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Center for Agricultural and Rural Development

Brains or Brawn? Which Economic Development Policy is Best for Iowa?

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During this period of sluggish economic growth, state governments have been forced to consider whether they will be able to maintain valuable government services in both the near and distant future. Short-run concerns are shared nationwide, as lower tax collections create holes in state budgets. In the longer run, states such as Iowa face the dilemma of an aging and declining workforce, leading eventually to inadequate support for their economies.

Iowa Governor Tom Vilsack has been at the forefront of policy prescriptions for economic development. At the beginning of his first term, his Strategic Planning Council released the "Iowa 2010 Plan." The Council recommended that Iowa adopt a program to recruit 310,000 foreign workers by 2010. The recommendation was based on the belief that Iowa's economic future with a shrinking labor force would be grim, and the logical solution is to bring new workers and families into Iowa to maintain its current economic base of agriculture, manufacturing, and services.

Now, at the beginning of the governor's second term, the policy prescription has changed to emphasize education, value-added agriculture, and biological sciences. In his recent condition-of-the-state address, Governor Vilsack set a goal of doubling the proportion of Iowa's workforce with college experience and adding 100 new life science companies. As he puts it, "Iowans who learn more earn more."

Which of these two policy prescriptions is best for Iowa? Should the traditional economic base that needs low-cost, high-quality labor be supported? Or should our traditional emphasis on "brawn" be replaced with an emphasis on "brains" by growing and recruiting companies that need highly educated workers, venture capital, and access to high technology?

The Changing Color of Iowa's Workforce

The 2000 census contained some good news for Iowa: the state's population increased by 5.4 percent in the 1990s. This increase reverses the 4.7 percent loss that occurred in the 1980s. But a closer look at the census numbers reveals some age and race trends that point to important changes for Iowa's future.

The first trend is that the gap between the number of older Iowans and the number of younger Iowans continues to grow. In 1980, for every 100 Iowans over the age of 44 there were 100 under the age of 20. In 2000, the number under age 20 had fallen to 76. This ratio also has fallen in the rest of the United States, but Iowa's ratio has fallen 20 percent more than the U.S. ratio. This is another way of saying that Iowa's population is turning gray faster than the country's as a whole.

Iowa's workforce is also turning less white and Anglo. The ratio of young to old would have fallen by even more had it not been for the rapid increase in the number of non-white Iowans and the number of Iowans of Hispanic origin in the last decade. Iowa's non-white population increased by 89 percent, to 178,000 individuals in the 1990s. Its Hispanic population increased by 159 percent, to 82,000. These new Iowans are much younger than the population as a whole.

In 2000, non-white Iowans numbered 280 under the age of 19 for each 100 over the age of 44. The ratio of younger to older Hispanics was 3.46. The importance of immigrants in stemming population decline is illustrated by U.S. census

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In this Issue

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data that shows that in 54 of Iowa's counties, immigration was either positive in counties that lost population or immigration accounted for more than 75 percent of population growth in the county.

Do We Need Population Growth?

Thirty years ago, few would have endorsed a policy of population growth. The prevailing wisdom at that time was that the world was running out of resources because population was growing much too quickly. But today, many of the world's rich countries (including Japan and most European Union countries) face daunting problems caused by a shrinking labor force and, eventually, a shrinking population.

A balance between young and old in a population is thought to offer many benefits. From a fiscal point of view, countries with pay-as-you-go retirement systems (such as the social security and Medicare programs in the United States) depend on a large number of new taxpaying workers to keep retirement systems solvent. For states, a large number of school-age children can strain education and social services budgets in the short run. But, in the longer run, these children become taxpayers, helping to ensure adequate resources to support the functions of state government.

From the perspective of a state's industry, a balance between young and old means an adequate supply of new workers will be entering the labor force to replace retiring workers. Clearly, a shrinking labor force threatens existing industries that rely on plentiful labor.

Iowa's traditional economic base is agriculture, food processing, and other manufacturing. In 1998, production agriculture, manufacturing, mining, and construction accounted for about 35 percent of Iowa's value of goods and services. Broadly defined, agriculture and related industries accounted for about 25 percent. A significant proportion of the labor employed by industries in this traditional economic base is, relatively speaking, low wage. Services, finance, insurance, government, communications, and transportation account for a growing share of Iowa's value of production, and these industries are somewhat less labor intensive.

What would happen to Iowa's economy if the labor force were allowed to shrink? The answer depends on the educational and skill levels of the labor force. If the labor force that remains is highly educated and skilled, and the labor shortage shows up predominantly in a shortage of low-skill and low-wage workers, then the sectors that would become relatively less competitive in Iowa—and the ones that would most likely relocate—are those that depend on low-skilled, low-wage labor. Meatpacking, livestock production facilities, some manufacturing, and some service industries would decline in relative importance in Iowa. The insurance, higher-wage service, manufacturing, finance, and communications industries would fare relatively well. On the other hand, if current trends continue, with less than 30 percent of Iowa's labor force having some college education, then Iowa will continue to be a state specializing in lower-wage jobs.

Governor Vilsack's first-term proposal to bring in a large number of immigrants is consistent with the goal of meeting the future labor needs of Iowa's current industries. A large influx of low-cost, relatively uneducated workers would support Iowa's traditional economic base. His second-term proposal for economic development focuses on transforming Iowa's workforce into a more educated, higher-wage labor pool, employed by a high-tech, bio-based economy.

Which Path Should Iowa Take?

Iowa, like any state or country, has limited resources to invest in eco-

nomic development. Should Iowa invest in programs that would grow its population through immigration, or should it invest in programs that would encourage advanced education and the recruitment of high-technology companies?

Before we consider this question, it is important to note states, and countries too for that matter, have a limited ability to affect the robustness of their economies. The links between government policy and economic growth are poorly understood and cause and effect are highly variable. Often the best government policy is the one that does the least, in the sense of not giving subsidies to favored industries and levying taxes on those that have fallen out of favor.

But we do know something about Iowa's demographics and comparative advantages. We know that Iowa's population is aging. Older people demand different goods and services than do younger people. So, we can expect to see increased demands for health services, hospitality, assisted living, and leisure activities. All of these activities require large amounts of labor. An expanded labor force would allow Iowa companies to meet these increased demands.

Iowa will continue to have a comparative advantage in production agriculture. The growing, processing, and transportation of grains and livestock and the provision of supplies to these basic industries will continue to be important to Iowa for the foreseeable future. Again, increasing the supply of workers to support these industries would keep Iowa's comparative advantage in this traditional, and still important, sector.

Iowa currently does not have a comparative advantage in high-tech, bio-based industries that require a highly educated labor force. Recent history has taught us that high-tech companies prefer to locate in places where there are other high-tech companies. Bio-based research and development is being conducted by companies across the United States and the world, but there are high concentrations of companies in southern California, the San Francisco Bay area, Boston, Baltimore–Washington, D.C., and the North Carolina Research Triangle area. Internationally, Israel and Saskatoon, Canada, are regarded in the top circles of plant and life science research. A relatively minor player, St. Louis, currently has more than 23,000 people employed in plant and life sciences by 1,200 companies.

What would happen to Iowa's economy if the labor force were allowed to shrink? The answer depends on the educational and skill levels of the labor force.

So Iowa starts with a distinct disadvantage: new companies are much more likely to want to locate close to the existing hubs of life science commercial activity rather than in Iowa. And venture capital is more available to companies that are located in existing hubs. It would help if Iowa could attract a small number of established and influential life science companies to locate here to complement the skills that Iowa's existing seed companies can offer.

But Iowa does have some potential advantages. It has two major research universities: Iowa State University has agricultural life science expertise, while the University of Iowa has bio-medical expertise. Iowa farmers are world leaders in the ability to raise livestock and grow crops, which can be an important consideration for companies that need to use crops or livestock in their production processes and who want to be close to their production facilities.

While any prediction of the future is tenuous, there is little doubt that the world will continue to demand the types of products that Iowa has excelled at producing: food and a variety of manufactured goods, such as windows, appliances, and farm machinery. The state would be wise to continue to adopt policies that support these traditional sectors and other sectors, such as insurance and finance, that currently are important to the state's economy. Such support could include programs that reduce technical and social barriers to immigration.

But we know with as much certainty that the world is moving toward an economy based on knowledge, information, and biotechnology. Thus, the wage gap between highly educated, highly skilled workers and those with less education and skills will continue to grow. Thus, policies that encourage Iowans to pursue higher education are sound as well.

Whether Iowa can attract and generate enough companies to employ these college-trained Iowans is a bigger question. The state undoubtedly faces large obstacles to attracting the amount of venture capital and the kind of workforce needed to successfully compete with those regions that have a significant headstart.

A prudent strategy might be to roll the dice on the risky investment of life sciences by building on Iowa's current strengths in the area, while simultaneously taking out an economic insurance policy by making sure that Iowa's existing industries are supported. And, whichever direction economic development policy takes, enhancing educational opportunities is always a winning strategy. ◆

Cuba: An Emerging Market for Iowa Agriculture?

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Despite the collapse of communist political societies nearly a decade ago, Cuba remains an interesting mix of economic planning, social welfare, and intellectual achievement. Though urban decay and inadequate infrastructure suggest that Cuba has failed to achieve its utopian dream of social and economic justice, a deeper analysis of the food rationing system shows the country is clearly a master of economic scarcity, of making a little go a long way.

Perhaps herein lies the reason that the October issue of *AgExporter* magazine, published by the U.S. Department of Agriculture, showcased the Caribbean Market with no mention of Cuba or the Trade Sanctions Reform and Export Enhancement Act of 2000 allowing U.S. food and agricultural products into Cuba for the first time in over four decades. The State Department, too, has been dismissive and often critical of U.S. political officials and businesses seeking deals with the Castro regime. After all, why waste so much time on Cuba when the market's paltry 11.3 million citizens with average monthly salaries under $25 pale considerably when compared with other markets worldwide.

But Cuba's outward appearance of a failed economic system belies another story of interest. Cuba spends more than $1 billion annually importing food and agricultural products, and, until recently, Iowa farm products have not been part of the mix. Clearly, Cuba is far more interesting than one might assume at first glance.

By putting Cuba into a Caribbean context and analyzing the food needs of this import-dependent country, Iowa agribusinesses and policy leaders will have a better understanding of why this faltering communist state is a potential food market now open for business. Surprisingly, Cuba has the potential to be one of Iowa's top export markets in a number of key product categories, ranging from corn and soybeans to meat, poultry, and processed egg products.

The Caribbean Market

In 2001, the Caribbean region imported nearly $1.7 billion worth of U.S. food and agricultural products (USDA-FAS, *BICO Report*, October 2002). As a region, this puts the Caribbean in the top half of U.S. agricultural export markets. Purchases by Cuba in the first year of exemptions to the embargo resulted in only $4.5 million in U.S. food shipments—an understandable amount considering the time needed to develop a capable trading regime, time to license shipping lines for moving freight into Cuban ports, and time for companies to market products to Cuban purchasing agents. Through September of 2002, U.S. food sales to Cuba reached $105.5 million, and estimates by the Washington, D.C.–based Cuba Policy Foundation portend a strong year, with sales as high as $165 million by the end of the year (Figure 1). Estimates for 2003 suggest continued export growth of up to $260 million worth of food and agricultural products from the United States.

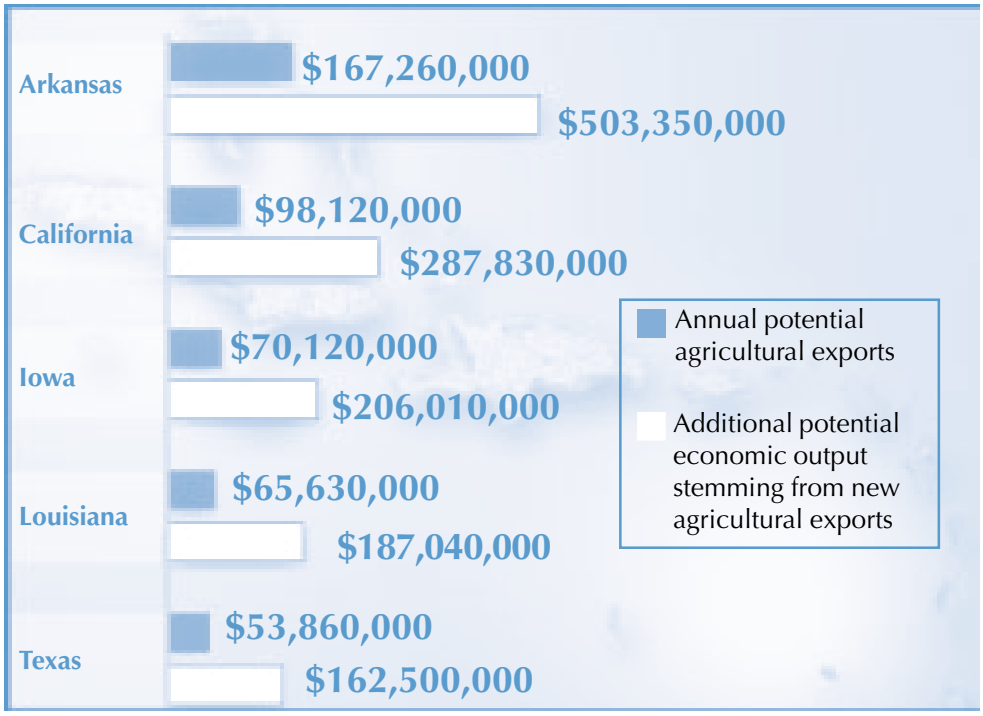
As a market, the Caribbean is diverse, buying bulk commodities, meat and poultry, snack foods, and other high-value, consumer-oriented food products. In 2001, Caribbean meat imports were dominated by broiler meat; it accounted for half of the value of the region's meat imports, reaching $219 million and more than 200,000 metric tons. The U.S market share of Caribbean meat imports hit $113 million that same year, according to the USDA's Foreign Agricultural Service.

Although not as strong, region-wide tourism and the hotel and restaurant industry (HRI) contribute significantly to the demand for high-

Figure 1. U.S. agricultural exports to Caribbean Islands, Jan.–Sept. 2002

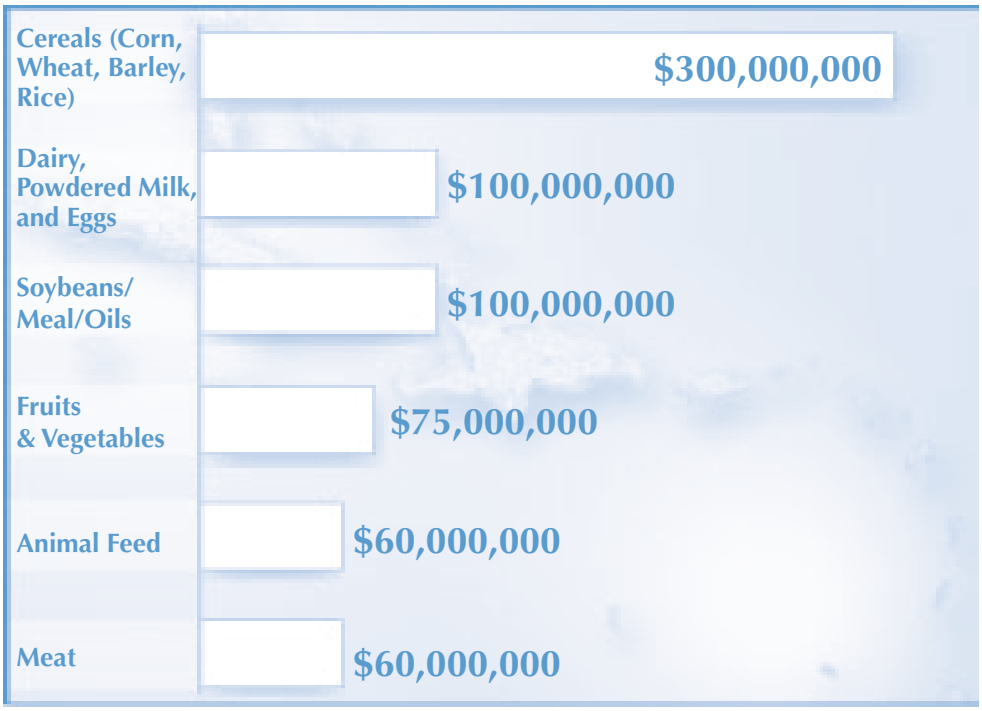
Source: USDA-FAS.

Figure 2. Top five states affected by the U.S. embargo against Cuba: agricultural sector



Source: Rosson and Adcock 2002.

Figure 3. Cuban agricultural markets



Source: American Farm Bureau 2002.

quality pork and beef. In Cuba, tourism has grown from less than a half billion U.S. dollars in 1990 to more than $2.2 billion in 2001 from more than 2 million foreign visitors (Chamber of Commerce of the Republic of Cuba 2002). Furthermore, Cuban consumers prefer pork to other meats, with consumption accounting for 34 percent of the Caribbean's total imports. To date, the United States has recorded little in the sale of pork to Cuba, but with aggressive marketing efforts, much of the Cuban pork market could be dominated by U.S. exports in the near future.

Cuba: A New Market for Iowa Food and Agriculture

During the first U.S. Food and Agribusiness Exhibition in September 2002, Cuban officials signed deals worth nearly $90 million, and earlier this year, Ohio-based Marsh Foods secured a deal to deliver $750,000 worth of branded U.S. grocery items to Cuban consumers. During the show, Iowa-based FC Stone secured a $5 million contract for corn and soybeans (including the cost of transportation). Additional sales opportunities exist for Iowa companies willing to investigate the Cuban market.

According to a study conducted for the Cuba Policy Foundation, Iowa ranks third after Arkansas and California as the state most likely to benefit from trade with Cuba (Figure 2). The study concluded that Iowa likely would gain more than $70 million in agricultural sales to Cuba, with an additional spin-off of more than $206 million into the Iowa economy (Rosson and Adcock 2002). In testimony before Congress, the American Farm Bureau highlighted data from the United Nations Foreign Agricultural Organization, suggesting that many of the top products imported by Cuba can be sourced from Iowa companies (Figure 3). Demand for pork, beef, processed egg products, animal feed, and soy protein and oil

continued on page 8

Iowa's Agricultural Situation

USDA's year-end summaries show livestock contraction and unexpected increases in crop production

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The start of a new year brings summaries of the 2002 agricultural year. These summaries have had a strong bearish impact on crop markets. Following the January 10 release of the USDA annual crop summary, soybean futures fell by 10¢ to 20¢ per bushel and corn futures fell 3¢ to 9¢. In both cases, though, the price drops have not been enough to revive loan deficiency payments. Prices remain 20¢ to 30¢ over county loan rates, a sharp contrast to this time last year when loan deficiency payments were positive for corn and over a dollar a bushel for soybeans. Even given the recent price drops, the state average corn price is 24¢ higher this year, at $2.15 per bushel. The state average soybean price is $1.30 higher at $5.45 per bushel. The market's recent downturn was driven by the surprising increases seen in the USDA's production estimates for 2002 corn and soybeans.

For corn, the USDA raised the production estimate by 5 million bushels to 9.008 billion bushels. This is roughly 500 million bushels less than the 2001 figure. The national average yield fell by more than 8 bushels per acre. However, Iowa's corn crop had a banner year. State production rose to nearly 2 billion bushels. The state average yield of 165 bushels per acre shattered the previous record yield of 152 bushels set in 1994. On the demand side, world stocks-to-use ratios are tighter now than they have been over the last couple of years. Industrial uses, such as ethanol production, are projected to increase.

For soybeans, national production is estimated at 2.730 billion bushels, a 161-million-bushel increase over the previous estimate. The national average soybean yield fell by 2 bushels per acre. Again, Iowa soybean production bucked the national trend. State soybean production rose by 14.5 million bushels to 495 million. The state average yield rose 4 bushels to 48 bushels per acre, the second highest yield in state history. World soybean stocks-to-use ratios also are lower than they have been over the past two years. Chinese import demand is seen as a major driver in the world soybean market.

Iowa's weather at the end of 2002 was also record breaking. This past December was the driest month on record for Iowa. Des Moines had a streak of at least 50 days without measurable precipitation. For the entire year, only 18 of Iowa's 99 counties reported average to above-average precipitation. Nearly half of all counties recorded at least a 4-inch shortfall in precipitation over 2002, with 13 counties (mostly in south-central Iowa) having a shortfall of at least 8 inches. Soil moisture could become a major concern. However, the emergence

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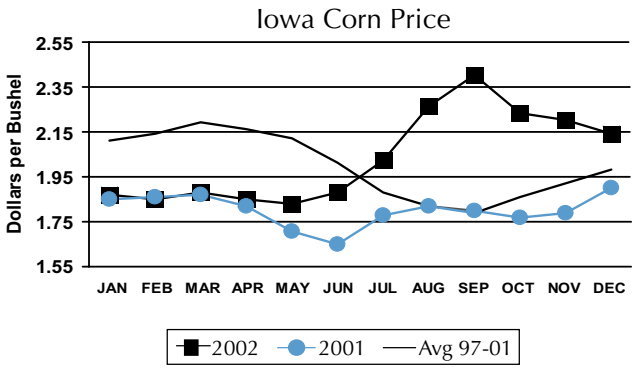
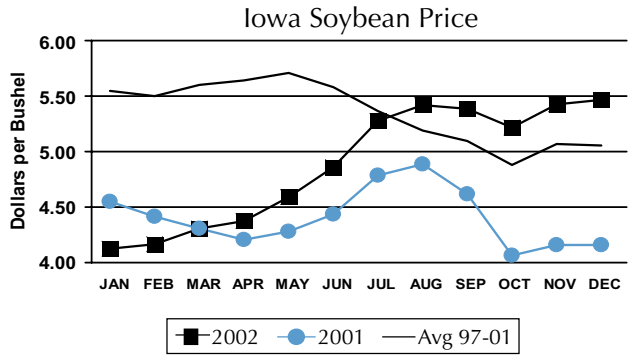
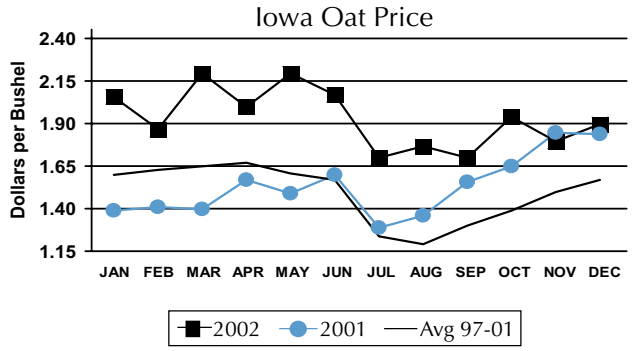
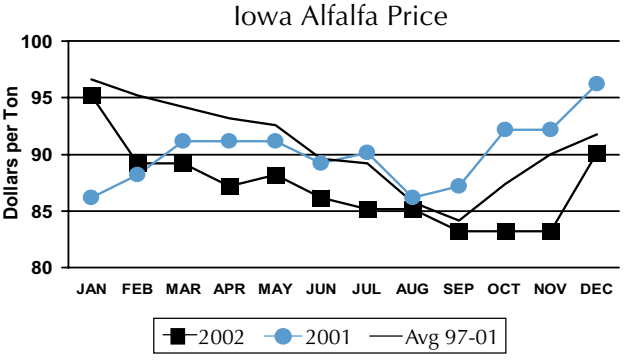
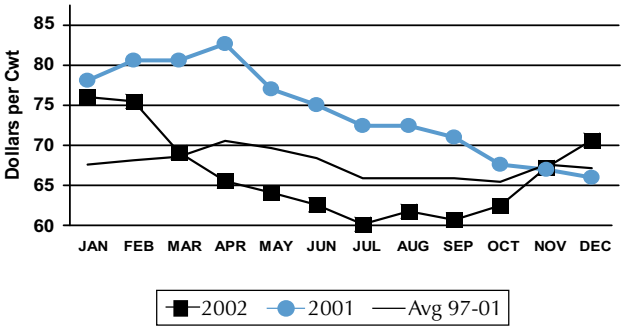




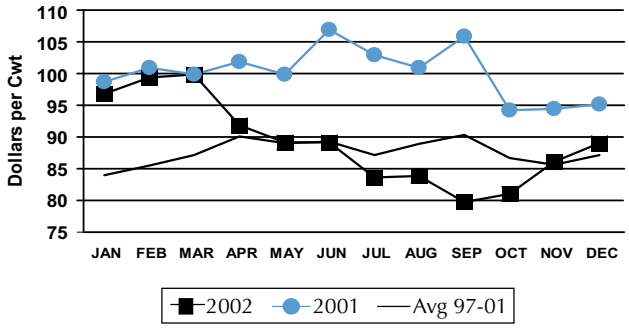




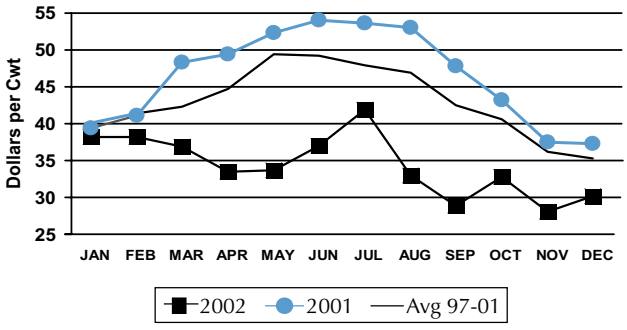
Iowa Steer and Heifer Price



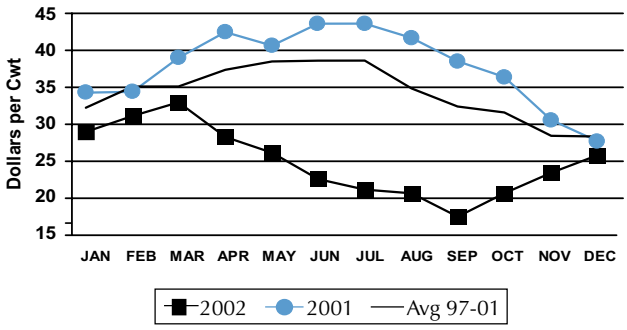
Iowa Feeder Calf Price



Iowa Barrow and Gilt Price



Iowa Sow Price



Iowa Cash Receipts Jan. – Sept.

	2002	2001	2000
		(Million Dollars)	
Crops	3,226	3,283	3,310
Livestock	3,796	4,363	4,463
Total	7,022	7,646	7,774

World Stocks-to-Use Ratios

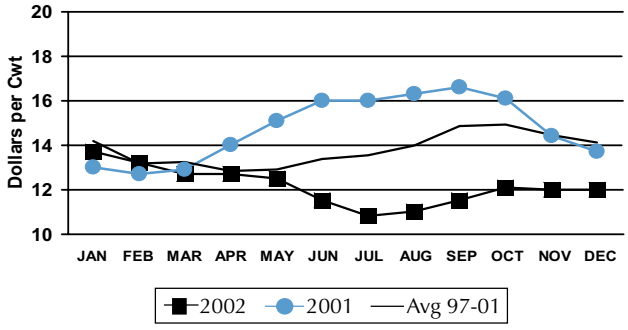
	Crop Year		
	2002/03 *(Jan. Projection)*	2001/02 *(Estimate)*	2000/01 *(Actual)*
		(Percent)	
Corn	16.98	21.25	25.37
Soybeans	15.97	17.49	17.97
Wheat	28.80	34.17	34.99

Average Farm Prices Received by Iowa Farmers

	Dec.* 2002	Nov. 2002	Dec. 2001
		($/Bushel)	
Corn	2.15	2.21	1.91
Soybeans	5.45	5.41	4.14
Oats	1.90	1.80	1.84
		($/Ton)	
Alfalfa	90.00	83.00	96.00
All Hay	880.0	81.00	95.00
		($/Cwt.)	
Steers & Heifers	70.40	67.20	66.10
Feeder Calves	89.20	86.20	95.30
Cows	34.00	32.00	33.70
Barrows & Gilts	30.00	27.80	37.10
Sows	25.90	23.60	27.80
Sheep		34.00	35.60
Lambs		81.00	60.00
		($/Dozen)	
Eggs	0.43	0.48	0.32
		($/Cwt.)	
All Milk	11.90	11.90	13.60

*Mid-month

Iowa All Milk Price



Cuba: An Emerging Market continued from page 5

will mean that Iowa quite likely will benefit from growing trade with Cuba. Arkansas benefits the most from the high demand for poultry meat; however, for every pound of poultry exported, a pound of soybean meal moves off the market, indirectly benefiting Iowa soybean growers.

Success Hinges on Economic Growth

Export sales to Cuba are limited by a number of factors, including the continued recovery of the economy following a decade of declining aid from and exports to Russia. Furthermore, long-term export growth will be dependent upon domestic economic reforms and a liberalization of the Cuban trading regime. Less problematic, though complicated, is the U.S. regulatory framework to legally ship U.S. products to an embargoed country.

Despite the existence of a number of food distribution firms and joint venture resorts with Canadian and European partners, all purchasing must be funneled through Cuba's state trading organization, Alimport. At present, Cuban purchasing decisions are being made as much on political grounds—by targeting states with important votes to end the embargo—as they are for price, quality, and need. Firms seeking to do business with Cuba should seek out prospective distributors as well as understand the function and purpose of Alimport. A list of food distributors is available from the Cuban Chamber of Commerce in Havana. ◆

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For information on policies and procedures for securing a travel license, product license, or a license exemption for agricultural products, go to ***www.exportpartnership.com*** *or call the Iowa Export Assistance Center at the Greater Des Moines Partnership at (515) 286-4950. E-mail enquiries can be forwarded to* ***info@exportpartnership.com****.*

Tom Rial is director of the Iowa Export Assistance Center of The Greater Des Moines Partnership and director of the Midwest Agribusiness Trade Research and Information Center (MATRIC) office in Des Moines. MATRIC-Des Moines provides Iowa agribusiness with export information and assistance through a subcontract from MATRIC at CARD.

Water Quality Research: A Collaborative Effort

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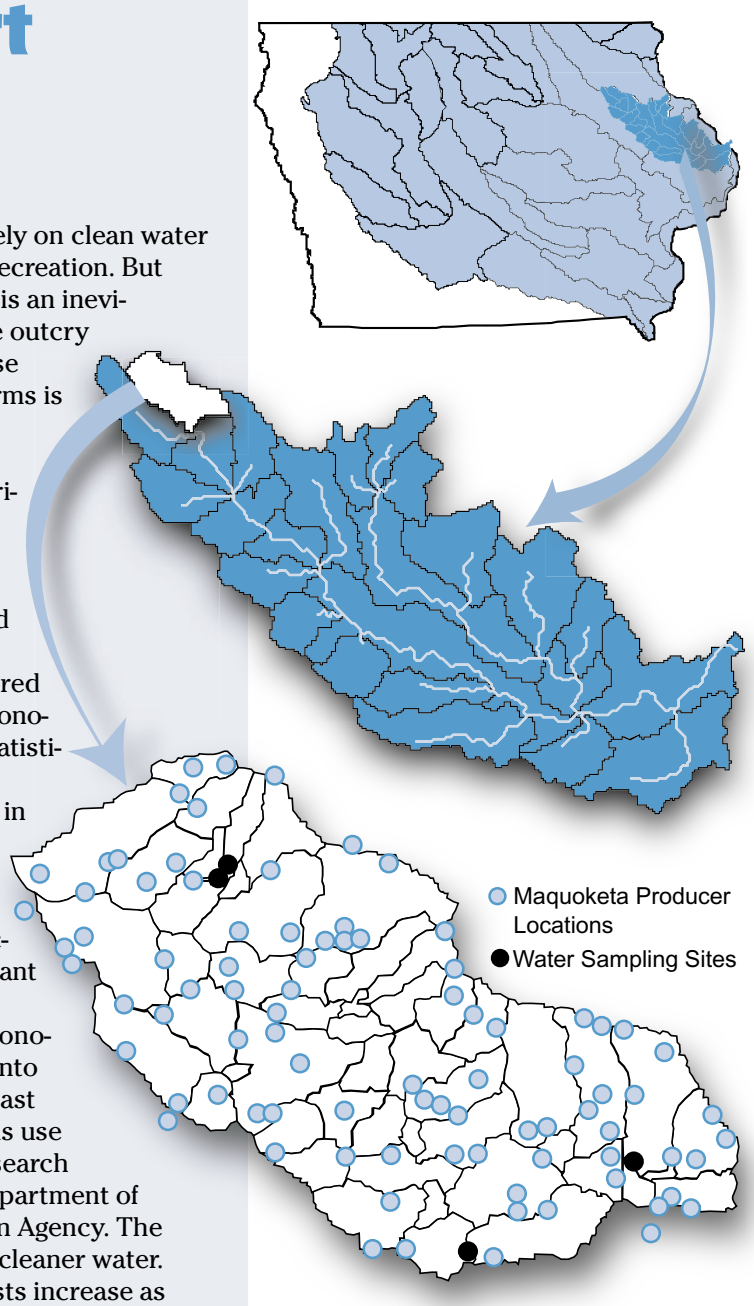
Who could be against clean water? After all, we rely on clean water for our households, farms, industries, and for recreation. But whenever groups push for cleaner water, there is an inevitable outcry about the costs. And, too often it seems, the outcry is from farming interests. This should come as no surprise because in many areas runoff from crop and livestock farms is the largest contributor to water pollution.

CARD researchers are continuing their efforts to estimate the costs and benefits of reducing agriculture's contribution to water pollution. There are two main thrusts to this effort. The first is to gain a better understanding of how site-specific management practices, and site-specific physical properties (such as type of soil, slope of land, and proximity to waterways), interact with weather events to determine the amounts of nutrients and sediments delivered to waterways. This effort requires the collaboration of agronomists, soil scientists, hydrologists, biological engineers, statisticians, and computer programmers to collect the data and construct the models needed to understand water quality in a given watershed. A recent analysis of the Upper Maquoketa River watershed is an example of such collaboration, as illustrated by the accompanying map. The results showed that relatively few combinations of production practices and physical properties generated a significant portion of pollution in the watershed.



The second thrust of CARD's research effort is for economists to translate the physical reality of water pollution into estimates of the cost and benefits of cleaner water. Late last year, an annual survey was initiated to assess how Iowans use and value water. This four-year effort is supported by research funds from the National Science Foundation, the Iowa Department of Natural Resources, and the U.S. Environmental Protection Agency. The results should give us better estimates of the benefits of cleaner water.

Past economic research has shown that clean-up costs increase as water becomes cleaner (it costs much more to clean pristine water than to clean dirty water). Costs also increase when inefficient regulations are used. For example, if 90 percent of runoff comes from 10 percent of land, then regulations that require 100 percent participation in clean water practices can be quite costly. Flexible regulations that result in 10 percent participation (if it is the right 10 percent) would be much more cost effective. CARD research is meant to help design and implement low-cost clean water programs and to help determine the level of cleanliness at which benefits are not exceeded by costs. ◆

Iowa's Agricultural Situation continued from page 6

of El Niño does bode well for the spring precipitation outlook.

For the livestock sector, 2002 was a year of contraction. National hog breeding stock fell by 3 percent. The number of market hogs dropped to 52.9 million head, a 1 percent decrease from 2001. The September to November pig crop was 2 percent below the 2001 level. Planned farrowings are down 1 percent for the December to February period and down 3 percent for March to May. Nationally, there are just over 75,000 hog operations, a 7 percent decrease from 2001, and a 13 percent drop since 2000.

Trends in Iowa's hog production parallel the national trends. Breeding stock declined by 7 percent in 2002. Market hogs held at 14.25 million head, slightly below the 2001 figure. The September to November pig crop was down 2 percent. Planned farrowings are up 2 percent for December to February but down 4 percent for March to May. Roughly 500 Iowa hog operations ceased production in 2002, bringing the state total down to nearly 10,000 hog operations.

Local hog prices are also down from last year. The weekly weighted average price for Iowa and southern Minnesota is $42.15, down $8.20 from last year at this time. However, stronger packer demand and tighter supplies have helped boost lean hog futures over $60. Also, pork exports for 2002 were up 3 percent for the year, with most of the increase coming from Japan, Canada, South Korea, and Taiwan.

National cattle on feed numbers fell 8 percent from last year, even with increased placements and decreased marketings during November. As of December 2002, 10.9 million cattle are in feedlots with over 1,000 head. During November 2002, 2 million cattle were placed in feedlots, while 1.7 million head were marketed. For Iowa, the number of cattle on feed equaled last year's figure. November placements were up 7 percent from 2001, but marketings were down 2 percent.

Local cattle prices are up compared to last year. The average price for choice steers on a live basis from interior Iowa markets is $77.50, up $11.07 from this time last year. Tightening supplies, poor feeding conditions in some regions of the country, and winter weather concerns are helping maintain cattle prices. Demand for beef is projected to remain strong through 2003 both domestically and internationally. Beef exports for 2002 are expected to finish at record levels.◆

Recent CARD Publications

Briefing Papers

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Working Papers

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MATRIC Briefing Paper

Clemens, Roxanne, Bruce A. Babcock. Why Can't U.S. Beef Compete in the European Union? November 2002. 02-MBP 4

Meet the Staff: Roxanne Clemens

When Roxanne Clemens was hired as managing director of the Midwest Agribusiness Trade Research and Information Center (MATRIC) in July 2001, it was a return engagement to CARD. She first joined CARD in 1991 as a communications specialist in the Information Services unit.

In 1993, she left to join the ISU Meat Export Research Center, where she edited the *U.S. Meat Export Analysis and Trade News*. "In that position, I had the opportunity to expand my knowledge about international meat trade and conduct market research in several countries," says Roxanne. After about seven years at the Meat Export Research Center, she went to work for NASA's Food Technology Commercial Space Center at ISU. "Working at NASA was fascinating," she says, "but I was pleased to be able to return to international trade issues."

MATRIC's mission is to help small- and medium-sized Midwest agribusiness firms develop and expand export markets for agricultural products and technologies. Roxanne spends the majority of her time collaborating on research projects and preparing results. She also assists the director, Bruce Babcock, in soliciting proposals for new research and manages MATRIC's daily activities. "I think one of the most important assets of the MATRIC program is our ability to fund interdisciplinary research that is highly responsive to a rapidly changing international trade environment," she says.

The influence of consumer preferences on the world's food supply is one example of how MATRIC research programs respond to the needs of agribusiness. "Consumers and their governments are increasingly concerned about food safety," she says, "and U.S. agribusiness firms need to adapt to regulations being implemented in other countries to ensure a safe food supply. These changes are occuring quickly and we need to know how they will affect U.S. competitiveness."

MATRIC also focuses on helping U.S. agribusiness identify international niche markets, for those producers who want to move away from low-cost, high-volume commodity production. "With these niche markets, research is needed to measure any additional production, processing, and shipping costs, as well as potential price premiums," says Roxanne. "We also need to identify ways to protect niche markets from identical or similar products." At the same time, MATRIC works to identify emerging international markets with growth potential for traditional U.S. commodities.

Roxanne's latest collaboration is on research involving meat trade with Mexico and the implications of full implementation of NAFTA. Other recent MATRIC projects have included a study of how Australia and New Zealand differentiate their beef in the global market, an estimate of U.S. costs of meeting non-hormone beef regulations in the European Union, and a case study of how the

Roxanne Clemens

producers of Vidalia onions developed and protected their niche market. This and other MATRIC research is available online at *www.matric.iastate.edu*.

Roxanne says she feels gratified when, after the release of a research paper, she fields questions and gets feedback from producers and agribusiness. "That type of response is a good indicator that MATRIC research is being read and used by the people for whom we are conducting the research," she says.

Roxanne grew up with five siblings on a farm near Little Cedar, Iowa. The family raised hogs, cattle, corn, and soybeans. "My favorite tasks were fieldwork and working in the farrowing house," she says. She now lives on a small acreage, minus the crops, livestock, and accompanying chores, and she and husband Marlin devote their leisure time to remodeling their home, refurbishing the outbuildings, and landscaping. She also enjoys canoeing and camping, traveling, reading, and spending time with family and friends.◆

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