ASSESSMENT OF TERTIARY AGRICULTURAL EDUCATION IN GHANA

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Abstract

This study assessed the perceptions of different stakeholders of the agricultural education system in Ghana, including administrators of the tertiary agricultural training institutions, lecturers, students, farmers, researchers and employers. It also assessed relevance of the current agricultural education programmes in the tertiary agricultural education institutions in the country. Both quantitative and qualitative research methods were used.

The study revealed that respondents lacked awareness of the vision and mission statements of the agricultural training institutions. Very limited formal linkages existed among the institutions and the larger community in Ghana. The curricula of the institutions were mainly theoretical, lacking practical off-campus occupational experience activities. Moreover, emerging issues in agriculture, including population, HIV/AIDS, gender and youth, systems thinking, agribusiness, and entrepreneurship that are of major concern to the larger society were being neglected.

While many administrators and academic staff of these institutions preferred specialization at the diploma and undergraduate levels, the majority of respondents outside the training institutions expressed the need for generalist training. They wanted to insure that students acquired a substantial knowledge base in other complementary areas to improve their employment opportunities.

The study revealed a need for the training institutions to regularly review and revise their curricula. Such curricular reviews and revisions should involve key stakeholders of the
agricultural education system. Moreover, the training institutions should clearly state their vision and mission statements and publicise them among students, administrators, academic staff and the larger community.

Introduction

African agriculture is undergoing a crisis that threatens the very future of the continent. Food crop production is insufficient to feed the rural population properly, much less to supply the exploding urban population. Many factors have contributed to the decline in food production. However, one of the fundamental constraints is poor training of agricultural development professionals, especially those that work directly with farmers (Maguire, 2000; Zinnah, Steele and Mattock, 1998; FAO, 1996).

Following independence in 1957, Ghana established agricultural institutions to train the manpower needed for agricultural and rural development. They are: (1) the Faculty of Agriculture, University of Ghana (UG) in Accra; (2) the Faculty of Agriculture, Kwame Nkrumah University of Science and Technology (KNUST) in Kumasi; (3) the School of Agriculture, University of Cape Coast (UCC) in Cape Coast, and (4) the Faculty of Agriculture, University of Development Studies (UDS) in Tamale. In addition, six agricultural training colleges have been set up to allow senior secondary school graduates pursue Certificate and Diploma programmes in agricultural studies. The Agricultural training colleges are: (1) the Animal Health and Production College in the Northern Region, (2) the Ejura Agricultural College in the Ashanti Region, (3) the Kwadaso Agricultural College located in the Ashanti Region, (4) the Department of Agricultural Education, University College of Education (UCE), Mampong in the Ashanti Region, (5) the Damongo Agricultural College in the Northern Region, and (6) the Ohawu Agricultural College in the Volta Region.

Along with a rapid growth in the number of agricultural faculties and colleges in Ghana, serious problems and limitations soon became evident within each one of the tertiary institutions (Kisseidu, 2000; NARP, 1993; Steele, Mattocks and Perrault, 1992; CSIR, 1990). The problems and limitations included: (1) outdated curricula that lacked responsiveness to changing needs of society, (2) outdated and insufficient instructional resources, and (3) large student populations. It should be pointed out that these limitations are not unique to Ghana. Precedent studies have documented similar problems in other parts of the world, including developed countries (Maguire, 2000; van Crowder, Lindley, Bruening and Doron, 1998; Warren, 1998; Zinnah, Steele and Mattocks, 1998; Comer, Cheek and Connor, 1996; FAO, 1996; Kunkel, Maw and Skaggs, 1996; Launde, Baker, Buelow and Hayes, 1996; Miller, 1995; Pitt, 1996; Schuh, 1993; Johnson and Bentley, 1992; Meyer, 1992; Saint, 1992; FAO, 1991).

Purpose of the study

This study assessed the perceptions of various stakeholders regarding the current status of agricultural education at the tertiary level in Ghana. Respondents were asked to make suggestions that could enable tertiary institutions to more adequately prepare individuals to have a capacity for working on Ghana’s most important emerging agricultural and rural development problems.
Methods and data sources

These researchers primarily utilized exploratory and descriptive research methodologies. Focus group discussions and related observations were selected as the most appropriate approach for data collection (Krueger, 1988; Spradley, 1980; 1979). Each focus group discussion engaged key power actors or informants within the main subgroups of the agricultural education system (farmers, government officials, lecturers, deans and principals, researchers at the major research institutes, representatives of NGOs and banks). The research team also used structured questionnaires and semi-structured interview schedules where deemed most appropriate. Additional information was gathered from secondary sources.

The population was extremely heterogeneous. Therefore, procedures for targeting respondents had to be customized for each subgroup within the study population. The procedures selected and the response rates for each subgroup are detailed in the following paragraphs.

At the institutional level, all deans and principals of the training institutions were included because of their small number. Eight out of the ten administrators returned their questionnaires.

All the final year students were included in the study. The final year students were targeted because they had been in the institutions for a long period and it was assumed that they would be abreast with the happenings of their institutions. In all, 432 students (83%) responded to return completed questionnaires. The breakdown of respondents in this subgroup was: 30 from Animal Health and Production College, 28 from Ejura Agricultural College, 43 from Kwadaso Agricultural College, 36 from Damongo Agricultural College, 37 from Ohawu Agricultural College, 95 from University College of Winneba (UCEW), 102 from the University of Cape Coast (UCC), 33 from Kwame Nkrumah University of Science and Technology (KNUST), 16 from University of Ghana-Legon (UG), and 12 from University for Development Studies (UDS).

All the Heads of Departments and two lecturers from each academic department in the faculties and colleges were selected to participate in the focus group discussions. All the lecturers were included in the study due to their small number. One hundred and ten (110) lecturers filled out the questionnaires. These included 12 from Animal Health and Production College, 6 from Ejura Agricultural College, 7 from Kwadaso Agricultural College, 4 from Damongo Agricultural College, 7 from Ohawu Agricultural College, 7 from UCEW, 12 from UCC, 23 from KNUST, 23 from UG, and 9 from UDS.

Key individuals, including farmers, NGO representatives, bankers, researchers, and officials from the Ministry of Food and Agriculture—were identified and selected on a snowball basis to form the users (employers) sample for the study. These individuals were selected to participate in the focus group discussions and interviews. Open-ended and semi-structured interview guides were used to provide uniformity and structure.
Descriptive statistics such as means, percentages, and frequencies were computed using the Statistical Package for Social Scientist (SPSS) software to determine if general trends were evident in the data. The perceptions of the various categories of respondents regarding key characteristics of effective agricultural education in the tertiary agricultural education institutions in Ghana were ranked and compared using content analysis. These included: (1) the awareness of the vision and mission statements of these institutions, (2) the balance between classroom time, on-campus practicals and off-campus occupational experience activities, (3) the formal linkages between the institutions and the larger society, (4) the relevance of the curricula, (4) the ratio of lecturers to students, and (5) the availability of relevant instructional materials and equipment. Comparing rankings from different focus groups gave a clear configuration of how subgroups perceived the same issues or phenomena.

Results and conclusions

Vision and mission statements: All the Deans and Principals indicated that their agricultural faculties and colleges have vision and mission statements. They are supposed to guide the institutions in developing programmes that will enable students to deal with the changing and complex nature of agriculture. However, about two-thirds of lecturers (63.4%) and a large majority of students (80.6%) surveyed were not aware that such documents even existed. This extreme lack of awareness signals that individuals within each subgroup lack any clear sense of their institution’s overall goals.

Relevance of the curricula and courses: The study revealed that traditional agriculture courses such as crop science, soil science, animal science, agricultural economics, and agricultural engineering are adequately catered for in the existing curricula. However, in contrast, there was a general agreement among the subgroup of employers that existing curricula and courses were not producing graduate who are responsive to end user needs. They recommended, therefore, that courses and curricula be reviewed for possible revision to include emerging topics such as entrepreneurship, gender and youth, agribusiness, systems thinking, and the effects of population growth and HIV/AIDS

Balance between classroom time, on-campus practical training, and off-campus occupational experience activities: There were wide variations in the views expressed by respondents regarding the estimated time allotted to classroom time, on-campus practical training, and off-campus occupational experience activities. The students indicated that, on average, 64 percent of their training time was devoted to theory in the classrooms. Approximately 19 percent of training time was devoted to on-campus practicals with only 11 percent given for conducting off-campus occupational experiences. Administrators and members of academic staff had almost the same estimates of classroom time allocations (average of 53% and 58%, respectively), on-campus practicals (21% and 22%, respectively), and off-campus occupational experience programmes (13% for both groups).
Every employer expressed a concern about the inadequate level of off-campus practical occupational experience programmes in the training institutions. They employers said that they usually have to retrain the graduates to enable them to carry out their assigned workplace-duties. The respondents in this study suggested that there were three main reasons for the current lack of practical training: (1) very large class sizes, (2) few and often obsolete equipment, and (3) inadequate funding.

Linkages between the training institutions and the larger community: A large majority of administrators (87.5%) and slightly more than half of the lecturers (52.7%) indicated that formal linkages existed between their institutions and the larger community. However, a total of 66.9% of the students were not even aware that such linkages existed at all. The main forms of collaboration between the various agricultural colleges and faculties in the study were focused on joint research or review of instructional and examination materials.

The majority of people in the larger community surrounding the academic institutions were largely unaware of the existence of any formal linkages. Very few linkages existed between the training institutions and the larger society-involving resource mobilisation or curricular development/revision were reported by respondents. At best, these linkages were reported to be ad hoc and irregular. The study found little evidence that there was any significant input or influence by the larger community regarding the development and revision of courses and curricula to make them more responsive to the diverse needs of the surrounding community.

Availability of current and relevant instructional materials: The training institutions surveyed, especially the agricultural colleges, lacked modern instructional resources such as journals, textbooks, and laboratory equipment. The majority of the available textbooks and journals were often outdated and inadequate to meet demands. The laboratories also lacked basic equipment to carry out even simple experiments. None of the institutions had enough modern instructional equipment such as computers and their accessories, overhead projectors, television, or video decks.

Responsiveness of the teaching and learning process: The academic staff and the administrators reported that the teaching-learning process was generally responsive to the needs of students -- even in spite of the recent rapid student population growth. However, the majority of the students complained that the teaching-learning process is mostly confined to theory in the classroom. More connections to broad-based knowledge and practical experience could enrich the traditional information-intensive contents delivered in the classroom.

Student–lecturer ratio: The student-lecturer ratio ranged from 4:1 to 24:1 in the institutions surveyed. Although the overall lecturer-student ratio appeared to be relatively low in some of the institutions, the class sizes for certain courses were so large that lecturers complained that they found it difficult to handle such classes. It was apparent that the current student-lecturer ratio in the institutions was likely to deteriorate even more as a result of increasing pressure on the universities to increase their intake to clear a huge backlog of qualified applicants. The pressure has become
particularly troublesome because of the government’s insistence on tying each university’s annual budgetary allocation to the number of students admitted each year. In spite of exploding student numbers, very few new lecturers are being hired each year to cope with the increases in enrolments. Consequently, there is a severe strain on the quality of teaching and learning because students do not receive enough individualized attention. In particular, practical training and tutorial assignments are being sacrificed due to heavy workload on the academic staff.

Students’ contact with clientele: The study revealed that students’ contact with clientele during their training was grossly inadequate. They especially had minimal contact with officials from the Ministry of Food and Agriculture, representatives of agribusiness, NGO staff, researchers, and bankers during their training. Thus, the majority of graduates leave the agricultural training institutions poorly prepared to cope with the real-world dynamics of the rapidly changing work environment in the agriculture sector.

Professional competencies of lecturers: Generally, the lecturers employed in the agricultural faculties were found to be academically competent. All of the faculties require a Master’s degree as the minimum education level for a lecturer to teach at the Diploma or B.Sc. level. It should be noted, however, that the agricultural colleges have difficulties attracting enough lecturers with the requisite academic qualifications.

Educational Implications

The researchers suggest the following educational implications arising from the study:

1. The study revealed an urgent need for systemic change in the tertiary agricultural training institutions in Ghana. But as John, Townsend, and Nelson (1996) caution, mere improvement or incremental change is not likely to bring about sufficient systemic change in higher education in agriculture. In order to facilitate systemic change in higher agricultural education in Ghana, clear vision and mission statements that cut across agriculture and rural development should be articulated. These can potentially provide a guide or a sense of direction to the change process. Agricultural training institutions must seek to communicate these vision and mission statements to the stakeholders.

2. The curricula of the agricultural training institutions were observed to be mostly theoretical with very little time being devoted to practical training and the acquisition of off-campus occupational experience. This implies a need for the training institutions to revise their curricula in a way that shifts some of the emphasis from theory to more practical training, especially the acquisition of relevant work experience. Prospective employers of graduates should be consulted at all stages of curriculum development and revision processes in order to address their needs. A shift in this direction might encourage the private sector to provide funding or more opportunities for students to acquire relevant work experience attached to their organizations.
3. The study revealed a serious lack of emphasis on important emerging and non-traditional topics in agriculture, such as entrepreneurship, gender and youth, agribusiness, systems thinking, population growth and HIV/AIDS. These, and other issues, are of major interest to employers in the public and private sectors, including NGOs. The future potential employers of graduates were in full agreement that the agricultural training institutions in Ghana are not providing relevant training. They believed that by equipping students with skills in these emerging areas during their training could dramatically lessen the cost of re-training these graduates after they commence employment. They also noted that some of the money saved from not having to conduct as much re-training could be channelled to the institutions for support of their instructional programmes.

4. All the Deans of the agricultural faculties and the Principals of the agricultural colleges indicated that their institutions have made some attempts to revise curricula. However, these attempts have been largely incremental in substance – such as the addition of new courses and programmes. But, as Warren (1998:15) has warned “there is nothing wrong with incremental change per se, but if it is the only response to change, operating in a strategic vacuum, it exacerbates the loss of the purpose… If incremental change is applied where a ‘quantum leap’ is required, the effect can be disastrous.” Also, Comer, Cheek, and Connor (1996:4) suggested that when curricular reform efforts occur, “it is essential that they break out of the mould of elaboration of what exists into the realm of innovation and strategic thinking.”

5. About one-third of the students surveyed in the institutions reported that agriculture was not their first undergraduate degree preference. Agriculture was usually either a second or third choice. This suggests that the agricultural faculties need to carry out more public relations activities to make individuals (especially prospective students) aware of attractive career opportunities in agriculture and related professions.

6. Very few formal linkages existed between the agricultural training institutions included in this study and the larger community that surrounds their institutions. The respondents reported very few instances where sharing of experiences, lessons or any resource mobilization for enriching the programmes occurred. The linkages between academic institutions and the larger society were mostly informal arrangements that were dependent on the good will of individuals. Consequently, there was a lack of consensus or clarity regarding the type of curricula needed to train students to effectively deal with the rapidly changing agriculture work environment.

7. While some administrators and lecturers supported the need for students to specialize at the undergraduate level, the majority of respondents from outside the training institutions, (especially those from NGOs) voiced the need for generalist training. Those from outside the academic institutions recommended that a generalist courses and curricula at both the undergraduate and diploma levels could go a long way to insure that students will acquire a strong knowledge base and enhance their employment opportunities after graduation.
It is clear from the results of the study that tertiary agricultural education in Ghana faces major challenges that require systemic revitalization of the curricula in the agricultural faculties and colleges. Unless something is done to make the curricula more responsive to the changing needs of the diverse stakeholders, this could lead to the demise of the agricultural education system. The question remains as to what can and should be done. The first major step is to hold a national workshop, involving the main stakeholders of the agricultural education system, to discuss and develop a national framework and action strategies to reform agricultural education at all levels in Ghana. Agriculture is, and will remain to be for years into the future, the main sector of the Ghanaian economy.

References Cited


