

Evolution of Agricultural Economics: A Review Article for Economists

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Abstract

Agricultural Economics arose as academic field of study in the late 19th century, combined the theory of the firm with marketing and organization theory, and developed throughout the 20th century largely as an empirical branch of General Economics in United States and Europe. In Ethiopia, for first time undergraduate program in Agricultural Economics was offered at Haramaya University (former Alemaya Agricultural University), then by Jimma University in October 2006. Agricultural Economists in Ethiopia and all over the world contribute important subject in economic development and policy, they take the responsibility for extension services and formulation of state and national policies toward the agricultural development. Economists initiate empirical research and the joint application of theory and mathematics as well as Statistics. However, before the 1950s few General Economists did empirical research; these make Agricultural Economists the first econometricians. The work of Agricultural Economists shows that the professionals has developed large contribution from the stand point of individual economic efficiency in production and marketing, but little attention has been given to the questions relating to state and national agricultural policy. The review results in this paper predicting currently about 60% of Agricultural Economists employed in different nonagricultural sectors and 45% of economics department indicated to hire Agricultural Economists to fill positions in their faculty.

Keywords: Agriculture, Agricultural Economics, General Economics, Professional, Ethiopia

1. Introduction

Economics is a Social Science that centers on the study of humans as they act and interact in the market, behave. In general concept economics defined as the study of how limited resources can best be used to fulfill unlimited human wants. Whereas the wants or desires of human beings are unlimited, the means or resources available for meeting these wants or desires are limited. Economics thus deals with making the best use of available resources in order to fulfill these unlimited human wants. Any society, any country, or for that matter, the world, faces constraints and limitations in the availability of resources. When the word resource is used, people usually think of basic natural resources, such as oil and gas, and iron ore. However, the term has a much broader economic meaning, and economists include not only basic natural resources, but a broad array of other items that would not transpire to those who have not studied economics (David, 2012).

Economists study very complex actions and interactions between humans and their environment. The subject dates from olden days, but economists have studied agriculture for about 150 years. Although economics is the theme of thousands of books, papers, laws, and regulations, its day-to-day use by economists interested in Agriculture centers on five very clear-cut economic problems that might be faced by producer and consumer of agricultural products, or even an operator of a business that serves agriculture (Andrew and Paul W. Parkley, 2013). These five economic problems may change slightly from person to person, from one economic sector/institution to others, but they always come back to:

1. What (if anything) should I produce?
2. How much should I produce?
3. How should I produce it?
4. When should I produce it?
5. For whom should I produce it?

Relative economic literatures tell that much of the evolution of economic learning has been linked to historical, economic, sociological, and political forces that brought peoples to examine certain economic questions affecting them. For instance, there was great hypothesize that there is noticeable link between the emergence and content of classical economics and the industrialization of England, similarly between Ricardian economics and the conflict between English landlords and businessmen, and between Keynesian economics and the Great Depression of the 1930s. Within days of the U.S. Department of Agriculture's late 2003 announcement that a cow in Washington State had been diagnosed with bovine spongiform encephalopathy (BSE), 53 countries banned imports of U.S. cattle and beef. In 2003, U.S. beef exports were valued at \$3.95 billion and accounted for 9.6 percent of U.S. commercial beef production. Five countries – Japan, Mexico, South Korea, Canada and Hong Kong – received 90 percent of U.S. beef exports in 2003¹.

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Agriculture sector was surprised by world Economic Depression of the 1930s. In most of the countries, it found the economist inadequately aware with the dynamics of the economy of Agriculture sector and the Governments unprepared with tools to turn away the disaster or even to mitigate its effects. As a result, the effects of the depression were more widespread, more intense and prolonged in agriculture than in other sectors of world's economy. As it presented before the economists and the Governments motivated a good deal of fruitful thinking which, ultimately, led to a fuller development of the science of Agricultural Economics. Not those agricultural problems were entirely ignored by economists prior to the depression; but they were only dimly visualized and superficially treated as more or less unimportant off-shoots of the General Economic problems (ISAgEc, 1950).

Agricultural Economics is a field of Applied Economics. Its scope and its relationship to other social and natural science disciplines has changed over time in response to the social, economic and technical changes in inward on the agricultural sector and progress in economic theory and in other related social and natural science disciplines. The substance of agricultural economics in the United States and Germany can best be understood by reviewing the historical origins of the field and its recent evolution in relation to developments in economic theory, statistics and econometrics (Vernon W. Ruttan, 1969).

In fact, prior to 1900 Agricultural Economics did not exist as a field of specialized study either within general economics departments or in colleges of agriculture in any country of the world. Therefore, the rapid growth of Agricultural Economics as an academic field started between 1900 and the early 1920's which emerged in reflect to the growing interest of a number of economists in problems of agricultural policy, the behavior of agricultural commodity markets, and the economics of land use. Similarly, group of economists and number of men who had been trained in the several agricultural disciplines such as agronomy, horticulture, farm management, and soil science involved in factors affecting the costs of production and in the economics of farm management in problems such as the economics of enter prise selection, choice of production methods, and the financing and growth of the firm (C. Ford Runge, 2006).

2. Status and Advancement of Agricultural Economics as an Academic Field

Many non-agricultural economists think that economics has no place in the study of agriculture and agricultural science. They believe that since agriculture is mainly concerned with provision of food the emphasis should therefore stop at the level of increased production. But, study of agricultural economics has enabled us to know what to do, not only to ensure increased agricultural production, but, also how to produce profitably, productively and efficiently, all of the above problems leads to the development of the department of Agricultural Economics and New Generation of Economists(NGOE).

Agricultural Economics is an empirical branch of General Economics which is the application of economic principles to the operations of the agricultural industry. Like the other branch of economics, it is concerned with the allocation of scarce resources for optimal production and productivity.

Unlike the definition of economics, which has remained fairly constant since the time of Adam Smith, the general accepted definition of the field of Agricultural Economics has changed dramatically with the change of the definition of "Agriculture" during the last half of the twentieth century. The word "Agriculture" was derived originally from the Latin word which means "field cultivation" that includes rising of plants and animals for food, clothing, and other basic human needs. However, the modern usage of the term has expanded this meaning to include a host of firms and activities involved in supplying the inputs utilized by farmers for the production. The modern definition also included those activities and firms engaged in further processing, packaging, distributing and marketing the food and fiber products produced by farmers (James E. Martin, 1978).

The current modern society demand agricultural product in the form of processed and packed. Due to this, a growing interdependence has been developed between agricultural and non-agricultural economic sectors of the modern society which guide to the development of new generation of economists (NGOEs).

Agricultural Economics is a subset of General Economics, and we should not expect a huge difference in the main paradigms. However, Agricultural Economists are generally more applied in their work than most of those working in the main areas of economics. LEONTIEF has been quoted the famous quotation by many times as proof of the problem-oriented research of Agricultural Economists (LEONTIEF 1971, p. 5). Therefore, Agricultural Economists more concern about research, training and teaching, as well as developing community oriented policy.

World Bank study (1992) documented well the basic understanding of the leading Agricultural Economists. So, expressed that obviously these Agricultural Economists are well trained neoclassical economists; hence, they advocated for fast privatization and, similar as their colleagues, did not focus much on market failure, political economy aspects, and the new role of the government. However, they addressed explicitly the need to deal with market failure on the capital market, on the land market, and the market for extension, research, and training.

The 'standard' of economic reasoning in the early nineties was based on neoclassical economics. So, it is shown that the discrepancy between expectations and reality as well as the evolution of institutional economics

has challenged economists. A ‘blue print’ favoured in the early nineties seems to be opposed by many economist nowadays. Therefore, Agricultural Economists have been developed by the lines of thought in the main profession. Nevertheless, there are open questions concerning assessment and approach in giving policy advice¹.

The qualifications and experience of the faculty in the Agricultural Economics and economic-related departments are obviously important determinants of the potential quality of the training programs and hence the Agricultural Economics capacity. Therefore, Agricultural Economics have been developed indifferent universities at different countries. But, current and future strength of the departments is influenced by human capital strengthening of the junior faculty through higher degree training².

3. Founding the Department of Agricultural Economics

The Department of Agricultural Economics had been founded under General Economics Department³. It owes much to Richard T. Ely, William and Frederick Jackson Turner, brilliant forerunners at Wisconsin of social science. It was established as a separate department in the College of Agriculture in 1909, under the chairmanship of Professor H. C. Taylor⁴. During Harry L. Russell’. Professor Richard T. Ely was then Chairman of the General Economics Department and among the earliest economists to promote study of Agricultural Economics.

By the 1930’s departments of Agricultural Economics were established in many U.S. universities, where technical and institutional issues affecting agricultural production formed the core subjects. In addition to the leading roles played by Cornell, Illinois, Iowa State, Minnesota, Purdue and Wisconsin, a major research program was established at the University of California-Berkeley (Beneke, 1998).

In the 21st century, the profession has continued to reach beyond the agricultural sector, expanding its scope through numerous applications of relevant economic theory. Meanwhile, the high level of abstraction in economics characteristic of the last half of the 20th century appears to have given way to new interest in empirical and experimental studies, suggesting that the distance between agricultural economics and its mother discipline may narrow in the years ahead (Sexton and Lavoie, 2002).

Retracing the evolution of Agricultural Economics, especially in the United States, requires an explanation of institutional innovation in 19th century America which was more explained in the work of Taylor, H.C. and A.D. Taylor (1952). Federal Department of Agriculture was empowered to collect a wide range of farm statistics by US President Lincoln in the midst of the Civil War. The Morrill Act established the Land Grant Colleges (financed through sales of government land) especially in the states of the Old Northwest Territory: Their creation reflected both vast surpluses of land, and the drive to improve plant and animal husbandry through applications of chemistry and biology. Eventually, the land grant model was replicated in every state as well as in some other countries (Cochrane, 1993). Lastly at the beginning of the 20th century, the application of scientific management and economic principles to agricultural production created the foundations of the discipline in the United States.

In Ethiopia, the field of Agricultural Economics commenced to receive attention about 15 years ago. Following this as an undergraduate program Agricultural Economics was offered at Haramaya University⁵ (former Alemaya Agricultural University), and about 1,400 Agricultural Economists were produced up to the date of the closure of the department in 1999. Despite the very important contributions the graduates made to the development of the Ethiopian economy, the Ministry of Education closed the program to the surprise of the university, the professional association and various employing institutions. In reply to the demand of the labor market for Agricultural Economist, the Haramaya University has re-opened the program in 2005/2006 academic year.

Jimma University⁶ has also confirmed the fact by its need assessment survey conducted in October 2006 in sampled organizations: Oromia Regional Bureau of Agriculture and Rural Development; the Federal Ministry of Agriculture and Rural Development, Agricultural Products Marketing Agency; Ethiopian Institute of Agricultural Research; Development Bank of Ethiopia; and Support Integrated Development, SID Consult, which all reported their unmet needs for Agricultural Economists. They have clearly declared the problems they faced by the high turnover of these professionals because of the very high demand in the market by taking this in to consideration Jimma University opened the department of Agricultural Economics under the College of

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2 The International Food Policy Research Institute (IFPRI) 2020 Vision Network for Eastern Africa

3 Glover, W.H. Farm and College. Madison WI: The University of Wisconsin Press, 1952 (Station Research in Social Science).

4 Henry C. Taylor (1873-1969) was the son of an Iowa farmer – just as B. H. Hibbard was. He attended Drake University, Des Moines, Iowa for 2 years and then in 1896 matriculated at Iowa State College at Ames. He received his B.Sc. degree in 1896. The following fall he came to the University of Wisconsin to study under Professor Richard T. Ely as his associates. After 3 years of graduate study at Wisconsin, Taylor went to Europe and studied there for nearly 2 years. Upon his return to Wisconsin and completion of his dissertation, he received his Ph.D. degree in 1902. He becomes the first professor of Agricultural Economics and the founder of the department.

5 Haramaya University, Dire Dawa, Ethiopia: E-mail: [haramaya\[at\]haramaya.edu.et](mailto:haramaya[at]haramaya.edu.et) or haramaya@haramaya.edu.et

6 Jimma University, Jimma, Ethiopia. E-mail: ero@ju.edu.et, Website: <http://www.ju.edu.et>

Agriculture and Veterinary Medicine (JUCAVM), Jimma University on 2006/07.

The numbers graduating at the bachelor degree level are substantially lower in Agricultural Economics departments than in Economic departments with little correlation between the apparent strength of the department and the specific numbers of graduating. The specific points to note for this case are; the country producing a reasonable number of B.A. degrees in Economics while there are currently a small number of B.Sc. degrees in Agricultural Economics being produced in Ethiopian universities. In the similar way Ethiopia where, against the wishes of Alemaya University, when the government closed the B.Sc. in Agricultural Economics in 1997, arguing that Agricultural Economics was simply a branch of Economics, which is taught at Addis Ababa. This was particularly disappointing given the importance of agriculture in the economy of Ethiopia (IFRI, 2001).

The emergence of Agricultural Economics bachelor degree has opened up the possibility of attracting applicants from a bigger pool of B.Sc. degree holders in the same field of the study. It has also improved the likelihood that the applicants for the M.Sc. degree will have a stronger background in Agricultural Economics, and the applicants have understanding of technical application of economic principles on agriculture, and will also likely be stronger because the entrance requirements for such B.Sc. degrees may count more closely with the types of skills expected to be demonstrated at the M.Sc. level which will increase the productivity of the professionals. Thus, there is a hope that increasing opportunity for selecting stronger individuals for the M.Sc. degree because of the changes that have taken place at the B.Sc. level in Agricultural Economics in many universities recently.

Currently, the demand for agricultural economists is increasing from time to time for different government and private institutions. One recent manpower study done by Voluntary Overseas Cooperative Assistance (VOCA) in Ethiopia (President of Alemaya University, Personal Communication) indicated that currently there are 994 Agricultural Economists employed by 34 agencies in Ethiopia. However, the study reported the current market demand for Agricultural Economists was 2,580 while the number needed to fill the current five-year plan(GTP) was estimated to be 2,635 need of Agricultural Economist professionals (IFRI, 2001).

Employment opportunities tend to increase with an increase in qualifications and experience of the professionals. University employment often appears to be a stepping-stone to employment on better terms of service outside academia, currently the Government of Ethiopia focusing on Agricultural Economics professional than previous time. Many of the graduated students are employed in Regional Bureau of Agriculture and Rural Development; the Federal Ministry of Agriculture and Rural Development, Higher Educational Institutions, Developmental Bank, Commercial Bank, and other government and non-government organizations.

In addition to previous Universities in the country the Government of Ethiopia following its second five-years plan (GTP2) announced to open eleven universities in coming year (2018) which are named as Bonga University, Dambidolo University, Dabaraq University, Injibara University, Jinka University, Kebri Dehar University, Maqdala University, Odabultum University, Raya University, Salale University and Warabe University; in all these Universities the department of Agricultural Economics planned to be opened, this is a good news toward the department and its professionals.

4. Future of Agricultural Economics

Previously, the study of Agricultural Economics is in a state of flux. Therefore, graduate in Agricultural Economics have faced uncertainty that concern their future. This uncertainty often increased and exacerbated by the current state of the discipline, due to such kind of uncertainty in employment opportunities Agricultural Economics face stress in searching for employment after graduation.

Let me put the discussion on the ground. In Ethiopia, even though Agricultural Economics graduate students and faculty aware, there are many potential options for employment for Agricultural Economists in different public and private sectors in addition to employment in Agricultural Economics department. However, the perception of many organizations including nonagricultural schools was not positive to hire Agricultural Economists. Therefore, the market demand for those professionals has been very thin.

In the past few years, several articles have been discussed to see the development, health and survival of Agricultural Economics department. Christenson *et al.*, (1995) predicted advancement in technology and increasing number of individuals intending the study of Agricultural Economics and need for additional education later in life is positive point for the survival and development of Agricultural Economics department.

The study by Jeffrey H. and Stephen B., (1997) was employed to test the perception of nonagricultural schools to hire Agricultural Economics and the found that Agricultural Economics graduate students have an opportunity to gain employment at different organization including arts colleges and Universities. Their study result shows out of 101 Economics departments that were surveyed 45% indicated that they would consider hiring an Agricultural Economics to fill a faculty position within their department and they place greater value on teaching related experience of the candidate.

The most surprising results by Jeffrey H. and Stephen B., (1997) was that only in year between 1991 and 1995 about 25% of Agricultural Economists were hired in economics department, in addition to this 55% of

Economics department heads those indicated they would not hire an Agricultural Economists intended to hire within five years. Therefore, from the review results it is predicted currently about 60% of Agricultural Economists employed in different nonagricultural sectors including economics departments, commercial bank, microfinance institutions, NGOs and private sectors in addition to the Agricultural Economics department.

The substantial share of the increase in the market demand for Agricultural Economics professionals in recent years is due to the government economic development plan in which the center of the plan is agricultural development and transformation plan in many developing countries like Ethiopia; and the demand for Agricultural Economists dramatically increased in research centers, Economics departments, different financial institutions, and food production and processing industries has increased the employment opportunities for Agricultural Economists.

The future concerns of next decades of this department materialize different questions like the organization form of the department under different institutions. Based on this focusing point Vernon W. Ruttan (1969) forwarded the following points. First, the center for development of regional and national agricultural economics research should be developed. Second, there is increasing interest to combine the existing Agricultural Economics and General Economics departments in to single units in which Agricultural Economics and its sub-disciplines represented additional fields of Applied Economics. Third, the existence of the Agricultural Economics department into Applied Economics department with broader responsibility for the service to the public and private sectors at national and local level.

Dobson (1995) was suggested that Agricultural Economics to develop and survive the current cuts in public funding and to position themselves, it is suggested that at higher level offered degree (M.Sc. & Ph.D.) in Agricultural Economics should be provided as applied economics degree, since the market for applied economist is perceived as being distinct from the market for Ph.D. Agricultural Economics because the title was restrictive, but the concepts and background of professionals beyond that. Dobson concluded his report by saying that the markets for Agricultural or applied economists are not longer a single market.

The national and international agencies are increasingly interested in employing the Agricultural or Applied Economists in the field of agricultural planning, program monitoring and evaluation, and management of different projects. Similarly, the demand for Agricultural Economists increased in higher educational intuitions, research centers, food processing and marketing agencies, and government policy advice and developing.

5. Conclusion

Agricultural Economists, both collectively and individually have served agriculture and non-agriculture economic sectors, and the whole society well for past eight decades. The profession has made significant contributions in the application of economic parameters affecting abroad range of production, marketing, Investment, and policy decisions.

Agricultural Economics developed largely as an empirical branch of General Economics. Economists pioneered empirical research and the joint application of theory and mathematics as well as Statistics. However, before the 1950s few general economists did empirical research, these make Agricultural Economists the first econometricians. The discipline was closely linked to empirical applications of mathematical statistics and made early and significant contributions to foundation of econometric methods.

The profession of Agricultural Economists are engaged in the scholarship of research, teaching in higher educational institutions, agricultural policy advice, project management, extension and service that emphasize specific areas such as farm and agribusiness management, marketing, international trade, natural resource and environmental economics, and community and international development. The Department of Agricultural Economics developed with the objectives to be connected with multidisciplinary research, teaching, extension and policy guidance service which affect the food production and processing system, natural resources and the environmental quality.

The numbers of shining Agricultural Economists are increasing from time to time; this because of the numbers graduating at the bachelor degree level is substantially increasing in different universities and countries which increase the probability in which number of professionals that have background in this department join M.Sc. level which can increase efficiency and effectiveness of the candidates.

The review results is predicting currently about 60% of Agricultural Economists employed in different nonagricultural sectors including economics department, commercial bank, microfinance institutions, NGOs and private sectors in addition to the Agricultural Economics department. This indicates that the markets for Agricultural or applied economists are increasing from time to time, therefore to narrow the gap in public findings the higher level provided degree (PhD.) in Agricultural Economics should be provided as applied economics degree.

Generally, regardless to the level of public and private organizations it will be necessary to continuously re-define the significance of the inter-disciplinary linkage which has given Agricultural Economics its unique relationship to both natural and social sciences.

6. Recommendations

- i. The professionals of this department should have to re-establish themselves under different professional associations and contribute to the development of their department and their respective country.
- ii. Universities have responsibility to select candidate for higher degree (M.Sc. & Ph.D.) in Agricultural Economics those have background in this department or at list related field like General Economics, and Agribusiness and Value Chain Management departments with supportive courses to increase productivity and efficiency of the professionals.
- iii. Agricultural Economists should not ignore their responsibilities and professional disciplines, values and servicing the community as well as infighting with poverty and hunger.
- iv. Since the employment opportunities for Agricultural Economists in public and private sectors, and international/national organizations are increasing, the department should accommodate and well prepare students to make them stand out in the markets.
- v. The department should prepare and present course lectures, provide different homework assignment, quizzes and exams to make students responsible and allow them to observe successful teaching styles.
- vi. Finally, this paper recommend that the title for offering higher degree (Ph.D.) in Agricultural Economics should be provided as Applied Economics degree, because for each department higher degree specialization is important, this will increase the market demand for the professionals of this department than ever.

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