



A CAREER AS AN AGRICULTURAL ECONOMIST



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AGRICULTURAL DEVELOPMENT AND AGRIBUSINESS

Graduates in these areas are in high demand because of the increasing importance of economics and management in the modern global food system, and public concerns related to the environment and resource use. (McGill University)

AGRICULTURE IS THE LARGEST EMPLOYER IN THE UNITED STATES, PROVIDING 21 million jobs, the vast majority of which are in agribusiness. (Fewer than three percent of Americans employed by the agricultural industries actually work on farms.) Agribusiness is a relatively new



term that refers to the business of agriculture, particularly the small number of large-scale corporations that control the industry and tend to be less concerned than traditional family farms with environmental protection and animal welfare. Agribusiness includes farmers; suppliers of products like seeds, fertilizer, and farm equipment; companies that process crops and those that manufacture food; and transporters, distributors, and sellers of agricultural products. It is a much bigger business than just farming. Processing, packaging, and marketing represent about 67 cents out of every dollar spent on food, while only 33 cents goes to the farm.

Agricultural economics is an applied social science that combines the technical features of agriculture with the principles of economics, business, management, marketing, and finance. It uses these tools to study and analyze the practices and policies affecting agriculture and to solve problems that affect crops, livestock, and the food and fiber industry. The discipline slants more toward microeconomics (the study of elements within an economy) than macroeconomics (the study of the economy as a whole).

Generally, the concerns of agricultural economists include:

- Prudent use of natural resources, as well as their conservation
- Promotion and marketing of agricultural products, including crops, livestock, and fishery
- Ways in which consumers and societies use limited resources to produce, process, market, distribute, and use food and fiber products
- Development of poor and rural economies, both in the United States and abroad.

The bottom-line objective of this field is to increase agricultural profitability and contribute to the health and prosperity of people and the planet. For instance, the United States and its citizens sponsor or contribute to a number of programs that provide food aid to developing countries. While there are many obvious positive aspects to such programs, they can also cause disruption in local markets, foster a dependency on outside sources of food, and lessen the incentive to produce food locally. These are the kinds of issues that challenge agricultural economists.

Agricultural economists study data and statistics to determine how supply, demand, management practices, and government programs and policies affect farm profits and the price of food. They create methodologies, such as sampling techniques or statistical models, for acquiring the data they need. They are trained to spot trends, detect patterns, and predict likely future events. Alone and in research teams, they evaluate data and present their findings in tables, charts, and written reports.

In addition to economics, these professionals are educated in business principles – in fact, many of the Ag Econ degrees conferred by the so-called land-grant universities in the United States resemble business degrees more than traditional economics degrees. The skills they cultivate, such as leadership, problem solving, and forecasting, are highly valued by employers. Therefore, a background in agricultural economics will open the door to a wide range of career options in private industry, government, and nonprofits alike.

Some are engaged in public policy, analyzing current procedures and influencing future measures. They may evaluate the ways in which trends in crop and livestock production affect the environment, or conduct research into agricultural trade policy. Faculty members at Iowa State University's Center for Agricultural and Rural Development (www.card.iastate.edu) are engaged in such projects as how income growth and rapid urbanization in Indonesia are shifting grain consumption from rice to wheat, and what that means for world prices and US producers. They also conducted an analysis of consumer perception and evaluation of food quality that concluded that the country of origin and butcher wield powerful influences on consumers' decisions about the purchase of pork. Another project is an empirical analysis using concentration data and product quality indicators that found when the concentration of manufactured goods increases, the products are more likely to be of higher quality.

Other agricultural economists use their education and training to manage farms, ranches, or agribusinesses, which are often giant multi-national corporations. They conduct financial analyses and establish production schedules that are designed to maximize profitability. They develop marketing plans to help sell the products, locate the best markets and prospective customers, and forecast production and consumption rates. They also help

determine optimum pricing to sell the most product at the highest price with the least likelihood of waste, leftovers, or excess inventory. Based on the history of the market, national and global conditions, and other trends, agricultural economists predict future events like supply and demand.

Agricultural economists are also involved in helping poor and rural communities prosper, evaluating the impact of agricultural production on the environment, and providing financing to agricultural outfits, among other activities. Many also teach at colleges and universities, where they also perform research in their areas of expertise, and a good number write articles for trade and professional publications.

In this report, you will learn more about the vital and rewarding work undertaken by agricultural economists. You'll find out the best ways to prepare for this career (hint: math, math, and more math), and what you can expect from an undergraduate curriculum in this discipline. We'll tell you what personal qualifications you should have, and the best and not-so-great aspects of this career. You'll also learn more about what the work entails, and where the jobs are. And you'll get a first-hand look at the profession from four agricultural economists (one of whom is just starting out, and one of whom is retired after an illustrious career). This is a greatly fulfilling career in a field that is full of promise and opportunity, so keep reading!

EXPLORING AND PREPARING FOR THIS CAREER

ECONOMICS AND THE ECONOMIC THEORY THAT IS THE FOUNDATION OF applied work like that of agricultural economics relies a great deal on mathematics. For instance, microeconomics, or the study of how consumers, households, and companies behave, uses math to determine the relationship between costs and prices on the one hand, and the production, distribution, and consumption of goods and services on the other. Macroeconomics, which considers the economy as a whole, including factors such as inflation, unemployment, and government policies, employs mathematical tools like control theory, which attempts to manipulate the inputs of a dynamical system (like a national economy) in order to generate the desired outputs.

Agricultural economists also use math and statistics to calculate risk and probability and to predict events like crop yield. Risk analysis is a critical concept in agriculture, which is inherently unpredictable because of unknowable factors like weather and disease and the management choices an individual farmer will make.

Econometrics is a practice that uses statistical techniques to quantitatively examine economic patterns and relationships, and is used to compare theories with hard data.

All of this is an elaborate way of saying that you should take as many math and statistics classes as you can during high school, and include Advanced Placement courses. Your college curriculum will include plenty of math, so make sure you have an aptitude for and enjoyment of it well in advance. If you do well on Advanced Placement exams, you may receive college credit for your effort and get a jump on your academic career.

Graduate study in agricultural economics is especially mathematically rigorous. Coursework in business, accounting, and computers will also help prepare you for your college curriculum.

Agricultural economics works within a framework of federal regulation and policy, so classes in political science, government, history, and civics would be helpful. Needless to say, you should take any economics courses offered at your school.

It is important that you can communicate effectively, because economists are called upon to present quantitative findings in a way that can be understood by people who do not have your education and training – ranging from elected officials to executives to journalists to residents of third-world countries. Because agriculture and resource management are increasingly global concerns, you should study at least one foreign language.

If there are any opportunities to speak to agricultural professionals in your community, do so. Contact the American Agricultural Economics Association (www.aaea.org/contact.cfm) to see if one of its members would be willing to talk to you about his/her career.

Can you get a summer job on a farm or a ranch, or work after school at an agribusiness firm? These experiences will give you an introduction to how agriculture-related business decisions are made. But agricultural economists work in many other areas, too,

and use a broad range of skills, including decision making, problem solving, data analysis, critical thinking, and communications. They work for financial institutions, nonprofit organizations, governments, and many other types of employers. As you read this report, try to think of jobs with businesses in your community that would introduce you to some of the kinds of tasks agricultural economists undertake.

If you are still in high school, now is the time to investigate colleges and take steps to ensure you conform to the admission requirements of the schools of your choice. Every US state and territory has a land-grant university, and many of these have programs in Agricultural Economics or related disciplines such as Agribusiness. (The Land Grant Act of 1862 gave large tracts of federal land to the states, which were to sell the land to fund at least one college of agriculture.) You can find a list of educational institutions with relevant programs on the website of the American Agricultural Economics Association (www.aaea.org/career/colleges/). Look at each department's areas of specialization to see which ones you find intriguing or stimulating.

Just for fun, visit the Teen Scene page on the website of Agriculture in the Classroom, a program that is coordinated by the US Department of Agriculture with the goal of enhancing students' awareness of the role of agriculture in the economy and society. There are ideas and information about science fairs, careers, ag science in the city, alternative fuel research, resource conservation, emerging technologies, and weather and crop production.

The website address is www.agclassroom.org/teen/teen2.htm

There is also an e-zine at www.agclassroom.org/teen/agro/ezone.htm

HISTORY OF THIS CAREER

TWO MEN STAND OUT AS PIONEERS IN THE FIELD OF AGRICULTURAL economics in the United States, William J. Spillman (1863-1931) and Henry C. Taylor (1873-1969).

Spillman, who studied both mathematics and agriculture, was an educator for the United States Department of Agriculture (USDA) (www.usda.gov), which was established by Congress in 1862 to aid in the development and distribution of information that would help boost agricultural production.

In hundreds of articles and several books, Spillman addressed the problems of overproduction and low prices, and his concepts fashioned the nation's agricultural policy. Spillman advised farmers to rotate crops and to integrate livestock, and instructed them in plant genetics. He was a trailblazer in the field of farm management by conducting research into how the most profitable farms were operated and the effect of such factors as distance from markets, leasing deals, climate, soils, and farming methods. He helped develop cooperative, educational, and outreach programs that have since become the Agricultural Extension Service. Spillman also dedicated his career to such issues as sustainability and the law of diminishing returns (an economic principle that has more input yielding less output) that are still critically relevant today.

By 1909, the term "farm economics" was regularly used at the USDA, and the following year, the American Farm Management Association was established, with Spillman as its first president. In 1919, the American Farm Management Association merged with the Association of Agricultural Economists to form the American Farm Economics Association, now the American Agricultural Economics Association. The International Association of Agricultural Economists was founded in 1929 by 50 agricultural economists from 11 countries.

Henry C. Taylor, who came from a prosperous farming family, was the first managing director of the Farm Foundation (www.farmfoundation.org), whose mission is to improve "the economic health and social well-being of US agriculture, the food system, and rural people, by helping private and public sector decision makers identify and understand forces that will shape the future." Taylor also headed the USDA's Bureau of Agricultural Economics and helped establish the Department of Agricultural Economics at the University of Wisconsin.

As farms became increasingly industrialized, farmers formed cooperatives in order to maintain control over the marketing of their commodities, but they still struggled to turn a profit. The genetics techniques Spillman had taught farmers actually led to overproduction, which in turn resulted in lower prices for many commodities and a downslide among family farms. To resolve these problems, Spillman conceived of agricultural allotments, the concept underlying the federal farm programs that provided financial assistance to help family farms compete and thrive. In the 1920s and 1930s, the government began to intervene significantly in the agricultural arena. Franklin Roosevelt's New Deal, which enacted perhaps the first truly effective farm legislation, gave the secretary of agriculture the authority to control crop production. For example, controls over how much of any crop a farmer may plant were implemented.

Many other countries have also taken steps to influence the conditions of supply and demand. But by no means do all economists endorse massive government intervention in all agricultural markets. Government subsidies for farms in first-world countries like the United States have been criticized because they result in surplus commodities being dumped on international markets, ruining opportunities for farmers in developing countries, who not only cannot earn a living by selling their goods, but end up becoming consumers of subsidized imports because they are less expensive than locally produced items. On the other hand, subsidies give poor people access to things like fresh produce that might otherwise be cost-prohibitive. The wealthy nations are disinclined to remove the subsidies because then their farmers, with their costs of labor and other resources, would not be able to compete on a global basis. Farms would decline and jobs would be lost, and politicians are loath to enact legislation that favors poor, third-world farmers over their own. Throughout the 20th century, the United States instated, eliminated, and reinstated subsidies. It is a complex issue, of the most challenging type that agricultural economists grapple with.

WHERE YOU WILL WORK

TRAINING IN AGRICULTURAL ECONOMICS WILL PREPARE YOU FOR A VARIETY OF careers in a wide range of industries. Agribusiness firms that manufacture, process, market, and distribute chemicals, equipment, seed, and fertilizer or provide animal health services, as well as food retailers and manufacturers, all employ agricultural economists as sales representatives, production managers, and retail managers.

Rural banks, financial planning firms, credit companies, and other financial institutions that provide farmers with services and loans hire agricultural economists as lenders, planners, and analysts. Their business and financial acumen also makes agricultural economists well-suited to estate planning and real estate appraising.

They also work for local, state, and federal government agencies engaged in production, marketing, credit, natural-resource management and conservation. Government employers include the National Marine Fisheries Service (www.nmfs.noaa.gov/), Environmental Protection Agency (www.epa.gov/), and US Department of Agriculture (www.usda.gov/). Work is found at farms, ranches, and agricultural extension services.

Media companies, law firms, and consulting firms employ agricultural economists. Educational institutions rely on them to instruct the next generation of agricultural economists.

In the nonprofit arena, environmental groups, commodity organizations, research outfits, and advocacy groups like the Environmental Defense Fund (www.edf.org/), the Nature Conservancy (www.nature.org/), and the Food Alliance (www.foodalliance.org/) retain these professionals to decipher the implications of agricultural policy, promote sustainable agriculture, reward farmers who produce food in socially responsible ways, and educate consumers. The Rockefeller Foundation (www.rockfound.org/) focuses on providing support to “poor and excluded” populations, including rural residents of developing countries. The W. F. Kellogg Foundation (www.wkkf.org/) aims to help people help themselves by applying knowledge and resources in the area of food systems and rural development.

International organizations like the World Bank (www.worldbank.org) and United Nations (www.un.org) offer opportunities. International research centers, such as International Maize and Wheat Improvement Center (www.cimmyt.org/) and International Crops Research Institute for the Semi-Arid Tropics (www.icrisat.org/) are also a source of employment. Many international organizations offer the opportunity to work overseas.

Oklahoma State University lists the following as examples of companies and organizations that have employed graduates of its Agricultural Economics program:

- Farmers Insurance Group
www.farmers.com/
- Regions Bank
www.regions.com
- National Agricultural Statistics Service
www.nass.usda.gov/index.asp

- Halliburton Company
www.halliburton.com/
- John Deere
www.deere.com
- BancFirst
www.bancfirst.com/
- American Corn Growers Association
www.acga.org/
- Archer Daniels Midland
www.admworld.com/
- Arrowhead Yacht Club
www.arrowheadok.com/
- Chickasaw Nation
www.chickasaw.net/
- Colorado Beef Council
www.cobeef.com/
- Edmond Bank & Trust
www.edmondbank.com/
- Farm Credit Services
www.farmcredit.com/

- Hormel Foods
www.hormel.com/home.asp
- Koch Industries
www.kochind.com/
- Novartis
www.novartis.com/
- Seaboard Foods
www.seaboardfoods.com/
- Bank of Oklahoma
www.bankofoklahoma.com/
- US House of Representatives, Congressional Staff
www.house.gov/

THE WORK YOU WILL DO

AGRICULTURAL ECONOMISTS USE ECONOMIC TOOLS AND PRINCIPLES TO examine issues, and solve problems related to agriculture, food, rural populations, and natural resources. They influence government policy, promote environmental conservation, provide economic and management information to farmers and ranchers, help rural communities thrive, procure and sell commodities, approve loans, and perform a great variety of other tasks in an array of positions for a broad range of employers.

Policy Analysis The United States Department of Agriculture, the International Food Policy Research Institute, universities, and other organizations employ agricultural economists to help develop public policy with objectives such as finding sustainable solutions for ending hunger and poverty in the developing world, understanding the role of governance in promoting rural and agricultural development, analyzing how agribusiness affects world economies, and determining the optimum level of government intervention in the free market. For instance, many economists contend that crop subsidies increase production costs, decrease commodity prices, hurt small farmers, interfere with trade patterns, and destroy the viability of farms in third-world countries.

Agricultural economists attempt to answer questions like: How do farm and food policy affect farm income, government costs, and trade? How do farm subsidies and food programs redistribute income and wealth, and is this a benefit or a drawback? How have policies affected the structure of agricultural markets? How do policies and technological progress interact? Does the fact that Americans spend relatively little money on food drive the general economy? What public programs have been eliminated in order to finance agriculture subsidies? How does increasing consolidation in the food processing industry affect small farmers and poor households? Have remittances from migrant workers to family members in developing countries helped to reduce poverty?

To address these questions, agricultural economists first conduct research. They review literature; compile and analyze statistical data; design, implement, and analyze surveys; and use modeling tools to investigate the consequences of alternative policies. They present their results at meetings of professional societies and publish them in technical journals. They also communicate their findings to farmers, educators, legislators, the media, and the general public.

One of the principal federal employers is the Economic Research Service of the US Department of Agriculture, where economists and social scientists conduct investigations in four areas – Food Economics, Information Services, Market and Trade Economics, and Resource and Rural Economics. They disseminate information via published reports, magazines and websites, briefings, and articles in professional publications.

Finance Institutions like Discover Financial Services and American Express Company employ agricultural economists for their analytical skills and strategic thinking. In this capacity, they design and develop models for predicting consumers' credit behavior and for detecting and preventing fraud. They complete root-cause analyses, apply economic concepts to business problems in the areas of consumer credit and risk management, and interpret statistical findings. Rural banks also use economists to make loans to their agricultural clients.

Some individuals educated as agricultural economists find work as commodities traders for brokerage firms, where they arrange and negotiate sales between buyers and sellers of

commodities such as grain. The Securities and Exchange Commission requires sellers of investment products to pass a battery of tests.

Non-financial institutions also use agricultural economists to provide finance-related services. A large restaurant chain recently advertised for a commodity analyst to study US and global changes in commodity supply and demand in order to make recommendations to minimize the impact of cost changes and to help the employer make well-timed purchasing decisions.

Extension Service

The Cooperative Agricultural Extension Service of the US Department of Agriculture was established in 1914 to utilize the results of the research conducted at the so-called land-grant colleges (there is at least one in each state and territory) as well as to educate the public in agricultural and other matters so they can improve their lives and communities. Accordingly, Extension economists can expect to spend a good deal of time on educational endeavors, such as maintaining a website that provides marketing, financial management, risk management, and decision-making support to farm and agribusiness administrators. Other duties might include publishing and analyzing data such as grain prices or the beef cattle production cycle; preparing reports on agricultural finance; creating budgets for entire farms; engaging in research on commodity marketing; and developing educational programs to improve the efficiency and profitability of the state's peanut, cotton, and corn crops.

Two specific Extension initiatives are the Farm Financial Management Program, whose purpose is to integrate the factors of production with the principles of financial management to create a farm business sector that is economically and ecologically sound and socially responsible. The other is the Trade Adjustment Assistance program, which provides technical and financial assistance to wild fish harvesters and others adversely affected by competition from imports.

Agricultural economists who work in Extension sometimes do double duty as instructors or professors at the universities that employ them. A doctoral degree is generally required to teach at the college level.

Sales and Marketing

A number of agricultural economists launch their careers as sales representatives, for companies that produce everything from canola oil to feed supplements to fertilizer to grain elevators, and then move up into management positions after they become thoroughly familiar with the company's products and customers.

Salespeople present and demonstrate their employers' products to farmers, ranchers, and other customers and explain how the products can reduce costs, increase profitability, or otherwise enhance the client's business. Their territories may include several states and, consequently, they spend a great deal of time traveling. They show product samples, distribute catalogs, and visit sites where equipment is being installed. They follow up on clients who have made purchases, troubleshoot when necessary, and try to sign up new accounts by contacting referrals from current customers, attending trade shows, and making cold calls to prospects.

An educational background in business also makes an agricultural economist a good candidate for marketing occupations. Marketers establish promotional budgets and strategies, arrange co-op advertising deals with dealers, and coordinate with advertising agencies. They may prepare educational programs to tout the benefits of their products to consumers, health professionals, cooks and chefs, the government, and the food industry.

Rural Development

Some agricultural economists are engaged in rural economic development, both in this country and abroad. The economies of communities that rely heavily on agriculture have suffered with the consolidation of the agricultural industry into fewer and larger businesses, and young people from rural areas, seeing very little opportunity, are fleeing to urban centers. Agricultural economists devise and administer programs to enhance economic opportunity and quality of life in rural communities. One way to make rural areas self-sustaining is to support viable businesses that can compete on a global level.

Another tactic is to encourage families to relocate to small towns by promoting the tax advantages, affordable housing, and access to nature in rural areas. Advances in telecommunications, particularly the broadband revolution, mean that people can run businesses out of their homes, so agricultural economists have urged rural communities to invest in technology infrastructure.

Opportunities for rural economic development also exist in new energy sources that are mainly rural and agriculture-based: ethanol, biodiesel, wind, and solar.

Agricultural Management

In today's intensely competitive and increasingly global marketing environment, farms and ranches need managers who can analyze and respond to market conditions. Agricultural economists are specialists in the business facets of operating such an establishment. This means hiring and overseeing workers, evaluating financial resources, setting production goals and monitoring output, supervising marketing efforts, arranging for crop transportation and storage, and managing the upkeep of property and machinery.

Agricultural production and profits are at the mercy of numerous capricious factors, including weather conditions, the presence or absence of pests and diseases, and price fluctuations based on supply and demand. Agricultural economists endeavor to minimize risk by evaluating which crop combinations will most likely provide a cushion against losses; calculating when to plant, fertilize, harvest, and market; determining whether it makes more sense to sell to food processing companies (which buy in bulk) or to consumers (where the profit margins are higher); and deciding whether to risk participating in the futures market. Participants in the futures market sign contracts that guarantee a certain price for goods at some specified date in the future. This practice can protect farmers and ranchers from unexpected plunges in pricing for agricultural products, but it can also backfire.

Environmental Law

Environmental law is another career possibility for students with undergraduate degrees in agricultural economics and the interest and resources also to obtain a law degree (JD). Environmental lawyers work in law firms and in the legal departments of corporations, government agencies, and nonprofit organizations. In addition to negotiating agreements, advising clients and defending their actions, as all lawyers do, environmental lawyers administer regulatory programs for the government, monitor private companies' compliance with government regulations, help agricultural clients file environmental-related applications, advocate and lobby in the political arena, and mediate between opposing parties in disputes addressing such issues as global warming, pollution control, endangered species, and hazardous waste cleanup.

Consulting Consulting is another career possibility, and includes employment by private firms as well as self-employment.

Consulting firms may be engaged in natural resource industries, such as forestry, fisheries, or land management. Crop consultants use weather-based models to forecast crop, pest, and disease outcomes for use by manufacturers of herbicides, pesticides, and fungicides. Some consulting firms specialize in regulatory and policy matters like economic impact assessments.

AGRICULTURAL ECONOMISTS TALK ABOUT THEIR CAREERS

*I Am a Professor at the
Purdue University
Climate Change
Research Center*

"Agricultural economics is really applied economics. It is the economics of real-world problems and policy issues. I like working on real-world problems. That is why I switched from economics to agricultural economics. My PhD is actually in economics, but I found I liked the applied work much better.

I do research, teaching, and extension. My day is a mixture of all these, plus international work. On a typical day, I might be teaching an hour or so, meeting with students on research projects for a couple of hours, taking media calls on energy and agricultural issues, preparing extension materials, and conducting research. I like the variety of topics and areas of work. I like the stimulation I get from interacting with students and citizens in the state. What I do not like is committee work, and any academic institution has some of that.

Our profession requires good math skills. Students should get as much math as they can, preferably through calculus. Good writing is essential, so also take courses that require you to write."

*I Was a Senior
Economist With the US
Department of
Agriculture's Economic
Research Service in
Washington, DC*

“After a naive entry and eye-opening completion of a BS degree in commerce, I was so turned off by the business world that I decided to return to farming. A redeeming feature of my undergraduate experience was after-hours voluntary seminars with two young, energetic economics teachers. They were great and, as it turned out, most influential in my career.

After I received my degree in commerce and returned to farming, I had an injury, and while recuperating had plenty of time to reflect on what I really wanted to do with my career, so I applied to graduate school in several places, and chose Iowa State University. I worked hard, finished my master's, did course work toward my PhD, and traveled on a scholarship to India, where I wrote my doctoral dissertation on land reform in India after independence. After I completed my doctorate, I went to work for the US Department of Agriculture, where I stayed 40 years. During my employment there, I taught a little, returned to India on another scholarship, was a fellow at Yale Law School for an academic year, and had a number of short-term assignments abroad. I retired, continued a little work in the Ukraine and Albania, and I continue to study and write.

Tasks then as now include problem solving, isolating issues, finding explanations, and communicating the results of the inquiry. In short, I have spent over 50 years in land economics and agricultural economics.

What I enjoy most about this work is “the chase” – pursuing explanations, demystifying, and writing about what I uncover. Most rewarding is the finished product (although an inquiry is never really finished).

There are always nuisance chores. My challenges now are finishing three books I have underway, and some other areas of study. Then, who knows what?

Students who are interested in pursuing this career should take a great variety of courses. Economics asks for a good grounding in math. Some familiarity with biology, genetic science, maybe physics are important, and study all the literature and history you can find. Learn how to READ, and learn how to WRITE. Learn how to speak, one-on-one and publicly. I also believe strongly that young people should learn to play at least one musical instrument, at least to your satisfaction, even if you never go public. Learn how to build, make, and repair things. Run or do other endurance-related physical things, keep healthy, avoid bulk. Smile!"

*I Am a Professor of
Agricultural Policy With
a Special Expertise in
Economic Reform and
Agricultural
Development in the
Ukraine*

"As a child I spent 9 months living on a relative's farm, and this sparked a lasting interest in agriculture, farm life, and the countryside. I decided to major in Agricultural Economics as a sort of compromise between a social science (this is where the really difficult and important questions facing mankind are to be found, and perhaps solved) and agriculture. I was offered fellowships to pursue a master's degree (in Canada) and PhD studies (in Germany, where my father came from). At some point it just seemed clear that I would pursue an academic career. In the midst of my PhD studies the Iron Curtain came down and the Cold War started. Germany and Europe in general were very exciting places to be, so there was no shortage of work and interesting research topics, and I ended up staying here.

My workday involves teaching, research, and administration, in roughly equal proportions. A typical day involves giving one or two lectures and meetings with students and doctoral candidates. Two or three times a week there will be a meeting with colleagues over some administrative point in our department or faculty, and hopefully I will have a few hours to catch up on the journals and work on my own projects. I travel a lot, probably an average of about three trips every two months; I recently visited Israel, Kiev, and Washington, for example.

I edit a professional journal, as well, and this takes probably a day and a half of my time each week, and puts my workload a little over the top. The editorship will end in about six months (after six years), and I look forward to having more time for reading and research of my own.

The research and working with students and colleagues who share my fascination for the workings of the agricultural economy are the best parts of my work. I love the flexibility, too. In the short run I am usually over-committed, but in the medium to long term, I can pick and choose projects – next year, I could be working on completely new topics.

The teaching and administrative burdens in Germany are considerably higher than at comparable institutions in North America. We are expected to compete in terms of publications and fundraising with colleagues in the States who have at most one-half of the teaching load and generally considerably less administration to deal with.

You do not have to come from a farm to get into this profession, but it is useful to have some experience with farms, agribusinesses, and rural areas (through an apprenticeship or part-time summer jobs, for example). If you want to work in ag economics, get a sound background in microeconomics, macroeconomics, math, and statistics early on. This will make it easier later to get to the frontier in whatever special areas interest you. A foreign language (Spanish, French, Chinese, Russian, German, whatever) will open all sorts of doors. Whatever you do, do something that you can get excited about. There is nothing more boring than bored people, and just about anything can be fun, if you go at it with enthusiasm.”

Agricultural Economics Is a Profession Full of Opportunities!

“Originally, I am from Germany, where I received a bachelor’s degree in food sciences and a master’s degree in food economics. My German field of study, Food Economics is closely related to the field of Agricultural Economics. In the US, there are several established departments that are known leaders in the instruction of agricultural economists. Knowing that American programs in agricultural economics provide a strong foundation in economic theory and quantitative analysis along with practical applications to agricultural issues, I became interested in pursuing an advanced degree in the United States.

Especially in the field of agricultural economics, the US universities offer a greater selection of courses than do their German counterparts, as well as greater opportunities for research. In 1999, I was awarded a scholarship to study at Kansas State University, where I completed the master’s program in agricultural economics. In 2005, I graduated with a doctoral degree in agricultural economics from Purdue University, specializing in agribusiness and industrial organization and marketing. For my dissertation research, I worked on determining the impact of food prices and policy changes on obesity in the United States. My dissertation won the Outstanding Dissertation Award of the Year by the Agricultural Economics Department at Purdue, and it has been submitted to compete for the American Agricultural Economics Association Award for Outstanding Dissertation.

Currently, I am working as an Assistant Professor at Arkansas State University. I am teaching applied statistics and marketing, and I am working on determining economic impacts on childhood obesity. I greatly enjoy my work, because it allows me to interact with students, faculty, and researchers from other fields. I am involved in several committees with the American Agricultural Economics Association, and I greatly enjoy the ability to network with members across the world. During the year, I attend several

professional meetings and conferences where I present my research. These meetings present great opportunities for me to make contacts with other researchers from all over the world, broaden my knowledge, and also stay current with the latest research projects.

Agricultural economics is an excellent field of study with a great variety of opportunities! Given that food and agricultural raw materials are produced, processed, traded, financed, regulated, marketed, and consumed worldwide, there are many different specializations within the agricultural economics profession that will match your interests!

My secret to success is staying on top of things by being organized, motivated, and creative. Grades are important, but engaging in extracurricular activities is just as important. It enhances leadership and professional skills that are not part of academic programs, but that are essential to long-term professional success. Extracurricular activities allow you to face and master a variety of challenges, including multitasking and social skills. Becoming involved enhances your education and expands your horizon of future career opportunities."

PERSONAL QUALIFICATIONS YOU WILL NEED

AGRICULTURAL ECONOMISTS CAN CHANNEL THEIR ACADEMIC BACKGROUNDS and experiences into a number of different occupations, from farm management to corporate sales to advocacy to government service to academia. Each individual career field will require certain specific traits. But there are some qualities that all agricultural economists should possess, or be willing and able to cultivate.

Because of the type of education that is required for this career, agricultural economists must have an interest in and aptitude for mathematics and science, as well as computers. Basic accounting skills are often called for, as well.

Perdue University has this heading on its agricultural economics website: Agricultural economists study farm and ranch management, government policy, trade statistics, overseas development, and other research data that help them devise the best answers they can to practical questions.

Agricultural economists are analytical, they are detail-oriented problem solvers, and – because this is an applied science – they are frequently found seeking a more effective or a more efficient way to get some project accomplished. They are logical and have an investigative bent. Policy changes come about gradually, and farmers may be reluctant to implement recommended changes, so patience and persistence are also important assets. Good judgment and a certain degree of intuition help agricultural economists make the decisions and offer the recommendations that influence individuals, enterprises, and governments.

In their work habits, agricultural economists must be orderly and organized because they are frequently found multi-tasking.

A good head for business is essential. Agricultural economists must understand production, processing, consumption, distribution, and market principles and be able to forecast likely future scenarios such as supply and demand of specific resources. They are often responsible for managing financial resources.

Communications and leadership skills will help you manage and motivate a team of people and make decisions. Interpersonal skills are especially critical for those who intend to begin their careers as sales representatives. They will also help you in your career when you network at the industrial and professional conferences or seminars you will attend. You may well be called upon to make your own presentations before an audience of people who do not share your educational background or professional experience, so the ability to convey ideas clearly will be needed. For instance, you may find yourself interpreting agricultural policy for a commodity organization, explaining new technologies to a group of ranchers, or describing international trade patterns to government agencies. You might be analyzing market conditions for farmers, lobbying Congress on behalf of an environmental group, advising a community group on environmental production, instructing food processors on techniques for the protection of ground water, or promoting products for a grain merchandiser. You will also need the confidence to make recommendations to executives, legislators, and other influential people.

ATTRACTIVE FEATURES OF THIS CAREER

YOUR EDUCATION AND TRAINING IN AGRICULTURAL ECONOMICS WILL HELP YOU acquire knowledge and develop skills that will prepare you for an array of careers, and there are many ways to carve out your own niche in this field. You can become involved in sales, marketing, management, finance, retail, food production, public policy, advocacy, academia, agricultural extension, and more. There are literally hundreds of careers for which your studies and internships will prepare you. As one agricultural economist interviewed for this report noted, "Agricultural economics is more than just cows and wheat."

This is meaningful and vital work. What could be more essential than food, fiber, and natural resources? Agricultural economists influence government policy that, in turn, affects millions of lives – alleviating hunger and rural poverty, for example. They help farmers and ranchers improve efficiency and increase their profits, and they also approve the loans that will help their businesses grow. They help companies market and sell the products yielded by these farms and ranches. They help third-world countries enhance their economic strengths. They work to resolve the growing pressure on the world's natural-resource base, promoting a healthier planet for all humans. And they contribute to human health by developing new technologies to improve food production and processing.

As an applied science, agricultural economics is a discipline that solves practical, real-world problems. It is very rewarding to make such contributions. It is also intellectually stimulating to try to make sense out of situations and figure out answers.

The outlook is strong for this profession. As Montreal's McGill University says on its website, "There has never been a better time to choose a career in agricultural economics, agricultural business, or natural resource economics. Graduates in these areas are in high demand because of the increasing importance of economics and management in the modern global food system and with public concerns related to the environment and resource use." Demand will only increase as agriculture becomes increasingly global and high-tech.

Agricultural economists who teach enjoy the rewards of associating with colleagues and students who are as enthusiastic about the field as they are.

UNATTRACTIVE FEATURES

THERE ARE SOME FRUSTRATING ASPECTS TO A CAREER AS AN AGRICULTURAL economist. Farmers and ranchers may not take your advice or heed your recommendations regarding their management practices. Members of rural communities may be reluctant to change the way they do things, even to strengthen their local economies. Changes in public policy can seem to take forever, or may not occur at all.

Conducting research, such as creating macroeconomic models and creating, conducting, and analyzing surveys, can be time-consuming, but are necessary, no matter how much you'd rather be out in the field implementing changes and improvements.

The agricultural industry is at the mercy of elements that you cannot control, such as climate, weather conditions, disease, federal aid, and price fluctuations in the market.

Agricultural economists in teaching positions may find they have very little time to do their own work in their areas of interest and expertise.

EDUCATION AND TRAINING YOU WILL NEED

AT THE COLLEGE LEVEL, STUDENTS MAJORING IN AGRICULTURAL ECONOMICS cultivate their marketing management, leadership, applied research, and problem-solving skills within a framework of business and economic principles that prepare them for occupations on the farm, or far afield: in government, for instance, and in business and industry.

Curricula generally examine the relationships between the agricultural sector and other sectors of the economy. You study how production, processing, and marketing, relate to the use and consumption of agricultural goods and services. Studies of physical and social sciences are included to help students understand the agricultural environment and learn to solve the economic problems the industry confronts.

Undergraduate agricultural economics programs typically incorporate instruction in environmental and natural resource economics, development economics, community and rural economics, and agribusiness. Agricultural economics can be highly interdisciplinary, and there may be quite a bit of overlap between seemingly distinct fields.

Some positions, such as those in academia and certain higher-level business and government jobs, require an advanced degree. Graduate programs are heavy on the mathematics, but also focus far less on theoretical models and much more on the application of the principles of economics. In doctoral programs, the work is extremely applied, with students engaging in research projects funded by outside sources.

Colleges and universities offering agricultural economics programs tend to be clustered in the Midwest and the South, although there are certainly exceptions. The following are just a few of the distinguished programs you should consider.

Purdue University (West Lafayette, Indiana)

www.agecon.purdue.edu/undergrad

Purdue University's Department of Agricultural Economics is one of the world's largest, with about 330 undergraduate students and 42 full-time faculty members who work directly with industry to bring back real-world cases to the classroom.

Within the department, students have the option of specializing in food industry marketing and management, agricultural finance, sales and marketing, agribusiness management, or farm management.

Recognizing globalization as an important trend in the food and agricultural industry, the department strongly encourages its students to spend time studying or working abroad, and they have done so in Australia, Brazil, China, England, France, Honduras, Japan, New Zealand, Poland, Russia, Sweden, and elsewhere.

For personal and career development, Purdue maintains a list of internships and offers assistance in writing résumés and cover letters and giving winning interviews.

Opportunities for extracurricular involvement include the Agricultural Council; Agricultural Economic Envoys, and the Agribusiness/NAMA Club.

University of Wisconsin (Madison)

www.aae.wisc.edu

The nation's first agricultural economics department was established at the University of Wisconsin-Madison. Today, students majoring in Agricultural and Applied Economics study:

- Management and marketing in agricultural, food and natural resource businesses
- Global markets and trade
- Agricultural production and technical change
- Markets and prices in the food system
- Environmental and natural resource economics
- Growth and development in low-income economies
- State and local economics
- Natural resources and sustainable development

The university's Agricultural Business Club helps students learn about professional learning opportunities, including internships. Members take road trips to the Chicago Board of Trade, the Chicago Mercantile Exchange, and the Federal Reserve. Madison's student chapter of the National Agri-Marketing Association competes with other chapters in a national marketing competition, enabling participants to learn about launching a product and attracting the attention of potential employers. Students also intern in such fields as marketing, commodity trading, agricultural production, natural resources, food processing, and government agency service.

Texas A&M University (College Station)

agecon.tamu.edu

The Department of Agricultural Economics at Texas A&M is devised to offer studies related to agricultural, food, managerial, and resource economics to aid sound decision-making decisions in such areas as agribusiness, natural resources, and communities. The Agricultural Economics degree is available in food and fiber marketing, farm and ranch management, and resource economics options.

Texas A&M's extensive extension economics programs are designed to help agricultural producers overcome challenges and obtain the most up-to-date management principles, and to furnish policymakers with the information they need to engineer efficient, effective strategies. Outreach, and research efforts include Farm Assistance (trmep.tamu.edu/farm.htm), Tomorrow's Top Agricultural Producers (tepap.tamu.edu/), the Agricultural and Food Policy Center (www.afpc.tamu.edu/), and the Center of North American Studies (cnas.tamu.edu/), and Agriculture Market Research (agrinet.tamu.edu/tamrc/).

Oklahoma State University (Stillwater)

agecon.okstate.edu/

Students may select majors in agricultural economics or agribusiness and can specialize in one of eight options (such as international agricultural marketing). Some key courses include:

- Introduction To Agricultural Economics Theories of production, marketing, role of agriculture in the economy; policies.
- Quantitative Methods in Agricultural Economics Indices, graphics, budgeting, discounting, statistical measures, microcomputers, and price analysis.
- Agricultural Production Marketing and Sales Identifying customers and customer needs and establishing relationships. Requires spending a day with a salesperson and making a sales presentation.
- Natural Resource Economics Applications of microeconomic theory to the management of soil, water, and other resources; supply and demand, resource allocation, rights of ownership, taxation, police power, and eminent domain.
- Quantitative Price Analysis Quantitative analysis of agricultural supply and demand in situations involving risk and uncertainty.
- Commodity Futures Markets Mechanics of trading, aspects of commodity prices, strategies, regulation.
- International Agricultural Markets. Theory of trade and monetary flows, national trade policies, world market structures, impact of trade on the domestic agricultural industry.

- **Advanced Farm and Ranch Management**
Use of spreadsheets to perform production planning and analysis with linear programming, simulations, and other tools. Use of information systems in analyzing resource allocation and in managing an individual farm or ranch business.
- **Environmental Economics and Resource Development**
Economic, social, and political factors relating to conservation, natural resource development and environmental quality. Valuation of prices and resources. Analysis of policy and the role of public and private agencies in conservation and development.

Internships are a part of the program and include supervised work experience with approved employers like banks, farm credit services, agriculture chemical firms, Soil Conservation Services, and Congressional offices. There is also a required course in Professional Career Development, and there are opportunities for international travel. In the unlikely event your college or university does not sponsor internships, you can find a listing on the website of the American Agricultural Economists (www.aaea.org/classifieds/).

WHAT YOU WILL EARN

SALARIES FOR AGRICULTURAL ECONOMISTS CAN VARY CONSIDERABLY depending on the employee's level of education attained. Advanced degrees justify larger earnings, and sometimes applicants with double majors at the undergraduate level can command higher salaries. Your number of years in the profession, prevailing wages and cost of living in the geographical location where the job is situated, and level of responsibility, also will affect your earnings. Generally, private-sector positions pay better than government jobs. Nonprofits are at the low end of the spectrum.

Universities graduating students with degrees in agricultural economics maintain that the average starting salaries in this profession range from \$30,000 to \$40,000. This may be a bit optimistic, since the starting salary offered by the federal government for an employee with a bachelor's degree in economics is between about \$25,000 and \$30,000, and the upper limit is for those with exemplary academic records. These figures refer to all economists, not just those in the agricultural specialty.

Salaries rise significantly with education and experience. Those holding master's degrees are eligible for positions with the US government that start at over \$37,500 per year, and PhDs start at between roughly \$45,000 and \$55,000, depending upon work experience. The federal government pays senior economists nearly \$90,000 a year, on average. However, the overall salary of the average agricultural economist is estimated at closer to \$75,000 per year, while the top 10 percent of all economists working for private companies earn \$125,000 and up.

Careerists who are not employed specifically as agricultural economists may face a different pay structure. For example, those who work as salespeople may be compensated with a combination of salary plus commissions and/or a bonus, based on how much business they generate. The more technical or specialized the knowledge required, the higher the salaries tend to be. Median annual earnings of wholesale and manufacturing sales representatives of technical and scientific products are about \$65,000.

Loan officers may also be paid a commission based on the value of loans they generate. The median earnings of loan officers are about \$55,000. Commercial loan officers with experience earn about \$75,000 to more than \$100,000.

Professionals in the investments industry, such as commodity traders or brokers, can earn up to \$80,000 per year or more, including bonuses based on the firm's success.

Full-time college faculty members in all disciplines earn an average of about \$75,000, with full professors averaging roughly \$100,000; associate professors, \$70,000; assistant professors, \$60,000; lecturers, \$50,000; and instructors, \$45,000. Private, independent colleges and universities offer the highest salaries, followed by public institutions and private schools with religious affiliations. Faculty members frequently augment their salaries with income from consulting, research, publishing, and other employment.

The net incomes of self-employed farm and ranch managers fluctuate due to unpredictable factors governing the quantity and quality of production, or supply and demand, and can range from \$25,000 per year to about \$75,000 or more.

Benefits and perquisites (perks) can add substantially to the overall value of a worker's compensation. A standard package of benefits from a government agency, a private company, or an academic or research institution might include 20 days of paid vacation; paid holidays and sick days; medical, dental, vision, disability, and life insurance; a pension or retirement plan; tuition reimbursement; and travel, transportation, meal, relocation, and entertainment reimbursement; profit sharing and stock options. Full-time faculty are also offered paid sabbaticals on a periodic basis.

OUTLOOK FOR THIS CAREER

EXPERTS PROJECT THAT EMPLOYMENT OF ECONOMISTS WILL INCREASE BY UP TO 10 percent through the next decade. Private industry, particularly management, scientific, and technical consulting providers, as well as companies that make and market value-added food products, will see the fastest growth. Agricultural economists are well suited to a variety of jobs in private industry. There will be positions available in the agricultural and food industries for financial specialists, marketers, sales, and merchandisers. The global economy, in which American agriculture is a powerful force, will also be a source of opportunities.

Economists will be in demand by both private industry and government agencies for their ability to use quantitative techniques to analyze and forecast trends, perform cost/benefit analyses, conduct environmental impact studies, and model microeconomic scenarios. Agricultural economists also have valuable knowledge of business, marketing, and management, as well as leadership and problem-solving skills.

The food system and the environment face increasingly complex problems for which agricultural economists will be called upon to find solutions. The education and training these professionals undergo are especially relevant in today's workforce, where specialization is valued. There is a growing demand for their expertise.

The US Department of Agriculture states: "Employment opportunities for US college graduates with expertise in the food, agricultural, and natural resources system are expected to remain

strong during the next five years. We expect slightly more than 52,000 annual job openings for new graduates during 2005-2010, and some 49,300 qualified graduates available each year for these positions.” The market during this period will be defined by consumer preferences, the food system’s evolving business structure, scientific and technological developments, public policy, and the security of the food system.

Universities that confer degrees in the field forecast strong employment opportunities, as well. Washington State University reports that most of its students “find employment before they graduate,” while the University of Kentucky Department of Agriculture says that the skills learned in its program “are so vital, graduates are in demand in today’s job market. Typically, the demand for graduates is greater than the number of qualified students to fill these positions.”

GETTING STARTED

THE AMERICAN AGRICULTURAL ECONOMICS ASSOCIATION (AAEA) HOLDS A recruitment fair at its annual meeting, which is usually held at the beginning of August. An estimated 120 undergraduates attend the meeting, where they have a chance to interact with potential employers as well as representatives from academic institutions.

The AAEA also maintains job listings on its website at www.aaea.org/classifieds/. You can search for jobs based on level of education required, location, and specialty, from agribusiness to resource and environmental economics.

Your college or university will also be a source of employment information, and the companies or organizations with which you have your internships are also potential employers.

Agricultural economics is a field that offers great rewards and many different opportunities to specialize. The outlook for this profession is bright. If you enjoy math and science and want to make a real difference, consider a career as an agricultural economist. This is rewarding and important work. The goal is to contribute meaningfully to the health and prosperity of people and the planet. Good luck!

ASSOCIATIONS AND ORGANIZATIONS

- **Agricultural Institute of Canada**
www.aic.ca
- **American Agricultural Economics Association**
www.aaea.org
- **Canadian Agricultural Economics Society**
www.caes.ca
- **Council on Food, Agricultural, and Resource Economics**
www.cfare.org/
- **International Association of Agricultural Economists**
www.iaae-agecon.org/
- **National Agri-Marketing Association**
www.nama.org
- **United Agribusiness League**
www.ual.org

PERIODICALS

- **Agricultural Economics**
www.iaae-agecon.org/ageconjournal.asp
- **American Journal of Agricultural Economics**
www.aaea.org/fund/pubs/ajae/
- **Current Agriculture, Food and Resource Issues**
www.cafri.org
- **Council Caller**
www.cfare.org/publications/
- **Journal of Agricultural and Resource Economics**
jareonline.org
- **Journal of Agriculture and Applied Economics**
www.aces.edu/~hkinnuca/JAAE

- **Purdue Agricultural Economics Report**
www.agecon.purdue.edu/extension/pubs/paer/
- **Review of Agricultural Economics**
www.aaea.org/fund/pubs/rae/index.cfm

