



SMAARDEC

Innovate. Engage. Connect.

SOUTHERN MINDANAO AGRICULTURE, AQUATIC AND NATURAL
RESOURCES RESEARCH AND DEVELOPMENT CONSORTIUM

2023

ANNUAL REPORT





INNOVATE. CONNECT. ENGAGE.

THE SMAARRDEC ANNUAL REPORT 2023





About SMAARRDEC:

Established on August 13, 1987, the Southern Mindanao Agriculture, Aquatic and Natural Resources Research and Development Consortium (SMAARRDEC) is a not-for-profit R&D organization under the orchestration of the Philippine Council for Agriculture, Aquatic and Natural Resources Research and Development (PCAARRD) serving as a partner in managing R&D efforts to accelerate the generation, utilization, and commercialization of technologies in agriculture, aquatic, and natural resources of Davao Region.

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— “ —

2023 is a year of good harvest for the Consortium as it consistently made its relevance and ingenuities transcend over the region's various AANR sectors.

— ” —

DR. BONIFACIO C. GABALES

President, University of Southeastern Philippines
Chairperson, SMAARRDEC Regional Research and Development Coordinating Council (RRDCC)

MESSAGE

As SMAARRDEC continually vouches for excellence in science and market-driven knowledge generation and utilization in the AANR sector, I am honored to share with you the SMAARRDEC Annual Report 2023 which hallmarks the consortium's accomplishments and initiatives on research and development (R&D) and technology transfer, bringing S&T innovations closer and accessible to the people of Davao Region.

2023 is a year of good harvest for the Consortium as it consistently made its relevance and ingenuities transcend over the region's various AANR sectors. SMAARRDEC's S&T projects in this report cover a broad scope of completed and ongoing regional goals to benefit the public and commercial sectors, research institutions, partners in the academe, researchers, extension workers, and ultimately, the farmers. As such, through its implementation of various value-adding regional research and development and extension projects under the leadership of PCAARRD, its 36th year in service, dedicated towards regional innovations, proves to be a year well served.

Dedicated to the sustenance of livelihood, advancement, and safety among its people and communities across the Davao Region, SMAARRDEC has consistently vowed to fulfill its mission to generate ideas, best practices, and updates on agricultural standards and developing markets that support the growth of the region's AANR sector even amidst the threats of pandemic. Credited to the dedicated men and women behind its operations, the Consortium recognizes its immense effort and participation to attain yearly deliverables and targets.

As we continually traverse more challenging years further, may our resilience be as strong as our commitments be ever-rooted within the Consortium's goals, driven by our common vision and collaborative efforts towards regional development. On behalf of the men and women behind SMAARRDEC, we thank you all, and may we continue to innovate, engage, and connect towards a thriving and economically sustainable Davao Region.

FORERWORD

The year 2023 brought forth positive initiatives and projects that bear witness on how SMAARRDEC steadfastly worked and adjusted reins in sustaining the consortium's programs through resilience and commitment among its member agencies for the development of the Davao region. This year's achievements, leafing through this report, testify to the sustained efforts of the Consortium as it thrives more progressively towards AANR advancements and innovations in its 36th year of service.

As PCAARRD in the region, SMAARRDEC strategically continues to innovate ways to mobilize scientific knowledge, empower local researchers and extension workers, and create an enabling environment for S&T/R&D innovations through more productive and ingenious means. Driven by its vision, it looks into a promising paradigm and transcends borders in anchoring its system of complementation towards sustainable interventions and life-changing pursuits of progress in AANR sector of the region.

Thus, this report details all of SMAARRDEC's ingenuities, from knowledge generation, utilization, and capacity building to knowledge management, and how it affects its stakeholders in the region. Amidst the challenges of our times, the Consortium embraces various modalities and platforms to channel information and innovation amongst its clients and beneficiaries to ensure business and research continuity, carry on project implementations, assist policy-making, and provide information accessible and far-reaching.

Indeed, the year 2023 marks the 36th milestone of our shared purpose as one Consortium in service and excellence through research-driven innovations for a more resilient and sustainable Davao Region. I commend the dedicated men and women of SMAARRDEC to whom Consortium operations are fueled and credited. Lastly, with its pool of competent individuals and cutting-edge innovations, I am confident that SMAARRDEC will continue to empower and take the lead in implementing its AANR programs, projects, and advocacies; discoveries; and milestones in a manner relevant and impactful more than ever.

— “

SMAARRDEC will continue to empower and take the lead in implementing its AANR programs, projects, and advocacies; discoveries; and milestones in a manner relevant and impactful more than ever.

” —

DR. GILBERT A. IMPORTANTE

Director, Southern Mindanao Agriculture,
Aquatic and Natural Resources Research and
Development Consortium (SMAARRDEC)



EXECUTIVE SUMMARY

SMAARRDEC ANNUAL REPORT 2023

As SMAARRDEC celebrates its 36th year with the theme "Empowering Synergy and AANR Innovation through S&T in the Region", the Consortium reaps this year's fulfillment of R&D harvests in empowering the region's AANR sector. Thus, capturing the Consortium accomplishments for 2023, SMAARRDEC remains resolute in its mission to drive sustainable development through research, innovation, and community engagement in the pursuit of advancing regional S&T-based knowledge towards broader sustainable development responsive to the needs of the people and communities it serve.

As PCAARRD's regional arm, the Consortium remains steadfast with its goals under PCAARRD's leadership and directions for R&D program implementation. For R&D management and coordination, a series of meetings among its member agencies were consistently conducted for the planning and implementation of SMAARRDEC's activities and projects across various platforms. Foremost are the Consortium's participation in the 1st Davao Regional Cacao Industry Development Council Meeting, its active planning and implementation of RIIC-iSTRIKE activities, and the reinvigoration of Techno Gabay Program to name a few. In consonance, monitoring and evaluation of various R&D Projects through different in-house reviews provided an opportunity for researchers to present and improve research and extension practices in the AANR sectors.

Also, the Consortium successfully conducted its Regional Symposium on Research, Development, and Extension Highlights (RSRDEH) and Farmers and Fisherfolks Forum which underscores the significance of SMAARRDEC's collaborative efforts in empowering research and development in the region. This provided a collaborative space for information exchange amongst its member agencies to present and pitch research and development studies relevant and value-adding. A total of 17 studies fell under the research category, while the Development and Policy brief had four (4) and six (6) presentations, respectively. The Consortium also actively pursues project monitoring and field evaluations. Noteworthy are visits from DOST-PCAARRD team on various Consortium-initiated projects namely SciCat and iCradle projects towards various regional commodities. In connection, led by its Consortium Director Gilbert A. Importante, series of CMI visits are conducted to discuss financial matters, possible projects, and commercialization of technologies.

Underpinning the importance of partnerships in sharing knowledge and resources, the Consortium conducted collaboration meetings in the planning and implementation of this year's activities namely the RSTW and NSTW Celebrations, and Davao Agri Trade Expo with its member agencies and other consortia in Mindanao. Moreover, a series of meetings for the 3Cs through iSTRIKE Davao discusses the competitiveness and commercialization of the region's top three commodities namely coffee, cacao, and coconut. AARRDEC also forge collaboration with its new member institutions during the 116th RRDCC meeting namely, Santo Tomas College of Agriculture, Sciences, and Technology (STCAST), Monkayo College of Arts, Sciences, and Technology (MonCAST), PLGU Davao de

Oro, and the University of Mindanao (UM). Equally thriving is the SMAARRDEC's website and information system which are continually maintained and updated with recent Consortium event highlights to effectively serve its clientele and stakeholders.

In strategic priority areas of R&D, various Consortium CMI-led projects continually brought cutting-edge ingenuities to various communities in the Davao Region. The University of the Philippines Mindanao (UP Mindanao) is set to develop a non-invasive grading system and maturity estimation model for Durian using Artificial Intelligence and Imaging through a project with the Department of Science and Technology (DOST) Science for Change Program (S4CP) while DOST-PCAARRD-funded project "Near Real Time Tracking using GIS and Thermal Sensing Technology for Foc TR4 Detection and Prediction Dispersal in Banana" is now on its full implementation this year at the University of Southeastern Philippines Tagum-Mabini Campus.

Contributing to another significant breakthrough is this year's launching of the DA-RFO XI-funded project "Bamboo Rural Enterprise and Development" (BREAD) by Davao del Sur State College (DSSC) which was located at Kapoc, Malita, Davao del Sur comprising processing facilities for engineered bamboo, including capability building. Upscaling the bamboo industry in the province and the region through the promotion and production of engineered bamboo, the project also aims to generate livelihoods for rural communities and serve as a training facility for young people, farmers, and bamboo entrepreneurs in the province and the region.

For R&D results utilization, SMAARRDEC also undertakes programs and activities to enhance the promotion and eventual utilization and commercialization of S&T outputs. The Year 1 annual review of RAISE program was conducted this year along with the on-going planning and implementation of LIFE Program. PHILFIDA Region XI conducted specialized livelihood training program on Abaca Fiber Processing as trainings deployed to train various of stakeholders in the field of agriculture, its benefits, and market analysis. Technology promotion remain an integral aspect of Consortium operations.

The Consortium forged collaboration with other consortia namely, the SOCCSKSARGEN Agriculture Aquatic and Natural Resources Research and Development Consortium (SOXAARRDEC), the Western Mindanao Agriculture Aquatic and Natural Research and Development Consortium (WESMAARRDEC), the Caraga Consortium of

Agriculture Aquatic and Natural Research and Development (CCAARRD), and the Northern Mindanao Agriculture Aquatic and Natural Research and Development (NOMCAARRD) during the Davao Agri Trade Expo (DATE) 2023 showcasing 14 technologies generated by the different consortium member institutions. Other tech promotion fairs and exhibits were also participated by the consortium for product display, exhibits, technology demonstration, business mentoring, technology pitching, research presentations, and promotional competitions to increase the presence and demand for regional champion products and innovations.

The Consortium also invests on several intervention strategies for members of its R&D network for human resource planning, development and management to strengthen the capabilities of its pool of R&D and technology management experts. These include non-degree training, webinars/seminars and workshops, research management involvement, and scholarship grants. Collaborative efforts among members of the Consortium were streamlined to strengthen the complementation of its human resource development activities. Also, to effectively carry out its operations, SMAARRDEC maintained modalities for a continuous establishment, maintenance, and upgrading scheme of its facilities, and equipment purchases. The Consortium has also received recognitions and awards from various institutions and agencies for its contributions in the region's AANR sector, insignia of the Consortium's continued relevance and presence in propelling S&T development.

The RRDCC, as the policy-making body of the Consortium spearheads the analysis and advocacy of important regional policy issues in the AANR sector. For 2023, RRDCC held (3) regular quarterly meetings, and various RRDCC resolutions were passed and implemented. The research "Climate Risk Vulnerability Assessment (CRVA) Targeting and Prioritizing for the Adaptation and Mitigation Initiative in Agriculture (AMIA) for the Province of Davao del Norte, Davao de Oro, and Davao Occidental" by USEP-CDM progressed to its data gathering stage this year. The convergence of efforts among the member agencies during the years has also broadened the initiation, continuation, and strengthening of programs addressing the R&D policy needs of the Consortium.

Finally, with a legacy of over three decades behind it, SMAARRDEC looks forward to new partnerships, breakthroughs, and transformative initiatives that will continue to empower communities, protect natural resources, and elevate the region's agricultural and aquatic landscape. The year 2023, indeed, stands as a testament to SMAARRDEC's dedication to its vision and unwavering commitment to the people it serves and the prosperous future it promises for Southern Mindanao.

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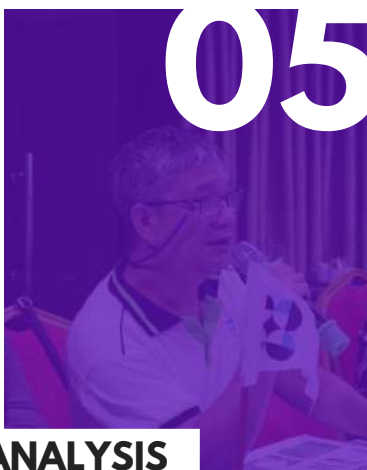
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RESEARCH AND DEVELOPMENT (R&D)

MANAGEMENT AND COORDINATION

Pursuant to the demands for technological advancement to respond with the regional challenges in the agricultural, aquatic, and natural resources sectors, SMAARRDEC keep abreast under PCAARRD's leadership in setting directions and implementation of i banner programs. The Consortium continuously conceptualizes, develops, and initiates research and development activities to bridge S&T knowledge gap and uplift regional and country's economic sustainability.

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Taking an active role in orchestrating a unified R&D agenda for S&T development, SMAARRDEC continues to be relevant in the entire R&D system by strengthening its management and coordination at the regional, national, and even international levels.

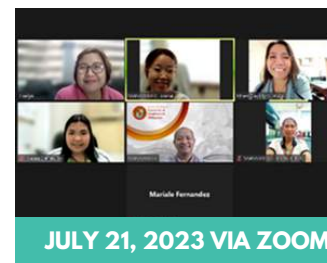
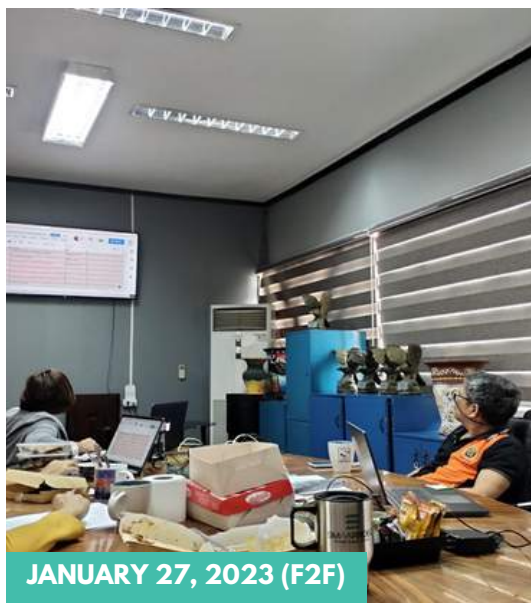


A. PLANNING AND PROGRAMMING

Consortium Secretariat Meetings

The Consortium secretariat, as the forefront of Consortium operations and planning, conducted series of meetings on both face-to-face and online modalities discussing agenda concerning SMAARRDEC's plans and activities. These meetings are the following:

- 9 January 2023 via Zoom- Discussed SMAARRDEC 2023 plan
- 27 January 2023 (F2F)- Finalized the RCP 2023-2025 Workplan and activities
- July 21, 2023 via Zoom - Discussed the preparations of Development Writing webinar and RRDCC meeting



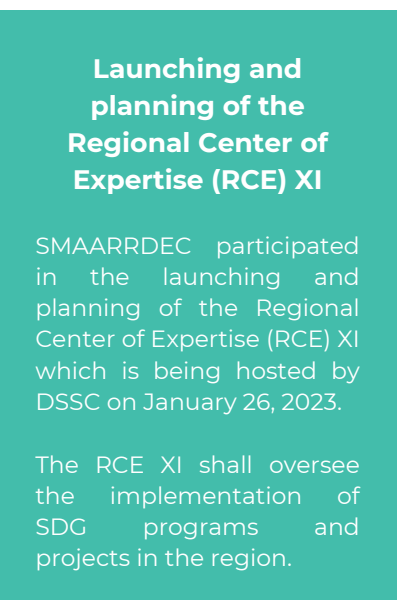
Coordination Meeting for RSRDEH w/ DDOSC, PAGRO-DDO and ATI-XI

The coordination meeting was held on April 20, 2023 via Zoom. The meeting discussed the finalized the venue at DDOSC main campus and the request for PLGU-Davao de Oro to facilitate invitation of farmers and possible sponsorship.



Banana Team Meeting

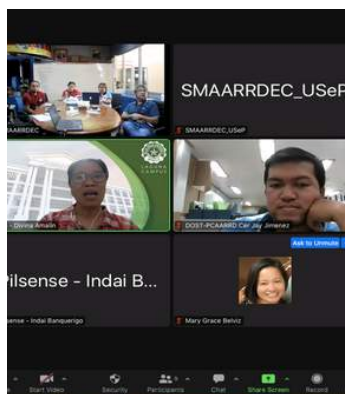
The meeting was held on February 8, 2023 via Zoom with the discussed proposals to be submitted to DOST-PCAARRD. This was facilitated by Dr. Cecirly G. Puig – SMAARRDEC R&D Cluster Coordinator.





Meeting with Cacao Philsense

This was held on May 5, 2023 at the UseP-Office of the President and on May 10, 2023 via Zoom and attended by RRDC Chair Generalao, SMAARRDEC secretariat and UseP Cacao experts. The meeting discussed the “Production of Fine Flavour Cacao Beans from Farming to Marketing” proposal in collaboration with De La Salle and ASCAT with Philsense as partner industry to be submitted to DOST for funding.



Peace 911 Meeting on Task Force Abaca

Held on May 14, 2023, at the DCIPC, Palma Gil St. Davao City. The meeting discussed the following issues at hand:

- Some abaca farmers in Davao City planted the abaca Daratex variety, whose produce was no longer bought by the buyers, thus, the livelihood of the farmers was sacrificed
- Apparently, the German market for processed abaca has complained about on the durability of daratex
- Local buyers will only buy Tangongon variety to address the requirements of the international market.

The following are the actions taken by SMAARRDEC:

- Provided references to Phil-FIDA for the crafting of the proposal
- Identified active laboratory in the region that could possibly back up Phil-FIDA in the production of Tangongon planting materials.
- Inquired from DA_BAR for possible funding; the proposal should be submitted for inclusion in the 2024 budget
- Inquired from DOST-PCAARRD for possible assistance; regional data will be provided with a capsule proposal

1st Davao Regional Cacao Industry Development Council Meeting

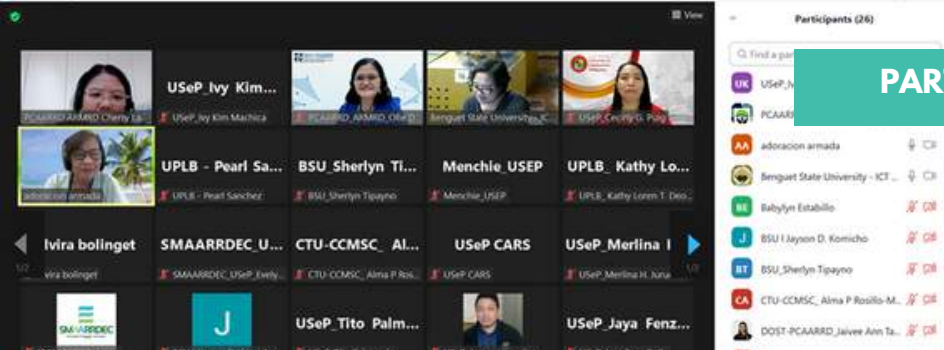
The meeting was held on May 17, 2023 at the DTI XI office to discuss the following activities namely:

- The creation of Provincial Council with TESDA;
- Promotion through MICE in partnership with DOT
- Future activity on addressing FDA issues on registration.



RAISE-UGMARA Catch Up Planning

The catch up planning was conducted on September 20, 2023 at the Ritz Hotel and via Zoom application.



PARTICIPATION ON PCAARRD MEETINGS

PCAARRD Inception Meeting

"Near-Realtime Tracking Using GIS and Thermal Sensing Technology for Foc TR4 Detection and Prediction Dispersal in Banana"

The meeting was held on April 27, 2023 via Zoom. Attended by the project team led by Dr. Cecirly Puig where in the team obtained clear direction as to the project implementation.

PCAARRD DC Meeting via Zoom

The meeting was held on April 18, 2023 via Zoom and attended by SMAARRDEC Secretariat for the proposal "Promoting AANR-STI in Davao Region". Agenda is on the RSTW/NSTW participation.

Meeting with Dr. Synan Baguio of DOST-PCAARRD

The meeting was conducted on April 20, 2023 via Zoom. It centered on the discussion of the status of Itik-Pinas deployment in the region. He also talked about the possible establishment of Itik Pinas production hub in USeP-CARS. Dr. Baguio encouraged to come up with livestock proposals.

UPLB Project AGRI 4.0 Meeting

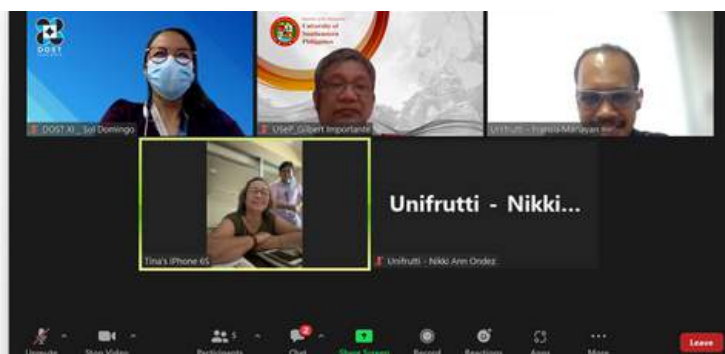
The meeting was held on May 10 and June 15, 2023 via Zoom. It was attended by CD Gilbert A. Importante and SERDAC staff.



LIFE project Coordination meeting

The meeting was held on June 22, 2023 in Talaingod Davao del Norte. Initial meeting with 56th IB Phil Army regarding the documentation status of approved LIFE project with Tatag IP.

To date MoA was signed and fund transfer is on process while implementation will start on August 1, 2023



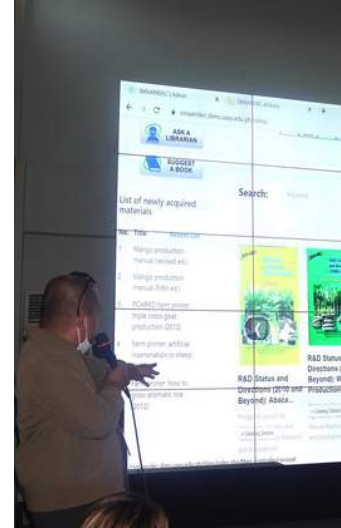
Exploratory Meetings organized by DOST XI

On Waste Utilization With Unifrutti Phils

This was held on October 4, 2023 via zoom

On Genetic Biodiversity Conservation with international mycology experts

This was held on October 20, 2023 via zoom. Both meetings were represented by CD Importante



SMAARRDEC CONDUCTED A COORDINATION MEETING CUM REORIENTATION ON CONSORTIUM OPERATION AND TECHNO GABAY PROGRAM

SMAARRDEC conducted a coordination meeting cum reorientation on Consortium operation and Techno Gabay Program at CIC- AVR, USEP Obrero, Davao City.

Participated by representatives from 28 Consortium Member Institutions, this activity aims to revive the vibrant camaraderie in the SMAARRDEC community, given the retirement of seasoned researchers and extensionists and the coming of new breed of experts in the region.

Understanding the consortium operation and the essence of collaboration are deemed necessary for regional development particularly in the AANR sector. A welcome message was given by RRDCC chairperson and USEP President, Dr. Lourdes C. Generalao. She highlighted that the activity is very important especially for young researchers and grateful for everyone for attending the activity. Dr. Evelyn Gecale, Technology Cluster Coordinator acknowledged all the participants. Dr. Gilbert Importante, Consortium Director gave a brief overview of the SMAARRDEC operation and introduced the Clusters and their role.

SLIMS, the official website of SMAARRDEC was presented by Mr. Rey De Leon to encourage the researchers to create an account for the pool of experts. Techno Gabay Program was also presented virtually by Ms. Cristin Rosan Besarion, TGP Focal Person.

MoC and MoU for SMAARRDEC operation and Techno Gabay Program was also discussed, respectively. The SMAARRDEC secretariat is looking forward that this coordination meeting will be conducted quarterly to continue the close coordination.



DOST-Scientific Career System Orientation

Held on July 18-19, 2023 at Acacia Hotel, Davao City, the orientation was participated by CD Importante and selected faculty researchers of the consortium member institutions

RRDIC Meetings

RRDIC Meetings for this year were attended by Consortium Director, Dr. Gilbert Importante on the following dates:

- March 9, 2023 via Zoom Presented proposals to the Council and was attended by CD Gilbert Importante and Dr. R Montepio as proponents.
- June 2, 2023 at NEDA XI, Bangkal, Davao City During the meeting, DSSC presented 2 proposals (on Coffee and Cacao) while USEP presented 1 proposal (on Coconut)

Working Group Meeting on 2023 RSRDEH

The meeting was held on August 7, 2023 at DDOSC Campus, Compostela. It was attended by SMAARRDEC Secretariat, DDOSC Research Team, and a representative from PAGRO DavOro to discuss the preparations for RSRDEH and Fisherfolks Forum.

Davao Region Development Research Agenda (DRDRA) Launching

The launching commenced on May 23, 2023 via Zoom and was attended by CD Gilbert A. Importante.

RIIC-iSTRIKE activities

The RIIC-iSTRIKE also conducted the following activities:

- May 16, 2023 at Seda Hotel on introduction of Spectree
- May 23, 2023 at Seda Hotel i-STRIKE regular meeting
- May 30, 2023, Orientation on Innovation funding

2023 National Forum on Geographical Indicators

The forum was held on May 22-24, 2023 in Makati City organized by IPOPhil. This was participated by Ms. Nekilo B. Tange of USEP-CDM and endorsed by SMAARRDEC and DTI XI.

PRDP Stakeholders Consultation

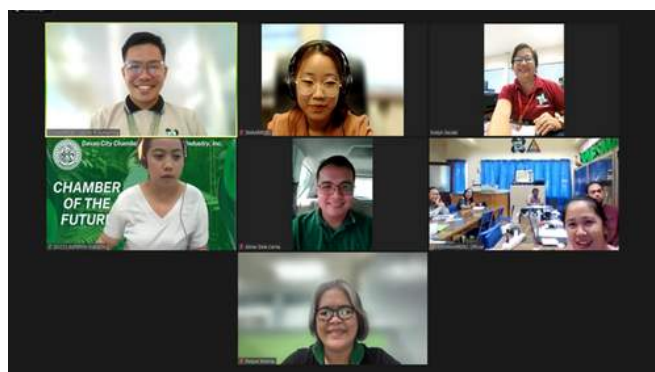
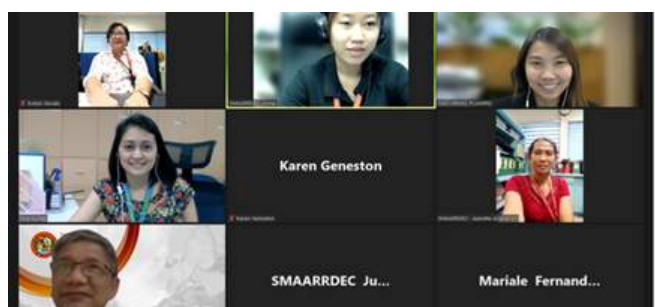
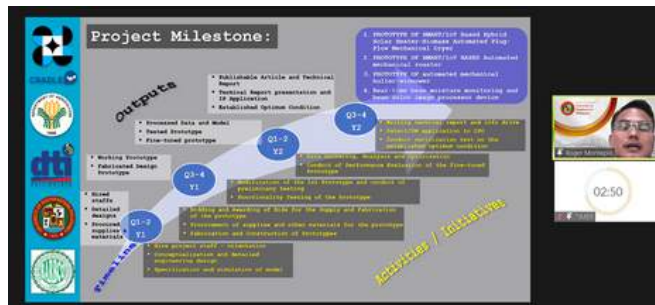
Conducted on December 13, 2023 at the World Palace Business Center, the event was attended by TTC Coor Evelyn Gecale. Highlights were the presentation of VCAs conducted and the prioritization of commodities to be subjected. It was also reported that DORSU implemented the research on Vannamei Shrimp funded by PRDP.

Meeting for Financial Management Seminar

Held on August 25, 2023 via Zoom, the meeting centers on the discussion regarding the preparation for Seminar on Financial Management for Mindanao Consortia. This was Attended by representatives from the five (5) Mindanao Consortia with DOST-PCAARRD-COU.

Davao Agri-Trade Expo (DATE) Preparation Meetings

Held on August 23, 2023 and September 8, 2023 via Zoom, the meeting was attended by representatives from the five (5) Mindanao Consortia with DATE secretariat.



Committee Hearing with Davao City Councilor Abella

On November 9, 2023, representatives met with Davao City Councilor Abella for the engagement/renewal of commitment of LGU-Davao City with SMAARRDEC.



Participation on the LIGHTS of Lourdes

Conducted on November 10, 2023 at the USEP-UGCC, this was attended by the consortium secretariat. Recognition of PCAARRD and SMAARDEC for the support extended to the 2-term presidency of Dr. Generalao were received by the RRDCC members/SUC Presidents and the former Consortium Director, Dr. Bayacag.



VI ACCOMPLISHMENTS					
RRD Management and Coordination					
Activities	Target	Actual	Program for CA	% Accomplishment (Target/Actual)	Remarks
Agency Technical Working	120	88	1	91%	27%
Forum	15	8	1	100%	100%



Consultation Meeting for the Establishment of Halal Industry Research Training Center at DNSC.

On November 29, 2023, the Consultation Meeting for the Establishment of Halal Industry Research Training Center at DNSC was attended by Dr. Evelyn Gecale, highlights were the presentation of VCAs conducted and the prioritization of commodities. It was reported that DORSU implemented the research on Vannamei Shrimp funded by PRDP.

Joint Director Council and RRDCC Chairpersons Meeting cum PCAARRD Anniversary Celebration

Conducted on November 9-10, 2023 at Los Banos, Laguna, the meeting was attended by CD Importante and ICT Cluster Coordinator De Leon. Highlights of the meeting were: the approval of the renewal of ERCP year 2 implementation and the recognition of the retired and new RRDCC Chair and CDs nationwide.



Turnover Ceremony of DSSC BREAD (Bamboo Rural Enterprise and Development) Project

On May 19, 2023 in Matanao, Davao del Sur, the turnover ceremony of DSSC BREAD was attended by SMAARDEC Secretariat.



Through continuous monitoring and evaluation, the Consortium steers documentation of outcomes, procedures, and impact as a foundation for decision-making and further improvements of the project. Such practice ensures all activities are carried out and inputs are well-utilized.



1. REVIEW OF R&D PROJECTS

(Please refer summary on Table 1)

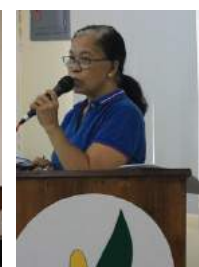
BPI-DNCRDPSC conducted Pre-Inhouse Review 2023

The Bureau of Plant Industry - Davao National Crop Research and Development and Production Support Center (BPI-DNCRDPSC) conducted its Pre-Inhouse Review for the year 2023 on May 25 at Bago Oshiro, Davao City.

SMAARRDEC Director Gilbert A. Importante together with Ms. Johana C. Orense and retired BPI-Research Director Concepcion E. Soguilon served as evaluators of the said activity. BPI-Agricultural Center Chief Dr. Lorna E. Herradura in her welcome remarks encouraged the young researchers to be involved in R&D activities and even in the production aspect.



A total of nine (9) papers were presented. Three (3) of which are completed researches on commodities such as banana, mangosteen, pummelo and garlic. While the other five (5) are on-going projects on germplasm, cacao, indigenous vegetables, calamandarin and banana. The three (3) completed papers will also be presented in the BPI project review at the national level.

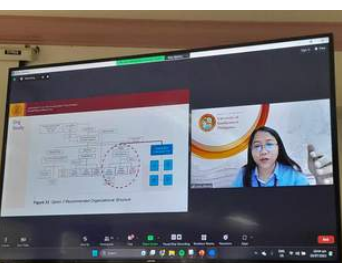


DSSC In-house Review

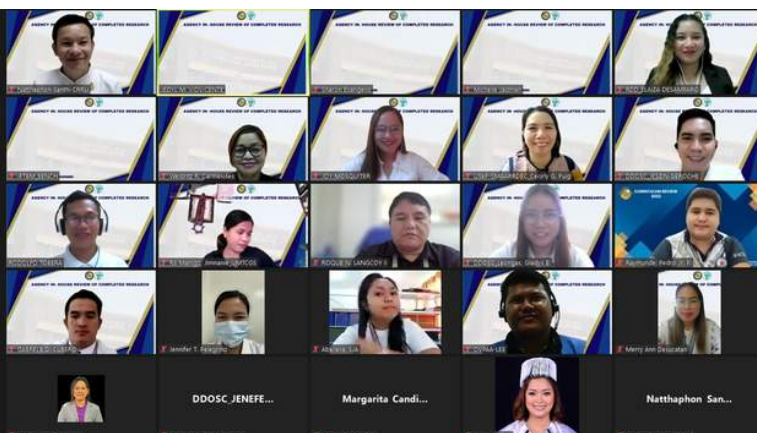
Held on July 20, 2023, at Digos City, eight (8) projects were presented during the review which was attended by CD Gilbert A. Importante as Evaluator.

USEP In-house Review for AANR Cluster

Held virtually on July 20, 2023, seven (7) projects (on cacao, pummelo, coconut, eggplant and tourism) were presented. This was represented by TTC Coor Evelyn Gecale.



DDOSC-RDD HOLDS IN-HOUSE REVIEW OF COMPLETED RESEARCH



The Davao De Oro State College, through the Research and Development Division, successfully conducted the 2023 in-house review of completed research projects on July 24, 2023. The event held virtually via Zoom, brought together seven (7) research outputs from the Experimental and Natural Science Research category and 13 completed studies from the Social Science Research category. The in-house review showcased the DDOSC's bevy of completed institutionally funded research as the College commits to fostering a culture of research and innovation among its faculty and staff.

Highlighting the event was the presence of the esteemed guest speaker, Dr. Natthaphon Santhi, the Assistant President for Global Affairs from Chiang Rai Rajabhat University in Thailand. Dr. Santhi highlighted the importance of crosscultural research collaborations and how such partnerships can elevate the quality and impact of research endeavors.

For the Experimental and Natural Science Research, the presented research outputs include Validation of Selected Organic Fertilizer in Enhancing Upland Rice Production by Domy Bonn M. Untalan; Quality Assessment of Irrigation Water and Soil Characteristics of Maparat, Compostela, Davao de Oro by Domy Bonn M. Untalan; Determination of Heavy Metal Contamination in Agricultural Crops, Water Resource and Soil Quality Near Mining Areas in Davao de Oro by Domy Bonn M. Untalan and Mariano Cojare Jr.; Design and Fabrication of Portable Grating Tool with a Mechanical Grating Plate Changer by Lee M. Serot; Supplementation of Different Herbal Plants on Production Performance and Sensory Characteristics of Broiler Chicken by Merry Ann M. Desucatan and Margeline C. Carvajal; Project Green Mining: Pag-amuma sa Kinaiyahan by Kirk John P. Tonido, Rodrigo S. Montajes Jr., and Eugene B. Dodongan; and Development and Performance Testing of the Laminated Cacao Pod Husk (CPH) particle board with Banana Stem Sheet and Glue as Binder by Lee M. Serot.

Meanwhile, for the Social Science Research, the presented research outputs include Perceptions of Personnel on Campus Security and Safety Measures of the Davao de Oro State College by Ramon P. Seban; Police Work Performance in Davao de Oro: A Community Trust and Satisfaction Survey by Diosdado H. Cruz, Jr.; Reaching the Inner Voice of the Graduates: An Online Tracer Study of Davao de Oro State College by Gabrele D. Cubero; Instructional Practices as Predictor of Student Achievement in Mathematics in New Normal Setting by Michael C. Morre Jr.; Institutional Readiness of DDOSC towards the Digital Era by Dr. Lilybeth M. Matunhay; Project SOP (Strategies for Overcoming Program) for MSMEs by Jennifer T. Pelegrino; Unveiling the Lived Experiences of Rebel Returnees: A Phenomenological Study by Gabrele D. Cubero; Work Engagement, Motivation, and Performance of Employees of the Davao de Oro State College During COVID-19 Pandemic by Dr. Pedro P. Raymunde, Jr.; Stakeholders' Perception towards Inclusive Practices in Compostela Valley State College: A Qualitative Inquiry by Riesha P. Vale; A Descriptive Correlational Study on the Relationship of Occupational Stress and Organizational Commitment among Teachers: Basis for Faculty Development by John Patrick L. Arcite; Employee Satisfaction: The Case of Academic and Administrative Staff of Davao De Oro State College by Dr. Lilybeth M. Matunhay; Graduate's Employability: A Tracer Study for Second Batch of Graduates in Davao de Oro State College – New Bataan Branch by Gabrele B. Cubero; and Case Study on the Usage of Gender-Fair Language Among Tertiary Students by Marianne N. Runas.



2. REGIONAL SYMPOSIUM ON RESEARCH, DEVELOPMENT, AND EXTENSION HIGHLIGHTS (RSRDEH)
(Please refer summary on Table 2a & 2b)



SMAARRDEC Marks 36th Years of Excellence: A Showcase through RSRDEH and Farmers and Fisherfolks Forum

“Empowering Synergy and AANR Innovation through S&T in the Region”

The Southern Mindanao Agriculture, Aquatic and Natural Resources Research and Development Consortium (SMAARRDEC) recently reached a significant milestone as it commemorated its 36th year of dedicated service and innovation in the fields of agriculture, aquatic, and natural resources. The celebration took the form of a two-day event, comprising the Regional Symposium on Research and Development, and Extension Highlights (RSRDEH), alongside the engaging Farmers and Fisherfolks Forum held at Davao de Oro State College, Compostela, Davao de Oro on August 15-16, 2023.

Attended and participated by representatives of Consortium Member Institutions (CMI's), students, faculty, and researchers. The commencement of the celebration was marked by an official ribbon-cutting ceremony led by RRDCC Chairperson and USeP President, Dr. Lourdes C. Generalao, together with SMAARRDEC Director Dr. Gilbert Importante, along with esteemed guests, heads, and representatives of CMIs. Dr. Christie Jean V. Ganiera, CESE, the College President of DdOSC, being the event host agency gave her warmest welcome message as she highlighted the symposium's theme. She emphasized the significance of the symposium.

The event also places utmost emphasis on acknowledging the most notable outcomes in Research and Development, while also fostering enhanced engagement among innovators, researchers, local government units (LGUs), and users of science and technology within the region. Furthermore, Dr. Lourdes C. Generalao, RRDCC Chairperson and USeP President gave her inspirational message to the participants.

She was truly delighted to mention that SMAARRDEC not only oversees research and development projects within the region, but more significantly, holds accountable for all the resources that have been entrusted by the benefactors. DOST-PCAARRD Executive Director Dr. Reynaldo V. Ebor, conveyed his sincerest congratulations to SMAARRDEC through an audiovisual presentation. Afterwards, Dr. Cecirly G. Puig, Research and Development Cluster Coordinator, provided the participants with a rationale and briefing of the event. This was followed by the official inauguration of the CMI's Booth Exhibit in which 15 CMIs participated the booth/technology exhibition.

The highlight of the day one was the presentation of Research and Development Category and Policy Brief. There were 17 studies fell under research category, while Development and Policy brief had four (4) and six (6) presentations, respectively.





RSRDEH AWARDS

As the event drew to a close, best paper winners from respective categories were announced as follows:

Research Category

1st place – Stable Isotopic Evidence of IMTA Biofiltration to Mitigate Eutrophication in Pujada Bay, Mariculture Park / DORSU, Emily S. Antonio, Lea A. Jimenez, Janeth C. Tayone, Roselyn V. Regino, Cirilo Ybañez, Amy G. Ponce, Ricksterlie C. Verzosa, Rheacin Polestico, Chella May Sison, Hisashi Yokoyama, Yoh Yamashita and Akihide Kasai

2nd place – Development and pilot testing of tree climbing-harvesting device and mobile mechanical dehusker for coconut/ USeP, Ryan Abenoja, Roger C. Montepio, Ruel F. Tuyogon, Cecile Ariola, Gumercienda Dismas, Menchie Lou Ferrer, Jasmine Fortuna, Ronnie Lusares and Lowrence Ceasar D. Sefuentes

3rd place – Twelve New Species and a New Combination of Metapocyrtus Heller, 1912 (Coleoptera, Curculionidae, Entiminae, Pachyrhynchini) from in Mindanao Islands, Philippines / DORSU, Analyn A. Cabras

Development Category

1st place – Outscaling Arabica Coffee-Based Farming System (Coffee+White Potato+Upland Vegetables)/ DA-RFO XI/ Melani A. Provideo and Norland Salazar, Jr

2nd place – Technical and Economic Evaluation of Selected Technologies in Mango production: A Case in Samal Island Garden City, Philippines /UPMin Vlademir A. Shuck, Leizel B. Secretaria, Angelyn T. Lacap, Michael Angela J. Urquiola, Nadzma D. Darimbang, Larry N. Digal and Emma Ruth V. Bayogan

3rd place – Technology demonstration on garlic production in Davao City/ BPIDCNRCDSPC/ Arceli G. Yebes, Jonalyn A. Pabuaya, Michelle M. Oman and Margie M. Sosmeña

Finally, clinching the First place in the Best Dressed Booth Competition was the Department of Agriculture Region XI. The second place was secured by the University of Southeastern Philippines, closely followed by the Philippine Coconut Authority Davao Research Center as the third placer.



3. PROJECT MONITORING AND FIELD EVALUATION

(Please refer summary on Table 3)



DOST RDs and staff visit projects on surveillance systems for banana disease

On September 27, 2023, the DOST Regional Directors and other DOST personnel visited one of the DOST-funded projects under the Collaborative Research and Development to Leverage the Philippine Economy (CRADLE) Program.

The goal of this project is to design and develop a mobile agricultural disease surveillance system that will be used to gather and disseminate disease-related information at the farm level. Moreover, this project aims to evaluate and validate epidemiological parameters as the basis for the development of a banana disease surveillance protocol.

With the help of the programs, they were able to develop a mobile application dubbed "Rosanna App" that will provide a platform for farm surveyors, technicians, and managers to gather, submit, and visualize essential health disease-related information.

This will also provide a content management application for farm management and activity information dissemination. The app focused mainly on Black Leaf Streak (BLS), Banana Bunchy Top Disease (BBTD), and other common banana diseases. This project profoundly helped improve the productivity of the Hijo Resources Corporation (HRC) by minimizing damages caused by said diseases and the cost of disease control. Through the project, this will intensify and open collaboration within the banana industry in Region 11 and in the country.



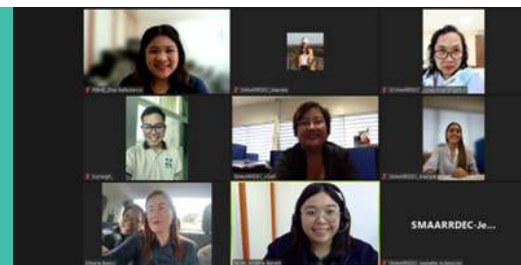
M&E and Equipment Tagging by DOST-PCAARRD-IDD

Held on September 11-12, 2023, the DOST-PCAARRD-IDD Visited USeP Obrero, USeP Tagum-Mabini Campus, UP Mindanao and Dimpas Greenintegrated Farm. This was Spearheaded by Engr. Ruel Tanquenco and Ms. Deborah Unson and Assisted by SMAARRDEC secretariat.



Monitoring and Validation Meeting on Mango FIESTA project implementation with PCAARRD-SERD

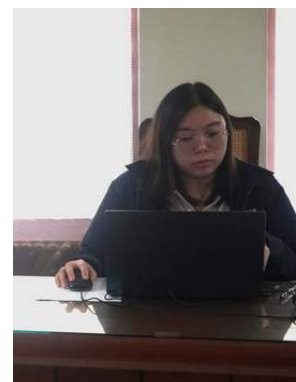
Held on September 14, 2023, the meeting was attended by the three consortia namely, SMAARRDEC, ViCARP, and SOXAARRDEC secretariat.



DOST-PCAARRD-SERD team conducted the Monitoring and Evaluation (M&E) of USeP-led projects

Held on August 22, 2023 at USeP RDE Conference Room, the team from DOST-PCAARRD-SERD composed of Ms. Kristine Banalo and Ms. Daisy Lyn Ballesteros conducted the Monitoring and Evaluation (M&E) of the projects implemented by the University of Southeastern Philippines (USeP). This activity aims to track the status of the following projects subjected to M&E namely:

1. The Use of Geospatial Analysis of Gall Rust (*Uromycladium falcatarium*) in Falcata (*Falcateria moluccana*) to Determine Diseases Occurrence in Compostela Valley, Philippines - Dr. Nympha E. Branzuela, For. Edgar Solis, For. Leo Ong and Ms. Sheryl S. Bayang;
2. Pilot Testing of Pre-, On-, and Post-, Harvest Facilities for Mango Production in Island Garden City of Samal (IGACOS), Davao del Norte implemented by Dr. Roger C. Montepio, Dr. BenHur Rafosala, and Engr. Ruel Tuyogon;
3. Development and Pilot Testing of Tree Climbing-harvesting Device and Mobile Mechanical Dehusker for Coconut – implemented by Engr. Ryan M. Abenoja/Dr. Roger C. Montepio/Engr. Ruel Tuyogon/Roland R. Bayron;
4. Synergize Academe-Industry Research Undertaking to Improve Productivity through Banana Diseases Surveillance System – implemented by Dr. Val A. Quimno, Dr. Gilbert A. Importante, and Dr. Cecirly G. Puig; and
5. Piloting Science For The Convergence Of Agriculture And Tourism (Scicat) To A MagsasakaSiyentista Farm In Davao Region implemented by Bryl I. Manigo *, Gilbert A. Importante, Gilbert M. Gordo, and Filman T. Simpao.



Lakbay-GALING Series Location Shoot and Interview

This was conducted on August 18-21, 2023 at HRC Tagum, Phil Eagle and Davao City proper. The activities were spearheaded by Dr. Paul Jersey Leron, Integrated Marketing Communication Project leader, PCAARRD-ACD.



4. CMI VISITS



Courtesy visit to the Philippine Fiber Industry Development Authority (PhilFIDA) XI

The SMAARRDEC team, led by Consortium Director Dr. Gilbert A. Importante, pays a courtesy visit to the Philippine Fiber Industry Development Authority (PhilFIDA) XI on May 15, 2023 with its newly appointed OIC-Regional Director Engr. Irma R. Rodis and the Department of Trade and Industry (DTI) XI with Dir. Ma. Belenda Q. Ambi. Dr. Importante recalls the existence of SMAARRDEC and its banner programs. The team discussed the continued collaboration of the consortium with its members, especially on solving current issues in the AANR sector in line with PhilFIDA XI's mission and as well as DTI XI on its projects helping industry partners in collaboration with the consortium. CD Importante also brought up the review of the memorandum of commitment. PhilFIDA XI and DTI XI assured their continuous support for the consortium endeavor.



Courtesy visit to Bureau of Fisheries and Aquatic Resources (BFAR) XI

The SMAARRDEC team led by Consortium Director Dr. Gilbert Importante, pays a courtesy visit on May 3 2023 to its Consortium Member Institutions (CMIs), namely the Bureau of Fisheries and Aquatic Resources (BFAR) XI with Dir. Raul Millana and the Department of Tourism (DOT) XI with Regional Dir. Tanya Rabat-Tan.

Dr. Importante recalls the SMAARRDEC banner programs including its mandate and operations. The purpose of the visit is to discuss the continued collaboration of the consortium with BFAR XI and DOT XI, as well as review the memorandum of commitment and update of the focal person from both agencies for constant communication.

PAGRO Davao de Oro visit

The meeting was held on March 13, 2023 at OSIS Conference and was attended by SMAARRDEC Secretariat and two (2) focal persons from PAGRO Davao de Oro who discussed DDO's application for membership to the consortium.



CLSU Researchers visit to SMAARRDEC-DDSC

Mango Researchers- Ms. J Laforteza and Ms. J Saturno from CLSU conducted Focus Group Discussion (FGD) with the mango growers of Davao del Sur on January 19, 2023. They introduced mango value adding technologies that could be adopted by the mango growers of DavSur.

Recognizing the essence of collaborative effort and interdependence of each manpower and resources, SMAARRDEC also tap on its various networks and agencies for resource sharing to effectively carry out significant operations and programs.



Coordinated the conduct of FGD-Scoping Study on the Barriers to Innovation in the Philippines

Held on September 6, 2023 at USEP Dining Hall, Obrero, Davao City, the activity was facilitated by Dr. Lily Ann D. Lando of PRIMEX and participated by researchers from different consortium member agencies, private innovators.

Davao Agri Trade Expo Preparation Meetings and Exhibitors Orientation Held on August 23, 2023 and September 8, 2023 via Zoom, the preparation meeting for Davao Agri-Trade Expo was attended by representatives from the five (5) Mindanao Consortia with DATE secretariat. Consequently, the DATE Exhibitors' Orientation was also held on September 22, 2023 at 2nd floor DCCCII, Bajada, Davao City and was attended by Dr. Evelyn A. Gecale and SMAARRDEC staff.



Initial activity for possible collaboration with Phil-Agro Industrial Corporation on Cassava

USEP-CARS and DABE faculty held a meeting with Phil-Agro Industrial Corporation on June 28, 2023 for initial discussion about the cassava industry problem. USEP team conducted field visit at Baungon Bukidnon on July 7-8, 2023. A CRADLE-cassava proposal is being crafted for submission to DPMIS for possible funding.

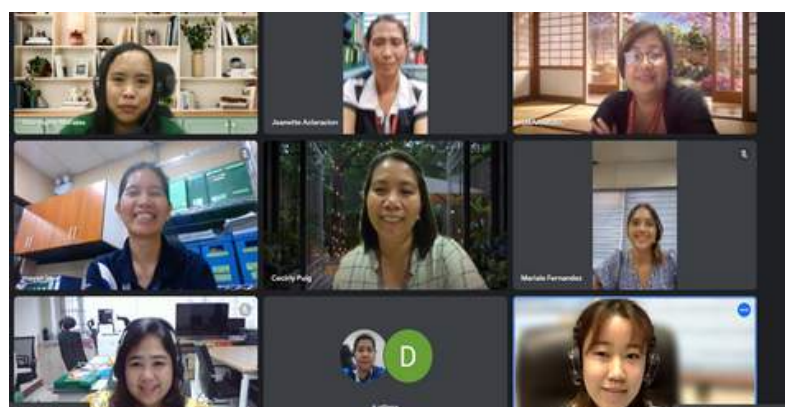
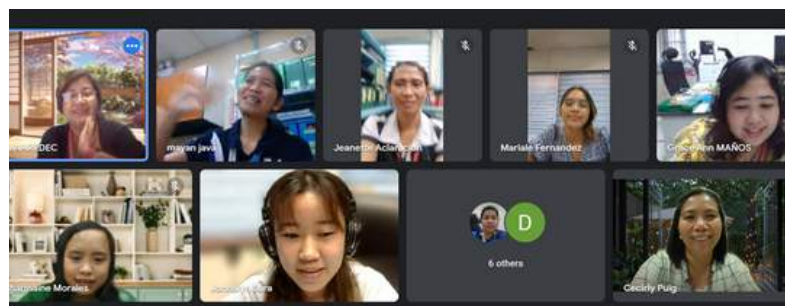
Meeting for the 2023 RSTW and NSTW Celebration

Conducted on October 5, 2023 via zoom, the meeting was organized by DOST and attended by the SMAARRDEC secretariat and other DOST XI consortia representatives. The discussion includes:

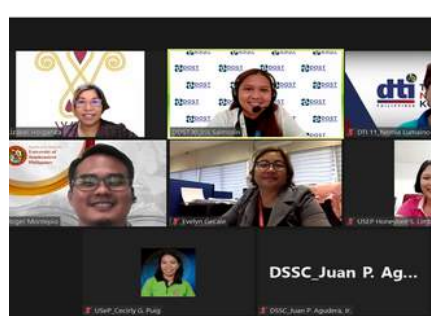
- RSTW will be held in Tagum City on November 9-10, 2023
- SMAARRDEC will invite three (3) speakers for Tech Forum on Nov 9, 2023
- SMAARRDEC to sponsor snacks of 200 target participants
- SMAARRDEC participation in the exhibit

On December 19-20, 2023, the Strategic Planning workshop was facilitated by CD Importante and Dr. Daisy Basing of USEP. Highlights were:

- Inputs of Laurence John Gido of NEDA XI on RDRA
- Talk of DOST_PCAARRD RRDCC Rep D. Dang Decena on, National Harmonize R&D Agenda in AANR
- Input of DepExecDir-ARMSS Dr Melvin Carlos on the direction of PCAARRD consortia
- > Brainstorming and writeshop.



SERIES OF MEETINGS FOR THE 3CS THROUGH ISTRIKE DAVAO



To discuss the competitiveness and commercialization of the region's top commodities, series of meetings for the 3Cs namely coffee, cacao, and coconut were conducted through iSTRIKE Davao on the following dates:

- o January 27, 2023
- o February 9, 10, 2023
- o February 22, 2023
- o March 9, 2023

As an off-shoot of the meetings, the following proposals were crafted:

1. Development of a Smart Post-Harvest Processing Facility for Cacao Beans at Biao Agrarian Reform Beneficiaries Cooperative (BARBCO)/RCMontepio/USEP
2. Development Pre- and Post Harvest Smart Monitoring System for Cacao Production (with Gran Verde Farm/RCMontepio/USEP)
3. Development and Evaluation of a Smart Coconut Sap Harvesting and Storage Equipment (with Cocolink/RCMontepio/USEP)
4. Development of Smart Post-Harvest Systems Facility for Coffee (RCMontepio/USEP)
5. Microbial degradation of plastics for Soil composts/enhancers and fertilizers for Vegetable crops (AMFernandez/JMC)



DAVAO CITY CACAO INDUSTRY DEVELOPMENT COUNCIL (DCCIDC) Meeting

September 1, 2023
8:30 a.m.
DCIPC Conference Room
CT00 Bldg. Palma Gil St., Davao City

Davao City Cacao Industry Development Council Meeting

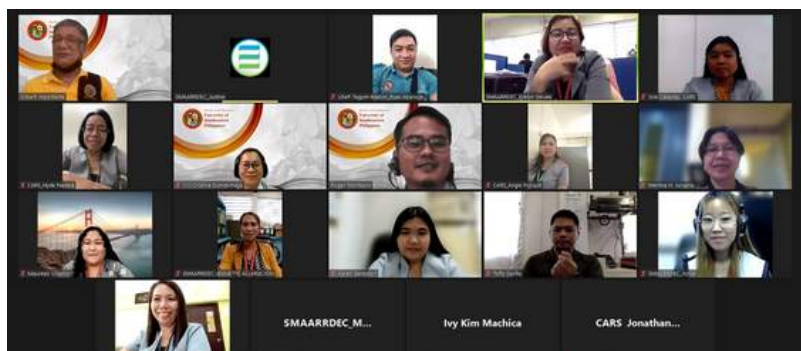
Held on September 1, 2023 at Palma Gil St., Davao City, the council discussed the following:

- Re-organization of the Council
- Election-1st quarter of 2024
- Strategic Planning - last week of November 2023
- National Cacao Congress –November 16-17, 2023
- Training on Soil Health and Regenerative Agriculture
- > Seek assistance from SMAARRDEC for a cacao expert as resource speaker for the training

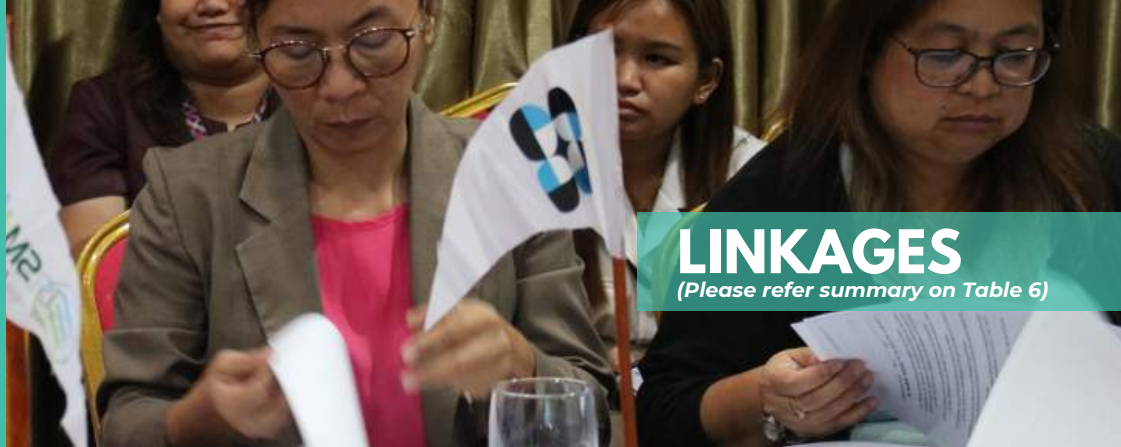


Crafting of proposed NICER on Automation and Digitalization in Agricultural Research and Development Using Artificial Intelligence of Things (AIoT)

The meeting was conducted on February 21, 2023 via Zoom and attended by researchers from USEP – CEng'g & CARS. This was spearheaded by Consortium Director, Dr. Gilbert Importante.



Strengthening current relationships with partners and forging new linkages with various institutions pave way for SMAARRDEC to continue broadening its outreach and effectively implement its programs and operations for the improvement of the region's AANR sector.



LINKAGES

(Please refer summary on Table 6)



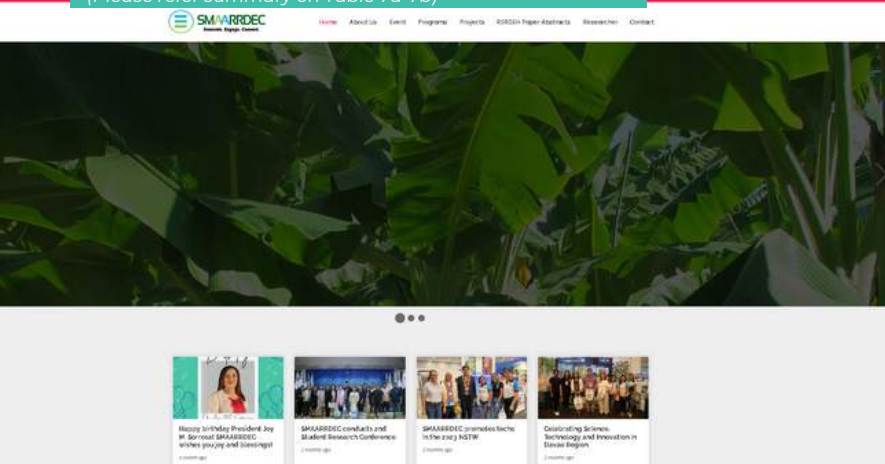
Signing of a MoC with Consortium's new member agencies

During this year's 116th RRDC Meeting on October 23, 2023 at the Panorama Summit Hotel, Davao City, SMAARRDEC welcomes the following esteemed institutions as new members of the consortium namely: Santo Tomas College of Agriculture, Sciences, and Technology (STCAST), Monkayo College of Arts, Sciences, and Technology (MonCAST), PLGU Davao de Oro, and the University of Mindanao (UM), who signed the Memorandum of Commitment as a formal acceptance of their responsibilities as new members of the consortium.



DATABASE AND INFORMATION SYSTEM

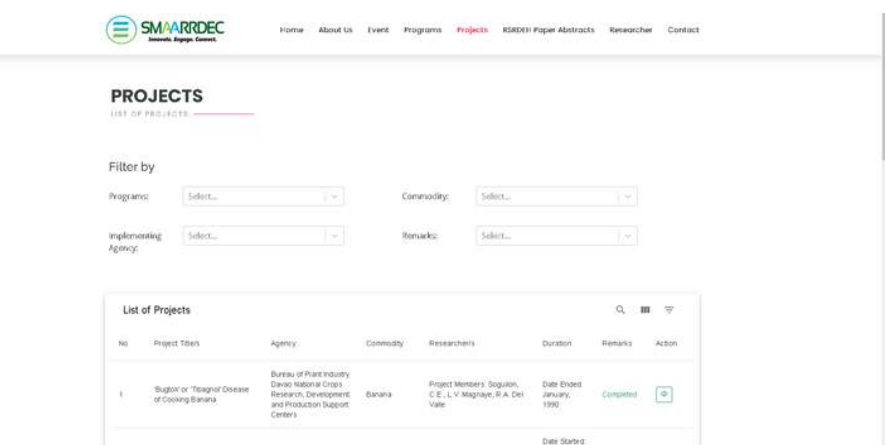
(Please refer summary on Table 7a-7b)



The Consortium's e-based information and technology services served as its virtual bureau of diverse e-based technologies including videos, news release, consortium activities and information exchange. The Consortium undergone its website and the facilities in constant maintenance which helped the consortium emanate its initiatives and share its technologies and information to its clientele.

This year, SMAARRDEC website uploads new articles to update highlights of the year in terms of Consortium activities and accomplishments made accessible for public information and reference. Designed and developed in-house, it includes the digitalized records of research projects kept in the OSIS library. It also digitized and uploaded 13 Regional Symposium on Research and Development Highlights.

Other than the generated list of Regional Symposium on RDE Highlights, the website features the generated list and details of on-going and completed programs/projects uploaded by the researchers/extensionists in the region. It is also utilized to post SMAARRDEC events and pool of experts on Agri-Aqua related research and extension projects.





STRATEGIC R&D

ACTIVITIES (Please refer summary on Table 8a)

The Consortium's R&D programs and projects are crafted to address regional priorities. Align with PCAARRD's programs, SMAARRDEC had been continuously conceptualizing, developing, and initiating the research and development activities of the region.

**Consortium-led R&D
Initiatives Packaged,
Approved, and Implemented**

44

**Technologies and
Information with Impact**

44

The Consortium held itself as a forerunner of R&D initiatives as it responds to the demand for technological advancement and strategic initiatives needed to solve the regional problems in AANR sector, its protection, and conservation towards modernization of the productive sector.



CONSORTIUM-LED INITIATIVES

PACKAGED, APPROVED, AND IMPLEMENTED
(Please refer summary on Table 8b)

DOST, UP MINDANAO TO DEVELOP AI AND IMAGING TECH TO DETECT DURIAN RIPENESS



Davao, being the largest grower of Durian in the country which accounts for about 80 percent of the nation's total production, is never an exception to experience losses in Durian harvest. This challenge continues to occur caused by low farm mechanization and postharvest facilities, inconsistencies in fruit grading due to manual inspection, and the inadequate number of skilled workers in durian processing.

Thus, the researchers of the University of the Philippines Mindanao (UP Mindanao) are set to develop a non-invasive grading system and maturity estimation model for Durian using Artificial Intelligence and Imaging through a project with the Department of Science and Technology (DOST) Science for Change Program (S4CP).

Through a project entitled AI-based Non-Invasive Grading System for Durian (AIDurian), UP Mindanao hopes to address the problem by developing a system that is capable of classifying durian based on ripeness, quality, and variety, providing a more accurate and efficient postharvest classification process. The new AI-based system will offer significant advantages over traditional methods of durian grading, which are often subjective and time-consuming.

Project AIDurian is the first i-CRADLE project in Davao Region and is part of DOST's efforts to expand the benefits of university-industry collaboration in increasing the competitiveness of Philippine industries through R&D.



The project is funded under the Industry-level Collaborative R&D to Leverage Philippine Economy program or i-CRADLE under the DOST S4CP. The implementation will be under the supervision of Dr. Armacheska Mesa-Satina along with Dr. Vladimir Kobayashi, Dr. Emma Ruth Bayugan, and Asst. Prof. Vicente Calag in partnership with 5 Durian processors. The project is expected to begin by the 2nd quarter of 2023.

“Near Real Time Tracking using GIS and Thermal Sensing Technology for Foc TR4 Detection and Prediction Dispersal in Banana” is now on its full implementation

DOST-PCAARRD-funded project “Near Real Time Tracking using GIS and Thermal Sensing Technology for Foc TR4 Detection and Prediction Dispersal in Banana” is now on its full implementation at the University of Southeastern Philippines Tagum-Mabini Campus. The project has a 2-year duration implemented by Dr. Cecirly G. Puig as the lead, with Gilbert A. Importante, Ivy Kim Machica, and James Jade S. Lasquites in collaboration with Hijo Resources Corporation (HRC).

NEAR-REALTIME TRACKING USING GIS AND THERMAL SENSING TECHNOLOGY FOR Foc TR4 DETECTION AND PREDICTION DISPERSAL IN BANANA



Philippine Council for Agriculture, Aquatic and Natural Resources Research and Development (PCAARRD)
Department of Science and Technology

FACULTY RESEARCHERS

DR. CECIRLY G. PUIG
DR. GILBERT A. IMPORTANTE
DR. JAMES JADE S. LASQUITES
DR. IVY KIM MACHICA

RESEARCH STAFFS

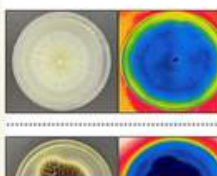
JAYA FENZ M. BELLA
TITO D. PALMEROLA



OBJECTIVES

This project is envisioned to reduce the economic effect of *Fusarium* infestation in the banana industry through Science and Technology.

1. Categorize Foc TR4 heat signatures at different growth stages in In vitro and In vivo;



2. Evaluate the critical mass of Foc TR4 to be infectious;



3. Evaluate the relationship of environmental parameters and *Fusarium* wilt disease development;



4. Develop machine learning models for classification and prediction of Foc TR4; and

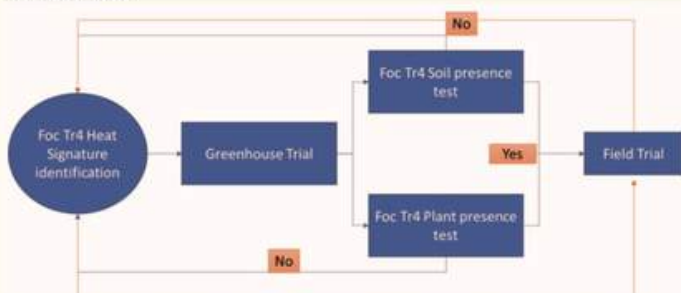


5. Develop an Expert Information System and Decision Support System with mobile application for 3 management decisions making.



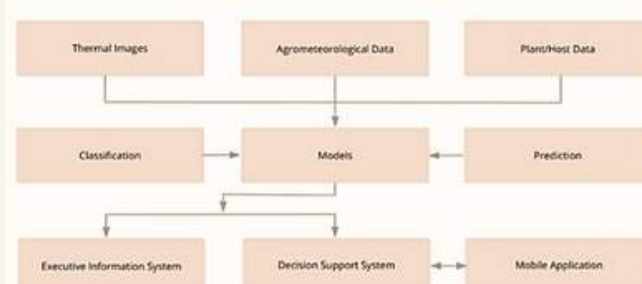
METHODOLOGY

This study will start by identifying the Foc TR4 heat signature. It shall first be conducted in the laboratory, where specimens of the fungus can be found at various stages of development. Foc TR4 signatures at microconidia, macroconidia, and chlamydospore stages shall be recorded and shall serve as a baseline data for greenhouse and field trials. Second, will be the greenhouse trial. In the greenhouse trial, Foc TR4 shall be induced at the various number of spores. There will be four treatments that will be considered in this experimental set-up, and the objective is to determine the number of pathogens where the infrared thermal imaging can detect it. In addition, it will also serve as a baseline for quantifying the number of pathogens present per square inch in the soil that could lead to symptomatic infection. Once data are analyzed, and heat signatures do not match, re-testing of heat signature from the laboratory will be conducted. However, if the heat signatures match from the laboratory with that in the greenhouse, field trial shall commence. The field trial is essential as the plant is in an uncontrolled environment, and multiple factors can affect the growth, dispersion, and disease latency. Factors such as the amount of sunlight, humidity, and airspeed can affect thermal sensing accuracy.



Developing EIS and Decision System

Once parameters are perfected in the laboratory, greenhouse, and field trials, field data parameters shall be stored in a database. The database which is composed of datasets will be used for the training and testing of the models. A dedicated server shall be procured for this purpose as this will also serve as a distribution point for the industry, and other researchers used.



The Consortium as PCAARRD's regional arm initiates innovations and interventions anchored on integrated and rationalized research, development, and extension efforts in pursuit of serving the interest of its target clientele.



The Davao del Sur State College (DSSC) launched the Bamboo Rural Enterprise and Development (BREAD) Project, which is funded by the Department of Agriculture Regional Field Office (DARFO) XI on May 19, 2023. Located at Kapoc, Malita, Davao del Sur, the 20-million-peso worth project is comprised of processing facilities for engineered bamboo, including capability building.

This project is being led by Dr. Graciella Caballero of DSSC and aims to (1) upscale the bamboo industry in the province and in the region through the promotion and production of engineered bamboos; (2) substitute bamboo by-products for the diminishing wood lumber industry in the country; (3) generate livelihoods for rural communities; (4) serve as a training facility for young people, farmers, and other interested individuals; and (5) offer services to bamboo entrepreneurs in the province and the region.

DSSC President Augie E. Fuentes expressed her heartfelt gratitude to the DA-RFO XI for this one-of-kind project, of which only two (2) agencies have benefited, one of which is DSSC. She hoped that this project would have a positive impact on the environment and promote sustainable rural development. "This would certainly generate employment for the local bamboo growers and even those who wish to learn the skills in processing", she added.



The provincial and municipal leaders of Davao del Sur manifested their full support for the establishment of the BREAD project in the province; expressing thanks to DA-RFO XI for choosing Davao del Sur as the location of this project, which will contribute to the economic activity not only of Matanao but of Davao del Sur as a whole. DA-RFO XI Regional Executive Director Abel James I. Monteagudo also emphasized that their agency envisioned seeing mass production of bamboo products in the region in the near future. The initiative could also be accounted to the efforts of the DSSC experts and the support of its provincial and municipal government units in coordination with the Davao Region Bamboo Council, DENR-ERDB-ARDEC, and other NGAs. He hopes for a more vibrant bamboo industry in the Davao Region.





R&D RESULTS

UTILIZATION

SMAARRDEC also undertakes programs and activities to enhance the promotion and eventual utilization and commercialization of S&T outputs. Thus, technology transfer was the Consortium’s frontrunner program in delivering appropriate information and technology services in the AANR sector. Through the program’s information and technology services, initiatives in technology promotion, dissemination, transfer, and commercialization activities.

Technology transfer proposal/s packaged, approved and implemented	44
Technologies deployed through various extension modalities	44
Technologies commercialized or pre-commercialization initiatives	51
Technology promotion approaches participated/conducted/produced	51
IEC Materials Exhibits/Fair	51

The Consortium fully captured the dynamism and collaborative process of technology transfer through enabling proposals, implementations, and packaging of technologies that will transform inventions and scientific outcomes into new products and services that benefit the grassroots.



TECHNOLOGY TRANSFER PROPOSALS

PACKAGED, APPROVED, AND IMPLEMENTED

(Please refer summary on Table 10)

A. RAISE-UGMARA PROGRAM

DOST-PCAARRD conducts the Year 1 Annual Review of RAISE Program

The Department of Science and Technology-Philippine Council for Agriculture, Aquatic and Natural Resources Research and Development (DOST-PCAARRD) conducts the Year 1 Annual Review of the Regional Agri-Qua Innovation System Enhancement (RAISE) Program at the UsePCIC-AVR, Obrero, Davao City. The 2-day activity is being hosted by the University of Southeastern Philippines (USEP) and Southern Mindanao Agriculture Aquatic and Natural Resources Research and Development Consortium (SMAARRDEC). It is being participated by the project leaders and staff from the seven (7) regions nationwide.



RAISE-UGMARA Midyear Review

Also, RAISE Program conducted its Midyear Review last its June 7-9, 2023. Conducted in Malagos Garden Resort, Calinan. National Review held on August 11, 2023 at Albay, Legazpi which was participated by the RAISE implementers from Cordillera Administrative Region (CAR), Ilocos Region, Southern Tagalog, Bicol Region, Western Visayas, Eastern Visayas, and Southern Mindanao. This highlighted the presentation of the accomplishments and the sustainability planning.

RAISE Program National Review

Held on August 11, 2023 at Albay, Legazpi this was participated by the RAISE implementers from Cordillera Administrative Region (CAR), Ilocos Region, Southern Tagalog, Bicol Region, Western Visayas, Eastern Visayas, and Southern Mindanao. Highlights were the presentation of the accomplishments and the sustainability planning.



B. LIFE PROGRAM



LIFE Program Inception Meeting

Conducted on October 13, 2023 at UPMindanao Campus, Bago Oshiro, Davao City The hybrid activity was graced by PCAARRD-TTPD Director Noel A. Catibog with his team

LIFE Project 3- Reintegration of IP Youth Farmer Evacuees

Initial meeting and site visit conducted on September 14, 2023. The project collaborates the 56th IB-Phil Army with the Team implementers from USEP- CBA, CAEC, and CARS.

SMAARRDEC conducts 2nd Student Research Conference

The Southern Mindanao Agriculture Aquatic and Natural Resources Research and Development Consortium (SMAARRDEC) conducted Innovating AANR Solutions: A Student Research Conference with a theme "Exploring Student Innovations for Industry Problem Solutions" on December 1, 2023 at USEP Social Hall, Obrero, Davao City. The conference highlighted the outstanding innovations crafted by the student-researchers and presented the relevant R&D findings from their undergraduate thesis.

Entries were categorized into Agriculture, Aquatic and Natural Resources, Policy Brief and Poster Category. Eleven (11) studies fell under the Agriculture Category while both Aquatic and Natural Resources and Poster Categories had eight (8) entries each. Policy brief on the other hand had four (4) papers.

Student-researchers and research advisers representing their respective State Universities and Colleges hailing from different parts of Davao region attended the said conference.

The very important event was graced by the newly-elected USEP President and RRDCC vice Chairperson of SMAARRDEC Dr. Bonifacio G. Gabales, Jr. who warmly welcomed everyone with a note of how the activity would encourage the young researchers to pursue endeavors in finding solutions. He said that this could shape and tickle the inquisitive minds of the young people present to work on more relevant research activities that could somehow address various industry problems.

SMAARRDEC director Dr. Gilbert A. Importante expressed his heartfelt gratitude to the DOSTPCAARRD for funding the activity that made it a reality. He encouraged the students from the SUC-member institutions to strive harder to do research which is industry-driven because utilization of the research output is the true measure of success – contributing to the development of the country. He wished to have the same enthusiasm for similar activity that would be done next year.



The Consortium also initiates in deploying significant technologies in manner that utilizes various modalities and platforms to extend its reach among its clientele and communities in Davao Region.



TECHNOLOGIES DEPLOYED THROUGH VARIOUS MODALITIES

(Please refer summary on Table 11)



PHILFIDA Region XI conducted specialized livelihood training program on Abaca Fiber Processing

The Department of Agriculture, in collaboration with the Philippine Fiber Industry Development Authority (PHILFIDA) Region XI, recently concluded a specialized livelihood training program titled "Abaca Fiber Processing: Abaca Twine Production and Macramé Bag Making for Davao del Norte.

This initiative, held in partnership with the 56th Infantry (TATAG) Battalion, took place from December 5-7, 2023, at the Alsons Compound, Sto. Niño, Talaingod, in Davao del Norte. The primary objective of the training was to equip the friends rescued, people organizations members, and soldiers with the necessary skills and knowledge to improve their economic resilience and foster sustainable livelihood opportunities.

Reflecting on the significance of the training, 2LT JELLIE ANN G GENADA (OS) PA, Assistant CMO Officer, 56IB, expressed gratitude to PHILFIDA for their dedicated efforts in imparting valuable expertise in abaca twine production and macramé bag making to the former rebels and soldiers, noting, "The skills training that you gained will surely benefit you as you will be using it to have a source of income later." The collaborative efforts of the Department of Agriculture, PHILFIDA, and the 56th Infantry (TATAG) Battalion highlight a commitment to community development and economic empowerment in the region.

DOST-FUNDED PROJECT AGAK ON ASSISTANCE DISTRIBUTION



Distribution of fingerlings to People's Organization at Brgy. Dagohoy of Talaingod Davao del Norte

As part of the implementation of DOST-funded projects AGAK and Pisolar, Brgy. Dagohoy of Talaingod Davao del Norte were given 1000 fingerlings for their communal fishpond. The consortium secretariat coordinated with BFAR XI Regional Office to realize their request.

Distribution of banana planting materials & African Night Crawler

As part of the implementation of DOST-funded project AGAK and sustained partnership with the Philippine Army, the Secretariat facilitated the provision of banana planting materials from BPIDNCRDPSC and african night crawlers from UseP-Mabini to the CAFGUs (rebel returnees) of the 27th IB. These CAFGUs are exposed to farming for their additional livelihood activities.

BPI distribution of planting materials

The 27th IB Phil Army requested planting materials through SMAARRDEC BPI released about 1000 seedlings of lakatan banana on June 13, 2023 for the IPs of Sibulan Toril; and provided assistance to the Sebisyo Caravan on June 23, 2023.

SMAARRDEC also continually maximizes its resources to its highest potentials to promote products and commodities for commercialization and package technology information and value-adding products with valuable impacts to its stakeholders.



SMAARRDEC ON TECHNOLOGIES DURING FARMERS AND FISHERFOLKS FORUM



On the second day of the Consortium's celebration of its 36th year, Ms. Olivia Gatus, Assistant Training Center Director of ATI XI graced the opening and delighted to see a lot of farmers and fisherfolks came and also the students since there is dwindling number of youths who are into agriculture. She hopes that the activity will encourage the young individuals to invigorate agriculture sector in the Region.

An inspirational message from Dr. Melvin B. Carlos, Deputy Executive Director of PCAARRD, he lauded SMAARRDEC for their impressive achievements over the years. He emphasized that solutions are not just taught but should be taken into action. He expressed his aspiration that this activity will empower farmers and fisherfolks.

Dr. Gilbert Importante highlighted the function of SMAARRDEC in the region. He hopes that the topic to be presented will help Farmers on their problem specifically on Fusarium Wilt and borer as well gain knowledge on Durian exporting and Polyculture. He then encouraged everyone to ask questions.

Provincial Governor's representative Fr. Nick Consensino, delivered the message of the Governor who is very grateful for SMAARRDEC for the activity particularly on introducing new innovation for the betterment of farmers and fisherfolks. He also mentioned some of the government programs which support farmers and fisherfolks.

April Rose Dianne Abella, OIC for Extension Services Division of DdOSC thanked everyone for coming into the event.



The plenary sessions encompassed five topics, with primary focus on the management of Banana Fusarium Wilt through the application of Trichoderma harzianum and an Integrated Disease Management approach. Ms. Marilou Infante, Agricultural Center Chief III at DA RFO XI, delved into the experiences of selected banana farmer cooperators. Dr. Merlina Juruena presented USEP's research output concerning Cavendish Banana Fusarium Wilt Management.

Further topics included Mr. Emmanuel Belviz's exploration of Durian exports, Mr. Napoles' discussion on Polyculture, and Dr. Juan P. Agudera's expertise-sharing on the utilization of Liquid Beauveria bassiana against borers.

The forum was marked by interactive sessions, where farmers and fisherfolks engaged in discussions on improving farming practices, enhancing market access, and adapting to new innovations. This grassroots-level exchange of ideas was a reminder of SMAARRDEC's commitment to fostering inclusive development.

The Consortium performed continuous promotions of value-adding technologies and information in the advocacy of a vibrant AANR sector of the region. It intensified its technology transfer program by brining relevant R&D breakthrough generated in the region to farmers and technology adopters.



SMAARRDEC Technology Promotion during 2023 RSTW

SMAARRDEC featured technology developed by CMI's on the recently concluded 2023 Regional Science, Technology, and Innovation Week (RSTW). This 2-day exhibits and technical fora covering various topics on disaster risk reduction, sustainable innovations, STEM education, and more.

Hosted in Tagum City Hall Atrium, Davao del Norte, this annual gathering of brilliant minds brought together scientists, researchers, educators, and technology enthusiasts from around the region to showcase and celebrate the latest advancements in science and technology. The event was graced by National Scientist, Dr. Lourdes Cruz who also served as the event's keynote speaker.

During the opening ceremony, The Department of Science and Technology (DOST) XI launched four major programs and these are the Sentro Mindanaw, Food Processing Innovation Center (FPIC) Davao, Social and Human Sciences, Education, Culture, and Communication and Information (SECCI) for the Sustainable Development Goal (SDG) scorecard, Grassroots Innovations for Inclusive Development (GRIND) program. These are on top of the various DOST science, technology, and innovation (STI) programs that are put together in the RSTW Exhibit classified based on the DOST direction for 2023-2028 strategic pillars, namely Human Well- being, Wealth Creation, Wealth Protection, and Sustainability. Spearheaded by DOST Regional Director Anthony C. Sales and National Scientist, Dr. Lourdes J. Cruz, together with Tagum City Councilor Committee Chair on Science and Technology Ronald Eliot, and Tagum City Mayor Executive Assistant IV Ciara Isabelle Uy-Salazar, pushed the button of lights to showcase the four programs.



In the afternoon session, technologies developed by CMI's such Liquid Trichoderma by Dr. Juan P. Agudera, Jr. of DDSC, Coconut Climbing Assistance Device (Coco Climber) by Engr. Ryan M. Abenoja of USEP and Trichoderma harzianum in the context of Integrated Disease Management: Selected Banana Farmers' Experiences by Ms. Marilou N. Infante of DA-RFO XI was presented. In addition, DOST-MIRDC represented by Engr. Mervin B. Gorospe also presented technology on rice transplanters and abaca stripping. In her closing remarks, Dr. Cecirly Puig, the Research and Development Cluster Coordinator of SMAARRDEC extended heartfelt gratitude to the farmers and stakeholders who actively participated, contributing to the success of the event through insightful discussions and engaging interactions.





SMAARRDEC PROMOTES TECHS IN THE 2023 NSTW

The Southern Mindanao Agriculture Aquatic and Natural Resources Research and Development Consortium (SMAARRDEC) participated in the 2023 National Science and Technology Week (NSTW) of the Department of Science and Technology (DOST) in the city of love, Ilo-ilo City.

The SMAARRDEC team showcased the two (2) matured technologies generated by the University of Southeastern Philippines (USEP), namely the ROSANNA App and Coco Climber. Both were displayed in the sustainable agriculture cluster under the Philippine Council for Agriculture, Aquatic, and Natural Resources Research and Development (PCAARRD). The DOSTPCAARRD showcased more than one hundred (100) technologies generated by the higher education institutions (HEIs) it supported.

Both technologies, the Rosanna App and Coco Climber, were projects implemented by USEP under the DOST-S4C-CRADLE (Collaborative Research and Development to Leverage Economy) program. The industry partner for Rosanna App is the Hijo Resources Corporation (HRC), has adopted the technology and applied its IPR as utility model in Singapore. Rosanna app is now being utilized by other two (2) banana industry players in the region.



Coco climber on the other hand is in the process of patenting and its partner industries, the Franklin Baker and Cocolink are working on its full adoption. The same technology has been shared with the different coconut farmer associations in the region for further validation. The 2023 NSTW had three (3) venues of exhibit and seminars: the plenary area was at the Iloilo Convention Center; Lawud: Marine S&T Exhibits was at the Capt John B. Lacson Training Ship and Museum of Philippine Maritime History; and Hinabul: Natural Fiber and Textile Exhibits at the National Museum Western Visayas.

It was a fun-filled and festive event that was attended by the different government and nongovernment agencies, industry, faculty, researchers, innovators, and students in all levels. It highlighted the significant contributions of science and technology to national development, which heralded the S&T advocacy in the country.



PAG-UGMAD 2023: Regional AgriAqua Technology Business Incubation Bootcamp and Pitching Competition

Held on November 17, 2023 at the Ritz Hotel, Davao City, the pitching competition was attended by the 10 RAISEUGMARA implementers where in 12 technologies were pitched to target local investors/business people.



SMAARRDEC serves as festival collaborator during the 2nd International Research Festival

Davao del Norte State College, through its Research, Extension, and Production Unit, served as the convener of both esteemed and budding researchers during the 2nd International Research Festival (IRF 2023), all for the growth of Mindanao Commons and the collective drive toward harmony, sustainability, resiliency, and globality.

Day Two (November 28, 2023) of the festival was all about knowledge and insight sharing through paper and poster presentations. The discussions were categorized under the following thematic areas: (1) Equality, Diversity, and Inclusivity, (2) Biodiversity and Blue Economy, (3) Human Security, Public Health and Safety, and Resiliency, (4) Leisure and Creative Economy, (5) Agriculture, Food Production and Innovation, (6) Teaching, Learning, & Leading in Precarious Times, (7) Digitization, Digitalization, & Innovation, and (8) Digitization, Digitalization, & Innovation.

SMAARRDEC, along with other partner institutions serves as festival collaborators namely, Hiroshima University, University of the Philippines Los Baños and International Institute for Halal Research and Training-INHART among others enlightened ideas for future research collaborations and inspired pursuits for innovation.



Capacitating the CMLs through IEC preparation is part of the deliverables of RAISE-UGMARA Project 4: Regional Knowledge Management. This initiative will aid the CMLs in disseminating their generated technologies to capture the target audience and stakeholders. The activity is graced by Dr. Franch Maverick Lorilla of USTP who served as Resource Speaker.

Selected outputs of the participants will be utilized in the participation of SMAARRDEC in different exhibits like the Regional/National Science and Technology Week and the Davao Agri Trade Expo 2023.

1. IEC MATERIALS



RAISE-UGMARA conducts IEC wokshop on Banner Techs

Selected representatives of the participating SMAARRDEC-member institutions in the RAISEUGMARA program are capacitated to create information, education, and communication materials for their respective agency banner technologies on July 17 2023 at The Ritz Hotel, Davao City.

The Regional Agri-Aqua Innovation System Enhancement (RAISE) Program in Southern Mindanao: Uplifting the Grassroot-Based Mindanaoans in AANR Initiatives through a Regional Approach (UGMARA) is now in its second year of implementation. It is being funded by the Department of Science and Technology-Philippine Council for Agriculture, Aquatic, and Natural Resources Research and Development (DOST-PCAARRD). The aim of RAISE-UGMARA is basically to mirror the functions and initiatives of the DOST-PCAARRD innovation and technology Center (DPITC) in the regions by providing assistance to the regional consortia on intellectual property management and the transfer of technologies among consortia member institutions.

Research Publication:

With great pride, the Consortium celebrate the latest accomplishment of Dr. Augie E. Fuentes, President of the Davao del Sur State College (DSSC), who co-authored a published paper in the American Journal of Pure and Applied Biosciences. The paper, entitled *"Phenotypic Characterization of Mottled Native Chicken in Davao Region, Philippines"*, is a comprehensive exploration of the physical traits of 141 hens and 31 roosters from the region.



Phenotypic Characterization of Mottled Native Chicken in Davao Region, Philippines

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ABSTRACT

There were 172 heads comprising 141 hens and 31 roosters from the Davao region collected and randomly sampled to describe the phenotypic characteristics in terms of quantitative (feather morphology, comb type, size, and shape color) and quantitative (body length, body length, chest circumference, shank length, height, and wingspan) traits of the mottled native chickens. The modified Philippine Native Animal Development survey questionnaire was used in the collection of data. Qualitative traits were analyzed using frequency and percentages while quantitative characteristics were analyzed through one-way ANOVA using Tukey's HSD test. There morphological characteristics of native chicken in the Davao region vary by province. Nonetheless, mottled native chicken is predominantly of a single comb, white skin, yellow shank, and normal feather morphology. Body weight and length, chest circumference, shank length, and wingspan for chickens were significantly different except for the body height of mottled native chickens across provinces. Meanwhile, all morphometric characteristics of roosters are significantly different across provinces. The mottled type of native chicken in the Davao region has been found out diverse as manifested in the quantitative and qualitative characteristics gathered. This study recommends incorporating the results of the phenotypic characteristics of mottled native chickens in the Davao Region to further determine its diversity and lineages.

Keywords: Mottled native chicken, Quantitative, Phenotypic characteristics, and Davao region.





Galing in Mindanao: SMAARRDEC joins Mindanao Consortia Techs Showcase to Davao Agri Trade Expo 2023

With the goal of mainstreaming the research and innovation results in Mindanao, the five (5) consortia under the Department of Science and Technology- Philippine Council for Agriculture and Natural Resources Research and Development (DOST-PCAARRD) namely, the Southern Mindanao Agriculture Aquatic and Natural Research and Development Consortium (SMAARRDEC), the SOCCSKSARGEN Agriculture Aquatic and Natural Resources Research and Development Consortium (SOXAARRDEC), the Western Mindanao Agriculture Aquatic and Natural Research and Development Consortium (WESMAARRDEC), the Caraga Consortium of Agriculture Aquatic and Natural Research and Development (CCAARRD), and the Northern Mindanao Agriculture Aquatic and Natural Research and Development (NOMCAARRD), joined the Davao Agri Trade Expo (DATE) 2023 and showcased 14 technologies generated by the different consortium member institutions, at the SMX Convention Center, Lanang Davao City, on September 28 to 30, 2023.

One of the highlights of the three-day activity was a technology pitching with the technology generators and some industry players, was conducted simultaneously with the plenary sessions on its second day.

The technologies showcased were the CocoClimber, Pisolar, and Biotrichof under SMAARRDEC, the Digital PCR Banana Probe Kits, the Nateura Face Cream and Body Lotion, the Halal Chevron Products, and Halal Chevron Sausage under SOXAARRDEC; the Zampen Native Chicken, and Zampen Native Chicken Piyanggang by WESMAARRDEC; the Black Soybean-based Food Products, and the Caraga Black Native Chicken under CCAARRD; and the SIPBIO (Indigenous plant as biofertilizers) and the Natural Fungicide for Tasmanian Piperita under NOMCAARRD; and lastly the Itik-Pinas.



The core of international delegates, farmers, different industry representatives, students, government employees, professionals, and private personnel visited the DOST-PCAARRD Mindanao Consortia Booth. Technology Pitching Session also happened during the Davao Agri Trade Expo.

The DATE is an initiative of the Davao City Chamber of Commerce and Industry Incorporated (DCCCII) that aims to create opportunities for the marketability of various local products and services and exercise collaboration between government and the private sector in developing the agriculture sector. The DATE is an initiative of the Davao City Chamber of Commerce and Industry Incorporated (DCCCII) that aims to create opportunities for the marketability of various local products and services and exercise collaboration between government and the private sector in developing the agriculture sector.



National Cacao Congress 2023

Held on November 16-17 2023 at SMX Convention Center, the congress was attended by selected faculty researchers of the consortium member institutions.



CAPACITY BUILDING AND GOVERNANCE

As capability building requires a systematic management approach to learning and development as an integral part of its workforce planning, SMAARRDEC has been unceasingly committed to improve the knowledge, skills and expertise, and facilities of R&D and Technology Transfer key players in the region.

Non-degree training programs conducted	44
Facilities/ equipment established/ installed/acquired or upgraded/improve	44
Awards and Recognition Scholarship Grants	51
Governance RRDCC Meetings	51 52
Membership Contributions New Initiatives of the Consortium,	51 51

SMAARRDEC has always relied on its empowered R&D core of researchers/experts and staff to successfully man the network and sees to it that the human resource development is holistic and encompasses the development of these of the physical well-being responsive to the sectoral needs of the region.



PARTICIPATION TO THE DOST-PCAARRD'S TRAININGS/SEMINAR



Seminar on Experiences in Banana R&D Research for Development Model Between the Academe and Industry

Organized by SMAARRDEC, A seminar on Experiences in Banana R&D Research for Development Model Between the Academe and Industry was held on the CIC-AVR, USEP Obrero Campus, Davao City, via hybrid set-up.

The speaker, Dr. Agustin B. Molina, a world-renowned banana scientist, R4D advocate, and International Banana Consultant, shared his personal experiences on research for development while working in the academe and in the industry.

Discussed during the seminar were the following: the importance of basic research as the foundation of applied research that will lead to innovation and technology; the impact of R4D scientific output is measured not much on how many have read it but on how many have used it; and strengthening banana research and development through putting up a banana research center in Mindanao. Attended by different representatives both from government agencies, academe and private banana industries, onsite and via Zoom platform. There are 62 F2F participants and 154 online participants that specifically graced the event.

Event Management Training

Held on March 30-31, 2023 at AIM Conference Center, Makati Represented by Tech Transfer Cluster Coordinator Evelyn A Gecale and Sci Comm Cluster Coordinator Karen B. Geneston Output of the training will be applied in the preparation and conduct of RSRDEH/Farmers and Fisherfolks Forum 2023 at Davao de Oro, DATE , RSTW/NSTW participation.

Proposal Development Seminar

Held on April 25-28, 2023 at AIM Conference Center, Makati Represented by Tech Transfer Cluster Coordinator Evelyn A Gecale and Sci Comm Cluster Coordinator Karen B. Geneston Outputs are proposals on the participation to DATE 2023 and RSTW/NSTW.



Seminar on Financial Management for Mindanao Consortia

Held on August 30-31, 2023 at Brokenshire Hotel and Convention Center, the resources speakers were from DOST-PCAARRD and was attended by consortium staff, project implementers and accountants from selected CMI of the 5 Consortia in Mindanao. The seminar discussed new guidelines on GIA funding and reconciled unliquidated funds.



RAISE-UGMARA IP Valuation and Commercialization Plan Training Workshop

Conducted on September 20-22, 2023 at the Ritz Hotel, the invited speaker: Mr. Karl Simon Revelar who successfully trained 40 RAISE implementers.



2023 Bridging Extension Services of Technical Services

On November 6-7, 2023, the Bridging Extension Services of Technical Services: UPLB Biotech to SUCs was held on November 6-7, 2023 at CIC-AVR, USeP, Davao City. This was facilitated by UPLB Biotech head Dr. Lorele Trinidad and team and participated by 150 (F2F and online) students and faculty researchers from different CMIs.



Strategic Planning Workshop

Conducted on December 19-20, 2023 at the USeP Social Hall, the workshop was facilitated by CD Importante and Dr. Daisy Basing of USeP and attended by CMI selected representatives.

Highlights were:

- Inputs of Laurence John Gido of NEDA XI on RDRA
- talk of DOST-PCAARRD RRDCC Rep D. Dang Decena on National Harmonize R&D Agenda in AANR
- Input of DepExecDir-ARMSS Dr Melvin Carlos on the direction of PCAARRD consortia
- Brainstorming and writeshop

Seminar on Booth Exhibit Management

Held on September 19, 2023, the seminar trained 43 secretariat and technology generators of five (5) Mindanao Consortia namely: SMAARRDEC, WESMAARRDEC, NOMCAAARRD, SOXAARRDEC and CCAARRD. The seminar was conducted in preparation for the DATE participation.

Development Writing for S&T Communicator

On July 25-26, 2023, a virtual training-workshop was held via zoom on Development Writing for Science Communicators. SMAARRDEC is a recognized publisher of S&T information, education, and communication (IEC) materials in the region. With its plan to revive the SMAARRDEC Monitor, a newsletter wherein activities, development of projects, and consortium member institutions (CMLs) activities were popularized. Mr. Noel T. Provide, former chief of Regional Agriculture and Fisheries Information Section (RAFIs) of the DA-RFO-XI and the DOST-PCAARRD Hall of Famer Awardee for Professional Media category, served as resource speaker and led an informative and interactive discussion in and among the participants. The workshop was participated by sixty (60) science communicators where in sixty (60) outputs were produced by the participants. The output articles will be used for publication on The SMAARRDEC Monitor Newsletter.

Webinar Lecture by Dr. Rasco

During the 28th Anniversary of the University of the Philippines Mindanao, the Department of Biological Sciences and Environmental Studies of the College of Science and Mathematics proudly presents the webinar of Eufemio T. Rasco Jr., PhD with the title: "Silos and Intersections: Where is expertise heading?" in line with the DBSES theme: Kinaiyahan Para sa Tanan (Nature for All) on March 9, 2023.

Webinar Series on Agricultural Research

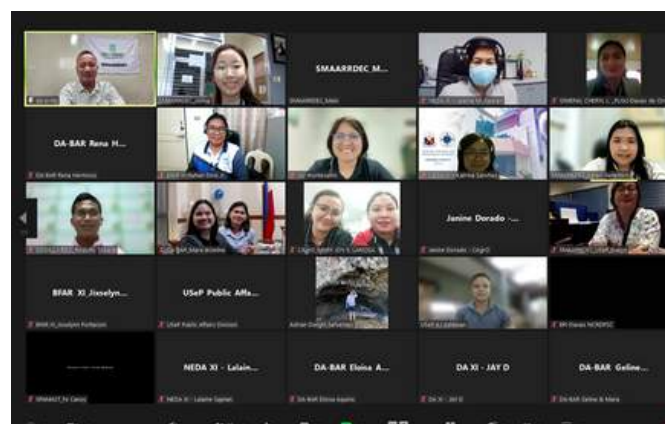
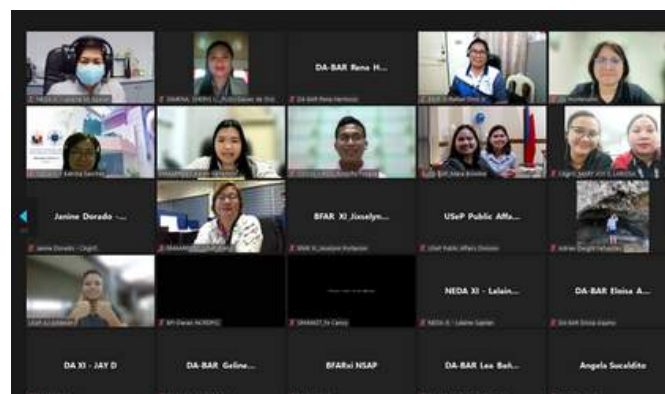
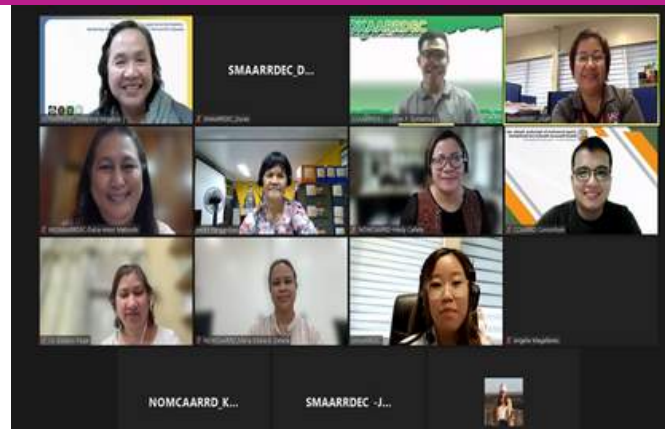
A webinar series was conducted featuring esteemed resource speakers from the University of Southeastern Philippines. It aims to provide invaluable insights to researchers from renowned experts as they share their knowledge on advanced research data collection techniques, presenting socio-economic data in agricultural research, and best practices for reaching diverse audiences.

- **June 8, 2023:** Advanced Techniques for Research Data Collection: Tips and Strategies for Success (Speaker: Dr. Roberto S. Deluna)
- **June 15, 2023:** Presenting Socio-Economic Data in Agricultural Research Speaker: Dr. Purisima G. Bayacag
- **June 16, 2023:** Presenting Research Data to Diverse Audience: Tips and Best Practices (Speaker: Mr. Karlo Caramugan)
- **June 8, 2023:** Advanced Techniques for Research Data Collection: Tips and Strategies for Success (Speaker: Dr. Roberto S. Deluna, Jr.)
- **June 15, 2023:** Presenting Socio-Economic Data in Agricultural Research Speaker: Dr. Purisima G. Bayacag
- **June 16, 2023:** Presenting Research Data to Diverse Audience: Tips and Best Practices (Speaker: Mr. Karlo Caramugan)

Second Stakeholders' Forum on Tech Transfer and Commercialization RO-XI

Held on June 19, 2023 via Zoom, the forum was attended by TTC Coordinator Evelyn Gecale and SCC Coordinator Karen Geneston

WEBINAR AND VIRTUAL TRAINING-WORKSHOPS





Training-Workshop on Data Analysis using Statistical Package for AANR Research

The Southern Mindanao Agriculture, Aquatic and Natural Resources, Research, and Development Consortium (SMAARRDEC) capacitated 31 new breeds of researcher through the training-workshop on Data Analysis on Digital Packages for Agriculture, Aquatic and Natural Resources Research held on August 4, 2023, Davao City.

The 3-day training was funded by the Department of Science and Technology – Philippine Council for Agriculture Aquatic, and Natural Resources Research and Development (DOST-PCAARRD) with a total budget of Four Hundred Twenty-Eight Thousand Three Hundred Seventy Pesos (P428,370.00). The participants came from the sixteen (16) implementing member institutions of SMAARRDEC.

Experts from the Socio-Economic Research and Development Data Analytic Center (SERDAC) Mindanao, namely Dr. Roperto S. De Luna, Asst. Prof. Michael L. Ayala, Assoc. Prof. Ronald D. Estrada, Asst. Prof. Karlo Martin C. Caramugan, and retired Professor and Consortium Director Dr. Purisima G. Bayacag served as resource speakers. SERDAC is also a DOST-PCAARRD funded project that is being institutionalized in USEP and SMAARRDEC.

With the fast turnover of researchers in the region, the consortium has to initiate continuous capacity building for the regional “cream of the crop”.



Aiming to imbibe the research culture in the new generation, the training was conducted to enhance the RDE capabilities of the selected junior researchers, where they were exposed to the principles and concepts of the research process, techniques in data collection and other statistical concepts and tools.

In the welcome message of RRDCC Chair Dr. Lourdes C. Generalao delivered by USEP Vice President Shirley S. Villanueva, she urged all participants to take full advantage of the opportunity to gain knowledge and skills from the training-workshop that will enhance capabilities and contribute to the advancement of AANR-related research. She encouraged everyone to embrace the challenges that come with research and to use them as opportunities to grow and improve, and to take pride in their respective work, to celebrate successes, and learn from failures, and most importantly, to enjoy the journey of being a researcher.

Consortium Director Gilbert A. Importante expressed his heartfelt gratitude to the newly-trained junior researchers for their full participation in the training-workshop and encouraged everyone to do what is expected of them as part of the regional pool of experts.



Regional Training on Intellectual Property Drafting and Fairness Report Guidelines

Kapalong College of Agriculture, Science and Technology hosted the Regional Training on Intellectual Property Drafting and Fairness Report Guidelines at CitiStar Hotel, Santo Tomas, Davao del Norte on November 14-16, 2023. This event was sponsored by the Department of Science and Technology (DOST)-PCAARRD and SMAARRDEC.

Furthermore, the event was participated by researchers, professors and technology transfer officers coming from different State Universities and Colleges (SUCs) and Research and Development Institutions (RDIs) in the region.



Mindanao Symposium on the Future of Agrifood Systems

The University of the Philippines Mindanao, in partnership with Visayas State University and the Agri-Aqua Value Chain Laboratory, organized the "Mindanao Symposium on the Future of Agrifood Systems" on 16 November 2023 in Davao City. The event was participated by the faculty researchers across Mindanao and the Visayas and attended by CD Gilbert A. Importante as the Consortium's representative.

The Mindanao Symposium Series is organized by the Office of Research of the University of the Philippines Mindanao, in partnership with other university units and external collaborators, commenced in order to foster discussions among various stakeholders about various issues affecting Mindanao and the rest of the country as well as help shape the agenda for R&D in shared areas of concern—namely,



the agrifood system, biocultural diversity, smart and sustainable environments, sports development, health, innovation, and various cross-cutting concerns.

The keynote speaker of the event was Acad. Eufemio T. Rasco Jr. who is an academican of the National Academy of Science and Technology (NAST) of the DOST and Professor Emeritus of UP Mindanao. Prof. Rasco's research and advocacies were plant breeding, genetically modified crops, underutilized bioresources, sustainable modern agriculture, and rural transformation through science-based support system for rice farmers, just to name a few. His talk is about "Pathways to the Transformation of the Philippine Food System".

5th Mindanao PPS-SMD Summit

Held on June 9, 2023 at Acacia Hotel Davao City, the said summit was attended by CD Importante and Dr. Cecily G. Puig.



2nd ASIMOV and SKAI Pinas

Held on June 13-14, 2023 at Acacia Hotel, Davao City, the event was organized by UPMin and was attended by CD Importante together with the team implementing Fusarium Tracking project.



National Research Management Training

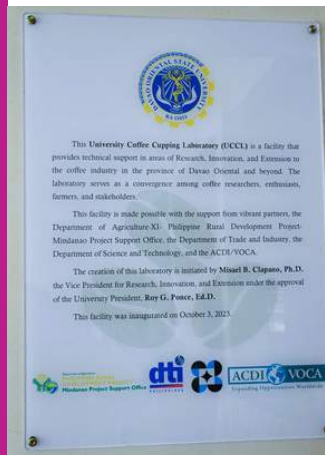
Held on December 5-7, 2023 at Dumaguete City, this training was organized by PHILARM and hosted by NORSU and SSC. This was attended by TTC Coor Gecale and Falcata team members.

SMAARRDEC maintained modalities for a continuous establishment, maintenance and upgrading scheme of its facilities. This enables the Consortium to efficiently deliver the communication, house on-going projects, share and exchange relevant information and ideas with partners and clients.



DORSU's coffee cupping laboratory

This is a value that the university has added to support the coffee industry in Davao Oriental from farmer producers to coffee shops through coffee quality research development and network for market support. This laboratory will partner with Quality graders in the region. DORSU also houses nurseries of robusta and arabica seedlings for projects with our indigenous peoples. The laboratory was made possible through the joint efforts of PRDP, ACDI-VOCA, DTI, DOST and CIDADO.



The awards and recognitions received by the Consortium serves as testaments of SMAARRDEC's outstanding performances and dedication to be continually relevant and functional in the AANR sector.



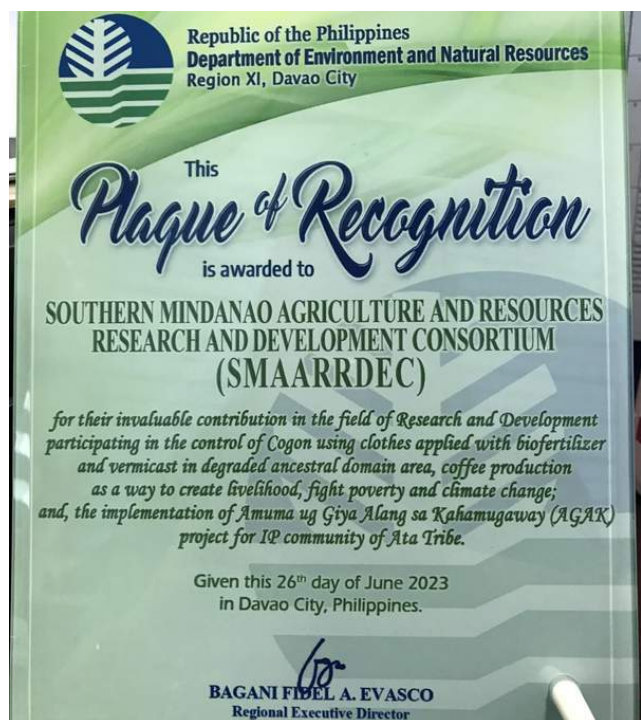
AWARDS & RECOGNITION

(Please refer summary on Table 16)

RECOGNITION OF SMAARRDEC AS ENVIRONMENTAL PARTNER IN DAVAO REGION OF DENR



DENR XI awards recognition to SMAARRDEC as Environmental Partner in Davao Region for its contribution in the field of Research and Development. Held on June 26, 2023 at the DENR Compound Lanang Davao during the culmination of the Environmental Month Celebration.



Recognition of Ms. Marilou N. Infante (DA-RFO XI) as a PMPC Awardee in Extension and Community Development 2023

Awarded during the Pest and Management Council of the Philippines (PMCP) Conference held at The Ritz Hotel, Obrero, Davao City last July 4-7, 2023.



Nomination of Mr. Belviz for the Philfruit Achievement Award

Mr. Emmanuel Belviz, being endorsed and nominated by SMAARRDEC, was hailed as 2023 PFA Achievement Awardee in Entrepreneurship. The ceremony was conducted last October 4, 2023 during the 30th National Fruit Symposium at Visayas State University.



Coffee from DavSur dominates PCQC 2023

Coffee from Davao del Sur continued to dominate the Top 12 of the Arabica Category of the Philippine Coffee Quality Competition (PCQC).

University President, Dr. Lourdes C. Generalao, and USeP-ITSO Manager, Engr. Filmann T. Simpao received the said award.

During the PCQC 2023, Jhon Lawrence dela Cerna of the Balutakay Coffee Farmers Association (Bacofa) in Davao del Sur earned the Top 2 spot for his natural-processed coffee beans. With a cupping score of 85.75, his coffee had notes of pineapple, mango, black currant, and honey.

Dione F. Ellaga of Don's Ka Farm placed third with his natural-processed beans that earned him a cupping score of 85.41. When brewed, his coffee had notes of orange, dried fruits, apricots, and chocolate.

On the fifth spot is Rogelio Gonzales of Bacofa. He used the natural processing method for his beans. With a cupping score of 85, the coffee had notes of tropical fruits, raisins, berries, and lemon.

Also part of the Top 12 are Cecilia G. Cavalida (Top 9, Cherry Gil Cabanday (Top 10), Roquita dela Cerna (Top 11), and Lendilou F. Loon (Top 12). Loon was also awarded for having the best honey processing method. Coffee beans from Davao del Sur have consistently placed in the Top 12 of the Arabica Category since 2018. In the last three PCQC, the top spots were dominated by farmers from Davao del Sur.

The PCQC 2023 was held during the Philippine Coffee Expo on June 4, 2023 at the World Trade Center in Metro Manila. The Expo was held from Jun 3 to 4, 2023 and featured key coffee industry players and talks on the latest trends and opportunities in the industry.



USeP-ITSO bags Gold Award

The University of Southeastern Philippines- Innovation and Technology Support Office (USeP-ITSO) received a Gold Award for providing IP services such as Intellectual Property (IP) awareness and capacity-building activities, patent search, and patent drafting to internal and external clients, and filed at least six (6) patents in 2022 during the ITSO Presidents' Summit on March 28, 2023, at Sequoia Hotel, Paranaque City, Manila.

University President, Dr. Lourdes C. Generalao, and USeP-ITSO Manager, Engr. Filmann T. Simpao received the said award.

The Presidents' Summit is an annual event that gathers professionals, experts, and leaders to discuss emerging technologies, trends, and best practices. Bearing the theme, "ITSO: Hub and Generator of Future-Ready Innovations", the Summit aims to recognize and award the ITSO members who have purposefully fulfilled the ITSO 2.0 Clustering targets for 2022.

Moreover, the summit highlighted new opportunities for ITSOs to enhance their IP management and technology transfer operations for 2023. This recognition solidifies the position of USeP as a leading university in the Philippines for innovation and technology transfer; dedicated to enhancing scientific research and leveraging technology to enhance the quality of life for Filipinos, thus transforming communities in the ASEAN and beyond.

CALL FOR APPLICANTS

Scholarship Grant on Organic Farming

ATI Davao Region is filling out slots for

10

Youth Trainees

5

Farm Partners

For more details, visit:

bit.ly/OrgFarmScholarship

Deadline of Application: February 20, 2023

SCHOLARSHIP GRANTS

ATI- Davao Region calls Scholarship grants on Organic Farming

ATI-Davao Region, as one of Consortium's member agency, calls 10 youth trainees and five (5) farm partners to be recipients of the Scholarship Grant on Organic Farming. Requirements for application includes applicants' qualifications namely: (1) must be 18 to 35 years old and from Davao Region; (2) practicing chemical-free and/or organic farming system; (3) and keen to start an agribusiness.

The Youth Scholarship Grant on Organic Farming is a highly specialized internship program designed to instill and develop in the trainees an appreciation for organic agriculture. The program provides start-up support and mentoring for their business plan.

SMAARRDEC actively hold RRDCC meetings and implement initiatives to translate the mission and goals of the Consortium and collaborate among member agencies for the common goal to improve lives of farmer and fisherfolks in Region XI.



GOVERNANCE

114th RRDCC Meeting

On May 4, 2023, the Southern Mindanao Agriculture, Aquatic and Natural Resources Research and Development Consortium (SMAARRDEC) conducted its 114th Regional Research and Development Coordinating Council (RRDCC) Meeting on April 5, 2023 at University of Southeastern Philippines (USEP) Hostel, Obrero, Davao City and via Zoom Conference. The said meeting was presided by RRDCC Chairperson and USEP President Dr. Lourdes C. Generalao. It was attended by various heads/representatives from Consortium-Member Institutions (CMIs). Expecting of new members and renewed commitment of the Consortium Member Institutions in the next council meeting.



RRDCC MEETINGS

(Please refer summary on Table 17)



115th RRDCC Meeting

SMAARRDEC conducted its 115th Regional Research and Development Coordinating Council (RRDCC) Meeting on July 27, 2023 at the Blue Lotus Hotel, Ecoland, Davao City. Presided over by DOST-ARD Mirasol Domingo, as representative of Vice-Chair Dr. Anthony C. Sales. The hybrid meeting was attended by representatives of the consortium member institutions. Highlighted during the meeting were the updates of programs/projects submitted to DOST for funding, the Consortium Director's report, newly approved SMAARRDEC-led projects and others for information and discussion. The next meeting is scheduled for the first week of October 2023.





116th RRDCC Meeting highlights turn over of leadership, acceptance of new members, and MoC signing

The Southern Mindanao Agriculture Aquatic and Natural Resources Research and Development Consortium (SMAARRDEC) conducted its 116th Regional Research Development Coordinating Council (RRDCC) meeting on October 23, 2023, at the Panorama Summit Hotel, Davao City. The meeting was presided over by Dr. Lourdes C. Generalao, the outgoing RRDCC Chairperson and USeP President. It was attended by the heads and representatives of consortium member institutions and the DOST-PCAARRD, represented by Dr. Fezoil Luz C. Decena.

In her opening message, Dr. Generalao expressed her heartfelt gratitude to her SMAARRDEC family and said that the meeting was particularly meaningful to her because it marks the last time she will serve as RRDCC Chairperson. She was grateful for everyone who supported the consortium throughout her tenure. During the meeting, several important discussions and activities were highlighted, including: (1) updates of the agencies, where the agencies were given the opportunity to provide updates on their conducted and upcoming activities and projects; (2) the Consortium Director's Report presented by Dr. Gilbert Importante that provided details on the consortium's accomplishments for the 3rd quarter with the newly approved and on-going projects; (3) the election of a new RRDCC vice chair; (4) recognition of new members; (5) ceremonial signing of a memorandum of commitment; and (6) turnover of the RRDCC chairmanship.

The newly elected RRDCC Vice Chairperson, with a majority of votes from the CMI's heads and representatives, was Dr. Bonifacio C. Gabales. He will assume the presidency of the University of Southeastern Philippines (USeP) in November 2023, when Dr. Generalao retires from government service.

SMAARRDEC also recognized its new members, namely: Santo Tomas College of Agriculture, Sciences, and Technology (STCAST), Monkayo College of Arts, Sciences, and Technology (MonCAST), PLGU Davao de Oro, and the University of Mindanao (UM), who signed the Memorandum of Commitment as a formal acceptance of their responsibilities as new members of the consortium.





In the turnover of the RRDCC chairmanship, the emblem was passed on to the new chairperson, DOST XI Director Dr. Anthony C. Sales, the former RRDCC vice chair represented by ARD Mirasol Domingo. It was a symbolic representation of the change in leadership within the RRDCC.

Dr. Generalao, in her speech, reflected that in her 43 years in government service and in USEP, half of it was with SMAARRDEC. "It is not just for myself; there is countless support I received from the individuals working in the consortium. We develop the agency, we develop people, and we learn from each other".

The meeting concluded with heartfelt messages and commendations for Dr. Generalao, in utmost recognition of her exemplary leadership and profound commitment as the Consortium Director and RRDCC Chairperson. This is a fitting tribute to her dedication and esteemed service to the SMAARRDEC stakeholders.



MEMBERSHIP CONTRIBUTIONS

(Please refer summary on Table 18)

For the year 2023, USEP being the host institution of SMAARRDEC contributed one million pesos (1,000,000.00) to fund the operations of the Consortium. The member institutions also contributed an equal amount of twenty-five thousand pesos (25,000.00). The member agencies are committed to continue its support to SMAARRDEC by providing resources cash or in-kind, especially its annual membership contributions to the consortium operations funds. These significant contributions enable the Consortium to propel various project and program implementations and initiatives to serve its stakeholders and clientele.

NEW INITIATIVES OF THE CONSORTIUM

(Please refer summary on Table 18)

For the Consortium's new initiatives in governance, the Consortium submitted nomination on the following award-giving bodies:

a. Tanglaw and Pantas Nominations

Submitted entries on February 26, 2023.

1. USEP for Tanglaw Award-Research Institution;
2. Dr. Emma Ruth V. Bayogan for Pantas Award-Scientist
3. Dr. Lourdes C. Generalao for Pantas Award – Research Administrator

b. NSAARRD Nomination

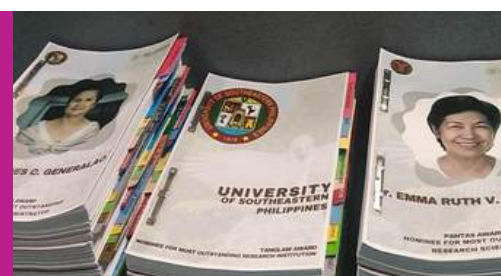
The Consortium also initiates to submit nomination for NSAARRD on March 21, 2023. this year's nomination includes:

Research Category:

Evaluation and Characterization of Ten Promising Cacao Varieties in Type IV AgroClimatic Zones in Southeastern Mindanao - Simeon Fernandez et.al./DA-RFO XI

Development Category:

Piloting Science for the Convergence of Agriculture and Tourism (SciCAT) to a Magsasaka Siyentista in Davao Region - Bryl Manigo et.al/USEP



<p>Republic of the Philippines DEPARTMENT OF AGRICULTURE Regional Field Office XI P. Bantayon St., Davao City 8000 Tel. No. (082) 226-2625</p>	
<p>Title of the Project Evaluation and Characterization of Ten Promising Cacao Varieties in Type IV Agro-Climatic Zones of Southeastern Mindanao</p>	
<p>As part of the program Multilocation Trial of Ten (10) Promising Cacao Varieties in Various Agro-Climatic Zones in the Philippines</p>	
<p>*SIMEON C. FERNANDEZ, *LYLBETH A. PANOLINO, ***DANNY CRIS C. BUCADON, ***JESUS MELCHOR P. BERTOLPO, ***MARIALETH B. ALABAR, ***ROGELIO C. QUINTO, JR.</p>	
<p>*Senior Science Research Specialist, Project Leader, **Science Research Specialist I, ***Agricultural Technician, ****Project Assistant, *****Project Staff</p>	
<p>*Department of Agriculture Regional Field Office XI-Research Division Philippine Council for Agriculture, Aquatic and Natural Resources Research and Development (DOST-PCAARRD)</p>	
<p>Project Duration: CY 2018 to 2021 Project Fund: P2, 606,320.00 Fund Source: Philippine Council for Agriculture Aquatic Resources Research</p>	
<p>Piloting Science For The Convergence Of Agriculture And Tourism (SciCAT) To A Magsasaka-Siyentista Farm In Davao Region</p>	
<p>Bryl I. Manigo *, Gilbert A. Importante, Gilbert M. Gordo, and Filman T. Simpa University of Southeastern Philippines</p>	
<p>Duration: August 2018 – December 2020 Budget: PhP 4,702,755.20 Funding Agency: Department of Science and Technology – Philippine Council for Agriculture, Aquatic and Natural Resources Research and Development (DOST-PCAARRD)</p>	
<p>Implementing Agency: University of Southeastern Philippines <ul style="list-style-type: none"> • College of Agriculture and Related Sciences (CARS) • College of Applied Economics (CAEC) • College of Business Administration (CBA) </p>	
<p>Collaborating Agencies: <ul style="list-style-type: none"> • University of Southeastern Philippines- Institute for Small-Scale Industries (IP-SSI) • Department of Tourism (DOT) • Department of Agriculture-Agricultural Training Institute (DA-ATI) </p>	



POLICY ANALYSIS AND ADVOCACY

The Consortium played a significant role in promoting agricultural productivity and competitiveness by formulating policies and recommendations to enhance the management/operations of the consortium. It also served as backbone in promoting transparency in administering all programs and projects of the Consortium.

Policy researches conducted 44

**Policy formulated/advocated/
implemented/institutionalized** 44

SMAARRDEC implemented policy research on priority commodities to prepare baseline projections for its research and development programs intended for use by farmers, government agencies, and officials, agribusinesses for long-term planning.



RSRDEH 2023

Policy Briefs Generated during RSRDEH 2023

1st place – SOS Marine Wildlife: Addressing the Threats of Marine Megafauna / DORSU/ Lea A. Jimenez, Amy G. Ponce, Ayje R. Consava and Nikki Jane Manooy

2nd place – Water Quality and Saltwater Intrusion Assessment of Community Water Systems from Selected Rural Coastal Areas in Davao del Sur / DSSC/ James Phil D. Flores, Mark Jude F. Trondillo, Kris Kristofferson T. Tan, Hazel Hana Yuga, Lara Mae C. Testado, and Wally T. Carcedo

3rd place – Agroforestry Education Campaign for Sustainable Development in Sitio Salawao, Sto. Nino, Talaingod, Davao del Norte/DNSC/ Jonelyn J. Arcayna

Poster

1st place – Evaluation of Marine Litter Loads of Selected Coastal Areas in Davao Oriental: An Initial Step for Mitigating Marine Plastic Pollution in Davao Region/DORSU / Lahoy N., Polestico R., Rojas C., Jimenez L., Villegas J., Viela E., Dedal A., Calica P., Bauyot M., Rapiz F., Asalas V., Ponce A., Verzosa R., Centro J., Cabrera J., Inoco J., Leal I., Bugwak E., Maravillas R., and Antonio E.

2nd place – Varietal Improvement of Traditional Purple Corn in Davao Region/ DA-RFO XI/ Norland S. Salazar, Gladys Mae N. Lutarte, and Godofredo G. Bertain, Jr.

3rd place – Design, Development and Optimization of an Automated Combined Mechanical Cacao Demucilager-Fermenter-Dryer/USEP/ Roger C Montepio, Roland B. Bayron, Ryan M. Abenoja and Ruel F. Tuyugon

Policy Briefs Generated and Presented during RSRDEH 2023

- Agroforestry Education Campaign for Sustainable Development in Sitio Salawao, Sto. Nino, Talaingod, Davao del Norte /DNSC / Jonelyn J. Arcayna
- Determination of Heavy Metals of Syringodium sp. in the Selected Coastal Barangays of Sta. Maria, Davao Occidental /SPAMAST/ Anthony O. Caliwang Jr.
- Factors Affecting the Adoption of Climate-Smart Agriculture among the Smallholder Coconut Farmers in Paquibato District, Davao City/ USEP/ Ele Mae Saplad and Christopher D. Balubayan
- Sustainable Fisheries Management and Livelihood Enhancement in Barangay San Roque, Maco, Davao De Oro/DNSC/ , Quirino M. Bero, Junilyn RelatadoPalope



STUDENT RESEARCH CONFERENCE 2023

Policy Brief generated and presented

- GIS-Based Identification of Sugarcane Production Areas and Agricultural Infrastructures and Facilities Potentially Affected by Different Hazards in The Municipality of Sulop, Davao Del Sur /DSSC/ Lorybe I. Lapan
- Water Quality and Saltwater Intrusion Assessment of Community Water Systems from Selected Rural Coastal Areas in Davao del Sur/ DSSC/ James Phil D. Flores, Mark Jude F. Trondillo, Kris Kristofferson T. Tan, Hazel Hana Yuga, Lara Mae C. Testado, and Wally T. Carcedo
- SOS Marine Wildlife: Addressing the Threats of Marine Megafauna/ DORSU/ Lea A. Jimenez, Amy G. Ponce, Ayje R. Consava and Nikki Jane Manooy
- 5 Feed the fish: Enhancing Efficiency of Fish Cage Operation in Sta. Maria, Davao Occidental/SPAMAST/ Jallom Joshua P. Aloni, Ardelyn M. Mondejar, Dario M. Morastil and Kher Dave H. Dono

The RRDCC as the policy-making body of the Consortium spearheads the analysis and advocacy of important regional policy issues in AANR sector.



Implemented by SERDAC/ USeP-CAEc, the following are the Policy Researches fulfilled:

- Impact Assessment of the PCIEERD Infrastructure Development Program
- Impact Assessment of the Philippine Lidar Program
- Impact Assessment of the National R&D Initiatives for Seaweeds with Focus on the DOST-funded Seaweeds R&D Program (Y1 of 2)
- Impact Assessment of the Project Development of Sustainable Breeder Philippine Mallard Duck (PMD) Production System (Y1 of 3)

Climate Risk Vulnerability Assessment (CRVA) Targeting and Prioritizing for the Adaptation and Mitigation Initiative in Agriculture (AMIA) for the Province of Davao del Norte, Davao de Oro, and Davao Occidental

The USeP-College of Development Management proposed a research program entitled "Climate Risk Vulnerability Assessment (CRVA) Targeting and Prioritizing for the Adaptation and Mitigation Initiative in Agriculture (AMIA) for the Province of Davao del Norte, Davao de Oro, and Davao Occidental" funded by the Department of Agriculture-RFO XI under the Balik Probinsya Bagong Pag-asa Program (BP2). With the release of funds by the Department of Agriculture last April 19, 2023, the Team is set to start the preparatory activities prior to data gathering stage.

On May 5, 2023, the University of Southeastern Philippines-College of Development Management (USeP-CDM) held an event for the turnover of three (3) million pesos in fund support for the Climate Risk Vulnerability Assessment (CRVA) Program. The event was attended by various stakeholders. Dr. Joetetty Bugarin, the CRVA Program Leader/CRDH/Center Manager, presented an overview of the program and its objectives. In addition to the fund turnover, the event served as an opportunity to review the research proposal and make necessary adjustments to the work plan. This collaborative effort aims to ensure that the CRVA Program is well-aligned with the needs of the community and can effectively contribute to climate change adaptation and mitigation strategies.

With the launch of the CRVA Program, USeP-CDM is taking a significant step towards understanding and addressing the impact of climate change on vulnerable communities. The funding support will enable the program to conduct a comprehensive research and develop targeted interventions for climate risk reduction. With the launch of the CRVA Program, USeP-CDM is taking a significant step towards understanding and addressing the impact of climate change on vulnerable communities. The funding support will enable the program to conduct a comprehensive research and develop targeted interventions for climate risk reduction.



SMARTARRDEC

SO... DAVAO AGRICULTURE, AQUATIC AND NATURAL RESOURCES RESEAR...
... technology transfer and knowledge management
... (AANR) in Davao Region. Embodies its essence to
... (32) Co... member Institutions to continuously have a w...
... mental service... ration within its internal and external consortiu...

FINANCIAL REPORT²⁰²³

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