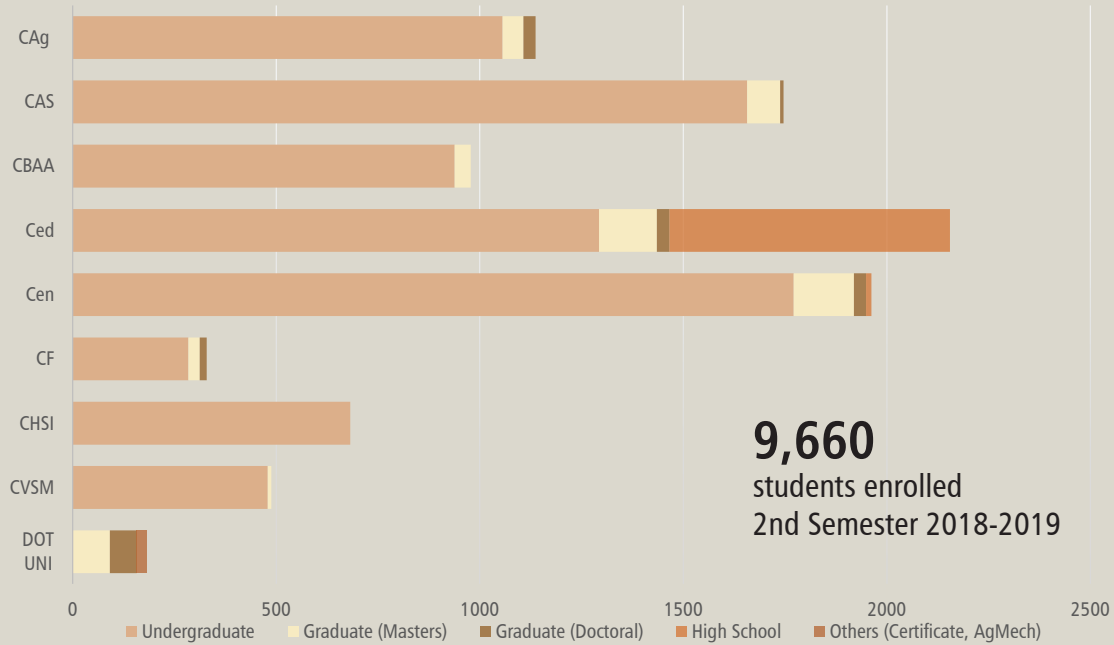
Excellence in **LEARNING**

In fulfillment of the University's mission to develop globally competitive, work-ready, socially-responsible and empowered human resources, it continues to support its students and faculty to soar higher in academic excellence. CLSU prides itself in providing academic programs of great rigor, preparing its students to be world-class professionally in the career paths that they will be taking.



Enrolment

In terms of enrolment rate per college including the vocational and secondary level, a total of 9,660 students were enrolled for the second semester, S.Y. 2018-2019 and 11,157 for the first semester, S.Y. 2019-2020.



Graduates

The University yielded a total of 2,897 graduates from the undergraduate and graduate levels during the 28th Midyear and 67th Annual Commencement Exercises.

535

28th Midyear Commencement Exercises

2,362

67th Annual Commencement Exercises



Performance in Licensure Examination

In 2019, the performance of CLSU graduates in the various licensure examinations administered was generally higher than the national passing percentage. Notably, three (3) graduates were able to take the top 10 posts for the Agriculturist Licensure Examination and Agriculture and Biosystems Engineer Licensure Examination.



Barnachea, Marc Louie F.
Top 6 (88.33%)
 Agriculturist Licensure Exam



Pangilinan, Paul John M.
Top 1 (89.67%)
 Agriculturist Licensure Exam












Nate, John Vincent A.
Top 8 (80.00%)
 Agriculture & Biosystems Engineer Licensure Exam

Performance of CLSU Graduates in Licensure Examinations



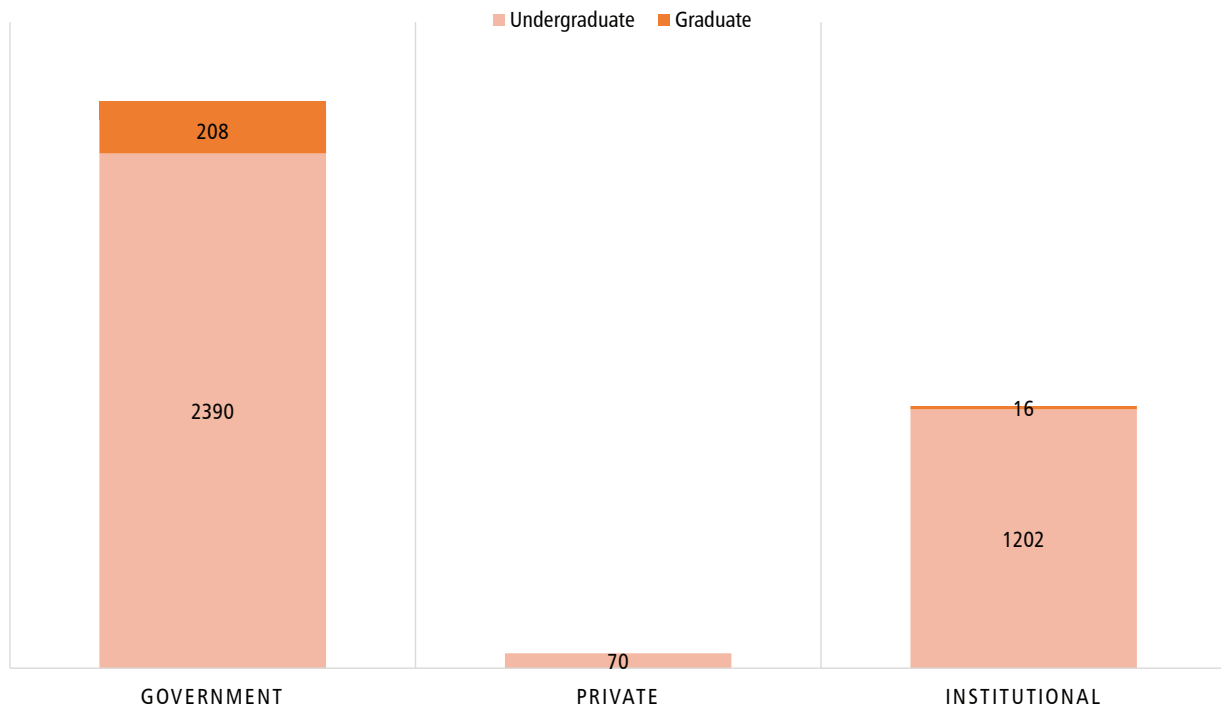
Licensure Examination	Date of Examination	Institutional Passing	National Passing
Professional Teachers			
Elementary	March 2019	52.29%	27.29%
Secondary		40.08%	25.95%
Elementary	September 2019	57.22%	31.34%
Secondary		63.27%	39.69%
Civil Engineers	May 2019	49.67%	38.25%
	August 2019	20.00%	19.49%

Licensure Examination	Date of Examination	Institutional Passing	National Passing	
	Certified Public Accountants	May 2019	32.00%	16.47%
		October 2019	29.11%	14.32%
	Agriculturists	November 2019	70.06%	41.05%
	Guidance Counselors	August 2019	66.67%	62.45%
	Agricultural Engineers	October 2019	45.45%	37.70%
	Veterinarians	August 2019	66.00%	48.86%
	Psychometricians	October 2019	50.00%	63.73%
	Chemists	October 2019	66.67%	42.12%
	Chemical Technician	October 2019	67.57%	89.09%
	Fisheries Technologists	October 2019	51.85%	34.79%



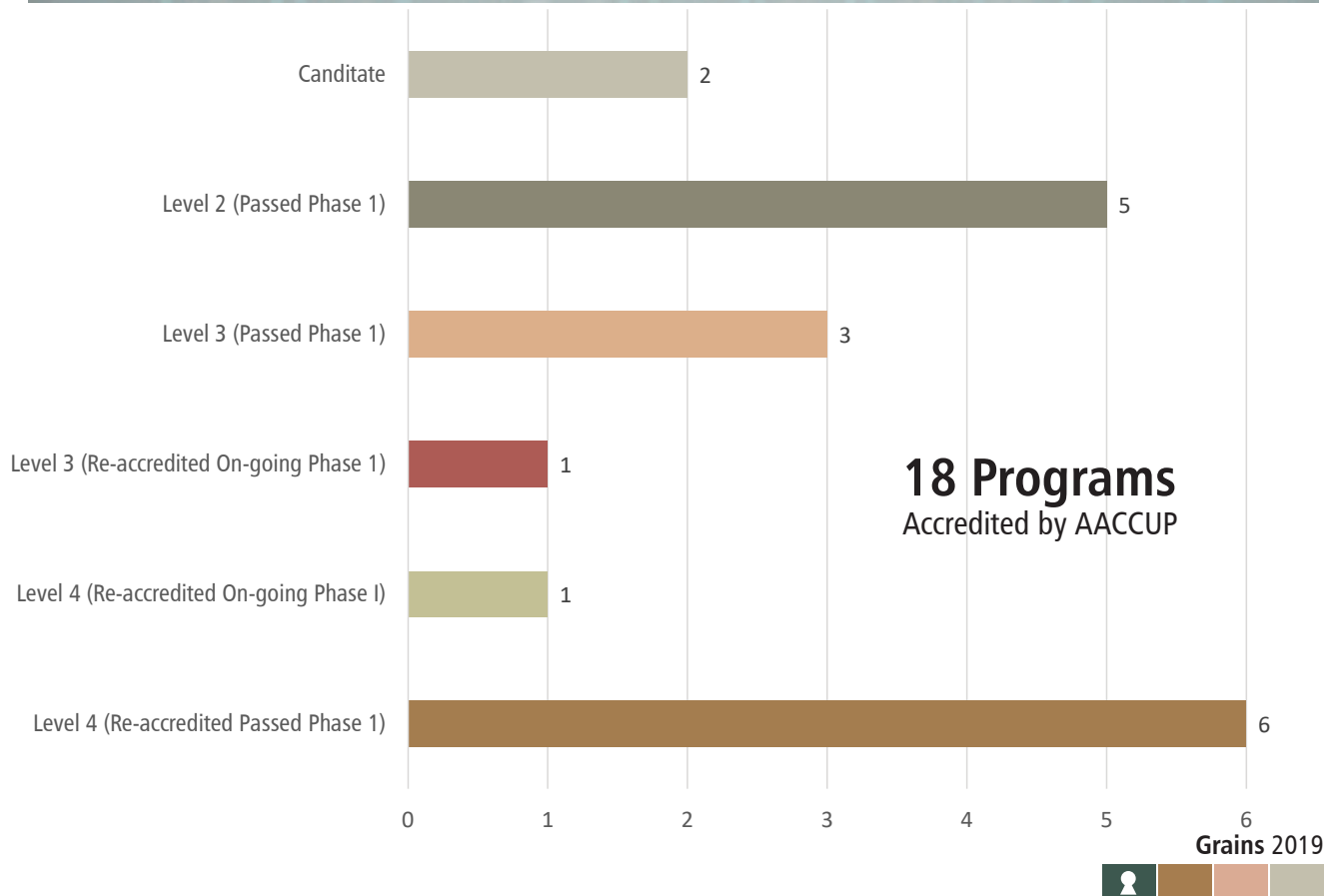
Scholars

The University is still a recipient of the Tertiary Education System (TES) and Unified Student Financial Assistance System for Tertiary Education (UniFAST) granted by the Commission on Higher Education (CHED). Aside from these, students also continuously receive scholarships from private institutions and individuals as well as from the university.



Program Accreditation

The Accrediting Agency of Chartered Colleges and Universities of the Philippines (AACUP) accredited 18 programs of the University. Six (6) programs retained the highest level of accreditation, one (1) is still undergoing re-accreditation as Level 4 Phase I, three (3) passed Level 3 Phase I while, five (5) passed for Level 2 Phase I, and two (2) were candidates for accreditation.





COURSE/PROGRAM	ACCREDITATION STATUS	DATE OF VALIDITY OF ACCREDITATION
MS & PhD in Agriculture	The program is Level III. Passed the Phase 1 of two (2) Phases of Evaluation in the 4 th Survey Visit. Must conduct Phase II.	September 16, 2019 – September 15, 2020
MS in Development Communication	The program is Level III. Passed the Phase 1 of two (2) Phases of Evaluation in the 4 th Survey Visit. Must conduct Phase II.	September 16, 2019 – September 15, 2020
MS & PhD in Rural Development	The program is Level III. Passed the Phase 1 of two (2) Phases of Evaluation in the 4 th Survey Visit. Must conduct Phase II.	September 16, 2019 – September 15, 2020
AB in Development Communication	The program level is II. Passed the Phase I of two Phases of Evaluation in the 3 rd Survey Visit. Conduct Phase II.	November 1, 2019 – October 31, 2020
BS in Statistics	The program level is II. Passed the Phase I of two Phases of Evaluation in the 3 rd Survey Visit. Conduct Phase II.	November 1, 2019 – October 31, 2020
Master in Chemistry/Chemistry Education	The program level is II. Passed the Phase I of two Phases of Evaluation in the 3 rd Survey Visit. Conduct Phase II.	November 1, 2019 – October 31, 2020
Master in Environmental Management	The program level is II. Passed the Phase I of two Phases of Evaluation in the 3 rd Survey Visit. Conduct Phase II.	November 1, 2019 – October 31, 2020
MS in Biology	The program level is II. Passed the Phase I of two Phases of Evaluation in the 3 rd Survey Visit. Conduct Phase II.	November 1, 2019 – October 31, 2020
BS Environmental Sciences	Candidate	November 1, 2019 – October 31, 2021
BS in Mathematics	Candidate	November 1, 2019 – October 31, 2021



COURSE/PROGRAM	ACCREDITATION STATUS	DATE OF VALIDITY OF ACCREDITATION
BS in Agriculture	Level IV Re-accredited. Passed the Phase I of two (2) Phases of Evaluation of the 4 th survey (2 nd cycle). Conduct Phase II.	December 1, 2019-November 30, 2020
BS in Agribusiness	Level IV Re-accredited. Assessment on going in Phase I of the 4 th Survey Visit (2 nd cycle). Revisit Area VI.	December 2019- November 2020
BS in Agricultural Engineering	Level IV Re-accredited. Passed the Phase I of two (2) Phases of Evaluation of the 4 th survey (2 nd cycle). Conduct Phase II.	December 1, 2019-November 30, 2020
BS in Business Administration(Majors: Economics, Marketing and Management)	Level IV Re-accredited. Passed the Phase I of two (2) Phases of Evaluation of the 4 th survey (2 nd cycle). Conduct Phase II.	December 1, 2019-November 30, 2020
BS in Fisheries	Level IV Re-accredited. Passed the Phase I of two (2) Phases of Evaluation of the 4 th survey (2 nd cycle). Conduct Phase II.	December 1, 2019-November 30, 2020
Doctor of Veterinary Medicine	Level IV Re-accredited. Passed the Phase I of two (2) Phases of Evaluation of the 4 th survey (2 nd cycle). Conduct Phase II.	December 1, 2019-November 30, 2020
BS in Chemistry	Level IV Re-accredited. Passed the Phase I of two (2) Phases of Evaluation of the 4 th survey (2 nd cycle). Conduct Phase II.	December 1, 2019-November 30, 2020
BS Civil Engineering	Level III Re-accredited. Assessment on-going in Phase I of the 4 th survey. Revisit Areas III, V & VI.	December 1, 2019 – November 30, 2020

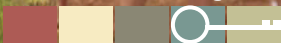
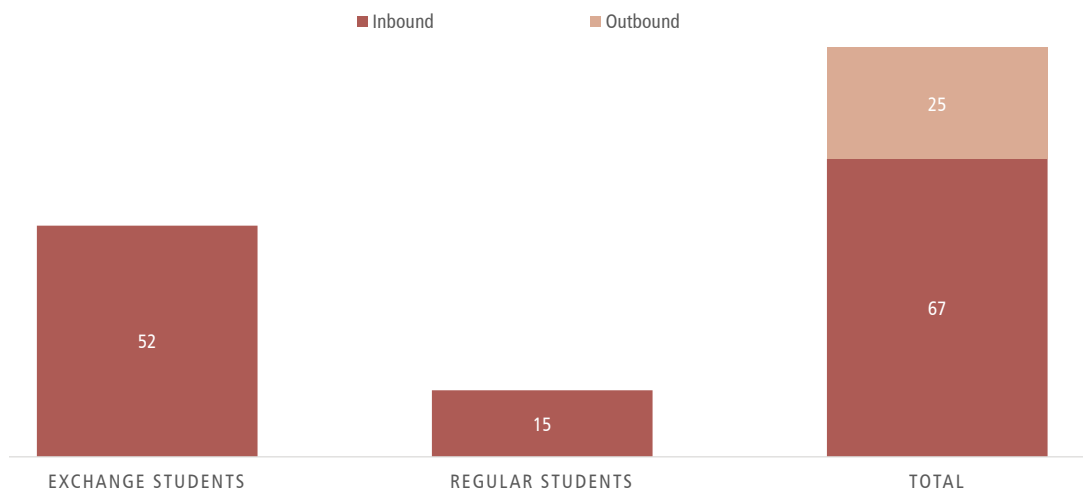


Internationalization

Outbound and Inbound

In 2019, there were 67 students coming from countries other than the Philippines. Most of them (52) were exchange students while the rest were regular students. Through the International Affairs Program of the University, 25 students

were able to go abroad such as Thailand, Japan, China, and Indonesia for an exchange student or internship program. Most of them were under the SEA Teacher Project.



Participation in the International Arena and Conduct of International Activities

Master of Science in Food Security and Climate Change Participation

A total of four (4) students from CLSU attended the Summer School 2019 sponsored by Erasmus+ through the Southeast Asian Regional Center for Graduate Study and Research in Agriculture (SEARCA) at the University of the Philippines - Los Baños and Camarines

Sur on July 15-21, 2019. The students were enrolled under Master of Science in Food Security and Climate Change (MSFSCC) focusing on assessing the sustainability and resiliency of food systems in vulnerable areas. The six-day summer school covers two research areas:

(1) assessing the farm level sustainability and resilience of expanding area of cacao as a component of farming systems in Camarines Sur, and (2) assessing the dynamics of innovation and transformation of the rice-based farming systems and its future under the Rice Liberalization Law.





SEA Teacher Project

The University through the College of Education welcomed international exchange students and teachers from Japan, Thailand, and Indonesia who served as participants of the "Pre-Service Student Teacher Exchange in Southeast Asia (SEA Teacher Project)". Likewise, the college send-off six (6) faculty to University

of Tsukuba, Khon Kaen University, and Universitas Pendidikan Indonesia. The project, under the Southeast Asian Ministers of Education Organization (SEAMEO), aims to provide opportunity for student-teachers from different universities to have teaching experiences in Southeast Asian countries.



AIMS IRO's Seminar-Workshop

CLSU in coordination with CHED hosted the ASEAN International Mobility for Students (AIMS) Seminar-workshop for International Relations Officers (IRO) held at the CLSU, DHM's Event Center on July 24-26, 2019. It was participated by 12 universities who are members of AIMS-Philippines. Resource speakers from Malaysia, Thailand and Philippines were invited to share their best practices in the implementation of the AIMS program.

2019 Cross Cultural Festival

CLSU Foreign Students participated in the 2019 Cross Cultural Festival held on April 10, 2019. The event features the diverse culture of the participating students through various forms of performances. It ended with a festive dinner wherein the foreign students took the lead in the food preparation. The activity's goal is to have sharing and promotion of nation's fine dishes.





USSC Benchmarks in Japan Universities

The CLSU - University Supreme Student Council (USSC) officers together with Dr. Renato G. Reyes, Vice President for Academic Affairs (VPAA), Engr. Adorable P. Pineda, USSC Adviser and Prof. Ernesto T. Jimenez Jr., Student Affairs Office Dean visited the three prestigious schools in Japan namely University of Tsukuba (UT), Tamagawa University of Agriculture, and University of Tokyo for a benchmarking and meeting held on October 30 to November 3, 2019.

During the said meeting, Mr. Fuma Sebe, UT Student

President, presented their council's support and services to the students. Likewise, Mr. Angel Paulo A. Mendoza, CLSU-USSC Chair, presented their council's program of activities and student support services of the Council to students. It was also agreed that CLSU and UT will formulate a joint activity for students of both universities. After the meeting, CLSU delegates also had an opportunity to explore the UT Museum, Library, Dormitories, and other facilities concerning welfare of the students.

CLSU Participates in ANTENA Project

CLSU is among the 10 Philippine universities selected by the Commission on Higher Education (CHED) to take part in the Internationalization of Higher Education at the Philippines Network or the ANTENA Project.

The ANTENA Project, which started in January 2019 and ends on January 2022, aims to develop and heighten quality education of universities in the Philippines through internationalization efforts. Since the internationalization efforts in higher education had just started, the project will enable the country to accelerate its international

networking and align its curricular programs with international standards. The University of Alicante, Spain, together with the University of Montpellier, France and the European Foundation for Management Development coordinated this event and is funded by the Erasmus+ and the Program of the European Commission.

In June 2019, CLSU together with CHED and Ateneo de Manila University co-hosted the 2nd ANTENA Project Survey Regional Meeting and the capacity building on internationalization. While in October of the same

year, Dr. Renato G. Reyes and Dr. Evaristo A. Abella represented the university in the 1st Observation Session of ANTENA in the University of Montpellier, France.

Other universities joining the project include Ateneo de Manila University, De La Salle University, University of the Philippines System, Saint Louis University, Polytechnic University of the Philippines, University of San Carlos, Xavier University, Benguet State University, and Mindanao State University – Iligan Institute of Technology.





International Seminars and Meetings Attended

To boost the University's international relations initiatives, some faculty and staff from the International Affairs Office (IAO), headed by Dr. Renato G. Reyes attended several international seminars and meetings listed as follows:

1. Kick off Meeting of the ANTENA Erasmus + Project - Alicante, Spain, February 24 – March 3
2. Benchmarking with Universitas Negeri in Jakarta, Indonesia for possible collaboration and partnership, March 24.
3. International Workshop for International Office (IWIO) 2019 – Ministry of Education, Malaysia, October 7 – 8
4. 10th Year Anniversary and 13th Review Meeting of the ASEAN International Mobility for Students (AIMS) – Bangkok, Thailand, November 11 – 13

Institutional Membership to International Organizations



ASEAN International Mobility for Students (AIMS) Program



University Mobility in Asia Pacific (UMAP)



ASEAN University Network Quality Assurance



Quacquarelli Symonds (QS) World University Rankings



Association of Universities of Asia and the Pacific (AUAP)





Transformative and Enabling
ENVIRONMENT

To fully harness the student's innovative mind and energy as well as faculty and staff's effectiveness and efficiency for an inclusive academic and research transformation in the University, the need to create a transformative and enabling environment is highly imperative.



Facilities Development and Improvement

As part of the University's commitment to provide its stakeholders a world-class facilities, several infrastructure development projects with a total budget of Php102,992,576.47 commenced in 2019. These include the rehabilitation of Fish Museum, construction of

a broiler house with climate-controlled system, repair of the RET Complex flooring, construction of the College of Engineering Workshop Extension, restoration of the Reimer's Hall, improvement of the Academic Affairs Amphitheatre, and the second

phase of the construction of Teachers' Hall. The University also spent a total of Php38,091,240 for the classroom and office equipment, and added one vehicle to its existing fleet.

FACILITIES DEVELOPMENT AND EQUIPMENT	BUDGET REQUIREMENT (Php)
Infrastructure Development	102,992,576.47
Laboratory Equipment	29,459,339.00
Vehicles	P1,295,500.00
Classroom/Office Equipment	P7,336,401.00
TOTAL	Php141,083,816.47



Transformative & Enabling Environment





Living Fish Museum

Renovation of the Living Fish Museum:

Php1,575,933.46 (July 26,2018 - July 19,2019)



Radyo CLSU

Construction of radio tower and purchase of new radio equipment amounting to Php 2.2 Million. The radio station (DWFA 107.3 FM) now operates in a 1,000 watts transmitter with 40-50km reach.

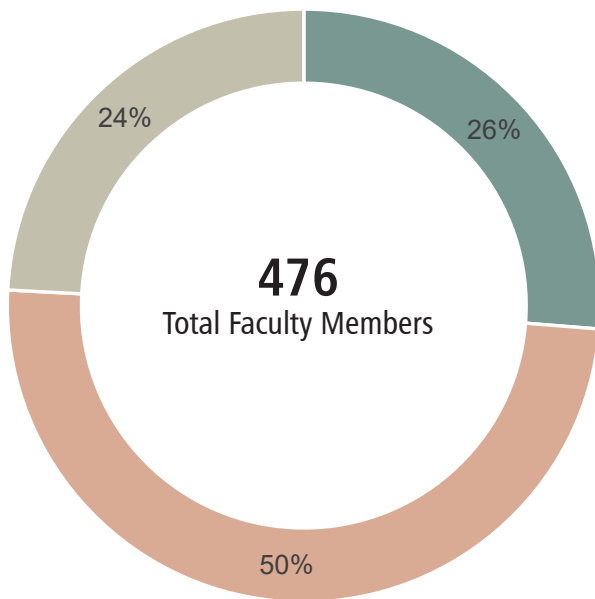


In 2019, several infrastructure development projects amounting to Php30,010,940.05 were completed. This includes the replacement of roofing and repainting of Men's Dormitory 8, construction of

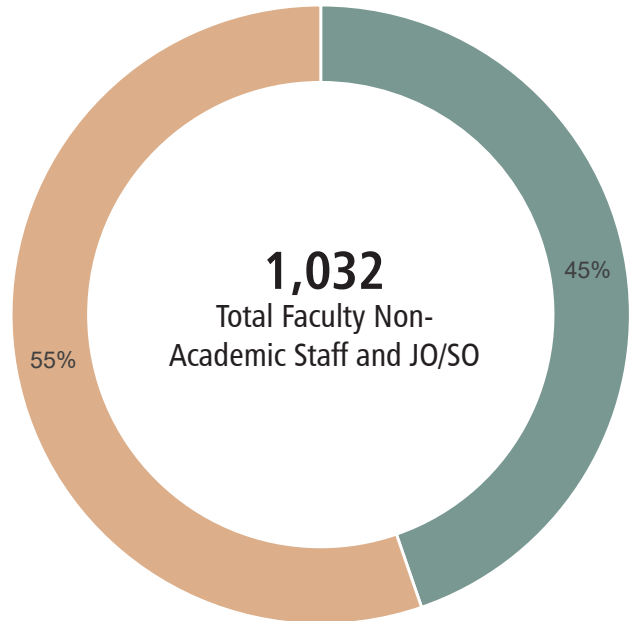
a stage at the Multi-Purpose Gymnasium, construction of the College of Engineering Workshop and Micro-Hydro Laboratory, improvement of Academic Affairs Building, rehabilitation of Property and Supply Warehouse, first

phase of the rehabilitation of the Physical Plant and Site Development Services (PPSDS) Building, rehabilitation of existing buildings, and physical site improvement at the College of Agriculture.

Faculty and Staff Profile



■ BS/ABM/DVM ■ MS/MA ■ PhD/EdD



■ Non-Academic Staff ■ JO/SO

Behind the University's steady trajectory in maintaining its relevance amidst the dynamic landscape of global higher education is its pool of dedicated faculty and staff. Their unwavering loyalty to uphold academic excellence is instrumental

in elevating the quality of education and other services it proudly offers. CLSU's four major programs (Academic Affairs; General Administration and Support Services; Research, Extension and Training; and Business Affairs) efficiently operate through its 1,508

highly qualified personnel who are committed to the mandates and thrusts of the institution. Of this aggregate, 476 were faculty, 489 were non-academic staff and 543 were job order (JO) or contract of service (COS) workers.

*BS- Bachelor of Science
 *ABM- Accountancy, Business, and Management
 *DVM- Doctor of Veterinary Medicine
 *MS- Master of Science
 *MA- Master of Arts
 *Phd- Doctor of Philosophy
 *EdD- Doctor of Education

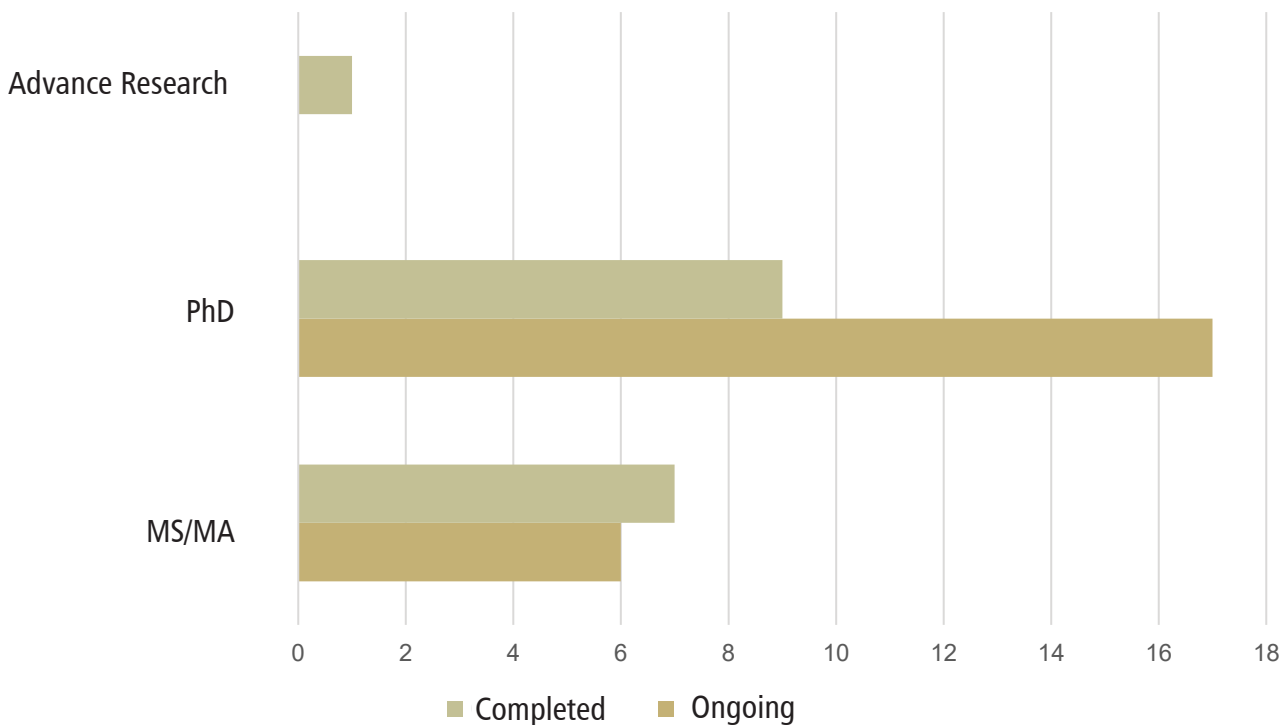


Strengthening Human Resources

Faculty on Advanced Degree

To the CLSU faculty and staff members, earning a masteral and doctoral degree continues to be a trend as it helps in gaining specialized knowledge to advance in their respective fields. An advanced degree is a manifestation of dedication to enhance the expertise and credibility of the university.

Among the 476 faculty members, seventeen (17) completed their respective degree programs/advanced research: 9 PhD, 1 advanced research, and 7 MS/MA. Also, twenty-three (23) faculty and staff members commenced their advanced degrees during the year: 17 PhD and 6 MS/MA.



Faculty and staff members who commenced their advanced degrees

Name of Faculty	Degree	Program/ Major Field	Sponsor/ Institution
Roan P. Alberto	PhD	Sustainable Food System	CHED / CLSU and University of Liverpool, United Kingdom
Zosimo G. Battad	PhD	Sustainable Food System	CHED / CLSU and University of Liverpool, United Kingdom
Claire Marie M. Castillo	PhD	Biological and Agricultural Engineering	ERDT / Washington State University
Oliver F. Celestino	PhD	Sustainable Food System	CHED / CLSU and University of Liverpool, United Kingdom
George M. Dela Cruz	PhD	Sociology	CLSUFSDP / De La Salle University
Melba D. Denson	PhD	Biological and Agricultural Engineering	ERDT / Washington State University
Rich Milton R. Dulay	PhD	Biology	DOST / De La Salle University
Creselda P. Francisco	PhD	Biology	DOST / University of Sto. Tomas
Efrelito Jay M. Guittap	PhD	Plant Breeding	DOST / UP Los Baños
Jayson Juan	PhD	Sustainable Food System	CHED / CLSU and University of Liverpool, United Kingdom
Lani Lou Mar A. Lopez	PhD	Microbiology	DOST / UP Los Baños
Lalaine Ann F. Manuel	PhD	Curriculum and Instruction	CLSUFSDP / Philippine Normal University
Mark Gill M. Mercado	PhD	Curriculum and Instruction	CLSUFSDP / Philippine Normal University
Jessica M. Rustia	PhD	Sustainable Agriculture	CHED / CLSU and University of Liverpool, United Kingdom
Shirly C. Serrano	PhD	Environmental Science	CLSUFSDP / Kasetzart University, Thailand
Fredelon B. Sison	PhD	Sustainable Food System	CHED / CLSU and University of Liverpool, United Kingdom
Mary Jhane G. Valentino	PhD	Botany	DOST / UP Los Baños
Francis A. Canare	MA	Information Technology	CLSUFSDP / Angeles University Foundation
Mary Grace J. De Guzman	MS	Civil Engineering	CLSUFSDP / Mapua University
Laila Marie A. Lavandero	MS	Civil Engineering	CLSUFSDP / Mapua University
Thomas Jason S. Mercado	MS	Rural Development	CLSUFSDP / Central Luzon State University
Rolando V. Pagaduan, Jr.	MS	Crop Science	CLSUFSDP / Central Luzon State University
Kier G. Santiago	MS	Animal Breeding and Genetics	Project-Based / Sunchon National University
Ella Joy A. Ponce	MA	Political Science	CLSUFSDP / De La Salle University
Redeem Faith J. Sabacan	PhD	Hospitality and Tourism Management	James Cook University, Singapore



Faculty and staff members who completed their advanced degrees

Name of Faculty	Degree	Program/ Major Field	Sponsor/ Institution
Judith R. Angeles	PhD	Araling Filipino-Wika, Kultura, at Midya (PHARFIL)	CHED / De La Salle University
Emily T. Astrero	PhD	Linguistics	CHED / De La Salle University
Jennifer T. De Jesus	PhD	Sports Education	CLSUFSDP / PNU-UNJ
Romeo S. Gundran	PhD	Veterinary Public Health	CHED and CLSU / Chiang Mai University, Thailand
Jonathan C. Lazaro	PhD	Animal Science	DOST / Central Luzon State University
Ma. Luisa T. Mason	PhD	Soil Science (Soil Biology)	MONBUSHO / University of Miyazaki
Arman M. Parayao	PhD	Microbiology	DOST / UP Los Baños
Lucia M. Rigos	PhD	Animal Science	CLSUFSDP / Central Luzon State University
Joel M. Torres	PhD	Linguistics	CHED / De La Salle University
Gemerlyn Garcia	Adv. Research	Veterinary Medicine	Fulbright / University of Georgia
Bryan L. Capiendo	MA	Educational Technology	CLSUFSDP / Technological University of the Philippines
Mark Aldren M. Feliciano	MS	Chemical Biology	ASEAN Foundation Scholarship / Chularborn Graduate Institute, Thailand
Johnah Jefferson S. Mercado	MS	Agribusiness Management	CLSUFSDP / Central Luzon State University
Ronalie B. Rafael	MS	Veterinary Medicine	DOST / UP Los Baños
Henrizon C. Sanchez	MS	Meteorology	CHED / UP Diliman
Mark Tangonan	MS	Accountancy	CHED / UP Diliman
Sheila Marie Navarro	MS	Meteorology	CHED / UP Diliman
Sharon E. Lazaro	PhD	Chemistry	CLSUFSDP and Walailak International Graduate Studies Scholarship Program / Walailak University, Thailand
Nelson M. Panajon	MS	Chemistry	DOST / De La Salle University

* CLSUFSDP – CLSU Faculty and Staff Development Program

* CHED – Commission on Higher Education

* DOST – Department of Science and Technology



Other Employee Development Activities

To enhance the well-being of the faculty and staff, the following activities were organized/ co-organized by the General Administrative and Support Services Program (GASS):

- Customer Relations Management Training for frontline service staff to ensure clients satisfaction
- PPMP workshop and Submission of the Indicative APP-CSE and Non-CSE for FY 2020
- Management Review for FY 2018 Operations
- Expanded Tulong Pangkalusugan for CLSU employees
- Regular dance fitness activity (ZUMBA)
- Conduct of capacity development program including the Pre-Retirement Counselling Seminar, Customer Relations Management Training, Advanced Utility Service Training, Seminar on Human Rights, and the Public Procurement Specialist Course



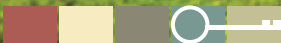
Several activities were likewise held in celebration of the 119th Philippine Civil Service Anniversary participated in by faculty, staff, and students listed as follows:

- Sagip Kalikasan Para sa Kinabukasan: GASS Saves Wild Mahogany Seedlings on September 10, 2019. A total of 119 mahogany seedlings were turned-over to the Physical Plant and Site Development Services (PPSDS) Nursery. Native seeds were likewise planted.
- Takbo Para sa Kalinisan on September 17, 2019 wherein 48 employees ran and collected non-biodegradable wastes inside the CLSU campus.
- Araw ng mga Kawani on September 18, 2019 where 114 employees were pampered and provided haircut, manicure, pedicure, and massage free of charge.
- Sama-samang Sayawan at Saya: A Dance Fitness Awareness Campaign on September 20, 2019 wherein 933 faculty, staff, and students registered.
- CLSU Idol: Search for the Most Talented Faculty and Staff on September 27, 2019 where 10 talents from the Academic, RET, UBAP, and GASS program vied for the coveted title.





Transformative & Enabling
Environment



Compliance to International Standards

Registration Certificate

This is to certify that the Management Systems of
Central Luzon State University

have been assessed by AJA Registrars and registered
against the requirements of

ISO 9001:2015

Certificate No.:	AJA17.1012	Date of Original Registration:	19 May 2017
Expiry Date:	18 May 2020	Date of Re-Registration:	N/A



JAS-ANZ



Acc. No. M2700903PM
www.jas-anz.org/register

A handwritten signature in black ink, appearing to read "B. ...".

Vice President - AJA Registrars Inc.



This certificate is issued in respect of the locations & scope of registration detailed in the Associated Registration Schedule.
This certificate is the property of AJA Registrars Inc., 2nd Floor JD Tower Commerce Avenue, Madrigal Business Park,
Ayala Alabang, Muntinlupa City 1770, Philippines and must be returned on request. A member of the AJA Group of Companies

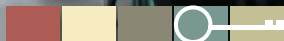
Training Office as Accredited Training Provider

Since 2012, the Central Luzon State University through the Training Office has contributed in developing the capabilities of the various cooperatives in the region, particularly in Nueva Ecija. This is through the accreditation awarded by the Cooperative Development Authority (CDA) to CLSU as one of its training providers for cooperatives. Through this accreditation, the

Training Office was able to conduct six trainings for the various cooperatives in Nueva Ecija for this year with a total of 261 participants trained. This accreditation has also helped sustain CLSU's linkage with DAR Nueva Ecija and was able to start another one with the Carranglan Employee's Cooperative.

In addition to the said accreditation, CDA also renewed its memorandum of agreement this year

with CLSU allowing the university to continue conducting the Training of Trainers (ToT) cooperative for CDA-accredited Training Providers. The ToT was conducted to hone the knowledge and skills of the trainers or aspiring trainers in writing and delivering modules for cooperatives. For 2019, 43 participants were trained in two batches.



Application to the QS Stars University Ratings

CLSU started its quest for the Quacquarelli Symonds (QS) Stars Ratings second quarter of 2019 where results will hopefully be out in 2020. QS is an international company known for being the world's leading provider of services, analytics, and insights to the global higher education system. It operates the QS Stars Rating System and provides the world university rankings since 2004. They conducted a rigorous and independent data collection and analysis of performance metrics as set out in the QS Stars™ methodology.



Financial Resources

In 2019, the University operated with a total budget of **Php 1,058,533,839.93** excluding the grant-in aids (GIA) from different external funding institutions.

STATEMENT OF INCOME AND EXPENDITURE FOR CY 2019

Source	Income (Php)	Expenditure (Php)
National Government Allocation (Fund 101)	888,226,264.00	872,432,527.15
Revolving Funds (Fund 161)	31,287,364.33	30,609,072.31
Auxiliary (Fund 163)	17,109,700.34	15,830,527.63
University Income (Fund 164)	121,910,511.26	115,337,795.29
TOTAL	Php1,058,533,839.93	Php1,034,209,922.38



Breakthroughs in **KNOWLEDGE INNOVATION**

In 2019, the University has brought new knowledge innovation through the implementation of research and development (R&D) projects and activities. These breakthroughs have opened opportunities for the University to deliver quality research results and reliable technologies which can be useful in the improvement of the lives of many Filipinos.



Research Presentation and Publications

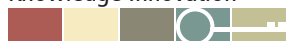
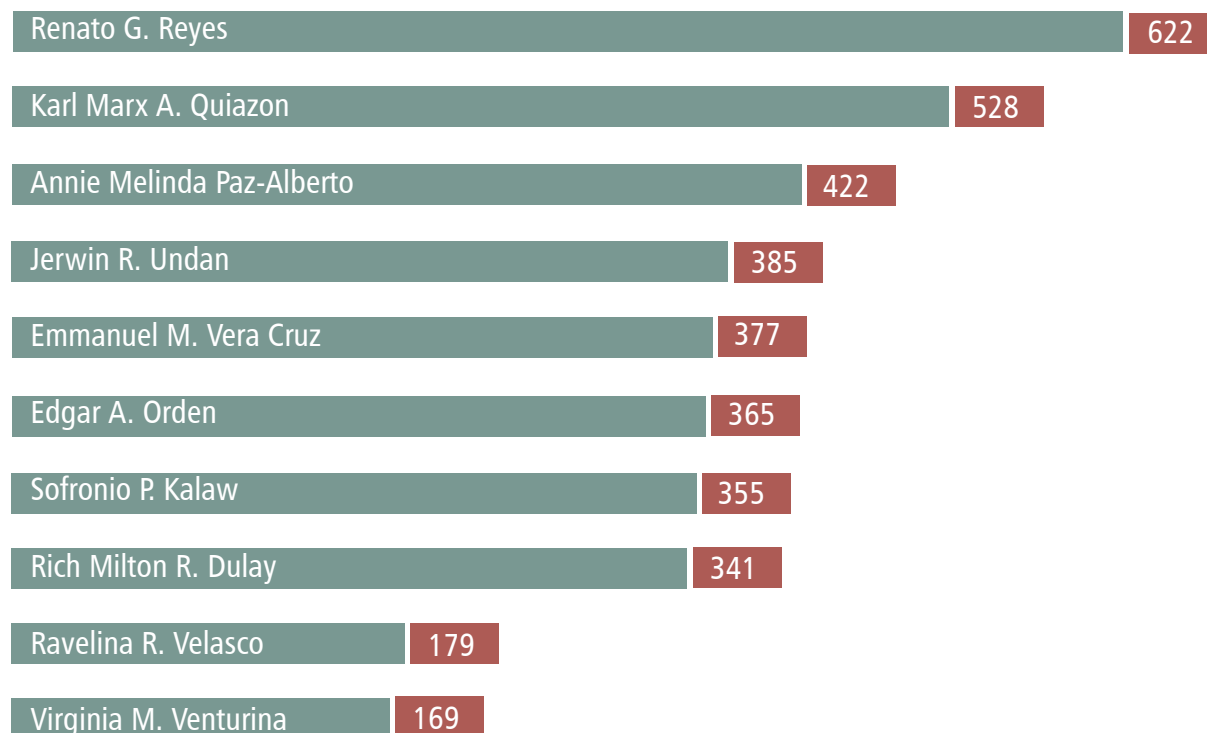
Publications

The most important means of communicating scientific work is through publication writing. Through publications, faculty and staff researchers can gain recognition and acknowledgement as experts in a particular field at national and international levels. Moreover, a publication in peer-reviewed journals also gives international recognition for an individual, department, university, and institutions.

This year, a total of 35 research papers were published in refereed journals, while 27 in conference proceedings and book of abstracts.



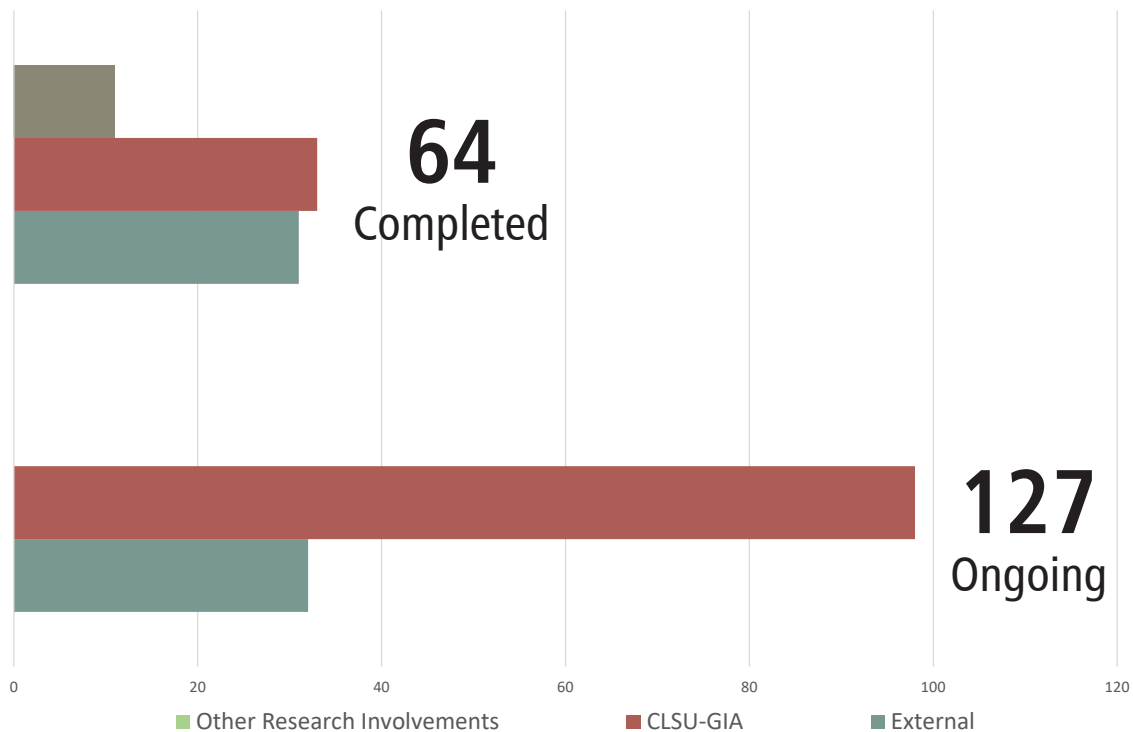
Top 10 Most Cited CLSU Authors (total citations)



Completed and Ongoing Researches

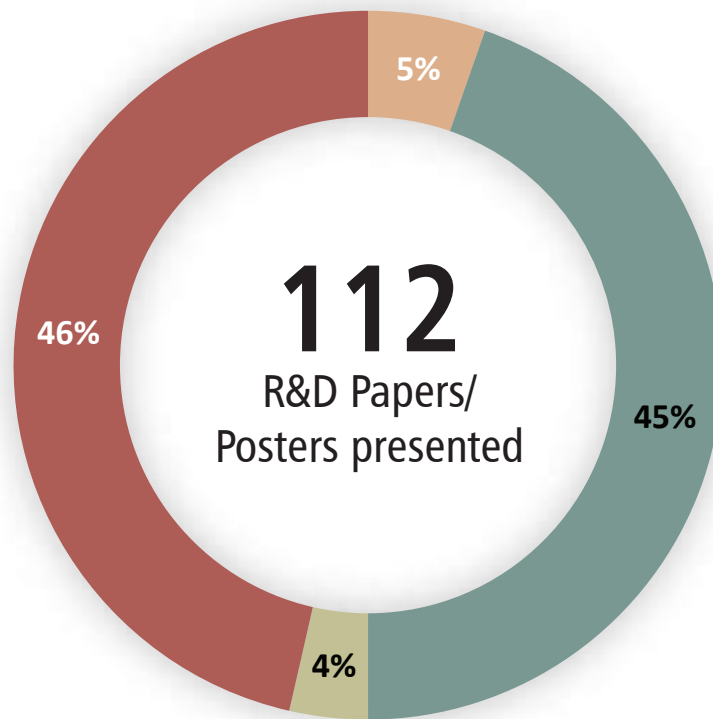
In an academic institution, the role of research is significant for its sustainability and development, and is imperative to have knowledge-driven growth based on innovation. Moreover, research results have greatly contributed in finding solutions to many problems faced by the society and communities.

In an effort to reach the University's goal of becoming a National Research University, the CLSU continuously implements R&D projects funded internally and externally. To note, a total of 64 research programs, projects and studies were completed wherein 31 were externally-funded and 33 were grants-in-aid (GIA)-funded. While 127 are still ongoing wherein 98 of these were GIA-funded and 32 were externally-funded.

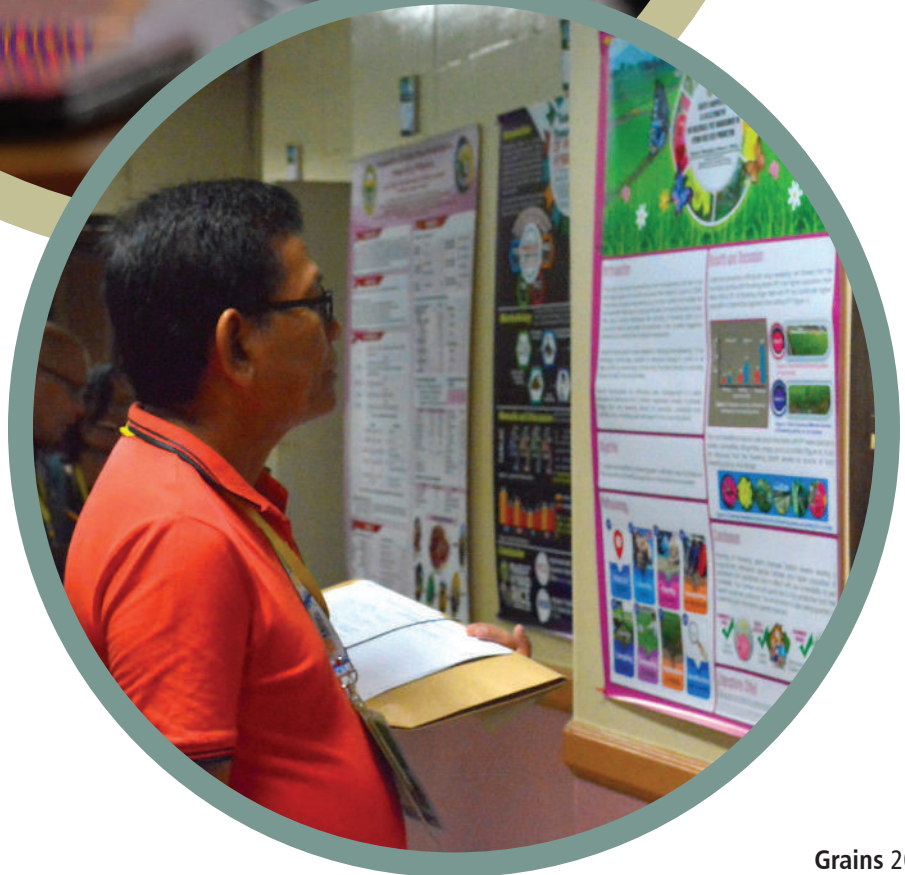


Presented Research and Development Papers

To provide an opportunity to share knowledge as well as to learn more beyond the confines of the University, faculty members and staff are highly encouraged to participate in paper presentations. This year, a total of 112 R&D papers/posters were presented, six (6) international, 50 in national, four (4) in regional, and 52 in local/institutional.

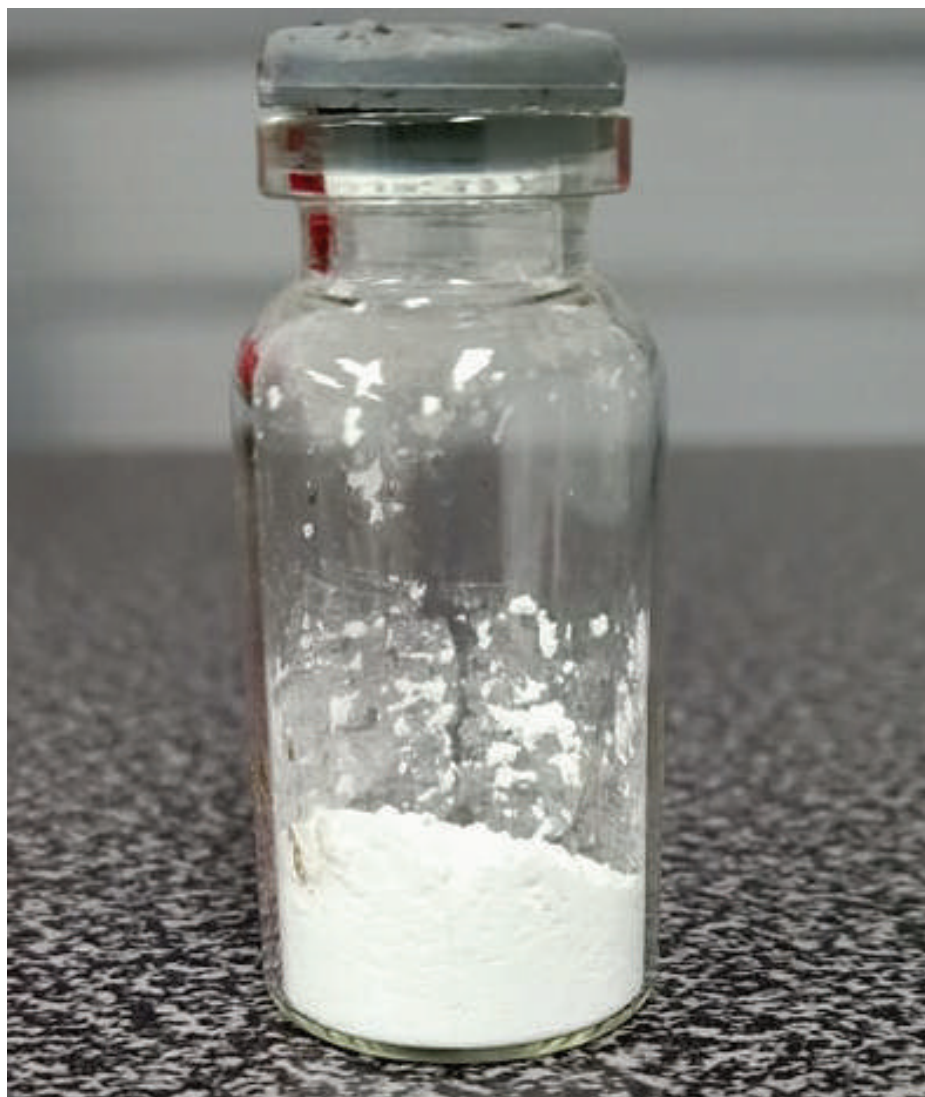


■ International ■ National ■ Regional ■ Local/Institutional



Generated Knowledge and Technologies

Through the different R&D programs and projects whether internally-funded or externally-funded, the University was able to generate knowledge and various technologies that are geared for knowledge sharing and technology transfer.



Zeolite-silica Nanocomposite

Under the Nanotechnology R&D Facility of the University, two (2) protocols were crafted on the pilot-scale production of nano (*zeolite-silica*) composite materials. The documents needed for the application of its patent have also been prepared and already coordinated with the CLSU Intellectual Property Office/ DOST-TAPI.

Food Products made from Aromatic Brown Rice

With Aromatic Brown Rice as the main ingredient, the Research Office developed functional or calamity foods namely instant champorado, biscuit, rice burger, and ready-to-fry crackers. A sensory evaluation was performed to determine the degree of liking towards the products formulated. Processed aromatic brown rice were used to produce flour and determined each percent recovery and water activity. The sensory analysis of five (5) varieties of aromatic brown rice was done using a scoreboard and a 9-point hedonic scale to 30 panelists and another sensory evaluation for 20 samples of aromatic brown rice with 4 treatments per variety. Moreover, the shelf life determination of cooked aromatic brown rice was also determined.



Aromatic Brown Rice Ready-to-fry Crackers



Aromatic Brown Rice Biscuit



Aromatic Brown Rice Burger

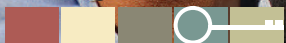


Aromatic Brown Rice Instant Champorado



Genetic Conservation and High-Value Trait Characterization of Sunflower

The cultural management intended for sunflower such as irrigation, manual weeding, pest and disease management and fertilizer application was performed. Through molecular breeding, the DNA and RNA of selected sunflower accessions were extracted, and the target gene for oil and nectar production of sunflower was amplified. Using a refractometer, the sugar concentration of the sunflower's nectar was analyzed. Seed germination and seed vigor test of the entries in preparation for the next cropping season (October 2019-April 2020) were also carried out.



Vegetable Production using Protective Structure

Using protective structure, research results showed that crops grown inside has better growth and higher yield. The formulated pelleted organic fertilizer improved the quality of compost, brought about by molasses as binder and incorporation of liquid fertilizer and leaf crude extract.



Rehabilitation and Increasing Crop Productivity in Lahar and Ash Laden Areas in Botolan, Zambales



Agricultural areas were buried with lahar, ash and black sand deposits in selected areas in Botolan, Zambales due to eruption of Mt. Pinatubo and flooding many years ago. Socio-economic appraisal of the farming community and soil characterization were employed to determine crop suitability. The project showed that crops can be grown profitably through adoption of appropriate technologies such as use of quality seeds, selection of appropriate crops, nutrient management for proper nutrient absorption, water management, among others. From barren soil in selected farms in Botolan, the project transformed the soil to green with vegetables, corn and rice.



Genetic Conservation and Grain Quality Characterization of Selected Special Purpose Rice

More than 400 germplasms of special purpose rice were assembled. The germplasms are composed of CLSU's collections as well as those from Philippine Rice Research Institute (PhilRice) and International Rice Research Institute (IRRI). In 2019, 100 accessions were planted and analyzed for agromorphological characterization, evaluation of aroma and genomic DNA. High yielding, aromatic and more nutritious (in terms of micronutrients) germplasms were selected for breeding purposes.





Postharvest Value-Adding on Crop By-products after Seed Production

Two (2) products were developed from tomato – sauce and ketchup, while another is from hot chili pepper – chili garlic oil. Products were displayed and sold at the CLSU I-CARE building with the help of the CLSU-Agriculture and Food Technology Business Incubator (AFTBI).

Onion Briquettes, Manual Briquetting Machine, and Onion Leaves Gasifier

A briquetting machine was designed and developed to produce briquettes out of dried and carbonized onion leaves. The machine comprises three parts: (a) base plate, (b) compaction chamber, and (c) push rod.



Cost-effective Seed Production Technology

Through this project, a cost-effective seed production technology for onion using three (3) varieties: Australian, Batanes and Red Creole was developed. Seven (7) studies were conducted to assess four (4) factors such as storage condition, gibberellic acid, bulb size and type of fertilizer, and their influence on vegetative and reproductive characteristics. The percent seed germination and seed vigour index were also used to assess the viability of the produced seeds from the various studies.





Feeding System for Itik Pinas under Range Management System

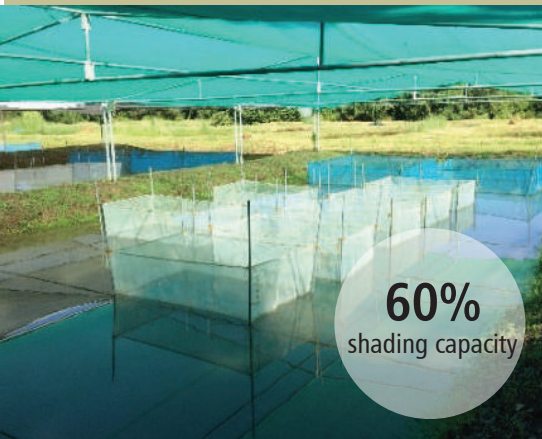
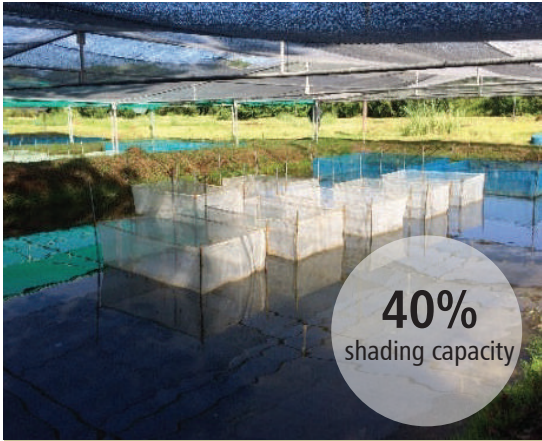
Results showed that the income over feed cost was higher in ducks fed prelay diet than their counterparts. Feeding 100g/per duck/day of madre de agua improved egg production rate by 7.96% and egg mass by 8.87%. Growing ducks subjected to feed restriction by 20% of their voluntary feed intake had a comparable performance with those subjected to ad libitum feeding. Fallen rice seeds, water spinach, and golden apple snails, among others, represent valuable feed resources for herded ducks in rice fields as they provide significant amounts of nutrients. These are available in large amounts, especially after the rice harvest.



Lees as Feed Ingredients in Aquaculture

The research evaluated the potential of lees (*tapuy*) as ingredients of tilapia feeds and assessed its chemical composition, water quality in the culture unit, growth performance of fish, and sensory traits of Nile tilapia (*Oreochromis niloticus*) fed with different levels of lees incorporated in the feed.

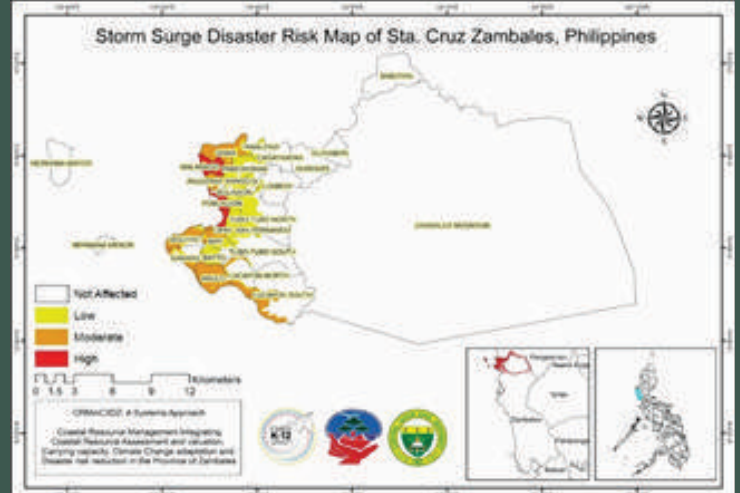
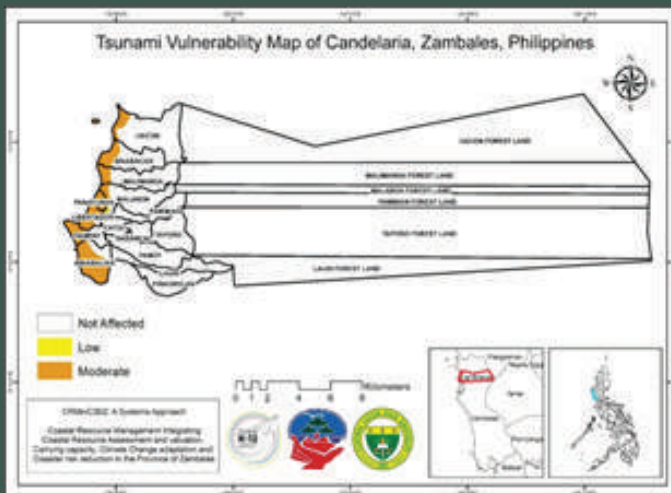
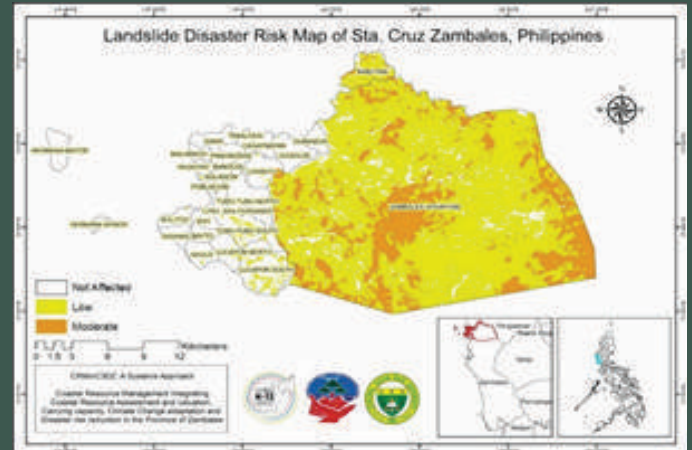




Improved Aquashade Design to Further Enhance Seed Production

The aquashade technology (AT) was assessed based on how it mitigates the effect of high water temperature on stress response and reproductive indices of Nile tilapia that affect its breeding performance. It investigated the effectiveness of different shading capacities of net [40%; 60%; and 80%] as top cover of breeding ponds on the breeding performance of the fish during warm months and was compared to that of the unshaded pond.





Disaster Risk Maps and Vulnerability Maps

To develop mitigation strategies or create preparedness plans, it is imperative to know where hazard zones are located and understand its connection to the distribution of people, agricultural areas, and coastal areas. Through this project, four (4) major disasters with devastating impacts were assessed namely flood, landslide, storm surge and tsunami using remote sensing

technologies and geographic information system (GIS). There were 48 maps generated, 16 hazard maps, 16 vulnerability maps and 16 disaster risk maps. Results in the flood hazard assessment in the four (4) municipalities revealed that low-lying areas throughout the municipalities are highly susceptible to flooding. In terms of landslide hazard, barangays that are situated in the mountainous portions

or highly elevated areas of the municipalities are more susceptible to landslide. However, for storm surge and tsunami hazards, the majority of the barangays in the municipality that are situated near the coast were found to be highly susceptible to storm surge and tsunami.

Generated Research Funds

A total of Php154,813,133.77 Research and Development (R&D) grant was generated by the University from various funding agencies and institutions such as the DA-BAR, DA-ACEF, DOST-GIA, DOST-PCHRD, DOST-PCAARRD, DOST-Region 3, DOST-PCIEERD, IRRI, NIA-UPRIIS, CHED, DENR, ASCOT, DILG, DA, and DTI.

Php154,813,133.77

Research and Development Grants



Knowledge Products

To enable effective action by an intended user, client or stakeholder, knowledge products (KPs) are being prepared as an offshoot of successful research results or outcomes. At CLSU, a total of 79 new KPs and 139 reproduced KPs were developed wherein 793 and 57,541 pieces respectively were distributed to its clientele.

79

New KPs

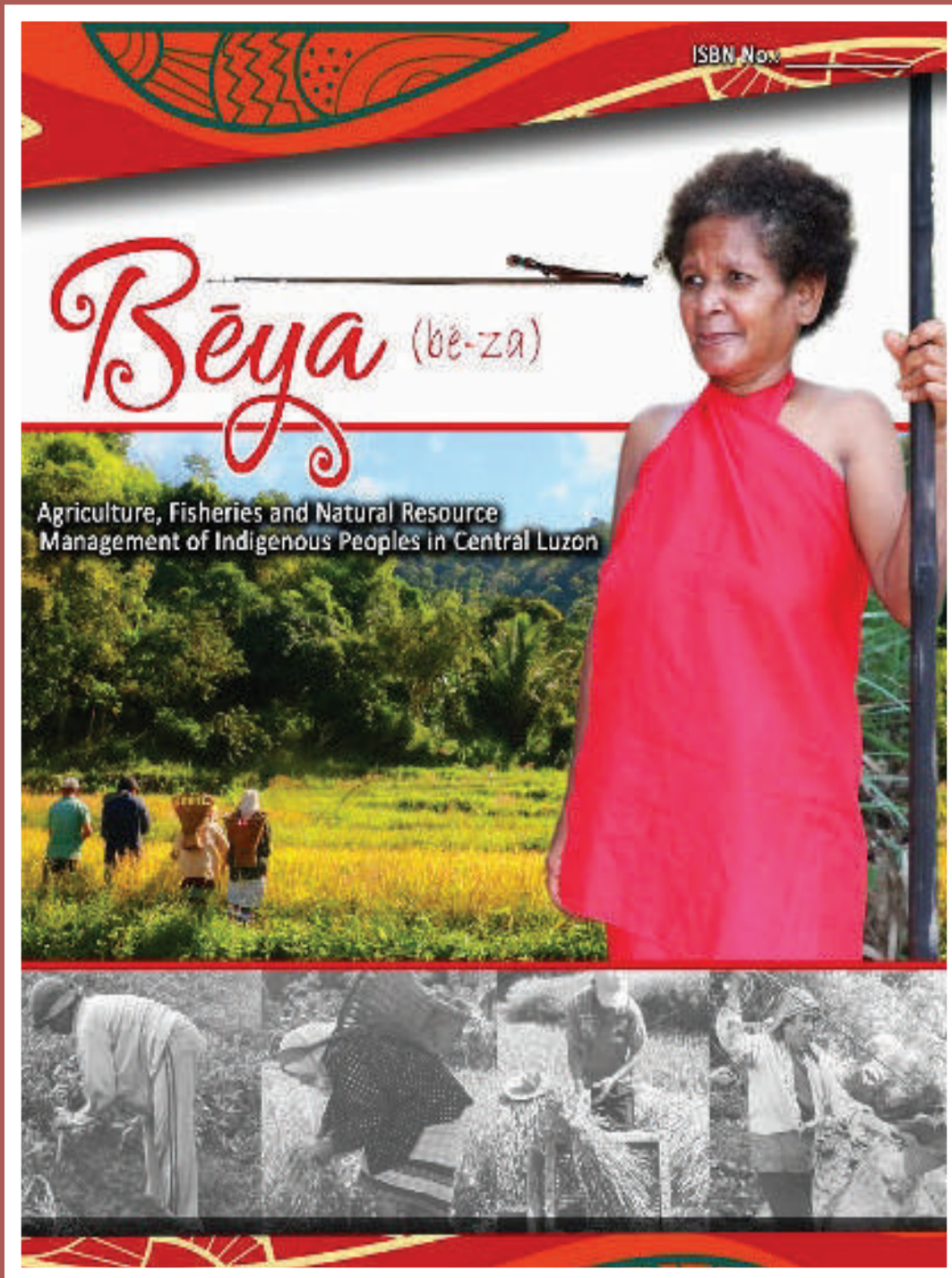
58,334

Distributed KPs
to clientele



The coffee table book demonstrates the CLSU-AFTBI's commitment to introduce and offer new processes, business innovation models, services and products that will positively affect client's businesses.





The book consisting Indigenous Knowledge Systems and Practices of Alta-Dumagat and Ilongots of Aurora, Kalanguya of Nueva Ecija, and Ayta Magbukon of Bataan on agriculture, fishery, and natural resources

management were documented as a contribution to the body of knowledge. These IP's are Central Luzon's major ethno-linguistic groups as identified by the National Commission on Indigenous Peoples (NCIP) Region 3.

Intellectual Property Rights (IPR)

The Intellectual Property Office (IPO), under the RET Program have assisted 29 IPR applications for 2019 wherein 13 are inventions, 6 copyrights, 5 trademarks, 3 utility models, and 2 industrial designs.

29 IPR Application

13 Inventions

6 Copyrights

5 Trademarks

3 Utility Models

2 Industrial Designs



Industrial Design



The Small Ruminant Center (SRC) also acquired the registration of the Portable Pellet Mill from IPOPHL with registration number 03-2017-0501789 issued on January 25, 2019.



The Philippine Sino-Center for Agricultural Technology (PhilSCAT) acquired the registration of CLSU PhilSCAT- INCA Biogas Digester Tank issued by the IPOPHL with registration number 3-2018-050157.

Patent / Utility Model



A patent was granted to the research project titled "A Phytoremediation Method Using Seagrass to Remove Lead in Contaminated Sediments in Coastal Ecosystem." Naturally occurring sea grasses can be utilized to get rid of toxic waste particularly lead in polluted sediments. The method indicated is cause effective and eco-friendly which could be used constantly in cleaning pollutants and toxic waste such as lead as long as the sea grasses are present and growing in the appropriate type of sediment in coastal ecosystems.

Trademark

The AGRISIKAT name and logo received its trademark registration from the Intellectual Property Office of the Philippines (IPOHL) giving the right and sole ownership to the University for its institutionalization. The AGRISIKAT! Sa Agrikultura, Sikat Ka is a CHED-funded project implemented to promote agriculture and fisheries to students as a viable career option.



Plant Varietal Protection

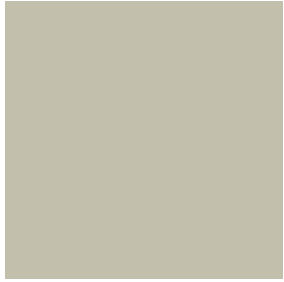
Three (3) special purpose rice varieties registered under the Philippine Plant Variety Protection (PPVP) Law were given protection for 20 years. These are CLS 1 (white aromatic), CLS 2 and CLS 3 (pigmented). While CLS 4 (sticky) rice was also registered but still under review.





Maximum Impact thru **PROACTIVE ENGAGEMENTS**

There is a saying that technology only achieves desired goals if the people adopt it, otherwise, technology is just a wasted money. Thus, to fully utilize the potentials of the technologies being developed and generated, CLSU is using different modalities of technology transfer like trainings, forums, seminars to technical advisory and consultancy services. These proactive engagements provide the University an opportunity to build stronger relationships with its stakeholders.



Technical Support, Extension Services and Trainings

Trainings

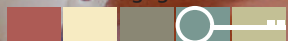
Through the different Research, Extension and Training Offices and Centers, a total of 141 trainings were conducted, while 6,488 were trained clientele who are mostly famers, fisherfolks, agricultural extension workers, students, and faculty and staff researchers.

141
Conducted
Trainings

6,488
Trained
Participants



Maximum Impact thru
Proactive Engagements





Rice Machinery Operations: Focus on Mechanical Rice Transplanter and Double Mulching Technique for DA-Region 3 Farmers, Technicians and Farm Service

A total of 90 participants from Zambales, Nueva Ecija, Tarlac, and Pampanga attended the aforesaid training wherein the results of the pre and post tests showed that 95.6% of the participants had positive increments with the highest point increment recorded at an average of 28 points.



Field and Laboratory Research Operations, and Data/Information Management for Research Office Faculty and Staff

Several capacity building trainings were conducted by the Research Office as part of its human resource development. This includes Cultural Management Practices of Aromatic Rice, Soybean, and Selected Vegetable Seed Production, Farm Machinery Operation and Land Preparation for Rice and Vegetables, Experimental Design and Layout, and Basic Operations of Laboratory Equipment for Crops and Related Research among others.



Training Course on Management of Training Programs for Development

The training is in line with the University's commitment to empower the human resources even of other organizations/institutions. It was conducted upon the request to capacitate the faculty and staff of the Nueva Ecija University of Science and Technology (NEUST) -Training Department in developing and managing training programs. A total of 29 participants were mentored on developing training programs, training methods and techniques, and were given tips in conducting training programs including documentation, monitoring and evaluation.

Road Safety Awareness Seminar

The seminar was attended by a total of 416 students, faculty and staff, members of the New Association of Tricycle Operators (NATO), law enforcers, riders clubs, local government unit employees of Science City of Muñoz, and San Jose City, Nueva Ecija. The activity aims to promote and increase awareness of road users on road safety to decrease the number of accidents.



Nanoparticles Characterization Training

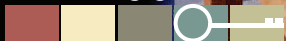
This training is a product of collaboration between the Training Office and CLSU Nanotechnology R&D Facility. It was held consecutively with the launching of the CLSU Nanotechnology R&D Facility on July 23-24, 2019. The training was attended by 40 academicians, scholars, educators, and private practitioners from various parts of the country. Notable resource persons from the Department of Science and Technology, Department of Mining, Metallurgical and Materials Engineering in UP Diliman, Nanotech Analytical Services and

Training Corporation, Fortuna Gold Merchandising, Incorporated, and CLSU graced the event. Topics covered were nanotechnology updates in the Philippines; role of metallurgy in nanotechnology; nanotechnology characterization; carbon dot from natural and synthesis raw materials for environmental and bio-imaging application; hybrid au/graphene oxide-based nanomaterials for surfaced enhanced raman spectroscopy; and the updates in nanotechnology in agro-fishery in CLSU.



Technical Advisory and Consultancy Services

The University, through its faculty and staff researchers, continuously provides technical advisories and consultancy services to its clientele. This year, the different RET Centers/ Offices accommodated and provided technical advisory services to 17,788 clients while 3,376 were provided with consultancy services.



Technology Demonstration and Exhibit Participation

Technology demonstration is an effective way to raise farmer awareness about new options. Farmers may then seek more information about a technology if they wish to try it. Under the RET Program, 32 techno demo sites/ farms were established in 2019 by the different Offices and Centers.

Aside from this, the University also joined or participated in 33 exhibitions organized by the different public and private R&D agencies and institutions. Mostly, the technologies generated and products being developed were showcased as part of promotion.

33 Exhibits participated

32 Techno-Demo sites established



Technology Transfer Activities

Technology transfer is the mechanism by which the accumulated knowledge developed by a specific entity is transferred wholly or partially to another one to allow the receiver to benefit from such knowledge (UNIDO, 2004). Modalities to transfer technologies include trainings, seminars, and forums.

Tales from the Field: A Conference on Indigenous Knowledge and Forum

The two-day conference held on July 11-12, 2019 aimed to provide an avenue for presentation on different research and development papers/activities in Central Luzon for which specifically aimed at promoting involvement

among IPs and researchers in celebrating the rich Indigenous Knowledge Systems and Practices (IKSP) culture, gathering researchers to exchange and share their experiences and research results on IKSP, and officially

launching the book on IKSP in agriculture, fisheries, and natural resources management in Central Luzon.

A total of 188 faculty, researchers, staff, and students from different State Universities and Colleges (SUCs), private and public institutions attended the said event. Eleven (11) research papers were presented wherein the winners include Mr. Norman C. King of Pampanga State Agricultural University (PSAU) who bagged the 1st place, Mr. Aaron Bermudez of Department of Agriculture – Agricultural Training Institute Region III, who was awarded 2nd place and Mr. Erwin V. Velasco of Department of Education (DepEd) Cabiao District of Nueva Ecija, who won the 3rd place.



Maximum Impact thru
Proactive Engagements





Establishment of Forage Production Modules for Slaughter Goat in Bongabon and Lupao, Nueva Ecija: A S&T Community-Based Farm (STCBF) Approach

The STCBF on forage production was implemented in selected villages of Bongabon and Lupao, Nueva Ecija with the primary objective of ensuring year-round supply of feeds to improve goat productivity. Farmer's skill and knowledge on improved goat technologies such as upgrading, housing/stall feeding and strategic deworming were enhanced through seminars, hands-on trainings using the Farmer's Livestock School on Goat Enterprise Development

(FLS-GEM) modality, lakbay-aral, cross visits and Farmer's Field Day. The establishment of forage modules and the adoption of goat technology options resulted in the production of bigger and heavier F1 and F2 progenies with Anglo Nubian or Saanen bloodlines that generated more revenue for the farmer. The STCBF facilitated the empowerment of communities that transformed traditional goat raising from subsistence farming to profitable enterprise.

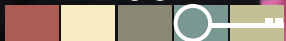
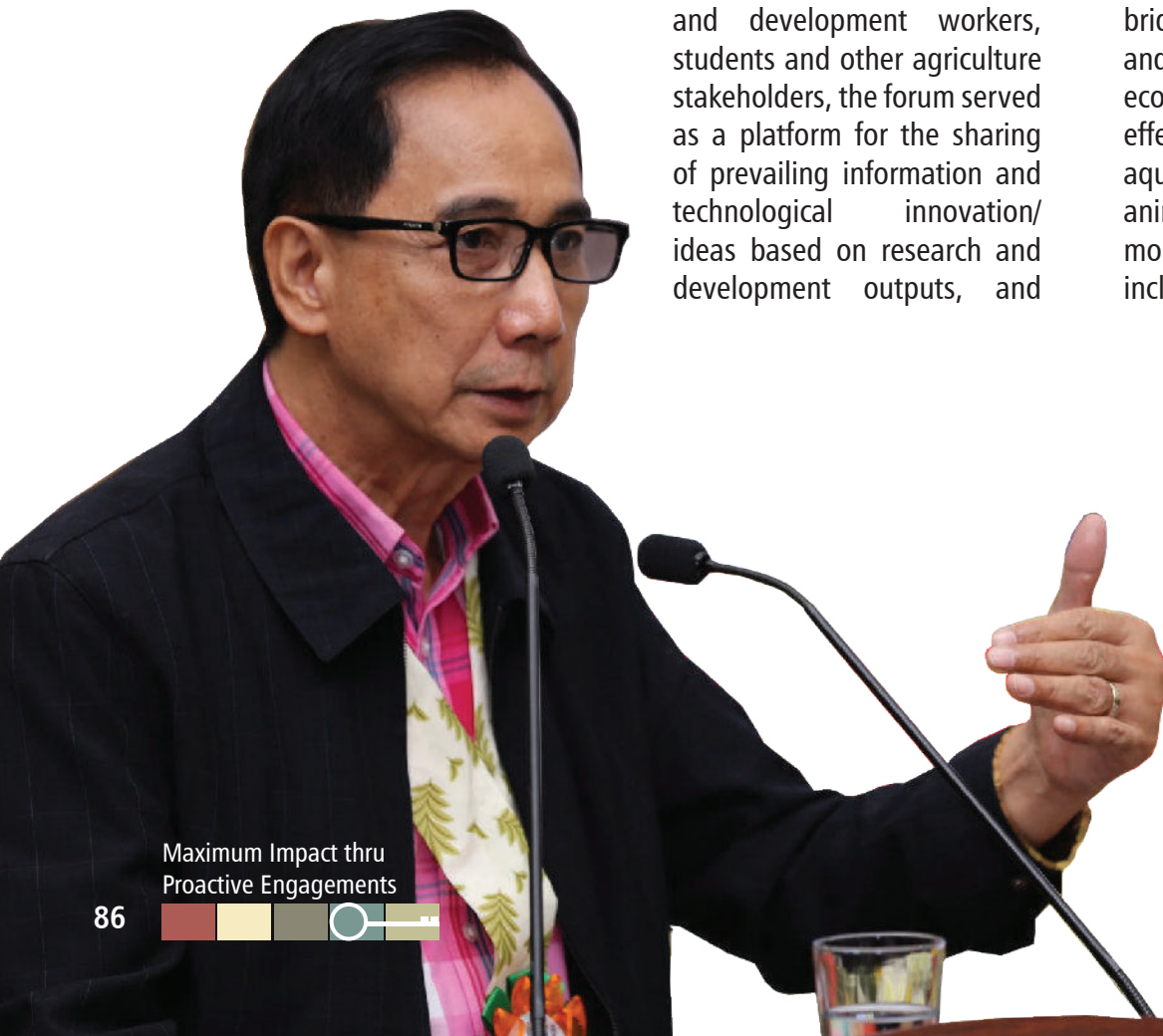




Forum on “Unleashing Innovation in Modernizing the Agriculture Sector”

The forum was held on August 29, 2019 at the CLSU RET Amphitheater, and was graced by then-appointed Agriculture Secretary, Dr. William D. Dar. With over 200 participants composed of farmers, traders, research and development workers, students and other agriculture stakeholders, the forum served as a platform for the sharing of prevailing information and technological innovation/ideas based on research and development outputs, and

pressing concerns confronting the sector. The topics discussed were Rice Tariffication Law; farm mechanization; irrigation water supply, challenges and prospects; enhancing farm income through sustainable farming and farm tourism; bridging primary production and processing divide for economic growth; mitigating effects of climate change in aquaculture; and threats of animal diseases, all aimed at modernizing agriculture and inclusive development.





Kalanguya IPs Receive After-training Support

CLSU through the Extension Office continues to implement the Kalanguya IPs for Sustainable Agro-Forestry Family Empowerment Project (KIP-SAFE) which aims to capacitate the Kalanguya IP families within the Ancestral Domain barangays of Carranglan, Nueva Ecija in undertaking sustainable agro-forestry and related activities in order to improve their living condition and contribute to watershed and environmental protection.

As part of the project, in 2019 the Kalanguya IPs received assistance as part of their after-training support provision. This include farm garden tools from Department of Agriculture- Agricultural Training Institute (DA-ATI) for use in their production activities, each of the project beneficiaries received one piece each of shovel, pick-mattock, rake, knapsack sprayer, and pruning shear. Also, 280 double rootstock grafted mango seedlings and assorted vegetable seeds were provided to the project by ATI-Regional Training Center III and Office of the Provincial Agriculturist-Nueva Ecija in support of their agro-forestry activities. Moreover, 200 native chicks and 100 native pigs were committed by DA-Regional Field Office III and Bureau of Animal Industry for the beneficiaries of animal production project.



Capacitating Rural Women through Techno Livelihood Trainings and Projects in Licab, Nueva Ecija

This is a three year project (October 2019-September 2022) of the Extension Office in collaboration with the CLSU Gender and Development (GAD) Office and Local Government Unit (LGU) of Licab, Nueva Ecija. It seeks to help improve the income and well-being of rural women and their household through appropriate training and project interventions. This will benefit thirty (30) women-members of Rural Improvement Club (RIC) in barangay San Cristobal, Licab, Nueva Ecija.

In preparation for the livelihood project setting-up and establishment, a training on mushroom production for rural women beneficiaries and gender sensitivity was conducted on October 25, 2019, in Brgy. San Cristobal, Licab Nueva Ecija and it was participated by 30 RIC member and 10 local officials.



CLSU Hosts the 2019 DPGAA Biennial Convention

With the theme “Innovative Agriculture, Aquatic and Natural Resources (AANR) Solutions Amidst Fourth Industrial Revolution”, the DOST-PCAARRD Graduate Alumni Association Inc. (DPGAA) held its 2019 Biennial Convention at CLSU, Science City of Muñoz, Nueva Ecija on October 22-23.

Dr. Reynaldo V. Eborá, Executive Director of DOST-PCAARRD, delivered the keynote speech on behalf of DOST Secretary Fortunato T. Dela Peña. Plenary talks were headed by local and international speakers including Dr. Leocadio S. Sebastian, Dr. Arnel N. del Barrio, Mr. Philip L. Ong, Dr. Ramon A. Razal, and Dr. Khin Mar Cho.

The Convention is an avenue for former DOST and PCAARRD scholars to showcase their research outputs, ideas, and interests in the field of agriculture, aquatic and natural resources (AANR). Scholars who made significant contributions in the advancement of AANR were also lauded through the awards given under three major categories: Research and Development, Technology Dissemination and Utilization, and Administration.

Dr. Tereso A. Abella, DPGAA Board of Directors President and CLSU President, together with the DPGAA 2018-2019 Officers spearheaded the said event.



AgriTekno Fiesta

As part of the celebration of the 112th Founding Anniversary of CLSU, the Research, Extension and Training (RET) Program conducted the AgriTekno Fiesta on April 11, 2019 at the CLSU grounds. Around 300 farmers and fisherfolks attended the said event where it aimed to promote the technologies generated by the faculty and staff researchers.





2nd Goat FIESTA and Meat Festival, Sweet Potato FIESTA, and Halal Goat FIESTA

CLSU as a member institution and based agency of Central Luzon Agriculture, Aquatic, and Resources Research and Development Consortium (CLAARRDEC), spearheaded three Farms and Industry Encounter through Science and Technology (FIESTA) with goat, halal goat, and sweet potato as focus commodities. The 2nd Goat FIESTA and Meat Festival, Sweet Potato FIESTA,

Halal Goat FIESTA were held on August 25-26 in Baler, Aurora, October 16-17 in Davao City, July 9-10, 2019 in Quezon City, respectively. The FIESTA is a technology promotion, transfer and commercialization platform initiated by the Philippine Council for Agriculture, Aquatic and Natural Resources Research and Development of the Department of Science and Technology (DOST-PCAARRD).



B. Forged Linkages

In 2019, the CLSU Board of Regents approved/confirmed partnerships with 103 international, 169 national and 27 regional/local entities. Of these numbers, 39 were government agencies and R&D institutions, 182 were academic institutions, 9 were provincial and local government units, and 69 were private companies and non-governmental organizations (NGOs). These partnerships were forged in furtherance of the University's thrusts of providing world-class and relevant education, harnessing the vast potentials of academe-industry linkages, sustaining the University's vibrant culture of knowledge generation and techno-transfer, fostering community service, and maximizing the University's resources for income generation.



For the RET program, a total of 105 linkages with the different universities, internationally and locally, agencies and corporations were maintained, and has recorded 35 new forged linkages. Of the 105 maintained linkages, ninety-seven (97) have signed MOAs, 4 were without MOA, and 1 with letter of agreement and 1 commitment form. While with the new forged linkages, 21 were with MOA and 14 were without. Majority of the nature of linkages is the conduct of research and training. For the Business Affairs Program, a total of 76 government agencies and private entities were involved as partners in the operationalization of the CLSU-AFTBI incubation program.



LANDBANK

Maximum Impact thru
Proactive Engagements



Establishment of the Joint Laboratory for Rice Technology between Central Luzon State University and Jiangxi Academy of Agricultural Sciences (JxAAS)

In March 2019, CLSU delegation headed by the Vice President for Research, Extension and Training firmed-up the R&D collaboration with JxAAS Nanchang, Jiangxi Province, People's Republic of China for the establishment of the Laboratory for Rice Technology which calls for joint cooperative research on the exchange and innovative utilization of rice germplasm resources; research on high-quality rice breeding and demonstration; research, demonstration and promotion of green, high-quality, efficient and mechanized rice cultivation technology; showcase of new technologies, new products, new machines or tools, new models and intelligent agriculture, and exchange visits, consultation, S&T training and service. The JxAAS provided \$75,000.00 for the implementation of the project.





Recruitment of Incubatees

Thirteen (13) new incubatees consisted of eight (8) students and five (5) startups joined the CLSU-AFTBI family, hence expanding further the facility's reach in terms of availment of its services. On February 28, 2019, a separate Memorandum of Agreement (MOA) was signed between CLSU and each of these new incubatees. While, MOAs with the first batch of incubatees were also renewed.



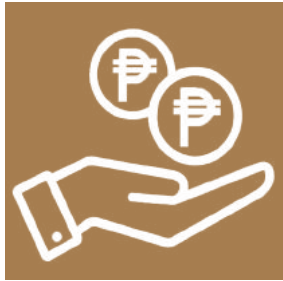
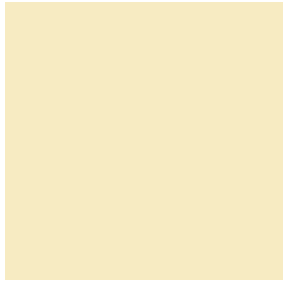
CLSU Signs Agreement with First Gen Solutions, Inc. and Pi Energy

In line with its prime concern and advocacy for environmental protection and sustainable development, the Central Luzon State University (CLSU) inked a memorandum of agreement (MOA) with the First Gen Solutions, Inc., and Pi Energy, two of the country's biggest independent electric power producers. It was held on August 18, 2019 at the CLIRDEC building – making CLSU the first State University to get solar and microgrid facilities. The MOA signing was graced by CLSU officials together with Department of Science and Technology Region 3 Director, Dr. Julius Caesar Sicat. The event is then shortly followed by the installation of the solar panels along the rooftop of the CLIRDEC building.



Business Affairs and **TECHNOLOGY COMMERCIALIZATION**

The Business Affairs Program of the University mainly handles the income generating projects (IGPs) and the commercialization of technologies generated by the researchers. One of the major projects under this program is the CLSU Agriculture and Fisheries Technology Business Incubation (AFTBI) where it caters clientele from the basic education sector, higher education institutions, LGUs, NGOs, NGAs, cooperatives and private entities.



Commercialized and Utilized Technologies

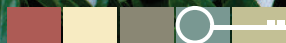
Part of the research process is the conduct of commercialization or the transitioning of technologies from the research laboratory to the marketplace. In continuous efforts of the University to push-forward its products, several pre-technology commercialization activities were conducted listed as follows:

Commercialization of TWC Goats for Meat Production

The data on growth performance record showed that Two-way Crossed (TWC) goats had an average birth weight, weight at one month and weaning weight of 2.38kg, 5.21 kg and 8.17 kg, respectively. A total of 17 kids were produced with a survival rate of 70.59%. It is important to note also that raising TWC gave a net benefit of 453.50 and 241.70 pesos per head compared to native and upgraded goats.

Pre-commercialization of Forage-based Pellet Feeds for Goats

The sites for feeding trials were already identified: Jeffrey Lim for commercial type, Conrado Castillo for semi commercial type and Mr. Jacang for backyard type. Under the project, 600kg pellets for feeding trials were produced and a forage area on campus was developed.





Commercialization of Mutton (Sheep Meat) in Luzon as Alternative for other Meat

Under this project, the Small Ruminant Center was able to acquire 39 heads of upgraded ewe. Moreover, 12 sheep farms with 627 heads were validated and profiled. The inventory of sheep in Luzon at 3,108 head (Inventory from Region II, III and V) composed of Dorper with 181 head, Katahdin 30 head, Native 286 head, Upgraded 114 head and crossbred with 20 head were recorded. A survey on sheep meat/mutton in the market was also conducted.



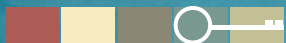
Carabao-based Enterprise Development (CBED) Program

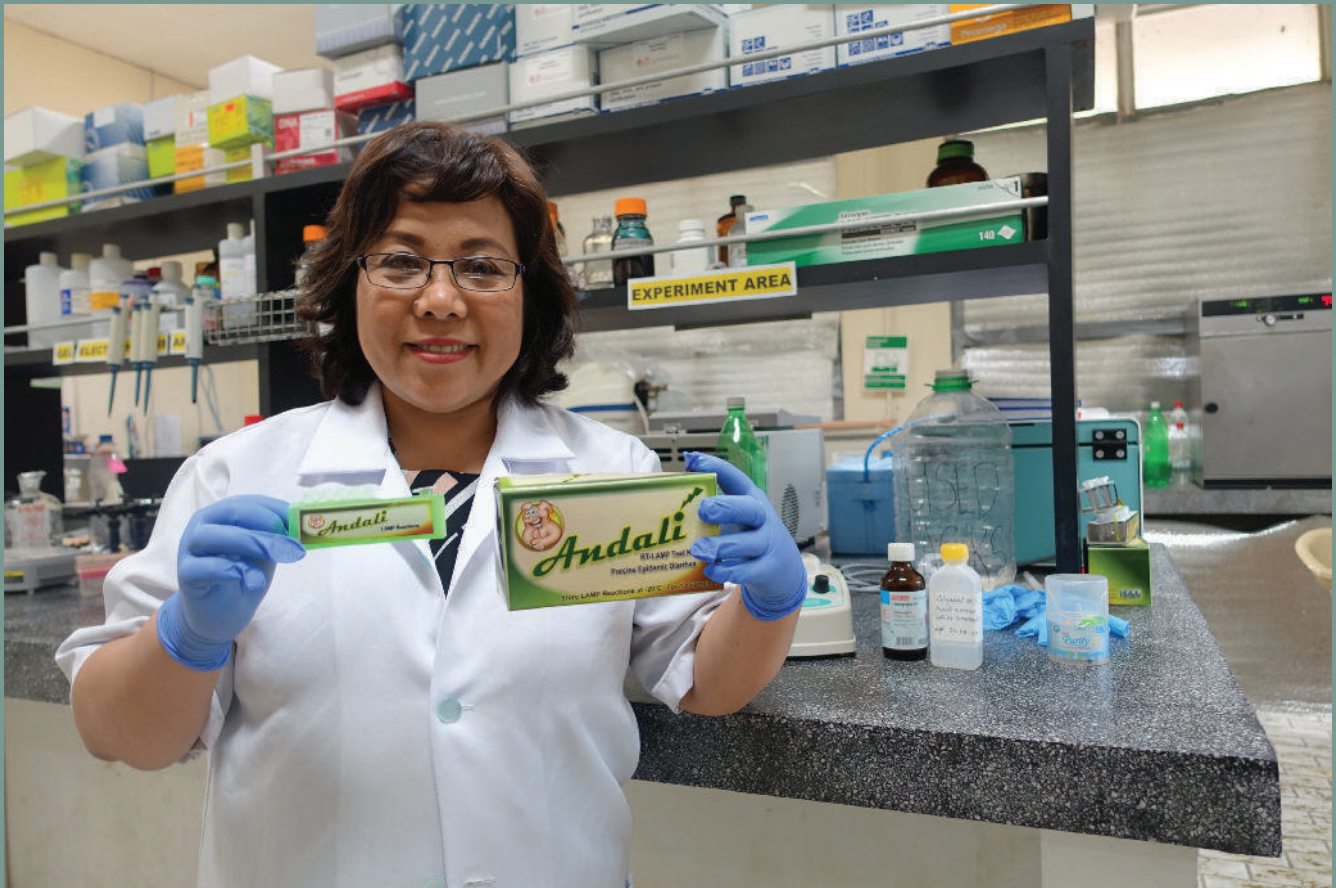
The Philippine Carabao Center at CLSU instigated the 'paiwi' system with 588 heads. They also produced 608,886 liters of milk with a value of Php 34,639,000.00. Moreover, 120 cooperatives/ associations were provided with market development services

Shing-a-ling/Mushroom Chicharon

Shing-a-ling is a Filipino snack made from dried thick egg noodles locally known as pancit miki - deep fried and dusted with either garlic, chili, cheese or beef powder. The Shing-a-ling version of the empowered women of PAG-ASA Burgos Rural Improvement Club of Sto. Domingo, Nueva Ecija, unlike any other, is mainly made from dried mushroom noodles - one of the mushroom-

based products being produced by the organization. With the aim to expand the organization's income, they decided to venture on value adding products that will maximize their very own mushroom production area - hence they partnered with the CLSU-AFTBI to further improve their product and expand their market. The PAG-ASA Burgos RIC reported an increase in income of Php59,000.00 for nine months and was able to generate employment among the members of the organization. Wanting to progress more, the organization has developed other products such as dried kamias and smoked fish.





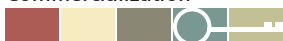
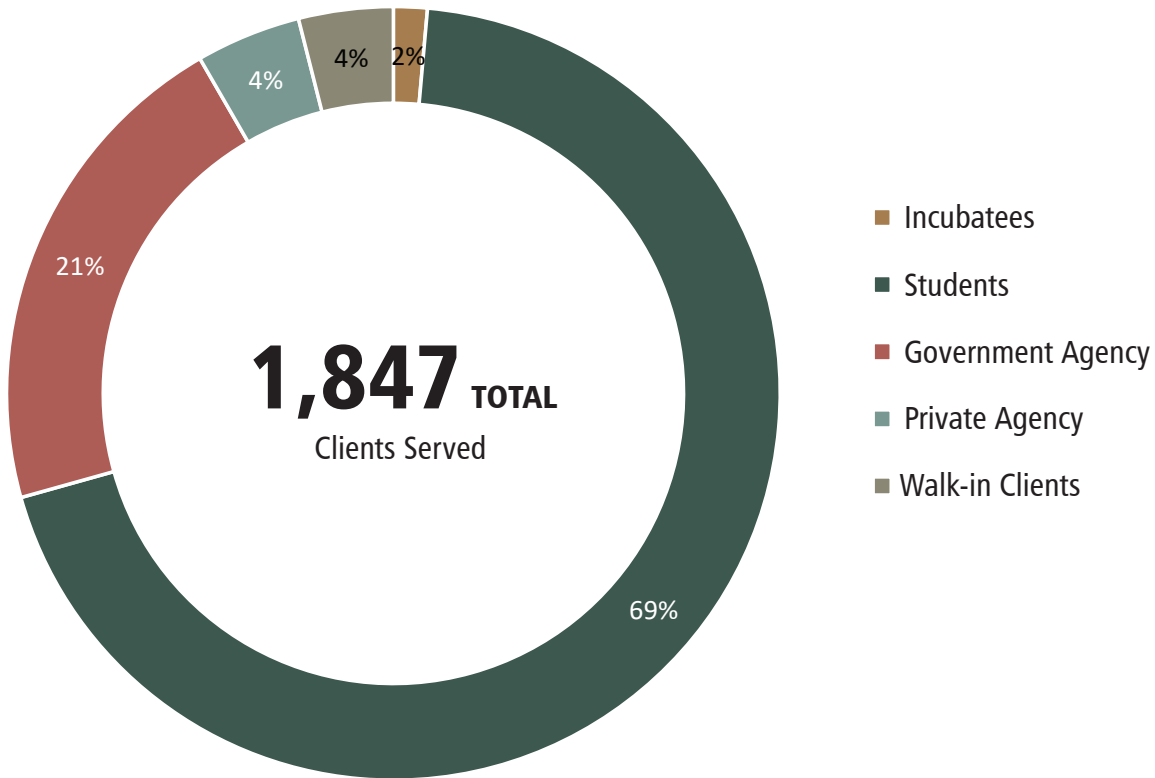
Andali , Anti-PED Test-Kit

Andali Test-Kit is a diagnostic test kit developed by a scientist from Central Luzon State University. Dr. Clarissa Yvonne J. Domingo of the College of Veterinary Science and Medicine was inspired to generate a technology that would save the local swine industry from the threat of respiratory and gastro-intestinal infections which adversely affect the swine farm productivity and efficiency, and income. The anti-

PED tool can help prevent Porcine Epidemic Diarrhea as it detects the virus being carried by truck tires or shoes exposed to infected pig manure. The kit was named "Andali" because it is easy to use and it provides results in an instant - as fast as 30 minutes. Aside from easy-use, the test kit is also more economical than any other kits with high sensitivity and specificity. The kit includes 10 tissue grinders, 10 tubes with Reagent 1, one tube with Reagent 2, 10 tubes with LAMP premixes, 10 yellow and 10 white plastic tips, one tuberculine syringe, one tube with LAMP dye, Tube 1 positive control and Tube 2 negative control.

Clients Served

Under the Business Affairs Program, a total of 1,847 clients from the basic education sector, higher education institutions, LGUs, NGOs, NGAs, cooperatives and private entities were served through the CLSU - AFTBI by implementing the service policies endorsed by its Board and Advisory Committee, and approved by the CLSU Board of Regents.



University Business Affairs Program (UBAP) Financial Resources

This year, the income generated by UBAP was Php4.23 million, a decrease of Php3.45 million (-49%) from Php6.97 million in 2018 which is attributed from the increase in operating expenses (+Php4.01 million or 20% increase from last year's Php19.79 million).

As UBAP cautiously managed the risks in its business operations, it recorded a moderate positive financial performance (ROE = 15%). To cope with the challenges, it sustained its

integrated reporting system to align relevant information about its business strategies, governance systems, production and market performance, and future prospects in a way that reflects the economic, social and business ecosystem in which it operates. For better appreciation by stakeholders of UBAP's corporate social responsibility and sustainability initiatives, the office continuously provides rice ration at subsidized prices to all qualified CLSU employees.





Awards and **RECOGNITIONS**

CLSU students, faculty and staff have greatly contributed from the recognitions received by the University in international and national scenes. They have delivered excellent results in the field of their studies and beyond thus, being honored in this year's report.



Student Awards and Recognitions



CLSU Maestro Singers
Gold Prize for Open Category
Silver for Sacred Category
4th Cantata Macau International
Choir Festival and Competition

NAME OF THE STUDENT/S OR THE NAME OF THE GROUP/	AWARD RECEIVED/ RANK IN COMPETITION & CATEGORY	SPONSOR	DATE & VENUE
Marc Allaine Lazaro	Finalist for Ten Outstanding Students of the Philippines (TOSP) – Region III	Ten Outstanding Students of the Philippines (TOSP)	June 12, 2019
Jaymar Sorza	1 st Place, Development Communication Writing Filipino, 18 th Luzonwide Higher Education Press	Association of Luzon-wide Tertiary Press Advisers and Association of Tertiary School Paper Advisers of Region III Inc.	March 3-8, 2019 City of San Fernando, Pampanga
Neil Angelo Cirilo	1st Place, Poetry Writing Filipino, 18 th Luzonwide Higher Education Press Conference	Association of Luzon-wide Tertiary Press Advisers and Association of Tertiary School Paper Advisers of Region III Inc.	March 3-8, 2019 City of San Fernando, Pampanga
Engr. Franz Miranda	Best Poster, Manufacturing and Machinery Track	Engineering Research and Development for Technology	August 23, 2019
Jessica Cabang	1st Place (GIS Challenge)	Philippine Society of Agricultural and Biosystems Engineer (PSABE)	April 21-27, 2019 SMX Convention Center, Bacolod City, Negros
Gabriel Carl Bilkey	Mr. ABelympics 2019, Best in Filipiniana (Barong) and Best in Q & A	Philippine Society of Agricultural and Biosystems Engineer (PSABE)	April 21-27, 2019 SMX Convention Center, Bacolod City, Negros



CLSU Bulls Rodeo Team
Overall Champion
 Ilocos Sur Bicentennial Rodeo Tournament



Benjamin Josaiah Granada
1st Runner-up
 AIMS Speech Contest, Bangkok, Thailand

Faculty and Staff

A total of 42 Research and Development Awards were received by the faculty and staff. Among these, eight (8) papers/poster were awarded best R&D paper and one (1) qualifier during the 2019 National Research Symposium organized by the Department of Agriculture – Bureau of Agricultural Research and one (1) best research paper was also awarded during the NSAARRD organized by the Philippine Council for Agriculture, Aquatic, and Natural Resources Research and Development. Several individual and group awards were also received from international, national, and regional conferences.



Jeffrey A. Lavarias

Outstanding Agricultural Engineer and Biosystems Engineer in the field of Postharvest Technology, Agricultural Processing, and Rural Electrification
 Philippine Society of Agricultural and Biosystems Engineers (PSABE)

*Likha Award - Regional Winner for Creative Research Category:
 "Mechanical Cacao Sheller/Huller"*
 DOST and TAPI - 2019 Regional Invention Contest and Exhibits

Victorino T. Taylan

Most Outstanding Agricultural and Biosystems Engineer in the Philippines (MARAMBA AWARD)

Philippine Society of Agricultural and Biosystems Engineers (PSABE)



Renato G. Reyes

Achievement Award in Teaching
 4th Crop Science Society of the Philippines - 2019



Daerry's Tilapia Ice Cream Team

Recognized for their registered utility model application for the Process of Eliminating Fishy Flavor From Tilapia
 15th Agriculture and Fisheries Technology Forum and Product Exhibition of DA-BAR





**Edgar A. Orden, Neal A. Del Rosario,
and Jovanni Jo S. Galamgam**
Best Paper (Research Category)
National Symposium on Agriculture and Natural
Resources Research and Development (NSAARRD)

CLSU Researchers Reap Awards in DA-BAR's National Research Symposium



**Clarissa Yvonne J. Domingo, Lilet C. Cruz,
and Rubigilda P. Alili**

AFMA Best R&D Paper Applied Research (TA/TV) Animal Science Category Gold Award: *"Newcastle Disease Dry RT-LAMP Test Kit with Competence to Differentiate Infected from Vaccinated Animals (DIVA)"*



**Ronaldo T. Alberto, Jose T. Gavino Jr.,
and Emman E. Ramos**

AFMA Best R&D Paper for Applied Research (TG/IG) Soils and Water Science Category Silver Award: *"Site Suitability Mapping of Onion in the Province of Occidental Mindoro using Geographic Information System (GIS) Model Builder"*



**Ruel G. Peneyra, Christian Rod C. De Vera,
Fe L. Porciuncula, and Queenie P. Peneyra**

AFMA Best R&D Paper and Poster for Applied Research (TA/TV) Soils and Water Science Category Silver Award: *"Green Energy Driven Water System for Increased Agricultural Productivity and Rural Incomes: Ram-Pump Irrigation System Based Integrated Production System"*



Regidor G. Gaboy, Fe L. Porciuncula, Maria Adrielle S. Estigoy, Ma. Ruby Hiyasmin M. Delos Santos, Emil F. Ubaldo, Milagros A. Santos, Michael C. Mabalay, Mark Gil M. Fernando, Vilma M. Salas, Michael E. Mananghaya, Keiven L. Encarnacion, and Rojelito F. Sison
 AFMA Best R&D Paper Socio-Economics Research Category
 Silver Award: *"AGRISIKAT! Sa Agrikultura, Sikat Ka! A Career Advocacy and Family Engagement on Agriculture and Fisheries"*



Maria Excelsis M. Orden, Matilde Melicent S. Recto, Rocelyn M. Barroga, Maricar E. Gumangan, Rhenalyn F. Duca, and Kristalyn V. Armadillo
 AFMA Best R&D Paper Socio-Economics Research Category Silver
 Award: *"Impact Assessment of the Solar Household System as an Extension Project of the Department of Agricultural and Biosystems Engineering, College of Engineering, Central Luzon State University"*



Thelma B. Estera, Dana G. Vera Cruz, Alma A. De Leon, Celyrah B. Castillo, Celeste D. Dela Cruz, Michelle A. Domingo, Christian S. Manuel, and Jahninia G. Sobrepena
 AFMA Best R&D Paper Development Research Category Silver
 Award: *"Soybean Utilization and Product Development"*



Rubigilda P. Alili, Samuel E. Hermogino, Clarissa Yvonne J. Domingo, and Winston A. Palasi
 AFMA Best R&D Paper Applied Research (TG/IG) Soils and Water
 Science Category Bronze Award: *"Loop-Mediated Isothermal Amplification (LAMP) Detection of Schistosoma japonicum in Environmental and Flood Waters: Risk-based Surveillance of Suspected Transmission Sites"*



NAME	NATURE OF AWARD	AWARD GIVING BODY/ EVENT
International		
Vanessa V. Velasco, Jamal James D. Manlapig, Casimiro Lalugar, and Joseph R. Mendoza	1st Place - Best Poster Presentation- Evaluation of the Growth Performance of the IP-Kayumanggi in Selected Duck Egg Regions of the Philippines	2nd International Conference on Tropical Animan Science and Production 2019 and 2nd International Conference on Native Chicken 2019
Melanie P. Tolentino	1st Place Best Paper- Community Social Capital and Health Status and Health Seeking Behaviors among the Elderly	2019 Asia-Pacific Innovations Forum
Daniel Marvin V. Ramel, Jerwin R. Undan, Sofronio P. Kalaw, and Renato G. Reyes	1st Place Oral Paper Competition (Basic Research Category)- Species Listing and Mycophagy of Macrofungi Found in Barobbob Watershed, Bayombong, Nueva Vizcaya, Cagayan Valley Region	International Symposium and Training Workshop on Microbial Utilization in conjunction with the 201th MSP Anniversary and 6th Annual AnMicro Conference and iCollect Workshop
Nikko A. Macaraeg and Janet O. Saturno	2nd Place Best Poster Presentation- Rhizofiltration Potential of Floating Aquatic Macrophytes (FMAs) in Nile Tilapia (<i>Oreochromis niloticus</i> L) Tanks	13th International Kuroshio Science Symposium
Ronaldo T. Alberto, Jose T. Gavino Jr., and Emman E. Ramos	2nd Place Best Research Abstract Award in Engineering Technology and Innovation Strand- Assessing the Energy Potential of Onion Leaves in Bongabon, Nueva Ecija through Remote Sensing	3rd International Conference on Multidisciplinary Research on Higher Education
Ronaldo T. Alberto, Jose T. Gavino Jr., and Emman E. Ramos	2nd Place Best Research Paper Award in Engineering Technology and Innovation Strand- Site Suitability Mapping of Onion in the Province of Occidental Mindoro using Geographion Information System (GIS) Model Builder	3rd International Conference on Multidisciplinary Research on Higher Education
Juvy J. Monserate, Sarah Joy A. Ramos, Gerald Glenn A. Hernandez, and Joel R. Salazar	2 nd Runner-up Poster Competition- Fabrication of Two Selected Methods Electrospun of Polylactic Acid (PLA) Chitosan Nanofiber and Zeolite Chitosan Reinforced with Nano-Silica as Efficient Nanoremediators for Selected Heavy Metals in Aqueous Solution	International Nanotechnology Conference in the Philippines 2019
Ardenn R. Ponce, Eugenia G. Baltazar, Nemesio V. Torres, and Armando C. Lagasca	Best Extension Service - Implementation/Management Award (Agriculture and Fisheries Category)- Goat Raisers Rise: "Central Luzon Agriculture and Fisheries Extension Network-Stakeholders' Interventions towards Community Action Project (CLAFEN-SICAP) in Cuyapo, Nueva Ecija	2nd International Multi-Sectoral Development Services Conference and 4th International Multi-Sectoral Extension Services Convention
Milagros S. Diaz, Eugenia G. Baltazar, Fermina C. Macanas, Maria Concepcion De Vera, and Lolita L. Ponce	Best Extension Service - Implementation/Management Award (Science Technology and Engineering Category)- Establishing and Utilizing of Barangay Management Information System (BMIS) in Support of Local Development Planning and Management in Science City of Munoz, Nueva Ecija	2nd International Multi-Sectoral Development Services Conference and 4th International Multi-Sectoral Extension Services Convention
National		
Geraldine G. Gantioque	1st Place - Best Paper- Development of Rice-Based Complimentary Food for Older Infants	45th FNRI Seminar Series, Undergraduate Research Competition : Food Technology
Jerwin R. Undan, Sofronio P. Kalaw, Angeles M. De Leon, Renato G. Reyes, Rich Milton R. Dulay, Dana Theresa C. De Leon, and Rence Marrion M. Pineda	1st Place Best Poster Paper- Ethnomycological Survey and Species Listing of Macrofungi Utilized by Bago Tribe in Alilem, Ilocos Sur	19th Philippine Society for the Study of Nature (PSSN) Annual Scientific Conference (iConSIE 2019)
Alvin P. Soriano, Jomar S. Garabiles, Efren F. Celestino, and Ely Mar P. Urpiano	1st Place Best Poster- Women's participation in the application of artificial insemination(AI) as a breeding tool for goats	National GAD Congress



NAME	NATURE OF AWARD	AWARD GIVING BODY/ EVENT
Vanessa V. Velasco, Ernesto A. Martin, Eddie J. Rafael, Jayson Juan, Mae Angeline Valdez	Best Paper Award In Nutrition - Feeding System and Floor Space on the Growth and Egg Production Performances of Itik Pinas (<i>Anas platyrhynchos</i> L) under Range Management System	56th PSAS Scientific Seminar and Annual Convention- Philippine Society of Animal Science
Rosalie R. Rafael	Best Paper Presenter Award (Applied Chemistry Category)- Isolation and Characterization of Collagen from the By-Products of Milkfish (<i>Chanos chanos</i>) Processing	1st Annual National PCSMT Research Congress- Philippine Consortium for Science, mathematics and Technology (PCSMT) Inc.
Jessa M. Rarama, Ramil R. Carbonel, Patricia P. Bernal, Maria Celia M. Fernando, and Emmanuel V. Sicat	2 nd Place Best Poster- Advancing Women's Participation on Rural Renewable Energy Generation throughh Philscat's Likas Lakas Program	National GAD Congress
Val C. Garcia, Ramil R. Carbonel, Maria Celia M. Fernando, Carlos J. Abon Jr., and Emmanuel V. Sicat	3 rd Place Best Poster- Capacity Enhancement on Integrated Pest Management for PHILSCAT and CLSU staff	Philippine Association of Entomologist (PAE) Annual Scientific Meeting
Juvy J. Monserate	Technology Dissemination and Utilization Award	2019 DOST-PCAARRD Graduate Alumni Association (DPGAA) Biennial Convention
Regional		
Armando N. Espino, Jonathan L. Galindez, Marvin M. Cinense, and Roan F. Beronilla	1st Place Best Paper(RESEARCH CATEGORY) - Utilization of Modified Drip Irrigation for Production of High Quality Onion and Garlic	CLAARRDEC 30th Regional Symposium on R&D Highlights
Patricia P. Bernal, Maria Celia M. Fernando, Ramil P. Carbonel, and Emmanuel V. Sicat	1st Place Best Poster- Advancing Farmers' Ingenuity through Magsasakang Mekaniko Program in the Advent of Farm Mechanization	CLAARRDEC 30th Regional Symposium on R&D Highlights
Ramil P. Carbonel, Rosemarie Teresa V. Cabaniag, Trojane V. Soberano, Erickson C. Frediles, Francis E. Mina, Reymark E. Fulgencio, Patricia P. Bernal, Cao Wenliang, Xiao Wei, Cheng Liangii, Carlos C. Abon Jr., and Emmanuel V. Sicat	2 nd Place Best Poster- PHILSCAT's New Hybrid Rice Variety for Irrigated Lowland Ecosystem	CLAARRDEC 30th Regional Symposium on R&D Highlights
Maria Excelsis M. Orden, Anna Maria Lourdes M. Latonio, and Maria Yna Diane B. Manalastas	3 rd Best Poster	3RD GAD RESEARCH CONGRESS IN LUZON
Regidor G. Gaboy, Fe L. Porciuncula, Maria Adrielle S. Estigoy, Ma. Ruby Hiyasmin M. Delos Santos, Emil F. Ubaldo, Milagros A. Santos, Michael C. Mabalay, Mark Gil M. Fernando, Vilma M. Salas, Michael E. Mananghaya, Keiven L. Encarnacion, and Rojelito F. Sison	3 rd Place Best Poster (Development Category)- AGRISIKAT! Sa Agrikultura, Sikat ka! A Career Advocacy and Family Engagement on Agriculture and Fisheries	CLAARRDEC 30th Regional Symposium on R&D Highlights
Erick Allain C. Flores, Ramil R. Carbonel, Erickson C. Frediles, Francis E. Mina, Wen Hongbo, Ma Wendong, Liao Bin, Val C. Garcia, Angelica C. Sanchez, Carlos J. Abon Jr., Maria Celia M. Fernando, and Emmanuel V. Sicat	3 rd Place Best Poster- Technology Demonstration of Philscat Hybrid Rice	CLAARRDEC 30th Regional Symposium on R&D Highlights
Ramil R. Carbonel, Patricia P. Bernal, Maria Celia M. Fernando, Jessa M. Rarama, Edgardo V. Coloma, Aldo C. Valdez, Emmanuel V. Sicat	3 rd Place Best Poster- Empowering Filipino Farmers through Gender Neutral Capability on "Makina Teknik - A PhilSCAT Program on mechanized Rice Transplanting	CLAARRDEC 30th Regional Symposium on R&D Highlights

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 Science City of Muñoz,
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 (6344) 456-0688
(6344) 456-5202

 <http://clsu.edu.ph>

 clsu@clsu.edu.ph