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The Evolution of the Academic Programs in the College of Economics and Management – University of the Philippines Los Baños¹

Isabelita M. Pabuayon², Ma. Angeles O. Catelo³ and Loida E. Mojica⁴

Introduction

Both internal and external environments shape the instruction, research and extension agenda of higher educational institutions (HEIs) resulting in dynamic changes in scope and relationships between and among fields of study and scientific endeavors. Such agenda must be responsive and relevant to ensure that they continue to address the needs of nation-building and human development in a global perspective. The pressure is even stronger in the case of the premier national university, the University of the Philippines (UP), since it is supported by the national budget and there is high expectation of its continuing leadership and academic excellence in higher education. The College of Economics and Management (CEM) at the University of the Philippines Los Baños (UPLB) being part of UP is subject to the same expectation. David (2011) aptly described the role of UPLB and its constituent units including CEM – “it must continue to nurture an academic environment which will constantly challenge its constituents to aspire for and uphold the highest standards of academic and professional excellence, while imbuing each one with the values of integrity, critical-mindedness, and social responsibility”.

CEM consists of four highly interrelated fields anchored on the broad disciplines of Economics and Management. These are Agricultural and Applied Economics (AECO), Agribusiness Management and Entrepreneurship (ABME), Economics (ECON), and Cooperative Management (CM). They define the organizational structure of the College consisting of four units with department names based on the name of the field. The exception is CM whose unit name is Institute of Cooperatives and Bio-Enterprise Development (ICOPED).

AECO is an applied field of ECON. ABME and CM are applied fields of Management but much related to economics and agricultural economics. The mutual interdependencies among these fields allow for a certain degree of overlaps in certain aspects of instruction, research and extension/public service programs. Thus, CEM sees itself and its units as being part of the bigger environment within UPLB, the UP System and the local, national, regional and global arena. CEM's research, development and extension thrusts are likewise anchored in the UPLB integrated research, development and extension (RDE) framework. As implied in the 2008 UP Charter, all constituent units and sub-units of the UP System are expected to demonstrate excellence and leadership in their respective fields. The goal is to make UP a truly competitive graduate, research and public service university towards nation-building in the midst of dynamic global changes and developments.

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²Department of Agricultural and Applied Economics ((DAAE), CEM, UPLB, email: impabuayon@up.edu.ph

³Department of Economics (DE), CEM, email: mocatelo@up.edu.ph

⁴Department of Agribusiness Management and Entrepreneurship (DAME), CEM, email: lemojica@up.edu.ph



Historical Development of the Economics and Management Fields in the UP System

Agricultural Economics in the United States, Asia and Philippines

According to C. Ford Runge who wrote the “Agricultural Economics: A Brief Intellectual History” (2006), the field of agricultural economics was born in the late 19th century and developed throughout the 20th century primarily as an empirical branch of general economics. He noted that in the US, the field arose from two intellectual streams; first, “the neo-classical political economy and the theory of the firm applied to farm production”, and second, the economic crisis in American agriculture in the late 19th century that called for strategies for “organized marketing of agricultural commodities through collective bargaining and cooperatives”.

Quoting Cochrane (1983), Runge explained the beginnings of agricultural economics in terms of a) the first flowering that occurred at the University of Wisconsin in 1900-1920 with the creation of the department of agricultural economics in 1909 by Henry C. Taylor and colleagues, and b) the second flowering that occurred at the University of Minnesota in 1918-1928 with the leadership of John D. Black, a former PhD student of Taylor. The development of AECO was supported by the creation of the Bureau of Agricultural Economics (BAE) in US Department of Agriculture (USDA) in 1921 which provided a rich data source for analysis as well as complemented the on-going academic work at that time with its own group of economists. Pioneers during this time also included George F. Warren of Cornell and Edwin G. Nourse of Iowa State and others like the Holbrook and E.J. Workings brothers, Warren Waite, Frederick V. Waugh, and M. Ezekiel, among others. Their econometric works in the application of economics to agricultural commodities provided excellent empirical materials in AECO. With the leadership of Wisconsin, Minnesota, Cornell, Illinois, Iowa State, and Purdue, many US universities established their respective departments of agricultural economics in the 1920s, 1930s and later including that in University of California-Berkeley (subsequently also at Davis).

The influence of the American educational system is exemplified in the Philippines with the establishment of the Department of Rural Economics (DRE) under the UP College of Agriculture (UPCA) in 1919. This marked the first offering of the field in Asia and occurred at about the same time that the field of AECO began to flower in the US. With the transformation of UPCA together with the former UP College of Forestry (UPCF) into a full-fledged autonomous university in 1972, AECO remains to be offered within the UP System only in UPLB through its Department of Agricultural and Applied Economics (DAAE – CEM). Although at least 10 other schools in the Philippines offer the program (including being a major under BS Agriculture), CEM continues its academic leadership in the field. The 10 other universities are Central Mindanao University (CMU), Mariano Marcos State University (MMSU), Central Luzon State University (CLSU), Cavite State University (CavSU), Pampanga State Agricultural University (PSAU), University of Southeastern Philippines (USEP), University of Southern Mindanao (USM), Xavier University (XU), Visayas State University (VSU), and Tarlac Agricultural University (TAU).

Although AECO in Asia was first offered in UPLB, it now forms part of the curricular offerings of many Asian universities. Decades ago, many of these universities sent their faculty and staff for AECO graduate studies in UPLB and in other US universities. These alumni helped develop their curricular offerings in AECO, agribusiness management, or related fields on agricultural and rural development. In the past, most of AECO foreign graduate students of UPLB came from Thailand, Indonesia, Malaysia, Bangladesh, India, Pakistan, and Nepal. Recently, more students come from Vietnam, Laos, Myanmar, and Cambodia.

Based on the available online listing of academic institutions (this is probably incomplete and not updated), there are at least 48 Asian (including Australia) schools that offer AECO program either in BS, MS and/or PhD level as of 2014. Other schools which may have AECO courses but not the degree itself may not have been included in the list. Others have variants or similar courses only (not degree) but nevertheless these relate to agricultural and rural development. Among those in the Asian list, the Philippines, China and South Korea have the highest number of schools offering AECO. In most of the schools, AECO is an academic program under the Faculty/College/School of Agriculture.

The field of agricultural economics represents the core of what is now the economics and management education in UPLB with DAAE being the mother unit of CEM. Its development went through a process involving a) collaboration with UP units outside of Los Baños until it became a self-sufficient academic unit, b) branching out into a related field of agribusiness management, and c) having a separate DE to provide strong theory and quantitative courses for achieving a balance of theoretical foundation, quantification of economic measurements, and applications in addressing the growing complexity of rural and agricultural problems and developmental issues.

The offering of the AECO field in UPLB started with three courses to complement the basic technical agricultural courses of UPCA in order to address the development problems of the country which was then largely a rural and agricultural economy. These courses which were part of the BS Agriculture/Bachelor of Agriculture degree (BSA/BA) included 1) a basic course on general economic conditions in the Philippines, 2) a course on principles of rural economics, and 3) a course on farm accounting. Later, another course on rural cooperation and credit was added followed by more courses that filled in the needs of students. In the 1950s and 1960s, graduate programs were developed into MS/Master of Agriculture and PhD major in AECO. The demands for advanced economic theory courses of the graduate programs necessitated that these be taken by students in UP School of Economics (UPSE) at that time.

At about the same time that new AECO courses were being developed by DAAE for the BSA major in AECO, the field streamed into agribusiness giving rise to the BSA major in Agribusiness. The other management courses required for this field were taken by students in UP Diliman's College of Business Administration (UPCBA), now UP Virata School of Business. When a separate Dept. of Development Management (later Dept. of Agribusiness Management or DAM and now DAME with the addition of sub-field of entrepreneurship) was established, the former major in Agribusiness under the BSA was transformed into the BS Agribusiness Management (BSABM). This undergraduate program including its counterpart graduate programs has all courses now being taught in CEM.

Three interrelated factors contributed to the birth of DE in UPLB: These are: 1) the expanding demands of the growing agricultural sector of the country and the need to understand its relationship with the other sectors of the economy and broader macroeconomic economic issues, 2) the increasing economic analysis required for addressing new developments within and outside UPLB, and 3) the need for additional theory and quantitative courses to support the newly-instituted field of economics and strengthen the AECO program.

Economic issues relating to new disciplines in UPLB such as biotechnology development, environment, arts and culture; and the growing importance of service and industry sectors in CALABARZON and nearby regions called for a more encompassing field of economics. New courses and researches undertaken in DE by faculty and staff coming from economics, quantitative, and AECO disciplines provided a fertile ground for complementation between DE and DAAE. This contributed to further development of the field of AECO. Today, the respective programs of DAAE and DE even with their own unique thrusts in knowledge and skills competencies for students are enriched by requiring ECON and AECO courses, respectively. For example, before the recent revision, BSECO students may take the agricultural policy course for Economic Development major field and land economics course for Resource Economics major field, both offered by DAAE. On the other hand, BSAECO students take ECON courses offered by DE such as microeconomics, macroeconomics, and mathematical economics; as well as money and banking, consumption economics, and other courses for selected major students. There are various ways of sharing both human and material resources and college-wide activities like seminars, workshops, researches, and training involving the two departments. DAME and ICOPED provide an enriching and reinforcing environment for the natural yet interdependent development of all CEM economics and management education programs including the field of AECO.

AECO courses required by BSA and other UPLB units like BS Development Communication for some of its technical courses are provided by DAAE. Similarly, basic courses in economics and management courses are supplied by DE and DAME, respectively, to other UPLB programs. Some UPLB courses offered by other units which have AECO component are either team-taught with DAAE faculty or handled by DAAE graduates employed in those units. AECO is also taken as a minor or cognate field by many graduate students in other UPLB colleges wherein they include three AECO courses in their program of study and one AECO faculty in their advisory committee.

The rising interdisciplinary nature of academic offerings and research for which benefit-cost analysis is needed demonstrates even more the importance of AECO. Increasingly, DAAE faculty members serve as affiliate faculty in other UPLB and UP units to handle the AECO component of their courses and/or become members in the advisory committees of graduate students. The creation of interdisciplinary studies centers on food and nutrition security and safety, renewable energy, integrated disaster and risk management, climate change, and others in UPLB requires active participation of faculty and staff in AECO.

Most of the other schools offering AECO programs are also state universities and colleges (SUCs) based in various regions of the country. CavSU is in Region IV-A like UPLB, CLSU and PSAU in Region III, MMSU in Region I, and VSU in Region VIII. Mindanao has at least 4 schools offering AECO, namely, CMU, USEP, USM, and XU (a private Catholic school). CMU offers BSA major in AECO and MS AECO and PhD AECO. CLSU has MS AECO while USM, CavSU and VSU

have both BSA major in AECO and MS AECO programs. Both PSAU and USEP have BS AECO program. The Tarlac Agricultural University (TAU) in Region III offers the BSA major in Agricultural Economy.

Over the years, these schools have sent their faculty members to CEM-UPLB to obtain advanced degrees in AECO. In time, these CEM graduates returned to their respective schools and became the pioneer agricultural economists in their areas or have improved their respective curricula in AECO oftentimes using the UPLB curriculum as standard. They also became administrators in their own institutions providing directions in curricular development and taking leadership roles in their AECO instruction, research and extension programs. Other SUCs which have undergraduate and graduate programs in agriculture with some economic and/or management courses also continue to send their faculty to CEM-UPLB for advanced studies.

Although UPLB is the only one within the UP system that offers AECO degrees, UPSE has AECO courses taken as electives in its MA/Master's and PhD in Economics programs. Its AECO-related graduate courses with counterparts in DAAE are economics of agriculture, natural resource and environmental economics and special topics in these subject matters. The thesis or dissertation of students taking these elective courses may involve agricultural commodities or various aspects of the agricultural economy. Another UP campus with a program closest to AECO is UP Mindanao which has the BS Agribusiness Economics (BSABE) offered by its School of Management. This is different from the BSABM offered in DAME. Also, unlike the BSAECO, BSABE lacks technical agricultural courses of the College of Agriculture and Food Science (CAFS) available to AECO students in UPLB.

Agribusiness Management and Entrepreneurship in the United States and the Philippines

Agribusiness as a distinct area of study has its beginnings in 1955 when John Davis defined it as "fenced pasture and was centered on farms and items made from them" (Edwards and Schultz 2005). In 1957, John Davis and Ray Goldberg published a book entitled "Conception of Agribusiness" in Harvard University. The two authors are credited for the definition of agribusiness as "the sum total of all operations involved in the manufacture and distribution of farm supplies; production operations in the farm; and the storage, processing and distribution of farm commodities and items made from them." From these beginnings, 115 different 4-year baccalaureate programs in agribusiness management are now offered in the United States which are either a formal degree, option, major or specialization (Boland, Erika and Jeri 2001).

In the Philippines, agribusiness as a concept and field of study was born in 1969 when leading universities such as the Asian Institute of Management (AIM), Ateneo de Manila University (ADMU), De La Salle University (DLSU), and UP jointly sponsored the First Advanced Agribusiness Management Seminar in Manila through their graduate education programs. This seminar was attended by government leaders and managers of agribusiness firms. It was during this seminar when Agribusiness was introduced as an offering at the graduate business schools of sponsoring institutions (Drilon 1971).

Among the universities which jointly sponsored the First Advanced Agribusiness Management Seminar, it was UP which first offered the undergraduate Agribusiness course. The course was born out of the need to strengthen the business side of agriculture. The first idea was to combine knowledge of scientific agriculture and business management skills. Dr. Dioscoro L. Umali, Dean of then UPCA and Dr. Cesar A. Virata, Dean of UPCBA initially conceptualized the agribusiness program. This program was presented to the Board of Regents by Dr. Jaime C. Laya as a joint program between UPCA and UPCBA and approved in its August 1966 meeting. Dr. Fabian A. Tiongson of the UPCA Dept. of Agricultural Economics was the first program director. This program featured agriculture courses and business administration courses. Agriculture courses were taken in UPCA and business administration courses in UPCBA. Four years after the first implementation of the agribusiness major, it produced its first six graduates. It was also during this year when the BS in Agricultural Business curriculum was approved and it replaced BS Agriculture, major in Agricultural Business (Sandoval 1995).

Agricultural Business which was a major field in the BSA curriculum was first implemented in the second semester of the school year 1966-1967 and was first administered by the Dept. of Agricultural Economics. In 1975, the Institute of Agricultural Development and Administration (IADA) was established and one of its departments is the Dept. of Agribusiness and Development Management. This department took over the administration of the agricultural business program. In 1978, IADA became the College of Development Economics and Management (CDEM). Also during this period, the program ceased to be a joint offering between UPCA and UPCBA. In 1980, the Master of Management (MM) program was established in the college with three majors: Agribusiness Management (BM), Development Management (DM) and Cooperative Management (CM). The latter was directly managed by the Agricultural Credit and Cooperatives Institute (ACCI, now ICOPED), also under CDEM (Sandoval 1995). All of these were administered by the Dept. of Management which then was structurally divided into the Agribusiness Management and Development Management programs. In 1983, the Department of Management was renamed as Department of Agribusiness Management and the DM and CM programs were transferred to CPAf (now College of Public Affairs and Development). In 2012, the Dept. of Agribusiness Management was renamed as Dept. of Agribusiness Management and Entrepreneurship (DAME). This renaming is consistent with the offering of entrepreneurship courses in view of the importance of entrepreneurship as a growth driver in Philippine economy.

A Master of Agricultural Business (MAB) was offered by UPCBA in 1970. In UPLB, the MM-ABM was developed and started in 1979 (Sandoval 1995). In 1989, the Diploma in Agribusiness Management was offered with 10 students. The offering was stopped in 2002 because of lack of students. It was in 1998 when MM in Business Management was offered in UPLB as an adaptation of the MM-BM program in the UP System. There has been increasing enrolment in the MM-BM since then. In 2012, entrepreneurship courses were added to the agribusiness courses and the MM-ABM program was renamed as MM in Agribusiness Management and Entrepreneurship (MM-ABME). The MM-ABME program was developed in response to the increased need for entrepreneurial manpower that will create jobs and spur innovation in the economic system. In order to provide greater access to students especially those who are working, an off-campus program began to be offered three years ago with the first batch consisting of personnel of the Procurement Service of the Department of Budget and Management (PS-DBM) and National Confederation of Cooperatives (NATCCO).

With the creation of CPAf, the MM-CM was transferred to this college together with MM-DM. CPAf revised the MM-CM into Master in Public Affairs (MPAf-CM). However, with the re-integration of ACCI back to CEM in 2011, together with its renaming into ICOPED, the MPAf-CM was again revised adopting its original program framework of MM-CM albeit with needed revisions such as reduction in number of credit units and institution of a new course on cooperative enterprise development.

Economics in the United States, Asia and the Philippines

It is rather difficult to find literature that traces the evolution of the economics degree in the US. No source was found that points to a particular university as the first to have offered an economics degree. It seems that Stanford University is, by far, the first academic institution that has offered economics studies when it opened in 1891. On the other hand, Harvard University Department of Economics was established six years after, in 1897.

It is also not clear where the economics degree in Asia started. However, the offering of economics in the University of Tokyo started in 1878 when the Department of Literature began offering 'Economics as a course'. The Kyoto Faculty of Economics was established in 1919 and offered eight primary areas of study. The National University of Singapore (NUS) has a Department of Economics which was established in 1934 and which was formerly known as the Dept. of Economics & Statistics. The department offers courses in Economics leading to the degrees of B.A., B.Soc.Sci. (Honours), M.Soc.Sci., and Ph.D. It also offers minor programmes in the discipline to students outside the Faculty of Arts and Sciences.

In the Philippines, specifically within the UP System, UP Diliman put up the School of Economics (UPSE) in 1965, and 21 years prior to UPLB's move to offer the BSECON program. UPSE remains to be the only school that has been awarded as center of excellence in economics. UP Visayas also has a BSECON program which it adopted *en toto* from the Dept. of Economics-CEM-UPLB sometime in the late 1980s or early 1990s. UP Baguio does not have an undergraduate program in economics but it does have an AB Social Sciences major in economics. Other known universities in the country such as Ateneo de Manila University (ADMU), De La Salle University (DLSU), and University of Santo Tomas (UST) all have undergraduate and graduate programs in economics.

The original mandate of the DE in UPLB in 1975 was to be a service department in so far as meeting the needs of other units for fundamental courses in Economics was concerned. Initially, the department offered only theory and fundamental courses in Economics. It has also since offered the Summer Program in Economics (SPE) in 1977 that was initially funded by the Ford Foundation and the Agricultural Development Council (ADC). The SPE serves as a refresher course for incoming graduate students in four areas: microeconomics, microeconomics, mathematical economics, and econometric analysis (Sumalde *et al.* 2012). However, with the institution of its BSECON program in 1986, the DE was a service department no more and became its own degree-granting unit. It further expanded its mandate when it started offering its MSECON program at the turn of the century (Abrina *et al.* 2012).

Economics is a cross-cutting discipline. For many years, ECON 11 or General Economics was a general education (GE) course such that all students of the University would have to take it. This reflects the importance and universality of economics and not only its inter-disciplinary nature. Today, despite the institution of the new GE Program where economics is just an option course, several curricular offerings in the university still allow their students to take it. In fact, the first revitalized GE course of DE is ECON 10 (Economics in Social Issues) which remains a best seller among students. Within CEM, economics would continue to play a vital role, then and now, especially in training students to “think at the margin” as well as sharpen their analytical skills. Both DAAE and DAME students take ECON courses as required in their respective curricula. DAME students still take ECON 11, 101, and 102 while DAAE students take ECON 11, 101, 102, 106, 121 and 130; and recently, ECON 104 and 185 also.

In terms of research, then and now, there will always be room for collaboration within CEM units and certainly with other UPLB units. Economics as a discipline will necessarily cut across banner research thematic areas such as agricultural biotechnology, engineering and environment as well as across other areas such as food security, social policies and even governance concerns.

Recent Developments in Economics and Management

Changing Scope of AEEO and Changes in Institutional Name

The field of AEEO has undergone considerable transformation from its traditional areas which are primarily production economics, farm management, agricultural marketing and price analysis, agricultural finance, cooperatives, international trade, and rural development to allied and applied areas of food and nutrition economics, resource and environmental economics, renewable energy, and biotechnology economics, among others. Agribusiness forms part of the AEEO programs in many US universities (e.g., Kansas State and Texas A&M). Aside from the changing scope, research methods have moved towards more quantitative and rigorous analysis of problems and issues confronting the agricultural sector.⁵ The following factors contribute to this expansion in scope and analytical methods:

- a) Growing complexity of the agricultural sector and its increasing importance and interdependence with the industry and service sectors giving rise to more issues and concerns;
- b) Globalization and internationalization requiring cross-border assessment of issues and problems;
- c) Government policy shifts and revision of priorities of national and international organizations resulting from emergence of new problems and issues (climate change, sustainability, global poverty, food security, etc.); and
- d) Developments in information and communication technology, computer science, statistics, and mathematics that allow availability and analysis of comprehensive data sets and formulation of sophisticated modeling techniques.

⁵Reed (2010) noted the earlier analysis of Krueger (1991) and Hansen (1991) about the strong emphasis of mathematics in US PhD AEEO programs and that programs “might teach the language of mathematics but not the logic of economics, and end up valuing the grammar of the discipline, rather than its substance...has actually led to shallower understanding of basic economic processes (Krueger)”, based on the study report supported by the Commission on Graduate Education in Economics.

As a result, schools and universities particularly in the US and Canada have renamed themselves and there are fewer universities now compared to before that have maintained the original DAE. Other schools have been established more recently and therefore do not carry the AEEO name although their programs also relate to the economics of agriculture and its development. The need to change names is prompted by their expanded scope and/or refocused thrusts or priorities. Agricultural economics associations have also changed names. The present Agricultural and Applied Economics Association (AAEA) originated as American Farm Management Association (AFMA) in 1910⁶ reflecting its broad membership and scope.

At the University of Minnesota, the Department of Agricultural Economics in the 1920s started with focus on farm management, agricultural marketing, land tenure, agricultural credit, production economics, consumption economics, price analysis, and farm policy. In the 1960s, it evolved into Department of Agricultural and Applied Economics with new emphasis on international development, regional economics, and natural resource and environmental economics. It became Department of Applied Economics in the 1970s while maintaining its traditional strengths and expanding its scope. The Charles H. Dyson Department of Applied Economics and Management of Cornell University likewise was established as Department of Agricultural Economics and renamed as Department of Applied Economics and Management in 2002. The University of California – Berkeley Department of Agricultural and Resource Economics began as Division of Agricultural Economics in 1925 and was complemented by the establishment of the Giannini Foundation of Agricultural Economics in 1928 to strengthen its research programs.

In Asia, the present College of Economics and Management of China Agricultural University (CEM-CAU) formed in 2002 that offers the AEEO program has its roots as Department of Agricultural Economics established in the former Imperial University of Peking in 1927. CEM-CAU was a merger of the former CEM and the College of Engineering Management. The Department of Agricultural Economics and Rural Development of the Seoul National University established in 1997 resulted from the merger of two departments: agricultural economics and adult rural education. In Thailand, the present Department of Agricultural and Resource Economics originated from the former Department of Agricultural Economics established in 1961. At CEM-UPLB, DAE started as Department of Rural Economics in 1919, renamed as Department of Agricultural Economics in 1936, and later as Department of Agricultural and Applied Economics (DAAE) in 2015. This is not only to reflect its expanded scope while maintaining its traditional strengths in the AEEO field but to make it more attractive to incoming students who view agriculture as ‘working in the farm’, a turn-off among young and modern students.

⁶The AFMA merged with the American Association of Agricultural Economists (AAAE) in 1919 and formed the American Farm Economic Association (AFEA) with the first publication of the *Journal of Farm Economics* (JFE). AFEA was changed to American Agricultural Economics Association (AAEA) in 1968 with JFE becoming *American Journal of Agricultural Economics* (AJAE). AAEA became the Agricultural and Applied Economics Association (AAEA) in 2008 to reflect its membership and broad focus (www.wikipedia.org).

Complementary Research and Training Institutions in AECO Schools

Since academic institutions often have tripartite functions of teaching, research and extension, the development of the field of AECO is complemented by and depends much on the research and extension programs which are highly supported in many schools and universities. This support is exemplified in their well-developed research agenda with modern facilities, adequate staff complement, funds, and other logistics. Faculty members have specified research and extension workload (in percentage) in their appointments and are expected to undertake research and produce journal articles and other publications in order to obtain tenure status and promotion. They also have to enhance their research skills and expand research frontier by regular membership in professional societies and participation in national and international conferences. Schools have seminar series of various forms from 'brown bag' small discussions to unit- or university-level seminars, workshops and conferences to disseminate and share research findings, learn new methodologies, and generate policy recommendations on local, national and global issues.

Consistent with the school's priorities, research agenda vary but commonly cover the broad and expanded areas of AECO. Extension and outreach programs largely focus on state priorities and concerns, are commodity-specific, and include community and local level assistance on entrepreneurship, technology commercialization, marketing and distribution, and business development. These programs are usually supported by complementary research and extension centers and facilities funded by public and private sectors.

Globalization and Internationalization of AECO Education

Since world rankings often include indicators like the number of foreign students and faculty and number and amount of foreign-funded/collaborative research grants, many schools and universities embark on various forms of international collaborations. These do not only involve exchange of knowledge and experiences in AECO and related fields of management but also cross-cultural and communications exchange leading to improved networking and even speaking skills among students. International dimension appears to be a significant component of top AECO universities⁷. The collaboration could take the following forms:

- 1) off-shore/off-campus offerings of the AECO/agribusiness programs through online or distance education;
- 2) international programs on-campus (in English for non-English speaking countries like Thailand's Kasetsart University with international adjunct professors, Korea and CEM-CAU in China) or through joint or dual-degree programs with foreign schools;
- 3) admission of foreign student applicants for the entire duration of the degree program facilitated by scholarship grants (e.g., USAID, WB, IDRC, JICA grants in the Philippines, organizations like SEARCA and IRRI), research and teaching fellowships and assistantships, and other grants like Fulbright;
- 4) short-term assignments for teaching staff upon invitation of host universities to support their international programs (e.g., Korea, Vietnam and Thailand);

An 'internationalization index' was used by the American Council on Education (ACE) in its report (Green 2005) to measure internationalization in 188 comprehensive universities using six key dimensions or strategies, namely, articulated commitment, academic offerings, organizational infrastructure, external funding, institutional investment in faculty, and international students and student programs. Each dimension comprised a series of survey questions administered to university respondents. Based on the index, universities were classified as 'highly active' in internationalization ("having a high level of integration of international/global themes and content in the teaching, research and service functions of the institution") and less active.

- 5) collaborative or joint research programs;
- 6) international seminars and conferences hosted singly or jointly by universities; and
- 7) short study visits and international training courses (e.g., UPLB with Tokyo University of Agriculture – Japan, Korea, Thailand, and Bangladesh).

For tertiary education as a whole (not specific to AEEO), the globalisation of education is discussed in the Association of Pacific Rim Universities (APRU) report of Tierney and Findlay (undated) as being comprised of the first wave and second (new) wave. The first wave involves the movement of students across borders. The second wave covers “the movement of teachers and whole institutions into overseas markets, joint degree programs offered by institutions in different economies, and distance learning programs”. The APRU report noted five trends in the tertiary education sector some of which may also be true in AEEO education. These include 1) continuing increase of international student mobility with projected growth of 1.8 million international students in 2000 to 7.6 million in 2025; 2) increasing mobility of providers and programs with notable examples for Korea, Malaysia and Hong Kong, including the recent program of USAID-STRIDE that also covers AEEO scholarships; 3) diminishing importance of public provision with rising share of private institutions and decline in number of students in overseas and in public institutions in the case of Malaysia; 4) shifting of the extent of public funding to consumers rather than providers; and 5) widening and deepening interest in international research cooperation.

Interdisciplinary Nature of AEEO

Interdisciplinarity in teaching, research and extension is a trend that cuts across disciplines and fields. It arises from combining concepts and thinking of at least two academic disciplines or schools of thought thus crossing traditional boundaries in order to come up with a new approach of solving particular problems or issues. Specific examples of such mergers result in fields like agribusiness management (agriculture and business management), agribusiness economics (agriculture, business management and economics), and agricultural chemistry (agriculture and chemistry).

The field of AEEO itself is interdisciplinary since it combines economics, the technical field of agriculture, the quantitative fields of statistics and mathematics, and the social sciences of political economy and sociology to analyze and resolve socio-economic-political issues in the agricultural sector. Econometrics, a sub-field of economics that provides a major tool for modeling and quantifying economic relationships in agriculture is an integration of economics, statistics and mathematics. In most schools and universities, interdisciplinarity is demonstrated in terms of jointly offered programs or courses and collaborative research and extension/outreach or public service initiatives. Generally, AEEO is offered under the College of Agriculture and Life Sciences, Department of Agricultural Economics jointly with the Department of Economics of the College of Arts and Sciences or College of Liberal Arts. Interdisciplinary studies and programs are also popular programs (e.g., development studies, American studies, Asian studies, etc.) in many universities including UC-Berkeley, Wisconsin and Texas A&M.

Various centers and programs have been developed in universities with collaboration of departments within the faculty/college of agriculture and life sciences (e.g., AECO with agronomy, horticulture and animal sciences) or between the faculty of agriculture and faculty of economics. Academic journals are also accepting papers involving interdisciplinary work (technical with economics component) in addition to the usual AECO topics. Examples are the AJAE (international) and the Journal of Economics, Management and Agricultural Development (JEMAD) published by CEM-UPLB. Similarly, non-AECO journals accept papers with AECO component such as the Philippine Agricultural Scientist (formerly the Philippine Agriculturist) and Journal of Environmental Science and Management (JESAM) in UPLB.

In UPLB, the creation of different interdisciplinary centers exemplifies stronger collaboration among colleges and units in the university. In all these centers, CEM faculty is represented signifying the role of economics in providing a holistic and integrative approach to solving problems of agriculture. Within CEM, collaboration among units exists by way of various research projects undertaken (e.g., policy studies, impact assessments, ex-ante analysis of DOST ISPs, bio-enterprise development in organic agriculture), joint academic offerings (e.g., MM-CM and undergraduate and graduate programs requiring courses offered by all CEM units), and resource persons coming from several units for training courses. Other examples within UPLB and UP System include cross-registration, cross listing of courses (SESAM and CEM), and joint programs like the Masters in Tropical Coastal Management involving UPLB, UP Diliman and UP Visayas, and previously the Agribusiness program between DAE-UPCA and UPCBA. A recent development in UPLB is the proposed MS in Food Security and Climate Change (MS FSCC) with various sub-fields including Economics and Policy. This is intended to be a collaborative program among 5 ASEAN universities, namely, UPLB, UPM (Malaysia), KU (Thailand), and Gadjah Mada and IPB-Bogor (both in Indonesia). In 2018, UPLB started to offer the dual PhD by research program in partnership with the University of Reading in UK. Partnership with the Curtin University Business School is also being finalized.

Agribusiness Management and Entrepreneurship (ABME) in Benchmark Universities

The agribusiness program is widely offered in the US. The Cornell University offers Agribusiness Management as a specialization or concentration course under the BS in Applied Economics and Management (BSAEM) degree. The course is structurally under the Charles S. Dyson School of Applied Economics and Management, College of Agriculture and Life Sciences. The BS in Agribusiness Program of Texas A&M University is jointly offered by the May's Business School and the College of Agriculture and Life Sciences. Texas A&M University also offers a Master of Business Administration Course. The University of Wisconsin - Madison offers BS in Agricultural Business Management under the Department of Agricultural and Applied Economics, College of Agriculture and Life Sciences (CALS). The Michigan State University offers BS in Agribusiness Management under the Department of Agricultural, Food and Resource Economics, College of Agriculture and Natural Resources. Since the course is on Agribusiness Management, it focuses on the management functions in the whole of the agribusiness sector.

All these universities offer a mix of agriculture, economics, agricultural economics, and business/management courses in their agribusiness programs with emphasis on food systems. Texas A&M University and University of Wisconsin - Madison provide students more flexibility as reflected in their many elective courses. The different courses offered show the multi-dimensional nature of agribusiness as a field of study.

Aside from UPLB, there are many universities offering Agribusiness in the Philippines. One is CLSU which offers agribusiness as a degree program, administered by the Dept. of Agricultural Management under the College of Agriculture. Another university is the DLSU-Dasmariñas which offers Agribusiness as a major field under the BS in Business Administration Program. The CMU offers the BS in Agribusiness course with major fields in crops and livestock enterprises under the College of Agriculture. Benguet State University offers the BS in Agribusiness with majors in Finance and Marketing, also under the College of Agriculture.

Relevant Trends in Agribusiness Education

The following trends and forecasts are important considerations in mapping the strategic directions of DAME in its instruction, research and extension functions.

Changing boundaries of agribusiness. The field of agribusiness has continuously evolved in the last four decades. From being farm-oriented, it has become market-centric. This evolution has been driven by the systemic nature of value chains, multiple stakeholders, new technologies, globalization and increasing competition in the dynamic environment of agribusiness. Agribusiness tends to be larger, diversified, complex, strategic, political, and multinational (Edwards and Schultz 2005). Innovation in the curriculum should be done to shift orientation from agriculture to agribusiness and markets.

The internationalization of business education. Internationalization of the undergraduate business curriculum remains a core goal of business school leaders, administrators and faculty worldwide (Kisane 2013). The increasing globalization of agribusiness is a signal that to be responsive, agribusiness education should also be global.

Need for unique skills in managing food and agribusiness. Although agribusiness is business and management in orientation, there is a level of uniqueness and differentiation of agribusiness as compared to other businesses. Boland, Lehman and Jeri (2001) cited the findings of Sonka and Hudson (1989) that there are five factors that separate agribusiness from other industries. These are: 1) the unique cultural, institutional and political aspects of food, domestically and internationally; 2) the uncertainty arising from the underlying biologic basis of crop and livestock production; 3) the alternative goals and forms of political intervention across subsectors and between nations in increasingly global industry; 4) the institutional arrangements that place significant portions of the technology development process in the public sector; and 5) the differing competitive structures existing within and among the subsectors of the food and agribusiness sector. An understanding of the above uniqueness and the corresponding skills in managing them are required of a good agribusiness manager. In addition, agribusiness managers need to be skilled in the various management functions such as finance, marketing, operations, and human relations.

Agribusiness as key employment generator in the next 5-10 years. Agribusiness will be the key employment generator in the next five to 10 years, according to the Project JobsFit: Dole 2020 Vision (Cabardo and Madamba 2012). This will provide more opportunities in Agribusiness Education to produce more agribusiness graduates which will be part of the Philippine manpower in the future.

Skills required of agribusiness graduates. Communication skills (written and spoken), interpersonal/social/people networking skills, and analytical critical thinking are the three most important skills required of agribusiness graduates (Cabardo and Madamba 2012).

More flexible agribusiness curriculum. The provision of more elective courses will enable the students to have early exposure in the realities of business and its environment. This experience will give them added advantage and preparation for their potential jobs.

Increasing importance of entrepreneurship as field of study. In the recent IDEA Global Entrepreneurs' Conference 2014, one of the trends identified in education is the integration of entrepreneurship in science-based programs such as engineering and agriculture. Entrepreneurship provides interdisciplinarity since this field requires both technical and business expertise. Dr. Patricia Licuanan suggested the following: 1) develop a hybrid program where Science and Technology and Entrepreneurship is the focus, 2) enhance current baccalaureate program in entrepreneurship by expanding Science and Technology base, 3) institutionalize an entrepreneurial approach in the teaching of Science and Technology, and 4) create an interdisciplinary panel for technopreneurship in universities.

Changing Scope of Economics

Economics is such a dynamic field that has transcended boundaries over time. It is also a social science characterized by 'interdisciplinary adventurism' as trailblazing economists introduce their own theories and analytical frameworks to the extent that they alter the traditional way in which many issues are seen through the economics lens.

The traditional focus of economic research had been the price determination of goods and services and functioning of the markets, public finance and the role of the government. Much of economic theorizing and research agenda is largely influenced and shaped by economic affairs, phenomena, and issues of the time. But even the non-conventional thinking of certain groups of economists has led to path-breaking ideas and extensions on new areas of human behavior and relations that include the economics of family choices, racial discrimination, crime and punishment, contract theory, and game theory. Furthermore, with more advanced development and analytical tools, the focus of economic research has changed over the last 250 years. This was borne out of the discovery that economics can be applied to expanded fields of specialization such as health economics, energy economics and financial economics which emerged in the last 20 years of the 20th century (Sandmo 2011). The contemporary interest in environmental economics is said to have no counterpart in the economics literature of the 19th century (Sandmo 2011). It seems the same can be said about mechanism design theory, gender economics, behavioral economics, and experimental economics.

Globalization and Internationalization of ECON Education

The rationale for globalization and internationalization of education is to mutually enrich the experiences of both students and faculty members through the exchange of perspectives and expertise. In borderless economies such as the Philippines, internationalization is simply inevitable. However, for this scheme to succeed, universities may have to ensure they have something to offer to their potential partners so that the playing field may be levelled.

In particular, the NUS offers a ‘global approach to education and research with a focus on Asian perspectives and expertise. Its transformative education includes a broad-based curriculum underscored by multi-disciplinary courses and cross-faculty enrichment’. On the other hand, the University of Tokyo⁸ like many other prestigious Japanese universities that are members of the “Global 30” project now offers economics degree programs in English.

Internationalization of education can take many forms such as faculty/student exchange, research collaboration through the visiting foreign researcher mode, hiring affiliate faculty members to help teach in the Department and serve as resource persons for thesis advisees. Another form could be engaging in trainings, seminars and forums.

Interdisciplinary Nature of Economics

To be relevant and responsive, curricular and research programs should keep abreast of the developments in their own fields and also in other fields. The principles, theories, and methodologies of economics can find themselves in various applications, making economics interdisciplinary in nature.

To reiterate, the scope of economics has been changing over time and could now include or merge with at least one or more discipline(s) or field of specialization in order to give rise to something new and relevant. From the traditional ‘merger’ of economics with political science and law from which evolved the science of political economy that is rooted in moral philosophy, almost any other branch of the field spectrum can be connected with economics and benefit from the use of economic theory and tools of analysis. A testament to this is the emergence of the traditional fields of agricultural economics, public economics, international economics, development economics, institutional economics, and business economics. Added to this non-exhaustive list are the emerging fields of energy economics, health economics, transport economics, engineering economics, environmental and natural resource economics, financial economics, and behavioral as well as experimental economics. Clearly, the economics field can be linked to a very wide array of specializations and this cross-cutting characteristic holds true not only in the realm of instruction but in research and extension services as well.

Current Programs in CEM-UPLB

In academic year 2018-2019, UPLB started to offer the revised undergraduate curricula (including CEM programs) in line with: 1) implementation of the K-12 basic education program consisting of 6 years of elementary education, 4 years of junior high school and 2 years of senior high school, and 2) incorporation of new developments and trends in the respective disciplines or fields.

⁸<http://www.uni.international.mext.go.jp/course/detail/43>

DAAE now offers the BS Agricultural and Applied Economics (BSAAE), a 4-year program involving 138 credit units that include the general education (GE) courses, core and specialized subjects, the thesis, and an internship course. The major fields of specialization/tracks under this program are production economics and farm management, marketing and prices, rural finance and cooperatives, food and nutrition economics, and natural resource economics, with policy and development cutting across all fields. DE offers the BS Economics comprising of 135 credit units that include the same course categories as BSAAE with two fields of specialization, namely, environmental economics and development economics. DAME's undergraduate offering is the BS in Agribusiness Management and Entrepreneurship (BSABME) comprising of 137 units with agribusiness management and entrepreneurship as the fields of specialization.

At the graduate level, the academic offerings in AECO are the MS and PhD, the latter involving regular, straight from MS, PhD by research, and dual PhD by research with UK University of Reading. ECON graduate programs include the MS Economics and PhD by research and dual PhD by research with University of Reading. Management graduate programs are the Master of Management with the three majors, namely, Business Management, Agribusiness Management and Entrepreneurship, and Cooperative Management, the latter being offered in collaboration with ICOPED. All these programs are now being revised to re-align them according to the new set of institutional learning outcomes of UPLB (2019), to institute new courses based on recent developments in the disciplines, and streamline programs and courses in line with dynamic changes in and needs of allied fields. Towards strengthening these programs, complementary research and training initiatives are at their inception stage, namely, the UP Agribusiness Center for Entrepreneurship (UP ACE), the Rural Economic Development and Renewable Energy Policy Program (REDREPP), and the Socio-Economics Research and Data Analytics Laboratory (SERDAL).

References

- Abrina, A. F. F. with J. P. E. de Vera III, R. B. Cruz, L. V. Carino, and R. M. Briones. AFNR Education in the Philippines: History, Context, and Trends. Paper presented at the National Forum on State and Future Supply and Demand for AFNR Graduates in the Philippines, 3 May 2011. Romulo Hall, NEDA sa Makati Bldg. Makati City.
- Boland, M., E. Lehman, & J. Stroade. 2001. "A comparison of curriculum in baccalaureate degree programs in agribusiness management". *International Food and Agribusiness Management Review* 4, 225-235.
- Cabardo, J. J. S. and J. A. B. Madamba. 2012. Perceptions of UPLB Agribusiness Management Graduates on their Job Preparedness. Paper presented at the ISSAAS International Symposium and Congress, November 13-16, 2012, Legazpi City, Albay.
- Camacho Jr., J. DV., A. F. Abrina, Z. M. Sumalde, and J. V. Alcalde. 2012. Assessment of the UPLB CEM Department of Economics: Implications and Strategic Directions Towards Curricular and Economic Relevance. UPLB Centennial Professorial Chair Lecture. University of the Philippines, Los Baños, College, Laguna.

- College of Economics and Management, University of the Philippines Los Baños. 2008. Report of the External Review Team.
- David, W. P. 2011. Reassessing and Reaffirming UPLB's Commitment. *In Sentenaryo Lectures on the Occasion of the Centennial of the University of the Philippines*. Edited by Emmanuel S. de Dios. University of the Philippines System, UP Diliman, Quezon City.
- Depositario, D. P. T., E. Supangco, N. R. Zapata, Jr., and D. M. O. Santiago. 2012. Integrating Technopreneurship in UPLB Academic Programs: Towards Cultivating an Entrepreneurial Mindset. Professorial Chair Lecture. UPLB.
- Drilon, J. D. 1971. *Introduction to Agribusiness*. Tokyo: Asian Productivity Organization.
- Edwards, M. R. & C. J. Schultz. 2005. "Reframing Agribusiness: Moving from Farm to Market-Centric". *Journal of Agribusiness* 23(1):57-73.
- Green, M. F. 2005. Measuring Internationalization at Comprehensive Universities. A report of the American Council on Education. June 2005. Washington, DC.
- Rust, I. W. Review of *A Concept of Agribusiness*, John H. Davis and Ray A. Goldberg. Boston: Division of Research, Graduate School of Business Administration, Harvard University, 1957. Pp. xiv, 136. \$6.00 *American Journal of Agricultural Economics* 39(4):1042-1045. Published: 01 November 1957 <https://doi.org/10.2307/1234228>
- Kisane, D. 2013. A Challenging Model: CEFAM's Transatlantic BBA. *Journal of International Education in Business* 95-106.
- Pabuayon, I. M., M. A. O. Catelo, and L. E. Mojica. 2014. "Strategic Directions for CEM-UPLB Instruction, Research and Extension Service Programs Towards Excellence and Relevance". UPLB Centennial Professorial Chair Lecture delivered on 15 April 2014, College of Economics and Management, UPLB, College, Laguna.
- Reed, M. R. "The Status of Agricultural Economics Profession: Evidence from Graduate Education." *Journal of Agricultural and Applied Economics* 42 (3):385-392.
- Runge, C. F. 2006. "Agricultural Economics: A Brief Intellectual History." *Staff Papers* 13649, University of Minnesota, Department of Applied Economics.
- Sandmo, A. 2011. Economics Evolving: A History of Economic Thought. <http://press.princeton.edu/titles/9370.html>
- Sandoval, P. R. 1995. *Agribusiness Management: Emergence, Growth and Development*.
- Tierney, W. G. and C. C. Findlay. Undated. The Globalisation of Education: The Next Wave. Association of Pacific Rim Universities and Pacific Economic Cooperation Council.