

ENGAGING AGRICULTURE EDUCATION IN THE SOCIETAL CHALLENGES OF THE 21ST CENTURY: THE CASE OF THE PHILIPPINES¹

Cecilio R. Arboleda, PhD
Executive Director, UPLB Foundation, Inc.

Executive Summary

Introduction

When the United States Congress established the land-grant higher agriculture education system some 150 years ago, it was most probably aware of the grim scenario predicted by Thomas Malthus. For, the fundamental rationale of the land-grant system was to provide students with the knowledge and skills for increasing agricultural productivity in ways that will meet the needs of society – food, clothing, shelter and wholesome environment. Indeed, with the advancement of science and technology and its application to agriculture, food production has, thus far, outpaced population growth notwithstanding the increasingly severe limitation of further expanding the available arable land.

Although the 20th Century saw unprecedented prosperity and bountiful harvest of food, experts have increasingly sounded alarms of impending societal problems. Indeed, it has become ironic that much of the problems facing society today – population growth, environmental degradation, widening disparity between the rich and the poor, and so on – are often attributed by critics to the past successes of technological applications to agriculture.

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The problems facing society in the 21st Century has increasingly become complex and factors affecting them interact in complex ways with education. Not surprisingly, there has been increasing calls for shift in agriculture education paradigm.

Experiences in the 20th Century

Prominent economic historians attribute the unprecedented increase in agricultural productivity in the 20th Century to the institutionalization of the integration of agricultural education, research and extension that was started in the land-grant agricultural colleges in the United States. Although it took decades before the real benefits of the application of science and technology were felt, the accumulation of scientific knowledge and its continued application enabled the agricultural and related sectors to effectively respond to the needs of a dynamically changing society.

Not surprisingly, one of the first legislative acts of the American colonial government in the Philippines was to establish an institution of higher education in agriculture as part of the creation of the University of the Philippines in 1908. Over the years, many more state agricultural colleges were established in different parts of the country. For some reasons, however, it did not follow the pattern of the American land-grant system. Instead, while teaching was vested upon the University, research and extension were vested upon the Department of Agriculture – a secretariat of the national government. Then, with the legislation of the Local Government Code in the 1990s the function of agricultural extension was devolved to the municipal and provincial governments. Thus, the weak linkage among higher education, scientific research and extension in agriculture in a fragmented organizational set-up has become a defining characteristic by which knowledge in agricultural science and technology was managed in the 20th Century in the country.

Indeed, agricultural productivity has been lagging behind some of its Asian neighbors. And if the consistently dismal performance of most of the graduates from the country's more than 150 colleges and universities in the yearly Agriculturist licensure examinations were to serve as an indicator of the country's level of preparedness, then it behooves the leaders of higher education institutions and government policymakers to overhaul its agriculture education system if only to enable it to seriously engage in the many inter-related problems and opportunities that either continue to persist or becoming emergent in the 21st Century.

Societal Challenges of the 21st Century: Agriculture Education Perspective

There is no doubt that agricultural science and technology helped to avert hunger in the global scale. But, notwithstanding the successes of the so-called green revolution of the 20th Century, the threat of food shortages remains in many parts of the world. This is exacerbated by many other factors that influence agricultural productivity today: global warming, conversion of agricultural land for non-agriculture use, increasing cost of energy, environmental degradation, changing lifestyle and diversity of food preferences of the consuming public. Ironically, just when these many societal challenges call for smarter and more intelligent responses through agriculture education, many of the bright young men and women are shying away from careers in agriculture. This may be due to the fact other more interesting fields of studies have evolved while agriculture education has been stuck in the traditional if not obsolete courses.

Conditions have changed significantly since the first agriculture college was established in the Philippines. Developments in the various fields

of science amid a fast changing environment provide great opportunity for change in agriculture education. The opportunity lies in evolving more innovative and challenging curricular programs that are more meaningful, interesting and attractive to young men and women who, after all, would be in the forefront of meeting the many challenges of society this Century.

Engaging Philippine Agriculture Education to the Challenges of Society

As in the past, society's needs in the 21st Century remains a major driving force in the evolution of higher education. But because the challenges to agricultural productivity are becoming more complex, diverse, and difficult, higher education in agriculture needs to evolve in ways that its system of knowledge management promotes creativity, technological innovation and entrepreneurship. It should also enable its graduates to cope competitively in the global economy without neglecting the teaching of fundamental ideas and practices that promote good citizenship and more humane society.

In the case of the Philippines, the challenge is more daunting. Before it could make a serious bid for competitive engagement of its agriculture education in the societal challenges, the country needs to first remedy serious structural handicaps.

Sub-standard pre-tertiary education system In the early 1990s a number of lawmakers attempted to legislate one additional year of pre-tertiary schooling to the present 10 years. Unfortunately, parents and some sectors of the Philippine society lobbied against it because of the additional financial burden to the family. The bill did not also get enthusiastic support from the government because of the enormous public financial investment it will entail. In the meantime, concerned educators and parents may voluntarily organize a system that would enable students to have an internationally

competitive pre-tertiary education by adding *at least* one year of schooling and then accordingly revise the curricula at both the pre-tertiary and tertiary levels.

Proliferation of sub-standard higher education institutions offering agriculture degree programs While the proliferation and continued existence of sub-standard colleges and universities offering agriculture degree programs is widely recognized, there seems to be no serious action to correct it. Already, there are more than 150 colleges and universities offering agriculture degree programs – almost two for every province in the country. If no serious action is made, the law of supply and demand will naturally force their abolition. Enrolment is rapidly declining in many of these institutions. In some of them, there have been no enrollees notwithstanding offers of scholarship and no entrance examination.

Obviously, structural reforms would take time to implement. It requires much political will and investment in financial resources. Nonetheless, institutions that are vested with academic autonomy have great opportunity to organize and institute curricular reforms in their own institutions.

Incorporating concepts of food, agriculture and the environment in the curricula At all levels of the formal educational system, two strategies may be taken to introduce the appreciation of food, agriculture and the environment. One way is to institute a regular course that integrates the three concerns in a holistic way. The other is to design ways by which the concepts of food, agriculture and environment may be embedded in courses that are already prescribed in existing curricula such as in biology, physics, chemistry, literature, arts and literature, languages and so on. Indeed, it is also possible to adopt the two strategies simultaneously in some curricula. It is interesting to note that the public schools in the province of Albay are already

experimenting on the incorporation of the concept of climate change into the existing elementary and high school curricula such as in mathematics, physics, languages, and even in music and the arts! The incorporation of the sustainable agriculture in the 1996 revision of the BSA curriculum in the UPLB College of Agriculture provided the opportunity for incorporating concepts of food, agriculture and the environment. Clearly, the curriculum needs continuous refinement and improvement in both the subject matters and the creativeness of faculty to make it even more meaningful in addressing the challenges of the changing times.

Promotion of innovation, entrepreneurship and business management in the agriculture curricula Agriculture is fundamentally an applied science where knowledge is effectively managed in ways that result in improvement of productivity and quality of life. It is then remarkable that while creativity, innovation and entrepreneurship provide the basic foundation for economic development; they have not been explicitly taught or actively promoted in the agriculture curricula. Admittedly, while these attributes are undeniably desirable outcome of educational programs, the jury is still out as to what is the best way of inculcating them. In any case, there are already institutions abroad that excel consistently in this regard. Surely, the presence of well-equipped laboratories, a nurturing environment of experimentation and truly supportive faculty and administration are institutional attributes that need to be developed in the country.

Institution of courses/program in international agriculture With the advent of globalization, agricultural activities worldwide have increasingly become inter-connected. Conditions elsewhere invariably influence, one way or the other, success or failure of local agricultural activities. Many colleges and universities abroad have, for some time now, instituted international agriculture courses/programs in their curricula. It is time that institutions in

the Philippines should if only to address the problems and opportunities of the global competitive challenge in agriculture.