

The Role of SEAMEO SEARCA in Human Development in Southeast Asia

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Abstract

Having predominantly agricultural economies, Southeast Asian countries need to develop its support infrastructures and services to remain sustainable and globally competitive. This may be done through capacity building activities focused on institutions, communities, and people in the agriculture sector. Formal degree programs, specialized short-term training, curriculum development, institution building and strengthening, and research on new technologies and methodologies to accelerate growth, rural development, and environmental conservation are vital ingredients of this overall endeavor. The SEAMEO Regional Center for Graduate Study and Research in Agriculture (SEARCA) was founded in 1966 to address the agricultural development needs of Southeast Asia. Being its flagship program, the Center's human resource development activities are carried out through graduate scholarship (MS and PhD in agriculture and related fields) tenable in five leading agricultural universities in Southeast Asia, and through short-term training. In support of these efforts in human resource development, SEARCA manages and coordinates research activities to strengthen institutional capacity in sustainable agriculture for a food-secure Southeast Asia. Its more than three decades of experience in research and development, broad network of partners and linkages, and multidisciplinary pool of experts have also enabled SEARCA to render consulting services to clients by harnessing required technical expertise in the region. SEARCA's experience over the past 36 years has proven that investment in human resource development is vital to the well being of the agricultural sector. This highlights the need for investments, not only in formal degree and short-term training programs, but also in research and development infrastructure and information sharing.

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I. Southeast Asia and its Requirement for Development

Southeast Asia is largely an agricultural region, with 40-70 percent of its labor force engaged in agriculture and its arable land per capita being 0.25 to 0.98 ha. However, considering the much larger global perspective, agriculture in Southeast Asian countries is still relatively behind their "northern" counterparts. There are many fields not fully developed, particularly in aspects of support infrastructures and services and the present levels of science and technology. This situation thus necessitates attention and efforts in developing the agriculture sector in the region in such a way as to procure sufficient food supply for increasing populations as well as to support the economies of Southeast Asian countries.

One component of overall development efforts is the focus on capacity building, particularly investments in human capital. This would refer to the building of capacities of people

who actually depend on, as well as drive the agriculture sector. The review and improvement of traditional agriculture methods, research on new technologies, and building human resource capacity through formal education must be given high priority. Toward this end, much is expected from educational institutions to deliver and address this need. The emphasis must be on producing agriculture professionals of high quality, enhancing teaching curricula to incorporate sustainable agriculture principles, and raising awareness on the importance of agriculture development.

A purposive analysis of the region as regards this aspect of development would reveal that there is a need for the following:

- 1) Improvement of agriculture professionals' job knowledge and performance.
- 2) Creation of opportunities for formal degree programs as well as specialized and short-term training in agriculture available to

- the greatest number of people in the region.
- 3) Development of curricula to include sustainable agriculture principles, strategies, and technologies.
 - 4) Institution building and strengthening to better address the needs of the agriculture sector.
 - 5) Research and development to develop new technologies and methodologies that accelerate growth and development not only to address the problems of agriculture in the region, but also to build the capacity of communities and individuals engaged in agriculture.

II. SEARCA: A Response to the Needs of the Region

There are many development agencies and institutions that are similarly concerned with the needs of Southeast Asian countries. One such institution is the SEAMEO Regional Center for Graduate Study and Research in Agriculture (SEARCA).

Founded in 1966, SEARCA has been serving the agricultural development needs of the 10 SEAMEO member countries, namely: Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam. It is the first center of excellence established by the Southeast Asian Ministers of Education Organization (SEAMEO), an intergovernmental body founded in 1965 to promote cooperation among Southeast Asian nations through activities in education, science, and culture.

Essentially created to address the agricultural development needs of the region, SEARCA primarily carries out the following:

- 1) Provide nationals of SEAMEO member countries with high-quality graduate education (MS and PhD) and short-term training in agriculture and related fields.
- 2) Promote, undertake, and coordinate applied research programs related to the needs and important problems of agriculture in the region.
- 3) Disseminate research findings to enhance agricultural development in the region and in support of policy formulation.

- 4) Provide development services through consulting to address the needs of SEAMEO member countries.

Through more than three decades, agricultural human resource development has been SEARCA's flagship program, which is mainly carried out through graduate scholarship, the University Consortium (UC), and short-term training.

Graduate Scholarship

SEARCA's graduate program was initiated in academic year 1968-69 to ensure relevance and responsiveness of SEAMEO member countries to agricultural development issues and problems. Specifically, it provides nationals of countries in the region with scholarships to pursue advance degrees in agriculture and related fields. Through the program, SEARCA seeks to prepare scholarship grantees for positions of leadership in the developing economies of SEAMEO member countries.

To date, SEARCA continues to provide support for MS and PhD degrees in agriculture, forestry, and related fields to personnel of academic, government, and non-government institutions dealing with agriculture. The scholarships are tenable in five leading agricultural universities in Southeast Asia and three universities in other parts of the world, particularly located in Australia, Canada, and Germany.

Since SEARCA's Graduate Scholarship Program started, 1,037 study grants have been awarded. Of this number, 369 PhD and 507 MS degrees have been completed. The country breakdown is 1 for Brunei Darussalam, 26 for Cambodia, 272 for Indonesia, 11 for Lao PDR, 300 for the Philippines, 62 for Malaysia, 10 for Myanmar, 4 for Singapore, 275 for Thailand, and 76 for Vietnam.

In the past decade, the scope of SEARCA's graduate scholarship program has been expanded to include institutional development and networking activities and services to enhance graduate education in the region.

University Consortium

The Southeast Asian University Consortium for Graduate Education in Agriculture and

Natural Resources is one of SEARCA's major vehicles for regional academic cooperation. It is a commitment forged among leading agricultural higher education institutions in Southeast Asia to share academic expertise and resources in order to produce top-quality graduate degree programs in agriculture and natural resources. Its founding members are Institut Pertanian Bogor (IPB) and Universitas Gadjah Mada (UGM) in Indonesia, Universiti Putra Malaysia (UPM), University of the Philippines Los Baños (UPLB), and Kasetsart University (KU) in Thailand.

SEARCA serves as Secretariat and partner of the University Consortium (UC), providing more than half of the funds to support the consortium's activities in addition to the pool of funds contributed by the UC members and associate members. Associate members are University of British Columbia (UBC) in Canada and University of Queensland (UQ) in Australia, which joined the UC in 1992 and 1993, respectively.

The major UC components are student and faculty exchanges, research fellowships, professorial chairs, and thesis grants. Occasionally, the UC conducts meetings and workshops on topics of regional interest and relevance. So far, such workshops have been convened to discuss the following topics: retooling of agriculture faculties, academic networking, integrated management of acid upland soils, food and agriculture policy, curriculum development for sustainable agriculture, and development of sustainable agriculture courses.

One of the groundbreaking projects of the UC is Project SHARE (Sharing Resources in Higher Agricultural Education). It resulted from a workshop on higher education in Vietnam, organized by the SEAMEO Regional Centre for Higher Education and Development (RIHED) in November 1996, which identified the need for sub-regional linkages to render technical assistance for educational institutions in Cambodia, Lao PDR, and Vietnam.

The assumption of such technical assistance is that whatever happens to an agricultural university will have far-reaching effects on the agricultural economy and general welfare of the country's population. The impact of institution building on food security, poverty alleviation, sustainable development, and agro-industrialization should bear some positive effects on national development and improve the welfare of the

common citizen.

Sharing resources for institution building is deemed the most efficient way of improving the capability of a developing college or university as it endeavors to undertake instruction, research, and service functions. With institution building among agricultural universities as the ultimate goal, SEARCA laid the groundwork for such academic cooperation through Project SHARE. The general objective of the project is to accelerate the development of agricultural universities in Cambodia, Lao PDR, and Vietnam in order to improve their capabilities in teaching, research, and extension by sharing the expertise of consortium universities under twinning arrangements.

Meanwhile, SEARCA scholars who have completed their graduate programs (called SEARCA fellows) represent a major strength for the Center and can be a potent force in its efforts to promote sustainable agriculture. Currently, SEARCA is completing a database for the SEARCA-ASEAN Foundation Project on Regional Volunteer Experts for Agricultural Modernization (REVEAM), which taps SEARCA fellows to assist institutions in their development needs. The project hopes to foster and sponsor twinning arrangements between the UC and other universities to spur capacity building and institutional development in Southeast Asia.

Short-term Training

Another mainstay of SEARCA's human resource development efforts is the Short-term Training Program, which was launched in 1971. The program aims to upgrade the skills and competencies of SEAMEO nationals to tackle problems and concerns in agricultural development.

After having conducted hundreds of training courses over the past 32 years, SEARCA has identified its training target niche in the region, that is, middle- and high-level managers and administrators who occupy strategic positions in their institutions, determine policy, and generate the most impact in their respective work places. In addition, to broaden its reach and stay competitive, SEARCA goes into resource-sharing arrangements with collaborating agencies, purposive consultations with clients to tailor-fit training programs to client needs, and exploring

new working arrangements with like-minded institutions.

Past training courses covered the areas of technical agriculture and social organizations, technology transfer, agribusiness management, research management, crop and livestock production, information processing and documentation, and development strategies and planning for farmers' communities, among others. Since 1971, SEARCA has produced 11,216 training alumni from Southeast Asia as well as outside the region.

Research and Development

In support of its efforts in human resource development, SEARCA coordinates and manages research activities to strengthen institutional capacity in sustainable agriculture for a food-secure Southeast Asia.

The Center's Research and Development Program focuses on strategic issues of regional importance, with the linchpin of research activities being agricultural development and the promotion of sustainable agriculture. Moreover, SEARCA's research interest is mainly on upland, lowland, and coastal zones in a landscape continuum that emphasizes the holistic and integrated nature of ecosystems and landscapes.

While it identifies and develops research projects, the Center relies on partnerships and collaborations to implement these projects. In-house research is undertaken but on a limited scale and primarily for project development, piloting, and resource and socioeconomic profiling.

In carrying out its research activities, SEARCA does not confine its efforts to technology development, but more assiduously focuses on the development and transfer/ adoption of methodologies and on lessons learned. To achieve these, it espouses and favors participatory and community-based approaches that ultimately contribute to policy formulation.

The keystone of SEARCA's research and development efforts is the recognition that sustainability concerns and environmental degradation are the two most pressing problems in the region. The Center's active bid to solve problems affecting environmental sustainability is carried out through its Natural Resource

Management Program, which covers concerns in the entire landscape continuum to include proper management of forests, grasslands, upland and lowland agricultural areas, inland water, and coastal resources. Moreover, in cognizance of the importance of industry linkage to agricultural development, SEARCA also pursues an Agro-Industrial Development Program that focuses on developing models of technology transfer, enterprise development, cleaner production, and sustainable agro-industrial communities.

SEARCA has also invested in information and knowledge networks that provide access to information that catalyze development in the region, giving inputs to informed decision- and policymaking. Said networks also feed into the development of curricula that facilitate and enhance research of academic institutions and other development agencies.

Adopting the interdisciplinary and multidisciplinary approach, SEARCA's research integrates its programs on natural resource management, agro-industrial development, knowledge management, and cross-cutting projects on gender and development and policy studies. Knowledge management or the processing of information generated by research projects to applicable knowledge, and policy studies, which lay empirical and scientific bases for policy recommendations, are two vehicles through which SEARCA hopes to effectively bridge the gap between research results and their functional and commercial use.

At present, SEARCA directs its research on issues and concerns that fall within the Center's five priority themes defined in its Strategic Plan for 1999-2004, which include the related and integrative issues of food security, biotechnology, biodiversity conservation, water resource management, and environmental risk management.

The value and impact of SEARCA's research may spur development only if they reach a critical mass and are translated into action by their users. While the target beneficiaries of SEARCA's research efforts are farmers and fisherfolk, the Center works directly with institutions in need of assistance, i.e., government agencies, research organizations, academic institutions, and other development agencies and non-government organizations involved in agricultural and rural development.

To respond with relevant and functional research initiatives and projects to current and emerging needs of SEAMEO member countries, SEARCA follows a complex and meticulous process in selecting and prioritizing research efforts. Through consultative meetings, workshops, and scientific fora where representatives from member countries, partner institutions, and donors participate, SEARCA tunes in to regional agricultural conditions in a purposive appraisal of the situation in the agriculture and rural sectors of the region. The Center also uses its established networks, particularly the University Consortium, as feelers to determine the prevailing problems and gaps in agricultural development in Southeast Asia.

Consulting Services

Combining more than 35 years of experience in research and development, a broad network of partners and linkages, and a multidisciplinary pool of experts, SEARCA developed and formally organized in 1991 its Consulting Services (ConServ).

ConServ provides technical assistance to client institutions in project development for possible funding by financial institutions and other donors, and offers services in the client's perceived need areas by providing the required technical expertise. By 1997, ConServ was implementing projects in East and Southeast Asia and the Pacific for varied clients such as the United Nations Development Program, the World Bank-Economic Development Institute, the Asian Development Bank, the Government of the Philippines, and private companies. Through the implementation of regional consulting projects, SEARCA has widened the scope of its professional services and gained recognition from counterpart agencies and direct project beneficiaries.

Tapping the expertise of Southeast Asian professionals and international experts and forging partnerships with reputable international consulting firms in bidding for projects has also strengthened SEARCA's regional presence. ConServ has nominated 60 Southeast Asian professionals in at least 50 percent of available slots in its consulting projects. With its new contracts, ConServ has used the services of 155 Southeast Asian professionals and experts.

III. Promotion of Sustainable Agriculture and the Role of Higher Education Institutions

Even before the emphasis on sustainable agriculture (SA), SEARCA's academic and research programs have already been focused on environmental management and natural resource conservation. SEARCA's Seventh Five-Year Plan covering fiscal years 1999 to 2004 as discussed earlier in this paper gave more emphasis on SA with its vision of being Southeast Asia's leader in sustainable agriculture. SEARCA continues its advocacy on environment and natural resource conservation with SA as the core philosophy.

SEARCA's main goal of promoting SA in the region is based on purposive and validated assessment of the situation prevailing in the region, i.e. the increased importance of agriculture to provide food to a rapidly growing Southeast Asian population. The emphasis on the need to protect our environment and conserve our natural resources for increased agricultural productivity without sacrificing the welfare of society has highlighted the importance of sustainable agriculture development.

In order to achieve agricultural and agro-industrial development in resource-limited countries in Southeast Asia, there is a need to produce manpower and future leaders who will advance agricultural technologies and systems that are productive and sustainable. This is the role of agricultural colleges and universities, which because of the dynamic nature and demands of the agriculture sector must continuously examine and re-examine their curricula toward the adoption of sustainable agriculture concepts.

Since 1995, the Center has been assisting agricultural colleges and universities in facilitating workshops aimed at the adoption of SA through curriculum development not only at the national level but also at the regional level.

In all of these seminar-workshops at the regional level, the following were common considerations that need to be addressed by the agricultural colleges and universities:

- a) In the next millennium, the fight for food security would be in the uplands; hence the need to include sustainable agroforestry curriculum development.

- b) SA will have to be adopted under each country's political system.
- c) In translating the framework into an SA curriculum, the following should be considered:
 - 1. cultural/social dimension
 - 2. educational system, which differs from country to country
 - 3. reskilling of faculty, teaching children how and where to learn
- d) Graduates of the BSA curriculum should be able to conceptualize, implement and direct projects with farmers; analyze ecological and conventional food production systems; integrate biology, humanities, economics, and ecology in food systems; use systems approach for complex problems; and analyze policies on agriculture and food as they relate to sustainability.
- e. SA advocacy should be done at the policy level to involve the representatives from the ministries of education to facilitate the approval process.
- f. Other critical elements are goals of education, value system, process of curriculum development, course contents and emphasis, teaching methodologies and approaches, teacher's attitude, values, and knowledge about SA, learning resources, policy, material and financial support, research, extension program.

It is also a must for agricultural colleges and universities that aim to integrate sustainable agriculture concepts into the agriculture curriculum or even modify existing curricula towards an SA-oriented one to have a full understanding of what they are introducing, why they are introducing it, and how it should be implemented.

IV. Strategies for Strengthening Human Resource Development and Research in Agriculture in Asia

The call for internationalization of education and modernization of agriculture requires higher education institutions to effect the necessary transformations in order to be globally competitive. Institutional autonomy, organizational restructuring, innovations in

academic and administrative management, adjustments in curriculum design, expanding linkages and adjusting to market demands, creation of innovative evaluation systems, etc, are changes that are likely to occur in educational institutions in order to address concerns for the human resource development and research in agriculture in Asia. To effect the needed changes and innovations would require well thought-of strategies that Japanese universities, particularly the Nagoya University Graduate School of Bioagricultural Sciences could implement such as:

a. Forging strategic alliances with partners for complementation of programs and activities.

This would require bilateral or multilateral agreements on the implementation of activities for mutual advantage. An example is establishing networks or partnerships for academic exchange and collaborative research projects. The Asian Association of Agricultural Colleges and Universities (AAACU), where the Nagoya University and four other Japanese universities are members, will soon implement academic exchange programs (faculty and student exchanges, administrator study tours); publication exchanges; and come up with an agricultural bulletin or journal effective this year 2002. The announcement on the availability of limited grants for the academic exchange will soon be disseminated (probably first week of July 2002) after the President of AAACU has approved the funding. AAACU is a network of 48 agricultural colleges and universities in Asia. SEARCA is an affiliate member of AAACU and manages the Secretariat. Funding for the AAACU activities come from the pooled membership fees of the Association and donations from interested donor agencies. Recently, the Executive Board of AAACU has agreed to officially endorse the membership of Tokyo University of Agriculture at the 15th Biennial Convention to be held in Chiangmai, Thailand in December 2002.

b. Implementation of a Sandwich Program for the MS and PhD degrees in agriculture. This scheme has proven to be resource-efficient while effectively addressing the relevance of research done by the student. Japanese students may take

courses in one of SEARCA's University Consortium members or any of the members of the AAACU, then conduct their research in Japan to make sure that research projects address their country's concerns. Likewise, students from other Asian countries may take courses in Japan, but do their research projects in their respective countries. At SEARCA, an example of a sandwich program is the collaboration with the University of Gottingen (UG) in Germany, where Southeast Asian students take courses in Germany under a joint scholarship program of SEARCA and UG's Centre for Tropical and Subtropical Agriculture and Forestry (CeTSAF) for a period of one year, then return to their respective countries to do research for a period of six months, then return to Germany and spend another six months to finalize their research results, defend their thesis, and complete the requirements for graduation.

A more recent example is the first offering of the Asian-European Master of Science in Food Science and Technology (specializing in Agri-Food Industries Studies) organized by France's Ecole Nationale Supérieure des Industries Agroalimentaires (ENSIA) of Montpellier, France, hosted by SEARCA and conducted in collaboration with the Department of Science and Technology (DOST) of the Philippines. It is an International Program that provides students with further knowledge in food science and technology with an aim of equipping them with the global approach of industrial food business aspects and to develop their methodology applied to an industrial topic. The duration of the program is 19 months consisting of nine months of coursework at SEARCA and ten months of thesis work carried out either in Southeast Asia or in Europe. The international faculty is composed of professors from Kasetsart University, Prince of Songkhla University, King Mongkut Institute of Technology at Ladkrabang, Suranaree University of Technology, all in Thailand; Universiti Putra Malaysia; and Universiti Kebangsaan Malaysia.

c. Implementation of Joint Projects.

Through networking, joint projects may also be implemented. One example of a joint project developed by a network is the University Consortium Distributed Learning Project, which allows the offering of an MS in Sustainable Resource Management on mixed mode of approaches such as on-line, distance, on-campus or face-to-face and off-campus. The degree program is jointly developed by the participating universities of the Consortium namely: University of British Columbia, Canada; University of Queensland, Australia; and Universiti Putra Malaysia. SEARCA, being the Secretariat, shares in the cost of course development by hiring and paying the honorarium of the expert involved in the course development, marketing the project, and facilitating the course development.

The above schemes are just a few of the best examples of strategies and approaches to enhance the internationalization of agriculture education in the region that may be adopted by Japanese universities in general and Nagoya University Graduate School of Bioagricultural Sciences in particular. There are many schemes and collaborative efforts that may be applied depending on the resources available, the readiness and interest of the institutions concerned, and the complementariness of the programs.

V. Concluding Remarks

Over its 36 years of existence, SEARCA has remained steadfastly committed to its mission of strengthening institutional capacity in sustainable agriculture for a food-secure Southeast Asia through human resource development, research, knowledge exchange, and policy support.

Its experience has proven that investment in human resource development is the way to sustainable development in the agricultural sector. This highlights the need for investments, not only in formal degree and short-term training programs, but also in R&D infrastructure and information sharing.

SEARCA's mandate may only be considered fulfilled as long as the Center continues to be relevant and credible, as it satisfies and anticipates developments in sustainable agriculture, and provides the options and opportunities that would

show the way out of poverty to the farmers and fisherfolk in the region.

In this undertaking, the challenges are never ending and the problems are sometimes immense. But, as SEARCA has learned, so are the possibilities and solutions.

References

- Cedicol, Editha C. Curriculum Revisions for Integration of Sustainable Agriculture Concepts: Lessons from Southeast Asian Experiences. Paper submitted to the International Cooperation Center for Agricultural Education (ICCAE) as Visiting Research Fellow, November 2000- January 2001, Nagoya University, Japan.
- Ramos, Nova, A. (ed.) The Development of Sustainable Agriculture Curriculum for Southeast Asian Universities. Proceedings of the Regional Conference-Workshop on the Development of Curriculum in Sustainable Agriculture for Southeast Asian Universities held in Kasetsart University, Bangkok, Thailand, 29 August-2 September 2000. SEAMEO SEARCA, Los Baños, Laguna, Philippines.
- SEAMEO SEARCA. 1999. Seventh Five-Year Plan (1999-2004). Los Baños Laguna.
- SEAMEO SEARCA. 2001. SEARCA Annual Report 2000-2001. Los Baños, Laguna.
- SEAMEO SEARCA. 2002. Exploring Solutions to Poverty through Sustainable Agriculture.
- Villareal, R. L., and Editha C. Cedicol. Education and Change: Can Higher Education Institutions Cope? Paper presented during the Annual Conference of the Association of Colleges of Agriculture in the Philippines (ACAP). Rembrandt Hotel, Manila, Philippines. 1 May 2002.
- Villareal, R.L. 2001. Agriculture Education in EARTH ASIA Countries: Status, Issues, and Challenges. Paper presented at the "EARTH Asia Seminar," Maejo University, Chiangmai, Thailand. 2-6 April 2001.
- Villareal, R. L. 2001. Managing and Coordinating Research in Southeast Asia: The SEARCA R&D Program. Paper presented at the "East/Southeast Asia Regional Priority Setting Workshop," International Rice Research Institute (IRRI), Los Baños, Philippines.
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