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Issues and Strategic Approaches in Strengthening Agricultural Education: The Case of The University Of Eastern Philippines

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ABSTRACT

Agricultural education has been an essential factor in the success of agricultural development. At present, like in many Higher Education Institutions throughout the country, agricultural education in the University of Eastern Philippines (UEP) is threatened. Phenomenal observations on the decline of enrollment and the decreasing market demands of agricultural education graduates are inevitable. Does agricultural education have a good future in the University of Eastern Philippines, and if so, what strategies are being used to survive?

This paper discusses these questions. However, at a more specific spectrum, this paper documented the trend of enrollment for five years, analyzes the issues on agricultural education and the corresponding approaches towards its strengthening. Subsequently, the rationalization of CHED approved agricultural education curricula and the actualization of agricultural entrepreneurship is highlighted as the promising scenario for agricultural education, which has to support systems innovation of the agri-food complex of the province. Next to that more attention should be given to the theoretical and technological transfer through excellent implementation of the "hands-on, mind-on approach" bringing learning to the field.

This examines technological change in agriculture as a complex process of interactions among diverse actors in the academe who generate, use, and transfer knowledge. The paper finally buys and sells the idea that agricultural entrepreneurship strengthens agricultural education through building innovation networks and linkages, building the capacity of organizations and individuals to transmit and adapt information, products and processes, and new organizational cultures and behaviors.

Keywords: Agricultural education, issues, strategic approaches

INTRODUCTION

The University of Eastern Philippines being a comprehensive university in Eastern Visayas places a high priority on developing agriculture and increasing rural productivity, employment and income. It also emphasizes the importance of improving the quality of agricultural education and trainings system.

Although the College of Agriculture was formally organized as one of the originally six colleges of the University on February 5, 1966, early as 1957, the College has already offered courses like Bachelor of Science in Agricultural Technology and Bachelor of Science in Teacher Technology. Since then, College of Agriculture has been college's nomenclature not until June 10, 2011 by virtue of the UEP Board of Regents Resolution Number 22, Series of 2011 during its 229th meeting approved a new nomenclature, College of Agriculture, Fisheries, and Natural Resources (CAFNR), recognizing fisheries as a major source of human food and embracing natural resources conservation and protection for sustained agricultural productivity.

The College has a remarkable faculty profile having three (3) faculty members with Professor academic rank, nine (9) Associate Professors, twenty (20) Assistant Professors, and only five (5) with Instructor academic rank. The thirty-seven (37) faculty members are up-dated and have attended seminars, conferences, workshops and trainings in line with their field as participants, paper presenters and evaluators. Along research, the College has the biggest number of institutionally-funded research proposals (35 studies) for calendar year 2012. It is also the College that bags the greatest share of the externally-funded researches from agencies like the BFAR, DENR, DA-BAR and DOST. Similarly, extension is pacing equally with the numerous extension programs and projects implemented in both adopted barangays and schools in the province. Along production, the College collaborated with various agencies in the implementation of projects like the UEP-PHILRICE Rice Project, Coconut and Rice Production, Horticulture Project, and Palayamanan. All these accomplishments and attributes made the five programs of the College Level 1 status in the accreditation conducted by the Accrediting Agency of Chartered Colleges and Universities of the Philippines (AACCUP).

Evidently, the College of Agriculture is grounded on its primordial goal of contributing to the improvement of the quality of life of the people in the communities by producing graduates, generating, and disseminating scientific knowledge and skills needed to practice environmentally sound and sustainable technologies in Agriculture, Fisheries, and Forestry. Towards achieving this goal, multifarious moves were designed and were done by the college. One of which is the offering of Baccalaureate Degrees in Agriculture, Agribusiness, Agricultural Education, Agricultural Extension, Fisheries and Forestry. To meet the diverse human

needs sustainably, non-degree and graduate programs are offered. The four-fold functions of the university which are instruction, research, extension and production are continuously pursued all geared towards preparing the students for global opportunities and to showcase that agriculture and its allied disciplines is a profitable enterprise.

This paper therefore soars high of marketing the agricultural education through generally a system termed agricultural entrepreneurship. This specifically enticed a gradual increase if not drastic in the number of enrollees and eventually produce quality graduates ready and equipped in meeting the demands of the industry and the labor market. Specifically, it aimed at documenting the enrolment trend; and analyzing the issues and strategic approaches in the strengthening of Agricultural Education in the University of Eastern Philippines, municipality of Catarman, province of Northern Samar, Philippines.

METHODS

In the documentation of the enrolment trend, documents were taken from the registrar's office. The same office takes the responsibility of students' academic records where enrolment record is one. On the other hand, to ensure validity of the data, face to face interview was employed and conducted.

Furthermore, the use of qualitative method, through the interview, was conducted to students, faculty and administrators to gather some issues and the strategic approaches. Substantive literatures were reviewed that made the comprehensive discussion of the results. This simple allowed the reality on issues and strategic approaches surface by hearing the perspectives and views of the concerned(Hugo and Thompson, 1995:53 as cited by Cabatac, 2009).

RESULTS AND DISCUSSION

On Enrollment

The Commission on Higher Education in its vision of having a totally developed Filipino nation as a responsible member of the international community is the key leader of the Philippine higher education system effectively working in partnership with other major higher education stakeholders in building the country's human capital and innovation capacity.

One of the growing concerns or issues of the Philippine educational system along agriculture is the drastic decline of takers of agriculture-related courses. More to this is the production of highly competent and competitive graduates. And corollary to this is the offering of programs among HEIs that are responsive to the needs of the industry, both domestic and international. This certainly is hoped to gradually erase the economic ilk of developing countries like the Philippines.

Course	**Enrolment**										
	2013-14	**2012-13**		**2011-12**		**2010-11**		**2009-2010**		**2008-09**	
	Ist	**Ist**	**2nd**	**1st**	**2nd**	**Ist**	**2nd**	**1st**	**2nd**	**Ist**	**2nd**
BSAED	489	307	296	203	196	165	155	109	97	83	73
BSA	198	124	98	19	36	32	0	105	91	130	108
BSA (AS)	38	52	48	111	63	59	81	0	0	2	2
BSA (CS)	20	4	7	5	0	9	9	0	0	9	14
BSA (AE)	7	1	1	7	3	4	3	0	0	10	6
BSA (PP)	3	4	3	1	1	3	3	0	0	1	2
BSAB	382	207	176	155	127	136	111	92	78	96	89
BSF (Aqua)	92	67	58	63	47	32	27	30	21	30	19
BSF (FBM)	0	1	0	0	0	0	0	0	0	0	0
BSForestry	134	69	54	56	47	52	34	49	35	49	30
TOTAL											

Agriculture Education Act of 2010, an act rationalizing agriculture education in the Philippines by establishing a national system of agriculture education institutions, providing for mechanisms of implementation, and for other purposes urges the state to establish, maintain, and support a complete and integrated system of agriculture education relevant to the needs of the economy, community and society (HB 2991, Section 2). Corollary to this is the challenge for public and private institutions, colleges and universities to develop a network of an integrated system of agriculture education which will effectively respond to agriculture and rural development needs of the country (HB 2991, Section 5) and that this form part in the gradual elimination of the economic ilk of the country and particularly in the Province of Northern Samar.

The findings go with the mandate of such Act; the drastic increase of enrolment deeply imply the university's commitment of being a good arm in responding to agriculture and rural development needs of the province and the entire country. The Bachelor of Science in Agricultural Education as can be gleaned in the aforecited data has the highest enrolment and seemingly has increased dramatically. This could be attested by the strategic approaches discussed at a later part of the paper.

Furthermore, for more than 30 years of the opening of the Doctor of Philosophy in Agricultural Education graduate program, this year opens the horizon of the program having a remarkable number of enrollees. The same is true with the undergraduate programs (personal communication with the Former Dean). MS in Agricultural Education program on the other hand has produced a number of graduates already. Some of whom are already part of the veteran teaching staff of both the Colleges of Veterinary Medicine and Agriculture.

Issues on Agricultural Education

Evidently, there is a job-skill mismatch. As evidently observed in the past and apparently at present, agricultural education attracts fewer students than other fields of study, probably due to perceptions of agriculture as a less prestigious and profitable profession. These attitudes are more prevalent in rural areas, undeniably true in Northern Samar where the university is situated, where farming has been the mainstay of the population and where much of the population still lives in poverty.

However, a potential threat in the strengthening of agricultural education is the offering of courses in the nearby state universities which may entice enrollees from Northern Samar. Along this threat must be a move to enlighten the teaching force, innovative teaching strategies of the faculty members have to be ensured.
Various challenges relative to the strengthening of the agricultural education are advanced. The changing of the secondary/high school curriculum which would affect the tertiary curriculum is one. Another is the dissolution of Vocational-technical schools, then offering back. Advancing more is the Kto12 program in which tertiary curriculum has to fit in again to the new program of the national government. All these would require another set of curricular reforms.

Looking at a wider scale, ensuring paradigm shift among agricultural education stakeholders is another challenge considering that agriculture is really less attractive compared to other courses. However, if internal support is furnished, LGUs as immediate external partners will also be convinced in the implementation. Changing employment opportunities in agriculture and marginalization of agriculture and rural life, and the increase of urban-based students is another, for the reason that the reinventing is not only to entice students from the rural areas. Furthermore, integrating in the curriculum population, environmental and gender issues are significant challenges which can substantially be resolved through reinventing agricultural education.

Given the severe restrictions on financial resources, there is a need to determine levels of continued support to higher education in agriculture based on the ability of colleges and universities to carry out curricular modifications that reflect employment markets. In some countries, there has been excessive growth in the number of diploma and degree granting agricultural education institutions. The challenge is to achieve a "better fit" between the supply and the demand for trained human resources in agriculture.

A major challenge will be the transformation of agricultural education institutions into dynamic promoters of change within their environments. This will require that they abandon long-established traditions of academic isolation and become active contributors to sustainable agricultural and rural development through innovative teaching, research and extension.

Strategic Approaches Towards Strengthening Agricultural Education

The issue on job-skill mismatch calls for the formulation of master plans for priority disciplines, review of curricula to make them fit the needs of industries, establishment of labor market information system (LMIS) to provide up-to-date information on jobs that are in demand and hard to fill, to guide both students and parents in choosing courses (CHED 2013-2016 Strategic Plan). These are among the strategic actions to eradicate the growing negative notion of the mismatch of the curricula among SUCs with the demands of the labor industry. In the University, the regular visit and revisit of the curricula is one the best strategies that urges update of the same to respond to what the industry needs. This in a way has link the academe to the present trend of the industry in terms of offering its experts for the resolution of the issue.

Although agriculture generally kept up with scientific progress in the past, the pace of change is much faster today, requiring continual updating of the college's nomenclature. From the old College of Agriculture, this was changed to College of Agriculture, Fisheries and Natural Resources. This certainly could be part of the sudden increase in the enrolment, adding more allied fields in the college's nomenclature. Furthermore, curricular reform, offering of quality agricultural programs and designing innovative strategies essential for the students to develop skills and attitudes that will allow them to continue to learn and develop their competencies throughout their professional lives (Richardson, 1997) count much. This calls for the reinvention of agricultural education through rationalization of the present agricultural education curriculum. By rationalization, we mean,

bringing specific topics not just in the four walls of the classroom but doing every possibility to be on field for the full understanding and comprehension and application of the theories learned which is now evident in the university.

Add-on to this approach is the present memorandum of agreement entered into by the University of Eastern Philippines with the University of Israel. Part of the agreement is the accommodation of exchange student wherein Agriculture students of UEP had their exposure in Israel. Recently, three students finally succeeded in that academic opportunity. Similar to this is the offering of scholarships. One of which is the Enfant Du Mekong Foundation based in France which offers 10 scholarship slots every year. This has been in place for two years already in the university.

In addition to new scientific knowledge, the most important source of knowledge for agricultural development is rural people themselves and the time-tested systems of production that embody their knowledge. An understanding of rural people and their production systems should be an integral part of agricultural education. This requires that UEP as an agricultural education institution plays not only an academic role, but also a community development or outreach role that allows them to understand local knowledge and combine it with modern agricultural science. Understanding the contributions that local people can make to solve their own problems is the key to sustainable rural development. These all need the actualization of agricultural entrepreneurship in which students will be given options in their total application of their learning. First among the options is letting the soon-to-graduate students conduct thesis along their field of specialization and interest. Second, is the fielding of students to Field Practicum instead of Thesis Work. This is believed to give students more opportunity to have in-depth theoretical application. Third, is the putting up of agricultural enterprise in the graduating students' respective barangays. All these options are assumed to strengthen the agricultural education in the university's desire to be a vehicle in the solving of the food security and economic problem in the province. The eventual increase too, of enrollees on courses along agriculture will bring significant impact on increased farm and the proliferation of agribusiness in the Province of Northern Samar through increased quality graduates, thus improving the lives of poor families in the community.

Furthermore, curricular reforms and new educational strategies set forward by the University of Eastern Philippines as a haven of agricultural education will not only fortify and reinforce agricultural education but will ensure fitness of the graduates in the multi-dimensional nature of sustainable agricultural production; graduates equipped with know-how and skills to venture in agricultural enterprises, and scientifically inventive in dealing with crucial roles in the economic community (throughout their training, they need not only specialized courses which deal in-depth with specific technical subject-matter, but courses that help them think holistically).

For agricultural education to be relevant today and in the future, focus has to be given to its "practical" side, and that is how to make money out of agriculture. To attain this means a paradigm shift, a radical change in the way farmers and future farm entrepreneurs are educated. "The paradigm shift needed in agricultural education demands that instead of students spending time in classrooms or laboratories, they have to spend more time in actual, hands-on work in real agricultural ventures," (Gayo as cited by Mission, 1999). Furthermore, for agricultural education to keep pace with the evolving technological advancements, the use of ICT in agricultural education is a must. To attract and teach farmers' children including their parents to venture into farming, a mobile internet could be introduced.

Should the College of Agriculture of the University of Eastern Philippines take the lead and get more involved in the strengthening of Agricultural Education? The answer is definitely "yes". More importantly is the adoption of a new paradigm or mindset by the colleges where agricultural education is. Let the college be the instrument to change the farmers' understanding of agriculture from the concept like "growing rice" to "money making". The college must bring the students outside the four walls of the classroom, to the poorest among the poor, to the deprived, depressed and the underprivileged barangays. This will enlighten the farmers that new technologies introduced will help them achieve their goal of making money. What the farmers need is very simple technology; however, they do not even know it. This is where the college may come in, ensuring that technology is transferred efficiently.

The strengthening of the agricultural education programs of the University of Eastern Philippines must be preceded by sufficient planning schemes in terms of its cost, administration and implementation, and faculty preparations. Systematic and procedural steps must be considered from the planning up to the execution of plans. A committee has to be created responsible for the over-all planning and implementation of the strengthening and/or reinventing activities. As reflected in the table strategic actions will guide the strengthening of the program. One of which is adapting the CHED approved curriculum but the college will do in-depth rationalization. How? Theoretical application of agricultural courses must be designed not for classroom exercises only but considering a commercial-scale application. For instance, on piggery management, students have to be brought to a piggery for application and doing entrepreneurial activities at the same time. Another, if class topic is on fertilization, students must be exposed not only to a 1 meter by 3meter plot size but to farm size

area where students can fully exercise/apply the concepts they learned. Corollary is the appreciation that in agriculture there is money and money is in agriculture.

Another is actualization of agricultural entrepreneurship. This can be realized by designing changes in the students' requirement for graduation. Students in the College of Agriculture may opt to go with Thesis Writing, Field Practicum or Establishing Agricultural Enterprise. In the third option, a student must have his agriculture enterprise in his own barangay. Continuous intervention of the College in terms of monitoring and guidance is essential. The creation of a demo farm in every barangay or entrepreneurial establishment for the communities to see and feel the success impact of transforming agriculture through strengthening agricultural education has to be ensured. The Local Government Unit where the student belongs must not be limited to extend any form of assistance in the student's desire on technology-transfer.

Significantly paradigm shift of people through strengthening extension and extensionists in the rural areas is necessary. Let the barangay see and appreciate the impact of the radiation of extension workers (Faculty from the College of Agriculture for a start) in the development of the rural poor. Impact has to be specifically seen in the transformation of the families in the barangay because of agriculture and having graduate/s in agriculture-related courses in every family. This will further erase the notion that agriculture is not just the science of cutting grass but making money and business.

Furthermore, "One barangay, one scholar" scheme is envisioned to be of great help. Every barangay in the entire province will have one barangay scholar. This scholar will turn out as the Barangay Agriculture Worker to take charge in the theoretical and technological transfer. The same person will closely coordinate with the College of Agriculture in the sharing and dissemination of agricultural and entrepreneurial expertise. An inter-disciplinary systems approach to agricultural education is very much needed.

These are all over and above the specific activities conducted like the changing the College nomenclature, to: entice students to enroll in the college; serious school to school campaign, offering attractive and quality programs/courses, curricular reforms to erase the negative notion that agriculture is not just the science of cutting grasses but money making. In the campaign, the Dean presents the "ha" of Agriculture usually during Career Guidance/ Orientation to the secondary schools of the Division of Northern Samar.

At a relatively early stage of their education, students need an overview of the agricultural and rural systems. Throughout their training, they need not only specialized courses which deal in-depth with specific technical subject-matter, but courses that help them think holistically, or in terms of integrated agricultural systems, so that they can understand the multi-dimensional nature of sustainable agricultural production. This requires an inter-disciplinary systems approach to agricultural education.

Training in the systems approach is essential for agricultural education because of the increasing complexity of agriculture, food and rural systems, the problems of environmental protection and management, women farmers and household issues and the needs of small-scale farmers. Even conventional subject-matter teaching should take place within an inter-disciplinary framework of agricultural systems rather than as isolated subjects.

Increasingly, education in agriculture needs to take the form of courses in agro-forestry, agro-ecology, and the socio-economics of integrated production systems. Local food production systems need to be studied in terms of the complexities of the larger economic and social context. A systems approach to agricultural education makes it possible to understand, evaluate and integrate the many disparate elements of production systems into a unified study of how those systems work and how they affect the biological, economic and social environments.

Teaching an inter-disciplinary, systems approach to agricultural and rural development applies to training students at every level of agricultural education. A systems approach to agricultural education requires a team-teaching methodology using case studies, problem-solving approaches and practical, field-based exercises.

"We are at the dawn to reinvent agriculture education
in the country. We hope to revolutionize our
countryside and lift our farmers from poverty."

CONCLUSIONS

Agricultural universities like the University of Eastern Philippines is the best vehicle in the piloting of the reinventing and/or strengthening of agricultural education as a significant academic program in the resolution of food security, sustainable agriculture and rural development problems of poor provinces like the Province of Northern Samar.

Agricultural State Universities like the University of Eastern Philippines is the best avenue in advocating innovative strategies in strengthening agricultural education through the adoption and promotion of the actualization of agricultural entrepreneurship even to the farthest deprived, and less privileged rural area.

The strengthened agricultural education in UEP can best be achieved though agricultural entrepreneurship contextualized through curricular reform, inflecting changes to educational processes, putting

forward new educational strategies, innovative leadership and institutional reform. This ascertains food security, agricultural sustainability and agricultural development in the province where the university resides.

Adopting the old curriculum (CHED Approved curriculum) is better than designing a new one. However, this said curriculum has to be rationalized to fit in to the actualization of agricultural entrepreneurship. Hands-on, minds-on approach bringing the students in their respective barangay/field work can be accounted as one of the best approaches. This calls for extensive assistance of professors in the College of Agriculture who are equipped with expertise in the implementation of the inter-disciplinary systems approach.

Academic institutions like UEP are good venues in the analysis of issues and concerns besetting the community. Researches along these are best conducted in this institution. Alongside, new approaches also give birth and are explored tried, tested and evaluated in the same place.

RECOMMENDATIONS

Agriculture remains for many years a major contributor to the economy of poor communities. The agriculture sector is undergoing rapid changes as a consequence of both technological progress and economic forces which call for an increased market focus, competitiveness and higher productivity. Employment opportunities in the off-farm sector are expected to increase at a faster rate than in agriculture. This will further emphasize the present employment shift of agriculture graduates to related sectors, requiring a revision of existing curricula to better address educational needs. It is hoped that this will holistically be realized by revisiting, reinventing and/or strengthening the agricultural education as a significant program.

Agricultural universities like the University of Eastern Philippines need to determine their unique functions and the special attributes that they can offer students and the agricultural community. They need to do a better job of communicating these attributes if they expect to remain sustainable, given the current economic constraints. The University of Eastern Philippines as an agricultural university needs to determine its unique functions and the special attributes that it can offer students and the agricultural community. Moreover, agricultural institutions need to do a better job of carrying through with their unique ability to solve the agricultural problems of the communities they serve. A holistic approach to teaching agricultural production through a multi-disciplinary systems perspective will increase the utility of both scientific and local knowledge ascertaining development in agriculture and food security in the Province of Northern Samar.

Inter-agency and stakeholders' alliances are essential means to capitalize strengths and to reduce costs reflected in the duplication of efforts. Collaborative strategies should be explored as a means to keep pace with accelerated scientific advancement on agriculture.

The curricula of agricultural education programs need to adjust to the current and future employment needs of graduates. The emphasis in curricular revisions should be on process skills of problem solving and on skill sets that are transferable to a diverse employment sector. New options for programs of study should be based on enabling students to meet the expectations of agricultural employers, and increasingly the employment needs of the private sector. Strengthened agricultural education needs to address not only immediate production needs, but also long-term food security, sustainable agriculture and rural development needs. This will require moving from a single-disciplinary approach to an inter-disciplinary, systems approach which incorporates a wide range of new topics, including gender, environmental and population issues.

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