



PHILIPPINES AND SEARCA



SEARCA's headquarters was constructed with funding from the International Development Research Centre (IDRC) of Canada and the Government of the Philippines.



Established in 1966, the Southeast Asian Regional Center for Graduate Study and Research in Agriculture (SEARCA) is one of the 26 specialist institutions of the Southeast Asian Ministers of Education Organization (SEAMEO), a treaty organization that promotes regional cooperation in education, science, and culture.

The SEAMEO member countries are Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, the Philippines, Singapore, Thailand, Timor-Leste, and Vietnam. The associate member countries of SEAMEO are Australia, Canada, France, Germany, Morocco, the Netherlands, New Zealand, Spain, and the United Kingdom. The Philippines is one of the founding member countries of SEAMEO, which was established in 1965.

SEARCA's objectives are to:

1. Provide high-quality graduate education and training in agriculture;
2. Promote, undertake, and coordinate research addressing the development needs and problems in agriculture of the region; and
3. Disseminate the findings of agricultural research and experimentation.

SEAMEO SEARCA

College, Los Baños, Laguna 4031, PHILIPPINES

Tel: (63-49) 536-2290, (63-49) 554-9331 to 9336, (63-2) 8657-1300 to 1302

Fax: +63 49 536-7097

E-mail: post@searca.org

Website: www.searca.org



Our Vision

A leading enabler and champion of excellence in agriculture and rural development in Southeast Asia

Our Mission

To elevate the quality of life of agricultural families through sustainable and resilient livelihoods and access to modern networks and innovative markets



Our Strategic Objectives

- Access new and innovative financial services
- Adopt new, sustainable, and resilient production technologies and systems
- Integrate with modern postharvest and logistics system
- Gain access to and operate in modern networks and markets





supports the
UN Sustainable Development Goals



Our Strategic Intent

SEARCA, in the next five years, commits to BETTER, BIGGER, and SMARTER outcomes and impact on the agriculture industry and its stakeholders, most especially the larger proportion of resource-poor farmers, by delivering better services through more context-relevant and valuable services to even more beneficiaries in more effective and efficient ways.

Alongside other global, regional, and national organizations, SEARCA aligns its direction toward contributing to the achievement of the United Nations (UN) Sustainable Development Goals (SDGs) that address global challenges to achieve a better and more sustainable future for all. SEARCA commits to contribute and allocate resources for the achievement of five SDGs which directly align with its mandate and focus, with an emphasis on creating partnerships (SDG17). Moreover, SEARCA also touches three other SDGs as it tries to achieve the five.



SEARCA's core program on Education and Collective Learning (ECL) leads the development of a new breed of agriculture leaders and professionals through its scholarships and other graduate study programs. ECL also leads the technical and professional trainings, and coordinates roundtable discussions, conferences, fora, and all other SEARCA learning events.

■ GRADUATE SCHOLARSHIP AND INSTITUTIONAL DEVELOPMENT

► GRADUATE SCHOLARSHIP PROGRAM

One of SEARCA's main objectives is to produce high-quality human resources in agriculture for the SEAMEO region in order to strengthen their institutions that would propel regional development. One of the major undertakings under this program is the provision of scholarships that enable Southeast Asians working in agriculture and rural development to pursue their master's or PhD studies.

Full Master's and PhD Scholarships

So far, SEARCA has awarded 458 full graduate scholarships (243 MS, 215 PhD) and 66 PhD Research Scholarships to Filipinos. Of this number, 437 (206 MS, 177 PhD, 54 PhD research) have completed their graduate studies.

Nagoya University-SEARCA Joint PhD Scholarship in the Field of Agriculture and International Development for Philippine Health

To date, six scholarships were awarded under this collaboration. Four scholars had completed their studies, while one is ongoing and one dropped out.

Other Project Scholarships

In 2010, SEARCA together with the Department of Agriculture (DA) implemented a graduate scholarship program under the DA-SEARCA Umbrella Capacity Development Program in Strategic Management and Policy for Agricultural Professionals and Executives. The four-year scholarship program aimed to produce a cadre of home-grown, world class-career bureaucrats who can competently and proactively steer the Philippine government's agriculture program. Six DA staff completed their Master's degrees in Public Management at Ateneo School of Government and three DA staff completed Master in Development Economics at UP School of Economics.

Moreover, in 2002, four Filipinos were awarded the ASEAN-European Master of Science in Food Science and Technology, a 19-month intensive training in food science offered under France Ecole Nationale Supérieure des Industries Agroalimentaires (ENSA).

Currently, SEARCA is also administering the Graduate Scholarship Program in Livestock Research and Biotechnology for the Philippine Carabao Center (PCC) which aims to strengthen the Center's pool of professionals by providing scholarship grants to qualified PCC officers and regular staff to pursue graduate degrees from selected universities in the Philippines, USA, Canada, and Australia. One PhD and seven MS scholars completed their graduate programs, while two PhD scholars are still ongoing.

SEARCA in cooperation with the Tokyo University of Agriculture (TUA) in Japan, is also offering a Dissertation Doctorate Program for Agriculture and Natural Resources which is open to all nationals of member countries of the Southeast Asian Ministers of Education Organization (SEAMEO) including the Philippines.

NTU-SEARCA Joint Scholarship Program for Global Agriculture Technology and Genomic Science (Global ATGS)

A partnership between the National Taiwan University and SEARCA, the joint scholarship aims to cultivate agricultural professional talents, encourage academic excellence, and promote research and development in agriculture within Southeast Asia through a two-year Master Program in Global Agriculture Technology and Genomic Science (Global ATGS). The academic program tackles emerging agricultural biotechnologies and smart agriculture through its cross- and inter-disciplinary curriculum. Since its pilot offering in AY 2020/2021, SEARCA has awarded the scholarship to eight Filipino nationals.

Sejong-SEARCA Joint Scholarship Program

The joint scholarship between SEARCA and Sejong University in South Korea aims to increase the capacities of Southeast Asian scientists/researchers in the fields of Integrated Biological Sciences and Industry (e.g., Plant Breeding and Genetics), Bioresource Engineering (e.g., Plant pathology, QTL mapping, Tissue culture). Three Filipinos have been granted the scholarship since its pilot offering in 2020/2021.

Sandwich Program

SEARCA also awarded scholarships for sandwich program to three Filipino graduate students to conduct or complete their graduate research under the supervision of a counterpart adviser

in the French Agricultural Research Center for Development (CIRAD) and in the National Taiwan University (NTU). Awardees for the sandwich program scholarship were Mr. Bryan Rey Oliveros and Dr. Ana Liza C. Lopez, both faculty at the University of the Philippines Los Baños, and Dr. Ma. Fe. A. Simbulan of Pampanga Agricultural College.

Special Graduate Seminar

The special graduate seminar is held once every semester and highlights outstanding research by a SEARCA scholar. Hosting the seminar is the Center's way to support the scholars' academic milestones and to recognize their capacity to produce quality research that has a great impact on agriculture and rural development.

The following Filipino SEARCA scholars served as speakers at the Special Graduate Seminar:

- Engr. Philip Donald C. Sanchez (MS in Agricultural Process Engineering, Universiti Putra Malaysia), "Application of laser-based imaging technique in the quality evaluation of Malaysia sweet potato varieties during postharvest storage," 5 March 2021 via Zoom
- Dr. Glenn Y. Ilar (SEARCA PhD Research Scholar, PhD in Development Studies, UPLB), "Developing a Community-Based Development Framework for Agriculture and Rural Development," 24 January 2018
- Mr. Arsenio Bulfa Jr. (MS Soil Science, UPLB), "Measurement of Carbon Dioxide in Corn Cob Biochar-Amended Acid Soil Added with Different Types of Fertilizers," 14 June 2017

► REGIONAL SEARCA ALUMNI ASSOCIATION (RSAA)

Participants and beneficiaries of SEARCA's capacity-building programs become the Center's partners in its mandate of promoting agricultural and rural development toward poverty reduction and food security in Southeast Asia.

Upon graduation, SEARCA scholars automatically become members of RSAA, an organization consisting of all SEARCA Graduate Scholarship Alumni. The goals of RSAA are to facilitate the development of linkages among in-country associations (country chapters) of SEARCA alumni, as well as foster collaborative research and development efforts in the region. As testimony that the SEARCA graduate scholarship program is a key factor in human resource development in the Philippines, a number of these scholars have held key positions of responsibility in government and other sectors of the country.



SEARCA, in partnership with the Regional SEARCA Alumni Association (RSAA), organized the Scholars' Conference 2023 on "Advancing Agricultural Research for Improved Food Security." Twenty-eight scholars presented their research across six parallel sessions from March 14-15, 2023, via the SOLVE Platform. The two-day conference is the Center's way to support their academic achievements and recognize their capacity to produce quality research that has a great impact on agriculture and rural development.

Three SEARCA Alumni from the Philippines served as Parallel speakers:

PARALLEL SESSION ON PLANT SCIENCES

Dr. Maria Genaleen Diaz

Professor, Institute of Biological Sciences, College of Arts and Sciences, University of the Philippines Los Baños

PARALLEL SESSION ON FOOD SCIENCES

Dr. Queenie Ann L. Curayag

Director, Food Research and Development Center and Professor, Department of Food Science College of Human Ecology Central Mindanao University, Philippines

PARALLEL SESSION ON AGRICULTURAL RESILIENCE

Dr. Nathaniel R. Alibuyog

Professor VI and Vice President for Research and Extension Mariano Marcos State University Philippines

Outstanding SEARCA Scholars

Since FY 2020-2021, SEARCA has been granting Outstanding SEARCA Scholars award to those who completed their degrees during the fiscal year with remarkable academic achievements and related engagements. Ms. Maria Genesis T. Catindig-Reyes, who completed her MS in Rural Sociology from the University of the Philippines Los Baños, was recognized as the Outstanding SEARCA Scholar for the master's level for Fiscal Year 2021-2022. The award recognizes Ms. Reyes' academic excellence, including publication in a refereed journal, numerous papers presented in international conferences about resilience of rice farming families and scaling up inclusive digital agricultural value chains that contribute to the Center's thrust on Accelerating Transformation Through Agricultural Innovation (ATTAIN), and other co-curricular engagements.



Outstanding SEARCA Scholarship Alumni (OSSA)

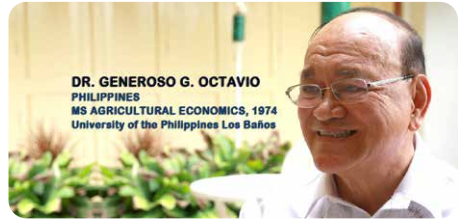
On the occasion of its 50th anniversary, SEARCA honored 11 Southeast Asians with the OSSA Award. It was the first time that SEARCA conferred such accolade on its alumni who have championed ARD and distinguished themselves in creating positive impact through their work.

Five Filipino alumni received this award:

- **Dr. Naomi G. Tangonan**, OSSA Award for Excellence in Teaching, was recognized for her passion for teaching and academic excellence in the university as well as in the field with the farmers, out-of-school youth, and women. She is also known for the two editions of the reference book in plant pathology titled “Host Index of Plant Diseases in the Philippines” that are still considered main references among crop protection students, agriculturists, and technicians in the country. Her leadership in the rubber industry where she led 17 experts to produce the book titled “Rubber Production and Management in the Philippines.” She also became the first female dean at her university.
- **Dr. Segfredo R. Serrano**, OSSA Award for Public Policy, was honored for his nearly 20 years of government service as one of the think tanks of a country’s agriculture sector, having been entrusted that critical position by 12 agriculture ministers. He had provided the agriculture ministry the critical “institutional memory” and expertise used in crafting national agricultural policies and programs with strong convictions about the long-term welfare of the Filipino farmer. He also took the lead as the chief negotiator for agriculture and fisheries in all international trade negotiations of the Philippines and was able to mainstream the issue of climate change in the country’s agriculture and fisheries sector, leading the Philippine Delegation to negotiating sessions under the U.N. Framework Convention on Climate Change (UNFCCC).
- **Dr. Lucrecio L. Rebugio**, OSSA Award for Advocacy, was cited for being a major prime-mover in advancing social forestry education in the Philippines and in other Asian countries. His more than 37 years of service in UPLB is marked by former students who are now leaders, academicians, and scientists both in the Philippines and abroad, and his numerous scholarly publications. His lectures on paradigms and their relationship to forestry and the environment have inspired major policy and program reforms in forestry toward a more holistic and integrated approach on the technical and social aspect of natural resources management.



- **Dr. Generoso G. Octavio**, OSSA Award for Advocacy, was honored for his leadership of a micro-finance institution that became the frontier of training for small and large institutions, both local and international, which started their micro-credit ventures using the Grameen Bank methodology. As a leading micro-finance institution ASHI helped the microfinance industry in the Philippines to expand and grow, and reach out to almost half a million poor households in a sustainable manner. Dr. Octavio extended also his expertise to help not just local organizations but other neighboring countries. As a servant-leader, he helped tsunami devastated areas in Aceh in Indonesia, Sri Lanka, Tamil Nadu and Kerala in India, Khao Lak and Phang Nga in Thailand, and Penang-Kedah in Malaysia through various recovery and rehabilitation activities.



DR. GENEROSO G. OCTAVIO
PHILIPPINES
MS AGRICULTURAL ECONOMICS, 1974
University of the Philippines Los Baños

- **Dr. Delfin Ganapin, Jr.**, OSSA Award for Public Policy and Governance, was recognized for his work in the environment and the marginal sector that translated into concrete actions with lifelong impacts. He was able to strengthen environmental impact assessment by introducing the social acceptability requirement for the Philippines' environmental compliance certificate (ECC). This became the pattern for the "prior informed consent," which is now enshrined in the United Nations Declaration on the Rights of Indigenous Peoples. He also conceptualized and set the precedent for setting up environment and social guarantee funds, which is an innovative insurance system to be used for stakeholder monitoring of impacts as well as providing immediate funds for affected communities to solve problems, for compensation, and for rehabilitation, should the need arise. Moreover, he led an internal advocacy within government to empower indigenous peoples and took the lead in conceptualizing and implementing an innovative ancestral domain claims program. The program allows IPs to have security of tenure for their conservation-orientate practices even as the law does not yet allow them the ownership of their traditional lands. These laid the ground work for the passage of the Indigenous Peoples Rights Act, which until now serves as a model and inspiration for those wanting to empower indigenous peoples in other parts of the world. As the Global Manager for the UNDP-implemented Global Environment Facility (GEF) Small Grants Programme (SGP), he was able to transform the program into a global platform by adding 79 countries to its portfolio of 54 participating countries. Now SGP is GEF's biggest program for community and civil society engagement.



DR. DELFIN J. GANAPIN, JR.
PHILIPPINES
MS FOREST BIOLOGICAL SCIENCES
University of the Philippines Los Baños

► UNIVERSITY CONSORTIUM

The University of the Philippines Los Baños (UPLB) is one of the founding members of the Southeast Asian University Consortium for Graduate Education in Agriculture and Natural Resources (UC) initiated by SEARCA in 1989. The other members are Institut Pertanian Bogor

(IPB), Universitas Gadjah Mada (UGM), and Universitas Brawijaya (UB) in Indonesia, Universiti Putra Malaysia (UPM) in Malaysia, and Kasetsart University (KU) in Thailand.

Three Philippine universities became affiliate members of the UC:

- Visayas State University
- Central Luzon State University
- Central Mindanao University

The 4th University Consortium (UC) Faculty Forum concluded at the Science City of Muñoz, Nueva Ecija, Philippines, held on 5-6 December 2022 with the theme Future Proofing Agriculture. The Forum gathered UC members to discuss strategies to ensure agricultural productivity in a future that is full of uncertainties and confronted with environmental and social problems. The 4th UC Faculty Forum was the first major event hosted and organized by Central Luzon State University (CLSU) for the UC.

Moreover, CLSU, SEARCA, and the UC jointly organized the International Summer Short-Term Course on mushroom farming, organic agriculture, aquaculture, and transboundary animal diseases on 19-29 July 2021. This was CLSU's first activity with the consortium since it became a member. The activity had its second iteration on 1-12 August 2022 in the fields of food sustainability and food security in marine fishes, sustainable mushroom farming, sustainable and efficient animal management strategies, and combatting ASF through risk analysis test kit development.

UPLB organized a number of annual UC activities such as the 2015 UC Summer School on "Food and Nutrition Security and Sustainable Agriculture in Southeast Asia" and the 2019 UC Summer School on "Sustainable and Resilient Food Systems in Vulnerable Areas" as part of the Master of Science in Food Security and Climate Change (MS FSCC) project funded by the European Commission's ERASMUS + Capacity Building for Higher Education from 2016 to 2019. UPLB likewise hosted the 2016 UC Graduate Forum on "The Quest for Environmental and Food Security, Inclusive and Sustainable Agricultural Development." The UC Faculty Forum was proposed to the UC by UPLB taking inspiration from the existing UC Graduate Forum, hence, the institution was the first one to host it in 2019 with the theme "Responding to the Challenges of the Fourth Industrial Revolution"

A project with the Philippine Commission on Higher Education (CHED), the Leveling-Up Philippine Higher Education Institutions in Agriculture, Fisheries, and Natural Resources (LevelUPHEI AFAR) aims to upgrade the institutional capacities of the State Universities and Colleges – Association of Colleges of Agriculture in the Philippines, Inc. (SUC-ACAP, Inc.) and its 75 members through participation in activities and learning events organized by the University Consortium and its members. To date, 165 delegates from 34 universities of the State Universities and Colleges – Association of Colleges of Agriculture in the Philippines, Inc. (SUC-ACAP, Inc.) participated in various mobility activities in university consortium partner universities.

The UC, in cooperation with the Tokyo University of Agriculture (Tokyo NODAI) in Japan, is also offering a Dissertation Doctorate Program for Agriculture and Natural Resources, which is open to researchers with full-time employment at any member of the UC. One Filipino grantee completed her PhD Under this program

So far, at least 256 Filipinos have participated in UC activities:

- 40 graduate exchange students
- 87 thesis grantees
- 43 exchange faculties
- 2 research fellows
- 82 professorial chair holders
- 2 seed fund for collaborative research grantee

► REGIONAL PROFESSORIAL CHAIR GRANTS

Since 1974, SEARCA provides professorial chair grants to highly competent faculty and research staff of universities in Southeast Asia. Initially, the grant was offered only to faculty and research staff of UPLB. In the Philippines, the grant was expanded in 2005 to cover the entire UP system. Through Professorial Chair Grant, SEARCA supports and recognizes the contributions of institutions and individuals who promote academic excellence in the fields of agriculture and related sciences.



Starting 2012, it further expanded to include other universities in Southeast Asia. Since academic year 2011-2012, the SEARCA Regional Professorial Chair Grant has recognized the contribution of institutions and individuals in the fields of agriculture and related sciences, thereby contributing to ARD in Southeast Asia through instruction, research, innovation, and extension work. Since AY 2012-2013, 31 Filipino grantees.

■ TRAINING FOR DEVELOPMENT

Short-term training is SEARCA's fast lane to building the capacities in the agriculture and rural development sector of SEAMEO member countries. Training activities are geared toward developing the technical and managerial competencies of university faculty members, researchers, agricultural and environmental leaders, and development practitioners in Southeast Asia.

SEARCA is currently implementing the SEARCA-Commission on Higher Education (CHED) project titled "Leveling-Up Philippine Higher Education Institutions in Agriculture, Fisheries, and Natural Resources (LevelUPHEI AFAR)" funded by CHED. The LevelUPHEI AFAR project aims

to upgrade the institutional capacities of the State Universities and Colleges-Association of Colleges of Agriculture in the Philippines, Inc. (SUC-ACAP, Inc.) and its 75 members through short-term training courses and cross-visits, participation in activities of the SEARCA-established University Consortium, and to improve their standing in the world university rankings. To date, SEARCA has implemented the following courses under this project:

- 2nd Leadership Development Program for Higher Education Institutions (HEIs) in the Philippines (LDP-HEIs-Phils)
- Online Training on Research Designs and Methods for HEIs in the Philippines (Research4HEIs)
- Online Strategic Communication Planning Workshop: Enhancing Communication Skills for HEIs in the Philippines (StratCom4HEIs)
- Online Training on Scientific Writing and Presentation for HEIs in the Philippines (SciWriting4HEIs)
- 3rd Leadership Development Program for HEIs in the Philippines
- Training Course on Research Designs and Methods for HEIs in the Philippines (Research4HEIs)
- Cross-visit to HEIs in Thailand
- Training-Workshop on Developing Fundable Research Project Proposals for HEIs in the Philippines (FundableProp4HEIs)

In the pipeline under this project are the face-to-face offerings of SciWriting4HEIs and StratCom4HEIs, two cross visits, and a culminating forum.

Since SEARCA began its capacity building service in 1970, 8,714 Filipinos had participated in 510 international, regional, in-country SEARCA trainings, seminars, and learning forums on various topics, including:

- | | |
|--|--|
| <ul style="list-style-type: none"> • Integrating climate change adaptation into local and national policies, plans, and investments • Climate risks management in natural resources management and agriculture • Upland agroforestry systems and watershed resource management • Leadership excellence in academe program in Southeast Asia • Climate change vulnerability and socioeconomic analysis • Environmental planning and management • Watershed governance • Strengthening project development and management • Techniques and tools for effective knowledge sharing • Advanced higher education administrators development • Technology and capacity development • Commercialization of research results • Research management | <ul style="list-style-type: none"> • Knowledge management • Strategic communication on agricultural biotechnology • Plant genetic resources documentation • Plant biotechnology regulations • Integrated pest management • Regional food safety system • Biosafety • Social laboratory and technology transfer management • Assessment of development projects' impacts on poverty • Supply chain management and sustainable development • Strategies and planning for farmers' communities • Management of agricultural information services • Data management for rural development • Enterprise development • Community forestry • Agricultural extension |
|--|--|



Of these learning events, 466 were conducted in the Philippines. Owing to mobility restrictions brought about by COVID-19, the Center established the SEARCA Online Learning and Virtual Engagements (SOLVE) platform. This platform hosts the online capacity-building activities of the Center, starting in April 2020. Twenty-two of the activities conducted in the Philippines were all online offerings.

Aside from SEARCA-organized training courses, the Center also proactively finds other opportunities for Southeast Asians to participate in high-level training courses. Some of these training courses which were participated in by Filipinos include:

- 2010 National Taiwan University Summer Program on Biodiversity, Agriculture, and Culture - Mr. Lawrence T. Ramos, a research assistance at World Agroforestry Centre
- SEARCA-Beahrs Environmental Leadership Program - Mr. Rey B. Lara, Chief, Plans and Programs Section, Department of Agriculture, Zamboanga and Mr. Rusty G. Abanto, assistant professor at Camarines Norte State College, Camarines Norte
- SEARCA-FSC Summer School on Sustainable Agricultural and Rural Development for Food Security - Ms. Micah Dee Roque, MS Agronomy Student, UPLB and Mr. Joseph A. Pagtananan, Pollution Control Officer, Office of the Vice-chancellor for Community Affairs, UPLB
- SEARCA Summer School Program on Food and Nutrition Security in Southeast Asia - Mr. Aries O. Ativo, Instructor, Central Bicol State University of Agriculture, Camarines Sur; Mr. Roden D. Troyo, Instructor, Visayas State University, Leyte; and Ms. Meryl A. Bernardino, MS Food Science Student, UPLB

The 2015 SEARCA Summer School was conducted in cooperation with the University Consortium and was hosted by UPLB in July 2015.



From 2014 until 2019, SEARCA conducted a series of overseas comparative study missions for the Philippine Carabao Center (PCC). These study missions were components of the project Capacity Development under Livestock Research and Biotechnology Research and Development of the Carabao Development Program (CDP), which aimed to enhance the capacity of PCC to address the requirements of the Carabao sub-sector and enhance its full potential as a major player of the livestock industry and the region considering the ASEAN Economic Community (AEC) and greater globalization. It also aimed for PCC to have the regional and international perspective and influence in setting the policy recommendations and developing the strategic framework toward a competitive and inclusive livestock sector.

The study missions also aimed for the participants to: 1) identify relevant and specific overseas public and private sector program concepts and strategies needed to strengthen the “i-REB (Intensified Rural Enterprise Build-Up) framework and its operationalization; and 2) forge stronger partnership with international research and development institutions that will enhance generation of major final output relevant to improving productivity through the application of relevant biotechniques, technology transfer, and policy reforms. To achieve these objectives, the overseas study mission participants, composed of PCC officials and staff, visited relevant public and private institutions and organizations in Kenya, Japan, Australia, South Korea, India, Vietnam, and Thailand.

RESEARCH AND THOUGHT LEADERSHIP



One of SEARCA's main objectives is to conduct and coordinate appropriate and relevant research that promotes accelerating transformation through agricultural innovation (ATTAIN). Central to the Center's resolve to be strategically visible and more relevant for all stakeholders and strategic agricultural and rural ecologies, SEARCA's core program on Research and Thought Leadership undertakes policy analyses, research for development, and facilitate knowledge platforms.

► ONGOING RESEARCH PROJECTS AND POLICY STUDIES

School Edible Landscaping for Entrepreneurship (SEL4E) in Rizal Province

This project seeks to expand and enrich the SEL4E project through collaborative efforts, ultimately improving nutrition and well-being in Rizal province.

Project Objectives:

- **Build Partnerships:** Form strong partnerships among Rizal's Local Government Units (LGUs) and partner agencies to support SEL4E's home garden aspect.
- **Empower Educators and LGUs:** Empower teachers and LGUs with knowledge to effectively teach K-12 students about SEL4E related concepts.
- **Engage Communities:** Engage households to enhance community involvement.
- **Plan for expansion:** Develop recommendations for expanding the project sustainably across Rizal's municipalities.

Project Scope:

Component 1: Trainers' Training for SEL4E: Discuss experiences, integrate key concepts, and receive training materials for SEL4E curriculum integration

Component 2: Home Gardening for Better Health: Scaling SEL4E's home garden part involves three phases: scoping, capacity building, and refining protocols

Bridging and Upgrading Mechanisms and Pathways for the Uptake of Biotech (BUMP UP Biotech)

Project funded by the Bureau of Agricultural Research through the Biotech Program Office of the Philippine Department of Agriculture. It primarily aims to identify pathways for the uptake of biotech innovations for food and nutrition security. This also includes the improvement of existing platforms for collaboration among academe, industry, and government actors for sharing research information, technology and policy with local governments and local media.

Specifically, the project aims to:

- Capacitate provincial government units by providing enabling mechanisms to harness up-to-date technology and information;
- Capitalize on knowledge gathered from the academe, industry, and government to support uptake of biotech innovations; and,
- Communicate biotechnology through local media/community radio.

The project will be implemented in the provinces of Oriental Mindoro, Bohol, and Agusan del Norte.

Scaling Up the School-Plus-Home Gardens Project

This project articulates SEARCA's commitment to replicate the benefits of its completed "Participatory Action Research on School and Community-Based Food and Nutrition Program for Literacy, Poverty Reduction and Sustainable Development," also known as "School-Plus-Home Gardens Project (S+HGP)." The project used school gardens as an

approach to improve the nutrition, education and economic well-being of schoolchildren. Conducted with UPLB and the Philippine Department of Education-Laguna, the project was successfully implemented and piloted in five elementary and one secondary school in Laguna, Philippines. Three years after the project ended, the initial six pilot schools have grown to 89 adopted schools in 2020 and continues to spread out.

This project aims to replicate the positive results from the S+HGP to other parts of the Philippines, particularly those with high malnutrition rates and inadequate food security, together with UPLB and Kansas State University (KU) as partners. They have already collaborated on an online training on S+HGP cum biodiversity enhancement for teachers, parents, and key LGUs in Busuanga Island, Palawan. The training outputs include an action plan crafted by the participants toward the establishment and implementation of S+HGP suited to the context of Busuanga Island.



Moreover, experts from the Philippines serve as resource persons in the Trainers' Training for Integrating the School-plus-Home-Gardens in the Establishment of Agriculture Technology Parks (ATPs) and Mini ATPs in Cambodia that runs from December 2021 to February 2022. This online training is a collaboration among SEARCA, the Center of Excellence on Sustainable Agricultural Intensification and Nutrition (CE SAIN), the Kansas State University (KSU), and University of the Philippines Los Baños (UPLB).

Improving the Processes Influencing the Successful Adoption of New Technologies by Coconut Smallholder Farmers in Quezon

SEARCA is scaling up the gains of the ISARD Piloting Project through the replication and application of its implementation model in one of the provinces in the Philippines. SEARCA is now establishing its partnership with the local government of Quezon to create a market-driven coconut industry with empowered and resilient farmers. The scaling up plan envisions to develop coconut-based enterprises contributing to ISARD in Quezon Province. Baseline assessment, scoping visits, planning workshop, and sharing event are among the current activities of the project in collaboration with the Provincial Government of Quezon.

Documenting Linkages between Farmers and the Tourism Industry in Asia and the Pacific

The Philippines is one of the six countries covered by the regional study commissioned by the United Nations Food and Agriculture Organization of the United Nations (FAO) that documents the potential of agri-food tourism for sustainable food systems development. The study aims to contribute to the research on agri-food tourism in Asia and the Pacific with a regional survey on linkages between the tourism industry and local (smallholder) farmers and six detailed case studies.

Identify Opportunities and Developing a Guiding Framework to address Humanitarian-Development-Peace (HDP) Nexus in Hand-in-Hand Initiative in Asia and the Pacific

SEARCA is analyzing cases in selected Asia-Pacific countries, including the Philippines, to come up with recommendations on addressing the HDP Nexus in the Hand-in-Hand Initiative in the region. The project aims to come up with a guiding framework will be developed with approaches and practices that are proven successful in the target countries under study.

► PAST RESEARCH PROJECTS AND POLICY STUDIES

SEARCA has worked with various development organizations and research institutions in the implementation of the following completed research and policy studies in the ASEAN region, including the Philippines:

Know The Science (KTS 2): Strengthening Biotech Links

The project, which was jointly implemented by SEARCA and the International Service for the Acquisition of Agri-biotech Applications (ISAAA), Inc., aimed to continue the momentum and successes of previous and current information, education, and communication (IEC) advocacies on biotech crops. The planned activities were designed to counter the strong national sentiment against biotechnology and agri-sciences. It covered various approaches that focused on some elements of a successful IEC strategy, targeting essential stakeholders

such as policymakers, the media, the public, and the youth.

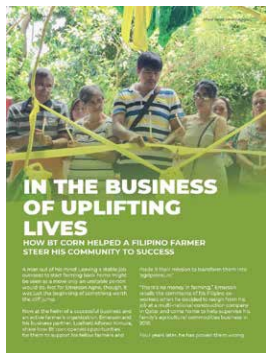
SEARCA handled several components of the project that contributed to raising the awareness of the public on biotech crops and strengthening old and newly found links and partnerships inside and outside the biotech space. The team led the development of four policy briefs focused on the regulatory frameworks for genetically modified crops and plant breeding innovations, modern animal biotechnology, and benefits of coexistence farming.



SEARCA also facilitated the translation of seven IEC materials in four Filipino dialects, namely Tagalog, Ilokano, Bikolano, and Bisaya-Cebuano. Another integral aspect of the project managed by the Center was the social media campaign on Facebook, Twitter, and Instagram. The KTS accounts have garnered more than 7,000 followers across the three platforms.

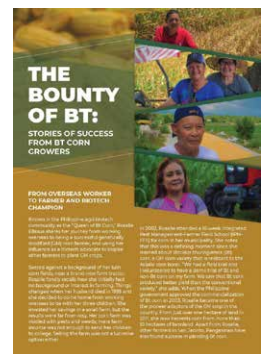
FarmerTalk: Development of Information, Education, and Communication (IEC) Materials Highlighting Biotech Contributions to Farmer Success

Committed to the goal of sharing knowledge to elevate the quality of life of agricultural families through sustainable and resilient livelihoods and access to modern networks and innovative markets, SEARCA and CropLife Asia have partnered to communicate the impacts and contributions of biotech crops through flyers and videos highlighting success stories of farmers in the Philippines, Indonesia, and Vietnam who have experienced first-hand the benefits of using biotech crops. The project featured case stories of seven biotech corn farmers from the Philippines.



A Series of Activities in the Framework of the UN Decade of Family Farming

SEARCA documented and systematically analyzed policies, strategies, initiatives, and programs successfully supporting family farming in selected Southeast Asian countries under Activity 2 of this Food and Agriculture Organization of the United Nations (FAO)-funded project. A case study on the Philippines' Partnership Against Hunger and Poverty (PAHP) and Expanded PAHP Program was one of the six country-level case studies conducted. To support the documentation of some case studies and get the viewpoint from farmers' organizations, SEARCA collaborated with the Asian Partnership for the Development of Human Resources in Rural Areas (AsiaDHRRRA).



Agricultural Transformation and Market Integration in the ASEAN Region: Responding to Food Security and Inclusiveness Concerns (ATMI-ASEAN)

The Philippines was one of the five ASEAN Member States (AMS) covered by this International Fund for Agricultural Development (IFAD)-funded project, which was co- implemented by the International Food Policy Research Institute (IFPRI) and SEARCA. The overall goal of the ATMI-ASEAN project was to strengthen the institutional capacity of the AMS to develop and implement policies and sub-regional programs as well as facilitate integration of smallholders in sub-regional agricultural and food markets. This was done through three main components and broad activities (1) Policy studies and expert workshops; (2) High-level policy forums and roundtables; and (3) Technical assistance for planning and policy development.

The Planning, Project Development, and Special Projects of the Department of Agriculture (DA) served as the project's focal agency in the Philippines. DA led the conduct of the policy study and national-level activities in the Philippines to strengthen the competitiveness of small-scale rural producers and support their inclusion in regional agrifood markets. These include capacity building for evidence-based decision making, policy formulation, and monitoring and evaluation. The University of the Philippines Los Baños (UPLB) conducted a policy study on Value Chain Analysis of Selected Pork-Based Processed Products in Luzon, Philippines and developed a national roadmap for pork-based processed products in coordination with DA under the ATMI-ASEAN project. Moreover, the Philippines also provided inputs to the Maize-Meat Regional Value Chain Assessment that was endorsed by the project to ASEAN Ministers on Agriculture and Forestry (AMAF).

Identify Opportunities and Developing a Guiding Framework to address Humanitarian-Development-Peace (HDP) Nexus in Hand-in-Hand Initiative in Asia and the Pacific

SEARCA analyzed cases in selected Asia-Pacific countries to come up with recommendations on addressing the HDP Nexus in the Hand-in-Hand Initiative in the region. The project aimed to come up with a guiding framework with approaches and practices that were proven successful in the target countries under study. One of the case studies conducted was on the Bangsamoro Autonomous Region in Muslim Mindanao (BARMM) in the Philippines.

Implications of ASEAN Economic Community (AEC) and Trade and Investments on Regional Food Security

SEARCA partnered with the Universitas Gadjah Mada (UGM) of Indonesia to implement this project which was identified by the SEARCA-initiated Southeast Asian University Consortium for Graduate Education in Agriculture and Natural Resources (UC) as one of the six priority research and development areas for collaborative undertaking under SEARCA's Umbrella Program on Food and Nutrition Security for Southeast Asia (FANSSEA). The project analyzed the potential impacts of AEC on existing trade agreements, flow of investments, and related commitments among ASEAN member countries, including the Philippines, and across existing ASEAN Free Trade Agreements (FTAs), and its implications on food security in the region.

Scaling Up Effective Models of Inclusive and Sustainable Agricultural and Rural Development

This project took off from the action research project titled “Piloting and Upscaling the Effective Models of Inclusive and Sustainable Agricultural and Rural Development (ISARD)” launched in 2015. Implemented in two sites in the Philippines— Victoria, Oriental Mindoro, and Inopacan, Leyte, the project enhanced the capacity of communities and partner institutions in effective agricultural systems that demonstrated increased benefit for the poor and vulnerable groups, as well as assess the enabling environment, socio- economic processes, and overall performance in implementing effective agricultural systems through employment of participatory development approached.

SEARCA partnered with Mindoro State College of Agriculture and Technology (MinSCAT) and the local government unit (LGU) of Oriental Mindoro to revitalize the calamansi industry in Victoria, Oriental Mindoro through strengthened linkages among key stakeholders, technical assistance, capacity building, knowledge management, and networking. On the other hand, the ISARD Piloting Project in Inopacan, Leyte was implemented by SEARCA, Visayas State University, and LGU of Inopacan, Leyte. The project in Leyte evolved in strengthening linkages among farmers, government, and industry sector for ISARD.



The project was implemented from July 2014 to June 2020.

Upgrading the Calamansi Value Chain Towards Improving the Calamansi Industry of Oriental Mindoro

Together with its partners—Department of Agriculture – Bureau of Agricultural Research (DA-BAR), Tokyo NODAI, University of the Philippines Los Baños (UPLB), Mindoro State College of Agriculture and Technology (MinSCAT) and the local government units of Oriental Mindoro, SEARCA aimed to harness the strengths of each partner in addressing gaps along the calamansi value chain through technology utilization/commercialization and marketing.

Specifically, the project had the following objectives:

- Improve calamansi production and fruit quality by utilizing proven technologies and practices in integrated pest management, fertilization, off-season fruiting, and post- harvest handling practices;
- Support the commercialization of calamansi-based products through value chain analysis of processed products,



market study, and product and post-harvest handling practices, calamansi processing, and entrepreneurship; and

- Promote faculty and student exchange for R&D and technology promotion/transfer undertakings.

The activities of the project evolved around its four components:

- Expanded Calamansi Value Chain Analysis and Market Study;
- Improving Calamansi Production, Postharvest Handling, and Processing Component;
- Enhancing Calamansi Products and Enterprise Development in Oriental Mindoro; and
- Capacity Building and Faculty/Researchers Exchange.



The project successfully produced the following outcomes:

- Areas of improvement in the calamansi value chain identified and addressed
- Market for calamansi products analyzed and identified
- Productivity and fruit quality improved (Increased production by 20% due to improved pest and disease management and off-season production; reduced postharvest losses by 25% and shelf life of fruits extended)
- Calamansi-based processed products and enterprise enhanced
- Trainings and capacity building of various stakeholders conducted
- Knowledge resources produced and disseminated

This project was implemented from October 2018 to June 2021.

International Benchmarking Study of the Philippine Livestock, Dairy, and Poultry Industries

The overall objective of the International Component of the study, funded by the National Economic and Development Authority (NEDA), Philippines was to determine the comparative advantage of the livestock, poultry, and dairy industries (i.e., hogs, chicken, cattle, and carabao) in other Asian countries (e.g., China, Thailand, and Vietnam) based on parameters including productivity levels, cost of production and structure, among others. As such, the study covered a comparative analysis based on the following:

- Cost and return structure of livestock, poultry, and dairy (cattle and carabao) production in Asian countries (e.g., China, Thailand, and Vietnam) by farm type (i.e., commercial and backyard, if possible);
- Livestock/poultry/dairy production management and marketing practices in the identified Asian countries; and

- Identification and analysis of key enabling policies to strengthen the livestock, poultry, and dairy sector in the identified Asian countries.

The study was able to produce a benchmark report that summarized the comparative advantage of the livestock, poultry, and dairy industries in China, Thailand, and Vietnam based on trends in productivity, inventory, trade, and prices; cost and return structure of livestock (swine), poultry, and dairy (cattle and carabao) production; production management and marketing practices; and regulatory and development policies as enabling instrument to strengthen the livestock, poultry, and dairy sector in these three identified Asian countries.

The key findings of the study are as follows:

- Based solely on trade data during the period 2010-2020, Thailand possesses a comparative advantage in poultry and swine where it has consistently been a net exporter.
- The role of the private sector in adopting technologies that bring about higher efficiency is well established. Partnerships between local and foreign corporate farms were instrumental in the introduction of high-quality animal breeds and, institutional innovations like the contract growing system. The increasing commercialization of these industries in the three countries has been remarkable in the last decade.
- All three countries especially Thailand are currently focusing efforts on achieving this objective. Through farmers' organizations, smallholders can expand participation in the value chain beyond primary production and thereby enabling them to get a bigger share in the benefits derived from the growth of the industry they are involved in.
- In the three study countries, the role of government in promoting poultry, swine and dairy production has been concentrated on upgrading indigenous animals, organizing farmers, providing initial support to nascent industries (e.g., dairy), and disease prevention and control. Economic policies covering trade, tariff, and inputs pricing are likewise adopted with varying results.

The project was implemented from July to October 2021.

AgPractices&Domains Platform: An Integrative System of Information and Modelling for Recommendations Domains of Agricultural Best Management Practices and Technologies

Funded by the University of Southern Queensland, the project endeavored to improve and build the capacity of agriculture researchers in Myanmar and Philippines in using data from different sources to target integrated pest and disease management options through the use of AgPractices&Domains platform.

The project successfully produced and accomplished the following:

- A cloud-based platform tool that used a scalable approach for integration of agricultural data into modelling. This platform serves as portal for collaboration that will enable digital documentation of data collection for pest and disease and a harmonization of data labelling and analysis.
- Drafting of users' and operations manual as e-learning materials and handouts in the use and the application of the tool.
- A report on potential sustainability plan in the future development and scaling of the application and 2 video documentations of the project activities.

- Workshop with researchers and development practitioners on Modeling Management of Climatic Stress in Rice-based Cropping Systems: The Application of the AgPractices&Domains Platforms to:
 - Promote the use of AgPractices&Domains tool to advance agricultural research in delivering technologies and practice improving cropping systems productivity and adaption to climate variability;
 - Train targeted to potential end users of the tool; and
 - Generate feedback on the web-based application interface for further development.

The project ended in October 2021.

Enhancing Food Supply Chain Resilience and Food Security in ASEAN with Utilization of Digital Technologies (Component 3)

The study, funded by the Economic Research Institute for ASEAN and East Asia and in collaboration with the Association of Southeast Asian Nations (ASEAN), aimed to consolidate information on the status of digital technologies that have the potential to increase farm productivity and improve the resiliency of the supply value chain. It was composed of three components focusing on:

- Component 1: Macro data analysis: Estimation of the overall impact of COVID-19 on agricultural production and food value chain resilience in ASEAN;
- Component 2: Assessment of actual status on the application of digital technology in the food and agriculture sector; and
- Component 3: Formulation of a draft guideline on the utilization of digital technologies for the ASEAN food and agriculture sector

SEARCA is specifically assigned in Component 3 for the development of the ASEAN Guidelines for Accelerating Transformation of Food and Agriculture through Digital Technologies and Innovations. This regional guideline will equip the ASEAN region with recommendations and implementation considerations for making an informed decision that will shape the digital transformation of agriculture in the region. More specifically, the guideline will outline conditions and actions needed to make use of digital technologies for agriculture and food system improvements, including interventions to facilitate digital technology uptake in the agriculture and food sector.

The project was conducted from November 2020 to October 2021.

Promoting Climate-smart Land Use through ASEAN Policy Documents and Regional Events

The Climate Smart Land Use (CSLU) project builds on the successes of the Forestry and Climate Change Project (FOR-CC) under the former ASEAN-German Program on Response to Climate Change (GAP-CC), which supported ASEAN in improving selected framework conditions for sustainable agriculture and forestry in ASEAN Member States (AMS). Similarly, CSLU, implemented by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) in close cooperation with the ASEAN Secretariat (ASEC), aimed to strengthen the coordination role of ASEAN in making contributions to international and national climate-policy processes for climate-smart land use in agriculture and forestry.

SEARCA was specifically assigned in the development of the ASEAN Guidelines on Promoting CSA (Volume 3). The integrated CSA guidelines is based on a clear framework and will help articulate the contribution of CSA across varying development goals and principles of sustainable agriculture. Central to these goals are:

- CSA practices, tools, and techniques
- CSA policies and programs
- CSA stakeholders' roles and contributions
- CSA scope and scale of implementation

The Volume 3 of the Guidelines primarily aimed to provide guidance on how ASEAN member states can promote the adoption and upscaling of CSA practices such as the ones presented in the ASEAN Guidelines. Specifically, it adhered to:

- Provide assessment guidelines in prioritizing the CSA approaches; and
- Suggest principles for the promotion and adoption of CSA among ASEAN Member States (AMS).

The project was carried out from May to November 2021.

Case Study Researches on Public Policies in Asia and the Pacific – Philippines, Indonesia, and Vietnam

The Philippines is one of the three countries in Asia covered by this International Fund for Agricultural Development (IFAD)-funded project and in collaboration with the Food and Agriculture Organization of the United Nations (FAO). The project aims to provide a comprehensive analysis of the public policy trends related to the promotion and implementation of family farming in the Philippines, Indonesia, and Vietnam. Specifically, the project intends to:

- Assess existing public policies and programs related to family farming in terms of operations, production, drivers, and challenges across the phases of policy development cycle.
- Determine the gaps, opportunities, and lessons along each stage of the policy cycle to develop context-specific suggestions for improving the policy development process.

The results of the policy studies were used to develop a modular program that will contribute to the implementation of the main objective of the UN Decade of Family Farming (UNDF) and serve as a tool for countries to develop public policies for the support of family farming. In particular, the program will contribute to Pillar 1 of the GAP: Develop an enabling policy environment to strengthen family farming.

This project was implemented from April to October 2020.

Rural Regional Transformation (RRT): Pathways, Policy Sequencing and Development Outcomes in China, the Philippines, and Vietnam

The goal of this project is to provide policy recommendations for stronger and more equitable growth in sub-national regions of China, the Philippines, and Vietnam through rural transformations. The project identified the policy implications for other developing countries through cross-country comparison; and improved the capacity of participating organizations through their collaborative work in the project.

The project was able to accomplish the following:

- Developed paper on typologies of rural transformation in the Philippines that documented the pathway of rural transformation as well as selection of sample rural regions;
- Developed papers on the impacts of the institution, policy, and investment (IPI) on rural transformation in the Philippines; and the impacts of major RRT drivers (i.e., IPIs) on rural development outcomes as inputs to quantitative modelling and the cross-country comparison study
- Produced RRT policy briefs for dissemination to policymakers at regional, national, and international levels and to international development partners
- The preliminary of research results in the Philippines was presented in Inter-Conference Symposium of International Association of Agricultural Economists (IAAE) held in Nanjing, China on 11-13 November 2019.

The project was implemented from September 2017 to March 2021.

ASEAN Working Group on Social Forestry Strategic Response Fund (ASRF) under ASFCC Phases 2 & 3

The Philippines was one of the countries covered by the ASEAN Working Group on Social Forestry Strategic Response Fund (ASRF), which SEARCA implemented as the supporting partner of the ASEAN-Swiss Partnership on Social Forestry and Climate Change (ASFCC). The ASRF is a flexible funding mechanism that aimed to enable the ASEAN Member States Focal Points to quickly respond to emerging issues and challenges and articulate policy recommendations and directions on social forestry as it relates to climate change, food security, and poverty alleviation.

Under the two phases of ASRF, grants were awarded to three (3) projects in the Philippines from 2014 to 2020:

- A Study on the Existing Benefit-Sharing Mechanisms in the Philippine Community-Based Forest Management (CBFM)
- Dialogue among DENR Facilitators towards strengthening capacity on Community-Based Forest Management
- Social network analysis of selected community-based forest management (CBFM) projects in the Philippines

Enhancing Human Resource Development in Agriculture: Imperatives for Regional Food and Nutrition Security

Led by UPLB, the study aimed to take stock of the human resource requirements toward ensuring food and nutrition security in the region, particularly for Indonesia, the Philippines, and Thailand. Specifically, it envisioned to assess the demand and supply potentials of human resources in the agriculture, fishery, forestry, and natural resources (AFNR) arena with an eye to charting the future direction of educational assistance programs and initiatives to promote food and nutrition security.

SEARCA has worked with various development organizations and research institutions in the implementation of the following completed research and policy studies in the ASEAN region, including the Philippines:

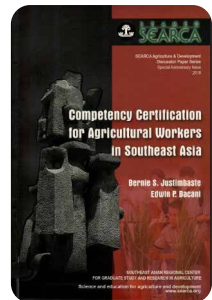
- Postharvest System Improvement – Best Practices in Fresh and Dried Chili
- in Southeast Asia: Quality and Safety Aspect, Kasetsart University
- From July 2015 to February 2016, the project was conducted with Kasetsart University (KU) as lead in collaboration with the members of the UC, specifically UPLB, UGM, IPB, and UPM with country focus on Indonesia, Malaysia, the Philippines, and Thailand. The outputs of the study include:
- Supply chain of fresh chili varies in each country and comprise of pool traders, distributors, wholesalers, retail traders and household;
- Middle-large scale chili farms showed a good adherence to good agricultural practices (GAP) while small scale chili condiment producer revealed noncompliance with all aspects of good manufacturing practice (GMP); and
- GAP guidelines for both fresh and processed chili production need to be disseminated more extensively to small farms and industries in Southeast Asia.

Linking Farmers to the Market: Towards Transforming Subsistence Farms to Commercial Farms

The project was implemented in 2015 for two years and documented the best practices in farm-market linkage and developed recommendations leading to reforms that will improve farm-to-farm market linkage in Philippine agriculture. The project focused on three traditional crops, namely, rice, corn, and coconut, which account for about three-fourths of the arable land in the country and most of these farms are organized in a subsistence orientation. Funded by DA-BAR, the project evolved in three main components: the first is focused on the existing policies and programs designed to effect linkage of farmers to the market; the second is a household level analysis establishing the extent of market linkage and the level of entrepreneurial competencies of the farmers; and the third is a set of case studies of various entrepreneurial models.

Competency Certification for Agricultural Workers in Southeast Asia

SEARCA had been enjoined by the Southeast Asian Ministers of Education Organization (SEAMEO) in 2017 to conduct a study on competency standards for agricultural workers in Southeast Asia as a step forward in mapping national competency standards among the Southeast Asian countries. SEAMEO promotes technical and vocational education and training (TVET) as one of its seven education priorities. Hence, the collaborative study has been instrumental to the formulation of regional and national qualification reference frameworks and assurance framework, which was recognized to be essential in the harmonization and internationalization of TVET in Southeast Asia.



The results of the project were presented and validated in a regional workshop convened in May 2018 in the Philippines and jointly hosted by SEARCA and the Philippine Technical Education and Skills Development Authority (TESDA). It was participated in by representatives of TVET institutions from Brunei Darussalam, Indonesia, Lao PDR, Malaysia, Philippines, Thailand, Timor-Leste, and Vietnam; SEAMEO Secretariat; SEAMEO Regional Center for Vocational and Technical Education and Training (VOCTECH); SEARCA; the International Labour Organization (ILO); and private sector organizations involved in skills development of agricultural workers.

It crafted a four-point recommendation that was subsequently presented and elevated for consideration in the 4th HOM on SEA-TVET held in September 2018.

The four-point recommendation focused on the following:

- Encourage TVET institutions to increasingly assume proactive and transforming roles in assessing, validating, and certifying skills and experience gained through non-formal and informal modes within a lifelong learning framework;
- Strengthen and expand competency certification systems to cover recognition of non-formal and informal learning;
- Encourage TVET institutions to pursue partnerships and alliances with a broader range of stakeholders; and
- Promote support from regional TVET networks and international cooperation.

Review and Assessment of the Agricultural Innovation Systems (AIS) in ASEAN

The Organisation for Economic Co-Operation and Development (OECD) collaborated with SEARCA for the conduct of this scoping study whose results were the basis for the policy dialogue between the OECD and ASEAN countries, including the Philippines, to secure food security in a long-term perspective.

Implemented from July 2015 to June 2016, the study aimed to identify the policy issues to improve agricultural productivity growth and sustainability in ASEAN region. Specifically, it aimed to provide an overview of agricultural innovation system in ASEAN countries, highlighting the need to evolve agricultural innovation system to generate innovative solutions for long-term food security concerns.

Landscape: Inclusive Agribusiness in Southeast Asia

SEARCA conducted a scoping study that assessed and mapped relevant agribusiness players and their activities and roles in the region, with specific attention to Indonesia, Myanmar, the Philippines, and Vietnam. The study evaluated agribusiness innovation trends and highlighted key champions and practices in the ASEAN region. The study results were presented at the Roundtable on Inclusive Agribusiness in Southeast Asia held in Ho Chi Minh City on 23-25 September 2015, which gathered more than 100 key agribusiness practitioners from the private sectors, farmer's groups, government, academe, civil society organizations, and international organizations.

Value Chain Analysis (VCA) of Carabao and Carabao-Based Products in the Philippines

SEARCA was commissioned by the Philippine Carabao Center (PCC) to conduct a VCA of carabao and carabao-based products considering the importance of these products in providing livelihood to farmers and other stakeholders and in improving the nutritional status of the vulnerable populace. The initial phase of the project



was implemented in 2015 to analyze the value chains of carabao and carabao-based products in selected regions in Luzon, and recommend specific measures for improvement. The process through which these products pass the different segments in the value chain, together with the resulting variety of products, was examined. After a year of implementation, the second phase of the project conducted the VCA of carabao and carabao-based products in selected regions of Visayas and Mindanao.

The study yielded the following results:

- An overview of the carabao and carabao-based products industry in Luzon, Philippines and description of local production levels, production systems and trends, from national, regional and provincial levels;
- Identification of specific and applicable product forms available for trading in major production and demand centers in the country;
- Product- and commodity-specific value chain maps which identify the specific activities and services, key players and their functions, product and information flows as well as selling and payment schemes;
- An in-depth analysis of markets and market opportunities of carabao products, including market trends and product standards and requirements, (including current and potential markets, as well as domestic and export markets);
- Identification of constraints and opportunities faced by the value chain players by function/ segment;
- Recommendations for policy directions, strategies and enabling environment needed to improve the carabao industry in general, and the specific value chain in particular; and
- Publications on buffalo meat and meat products value chain and on dairy buffalo value chain.

National Action Plans for Mitigation in Rice: Comparative Assessment of Institutional Setting and Possible Entry Points for Intervention in the Philippines and Vietnam

SEARCA collaborated with the International Rice Research Institute (IRRI) on this project, in consonance with SEARCA's focus on the overarching thrust of ISARD in its 10th Five-Year Plan. The project was conducted from July 2016 to January 2017.

The study primarily aimed to identify bottlenecks in the implementation process and entry points for international institutions to support implementation of national mitigation plans in the rice sub-sector. Furthermore, the project intended to highlight key stakeholders and their roles as well as posit recommendations on how to effectively involve them to successfully reduce the carbon footprint of rice production in the Philippines and Vietnam. The outputs of the project include the following:

- Improved level of understanding of the dynamics of implementation of climate change mitigation policy, particularly in the rice sub-sector, in the Philippines and Vietnam;
- Better grasp of the Intended Nationally Determined Contributions (INDC), national climate change action plans, related initiatives in greenhouse gas (GHG) mitigation in the rice sub-sector and the resources entailed;
- Identified potential bottlenecks in the implementation of national mitigation plans in the rice sub-sector;
- Possible entry points for interventions in support of the implementation of national mitigation plans in the rice sub-sector;

- Understanding how climate change policies developed at the national level are translated to the local level; and
- Recommendations on effectively involving stakeholders to reduce the carbon footprint of rice production in the Philippines and Vietnam.

Improving the Agricultural Insurance Program to Enhance Resilience to Climate Change: Evidence from Rice and Corn Production in the Philippines

SEARCA and the Philippine Rice Research Institute (PhilRice) carried out the project to analyze how good agricultural practices (GAP) adoption among rice and corn farmers could be implemented to compliment the enhancement of agricultural insurance system in the Philippines. SEARCA led the corn component of the study in coordination with the Philippine Crop Insurance Corporation (PCIC), while PhilRice undertook the research on the rice component. Completed in 2014, the project was able to: (1) identify the existing and matured GAP technologies related to pest and disease resiliency in rice and corn production; (2) determine the extent of awareness of farmers about these technologies and analyze uptake patterns and identify the psychological, socio-economic and demographic determinants of GAP adoption; (3) assess the perception and level of awareness on crop insurance system mechanisms among rice and corn farmers; and (4) identify appropriate policy recommendations and intervention measures to improve adoption of good agricultural practices toward improving the formulation and effectiveness of agricultural program.

Impact of Climate Change on the Philippine Rice Sector: Supply/Demand Projections and Policy

Funded by the IRRI in 2007, the project presented the analysis of the effects and impacts of climate change on rice production in the Philippines. Moreover, it analyzed the effects of global warming on rice crop productivity using available historical data on rice yields and weather data, and also supplemented by crop simulations utilizing a process-based crop model. The project came up with a national rice-climate change modeling framework that can also be used as prototype for assessments in other countries.

Food Reserves: A Comparative Study on Food Reserve Management and Policies in Southeast Asia

The Philippines was among the countries covered by this project, which was a collaboration between SEARCA and the members of the UC. The project was under the auspices of SEARCA's Umbrella Program on Food and Nutrition Security for Southeast Asia 2014-2019.

The project aimed to:

- Define and understand the importance of keeping food stocks and reserves, and the rationale behind countries' decision to stockpile.
- Identify commodities that countries stockpile and the modalities and mechanisms of food stockpiling that have been adopted, including physical, virtual, trade, national, and regional mechanisms.
- Examine the implications of a changing regional trade regime on a country's foodstocks, as well as the impact of individual countries' food reserves on a regional stockpiling mechanism such as the ASEAN Plus Three Emergency Rice Reserve (APTERR).
- Explore the feasibility of establishing other types of regional stockpiles beyond reserves.

In addition to the survey in the 11 Southeast Asian countries, SEARCA organized a workshop involving all countries to determine the role of food reserve management and policies in the region and identify implications of a changing regional trade regime, like the ASEAN Economic Community 2015 (AEC 2015), on a country's food stocks. Countries stockpile food, particularly rice, in different modalities and adopt a mix of trade instruments. Thus, SEARCA chose rice as a starting point to study food reserve management processes and policies in Southeast Asia.

Umbrella Program on Climate Change Adaptation and Mitigation in Southeast Asia

From 2015 to 2020, this program was jointly implemented by SEARCA and the UC with the CGIAR Research Program on Climate Change, Agriculture and Food Security–Southeast Asia (CCAFS SEA) and the International Center for Tropical Agriculture (CIAT). It covered the Philippines and the 10 other Southeast Asian countries.

Umbrella Program on Food and Nutrition Security for Southeast Asia

The Umbrella Program on Food and Nutrition Security for Southeast Asia was envisaged to serve as a platform for collaborative research on food security among the UC members and partner universities/institutions from the SEAMEO member countries. It aimed to align the program of work on food security of SEARCA and the UC to the development needs in the region and to support ongoing ASEAN-level programs on improving food security. The priority areas for collaboration were addressed through three integrated components: research and development, capacity building through graduate education and training, and knowledge management.

Other Past Research Projects

Many of SEARCA's research projects in the Philippines were conducted in cooperation with various national government institutions, international aid and donor organizations, universities, and private sector. Altogether, SEARCA has conducted at least 240 projects in the Philippines on various topics including:

- Agrarian Reform
- Agribusiness and enterprise development
- Agricultural credit and insurance
- Agricultural human resource and capacity building
- Agricultural information management
- Agroforestry and watershed resource management
- Agro-industrial development
- Aquaculture
- Biodiversity conservation and protected areas management
- Biofertilizer
- Biofuel development
- Biotechnology and gene banking
- Climate Change adaptation and mitigation
- Commodity research of staples and high valued crops
- Commodity value chain analysis and agri-food systems



- Economic and environmental impact assessments
- Ex-ante evaluation of industry strategic S&T plans for inland crops, aquatic resource, and livestock sectors
- Farming systems
- Fisheries resources management
- Food and nutrition security
- Gender roles in agriculture
- Production of organic feeds for native chicken
- Productivity growth in Philippine agriculture
- Assessment of smuggling on selected agricultural commodities



Some of the Philippine agencies that have commissioned and collaborated with SEARCA in these projects are the following:

- Department of Agriculture (DA) and its bureaus and attached agencies
 - Bureau of Agricultural Research (BAR)
 - National Agricultural and Fishery Council (NAFC)
 - Philippine Carabao Center (PCC)
 - Philippine Rice Research Institute (PhilRice)
 - Bureau of Fisheries and Aquatic Resources (BFAR)
 - Philippine Crop Insurance Corporation (PCIC)
 - Quedean Rural Credit and Guarantee Corporation (QUEDANCOR)
 - National Postharvest Institute for Research and Extension (now Philippine Center for Postharvest Development and Mechanization (PhilMech)
 - National Tobacco Authority (NTA)
- Department of Education and its attached agencies
 - Department of Education – Division of Laguna
 - Department of Education – Division of Busuanga
- Department of Agrarian Reform (DAR)
- Department of Environment and Natural Resources (DENR)
 - Protected Areas and Wildlife Bureau (PAWB)
 - Palawan Council for Sustainable Development (PCSD)
 - Laguna Lake Development Authority (LLDA)
- Department of Science and Technology (DOST) and its line agencies
 - Technology Application and Promotion Institute (TAPI)
 - Philippine Council for Agriculture, Aquatic, and Natural Resources Research and Development (PCAARRD)
 - National Academy of Science and Technology (NAST)
- College of Economics and Management Alumni Foundation, Inc. of the University of the Philippines Los Baños (CEMAFI-UPLB)
- Climate Change Commission (CCC)
- Land Bank of the Philippines (LDB)
- National Commission for Indigenous People (NCIP)
- National Economic and Development Authority (NEDA)
- National Nutrition Council (NNC)

- Philippine Statistics Authority (PSA; formerly National Statistics Office)
- Philippine Institute for Development Studies (PIDS)
- Technical Education and Skills Development Authority (TESDA)
- Local Government Units (LGUs)
 - Provincial Government of Leyte
 - Provincial Agriculture Office of Leyte
 - Provincial Government of Oriental Mindoro
 - Provincial Agriculture Office of Oriental Mindoro
- Mindoro State College of Agriculture and Technology
- University of the Philippines Los Baños
- Visayas State University
- Alay Kapwa Kilusang Pangkalusugan (AKAP)
- Center for Agriculture and Rural Development, Inc. Mutually Reinforcing Institutions (CARD MRI)
- Century Canning Corporation
- CTI Engineering International Co., Ltd.
- Dyzum Distillery Inc.
- ERGONS Project Marketing Consultants
- Farming Systems Development Corporation
- Lingap para sa Kalusugan ng Sambayanan, Inc.
- Manila Observatory
- Nestle Philippines
- Philippine Long Distance Telephone (PLDT)
- Rural Improvement Club
- United Coconut Association of the Philippines, Inc. (UCAP)
- Woodfields Consultants, Inc.
- Victoria Kalamansi Farmers Federation (VKFF)

In addition, SEARCA's strategic role and position as well as its excellent track record in managing research projects has made it possible to forge partnerships and linkages with multilateral and bilateral agencies and international organizations which resulted to projects that involved and benefited Filipinos and Philippine institutions. The Center therefore becomes a window of various international aid, donor organizations, academic research institutions, and development organizations who wanted to maximize their assistance to Southeast Asia particularly in the Philippines. The international and regional organizations and institutions based in other countries that have collaborated with SEARCA in its research work in the Philippines include:

- ASEAN Working Group on Social Forestry
- ASEAN Secretariat
- Asian Development Bank (ADB)
- Asian Productivity Organization (APO)
- Association of Southeast Asian Nations (ASEAN)
- Australian Agency for International Development (AusAID)
- Australian Center for International Agricultural Research (ACIAR)
- Business School of Harvard University
- Canadian Department of Foreign Affairs and International Trade
- Canadian International Development Agency (CIDA)

- Center for Overseas Pest Research
- Common Fund for Commodities of the Netherlands
- Cornell University
- Commonwealth Scientific and Industrial Research Organisation (CSIRO)
- Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)
- ETC Foundation
- European Commission
- Ford Foundation
- Groupement d'études et de Recherches pour le Développement de l'agronomie tropicale (GERDAT)
- Institut Pertanian Bogor (IPB)
- Institute of Geographic Sciences and Natural Resources Research of Chinese Academy of Sciences (IGSNRR-CAS)
- Institute for Global Environmental Strategies (IGES)
- International Atomic Energy Agency
- International Center for Tropical Agriculture (CIAT)
- International Development Research Centre (IDRC) of Canada
- International Fund for Agricultural Development (IFAD)
- International Food Policy Research Institute (IFPRI)
- International Foundation for Science (IFS)
- International Institute for Environment and Development
- International Labor Organization (ILO)
- International Potato Center
- International Rice Research Institute (IRRI)
- International Institute of Rural Reconstruction (IIRR)
- John D. and Catherine T. MacArthur Foundation
- Kansas State University (KSU)
- Kasetsart University (KU)
- Ministry of Development Cooperation, the Netherlands
- Organisation for Economic Co-operation and Development (OECD)
- Southeast Asian Fisheries Development Center (SEAFDEC)
- Swiss Agency for Development and Cooperation (SDC)
- Tokyo University of Agriculture – NODAI
- United Nations Development Programme (UNDP)
- United Nations Food and Agriculture Organization (UN-FAO)
- United States Agency for International Development (USAID)
- Universitas Gadjah Mada (UGM)
- Universiti Putra Malaysia (UPM)
- University of Guelph, Canada
- University of Computer Sciences Yangon (UCSY)
- University of Southern Queensland (USQ)
- World Agroforestry (ICRAF)
- World Bank
- WorldFish
- World Vegetable Center (formerly Asian Vegetable Research and Development Center (AVRDC))

► RESEARCH AND COLLABORATIVE GRANTS

Seed Fund for Research and Training (SFRT)

The Southeast Asian region has a number of promising researchers and scientists whose desire to contribute to the region's development through research and knowledge dissemination initiatives is hindered by lack of funds. This situation serves as a barrier to translating promising research and training into scientific outputs that could be applied to promote development.

To address this concern and in line with the Center's thrust of promoting, undertaking and coordinating research programs relevant to the agriculture and rural development needs of the region, SEARCA will make available a pool of funds to be known as the SEARCA Seed Fund for Research and Training (SFRT).

The SFRT is envisaged to provide chosen research and training project proposals with limited start-up funds intended to enhance chances of securing long-term support from donor agencies. A grant of up to USD 15,000 shall be awarded as seed fund for research/training.

To date, a total of 34 Filipinos received SFRT grants for their research projects, all of whom have completed their research.

Travel Grants Program

To reinforce the Center's efforts and resources in accelerating transformation through agricultural innovation (ATTAIN) and become a leading enabler and champion of excellence in agricultural and rural development, SEARCA provides travel grants of up to a maximum of USD 1,200 to each qualified agriculture and agriculture-related professional, social scientist, or graduate student in Southeast Asia.



To date, more than 100 Filipinos have been provided travel grants under the program.

IFS-SEARCA Collaborative Research Grants

In 2016, the International Foundation for Science (IFS) and the Southeast Asian Regional Center for Graduate Study and Research in Agriculture (SEARCA) implemented a grants scheme for collaborative research called the IFS-SEARCA Collaborative Research Grants Pilot in Southeast Asia. It was open to the nine Southeast Asian countries of Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, the Philippines, Thailand, Timor Leste, and Vietnam, and focused on climate change adaptation and mitigation.



As a follow-on collaboration between IFS and SEARCA, in December 2020, the Mentorship Program for Advanced Grants was launched with a Call for Research on Accelerating Transformation through Agricultural Innovation (ATTAIN). Promising scientists will benefit from translating their research and scientific outputs into knowledge that can be applied to promote development, while enhancing their capacities to develop research proposals and conduct research, and also expanding their reach in terms of contributing to the body of knowledge in their research areas. The purpose of the Mentorship Program is to nurture relationships between established scientists and early career researchers (the IFS-SEARCA grantees) that are intended to help the latter to strengthen their research processes, ensure that their projects are of high quality, and produce useful results.

In partnership with SEARCA, IFS supports Southeast Asians who are enrolled in a PhD degree program or have recently completed a master's or PhD degree within the five years from the time of the call, and with limited research start-up funds. This call, however, gives priority in terms of number of slots to its scholarship alumni; faculty and staff of partner universities and universities under its institutional development assistance program; and other regular employees of development organizations, academic institutions and government agencies of Southeast Asian countries, such as Cambodia, Lao PDR, Myanmar, Philippines, Timor-Leste, and Vietnam.

The implementation of the new Advanced Grant scheme continued. Ten (10) successful applicants received an IFS-SEARCA Advanced Grant to conduct their research within one to three years.

► POLICY ROUNDTABLES AND CONFERENCES

Filipinos also participated in various policy roundtables, conferences, and fora with focus on providing evidence-based policy lessons/implications resulting from science-based studies. Likewise, these provide venue for in-depth discussion among stakeholders to address the issues concerning agricultural and rural development in the region.

- Regional Training Workshop on Halal Slaughtering and Certification (23-25 August 2022, Putrajaya, Malaysia)
- First International Conference on School-plus-Home Gardens cum Biodiversity Enhancement Enterprise (SHGBEE1) (8-12 November 2022, Coron, Palawan, Philippines)
- Roundtable Discussion Series on Sustainable Food and Agriculture Systems in Southeast Asia: Digital Economies for the Food and Agriculture Sector (18 April 2023, PICC, Manila, Philippines)
- Regional Policy Forum - From Farms to Schools: Toward Sustainable and Inclusive School-Based Food and Nutrition Programs in SEA (24-25 April 2023, Alabang, Muntinlupa City and via Zoom)
- United States Department of Agriculture-Foreign Agricultural Service (USD A-FAS) 2023 Biotechnology Outreach Series (30 June, 14 July, 8 August, and 15 August 2023, Philippines)
- Regional Workshop cum Roundtable Discussion on ASEAN Economic Integration (28-29 Nov 2019, Bangkok, Thailand)
- ASEAN Multisectoral Workshop on Mainstreaming Biodiversity in Food and Agriculture (4-6 Dec 2018, Bangkok, Thailand)

- Regional Workshop on Competency Certification for Agricultural Workers in Southeast Asia (9-10 May 2018, SEARCA, Philippines)
- International Conference on School Gardens: Leveraging the Multi-functionality of School Gardens (16-18 Apr 2018, SEARCA, Philippines)
- Training-Workshop on Rapid Value Chain Assessment for the ATMI-ASEAN Project (1-3 Nov 2017, Bangkok, Thailand)
- Forum on Promoting Sustainable Agriculture in the Mekong Sub-Region towards Food Security (6-7 Nov 2017, An Giang, Vietnam)
- Regional Workshop on Mainstreaming Biodiversity in Agriculture for Sustainable Development and Food Security in Southeast Asia (12-14 Sep 2017, Chiang Mai, Thailand)
- Policy Roundtable: Rice Policies across Southeast Asia (8 Dec 2016, SEARCA, Philippines)
- Regional Roundtable Discussion and Workshop on the Development of Ecological Monitoring Network in Southeast Asia (24-25 Oct 2016, SEARCA, Philippines)
- Policy Roundtable on Ensuring Food Security through Improving the Agricultural Insurance Program to Enhance Resilience to Climate Change in Southeast Asia (29-30 July 2015, Makati City, Philippines)
- Regional Consultation Workshop on the Umbrella Program on Climate Change Adaptation and Mitigation for Southeast Asia (12-14 May 2015, Hanoi, Vietnam)
- Second International Conference on Agricultural and Rural Development in Southeast Asia (ARD2014) (12-13 Nov 2014, Makati City, Philippines)
- SFRT Grantees Forum (3 Oct 2014, SEARCA, Philippines)
- Policy Roundtable on Biotechnology: Biotechnology for Food Security in a Climate Change Scenario and ASEAN Integration (26-27 May 2014, Hanoi, Vietnam)
- Policy Roundtable on Mainstreaming Climate Change Adaptation in the Agriculture Sector towards Food Security in Southeast Asia (6-7 Feb 2014, Phnom Penh, Cambodia)
- Regional Consultation Workshop: Umbrella Program on Food Security (25-26 Jul 2013, SEARCA, Philippines)

► ACHIEVEMENT AWARD IN AGRICULTURAL AND RURAL DEVELOPMENT

In pursuit to honor excellence, leadership, and service in advancing agricultural and rural development in Southeast Asia, SEARCA will launch the young achiever award in ARD, in collaboration with key partners, to exemplary young individuals in the region. The objective of the award is for re-engaging the youth and recognizing young individuals who have advanced ARD in the region through their leadership, innovation, and achievement. These young individuals have demonstrated workmanship and commitment in accelerating transformation through agricultural innovation that contributes to the achievement of the Sustainable Development Goals (SDGs).

Dioscoro L. Umali Achievement Award in Agricultural Development

From 2007 to 2015, SEARCA has awarded the Dioscoro L. Umali Achievement Award in Agricultural Development to recognize exemplary contributions in the field of agriculture and rural development. It is a collaboration among SEARCA, the National Academy of Science and Technology, Philippines (NAST, Philippines), and Dioscoro L. Umali Foundation, Inc. (DLUF). The achievement award covers a full range of fields including plant and animal sciences, land and water management, environment and natural resource management,

technology development, social organization, food security, poverty reduction, economics and business, and policy and governance, among others. In November 2011, Dr. Ramon C. Barba, Philippine National Scientist, was conferred the Umali Award for his distinguished achievement in the field of plant physiology, particularly his mango flower induction technology that resulted in year-round availability of mango fruits and micropropagation of important crop species.



► RESEARCH PUBLICATIONS

Agroforestry Status, Trends, and Outlook in Southeast Asia

The World Agroforestry (ICRAF) and SEARCA recognize the momentum brought by the adoption of the ASEAN Guidelines for Agroforestry Development and would like to harness this development by heeding the call of the ASEAN food, agricultural, and forestry (FAF) sector to produce the first Agroforestry Status, Trends and Outlook for Southeast Asia. The report published in 2021 gathered the relevant perspectives from key stakeholders in the sector to respond to the challenges and ensure resilient interventions in agroforestry. This will further guide development efforts and sustainable policies that can shape leadership roles, produce more responsive institutional arrangements, and enhance governance.

Under the Technical Cooperation Program of the Food Agriculture Organization of the United Nations (FAO) and the ASEAN Secretariat on “Scaling up Agroforestry for food security and environmental benefits in Southeast Asia,” the ASEAN Food, Agriculture and Forestry sector is requesting a report that encapsulates the status, trends and outlook of agroforestry in the Southeast Asian region. Such report will:

- Provide information on agroforestry practices, concepts, programs, policies, training, education and research, industry, issues/challenges, impacts and other relevant aspects.
- Draw an outlook of agroforestry into the future toward a resilient Southeast Asian region.
- Have an accompanying monitoring and reporting design for ASEAN Member States, which include the Philippines, to report on contributions and progress toward achieving resilience through agroforestry in the region.

Farms, Food, & Futures: Toward Inclusive and Sustainable Agricultural and Rural Development in Southeast Asia

Dubbed as Agriculture and Rural Development (ARD) Book 2016, SEARCA spelled out in this publication the nuances of productivity-enhancing interventions moving forward, carefully drawing from in-depth analyses and syntheses of lessons, experiences, and empirical evidence on Asia’s ARD. The book provided an overview of the complex issues and challenges, as well as

opportunities arising from the structural transformation and market integration happening in the region. For the ARD Book 2016, SEARCA assembled eminent experts and thought leaders working in ARD in the region, and together authored the book with four cross-cutting and contemporary ARD themes, namely: inclusive growth; sustainability; regional integration; and institutions, governance and transformation.

Agriculture and Development Primer on the Philippines

SEARCA published the Thailand primer as part of the “Southeast Asian Agriculture and Development Primer (SAADP) Series” which featured Southeast Asian country’s state of agriculture in a holistic, yet concise form.

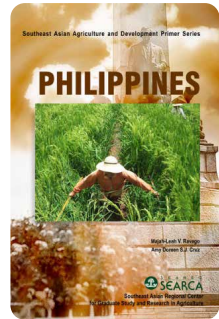
Published in 2004, the first edition of the Philippine primer was authored by Dr. Majah-Leah V. Ravago of the UP School of Economics, and Ms. Amy Doreen S.J. Cruz of the Department of Economic Research of the Central Bank of the Philippines. It presented the country’s state of agriculture in a holistic yet concise form and shows the institutions, structures, policies, and other areas affecting the sector’s performance over the past three decades.

The second edition of the primer on the Philippines was published in 2016. It included most recent data as well as emerging issues and concerns in the region focusing on Policy Reforms and Institutional Innovations in Agriculture: Experiences, Impacts, and Lessons. The authors of the second edition are Dr. Majah- Leah V. Ravago and Dr. Arsenio M. Balisacan.

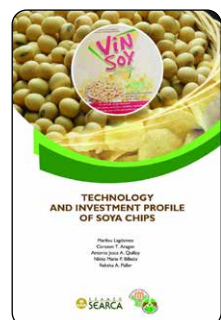
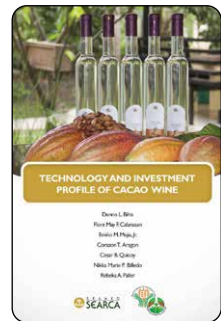
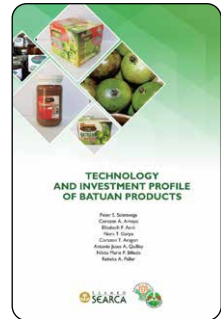
Other Publications

SEARCA has published books, monographs and other publications on various topics related to Philippine agriculture, including the following:

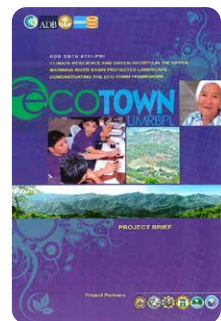
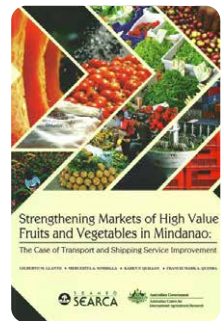
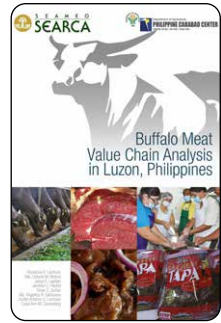
- Transforming Pathways: Working with Farmers in Agri-Food Systems Case Studies from Indonesia, Philippines, and Vietnam
- Rural Transformation in the Philippines: A Development Agenda
- Coping with Extreme Climatic Events: Stories of Resiliency in the Philippines
- Adapting to Climate Change: Strategies of Albay, Philippines
- Climate Smart Disaster Risk Management in the Philippines
- Benchmarking the Livestock and Poultry Industries: A Cross-country Analysis of the Philippines and Four Other Southeast Asian Countries
- Lessons from Disasters in the Philippines: The Project NOAH Experience
- Assessing Vulnerability of Coastal Fisheries in the Philippines to Climate Change Impacts: Tool for Understanding Resilience of Fisheries (VA-TURF)
- The School-Plus-Home Gardens Project in the Philippines: A Participatory and Inclusive Model for Sustainable Development
- Meso-Level Analysis on Rice-Farmers’ Adaptive Measures for Slow Onset Hazard: The Case of Saltwater Intrusion in the Philippines and Vietnam



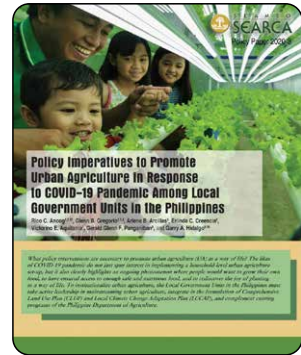
- Social Network Analysis of Selected Community-based Forest Management (CBFM) Projects in the Philippines
- An Upland Community In Transition: Institutional Innovations for Sustainable Development in Rural Philippines
- Dairy Buffalo Value Chain Analysis in Luzon, Philippines
- Buffalo Meat Value Chain Analysis in Luzon, Philippines
- Improving the Agricultural Insurance Program to Enhance Resilience to Climate Change: Evidence from Rice and Corn Production in the Philippines
- Endangered Beauty: Mt. Malindang and its Environs in Mindanao, Philippines
- Why Does Poverty Persist in the Philippines? Facts, Fancies, and Policies
- Simulating the Hydraulic Effects of Climate Change on Groundwater Resources in a Selected Aquifer in the Philippines Using a Numerical Groundwater Model
- Survey and Characterization of Indigenous Food Plants in Ilocos Norte, Philippines
- Coastal and Marine Resources Management in the Philippines: An Analysis of the Political Economy of Banate Bay
- Post-logging Ban Timber Tree Planting in Thailand and the Philippines
- Mangrove Rehabilitation in Ticao Island, Masbate, Philippines
- Economic Implications of Juvenile Siganid Fishery on Local Fishing Communities in Pangasinan, Philippines
- Ecological Succession in Areas Covered by Gold, Copper Mine Tailings in Benguet, Philippines
- Enhancing the Adaptive Capacity of Indigenous Peoples by Promoting
- Sustainable Resin Tapping of Almaciga (*Agathis philippinensis*) in Palawan and Sierra Madre, Philippines
- Agricultural Insurance in the Philippines: Enhancing Resilience to Climate Change
- Scaling Up Agroforestry Promotion for Sustainable Development of Selected Smallholder Farmers in the Philippines
- Community-Based Approach to Sustainable Stingless Beekeeping in Sorsogon, Philippines
- Strategic Policy Response to Climate Change in the Philippines Vol. 1: Portfolio of Climate Change Policies in Agriculture
- Strategic Policy Response to Climate Change in the Philippines Vol. 2: Exploring How Climate Change Policies are Translated into Local Actions in the Agriculture Sector
- The Impact of SEAMEO SEARCA Graduate Scholarship Program on Fellows of Selected Institutions in the Philippines
- Gender Concerns in the Post-production of the Selected Horticultural Crops in the Philippines and Thailand: Issues and Perspectives



- Empowering Farmers: The Philippines National Integrated Pest Management Program (Second Edition)
- Credit Assistance Program for Migrant Women in Jala-jala, Rizal, Philippines
- Pilot Testing of NAPHIRE's Livelihood and Nutrition Training Program in Isabela, Philippines: Women in Postproduction Systems
- Pilot Testing of ViSCA's Improved Cassava Processing Technology in Mabagon, Hindang, Leyte, Philippines: Women in Postproduction Systems
- Environmentally Sustainable Rural and Agricultural Development Strategies in the Philippines (Lessons from Six Case Studies)
- Grounding Science Communication: Experiences and Lessons from the Biotechnology Information Center (BIC) in the Philippines
- Socioeconomics of Climate Change in the Philippines: A Literature Synthesis (1990-2010)
- Good Agricultural Practices (GAP) in the Philippines: Status, Issues, and Policy Strategies
- Characteristics of Farm Holdings: Evidence from the Philippines' Census of Agriculture
- Estimating the Demand Elasticities of Rice in the Philippines
- Climate Change Vulnerability Mapping of Selected Municipalities in Laguna, Philippines
- Compendium of Climate-Resilient Agriculture Technologies and Approaches in the Philippines
- Many hands make light work: Solving the Philippines' ailing educational system
- What will it take to get the Philippines out of its poverty trap?
- Indigenous Food Plants (IFPs) for Increased Food Sufficiency in Ilocos Norte, Philippines
- Forging Alliances toward Better Coastal Resource Management in the Philippines: The Case of Banate Bay
- Food Security under Climate Risk: Conservation Farming and Upland Corn in the Philippines
- Landslide Occurrences in the Philippines: Contributing Factors and Implications to Local Governance
- Legislative Actions and Operational Reforms toward a Smuggling-free Agriculture Industry in the Philippines
- Adoption of Good Agricultural Practices (GAP) in the Philippines: Challenges, issues, and policy imperatives
- Economic Implications of Juvenile Siganid Fishery on Local Fishing Communities in Pangasinan, Philippines
- PBS 2017 2017 Building networks for sustainable community-based forest management: Lessons from the assessment of selected CBFM projects in the Philippines
- Food Security Potentials of Agroforestry Systems in Selected Upland Farming Communities in the Philippines



- Smallholder Commodity Systems in High-Value Crops: The Case of Calamansi and Jackfruit in the Philippines
- Smuggling of Selected Agricultural Commodities in the Philippines
- The School-Plus-Home Gardens Project in the Philippines: A Participatory and Inclusive Model for Sustainable Development
- Policy Imperatives to Promote Urban Agriculture in Response to COVID-19 Pandemic Among Local Government Units in the Philippines
- Proceedings of the First National Congress on Philippines Lakes
- Growth of Aquaculture Productivity in the Philippines
- Agricultural Productivity Growth and Environmental Externalities in the Philippines
- Human Capital and Agricultural Productivity: The Case of the Philippines
- Southeast Asian Agriculture and Development Primer Series: Philippines
- Agricultural Policy and Institutional Reforms in the Philippines: Experiences, Impacts, and Lessons



The Philippines is also featured along with other countries in 207 publications published by SEARCA. Meanwhile, 32 articles on the Philippines were published in the AJAD.

Moreover, 241 Filipinos co-authored in 121 other SEARCA publications, including 21 AJAD articles.

► INFORMATION MANAGEMENT PROJECTS

ASEAN Integrated Pest Management (IPM) Network

The ASEAN IPM Network, which started in 1997, was an initiative for regional cooperation in sustainable development of the Philippine government through the Department of Agriculture upon the endorsement of the ASEAN Ministers of Agriculture and Forestry. The Network served as the knowledge communicator of IPM for the national program in each ASEAN Member State. It also aimed to strengthen the capacity of national IPM programs to synthesize IPM knowledge for human resource development and policy advocacy in the region. SEARCA hosted the ASEAN IPM from its establishment in 1997 until 2003.

Agricultural Information Bank for Asia

In 1973, SEARCA established the Agricultural Information Bank for Asia (AIBA) which aimed to serve as a regional documentation center that will meet the need for improved information services in the field of agriculture and allied disciplines. Based in Los Baños, Laguna, Philippines, AIBA served as the regional coordinating center for the Agricultural Information Network-Southeast Asia (AgInfoNet-SEA) and the International Information System (AGRIS) being implemented by FAO. AIBA was also designated by the United Nations Educational, Scientific, and Cultural Organization (UNESCO) as the regional center for the Phase I implementation of its Asia and Pacific Information Network for Medicinal and Aromatic Plants (APINMAP) project. AIBA is composed of national centers in five countries including the Philippines, Indonesia, Malaysia, Thailand, and Singapore.

► AGRICULTURE, FORESTRY, AND NATURAL RESOURCES (AFNR) KNOWLEDGE PLATFORM

For almost six decades, SEARCA has been actively working with different like-minded institutions and networks in conducting research that addresses critical issues related to the region's agricultural and rural development. Capitalizing on this knowledge resource, SEARCA is leading the establishment of the Agriculture, Forestry, and Natural Resources (AFNR) Knowledge Platform.

This primarily aims to facilitate and sustain an ecosystem for knowledge sharing that contributes to agricultural and rural development in the Southeast Asian region and beyond. It also ensures access to an accurate, highly credible, sound, timely, and reliable source of information that will fuel future research activities, capacity building initiatives, policy development and technological innovations aimed at accelerating transformation in the region's agricultural sector.

It has three main components: knowledge generation, exchange, and utilization. Knowledge generation includes the conceptualization and organization of opportunities for knowledge sharing and learning (conferences, roundtable discussions, webinars, etc). Part of this is facilitating the link with other SEARCA programs and the AFNR KP. While AKRU works on scholarly publications, AFNR will work on popular formats, addressing the needs of our other stakeholders and providing another entry point/access to other SEARCA resources.

The second part is the Knowledge Exchange, the actual website itself. In this part, contributions of the programs will be categorized into these thematic areas. These are loosely based on our ATTAIN Priority Areas (our current five-year plan): Food and Nutrition Security; Sustainable Farming Systems and NRM; Value Addition, E-Commerce, and Industry Development; Policy and Thought Leadership; and Training and Capacity Building. There will also be links to other tools/resources like the SEARCA Library, AgPractices, Access Agriculture videos, etc.

The last part is knowledge utilization, the community of practice. We envision the contents of the AFNR KP to stir discussions in the COP. Regular activities (example: online forum on a certain timely/relevant topic) will be designed to keep the COP active and engaging.

EMERGING INNOVATION FOR GROWTH



SEARCA's core program on Emerging Innovation for Growth (EIG) is focused on providing farmers and farming families wider access to innovative products and services as well as business models for increased productivity and income through:

- Open Innovation and Agri-Incubation
- Knowledge and Technology Transfer
- Project Development, Monitoring, and Evaluation

► GRANTS FOR RESEARCH TOWARDS AGRICULTURAL INNOVATIVE SOLUTIONS (GRAINS)

SEARCA GRAINS offers short-term starter funds aimed at transformative innovations for sustainable agriculture and rural development across Southeast Asia. It is designed to support translational research and community knowledge transfer of technologies and products toward diffusion or adoption through partnerships in the agro-innovation ecosystem.

Agribusiness transforms agricultural commodities and technologies into added livelihood and income opportunities for farmers, fishers, and rural communities. Managed by the SEARCA Emerging Innovation for Growth Department (EIGD), GRAINS supports institutions working on technologies and systems that can uplift farming-related enterprises and commercial activities along the value chain into viable agribusiness models.

In FY 2021/2022, SEARCA invested more in supporting the journey to commercialization through GRAINS funding released for start-up enterprises, farmer cooperatives, agri-tech researchers and individual agritechpreneurs. SEARCA worked with the National Seed Industry Council to recommend a program for developing a modernized seed industry, while supporting farmer cooperatives with technology packages in processing pili nuts into value adding products and in commercializing elite traditional rice varieties. GRAINS also funded

university spin-off enterprises in establishing pilot plants for manufacturing nano-biotech products, such as Hormogroee plant growth regulator and Fruitect coating for shelf-life preservation.

In FY 2023/2024, GRAINS will continue to support five (5) ongoing projects and two (2) new projects in the Philippines, while expanding to support four (4) projects in other Southeast Asian countries.

Earlier this year, the project already started supporting the startup Farm Box, a social enterprise in Batangas that provides small-scale farmers and backyard hog raisers a package of farming supplies, training and insurance with the help of individual funders or investors. At the end of the farming cycle, the net profit mostly goes to the farmer, while the investors and FarmBox take a small share.

► **LIST OF GRAINS ONGOING AND NEW PROJECTS IN THE PHILIPPINES**

<p>Title: Farm Box: Advancing Small Holder Farmers through investment and Agri-Innovative Solutions Grant Recipient: Farmbox Agri Trading Date Awarded: 1 March 2023</p>	<p>Title: Bioconversion of Household, Agri-byproducts, and other Organic wastes into Insect-based Animal Feed and Organic Compost using Black Soldier Fly, <i>H. illucens</i>. Grant Recipient: Joseph Mario M. Navasero Date Awarded: 15 June 2022</p>
<p>Title: Enhancement of Prototype and Assessment of Product Marketability of AIRIN (an automated irrigation and nutrient management system) for small-scale farmers Grant Recipient: Myka M. Fragata Date Awarded: 15 June 2022</p>	<p>Title: Commercial Seed Production and Farming System Integration of Three Elite Traditional Rice Varieties Grant Recipient: Malvar Organic Farmers Agriculture Cooperative (MOFAC) Date Awarded: 1 May 2022</p>
<p>Title: ARCHIE, Agri Robot for Crop Health in Insect Control Grant Recipient: Carol Bernadette R. Domalsin Date Awarded: 15 June 2022</p>	

Impact stories. A series of feature stories in multimedia format, including digital narratives and videos, were initiated in 2023 to capture the experience of SEARCA GRAINS stakeholders. Beneficiary outcomes, challenges and positive changes communicated the impact of four (4) innovation and agri-incubation projects supported by GRAINS. Available on www.searca.org/grains are stories on digital farming, agri-investing, agri-product boosting, and precision farming.

Agri-technology and agri-startup acceleration support

Critical to accelerating the growth of agripreneurs, startups and innovators is fostering the connection with incubators, technical experts, business mentors and funders. To build

agripreneurship and technology acceleration, SEARCA engages in partnerships to help agristartups achieve their next level of success.

Advancing agri-incubation, SEARCA and East-West Seed Company are conducting the Young Agripreneurs Building Opportunities, Nurturing Growth (YABONG) bootcamp, a project aimed at helping young start-up farmers succeed by building their capacity in vegetable production and entrepreneurship. At the end of the three-month training with hands-on practice, the top five best business plans will receive seed money to help kickstart their vegetable farming businesses.

► KNOWLEDGE AND TECHNOLOGY TRANSFER

Innovation Olympics 2.0

SEARCA co-sponsored Innovation Olympics 2.0 (IO 2.0) together with East West Seed Company Inc.; University of the Philippines Los Baños; Sensient Colors; UPLB Technology Transfer and Business Development Office; SIBOL Labs; and APEX: The UPLB Business Network.

IO 2.0 was a nationwide search for innovative solutions that can help increase the profitability of smallholder farmers through efficient agri-technologies. With the theme “Precision agriculture for small-scale vegetable farming,” six student finalist teams competed for the grand prize of P200,000 out of 21 teams from Luzon, Visayas, and Mindanao. Team AIRIN of Nueva Vizcaya State University and Project ANGAT of the University of Mindanao emerged as grand champions.

During the course of IO 2.0, the following activities were conducted:

- 6 design thinking hackathon sessions
- 2 agri webinars
- 3 regional demo days
- 1 Grand Final event
- 1 Awarding Ceremony

A total of P2,600,000 were awarded as cash prizes, startup seed funds, and support funds to team advisers and technology business incubators

Development of Pilot Digital Agriculture Platform Project

SEARCA ventured on efforts linking farmers to market by tapping industry partners. An example is the “Development of Pilot Digital Agriculture Platform in the Philippines Project,” in collaboration with APPGeese, Inc. The project aimed to modernize traditional farming and improve the livelihood of smallholder farmers through the digital agricultural exchange platform that allows fair trade via farm-to-fork system, thus securing for farmers their profit while serving fresh produce to consumers through e-commerce.

Agri-mechanization through Tractor Development

SEARCA has partnered with Kansas State University (KSU) and the UPLB Center for Agri-Fisheries and Biosystems Mechanization (UPLB-BIOMECH) to increase agricultural mechanization in the region through the development and scaling out of an open source and innovative tractor

suitable for use of smallholder farmers. Through the partnership, the Ronnie Baugh (formerly Oggun) Tractor, developed by Cleber LLC using the Open System Manufacturing (OSM) model was introduced to the Philippines. The RB Tractor is currently being evaluated and tested by UPLB-BIOMECH while also developing implements for the tractor that are suitable to the region. The project has also partnered with an industry partner, RU Foundry, for prototyping and fabricating the developments to the tractor and its implements before introduction to farming communities.

Southeast Asian Agri-Tech Transfer (SAATT) Hub

The creation and development of the Southeast Asian Agri-Tech Transfer (SAATT) Hub website hosted by SEARCA shall establish SEARCA as a champion and enabler in the agri-tech transfer landscape. The SAATT Hub shall be SEARCA's contribution to the aggressive brokerage of already existing or upcoming innovations in agriculture by serving as the virtual central hub where agri-based and agri-related technology transfer institutions and stakeholders from the academe, industry, and government could promote and showcase innovative products and agri-technologies. The SAATT Hub shall also serve as a platform for agricultural cooperatives, farmers, and farming families in the region to gain access to SEARCA's IP and tech transfer assets, modern agri-technologies, and disruptive solutions to transform mindsets and agricultural systems ushering Agri 4.0.

SEARCA's Intellectual Property and Knowledge and Tech Transfer Policy and Guidelines (SIPAKTT Guidebook)

One of the strategies of ATAIN is for SEARCA to serve as the gateway to the future of agricultural development as it builds open innovation and open science spaces that will serve as the venue for future trends and opportunities facing agricultural and rural development in Southeast Asia through the Emerging Innovation for Growth Department (EIGD). With EIGD as lead and in partnership with the Alliance of Tech Transfer Professionals of the Philippines (AToP), the creation, establishment and implementation of SEARCA's Intellectual Property and Knowledge and Tech Transfer Policy and Guidelines (SIPAKTT Guidebook) is necessary to ensure that innovative products and agri-technologies reach the intended and ultimate beneficiaries without added financial burden. With this, SEARCA's IP assets will be able to reach more agriculture cooperatives and farming family beneficiaries through broader technology transfer programs.

AgriRobotics Activities

SEARCA is dedicated to bringing about agricultural transformation through the adoption of a new concept of agriculture, Agri 4.0, redefined by modern technologies, processes, and dynamics. Moreover, SEARCA is committed to the development of the next generation of agriculture leaders and professionals. With this vision, SEARCA partnered with FELTA Multi-Media Inc. to support the participation of select students in the Philippine Robotics Olympiad in Laguna, Philippines. Apart from this, SEARCA also conducted AgriRobotics and Agri-Innovation Sessions with Dagatan Family Farm School. Focusing on the discussion of Computer Integrated Manufacturing, students were able to strengthen their design engineering skills by solving complex and real-world problems of computer-controlled machines.

Development and Piloting of Agri-Robotics Modules

Envisioning to accelerate transformation to Agriculture 4.0 by nurturing innovations, the Southeast Asian Regional Center for Graduate Study and Research in Agriculture (SEARCA) invests in empowering and equipping the youth and by developing and making innovative programs available and accessible to spark their interest in agriculture through new and creative approaches to complex problems in food production. One way of doing this is by building the capacities of schoolteachers and equipping them with resources that they can use to integrate Agriculture 4.0 in their lessons under the K-12 curriculum. To accomplish this, SEARCA will collaborate with VEX Robotics in developing an agri-robotics curriculum to help students pursue pathways toward agri-technology. VEX Robotics is a leading global company in STEM professional development, curriculum, and certification that offers innovative virtual robotic solutions and hands-on kits that can help students develop their computer science and problem-solving skills.

Other Agri-Technologies

Under EIGD's Knowledge and Tech Transfer initiative is the facilitation of the adoption and transfer of emerging and innovative agri-tech innovations and linkages. For this fiscal year, this agritechology will be promoted to farming families in the Philippines and selected Southeast Asian countries: 1) Automated Calamansi Sorting Machine (in partnership with University of the Philippines Los Baños and Mindoro State University.).

Formulating the Seed Industry Development Program (SIDP) of the Philippines

Seed is one of the critical inputs in farming. The neglect of its quality might lead to poor harvest and lower market value. Given this, small-scale farmers in the Philippines still lack or have a limited supply of high-quality and affordable seeds. With the recent impacts of climate change, it is vital for farmers to have access to a modern and climate-smart variety of seeds. The formulation of the seed industry development program should lay out a robust seed production and distribution program that will lead to successful farming, increased crop productivity, and food security.

Corn and rice production in the Philippines is highly sensitive to the changing environment. Yield reduction is mainly brought about by the onset of droughts. With this, the government has implemented programs and projects that aim to increase the yield and income of farmers and ensure food sufficiency and sustainable growth.

The Philippine seed industry attained modest gains over the past five years despite environmental challenges and the pandemic. Notably, high-quality inbred seeds were accessible to growers through digital platforms during the pandemic. The RCEF was able to shorten queuing time, improve logistics, and hasten payment to seed growers. Public and private institutions should continue their focus on varietal improvement to address the impact of climate change and lessen the dependence on importation.

The use of different seed technologies can also improve the productivity and profitability of farmers. With an integrated crop management system, drone technology, farm machinery, and other equipment, performing farming operations will be easier for small- and medium-scale farmers. Various programs have been providing technologies and training on farming

techniques and practices to improve farmers' efficiency and effectiveness. Technology adoption could be expedited with the provision of other supporting infrastructures such as irrigation facilities and access roads. Additionally, the establishment of the National Seed Technology Park should help in industrializing and modernizing the seed industry of the country.

► ONGOING PROJECTS AND SERVICES

Rice Straw Biogas Hub

SEARCA, together with Straw Innovations Ltd, KoolMill, and Aston University, has embarked on the Rice Straw Biogas Hub, a project that envisions to generate biogas as clean energy from waste rice straw and provide an innovative package of technology services for rice farmers.

The three-year project was funded by Innovate UK under the United Kingdom Research and Innovation organization. Currently, the project is establishing the experiment site for the Greenhouse Gas Analysis in Laguna Province. The project team also conducted a roundtable discussion among stakeholders for the enabling environment and policy recommendations.

The Rice Straw Biogas Hub demonstrates efficient removal of waste rice straw from farmers' fields and conversion into eco-friendly, commercially viable products, focusing on biogas. With the package of rice technologies that the hub will introduce -- from efficient grain/straw harvesting; biogas-powered drying and storage; to efficient milling -- it is envisioned that farmers could triple incomes while protecting the environment.

SEARCA will help measure and establish the impact of the Rice Straw Biogas Hub on farmers' incomes, equality of opportunity, food security and decarbonization benefits. The emissions saved throughout the system will be quantified through greenhouse gas analyses, and results will be the basis for potential carbon-trading revenue in the future. SEARCA will also be involved in formulating recommendations for policymakers by leading the work package on creating an enabling environment. This involves technical training in anaerobic digestion for stakeholders, and analyzing policies, gaps and market failures to help governments develop supportive policies across Southeast Asia.

Food is Life Exemplified: Mobile App Development Competition for Planetary Health Diet (FLExPHD)

FLExPHD serves to produce a guide for consumers in making data- and values-driven food choices based on the Planetary Health Diet (PHD) model. In partnership with the National Academy of Science and Technology, Philippines (NAST PHL), and Department of Science and Technology – Philippine Council for Agriculture, Aquatic, and Natural Resources Research and Development (DOST-PCAARRD), SEARCA launched the competition with a series of hackathons and mentoring. Select participating teams were provided with grant money to help them develop, improve, and test their applications in their respective regions.

Carbon Wise Rice Farming (CWRf)

SEARCA aims to strengthen its position in the climate change agenda. The Carbon Wise Rice Farming (CWRf) is one of the Center's projects under the priority area: Enhanced ARD towards Climate Resilience. The project aims to establish a proof-of-concept on carbon farming in rice

farming systems using different climate-smart technologies that would help reduce carbon emissions from rice cultivation and will eventually be sold as carbon credits for additional income for farmers. The project will be divided into two phases. Phase 1 will establish the digital carbon farming tool that will be tested and validated in rice-based farming, while Phase 2 will be the out scaling of technologies to develop sustainable and viable carbon farming models in different agroecosystems. Once funding is secure, Phase 1 will commence this FY 2022-2023 and will be implemented for two years. The results and outcomes of the CWR project can be scaled up for the whole region with some locally defined adjustments with the goal of a platform and standard allowing agroindustry to offer carbon credits from rice-based farming systems.

► PAST PROJECTS AND TECHNICAL ASSISTANCE

Roundtable Discussion Series for Sustainable and Agriculture Systems in Southeast Asia: Day 2 - Promoting Carbon Farming in Agriculture in Southeast Asia through Regional Cooperation

SEARCA in partnership with the Bangko Sentral ng Pilipinas organized a Roundtable Discussion Series on Sustainable Food and Agriculture Systems in SEA. The two-day event was devoted to the stocktaking of the status, gaps, and opportunities in carbon farming in agriculture in Southeast Asia, with the view of establishing mechanisms for carbon credits and developing a market that will benefit smallholder farmers. The plenary sessions contextualized technical and financial initiatives in Southeast Asia relevant to carbon farming in agriculture.

Evaluation of the Program on Accelerating Farm School Establishment (PAFSE)

The evaluation study was able to layout PAFSE's implementation status and present recommendations to improve the program. Such recommendations include steps forward starting from program registration until monitoring and evaluation. In addition, the study was able to enhance the capability of the planning office staff in conducting similar evaluation research.

Process Documentation and Assessment of the Implementation of DA-BAR's Technology Business Incubation Program (TBI)

Commissioned by DA-BAR, the project aims to document and assess the implementation and operation of selected Technology Business Incubator (TBI) sites in the Philippines to draw lessons and provide technical and policy recommendations for the improvement of existing and future technology business incubation programs of the DA. Specifically:

- Characterize selected TBI Sites
- Assess the sites based on their strengths, weaknesses, possible threats, and opportunities in operation
- Recommend interventions and/or policy recommendations to address the gaps, threats, and opportunities identified
- Determine possible impact of having/establishing TBIs in the locality

The project was able recommend ways to enhance the marketing and capacity of the TBI projects through exploring direct support or institutional collaboration; strengthening the capacity of the M&E system and team, integration of BAR-TBI program to DA-BAR projects/

programs; providing varying types and extent of support to TBIs at different stages of development; determining the economic viability and long-term feasibility of pre-incubation TBIs; and capitalizing on the existing physical infrastructure, expertise, local presence, and extensive networks of seed investment TBIs.

Project SAYA: Strengthening Agricultural Yield of *Allium cepa* L (Onion) in the Philippines

SEARCA collaborated with Jollibee Group Foundation (JGF) in implementing “Project SAYA: Strengthening Agricultural Yield of *Allium cepa* L (onion) in the Philippines” which aims to increase onion production through analysis of how strengthening and expanding the local food supply systems in the Philippines could be achieved. Project SAYA has enabled SEARCA to engage with experts and field researchers from the University of the Philippines Los Baños (UPLB), Ilocos Sur Polytechnic State College (ISPSC) and Mindoro State University (MinSU), and selected farmer groups and cooperatives to identify and analyze the factors affecting onion production and identify potential areas for expansion. Fourteen (14) experts were tapped to contribute in the suitability analysis from various fields of agricultural engineering, particularly in irrigation and drainage engineering, agricultural machinery, and mechanization, horticulture, agricultural marketing, agronomy, and management. A total of 65 onion farming families in Ilocos Sur and Occidental Mindoro benefited from the project.

Formulation of the National Agriculture and Fisheries Modernization and Industrialization Plan (NAFMIP) 2021 – 2030

The Asian Development Bank (ADB) has commissioned SEARCA in partnership with SyCip Gorres Velayo & Co. (SGV) for the consulting services on the TA-9681 REG: Formulation of the National Agriculture and Fisheries Modernization and Industrialization Plan (NAFMIP) 2021 – 2030, in collaboration with the Food and Agriculture Organization (FAO). Section 13 of Republic Act No. 8435 or the Agriculture and Fisheries Modernization Act (AFMA) of 1997 has mandated the Department of Agriculture (DA) to formulate an Agriculture and Fisheries Modernization Plan (AFMP) to develop the agriculture and fisheries sector. The plan formulation process should be participatory in consultation with farmers and fisherfolk, private sector, nongovernmental organizations (NGOs), people’s organizations and the appropriate government agencies and offices.

The project formulated the NAFMIP 2021-2030 considering DA’s New Thinking to achieve the twin objectives: Masaganang Ani (increase productivity), and Mataas na Kita (higher incomes); and, Doubling the income of farmers and fisherfolk in the next ten (10) years. The project also integrated the priority programs and projects of the DA Secretary in the component plans (i.e., commodity, functional and regional) and investment program of the NAFMIP 2021-2030.

Data Collection for the Impact Assessment of the Second Cordillera Highland Agricultural Resource Management Project (CHARMP2)

The SEARCA carried out the data collection component of the Impact Assessment of CHARMP2 funded by the International Fund for Agricultural Development (IFAD). SEARCA gathered high-quality quantitative data at the household and barangay levels, for use in the impact assessment. The CHARMP was implemented from 2009-2017 by the Department of Agriculture (DA) in the Cordillera Administrative Region (CAR) covering 170 barangays in the provinces of Abra,

Apayao, Benguet, Ifugao, Kalinga, and Mt. Province. CHARMP2 entailed social mobilization of community-based organizations to engage beneficiary farmers in participatory investment planning, prior to actually engaging them in the specific interventions identified as needing support

Analysis of Fruit and Vegetable Value Chains in the Philippines

The Asian Development Bank (ADB) has commissioned SEARCA in partnership with SyCip Gorres Velayo and Company (SGV), to provide consulting services on the TA-9689 REG: Analysis of Fruit and Vegetable Value Chains in the Philippines. The study analyzed mango, onion, and tomato value chains in specific regions in the Philippines. It determined and examined the post-harvest losses of three priority commodities as well as identified the constraints on the value chain development of three commodities and main areas for improving investment. The project also recommended strategies for the three selected priority value chains.

Developing an operational example of a jurisdictional level platform for Palawan, Philippines

Commissioned by the FAO, SEARCA developed an operational example of a jurisdictional-level platform for Palawan, Philippines for the management and monitoring of forest and landscape projects relevant for climate finance investments in a coordinated way consistent with national climate change priorities and targets. The work supported quantitative evaluation for forest monitoring, and for leveraging forest and landscape climate finance at the jurisdictional scale, while also supporting improved coordination and integration with national-level efforts to better coordinate and account for climate finance projects in the land-use sector. The project formulated the jurisdictional sustainability profile of Palawan, Philippines, which can be used for robust projects planning and policy formulation process necessary for sustainable forest management in the Philippines. The project concluded that a Jurisdictional Sustainability Approach is feasible in Palawan subject to conditions it identified.

Building up from the Gains: Lessons from and Improvements for Effective Implementation of the Community-based Participatory Action Research (CPAR) Program

SEARCA assessed the overall program cycle of implementation of CPAR with the DA-BAR's implementing partners to draw lessons and policy recommendations for the improvement of CPAR, which emphasized the importance of organizing farming communities for cost-effective utilization of technologies. Specifically, the project:

- Developed the Results-Based Monitoring and Evaluation (RBME) Framework for CPAR using the Theory of Change (TOC) Model;
- Disseminated knowledge and information generated in the implementation of CPAR through the CPAR Congress;
- Updated the CPAR Operations Manual using the lessons learned from implementing partners to show the specific guidelines in proposing and implementing CPAR projects, and
- Developed a Policy Brief presenting the policy recommendations for the improvement of CPAR Programs.

Final Performance Evaluation of Protect Wildlife Activity

SEARCA conducted a performance evaluation of the Protect Wildlife (PW) Activity, a United States Agency for International Development (USAID)-funded initiative implemented by a consortium of organizations covering several biodiversity hotspots in the Philippines, which included 1) Palawan, Zamboanga City-Tawi-Tawi area, 2) Region 12, particularly the General Santos City, Sarangani and South Cotabato area, and 3) Central Luzon. Overall, the evaluation concluded that PW was able to significantly contribute to the reduction of threats to habitats and wildlife species in the key biodiversity areas which was the main goal of the PW Activity.

► SEARCA HUB FOR AGRICULTURE AND RURAL INNOVATION FOR THE NEXT GENERATION (SHARING)

SEARCA works to elevate the quality of life of agricultural families through sustainable and resilient livelihoods, and access to modern networks and innovative markets. To inspire its stakeholders, especially the youth, SEARCA conceptualized and built the SEARCA Hub for Agriculture and Rural Innovation for the Next Generation (SHARING). Designed toward exploration and experience of agricultural and rural development, this facility highlights pockets of innovation across Southeast Asia that contribute to farm success through innovators who adopt solutions to real world farming challenges. Its features encourage visitors to engage, interact, and learn about innovative practices in agritourism, circular economy agriculture, and tech-smart farming. It also provides a creative learning experience geared toward Agriculture 4.0 through an innovative “play-to-learn” venue for K-12 students to encourage the development of modern agricultural solutions by the youth. It includes a SHARING Café, a training facility for robotics, prototyping, design thinking, and other capacity building activities aims to promote agricultural innovation using LEGO® Education and Microsoft Minecraft Education Edition.

YOUTH FORCES FOR AGRICULTURAL INNOVATION (#Y4AGRI)



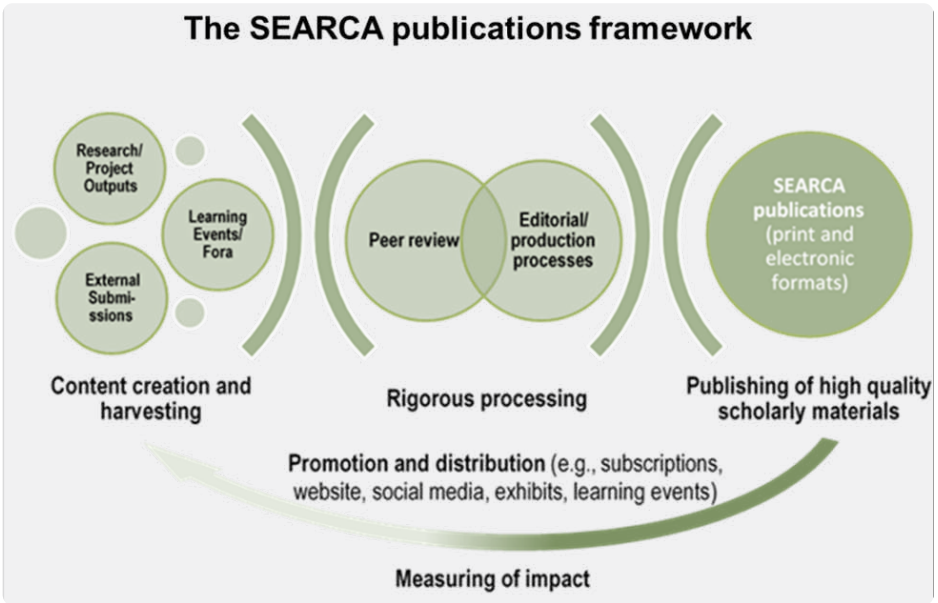
The Young Forces for Agricultural Innovation (#Y4AGRI), SEARCA's banner youth program, had several activities that engaged young Filipino leaders and advocates of solutions in the agri-food system. These include the 1st Virtual Youth Camp and Pista ng Pagkain at Kabataang Pinoy or "Pistang PagKaPinoy" (Festival of Food and the Filipino Youth). #Y4AGRI has also supported 10 youth and youth-serving organizations in the Philippines whose activities align with SEARCA's priority focus on gender and youth engagement in ARD.

The Philippines was also the most active participant in the SEARCA Youth COVIDeo Contest, which involved 435 youth from Southeast Asia, 355 of whom were Filipinos who are high school/university students, young professionals, and agriculture advocates.

In 2022, SEARCA Youth COVIDeo was rebranded into SEARCA Youth Stories Competition. It received a total of 32 video entries, 27 coming from the Philippines, with representatives from Luzon, Vizayas, and Mindanao.

A training titled Digital Storytelling for Young Agrinnovators was also conducted last 21-22 April and 4 May 2022 via Zoom. It aimed to equip young farmers, researchers, and development practitioners involved in research, teaching, and extension projects in agriculture in digital storytelling as an approach for agricultural extension and marketing. Twenty-eight Filipino youth stakeholders were trained to produce online stories and multimedia content that promote agriculture-related technologies, research, or advocacy in digital platforms.

APPLIED KNOWLEDGE RESOURCES



The Center's applied knowledge resources contribute to SEARCA's vision of becoming Southeast Asia's leading enabler and champion of excellence in ARD, particularly by asserting leadership in knowledge creation in these fields. Apart from the packaging of knowledge through publication, these knowledge products are also shared through its websites and increasingly complemented by social media. SEARCA also maintains a library and an archives system to store generated knowledge.

► PUBLICATION

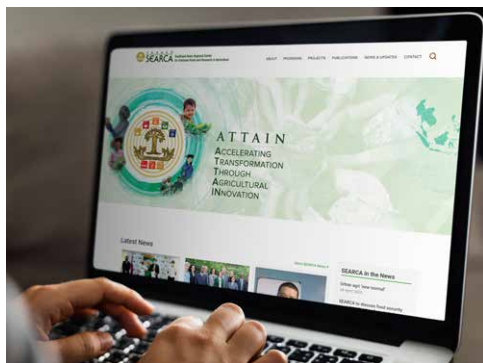
SEARCA publication provides one important avenue for knowledge creation in ARD. This ensures that research results, policy discussions, and best practices from the field, among its primordial knowledge sources, are packaged and broadly shared. SEARCA aims to publish high-quality professional, intellectual, and scholarly output in ARD with scholars, researchers, and policymakers as intended readers. A broad spectrum of ARD themes is published through a number of serial and non-serial SEARCA publications that include books, journal articles, monographs, discussion papers, and policy briefs.

Publishing for over half a century now, SEARCA has a publication pipeline of materials primarily sourced from outputs of its staple programs. External contributions are also welcomed, notably for the Center's priority thematic content. All materials submitted for publication as books, monographs, or journal articles undergo rigorous peer review and editorial processes to ensure high quality.

Over 500 various publications are curated in SEARCA's knowledge inventory system (mostly those published year 2000 onward). The Philippines is one of the more prolific sources of materials that SEARCA has been publishing for the past half century, understandably as it is accessible being the Center's host country and that more Filipino authors contribute their writings. As of 30 June 2023, 233 titles either focused on the Philippines or included it in its country of coverage have been published by SEARCA. These include books (20), monographs (63), abstract (1), discussion paper series (24), briefs and notes (58), proceedings (11), and journal articles (56).

► PROMOTION AND DISTRIBUTION

The Center has, in recent years, been investing on ensuring that its publications and other knowledge products maximize their intended use and not gather dust on a shelf. As it were, its momentum for more visibility online has proven more relevant than anticipated during the pandemic that started in 2020. The situation resulted to lessened printing and suspended the traditional distribution of physical copies and face-to-face knowledge exchanges/interactions.



The SEARCA website complemented by its social media presence are the current channels in which the Center's knowledge creations are accessed. Almost all publications are downloadable for free; learning/knowledge events and presentations are also freely accessible. As of 30 June 2023, a total of 45,310 publications have been downloaded from searca.org, SEARCA's official website. Over 23,000 people from 159 countries have downloaded these knowledge materials. The most downloaded types are refereed journal articles, books and monographs, and various briefs and notes. The Philippines is consistently the topmost downloader of SEARCA publications with over 13,704 as of June 2023.

► LIBRARY AND ARCHIVES

The SEARCA library, which houses a collection of over 15,500 agriculture and development-related references, serves primarily SEARCA scholars and staff, but it also accommodates other users. The references are also listed in SEARCA's online library information system (LIS) <https://lis.searcaapps.org/lis/> to facilitate faster access and search. The LIS also includes theses and dissertations of SEARCA scholars as well as weblinks to various online resources, such as articles on the latest updates in agriculture and development.

The Center's archives have digitized all vital records for efficient information processing, storage, access, and dissemination. As of September 2023, over 6,500 SEARCA documents have been digitized, including personnel and scholars' records, project reports, publications, financial statements, agreements, directors' exit reports, five-year plans, memorandums, and contracts.



MANAGEMENT

The Philippines is currently represented in the SEARCA Governing Board by Jose V. Camacho, Jr., UPLB Chancellor. The SEARCA Governing Board is the Center's highest policymaking body composed of representatives of the 11 SEAMEO member countries.

At present, the SEARCA Director is Dr. Glenn B. Gregorio. The Deputy Director for Programs and the Deputy Director for Administration are Dr. Nur Azura Binti Adam and Assoc. Prof. Joselito G. Florendo, respectively.

