



Rural COOPERATIVES

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Strategic Choices for Renewable Energy Industry

Page 4

**Special Renewable
Energy Section**

Capturing Value for Rural America: Strategic Choices for Renewable Energy Investment

Editor's note: This commentary was written by Thomas Dorr, USDA Under Secretary for Rural Development.

The train is leaving the station. The rapid build-out of renewable energy is a historic opportunity for rural America, and the pace of development is accelerating. In this issue of *Rural Cooperatives*, a team of USDA economists has ably summarized recent research on the strategic choices arising from this “renewables revolution” for farmers, investors, rural utilities and government at all levels.

The stakes are high:

- Since 2000, ethanol production in the United States has tripled. The aggressive Renewable Fuels Standard enacted in December — 36 billion gallons by 2022 — will keep this rapid development on track for years to come.
- Installed wind capacity in the United States has more than quadrupled in this decade. Germany still leads the world in total capacity, but the United States led in new capacity in 2005 and 2006, and the projections suggest that we will have done so again in 2007.
- Shipments of photovoltaic units in the United States have increased tenfold since 2000, and we lead the world in solar, thermal, geothermal and waste-to-energy applications. Renewable energy, in short, has become a noteworthy American success story, and I fully expect this progress to continue.

It is true that renewable energy is building out from a very low base, currently between 6 and 7 percent of total U.S. energy consumption. But it is also true that the growth rates described above, if sustained, will rapidly expand renewables' market share.

For rural America — and for USDA Rural Development — this is a challenge as well as an opportunity. Several new industries, largely rural and/or ag-based, are developing rapidly. There are opportunities at every point in the production chain. This is probably the greatest new opportunity for wealth creation in rural America in our lifetimes, and capturing a fair share of that value for rural America is an important objective.

To help rural stakeholders and policymakers expand the dialogue for winning strategies in this fast-moving and increasingly competitive arena, USDA Rural Development

identified four areas which are discussed in this issue. The choices we make today will cast a long shadow:

- Distributed wind and solar power must be integrated into the grid. In addition, rural utilities will have to expand and modernize the grid to move rural power in bulk to distant urban markets — e.g., getting North Dakota wind energy to Chicago.
- Biofuels face several logistical hurdles. The blend wall barrier is a significant obstacle. It is important that we increase the allowable blend level, increase the number of flex-fuel vehicles and develop economically sustainable solutions to incorporate more alternative fuels into our fuel system. The barriers to pipeline transmission need to be overcome.
- Not all business and investment models are created equal. From a rural development standpoint, it is desirable to encourage local ownership and control. It is important that we identify ways to facilitate the aggregation of local capital and create opportunities for farmers and other rural investors to engage.

These and many other issues are explored in these pages. I urge you to tune in to the larger discussion as well. Renewable energy and its impacts on farmers and rural development will be a major focus of USDA's annual Agricultural Outlook Forum, which will be held this Feb. 21-22 just outside Washington, D.C. Two weeks later, March 4-6, the world will gather in Washington, D.C., again for the Washington International Renewable Energy Conference, or WIREC 2008. More than 80 nations will participate in Ministerial-level discussions, while hundreds of companies and several thousand industry leaders will attend what will be 2008's leading renewable energy trade show and business conference.

These events are an outstanding opportunity to explore the potential of renewable energy, and to review best practices from around the nation and the world. I cordially invite you to attend. The renewables train is indeed leaving the station. The opportunity is real. Now is a great time to consider whether and how you should get involved. I hope to see you there. ■

“This is probably the greatest new opportunity for wealth creation in rural America in our lifetimes...”

—Thomas Dorr

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FEATURES



p. 4

4 *Investor's Manual*

New investment models could help reverse decline of local ownership of biofuel plants

By David Chesnick



p. 10

7 *Tapping farm equity key to greater local ownership*

By David Chesnick

10 *Ownership Manual*

Study assesses four primary ownership models for biofuels

By Anthony Crooks

16 *Getting Connected*

Study sees USDA role in linking electricity from alternate energy sources to grid

By Alan Borst



p. 16

18 *Overcoming constraints to growth in biofuels industry*

By Donald Frederick

22 *Using the 'extra-value index' to measure ag co-op performance*

By Carolyn Liebrand



p. 32

32 *Bison co-op helping Native Americans develop production, marketing strategy*

By Dan Schofer

34 *Valuing Your Co-op*

Meeting weighs value of co-ops in fast-changing business climate

By Lynn Pitman

DEPARTMENTS

- 2 COMMENTARY
- 20 IN THE SPOTLIGHT
- 25 CO-OP DEVELOPMENT ACTION
- 27 VALUE-ADDED CORNER
- 28 MANAGEMENT TIP
- 31 UTILITY CO-OP CONNECTION
- 38 NEWSLINE
- 47 PAGE FROM THE PAST

On the Cover:

Summaries of four studies that examine important strategic choices facing the renewable energy industry are presented in a special section of this issue. The studies were commissioned by USDA Rural Development.



Special Renewable Energy Section

Investor's Manual

Bioenergy

New investment models could help reverse decline of local ownership of biofuel plants



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Editor's note: This article presents findings of Informa Economics, a consulting firm headquartered in Memphis, Tenn. The article does not reflect any official position of the U.S. Department of Agriculture or of any other government entity.



little more than one-third of ethanol-industry capacity was owned by farmers and other local investors in early 2007, according to the Renewable Fuels Association. However, only 15 percent of new or expanding biofuel plant construction is owned by such investors. A key reason for this shift is that the larger plants being built today require larger amounts of equity.

Equity investment at this scale can

be difficult to obtain from farmers and other rural investors living in close proximity to a proposed facility. But if local investment wanes, so does the flow of returns from biofuel to the communities where it is produced.

Based on the analysis conducted by Informa and interviews carried out during the course of this project, Informa formulated several investment models that may be used to facilitate investment by farmers and other rural residents in the renewable energy



USDA photo by Dan Campbell

“If local investment wanes, so does the flow of returns from biofuel to the communities where it is produced.”

sector. This article briefly describes each of these models.

Closed-end renewable energy fund

With a closed-end renewable energy fund, investment is limited to farmers and other rural residents seeking to invest in energy projects. Such funds would be managed by professionals or institutions. These funds will need to be large enough to invest across multiple facilities. For example, a \$300 million

capitalization fund could own almost all the equity in three 100-million-gallon-per-year ethanol facilities.

While it is uncertain how much money farmers and other rural investors would be willing to invest in such a fund, some parameters can be placed

around potential contributions. Through interviews, Informa calculated that the per-person investments by farmers and other rural investors tend to be small, in relative terms, generally around \$10,000 to \$50,000. Given the resources of farmers, Informa believes farmers with gross sales of more than \$100,000, a mean net worth of at least \$1 million and a debt-coverage ratio of at least \$50,000 would be the most likely candidates for participation in a renewable energy fund.

Nearly 300,000 farms fall into the financial categories just described. If each farmer were to invest at least \$10,000, the fund would attract \$3 billion. New ethanol plants typically cost \$1.95 per gallon of capacity. Typically, they are built using 40 percent equity and 60 percent debt. This would be sufficient to provide equity for more than 3.5 billion gallons of ethanol.

Debenture guarantees

The debenture guarantee model, according to Informa's analysis, would be similar to the Rural Business Investment Program (RBIP), created in the 2002 Farm Bill and administered by the Small Business Administration. Under this program, Rural Business Investment Companies (RBICs) are established and allowed to issue debenture guarantees. The debentures issued by an RBIC are pooled with other issues and sold to outside investors.

The debentures are backed by the federal government and would carry lower premiums. Informa proposes that a similar program could be used for biofuel investment projects. The modifications of the RBIP program to facilitate an RBIC program would be as follows:

- Because a relatively large amount of total capital is required to finance construction of a new ethanol plant (around \$185 million for a 100-million-gallon facility) the maximum, \$6 million-net-worth restrictions of the existing program would be relaxed.
- Debenture pre-payment requirements for dividends may need to be relaxed in order to generate more cash flow to equity holders.
- Leverage fees for debentures would have to be significantly lower to be competitive against market interest rates.

Despite the current drop in the market price for ethanol, ethanol stake holders enjoyed short debt-payback periods for those that entered the market early. Thus, the debt market did



The ribbon-cutting in 2002 for the Glacial Lakes Energy ethanol plant in South Dakota.

not demand a high risk premium from ethanol producers. Furthermore, ethanol plants with a higher probability of financial success are able to secure adequate debt financing in the market, Informa found.

New Markets Tax Credit

A third investment model is based on the New Markets Tax Credit (NMTC). The NMTC program is funded and managed by the U.S. Treasury Department's Community Development Financial Institutions (CDFI) program. The Models for Funneling Local Investment Capital into Biofuel Production program permits taxpayers to receive a credit against federal income taxes for making qualified equity investments in designated Community Development Entities (CDEs).

These CDEs could invest in biofuel facilities and could supplement the farmers' equity, thereby leveraging the initial farmer investment. Some modifications would be needed for the biofuel sector, such as:

- The CDE would pledge to invest in a portfolio of qualified biofuel projects;
- Create a new tax credit model that will mirror the investment mechanism of the New Markets Tax Credit, but target it specifically for biofuels and renewable industry investment.

The New Markets Tax Credit could become a model to help finance a few farmer-owned biofuels facilities. The federal tax credit provides a subsidy that, if structured correctly, can provide some economical incentives for investors to finance farmer-owned operations.

Tax credit for projects with minimal rural involvement

Research by Informa indicated that farmer groups and rural residents can raise \$5 million to \$10 million from a limited number of investors in a short period of time. However, moving beyond this has proven difficult for many groups. To expand this group would incur a high cost. Therefore, another proposal would be to use tax credits for outside investors to help farmers finance biofuel facilities.

This program would require an outside investor to match the farmers' investment in exchange for the project's tax credit. Informa says this is similar to the Production Tax Credit for wind-generated electricity. In order for the investors to gain the tax credit, they would need to maintain a minimum of perhaps 25 percent farmer ownership. Using project tax credits for a minimum share of farmer or rural involvement is potentially a viable mechanism to maintain or increase the farmer participation in the biofuels sector.

No new investment models?

Informa noted that some interviewees objected to any program that the government would create for investment in renewable energy. They indicated that there already are substantial amounts of equity flowing into renewable fuel projects. They stated that farmer-investors can buy shares in any of the several publicly traded ethanol companies.

While farmers can use this approach to invest in ethanol, this would not accomplish the objective of stanching the trend of rural investors owning a receding share of renewable fuel-production capacity. This also would keep the returns from biofuels from recirculating within the rural community and thus stimulating further economic growth within that rural community. ■



USDA photo by Dan Campbell

Tapping farm equity key to greater local ownership of renewable energy

Editor's note: This article presents findings from Informa Economics Inc., a consulting firm contracted by USDA Rural Development to perform an initial study on financial models used in biofuel production. This article represents the author's effort to summarize the study findings; it does not reflect official positions of the U.S. Department of Agriculture or any other government entity.

The ability to tap local equity is the key to greater local investment in rural business opportunities, such as renewable energy. One part of this investment-model study includes an examination of the amount of equity available in rural communities that could be available for rural investment.

Farm assets

According to Informa Economics and the USDA Economic Research Service, the value of U.S. farm business assets in 2006 was \$1.81 trillion, about 6.3 percent more than in 2005. The value of farm real estate, accounting for 85 percent of farm sector assets, is expected to have increased by 7.5 percent in 2006, following a gain of 16.3 percent in 2005.

The value of farmland in the United States generally follows farm income and return to assets. However, since 2004, net farm income declined while rural real estate value increased substantially. This pattern followed the same pattern of real estate values throughout the rest of the country.

Total farm real estate value increased from \$1 trillion in 2001, to an estimated value of \$1.6 trillion in 2006, with most of the increase occurring since 2004.

Farm debt

While there is significant value in land held by farmers, it is important to determine the extent to which these assets are already leveraged. It is estimated that total farm business debt climbed 1.2 percent in 2006, to \$218 billion.

Real estate debt for farm businesses has steadily increased over the past 15 years, growing from \$67.6 billion in 1990 to \$114.3 billion in 2005. Real estate debt accounts for more than half of total farm debt outstanding.

continued on page 8

Farm equity

Farm business equity was expected to continue rising in 2006 as the increase in farm asset values exceeds the rise in farm debt. Farm sector net worth was expected to be about \$1.7 trillion in 2006, up from \$1.59 trillion in 2005. The increase in assets relative to debt has lifted farmers' net wealth over the past few years. The value of debt-to-equity fell from 17.4 percent in 2002 to an estimated 12.7 percent in 2006.

This growing stock of equity capital can be used to finance investments in rural communities. There are many opportunities for investment in the rural communities today, one of the biggest being the renewable fuel sector.

Funds available

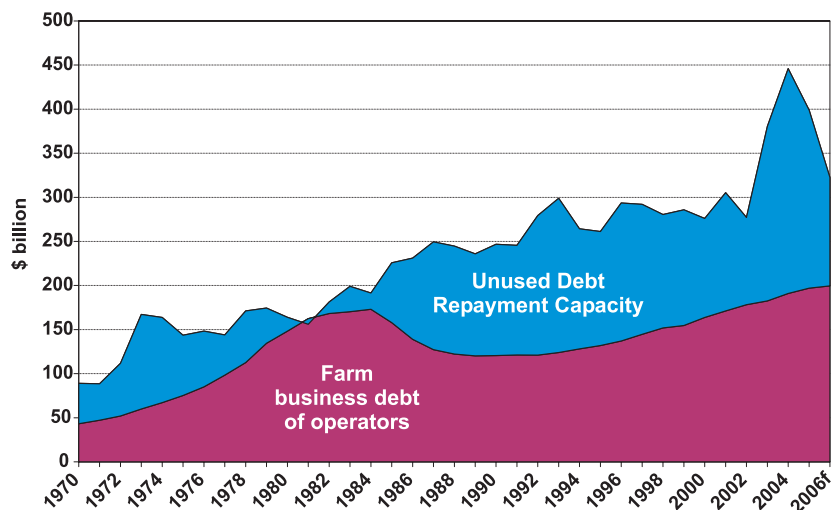
While U.S. farmers hold a significant amount of assets and equity relative to debt, the ability to take on more debt is largely dependent on the ability to generate enough income to service their debt obligations. In other words, you can't mortgage the farm if you cannot cover the additional debt payments.

One way to measure the amount of additional mortgage funds available is to look at the unused debt-repayment capacity. This value compares the difference between the maximum amounts of debt farmers can afford to the amount of debt they currently hold, given the income level of the farm household. The difference is referred to as the "un-used debt-repayment capacity."

The debt-repayment capacity is based on the maximum debt service that operators would be able to pay given total income and farm and non-farm expenses. Figure 1 illustrates these two values from 1970 to 2006. During this time period, there was only one year when the debt level was more than the repayment capacity. In 1981, the aggregate debt payments exceeded the farmers' ability to repay these loans, which resulted in many farm foreclosures.

This tells us that farmers could boost their debt load by nearly \$1 trillion. However, a number of scenarios could occur that could affect the income available for debt coverage. These include falling commodity prices, increases for input prices or crop failures. On the other hand, the risk associated with commodity price

Figure 1—Debt Repayment Capacity



fluctuations for the farm operator may be partially offset by their investment in a biofuel facility.

Demographics show that the farming community is older. More than one out of every four farmers, and about half of agricultural landlords, are 65 or older. This group controls more than one-third of all farm assets.

How does this affect the attitude of farmers with respect to mortgaging the farm for investment purposes? In addition to working longer past traditional retirement age, farm-operator households tend to have several income sources and different forms of wealth, compared with the general population. While fewer farm operators are covered by employer-sponsored pensions than are non-farmers, a majority of farm operators save from current income on a regular basis and have accumulated diversified financial portfolios, including individual retirement savings.

Reduced tax rates on capital gains associated with the appreciation in farmland values, along with the prospect of avoiding capital gains taxes on any appreciation prior to death, continues to encourage farm owners to hold land. Recent changes in the federal estate tax policies that allow larger amounts of property to be transferred at death free of any estate tax further reinforce this incentive.

These factors, along with not wanting to "mortgage the farm" on risky ventures, will probably keep the equity capital tied up in the farm business. In order to tap the equity, there will need to be some incentive to entice the farmer to transfer equity out of the farm and into ownership of biofuel operations.

— David S. Chesnick ■



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Ownership Manual

Bioenergy

Study assesses four primary ownership models for biofuels



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Editor's note: This article presents findings of Informa Economics, a consulting firm headquartered in Memphis, Tenn. The article does not reflect any official position of the U.S. Department of Agriculture or of any other government entity.

The U.S. Department of Agriculture commissioned Informa Economics Inc. to study the business models in use in the renewable transportation fuels industry. In addition to providing a

full description of the basic business models used in biofuels production, the objectives of the study were to:

- Articulate the advantages and disadvantages of each model and the conditions of the marketplace products and raw materials, sources of capital and regulatory and tax environment that most favor use of each particular model;
- Assess public policy and USDA Rural Development programs to align particular models to conditions best suited to promote energy development.

Industry background, structure

The ethanol industry is by far the largest component of the renewable

transportation fuels sector, with 3.9 billion gallons produced in 2005 and an estimated 4.9 billion gallons in 2006. This represents dramatic growth from 1990, when production was 900 million gallons, and 2000, when production was 1.6 billion gallons.

During the current decade, ethanol industry growth has been accelerated by a rise in petroleum prices and the banning of the competing oxygenate methyl tertiary butyl ether (MTBE). Farmer-owned facilities participated in this growth to a greater extent than ever. As of November 2006, farmers and other rural investors owned 50 out of the 107 operating ethanol facilities, or 37 percent of production capacity, and they participated significantly in the



USDA photo illustration by Stephen Thompson

ownership. It is a vertically integrated agribusiness conglomerate and is also the largest biofuel producer in both the United States and the world, with more than 1 billion gallons of annual production capacity (although a pending deal may result in a company that surpasses its production, see below). The corporation owns an extensive network of grain elevators and is one of the world's largest agricultural processors of soybeans, corn, wheat and cocoa.

ADM is a Delaware corporation and its stock is listed on the New York Stock Exchange. With net sales and other operating income of \$36.6 billion in fiscal 2006, ADM is the largest example of the corporate business model for biofuels. It operates seven ethanol production facilities: Decatur and Peoria, Ill.; Cedar Rapids and Clinton, Iowa; Columbus, Neb.; Marshall, Minn.; and Walhalla, N.D. It is building two new 275-million-gallon plants at its Cedar Rapids and Columbus sites.

ADM has an experienced internal sales force to market its ethanol. It began offering ethanol-marketing services to independent ethanol producers last year. The corporation controls substantial transportation assets, including 20,000 railcars, 2,000 barges and 1,500 tractor trailers. It has co-product merchandising capability via its ADM Alliance Nutrition subsidiary. "ADM is uniquely positioned at the intersection of the world's increasing demands for both food and fuel," says ADM Chief Executive Officer Patricia Woertz.

■ The Farmer-Owned Model

These businesses are generally structured legally as either a cooperative or an LLC or similar organization. Farmers have a majority ownership in the facility. In a co-op, or a co-op within an LLC or which owns an LLC,

industry's high profit margins.

About half of industry capacity is in the hands of firms structured as either a limited liability company or partnership (LLC and LLP) or a cooperative. The other half of the industry is controlled by investor-owned corporations, such as Archer Daniels Midland, which owns 20 percent of the industry's production capacity. Another 30 percent is owned by privately held corporations, such as Cargill and Abengoa Bioenergy.

Business models for biofuels

While a number of diverse business structures developed in the ethanol industry in the past 15 years, looking at a cross-section of the industry, with respect to producer and capacity, reveals

these four main business model types:

■ Corporate Model

The producer here is a corporation (typically a Class-C corporation) or a subsidiary of a corporation. Internal staff manages the plant(s) and the functions of grain procurement, biofuels marketing and co-product marketing. The producer does not own or manage farmland. If the corporation produces biodiesel, it is very likely to own integrated oilseed-crushing operations. Some corporations also provide third-party grain supply and biofuel and co-product marketing services to other producers.

Archer Daniels Midland (ADM) is a prime example of this model of

members have delivery obligations (grain and/or oilseeds) to the facility. They have access to storage, including on-farm bins and limited storage at the facility. Especially if the ownership is through a cooperative, the business will also have separate grain-elevator operations.

The Chippewa Valley Agrafuels Cooperative (CVAC) is an example of the farmer-owned business model. It was formed in the early 1990s with the intent of establishing an ethanol facility in Benson, Minn. CVAC was formed with more than 650 shareholders, which included producers, elevators and local investors. Planning for the ethanol plant began in 1993. CVAC teamed up (with) the design/builder Delta-T Corporation to form Chippewa Valley Ethanol Co. LLC (CVEC). Delta-T chose to become an equity investor when local producers faced a significant shortfall in their original equity drive.

“With the advent of cellulosic ethanol... the issues of cost, legal structure and management are expected to become even more acute.”

CVEC's original capacity was 15 million gallons, and was later expanded to 20 million gallons. As the size of new ethanol plants increased, CVEC expanded again, to 45 million gallons in 2003, in order to stay competitive. In late 2006, CVEC signed a letter of intent with Fagen Inc. to build a new 40-million-gallon facility next to the existing facility.

To improve its market position and diversify its revenue stream, CVEC and

a group of other ethanol producers founded Renewable Products Marketing Group. RPMG was established to collectively and cost-effectively market ethanol by aggregating sales in volumes demanded by buyers. RPMG members also used their combined buying power to reduce costs of enzymes and other raw materials.

CVEC teamed up with Pete's Wicked Ale in 2003 to produce Shakers Original American Vodka, a premium brand. CVEC has proven that the farmer-owned business model can be adaptive and progressive and that it can offer business strengths that go well beyond an assured grain supply.

■ Engineer/Builder-Owned Model

These firms either own facilities outright or maintain a significant ownership interest, along with other investors, in individual plants. In either case, the design/build firms maintain a controlling interest in management. Because of their ownership in multiple facilities, these firms have the scale to support an internal staff that conducts grain procurement and biofuels/co-product marketing. They may also provide services to unaffiliated plants.

From the Broin family's small-scale entry into the ethanol industry in the 1980s, it would have been difficult to predict the extensive role that the Broin Companies now play across the ethanol-supply chain today. The family built a small plant on its farm in Kenyon, Minn., in 1983. The Broins then purchased and refurbished a foreclosed ethanol plant in Scotland, S.D., in 1987.

From such small beginnings, Broin & Associates began providing ethanol facility engineering and construction services for other organizations. By the end of the 1990s, Broin Companies provided a range of services to ethanol producers and became the prototype engineer-owned business model. Renamed POET in May 2007, this group of companies provides a comprehensive array of services for

Renewable energy issues focus of WIREC 2008

The Washington International Renewable Energy Conference (WIREC 2008) will bring together government, civil society and private business leaders to address the opportunities and challenges of a major and rapid scale-up in the global deployment of renewable energy technology. The conference will be held March 4-6 at the Washington, D.C., Convention Center.

“Renewable energy can quite literally change the centers of power from urban cities to rural communities,” Thomas C. Dorr, USDA Under Secretary for Rural Development, recently said. “It is not often that you have the chance to get in on the ground floor of this kind of development, but that is the opportunity we are being presented with today. WIREC 2008 will bring together government, business and community leaders from around the world to discuss issues, share successes and identify best practices.”

WIREC participants can expect to:

- Acquire a better understanding of the benefits of renewable energy deployment on energy security, climate change, air quality and economic growth.
- Gain an appreciation for the multiple policy options and best practices that encourage and enable accelerated renewable energy up-take.
- Develop networks and find partners with whom to explore and initiate renewable energy projects.

These three objectives will be woven into WIREC's four cross-cutting and policy driven themes: Agriculture and Rural Development; Technology/Research and Development; Finance; and Market Adoption/Deployment.

For more information and to register: www.wirec2008.gov, or (805) 290-1338.

Elements of a Business Model

4 Pillars	9 Building blocks	Answer these important questions.
Products	Value proposition	What products are made? What services are performed?
Customers	Target customer	What customer or segment is offered value?
	Distribution channel	By what means is value (products/services) offered?
	Customer relationships	What links the company with its customers?
Operational Architecture	Value configuration	How are activities and resources arranged?
	Core competencies	What competencies are involved in executing the business?
	Commercial partnerships	What arrangements with other businesses are necessary?
Finances	Cost structure	What are the monetary ways and means?
	Revenue streams	How does the company make money?

Adapted from Ostenwalder, A. Pigneur and C. Tucci, "Clarifying Business Models: Origins, Present, and Future of the Concept," *Communications of the Association for Information Systems*, vol. 15, May 2005.

ethanol producers. In 1991, it began operating a center for plant design, engineering, construction and research. A management company was formed in 1994 to provide management services for Broin-designed plants. Dakota Gold Marketing was established in 1995 to market Dakota Gold Enhanced Nutrition Distillers Products. In 1999, Ethanol Products was formed to market ethanol and carbon dioxide.

Twenty-three operating ethanol plants with a combined production capacity of over 1.1 billion gallons have been designed and built by POET. An additional five plants totaling 375 million gallons were under construction or development in December 2007.

POET retains an equity interest of 20-25 percent in its partners' plants. With its engineering and construction capabilities, ownership and management of partner plants, as well as its ethanol and distillers grains marketing services, POET has pioneered the "engineer/builder-owned" business model.

■ The "Franchise" Model

This is not a vertically integrated model, but rather is characterized by a dependence on third-party service providers to link the firm to its supply chain. The plant is a "cookie-cutter" facility designed and built by one of the major engineering firms (consortiums), and its production process is monitored remotely by the builder.

Third-party service providers are depended upon to procure feedstock (grain or oil) and to market biofuels and co-products. New operations under this model are generally required by their financial institution(s) to enter into long-term agreements with these service providers. In turn, the service providers might invest a modest amount of capital in the facility.

ASAlliances Biofuels LLC (ASA) was formed in 2004 by Americas Strategic Alliances LLC, a firm specializing in merchant banking and investments. ASA's business plan combines top-tier service providers with sophisticated financial partners. Each facility is to be built by Fagen Inc. and located adjacent to an existing Cargill Inc. grain elevator.

ASA began construction on two planned ethanol facilities in 2006, each with a capacity of 110 million gallons annually, in Albion, Neb., and Bloomingburg, Ohio. Construction began on a third facility in Linden, Indiana in 2007.

Cargill Inc. is contracted to provide corn and natural gas procurement services and ethanol and distillers grains marketing and transportation services. United Bio Energy Management LLC will provide operational and maintenance support.

In addition to negotiating contracts with the construction, grain supply, product off-take and facilities management firms, ASA put together the group of equity backers for the three facilities and obtained the required debt financing. A group of private equity firms comprised of American Capital Strategies Ltd., Laminar Direct Capital, L.P. (a member of the D.E. Shaw group), U.S. Renewables Group LLC and Midwest First Financial Inc., provided a significant portion of the equity and all

of the subordinated debt to ASAlliances Biofuels. Challenger Capital Group Ltd., a Dallas-based, full-service investment bank, secured \$148 million in equity and subordinate debt.

In September 2007, VeraSun Energy Corp. announced plans to acquire the three ethanol plants from ASAlliances Biofuels LLC for \$725 million. The acquisition is expected to increase VeraSun's total production capacity to approximately 1 billion gallons by the end of 2008.

In a sense, the "farmer-owned" and "engineer/builder-owned" business models can be viewed as variations of the "franchise" model. However, they also have elements of vertical integration that differentiate them from the pure "franchise" model. Farmer-owned operations are linked to the farmer segment of the supply chain, and in some cases there is integration with a grain elevator. This arrangement can reduce, but not eliminate, the need for a feedstock supply agreement for ethanol operations.

Third-party marketing organizations

The advent of third-party marketing organizations is an important development in the industry and a key component of certain business models, especially the "franchise" model. As of December 2007, there were 120 companies owning 134 ethanol facilities in operation, with 66 facilities under construction.

Besides being costly for each of these facilities to have internal sales staff for ethanol and distillers grains (the main co-product of dry-mill ethanol production), it would be particularly inefficient for fuel blenders to have to purchase ethanol from 100 or so different firms. Moreover, rail carriers favor unit train shipments of about 100 cars and a limited number of origin and destination points (preferably one of each). These preferences are reflected in their rate structures.

Until recently, it was necessary for a

company to have a minimum of 100 million gallons of annual production to justify having an internal sales staff. However, given the proliferation of individual plants of that size, the minimum size has increased. Although there is no set rule, operations producing an aggregated 300 million gallons annually are more likely to use an internal sales staff. However, virtually all new entrants into the industry are encouraged by their lenders and debt holders to use a third-party marketing company, at least until they've gained sufficient industry experience.

VeraSun Energy Corp. owns eight plants with 560 million gallons of annual production, and has an additional 330 million gallons of capacity under construction.

At press deadline for this article (in early December), VeraSun had recently announced a proposed purchase of U.S. BioEnergy Corp. of Inver Heights, Minn., which would combine the nation's No. 3 and No. 4 ethanol producers into one company. The new VeraSun would have about 1.6 billion gallons of annual production at nine existing plants, with seven more under construction.

The deal was expected to be completed by March of 2008. If completed, the combined VeraSun-U.S. BioEnergy would surpass both ADM and POET in production. VeraSun recently transitioned to market its own ethanol, a service which had been done by Aventine Renewable Energy.

CHS Inc., the nation's leading farmer-owned energy and grain-based foods company, had owned about 20 percent of U.S. BioEnergy. If the merger is approved, it will own about 8 percent of VeraSun.

The CHS board of directors voted in favor of the VeraSun merger. CHS has marketed ethanol-blended fuels for more than 25 years and currently is one of the nation's largest suppliers of blended fuel products, which it distributes through 64 terminals.

Cellulosic ethanol applications

With the advent of cellulosic ethanol in the coming years, the issues of cost, legal structures and management are expected to become even more acute. Capital expenditures per gallon of capacity for cellulosic plants are estimated to be at least three times those for a corn-based plant. Between the total cost of a facility and obtaining the rights to use cellulosic ethanol technology, it is possible that only large corporations and private equity funds have the financial resources to provide the equity for such ventures, especially given the associated risk.

Given the importance of intellectual property in cellulosic ethanol and the fact that some of the main engineering companies serving the corn-based ethanol industry are also devoting resources to cellulosic ethanol, the engineer/builder-owned business model are likely to rise in prominence.

Collection and storage systems have yet to be established for crop-based feedstocks, although central milling locations exist for some forest and paper products. Given the scale of the investments and the role of intellectual property in cellulosic ethanol, it is possible that the farmer-owned business model will struggle to be relevant in the new industry. However, farmers will still be the main source of cellulosic feedstock. A hybrid business model could be developed to bring feedstock producers into the ownership structure.

The Broin/POET system of partnering with farmers and other rural investors seems to be adaptable for this purpose of tying together capital, intellectual property and feedstock. But the feedstock supply linkage will need to be enhanced. Given the legal and management issues discussed above, it seems imperative to ensure that any necessary modifications to legal structures and management systems be put in place during the next few years if farmers and other rural investors are to

continued on page 44

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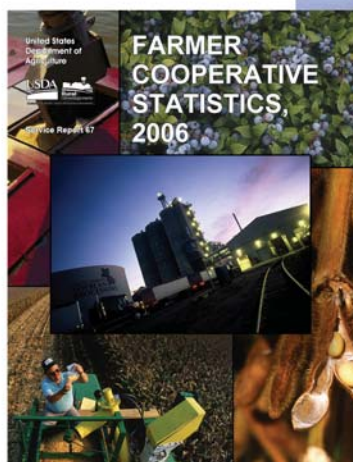
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By Alan Borst
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Editor's note: This article presents findings of Booz Allen Hamilton, a consulting firm headquartered in McLean, Va. The article does not reflect official positions of the U.S. Department of Agriculture or any other government entity.



USDA Rural Development commissioned Booz Allen Hamilton (BAH) to: examine current

renewable energy markets for electricity generation; identify various barriers that inhibit further development of these resources by rural residents; analyze business model options that can be applied to better enable the profitable sale of on-farm generated power to the electric grid; and recommend programs or policies that USDA could undertake to promote greater capture of renewable energy benefits by rural communities.

Affordable and accessible electric transmission remains the greatest obstacle to the development of rural renewable energy projects overall. BAH concluded that USDA, as the largest lender to rural electric cooperatives for transmission upgrade projects, has an important role to play in working with a variety of stakeholders and regulators to develop comprehensive, equitable and transparent transmission access rules that provide the opportunity to participate fully in the growing renewables market.

Despite the lack of comprehensive, nationally applicable transmission policies, there are emerging policy solutions at the state and federal level. These include provisions of the Energy Policy Act of 2005, which call on the federal government to create new transmission corridors in renewable-

Study sees USDA role in linking electricity from alternative energy sources to grid

Getting Connected

resource-rich areas. Regulatory developments at the state-government level will likely make transmission access more transparent and affordable for renewable energy projects. BAH found that USDA could play a significant role in helping analyze and publicize these developments to ensure that rural communities are able to capitalize on them to the greatest degree possible.

Supporting rural renaissance

Rural energy production holds much promise as a means of supporting our

national energy needs and contributing to the rural renaissance in America. A high percentage of the estimated U.S. wind and solar capacity and virtually all of the biomass-derived electricity generation capacity is located in rural areas. BAH found that wind energy currently offers the highest potential for profitable development, followed by biomass and solar opportunities. Unlocking the economic potential for these renewables requires analysis of the various value chains to identify the functions with the greatest potential for capture by rural residents. Realizing

“The greatest opportunities for capturing renewable energy value will be realized if rural communities aggregate their resources...to develop new projects at the local level.”

this value will require larger scale projects, which in turn will inform the choice of best business models.

The primary business model involves large-scale (primarily wind) projects by large and remote corporate developers, including investor-owned utilities and private energy companies. These projects bring some limited economic benefits to the local community but return the majority of the earnings to outside investors. Capturing the value inherent in renewable energy production requires major shifts in the way rural residents think about and act upon these opportunities.

Rural entrepreneurs key to effort

The first step in promoting these shifts is the dissemination of technical, business and policy information in a manner that America's rural entrepreneurs will understand. This information must be timely to ensure a market-based solution to both energy and rural development needs.

The greatest opportunities for capturing renewable energy value will be realized if rural communities aggregate their resources, either in the form of land-lease rights or capital formation, to develop new projects at the local level. However, such aggregation will only work if rural investors are able to secure access to expertise on various technical and contracting mechanisms that govern

power production, including site selection, project operation and power purchase agreement negotiation.

There is no current means for distinguishing renewable energy generated and owned by rural communities. An examination of marketing and outreach mechanisms that could stimulate greater demand for community-owned renewable energy should be undertaken.

Facilitating best practices

Given the pace of change in the renewable marketplace, new policies and business models are emerging on an almost daily basis that fundamentally alter the feasibility of rural-owned and -operated rural energy. By providing rural Americans with easy access to such information, USDA would facilitate a more rapid transition to creative new best practices and help rural Americans increase their profitability by adopting cutting-edge policies and business models.

Providing access to technical expertise

On-farm energy generation will entail a number of technical decisions, ranging from identifying appropriate energy source, technology and size, to project-related decisions involving site selection and connecting to the grid. Business challenges include the aggregation of financing and finding and negotiating a power purchase agreement.

In most cases, tackling all of these issues requires outside expertise or counsel, which is often time consuming and expensive. BAH suggests that USDA help rural constituents overcome this barrier by establishing a program through which it would provide rural investors access to experts on the various aspects of renewable energy. These experts would be pre-screened by USDA to determine their level of expertise and experience.

Promoting 'green branding'

To assist in developing a local market for on-farm energy products, tools could be developed to create additional demand for rurally owned renewable power. The government has used similar branding campaigns to build consumer awareness and markets for environmentally friendly products to great success, most notably with the ENERGY STAR Program. The federal government could assist rural developers in creating "green-market" branding campaigns to help the public connect the benefits of rural-based renewable energy generation to those regions and to their own lives.

Increasing use of financial incentives

The federal Production Tax Credit (PTC), with its relatively short authorization periods and lapses resulting from delays in reauthorization, has had the effect of creating boom and bust periods in the industry. To avoid such cycles in the future, BAH suggests the federal government should develop guidelines for a consistent, integrated set of financial incentives targeted specifically at renewables and on-farm generation, including making the PTC, Clean Renewable Energy Bonds, and Renewable Energy Production Incentive long-standing and consistent. Reforming the PTC to allow it to be applied against ordinary income, instead of passive income, would significantly increase rural ownership opportunities.

In summary, USDA can play a significant role in helping rural communities to profitably invest in renewable energy projects. Renewable-resource-rich rural areas can, and will, lead the way in helping America to reach its energy independence and environmental goals while also furthering their own economic development. ■

Overcoming constraints to growth in biofuels industry

By Donald A. Frederick
Program Leader for Law,
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USDA Rural Development

Editor's note: This article presents findings of Booz Allen Hamilton, a consulting firm headquartered in McLean, VA. The article does not reflect official positions of the U.S. Department of Agriculture or any other government entity. The author of this article recently retired from USDA.

The U.S. Department of Agriculture asked Booz Allen Hamilton (BAH) to identify the obstacles to rapid expansion of the biofuels industry and actions to overcome those barriers. The target is U.S. production and use of 60 billion gallons per year (BGY) of biofuels by 2025. This would meet 17 percent of the projected 250 BGY United States transportation fuel demand for 2025.

Expanded domestic biofuels production and use will have several important benefits, including: 1) lessen our dependence on foreign oil; 2) improve the environment; 3) reduce U.S. foreign trade deficits; 4) enhance the economic well-being and quality of life for rural Americans.

The 60 BGY target represents what policymakers believe to be the most aggressive, yet achievable, goal for biofuel production (i.e., ethanol and, to a much lesser extent, biodiesel) in the United States. BAH concludes that the goal is attainable, but will require significant technological, logistical and socio-economic changes to the current

system of producing, transporting and using transportation fuels.

Initial findings

Most biofuels production today is corn-based ethanol, most of which is used as an additive to petroleum-based gasoline, producing a blend of 90 percent gasoline and 10 percent ethanol.

As early as 2012, BAH says ethanol production from corn will reach 15 BGY. This will saturate the current blend market and the use of corn for ethanol production will begin to adversely impact other uses of corn, notably as livestock feed.

Further growth of the biofuels industry will require a new set of government policies that will facilitate the development of new, dedicated energy crops, commonly referred to as cellulosic feedstocks. Additional policy initiatives will be needed to encourage investment in infrastructure and distribution capacity that will make high-blend fuels – such as an 85 percent ethanol fuel (E85) – readily available and cost competitive with fuels entirely or primarily produced from oil. Finally, drivers will have to want to purchase and have easy access to affordable vehicles that operate efficiently on biofuels.

BAH found that as annual biofuels industry production progresses towards 60 BGY, constraints will arise in all four major components of the biofuels value chain (feedstock, conversion, transport and end use). The BAH report identifies those constraints and recommends actions that USDA and other government institutions can take

“Further growth of the biofuels industry will require a new set of government policies that will facilitate the development of new, dedicated energy crops.”

to address them. Forward thinking is essential to coordinate the simultaneous expansion throughout the biofuels value chain that is necessary to avert constraints which could cripple the industry.

Feedstock

Feedstock production involves the growth and harvesting of traditional crops such as corn and soy, future dedicated energy crops and biomass available from forest and agricultural resources.

BAH found that significant feedstock constraints are:

- Land and water use requirements for feedstock production sufficient to supply a 60 BGY biofuels market are not well understood;
- Severe drought and low crop yields could significantly impact the feedstock availability for conversion to biofuels;
- Current re-enrollment of CRP land is high and there is no incentive for land reintroduction for growing dedicated energy crops.



Moving increased volumes of ethanol will require expanded and innovative transportation systems. Rail tanker-car construction is backlogged 18 months, and some rail spurs are already overburdened. USDA photo by Dan Campbell

The recommended action to address feedstock constraints is to create a mechanism to determine what agricultural practices must be present in 2025 to support a 60 BGY biofuels market and still meet food and feed requirements. This study should examine:

- The balance between existing agriculture and introduction of new energy crops;
- The pace of land introduction and/or conversion needed to meet future biofuels feedstock production requirements;
- The potential of introducing drought- and pest-tolerant and high-yield seed hybrids;
- The benefits of creating a "strategic crop reserve" as a hedge against low crop yields;
- How subsidies could impact the production of new feedstocks/dedicated energy crops;
- How improved feedstock densification processes can lower costs and risks of biofuels facilities.

Conversion

Ethanol and biodiesel plants each have their own unique processes for

converting renewable feedstocks into biofuels. A sustainable American biofuels industry capable of replacing a significant amount of imported oil will require new technologies which can convert different and more plentiful renewable resources into biofuels.

The significant conversion constraints are:

- Environmental challenges of conversion technologies affect potential plant siting;
- Economics of new bioconversion technologies are highly dependent on volatile feedstock and biofuels prices.
- Biodiesel production is well below existing refinery capacity.

The recommended actions to address these conversion constraints are:

- Work with states to determine how emerging carbon trading programs, water rights issues and air permitting requirements will impact biofuels industry development;
- Create a biofuels security subsidy with a price floor on oil and a price ceiling for feedstock outside of which government support would be triggered to maintain positive economics within the biofuels industry;

- Create additional Renewable Fuels Standards specifically for E85 and biodiesel to increase both nationwide availability and demand of E85 and biodiesel.

Transport

Current biorefining finished product volumes are small enough that barge, rail and truck shipments are economical and efficient. But moving a greatly enlarged amount of product from dispersed biorefineries to local fuel terminals will require expanded and innovative transportation systems.

The significant transport constraints are:

- The existing biofuels transport infrastructure is incapable of supporting 60 BGY of biofuels;
- Rail tank-car construction is backlogged 18 months and rail spur lines are becoming overburdened with current shipments of freight and fuel;
- No determination has been made as to the feasibility of converting existing petroleum pipelines to accommodate biofuels;
- There is a long permitting process

continued on page 43



Mission to Market Co-ops

MacDonald, NCBA Marketing Committee work to expand public understanding of cooperatives



By Lindsay Atwood
USDA Rural Development

True Value hardware. Ocean Spray cranberries. Blue Diamond almonds. Land O’ Lakes butter. Dunkin’ Donuts. Best Western hotels. Sunkist oranges. These are all common brand names known by most Americans. The fact that they are all cooperative brands separates these businesses and their products from others.

Almost half of Americans are members of cooperatives, although many are unaware of it, and almost everyone in America regularly purchases products produced by cooperatives. Co-ops are part of the basic fabric of our daily lives, but too many Americans are unaware of this, or of the major role cooperatives play in the marketplace.

That is all going to change if Roberta MacDonald has her way. MacDonald, senior vice president of marketing for Cabot Creamery Cooperative in Vermont (part of the Agri-Mark dairy co-op), was instrumental in creating the new Marketing Committee of the National Cooperative Business Association (NCBA). As chair of the committee, her goal is to combat public ignorance of co-ops. Helping the public to understand what co-ops are can give co-ops a better edge in the marketplace



“Long before I was a zealot about co-ops, I was a zealot about farmer ownership,” says Roberta MacDonald. Above right: the new Girl Scouts’ Co-ops for Community merit badge. Opposite page: a new co-op education Web site homepage.

and spread this member- and community-oriented business structure.

Spreading the word

Although she makes her living promoting farmer-owned Cabot Cheese, MacDonald is a city kid who did not have a farming or cooperative background.

“I come from consumer products, glitzy D.C., New York and San Francisco,” says MacDonald. “I was actually somebody that didn’t even know where milk came from.”

In the almost 20 years since MacDonald started working for Cabot, a few things have changed. She credits her teammates with helping Cabot grow from a cooperative with \$30 million in annual sales to one with \$350 million in sales. During that time, she has come to truly appreciate and support the cooperative business model.

“Long before I was a zealot about co-ops, I was a zealot about farmer ownership,” she says. “I then came to appreciate what the cooperative structure meant.”

Understanding and appreciating the co-op business structure makes her position with Cabot more than simply a job. It may be her job to market Cabot, but her mission is to advocate Cabot’s cooperative advantage — and the advantages of cooperatives in general — to the nation.

“People don’t get that it’s an alternative to other business structures, and it can be just as profitable, just as

effective, but certainly...more transparent," she says.

From this dedication, both to Cabot and to the entire cooperative sector, MacDonald has poured her efforts into promoting cooperatives. She is well aware that what is true for Cabot is true for other co-ops: that on their own, co-ops simply do not have enough money to do serious consumer marketing. Joining forces is mutually beneficial to each and every one of them.

"We represent the largest potential voting bloc of any group in the United States," she says. "We are a political force to be reckoned with if we ever got together."

MacDonald was nominated to the NCBA board about four years ago, making her goal of promoting co-op advantages and forging cross-sector co-op alliances more attainable. She used her position on the board to advocate the creation of an NCBA Marketing Committee open to board members and any cooperative members' marketing team leaders.

"The committee was really her idea," NCBA President Paul Hazen says. "She's a marketing genius."

"I thought the marketing committee was the perfect place for the outgoing chair [of NCBA] to serve as chair," MacDonald says. "Instead, what they did was to make me chair."

Marketing the co-op advantage

Since its creation, the NCBA Marketing Committee has developed some powerful tools for reaching out to people and educating them about cooperatives. These tools, including a new co-op Web site (www.go.coop), a new introduction to cooperatives video and a new Girl Scout "Co-ops for Community" patch, all tout cooperative advantages. MacDonald played a part in each of the projects but credits teamwork for making them all happen. "No one person accomplishes anything, if you ask me," she says. "It's always a team."

Every member of the NCBA Marketing Committee, which includes representatives from several cooperative

associations — including the Credit Union National Association, the National Rural Electrical Cooperative Association and the National Council of Farmer Cooperatives — was crucial to the effort, she stresses. Staff from NCBA, dotCooperation LLC (which oversees the .coop Web URL domain) and NCB (formerly National Cooperative Bank) were especially helpful to the effort, as was the National Cooperative Grocers Association. The grocers association also played a key part in creation of the



.coop URL. Having researched what consumers thought of cooperatives with their members, they landed on the Go Co-op phrase, which was turned into the committee's Web site for the marketing program.

Many cooperatives are already taking advantage of the .coop URL, but the committee appreciates that there has to be serious marketing on an ongoing basis to increase public awareness. "Too few people even realize there's a .coop URL," MacDonald says.

As part of National Co-op Month in October, the NCBA Marketing Committee launched a month of sponsorship announcements on National Public Radio, promoting the new co-op Web site. "Two weeks into the campaign, we had thousands of hits on our Web site and many stayed to

look through all we had to offer," MacDonald says.

The Web site is also home to the video created to educate people about what co-ops are, what they do and how they benefit people. The video highlights housing, electric, grocery, healthcare, farm and financial co-ops across the nation. Cabot, along with NCBA, also spearheaded the effort to create the Girl Scouts "Co-ops for Community" patch program as a part of the overall co-op awareness campaign.

"Roberta has always wished to do something to spread the word on what co-ops are," says Deb Lowery, the National Girl Scouts project coordinator for Cabot Creamery. This is one way she has been able to directly involve co-ops in teaching the next generation about how they can personally become involved.

"I probably have about 200 orders [for information packets on the co-op merit badge program] that have come in

from cooperatives," Lowery says. "There's a tremendous amount of interest. The orders for the booklets are just coming in hand over foot."

Although the booklets were created for Girl Scouts, MacDonald emphasizes that any children and youth organizations can use the materials. "I think once 4-H gets hold of it, it'll go a lot of places," she says. "It's not just for Girl Scouts."

The benefits of this Girl Scouts patch program are in keeping with MacDonald's long-term goals for the future of cooperatives. She wants to get young people interested in co-ops, understanding co-ops and involved in co-ops.

"When you get kids involved from an early age in anything, it becomes

continued on page 46

Using the 'extra-value index' to measure agricultural cooperative performance

By Carolyn Liebrand, Ag Economist
USDA Rural Development, Cooperative Programs

Editor's Note: The extra value index was developed by USDA Cooperative Programs previously to evaluate dairy cooperative performance. Results for dairy cooperatives can be found in

Research Reports 166 and 212, and also in "Rural Cooperatives" magazine (Nov./Dec. 1996 and Sept 1998 issues). This article summarizes the results of "Measuring the Performance of Agricultural Cooperatives," a new USDA report that extends the analysis to all types of agricultural cooperatives. To order a copy of the full report, see ad on page 15.



Photo illustration from photo by Bruce Campbell



he task of measuring the financial performance of cooperatives is problematic because of the attributes of the cooperative form of business. One such feature is the use of member equity to finance cooperatives.

The cost of member equity is often overlooked.

Most of the commonly used financial measures — return on equity, return on assets, return on operating capital, net margins on sales, net margins per unit and so forth — do not yield unequivocal conclusions about a cooperative’s performance, in large part due to the treatment of equity. Another complicating factor is a cooperative’s lack of publicly traded stock. For public companies, the stock price may serve as a proxy for a company’s performance and market value.

For these reasons, it is difficult for members to judge their cooperative’s performance. However, members need to be

able to fully evaluate their cooperative’s performance. The more complete the measure of cooperative performance, the better equipped the board is to guide the cooperative and to evaluate and appropriately reward cooperative managers.

What is extra value?

In previous reports, USDA Cooperative Programs took an innovative business-school tool for measuring the performance of a business and modified it for use with cooperatives. This method is fairly simple. It calculates the “extra value” a cooperative generates through its operations by subtracting an interest charge on equity capital from net savings:

$$\text{Extra value} = \text{Net savings} - \text{Interest on equity}$$

$$\text{Interest on equity} = \text{member equity} \times \text{interest rate for equity}$$

Performance was measured using three different interest rates for the charge on equity to reflect a range of risk premiums. The December average of the British Bankers Association’s London Inter-Bank Offered Rate (Libor) plus 200 basis points provides the basic reference rate. This Libor + 2 “basic” rate reflects the commonly held opinion that banks in the United States will generally extend loans to a firm with a better-than-average credit rating, at an interest rate of about 200 basis points above the Libor.

The extra-value approach enables a cooperative’s use of member-supplied funds to be fully measured — whether member capital is earning more, or less, than it could in alternative investments. The value a cooperative generates over and above its expenses, including an opportunity cost for its equity capital, is termed “extra value.” A positive extra value indicates that a cooperative has created value by its operations, while a negative extra value means that a cooperative has actually diminished the value of members’ investment.

Extra value was also calculated at two higher rates — the basic rate plus 5 percentage points and the basic rate plus 10 percentage points — to account for the fact that equity investments are riskier than debt and require higher rewards.

For comparisons over time and among different types of cooperatives, extra value is expressed as a percentage of operating capital. This common-sized index is thus scale- and operating mode-neutral.

$$\text{Extra-Value Index} = \text{Extra Value} / \text{Operating Capital} \times 100$$

$$\text{Operating capital} = \text{fixed assets} + \text{net working capital}$$

$$\text{Fixed assets} = \text{non-current assets}$$

$$\text{Net working capital} = \text{current assets} - \text{current liabilities}$$

Selection criteria for cooperatives

Agricultural cooperatives that were on the “Top 100” list (compiled by USDA Cooperative Programs, based on a co-op’s revenue) for at least four years in both of the five-year time periods 1992–96 and 2000–04 were included in this



study. Multiple years were averaged to help minimize the impact of extraordinary factors on results. Use of this criteria resulted in the selection of 65 agricultural cooperatives.

Based on their main source of revenue, the cooperatives were grouped into seven general types: cotton, dairy, farm supply, fruit and vegetable, grain, sugar and “other.” The few diversified (where marketing and supply operations both generate significant revenue), rice, poultry and livestock cooperatives were combined in the “other” category.

Ag co-op performance

Performance was assigned to one of five categories, according to the cooperatives’ return on equity and extra value generated at three different interest rates:

Category I — Negative returns. Cooperatives in this category had a negative average return on equity for the five-year period.

Category II — Positive return on equity, but no extra value generated. These cooperatives averaged positive return on equity for the five-year period, but showed a negative extra value when the basic rate was charged for equity capital.

Category III — Extra value generated at a basic interest charge for equity. These cooperatives were adding sufficient value through their operations to cover the opportunity cost

of member-supplied capital at a rate similar to what they would have had to pay for debt capital.

Category IV — Extra value generated with a moderate risk premium on equity capital. Cooperatives in this group showed positive average extra value when interest on equity was charged at a 5 percent premium over the basic rate.

Category V — Extra value generated with a higher risk premium charge for equity. Cooperatives in this category were able to average positive extra value for the five-year period when applying a 10 percent risk premium (over the basic rate) to reflect the historical risk premium for equity investment.

Table 1 shows the numbers of cooperatives, according to type, that performed in each category for each time period. More cooperatives showed positive extra value (category III, IV or V) in the second time period (46 cooperatives) than in the first (39 cooperatives). The different types of cooperatives followed suit, with the exception of the farm supply cooperatives, where there were two fewer cooperatives with positive extra value — at any interest charge for equity — in the second time period.

For 2000-04, all of the cotton cooperatives showed positive extra value and more than 80 percent of the grain and dairy cooperatives generated extra value. A majority of

continued on page 44

Table 1—Performance of agricultural cooperatives in the two five-year periods 1992-96 and 2000-04, by category

Group	Negative ROE	Positive ROE	Positive EVI @Basic Rate	Positive EVI @ Basic +5%	Positive EVI @ Basic +10%	Period	Cotton	Dairy	Farm Supply	Fruit & Veg	Grain	Other	Sugar	Total
I	X					1992-96	0	1	0	0	0	1	2	4
						2000-04	0	1	1	2	1	0	0	5
II		X				1992-96	1	4	2	9	4	2	0	22
						2000-04	0	2	3	5	1	2	1	14
III		X	X			1992-96	0	4	4	3	5	2	1	19
						2000-04	1	5	5	5	8	3	1	28
IV		X	X	X		1992-96	0	3	2	1	2	0	0	8
						2000-04	0	3	0	1	2	0	1	7
V		X	X	X	X	1992-96	2	4	1	2	2	1	0	12
						2000-04	2	5	0	2	1	1	0	11



School's In!

California parents create childcare co-op

By Melanie Bowden

Editor's note: Bowden is a freelance writer, writing teacher and writing coach. She has written for more than 100 publications.



I've lived here for more than 15 years," says Lina Hernandez, a mother of three. "Before the Knights Landing Children's Center,

there was no reliable child care. My husband worked days and I had to work the swing shift."

Now, Lina has a day job as a case manager for the Yolo Family Resource Center. She's much happier not having to look for swing shift agricultural or retail work. And her four-year-old daughter, Esmeralda, is happier too.

Staff from the new California Center for Cooperative Development (CCCD), along with a parent organizing committee, spent a year planning for the parent-run cooperative's opening in January 2004. In 2007, the CCCD helped the co-op upgrade its financial accounting system. CCCD helped educate the members and the board of directors, which is comprised of parents. It also assisted with other structural supports that have helped strengthen the co-op, which offers families in the rural community of Knights Landing, Calif., a place for children age 2-6.

The co-op meets the unique needs of parents in a rural agricultural community. Many of them work in a nearby cannery or in the fields. Since the center is open year-round from seven a.m. in the morning to five p.m., parents have



time to drive back and forth to their jobs and still put in an eight-hour shift, something that was impossible when the sole preschool in town offered only a three-hour program.

USDA Rural Development recently provided a \$224,000 grant to the Yolo Mutual Housing Association (YMHA), which is the new Center for Cooperatives in California. YMHA works with cooperatives on various projects throughout the state, including providing technical assistance and support to Knights Landing Cooperative Children's Center.

Director-teacher Clare Purtil greets an arriving student at the Knight Landing Cooperative Children's Center. Above: the co-op's playground. Each member-family must perform five hours of work at the Center each month. Photos by Melanie Bowden



Parents make the difference

The operation of Knights Landing Children's Center (KLCC) is designed to meet the needs of its members--and to adjust when those needs change. Parents make decisions and solve problems on such issues as tuition, staff hiring, hours of operation and budget. The parent-elected board of directors meets monthly, and membership meetings are also held regularly.

"It's the parents working together who have kept the center open," says Clare Purtil, a board member and a teacher at KLCC. "Without the parents' help, we wouldn't be able to offer three different programs: four-hour, six-hour and full day."

A sliding-scale fee has also been established, with the help of a combination of grants, donations and volunteer parents

doing jobs that would otherwise require paid help. Since the highest fee is less than the lowest fee typically charged by local child care providers, KLCC is able to serve more families living on low incomes.

For their part, each member family is required to participate five hours a month, either helping in the classroom or performing functions such as bookkeeping or purchasing supplies. Parents are expected to attend the annual membership meeting and to participate in a minimum of six education classes that focus on parenting issues.

“It is humbling to work with the parents and staff of Knights Landing Children’s Center,” says Kim Coontz, a nationally known co-op development specialist who now serves as executive director of the new California Center for Cooperative Development. “The parents and the dedicated staff of KLCC put a high value on their cooperative and have been true partners in identifying the education and training needs that would best help it succeed. They have worked hard to implement the changes needed to make their cooperative strong.”

Facing the future, together

This solid base of support will be tested in the coming months. Grafton Elementary School has notified the co-op that next fall, it will need the classroom currently used by KLCC. The school has offered the cooperative another temporary classroom until the following fall, but then the co-op will need to have a more permanent location. Some of the help provided by the cooperative development center has included identifying potential funding sources for this move and developing a brochure and templates for other types of information, which are useful for fundraising.

Gricelda Cardenas, a board member and the co-op’s treasurer, appreciates all that KLCC has to offer. “I receive parenting and educational support from the staff and the other parents. Parents are encouraged to participate in their children’s education, both at the center and at home, and are given the necessary tools to help their children learn.”

Esmeralda Hernandez, Lina’s four-year-old daughter, likes getting to play with all her friends at school. “Teacher Clare takes us to the library every week,” she says. “One time we went to the clinic and learned how to listen to a heartbeat from the doctor.”

Asked what she likes best about her school, she says, “I like everything.” And she likes having both of her parents at home at the end of the school day, too.

For more information on the California Center for Cooperative Development, visit: www.cccd.coop. ■

Art & science of energy independence

“The Art and Science of Cooperative Business Development,” now in its fifth year, is the only training program available in the United States that addresses the unique attributes of developing and expanding cooperatively based enterprises.

Twice each year for five days of intensive training, participants are immersed in learning the practical applications of cooperative business development skills. The training uses a multi-faceted format that includes lectures, interactive sessions, case study analyses, panel discussions, study tours to local cooperative, and plenty of opportunities to network with faculty and students.

The program is produced by CooperationWorks!, a national service cooperative for co-op development centers. It takes place at the University of Wisconsin and Madison, a national nexus for cooperatives and credit unions.

Energy independence director speaks

A special highlight of the September 2007 session was a reception for the Madison co-op community, featuring guest speaker Judy Ziewacz. Currently the director of Wisconsin’s new Office of Energy Independence, she was previously deputy director of the Wisconsin State Department of Agriculture, Trade and Consumer Protection. Before that she was a national leader in cooperative development and one of the founders of CooperationWorks!

Ziewacz spoke about the role co-ops can and are playing in the move toward energy independence. Wisconsin’s governor has challenged the legislature to mandate that 25 percent of electricity and 25 percent of transportation fuel come from renewable fuels by 2025. The state’s dairy co-ops (part of a \$20.6 billion industry) seem to be in a good position to benefit from such initiatives.

Ziewacz told the Madison crowd that people who look to generating renewable energy from the rural landscape but are intimidated by big projects should not be concerned. That’s because the co-op model offers a way to make this happen by becoming more, not less, independent.

Business model that works

“When we first started the [co-op development] centers,” she said in a recent interview, “we positioned cooperatives as a rural development tool that aggregates individual producers’ enterprises in both vertical and horizontal linkages to the market. As the renewable energy field develops, we don’t have to reinvent the wheel,” she emphasized. “We already know a model that works.”

The 2008 “Art & Science of Cooperative Business Development” program will begin this spring. For more information, contact Audrey Malan at 307-655-9162 or cw@vcn.com.

—By Jane Livingston



Ohio co-op's soy-crushing plant produces for expanding trans-fat-free oil market

By **Michael Jones**
Public Affairs Director
USDA Rural Development, Ohio

Developing new markets and responding swiftly — and correctly — to market changes are qualities all successful businesses share. Mercer Landmark Inc., a northwest Ohio cooperative, exhibited those business skills in positioning itself to become a significant regional supplier of soybean-based products.

Mercer, a 74-year-old, locally owned farm cooperative, has more than 2,000 producer-members and operates 15 facilities in Mercer, Darke, Van Wert and Paulding counties. Although Mercer focuses on delivering a variety of agronomy, livestock, grain-marketing and related services to its members, it constantly evaluates new opportunities that could increase the cooperative's overall profitability.

The motivation to financially reward its producer members prompted Mercer to investigate the potential market for soybean oil. To do so, Mercer sought USDA Rural Development's help, securing a \$30,000 Value Added Producer Grant to evaluate the soy-oil market. The grant provided half of the funding needed to conduct a feasibility study and complete a business plan. The study, completed in 2006, confirmed that Mercer's management was right on target in seeking to enter the soy-oil market.

"When we look at growth opportunities, our main concern is making sure whatever decisions we make produce positive financial returns for our members," says Mike Fry, president and CEO of Mercer Landmark. Fry has been with Mercer since 1995 and is responsible for directing and leading the business operations.

"This venture is an opportunity for us to position Mercer to benefit from current trends, as well as to anticipate and incorporate any future industry developments," adds Fry.



Denise Myers determines the linolenic acid concentration of a new soybean shipment. Mercer Landmark CEO Mike Fry (left) and Manager Scott Boulis display raw soybeans, high-protein soybean meal and soy oil. USDA photos by Michael Jones

Study leads to crushing plant

As a result of the feasibility study, Mercer constructed a small soybean-crushing plant where it processes a special low-linolenic soybean, grown under contract by 200 Mercer producer-members. The co-op then sought, and received, a second Value Added Producer Grant: \$300,000 in working capital for the soybean-crushing venture.

Producer members will earn a premium of 60 cents per bushel when delivering this product to the plant at harvest, or 70 cents per bushel if the soybeans are stored on their farms until the plant calls for their crop. Mercer's producer-members will also share in profits from operations at the soybean-processing plant.

Using a mechanical extrusion technique, the process separates soybeans into food-grade soy oil and soybean meal. The extrusion process, which doesn't use chemicals, produces a premium-quality trans-fat-free oil and high-protein soybean meal that can be used in feeds.

"We've been very deliberate in our approach to launching this venture and have specific marketing goals in mind," says Scott Boulis, facility manager for Mercer Landmark. "Developments within our industry occur very rapidly and we

continued on page 43



Sharing the North Fork Canyon Run

Insights from Game Theory for Cooperatives



Photo courtesy Chattanooga Area Chamber of Commerce

By Bruce J. Reynolds, Ag Economist

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It is puzzling that many businesses and individuals forgo opportunities to join or organize cooperatives when such actions would benefit them. One reason for such missed opportunities is that “go-it-alone” decisions sometimes offer more immediate payoffs, or more certainty of outcome, than do efforts that involve sharing resources or participating in orderly marketing efforts.

Game Theory analysis helps identify situations that may lead to coordinated decisions among various “players,” depending on the way incentives are structured. An incentive structure can be conveniently displayed in a 2 x 2 pay-off matrix. These matrices provide a way to distinguish between “dominated” and “contingent” choices, which is a key to understanding the prospects for coordinated decisions. This

analysis will be applied in this article to hypothetical rafting businesses that share a thin strip of white water on the North Fork Canyon Run.

Game Theory is applied to studying situations where pay-offs to each participant are interdependent, i.e., determined not only by the decision of an individual but also by the decisions of others. For the sake of simplicity, this will be examined as a two-person game.

Although the pay-offs are interdependent — mutually affected by how many rafts in total are operated — the decisions about how many rafts to operate are often independent of what the other participant does. In these cases, the incentive structure is based on dominated choices — that is, the decisions of one participant do not influence the other operator’s decision and vice versa.

Two-person game

The North Fork Canyon Run is a narrow branch of a river that runs through a large and mountainous park. Several

small rafting companies provide tourists with white water rafting recreation during the non-winter months. These trips primarily are made on a couple of the larger rivers in the park and, to a limited extent, at the North Fork Canyon Run.

This run is navigable only during a couple months in the spring. Due to its narrow channels and frequent spots where rafts get briefly hung-up, the park authority established a one-raft-at-a-time rule. The park provides a dedicated phone line between the entry and exit points so the rafters know when to start the next raft trip. Rafting companies must have a permit to operate in the park.

Near the entry point for the North Fork Canyon Run is an access road along which visitors can park, as well as a small parking lot. Visitors come for a popular scenic outlook, hiking trails and to get on the waiting-list for raft rides when offered during the spring. The park authority believes that there is only adequate space for two rafting companies to set up and operate on any given day.

The first two permit-holding raft companies to arrive in the morning get exclusive rights to operate for that day. Different rafters operate on different days, depending upon their customer bookings and business on larger rivers in the park.

Daily revenue is determined by the number of rides per day, which in turn is affected by river conditions. Differences in water level occur from changes in the volume of snow melt in the mountains. When the water level is low, the rafts get stuck or hung-up more often on rocks, reducing the number of rides. Based on water levels, the two raft operators can estimate how many trips they'll make in the day, which is also affected by their respective decisions to operate one or two rafts. Four rafts usually operate, two per company, on the North Fork Canyon run. However, the optimum is usually three rafts, sometimes two — but hardly ever four rafts in total.

Let's take a look at three recurring payoff situations for rafting businesses sharing the North Fork Canyon Run.

Dominant choices

The outcome for two rafting companies in making a decision to operate one or two rafts is displayed in the payoff matrix for the relatively high water level that usually prevails on the North Fork Canyon run during the spring (Figure 1). Table 1 shows the number of rides per raft and the effect of the number of rafts operated on the total payoff for each cell in the matrix. Although there is a cost in operating an additional raft, the business owners want to keep their raft guides or navigators busy. When the first two operators arrive to establish their claim to operate for the day, each plans on using two rafts.

The incentive structure of the payoff matrix in Figure 1 creates a dominant choice of two rafts each regardless of what the other does. Column Rafting Co. has payoffs in the upper right corner of each cell. The second column has a payoff of either 20 or 14, which are larger than column one payoffs of

Figure 1 — Normal water level rafting and dominated choices

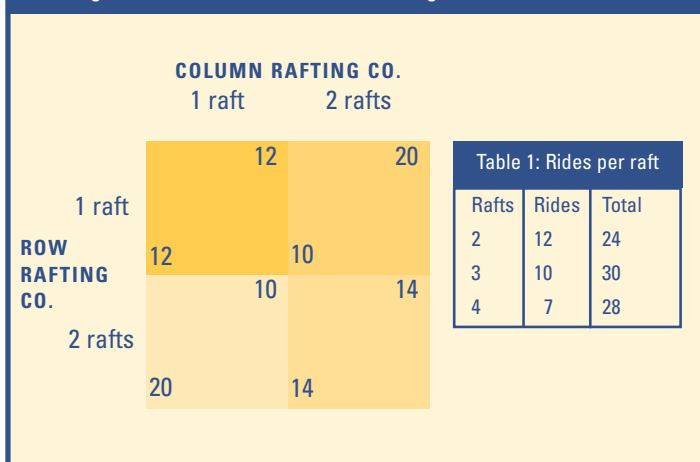
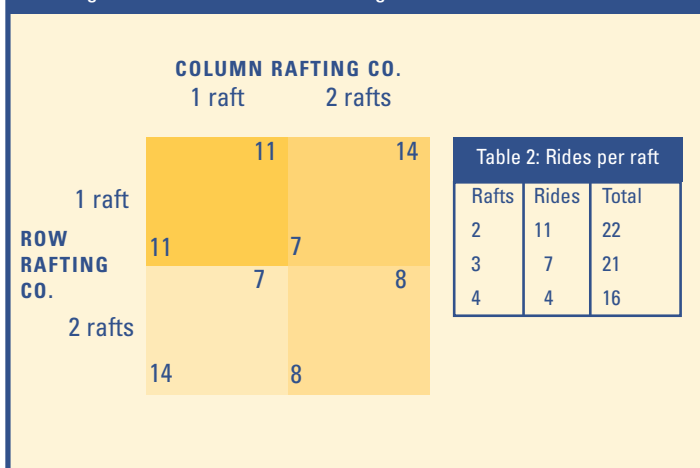


Figure 2 – Low water level rafting and the Prisoner's Dilemma



12 and 10 when operating one raft. A column is “dominant” when the payoff of at least one of its cells is higher and all its other cells are not lower than the adjacent cells of all other columns in the matrix. Likewise, for Row Rafting Co., the payoffs of both cells for operating two rafts dominate the pay-offs for one raft (lower left corner of each cell).

Combined revenue would be maximized with three rafts in total. The dominant choices would not have to be made if the two companies shared the day's proceeds from operating three rafts. Such coordination is difficult because there is usually a different combination of two companies operating on the North Fork Canyon Run from one day to the next.

When overnight temperatures are lower than normal, refreezing occurs in the mountains and water levels can drop enough to reduce the number of raft rides, whether operating 2, 3 or 4 rafts. Figure 2 and Table 2 report the impact of a lower water level on the number of rides. When more than two rafts are operated in these conditions, back-ups at the entry point may cause some customers to leave or other delays, in contrast to the immediate turnaround when using two rafts. The incentive structure of pay-offs again produces dominant choices in the 2nd column and the 2nd row. However, in this case maximum revenue is the northwest cell, where each operates one raft. This payoff structure is known

as “the prisoners’ dilemma.”

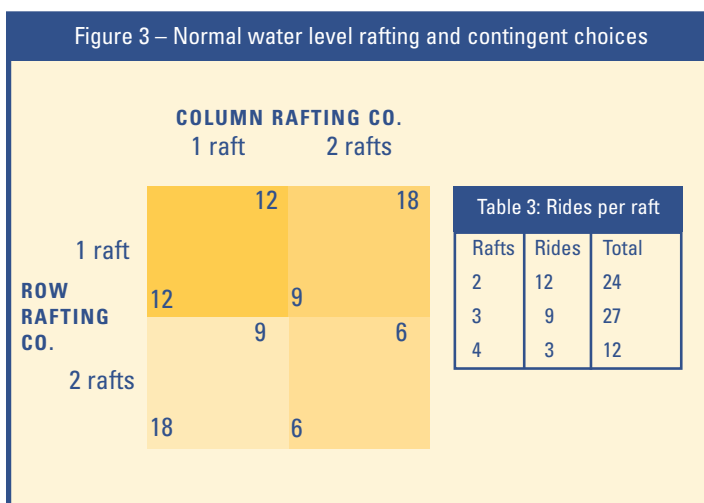
Volumes have been written about the prisoners’ dilemma because it focuses on what is lost when participants cannot communicate. In the original story, two prisoners are in isolation and both choose to confess, hoping to get a better outcome. Unfortunately, since they both confess, they each get the worst payoff. The two prisoners lack the trust in each other to stick to their “not-guilty” story and mutually get the better results of the northwest quadrant.

Many studies use the prisoners’ dilemma to discuss the importance of improving upon worst outcomes through trust and understanding. But on the North Fork Canyon Run, the participants in the two-person game differ from day to day, which can be enough to thwart communication and the building of trust. As pointed out by Thomas Schelling, it’s not really a “dilemma” at all but a game of dominated choices (Thomas Schelling, *Strategies of Commitment*, 2006, viii).

Contingent choices

Weekends in the park are crowded with sightseers, hikers and tourists wanting raft rides. The difficulty of finding convenient parking for the vans and raft trailers increases the turnaround time when more than two rafts are operated. A third raft encounters occasional delays but still results in more rides than if two rafts were operated. A fourth raft results in a series of delays on crowded weekends. The decision for each operator about one or two rafts is contingent upon what the other operator does.

Figure 3 and Table 3 report the payoffs of an incentive



structure that involves contingent choices. Without a dominant choice, each participant will consider the benefits of coordinating their decisions to be able to operate three rafts – one company operates two, the other company operates one raft, and they split their combined revenue.

The contingent choices of Figure 3 may not always result in coordinated decisions. The first rafting company to set up on the North Fork Canyon Run on a weekend day could choose to operate two rafts on the expectation that the second company to arrive will prefer to use one raft with a

payoff of 9, as compared to 6 if a fourth raft were added. This game has a “first-mover” advantage.

The potential success of a first-mover in operating a second raft depends on the other rafting company’s sensitivity about fairness. The second raft company could be indignant about the lack of revenue sharing and decide to operate two rafts. The first-mover advantage is defeated if raft operators always react indignantly and chose to operate a second raft. In that case, the “first-to-arrive” rafting company may choose to use just one raft so as to secure the pay-off of 12 trips rather than risk getting only 6.

Clearly, weekends on the North Fork Canyon Run involve contingent choices that do not come up during the weekdays when operating two rafts each is the dominant choice for any two companies.

Challenges in coordinating decisions

Game Theory analysis may appear to be an oversimplification of actual business decisions, but its purpose is to highlight cooperation opportunities and their prospects for success. In each of the three scenarios on the North Fork Canyon Run there are opportunities to jointly maximize earnings with coordinated decisions. Although only two parties have to reach an agreement, the fact that the companies operating raft trips frequently vary from day to day diminishes the patience and trust necessary for negotiating a plan for either three or two rafts.

A payoff matrix reveals the decision cell with the highest total earnings, but participants estimate their payoffs either along columns or rows. In other words, each player estimates its payoffs from a go-it-alone perspective. They don't compare the total value of each cell or quadrant in a payoff matrix. This orientation is natural and practical when thinking in terms of operating alone.

Finally, a Game Theory analysis also demonstrates why the prospects for coordinating decisions are much improved if participants are dealing with contingent, rather than dominant, choices. Participants understand that to choose for the highest pay-off, they risk getting the lowest pay-off, while their other choice offers pay-offs between the highest and lowest. This uncertainty, in contrast to dominant choices, encourages the parties to seek an agreement on three rafts with revenue sharing.

The benefits and challenges of coordination in a one-day encounter may be extended to the longer term of formally organized cooperatives when the earnings from individual decisions are interdependent. Market participants are more likely to become members of a cooperative when their decisions are contingent upon what other market participants do than if their choices are dominated.

The lesson from Game Theory is that while businesses and individuals are committed to their “bottom line,” their goals can be self-defeating if they allow this singular commitment to create tunnel vision. An eye for opportunities to cooperate is a useful skill in the pursuit of individual gain. ■

South Carolina co-op pursuing three-pronged energy strategy

By Anne Mayberry
 USDA Rural Development
 Rural Utilities Programs

Central Electric Power Cooperative in South Carolina is not an average utility, and neither are its members average electricity consumers. The co-op recently saluted its members for their efforts to embrace conservation, use renewable fuels and fund research into clean-air technology. The co-op and its members have committed up to \$10 million per year to fund projects that will help improve the environment and meet future energy needs.

“Our members deserve credit for what they’ve done,” says Ron Calcaterra, the co-op’s president and CEO. Because of their support, the co-op is “committed to investing in renewable energy and energy efficiency.”

Studies prompt action

Recent actions by the co-op are the result of two new studies commissioned by Central Electric to address its growing energy needs. Calcaterra explains that the rapid growth in the state — combined with the fact that most of its energy is purchased — triggered the need to base the co-op’s future direction on factual information rather than speculation.

“There were lots of comments about how we should meet our energy needs. We wanted to know what was possible, not just technically achievable,” Calcaterra says. Rural electric cooperatives are searching for safe, reliable and affordable electric power, but worry that they won’t find it before demand surpasses capacity. They’re not alone in having that concern.

Measures to increase use of renewable fuels and decrease carbon emissions will remain before Congress for the foreseeable future. Investors are looking for a silver bullet to generate returns on renewable fuels and carbon-capture technologies. While the decision to move toward a renewable-fuel portfolio can win accolades, it requires careful evaluation.

“There has been a lot of speculation about the best way to address climate change,” says Van O’Cain, spokesperson for



Ron Calcaterra, CEO of Central Electric Power Cooperative (CEPC), tells co-op members about how compact fluorescent light bulbs can save electricity. Photo courtesy CEPC

the Electric Cooperatives of South Carolina. “Unfortunately, there isn’t always a lot of information that tells you the best way to proceed.”

The challenge to meet future needs while providing reliable, affordable and environmentally responsible power led to the two independent, third-party studies. One study reviewed energy-efficiency programs while the other explored the value of renewable energy investments. Results of the studies are guiding South Carolina rural electric cooperatives as they determine which programs will deliver the greatest return on investment in addressing climate change issues.

Reliability

The energy studies focused on several sources of power. Currently, wind is not a viable alternative for providing the amount of power that electric cooperative utilities will need to meet demands growing at twice the nationwide average, Calcaterra says. “Setting up wind turbines off shore might provide more electric power, but there’s a whole gamut of problems with getting that power back on shore.”

Use of solar power would cost five-to-ten times the cost of coal, and “the sun doesn’t always shine when you need it,” Calcaterra notes. Baseload power must be available 24 hours each day, seven days a week.

continued on page 46

By Dan Schofer
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Editor's note: Schofer was a co-op development specialist with USDA Rural Development, but recently became deputy director for outreach with USDA's Farm Service Agency.

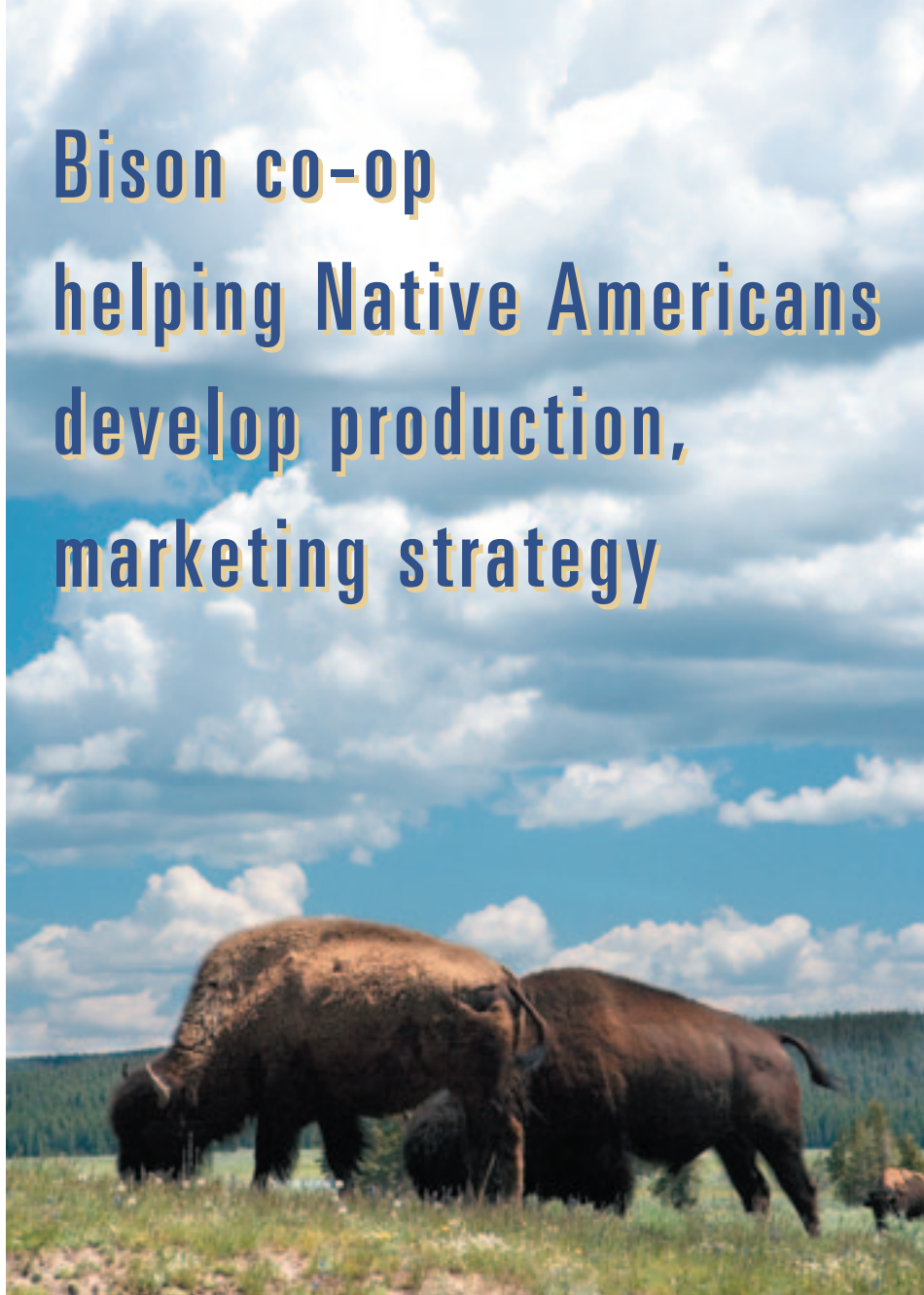
The Intertribal Bison Cooperative (ITBC) is a nonprofit tribal organization with 57 tribal members across 19 states committed to restoring buffalo herds to Indian Nations. This is being done in a manner that is compatible with the spiritual beliefs and cultural practices of these tribes. ITBC customers include the restaurant at the Smithsonian National Museum of the American Indian in Washington, D.C. It also provides buffalo robes and skulls for museum displays.

Helping ITBC in this effort is the funding it has received under the Small and Minority Producer Grant (SMPG) program of USDA Rural Development. This program provides funds and technical assistance to cooperatives or associations of cooperatives of small-scale, minority agricultural producers. The co-op or association must have a governing board and/or membership comprised of at least 75 percent minorities.

The role of ITBC, as established by its members, is coordinating the movement of surplus buffalo from national parks to tribal lands and developing marketing strategies. It also acts as a facilitator for educational and training programs.

ITBC provides technical assistance to members to help them develop management plans that will enable tribal herds to become self-sustaining. To do this, tribes need to acquire business tools to develop and implement long-term business and marketing plans for their individual herds.

Bison co-op helping Native Americans develop production, marketing strategy



Bison (below and opposite page) are rounded up and herded through chutes at Badlands National Park. The Intertribal Bison Cooperative (ITBC) is helping its members manage their herds as sustainable businesses while also preserving the tribes' heritage. Photos courtesy ITBC



Combining heritage and economics

Many Native American communities and tribal governments manage their herds solely for heritage and spiritual purposes. The challenge facing them is to also manage their herds as economically self-supporting businesses.

Some tribes regularly take children enrolled in tribal Head Start programs on tours of the buffalo herds to teach them about nature and the heritage of their tribes. Tribes also slaughter a select few animals for special events, sun dances and for consumption by the elders of the tribe.

“All of our member-tribes know it takes money to manage a herd properly,” explains Greg Wrangel, marketing director for ITBC. “People have been waiting for a comprehensive approach to make the tribal herds economically viable, as well as embodying our heritage and spiritually.”

In its effort to use buffalo as an economic resource, USDA awarded ITBC funds from the Small and Minority Producer Grants program to provide tribal members with:

- An assessment of current management and business practices;
- Business and marketing software;
- Regional training on using new software for each tribe’s buffalo program;
- The newest available production and herd-management techniques;
- A national conference, including training and the delivery of preliminary project evaluations.

The first phase of the project involved evaluating current management and business practices for individual tribal herds. Most members did not previously have any written business or marketing plans, working only on verbal directives from tribal councils or leaders. These directives are often subject to sudden change because of tribal elections.

A software package — designed to help them develop their own feasibility

analysis, business plans and marketing plans — was purchased and distributed to tribal members. ITBC then held five regional meetings in New Mexico, Wisconsin, Oklahoma, North Dakota and Oregon to familiarize tribal members with the software and related business concepts. Training sessions have been conducted for 42 tribes so far.

“We had members bring their laptops, loaded with the software,” Wrangel says. “Then we walked them through the business plan process. Each member was able to create a unique, basic business plan for his her tribe’s buffalo herd during the training session.”

Binders were distributed containing the most up-to-date information on herd management, organic- and natural-production guidelines, new veterinarian techniques, feed instructions, pasture management, noxious-weed management and university/extension bulletins on marketing. A second binder was distributed highlighting relevant government services and contacts that may be beneficial to herd management and marketing.

Hide tannery studied

Additionally, ITBC is looking into the economic feasibility of operating a jointly owned and operated tannery. The Ponca Tribe of Nebraska operates

a small tannery, which currently processes hides from ITBC and other tribes. The Santee Sioux Tribe, also located in Nebraska, is looking to develop its own tannery business for its tribal members, as well as for ITBC. A business partnership between ITBC members and tribal tanneries, combined with a solid marketing plan, could create an alternative and profitable revenue stream for tribal buffalo programs.

The culmination of the SMPG project was a national meeting of ITBC in Rapid City, S.D., Aug. 6-10, coinciding with the 2007 International Bison Conference. This provided an excellent opportunity to finish training tribal members on the use of their new software and provided follow-up assistance for fine-tuning business and marketing plans.

The concurrent conferences provided an opportunity for ITBC and its members to learn from other, non-Native ranchers and the buffalo industry as a whole. It also helped tribal members establish industry contacts and build professional relationships. ITBC provided entertainment for the international conference, which included tribal dancers, re-enactors and a traditional village.

For more information on the SMPG program, visit: www.rurdev.usda.gov. ■

USDA funds are helping the ITBC educate member tribes about new herd management techniques and to adopt modern business and marketing software.



Valuing Your Co-op



Meeting weighs value of co-ops in fast-changing business climate

By Lynn Pitman,
University of Wisconsin Center for Cooperatives

Understanding the true value of a cooperative is crucial to meeting the many strategic dilemmas facing cooperatives as they adapt to a changing business landscape. To explore this critical issue, more than 180 U.S. and Canadian co-op leaders (a record attendance) gathered in St. Paul, Minn., in early November for the 10th annual Farmer Cooperatives Conference. The University of Wisconsin Center for Cooperatives (UWCC) presents the annual conference, funded by the Farm Foundation and other organizations, to provide co-op directors and managers, professional organizations, government representatives and academics with information on major trends and issues affecting agricultural cooperatives.

Do co-ops create or destroy value?

Chris Peterson, professor at Michigan State University, provided a solid framework for the conference with his presentation: “Do Cooperatives Create or Destroy Value?” Each cooperative is built around a value proposition, said Peterson. Whether value is gained or lost is determined by how well the cooperative fulfills that proposed business arrangement.

The traditional value proposition — in which a cooperative business is organized and run for the mutual benefit of its members — provides market access for

members and deals with them fairly. Public policy provides these co-ops with some preferences (as in areas of anti-trust exemptions and tax treatment). Problems with this model occur when capital needs for either business investment or member equity redemptions exceed equity generated from members. As market conditions evolve, the co-op may not be the only avenue for “fair dealing.”

Another type of value proposition is based on the economic value created by the cooperative enterprise. Here the annual return of investment, adjusted for a given risk level, is the key metric for assessment. It was on this basis that the 2002 McKinsey report concluded that agricultural co-ops had destroyed more than \$1 billion of value in 1999. Under this scenario, there is no value added by the use of the cooperative business structure, because financial measures do not reflect or encompass the mutual benefit provided to members.

A third type of value proposition recognizes that a cooperative can create value both at the member-farm level (which was not considered in the McKinsey study), as well as at the co-op business level. While returns at the co-op business level can be measured by the net income used for patronage refunds and dividends on capital, the returns at the member-farm level are more difficult to quantify.

There are other variations of the cooperative structure that are being used to create and capture value, but these structures use trade-offs in member control to gain broader market access, alternative sources of equity or other opportunities. Peterson concluded that co-ops can create



Clockwise from center: Amy Gales of CoBank discusses financial perspective on co-op valuation; Swiss Valley Farms found advantages re-incorporating as a stock co-op under Iowa's new cooperative law; South Dakota Soybean Processors (seen here is a night photo of its plant in Volga, S.D.) transitioned from a new-generation co-op to a producer-owned limited liability corporation (LLC).

owned and controlled co-op can be an exceptionally strong model for a customer-oriented business.

Valuing assets during changing times

The co-op business structure can meet both economic- and member-benefit criteria. A change in market conditions was compelling enough for a group of Michigan Sugar Co. (MSC) producers to buy the company and create a producer-owned enterprise. When the parent company went into bankruptcy and put MSC up for sale, sugarbeet growers were faced with the possibility of losing demand for their crop, which produce a higher net return per acre than other crops. Mark Flegenheimer, CEO of MSC, described how producers bought shares based on acreage and raised \$24 million in equity to start this new-generation co-op.

United Producers Inc. — a livestock marketing co-op that also offers risk-management and production management services — decided to maintain its core cooperative structure after a lawsuit wiped out the co-op's equity, forcing it to reorganize. CEO Dennis Bolling pointed out that the cooperative previously had been structured so that the risk to farmers was limited to their retained earnings. But the future of the business depended on greater equity participation by members.

Because they recognized the value the co-op brought to their individual operations, farmers were willing to continue to patronize the co-op and provide equity for refinancing its operations. UPI is implementing cooperative-based solutions to meet its capital requirements through new capital retains and preferred membership programs. It has also created a community markets program to organize new cooperatives around its local facilities. While these efforts are not sufficient to meet all of the co-op's capital needs, they have provided significant member value while addressing financial requirements.

In other cases, the evaluation of the cooperative's value has led to the conversion to other business structures. FCStone CEO Pete Anderson described the rationale and the process of converting from a cooperative to a public corporation. FCStone was created in 2000 when the Farmers Commodities Corp. and Saul Stone and Co. merged to form one of the nation's largest volume commercial grain brokerage firms. The business needed increased capital to finance expansion while maintaining member service levels. However, annual payments to members limited the company's ability to raise and retain equity.

The cooperative structure also did not provide liquidity or a means for members and employees to benefit from the company's growth, in both market value and income generation. After a comprehensive strategic assessment, the cooperative converted to a stock company controlled by existing members. The new company included an employee stock ownership plan (ESOP) and increased investment opportunities for members. Two years later, the company converted from a private to a public corporation, with an

value when the value proposition both fits member needs and performs well as a business. Some cooperatives are successfully accomplishing both, but this continues to be a challenge.

Doug Sims, retired CEO of CoBank, focused on economic valuation. He stressed that a cooperative must first function successfully as a business before it can deliver the other benefits that are also associated with the cooperative business model. Sims said he believes that cooperatives historically have coasted on the value of member refunds without addressing inefficiencies within the business.

A co-op's value proposition must be able to generate a return on investment that meets or exceeds the cost of capital, Sims said. Given that ability, however, a member-

initial public offering (IPO) of common stock.

Case study measures benefits

Kansas State University Professors David Barton and Michael Boland, in their accompanying case study of FCStone, evaluated member benefits, before and after the conversion. Access to risk management services was similar, and for the next few years, at least, the original local co-ops will maintain control of the board. However, FCStone's IPO generated unparalleled multiples of book value, with the possibility of large equity payouts to co-op and producer owners, a scenario that was unique to this conversion and its business position.

Rodney Christianson, CEO of South Dakota Soybean Processors (SDSP), described how SDSP converted from a closed new-generation cooperative to an LLC in order to expand into the burgeoning field of vegetable oil technologies. Projected growth would threaten the cooperative's single taxation treatment, required more equity for expansion and a larger pool of producers.

In Barton and Boland's case study, expectations that drove the conversion were compared to the results. The growth in non-patronage-sourced business has not been as strong as expected, although business growth has been sufficient to increase the demand and the price for soybeans in the area. While producers and the plant are now both free to pursue the best respective buy/sell relationships, the actual transactions continue to follow the pre-existing pattern.

Equity liquidity has increased, as has access to new equity capital. Stock prices have fluctuated, but have remained above the original equity drive purchase price. Whether these changes would have occurred under the co-op structure is unclear.

Gold Kist conversion

The Gold Kist transformation from cooperative to public company to takeover target was described by Dan Smalley, past board chair of the cooperative. Gold Kist had evolved into a major poultry production and marketing enterprise with a homogeneous board and membership. Its financial success raised member expectations for payouts at the same time that the cooperative began to lose market share, faced large equity redemption obligations and needed access to

Value definition can evolve during co-op's life cycle

The definition of a co-op's value to members can change over the course of a single cooperative's life cycle, said Michael Cook, professor at the University of Missouri. He noted the many different member-value propositions that were described during the Farmer Cooperative Conference.

The range of member-value propositions reflect the complexity of the cooperative structure, while value created by an investor-owned firm is assessed by just a few measures. Cook pointed out that co-op value propositions can treat members as patrons or as investors, and the cooperative should understand where along the patron-investor spectrum its membership wishes to be.

Traditionally, farmer cooperatives have been formed to secure producers a larger portion of the proceeds from the sale of their product, or "a larger piece of the pie," and the co-op supported their efforts as individual entrepreneurs. The current shift in cooperative business strategy is to "create more pie" by enlarging markets through value-added efforts. Members look to the cooperative to serve a more "collective entrepreneur" function, and capital formation becomes a larger issue, Cook noted.

Because there are many ways to create value, cooperative members need to share a common interest. Cooperative life cycles can be seen as a process in which divergent interests develop within the membership as the result of growth, and the subsequent actions the co-op takes is a process for realigning the members' common interests. From this perspective, Cook said, a cooperative can have multiple life cycles. ■

capital.

Serious conflict ensued among board members, and the board eventually recommended converting to a public company with an IPO. The conversion was intended to provide flexibility, liquidity for equity holders and an independent board with expertise and perspective (which Smalley believed was particularly needed by the cooperative). The membership approved the conversion, Gold Kist went public and a new board (with a majority of independent directors) was formed.

But the now-public company was soon sold to Pilgrim's

Pride, a privately held enterprise. Smalley felt that the outcome ultimately benefited cooperative members, allowing them to capture the full market value of their company. But former members, who continue to be contract producers for Pilgrim's Pride, have no investment in, or control over, the company.

The issues that commonly lead to conversion can be strategically addressed, said John Schmitz, CHS executive vice president and chief financial officer. He described the advantages of CHS' cooperative structure as four-fold: a single level of income taxation, an orientation toward long-term planning, potentially closer customer ties and earnings that ultimately benefit the member. CHS equity and enterprise valuations are similar to an average of publicly held agribusiness corporations; earnings are the most important source of capital for creating value for the shareholder and for the business.

Valuing assets and measuring performance

Performance measures and asset valuation are also key to assessing a cooperative's value. David Holm, executive director for the Iowa Institute for Cooperatives, described a new cooperative benchmarking project, which will provide a powerful tool for assessing results of management decisions.

Harry Fehrenbacher, president of Effingham Equity, described the co-op's decision-making process for capital assets, which analyzes how well an investment will profitably support core business strategies and systematically evaluates the return on assets by facility and department. Amy Gales, regional manager of CoBank, reviewed financial perspectives on valuation, which establishes a present value for the co-op's relevance and viability both now and in the future.

Member-value proposition

The value proposition for members was part of Swiss Valley Farms' structural reassessment, undertaken when a 50-year sunset clause in the bylaws kicked in. Gordon Toyne, co-CEO, and Don Peterson, a director, provided perspectives on the process of reincorporating under the new Iowa cooperative law as a stock cooperative, rather than a membership co-op.

The board compared the limits of traditional bank lending practices to the impact of new sources of equity needed for maintenance and growth. The new law also allowed co-op boards to add outside (non-member) directors who could provide needed expertise in areas such as finance, mergers and acquisitions. The governance committee and the attorney worked to define and codify in the bylaws the different interests allowed under the new law and provided for member voting rights and a producer-member board majority.

The new structure gives the co-op the ability to issue preferred stock, which provides equity flexibility and a way for both employees and co-op members to invest in the co-op. The co-op's mission statement has been broadened to

recognize its commitment to its workforce and customers, as well as to its owners and members.

Because the change was so significant, extensive membership communications on this issue began five months before the vote, allowing time for members to ask questions. Peterson felt that this step was critical to member engagement and the eventual success of the reincorporation effort.

Kevin Sexton, manager of River Country Cooperative, explained how the co-op redefined its member-value proposition in response to changing demographics. The co-op repositioned itself to serve both consumer and farmer needs. Almost half of its earnings are now from petroleum, with the remaining earnings from farm supply activities. The co-op is attempting to maintain its program of cash refunds to members while building its unallocated reserve to support its growth.

Branding and corporate responsibility

A broader perspective on the cooperative value proposition was provided by Jean-Marie Peltier, president and CEO of the National Council of Farmer Cooperatives (NCFC). Peltier pointed out that traditional cooperative values — farmer ownership and control, economic viability of farm businesses, stewardship of natural resources and rural community — fit in well with the current emphasis of sustainability and social responsibility in the corporate realm.

NCFC is developing a cooperative stewardship initiative by working with Wal-Mart on a producer score-card program, and by exploring other tools for self-regulation, rather than using a third-party certification process for sustainability compliance.

To market this initiative, NCFC is developing a communications program that will capitalize on the desire by consumers to buy products that are values based. Peltier urged farmer cooperatives to create a vision of sustainability that is aligned with grower needs, saying that "you can't go wrong by doing good!"

Value creation critical to future co-op viability

It is clear that the ability of a cooperative to create economic value, as measured by standard financial metrics, is critical to the ongoing viability of the business. But the value proposition for members can encompass a wide range of benefits that may be difficult to accurately assess. Benefits may have a patron- or investor-orientation, which may change over the life cycle of the cooperative. This can be further complicated by market valuation increases that can be difficult for members to capture.

Cooperatives continue to explore structural alternatives that can support the value proposition for members and meet capital formation challenges, while weighing the potential impacts of the trade-offs in member control. ■



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'Energizing Rural America' theme of USDA Ag Outlook Conference

Crucial farm and rural development topics, including forces influencing renewable energy development, will be in the spotlight when USDA hosts the 84th annual Ag Outlook Forum, Feb. 21-22 at the Crystal Gateway Marriott Hotel in Arlington, Va., just outside Washington D.C. The forum attracts about 1,500 people annually, and is widely considered the nation's foremost conference for those with an interest in farm and rural issues.

The title for this year's conference is "Energizing Rural America in the Global Marketplace." Speakers include a wide array of national leaders from private industry and government. "Getting it Right: Responding to Market Forces" is the title of a panel talk that will follow the secretary of agriculture's address. Jean-Mari Peltier, president and CEO of the National Council of Farmer Cooperatives, will moderate the panel, with members that include: C. Larry Pope, president and CEO of Smithfield Foods; Thomas E. Stenzel, president and CEO of United Fresh Produce Assoc.; and Paul Schickler, vice president and general manager of DuPont and president of Pioneer Hi-Bred.

There will be 25 other panel talks in the following six topic tracks: Rural America, Energy and Technology, Policy and Trade, Food Risk and Security, Conservation, and Commodities. There will also be additional luncheon and dinner speakers.

Rural Development track panel topics include: "Innovative Business Models for Rural America" and "Innovative Financing for Rural America," among others. Energy and Technology track sessions include: "Ethanol: Is it a Sustainable Alternative?" "New Sources for Biofuels: What Are They?" and "Solar and Wind Technologies Coming of Age," among others.

For a program preview, roster of session topics and speakers, and to register, please visit: www.usda.gov/oce/forum. Registration is \$300 for those who register by Jan. 11, and \$350 after that. For updates on the meeting, send your e-mail and postal address to agforum@oce.usda.gov, or write to: 2007 Outlook Forum, Room 4426 South Building, USDA, Washington, D.C. 20250-3812. ■

Income, revenue climb at Riceland Foods

Riceland Foods Inc., Stuttgart, Ark., had \$947 million in revenue for 2007 (its fiscal year ended July 31), an increase of \$10 million from 2006. Income before distributions was \$549 million, up \$60 million from the previous year. The co-op reports that more than 98 percent of the earnings were returned to farmer-members as seasonal pool settlements or cash payments for grain.

Speaking at Riceland's 87th annual meeting in Jonesboro, Ark., President and CEO Danny Kennedy said the farmer-owned cooperative had met its three performance targets of providing competitive crop returns, protecting farmer-members' investments in assets and providing a high level of service.

Riceland's 2006-07 marketing pools returned \$4.38 per bushel for long-grain rice and \$5.28 per bushel for medium-grain rice, both of which compared favorably with other marketing opportunities.

The return for Riceland's soybean marketing pool was \$6.85 per bushel, compared to the harvest price of \$6.11. The wheat marketing pool returned \$3.74 per bushel, compared to a harvest price of \$3.45.

Kennedy said that the cooperative's balance sheet continues to reflect solid performance. Total assets stood at \$525 million, while permanent assets were \$262 million. Members' equity, including base capital and retained earnings, was \$205 million, he said. Long-term debt was \$57.5 million and working capital was \$59 million. "We understand that our members evaluate us at the end of the year on how our final settlements come out, but

that must be in balance with service, which comes at a cost,” Kennedy said.

Scott Gower, vice president for commodity operations, said Riceland received 116 million bushels of grain during the 2006 fiscal year, and expects to receive approximately 119 million bushels from the 2007 crop.

Carl Brothers, senior vice president for international rice, said that U.S. rice exports from the 2007 crop are expected to increase 14 percent compared to the previous year. Rice carryout at the end of the 2007-08 marketing year is expected to be 30

Riceland introduced two new value-added products: a quick-cook whole-grain parboiled brown rice that cooks in half the time of regular brown rice and a yellow rice mix which foodservice chefs can use to create a variety of ethnic dishes.

Brian Furnish to lead Burley Tobacco Co-op

The Burley Growers Cooperative Association has chosen Kentucky native and farmer Brian Furnish as its new general manager. Furnish, who has a 1,000-acre tobacco and beef cattle

government relations for the Burley Tobacco Cooperative.

“Brian brought to the board ideas and enthusiasm to help move the organization forward,” said Roger Quarles, president of the Burley Tobacco Cooperative Board. “He is a proven winner and we think he is a perfect fit for us at this time.”

GROWMARK, FS Seed Support Ag in the Classroom

The FS Seed Division of GROWMARK has renewed its commitment to Illinois Ag in the

Classroom programs with a check for more than \$50,000. This year’s contribution brings the co-op’s four-year total contribution to the program to nearly \$235,000.

“Many children have lost the connection to the farm and aren’t aware that real people grow the food that ends up on their plates at the dinner table, and that real people raise the corn and soybeans and other products that are turned into the renewable fuels that run their parents’ cars and other vehicles,” says Bill Davisson, CEO of GROWMARK, the regional agricultural supply and grain marketing cooperative comprised of FS member cooperatives.

“Through the Illinois Ag in the Classroom program, we’re working to make sure they know where their food and related products come from.”

Florida’s Natural squeezes out record revenue

Florida’s Natural, the nation’s third largest seller of orange juice, had record revenue of \$401.5 million for the 2006-07 season, despite a 7-percent drop in juice volume. The co-op reported that returns to its growers were 5 percent higher than the citrus industry average



David Feilke, a Riceland Foods member and director, checks on his crop near Stuttgart, Ark. Riceland handled about 119 million bushels of 2007 crop, and had revenue of \$947 million. Photo courtesy Riceland

million bushels, down 52 percent from the previous year. “The low carryout, along with rice competing for acreage with other grain prices, has created a friendly, if not bullish, marketing situation for U.S. long grain rice this season,” Brothers said.

USDA currently projects the 2007 rice crop average price for all types (long, medium and short) in the mid-range of \$4.73 per bushel, 35 cents higher than USDA’s current projection for the 2006 rice crop, he said.

operation, says tobacco has a strong future ahead.

“As a young tobacco farmer myself, I believe there are a lot of opportunities for our members,” he says. “We all need to work together to communicate and figure out ways to make money for the co-op and our farmers.”

Furnish has served as marketing director at the Kentucky Department of Agriculture and then as deputy director of the Governor’s Office of Agricultural Policy. He also worked previously in

for the 2006-07 season. It was the co-op's highest grower return since 1984, following a major freeze, according to *The Ledger*.

The improved returns came after a two-year program of cost-cutting that included selling a processing plant in Bartow and a packaging plant in Fullerton, Calif. Florida's Natural also trimmed the number of different products it offered by about 30 percent to concentrate on the most profitable lines, *The Ledger* reported.

Record earnings for CHS

CHS Inc., an energy and grain-based foods cooperative, had record net income of \$750.3 million for fiscal 2007 (which ended Aug. 31), up from \$490.3

2007 results.

Once again, refined fuels earnings led overall results, largely due to strong margins generated by the two CHS refineries. CHS is the nation's largest cooperatively owned refiner. Record revenues were attributed to increased renewable fuels volumes, and higher values and volume in grain.

While earnings were led by the performance of the company's Energy segment, CHS also achieved strong results in its Ag Business and Processing segments and corporate business solutions operations. Ag Business earnings — which include agronomy, grain marketing and retail operations — were led by both strong domestic grain markets driven by increased renewable

its share of Ventura Foods LLC, a vegetable oil-based food manufacturing and packaging business. CHS also saw record performance in its corporate business solutions operations, which include its insurance, risk management and financial services businesses.

Pappajohn drops plan to acquire ethanol plants

Iowa businessman John Pappajohn has shelved his plan to buy a controlling interest in as many as 10 farmer-owned ethanol plants, which he planned to operate as a single, publicly owned company. He had hoped to raise about \$800 million from investors to buy control of the plants, according to the *Des Moines Register*. The sharp drop in ethanol prices in recent months dried up investor interest, making his plan unfeasible. "At some point you need to acknowledge the market isn't there," he told the newspaper.

NCBA awarded \$8 million grant to help Mozambique farmers

The National Cooperative Business Association (NCBA), through its CLUSA international development program, is the recipient of an \$8 million grant from the Bill and Melinda Gates Foundation to improve the livelihoods of 60,000 small-scale cotton farmers in Mozambique. The grant will fund *The Cotton Value Chain Improvement Project*, a five-year project aimed at increasing Mozambican farmers' cotton yields and profits through improved efficiency.

The project brings together the CLUSA International Program with business partners Dunavant Mozambique, an international cotton trading company wholly owned by Dunavant Enterprises Inc. of Memphis, Tenn., and GAPI, Sarl, a Mozambican financial services company that promotes investment in small- and medium-sized businesses. GAPI will be providing much-needed credit and financial management service to the project's farmers.

"We believe that the combination of NCBA's long experience in organizing



CHS Inc.'s refinery operations helped the co-op enjoy record income of \$750 million and record revenue of \$17.2 billion in 2007. Photo courtesy CHS Inc.

million for fiscal 2006. Revenue for fiscal 2007 was \$17.2 billion, also a record, and was up 20 percent over \$14.4 billion for fiscal 2006. The 2007 results mark the fourth consecutive year of record earnings for the producer-owned cooperative and reflected strong performance by every CHS operating unit. The company issued a record \$253 million in cash patronage, equity redemptions, preferred stock and dividends. Another record cash return is expected during 2008, based on fiscal

fuels demand and continued growth in export markets, along with increased energy sales and grain movement at the retail level. Agronomy earnings were boosted by a shift to corn acreage which drove demand for crop nutrients and increased margins.

Processing performance improved significantly over fiscal 2006 for oilseed crushing earnings. CHS also reported improved earnings from its share of the Horizon Milling LLC wheat milling venture and strong performance from

farmers, plus Dunavant's progressive management approach, production expertise and long-term commitment to the African farmer and GAPI's unique approach to value chain lending in rural areas, will create a successful model that can be replicated in other regions or countries," said NCBA President and CEO Paul Hazen.

Blue Diamond sales hit \$658 million

Blue Diamond Growers, Sacramento, Calif., had \$658 million in sales for the 2006-07 marketing year, the second highest in the co-op's history and just \$16 million less than the 2005 crop year. Speaking at the co-op's 97th annual meeting, Board Chairman Clinton Shick attributed much of the co-op's success to its ability to develop new markets, offer innovative product solutions for health-conscious consumers and partner with leading almond users.

Shick reminded growers that the most powerful tool for producing a "top-quality, safe and nutritional food is the power that we, as growers, wield when we pull together in a cooperative relationship to deliver to the biggest and most versatile marketer." He called Blue Diamond's co-op business model a dynamic one that identifies "leading-edge technology systems and processes that provide the best quality almonds to consumers worldwide.

"As owners, we provided our cooperative with almost 90 percent of its short-term borrowing needs through the investment certificate and deferred payment programs," said Shick, who is beginning another three-year term as chairman. "This is not only a powerful indicator of grower confidence in Blue Diamond, it also lowers our cost of operating capital."

Blue Diamond had earnings of \$3.4 million from non-patronage business other than from almond sales. This reduces the need for retained earnings traditionally used to offset costs and provides for additional capital investment in the business, Shick said, adding that almond demand has



Blue Diamond Chairman Clinton Shick and his fellow growers produced another huge crop last year, which their co-op processed and marketed for \$658 million – second best in co-op history. Photo by Catherine Merlo

increased 5.4 percent compounded annually for the last 25 years.

With 150,000 new almond acres set to bear record crops over the next three years, Shick cautioned growers to protect their investment with a handler who plans and invests long-term in markets and innovative product mixes that increase customer demand.

Frederick named 'Honored Cooperator'

The National Cooperative Business Association has presented Donald Frederick the Honored Cooperator Award for his long career working with cooperatives while at the U.S. Department of Agriculture (USDA), including his efforts to make the Internal Revenue Code and regulations relating to cooperatives more accessible and comprehensible.

"His knowledge and efforts regarding law, tax policy and governance have benefited cooperatives and cooperative advisors and will have a long-lasting effect on cooperatives," said NCBA President and CEO Paul Hazen.

In addition to his co-op tax reference books, Frederick is the author of some

of the mostly widely read co-op primers in the world, including "Co-ops 101" and "Do Yourself a Favor, Join a Co-op" (both of which are available from USDA Rural Development). He also wrote the popular "Legal Corner" column in USDA's cooperative magazine, *Rural Cooperatives*.

The Honored Cooperator Award gives national recognition to outstanding individuals, including public figures, co-op employees and volunteers, who have worked to develop, advance and protect cooperatives. Frederick recently retired from USDA and now works part time with the National Society of Accountants for Cooperatives.

South Central Grain to merge with CHS

South Central Grain in North Dakota has voted to merge with CHS Inc. The co-op includes elevators in Napoleon, Kintyre, Wishek and Hazelton. The vote was 154 for the merger and 25 against it, according to a report in the *Bismarck Tribune*. South Central Grain and CHS already jointly operate a shuttle grain-loading facility at Sterling.

CHS has been leasing the four elevators based on a depreciation schedule. The elevator leases with CHS were set to expire at the end of 2008. The expiration will be accelerated and the merger formalized by the end of 2007, the *Tribune* reported.

Florida sugar co-op and partner purchase Veracruz sugar plant

American Sugar Refining Inc. — owned by the Sugar Cane Growers Cooperative of Florida in Belle Glade and by Florida Crystals Corp. of West Palm Beach — purchased a sugar mill and refinery in Veracruz, Mexico, less than a month before the final phase-in of the North American Free Trade Agreement. The purchase of Ingenio San Nicolas S.A. de C.V. gives the U.S. company a refinery that produces 75,000 tons of refined sugar annually, according to a report in the *Palm Beach Post*.

On Jan. 1, all sweetener trade restrictions with Mexico were set to disappear, and trade among the U.S., Canada and Mexico will be open. *The Post* article notes that some in the sugar industry are worried that a glut of sugar could be coming into the United States from Mexico, while others say the open borders present an opportunity. "It is a two-way street," sugarcane farmer Fritz Stein Jr., a member of the Sugar Cane Growers Cooperative, told the newspaper. "Come Jan. 1, we can go south and they can come north. I don't think they are going to destroy our market up here."

Sunkist to consolidate citrus juice and oil units

Sunkist Growers is consolidating its citrus juice and oil operations, which process citrus fruit into juice and other byproducts. The lemon processing operations currently housed in Ontario, Calif., will move to Sunkist's state-of-the-art processing facility in Tipton, Calif., which currently focuses on processing oranges and tangerines.

"By consolidating the two operations in the heart of the San Joaquin Valley citrus-growing area, we achieve greater economies of scale and increased efficiencies," said Ted Leaman, vice president of Sunkist's juice and oil business. "The Tipton facility is a newer, more modern facility."

The shortage of lemons caused by the freeze last January makes this the optimum time for Sunkist to accomplish this consolidation, Leaman notes. The bulk of the current season's lemon crop will be sold into the fresh market, leaving very little fruit for byproducts. Sunkist will contract for what processing capacity is needed until March 2008 when the new lemon lines are expected to be up and running at Tipton. Post-processing functions are expected to continue at the Ontario plant for about a year, until the move is complete.



More than \$1 million was raised last summer for March of Dimes charities through Sunkist's "Take a Stand" program. About 11,000 children age 7-12, including these Portland, Ore., citrus-drink moguls, received free lemonade stands and juicer kits from the co-op to raise money to help fight birth defects. Photo courtesy Sunkist

The Sunkist plant has been a fixture for many years, anchoring a large portion of Sunkist Street in east Ontario. Built in 1926, the complex is home to the plant that processes citrus juices, oils and aromas, and — until recently — Sunkist's research facilities, where many of the innovations found in today's citrus packinghouses were invented. The Tipton facility was built in 1981, and its operations have been continually upgraded.

Sunkist Citrus Juice & Oil is a leading supplier of value-added citrus products and has staked out a successful niche in its line of citrus byproducts. "Not-from-concentrate (NFC) orange juice is a key market," said Leaman, "and Sunkist supplies fresh quality juice to the major brands — with a West Coast shipping advantage."

Walton EMC returns \$3 million to members

Customer-owners of Walton Electric Membership Corporation (EMC), Monroe, Ga., received a capital credit on their December bills totaling \$3

million for all members. That brings the co-op's 20-year total for capital credits issued to members to more than \$31 million.

Capital credits are the customer-owners' portion of money left over once all expenses are paid. Walton EMC holds margins as a reserve to retire debt, build equity and to prepare for emergencies. Once sufficient reserves are accrued, additional money is returned to the customer-owners as capital credits.

The amount each customer-owner gets is determined by the amount of electricity he/she bought during 1983, 1984 and 2006. Walton EMC serves 116,000 accounts over its ten-county service area between Atlanta and Athens.

Minn-Dak revenue tops \$278 million

Minn-Dak Farmers Cooperative, Fargo, N.D., reported revenue of nearly \$278.6 million in 2007, up from about \$177 million in 2006. The co-op made payments to members (net of unit retains) of \$140.6 million, up from \$71.6 million in 2006. Patronage of \$7.8 million was credited to member accounts.

The co-op's growers harvested 2.2 million tons of sugarbeets from more than 107,000 acres. Average sugar yield was 20 tons per acre.

Speaking to members at the co-op's 35th annual meeting in Fargo, Minn-Dak President/CEO Dave Roche said the 2006 crop was the largest in the co-op's history. Despite increases in the prices of other crops, Roche urged growers to keep their acreage planted in sugarbeets.

Doug Etten, Foxhome, Minn., was elected chairman, succeeding Mike Hasbargen, Breckenridge, Minn., who stepped down from the post but remains on the board. Brent Davison, Tintah., Minn., was elected vice-chairman. ■

required for construction of new pipelines.

The recommended actions to address these transport constraints include:

- Determine the government's role to ensure adequate biofuels transportation capacity;
- Determine when the current biofuels transport infrastructure will be pushed beyond its capacity to accommodate additional volume;
- Examine opportunities to modify existing pipelines or use existing rights of way to transport biofuels;
- Fund research on reducing siting and construction constraints to enable infrastructure development necessary to support rapid industry expansion;
- Conduct analysis on the "least-cost" strategy for handling the transition to a 60 BGY future.

End use

Biofuels will reach their potential only if energy companies, vehicle manufacturers, retail service stations and consumers all have sufficient incentives to change their operations and habits to embrace renewable fuels. Like the change from leaded to unleaded gasoline, this will require a clear and sustained campaign to match supply and demand on an evolving basis.

The significant end-use constraints are:

- As ethanol production moves beyond 15 BGY, a significant increase in consumer demand for E85 will be required to support increased ethanol production;
- Current E85 and biodiesel retail availability is limited;
- Current production and sale of flexible fuel vehicles (FFVs), capable of running smoothly on either gasoline or biofuels, is limited;
- Additional outlets for ethanol are not established to accommodate an imbalance where supply exceeds national fuel demand.

The recommended actions to address these end-use constraints include:

- Sponsor public education programs to increase consumer demand for biofuels and FFVs;
- Create a national corridor of biofuels refueling stations to increase availability and encourage purchase of both E85 and biodiesel;
- Work closely with auto manufacturers to establish incentives to increase production of FFVs;
- Develop an export market for U.S. ethanol to support continued ethanol industry expansion through a possible slow transition to E85.

Failing to address the critical issues facing the biofuels industry will lead to bottlenecks which constrain continued rapid industry expansion and limit its capacity to lessen America's dependence on foreign oil. It will also hamper efforts to improve the environment, reduce trade deficits and enhance the economic well-being of rural America.

Eliminating these constraints will require considerable discussion and coordination with states and industry to determine the benefits and risks of various government interventions. While the range of issues and stakeholders is large, the timeframe for ethanol's transition beyond 15 BGY provides an opportunity for robust debate and for developing reasoned responses. The time to begin is now. ■

have to strategically respond to them if we want to remain competitive."

For instance, he says, recent consumer focus on healthier eating has created more incentives for companies to expand their product offerings. "That's what we're doing with production of the soybean oil," Boulis says. "We're also responding to the agriculture industry's demand by providing our high-end soy meal for use in their feeding practices. I think adaptability is the key to our business success."

Reducing transportation costs

As Mercer consolidates its operations and brings its soybean processing plant to full capacity, it eliminates the roundtrip costs of transporting soybeans to regional processors. Since Mercer currently buys soy meal from these same regional processors and has it shipped back to Ohio, bringing the plant into production will reduce product transportation costs by more than 50 percent.

Additionally, health benefits from using trans-fat-free oils are triggering an increase in consumer demand. Major fast food chains and food manufacturers either have changed, or are considering changing to trans-fat-free oils in their food preparations. These developments have helped to validate Mercer's market projections and its decision to initiate this new venture.

Cooperatives exist for the single purpose of improving the business profitability of their members. The commitment of Mercer's management and its ability to reach beyond current operations and find new venues to generate positive financial returns reflect the spirit and mission of all cooperatives. ■

Owner's Manual

continued from page 14

participate fully in the cellulosic ethanol industry of the future.

Business models are likely to become even more complex with the advent of cellulosic ethanol. For while corn is the predominant feedstock for the ethanol industry of today, a variety of feedstocks — corn, agricultural wastes, dedicated energy crops such as switchgrass and miscanthus, forestry products and

others — are expected to be used by the cellulosic ethanol industry of tomorrow. The feedstock producers of tomorrow are, therefore, likely to be much more than row crop farmers. The “farmer-owned” business model will have to expand to embrace these new producers.

With the advent of biorefineries, the number and specialization of co-products should multiply and require a more diverse and complicated mix of third party marketing firms. In the case of some products with highly technical

applications, the use of specialized marketing firms or long-term off-take agreements will be necessary because of the extraordinary expense of a facility having internal staff to perform such a highly specialized and technical sales function.

It's quite likely that more business models will be created by the advent of cellulosic ethanol. And we can expect them to be even more complex than today's business models. ■

Using the 'extra-value index' to measure agricultural cooperative performance

continued from page 24

the other types of cooperatives generated positive extra value in the second time period.

Five cooperatives showed consistent, strong performance — generating extra value with a 10 percent risk premium added to the basic charge for equity capital in both time periods (category V). Three of these high-performers were dairy cooperatives.

Furthermore, except for farm supply cooperatives, cooperatives of each type were found in the highest performance categories, IV and V, in 2000-04. This indicates that a range of agricultural cooperatives are capable of performing admirably, regardless of the product they may handle.

On the other hand, with the exception of cotton cooperatives, at least one cooperative of each type failed to generate sufficient value to cover a basic charge for the use of their members' equity. However, fewer cooperatives of each type (except for farm supply cooperatives) lost value in the second time period than in the first. In fact, farm supply cooperatives were the only type where a majority dropped in performance category between 1992-96 and 2000-04.

Group average extra value index

The simple average of the individual cooperatives' performances is shown in Table 2. The 65 cooperatives in the study averaged positive extra value in both time periods at the basic plus 5 percent rate, a category IV performance. For 2000-04, this group of agricultural cooperatives created 2.3 cents in extra value for every dollar of operating capital expended, on average, when a charge for equity capital with a 5-percent risk premium over the basic interest rate was applied.

However, if members' risk premium was 10 percent, the 65 cooperatives, on average, fell short of being able to pay member-producers this premium by 1 cent for each dollar of

operating capital used.

Grouping cooperatives according to their main product showed a range of performance. Cotton cooperatives, on average, outperformed the other types. They generated positive extra value, with a 10-point risk premium charged for equity (performance category V) in both time periods. As a group, dairy cooperatives performed almost as well, but they dropped to performance category IV for 2000-04, missing members' expectations by an average of just 0.8 cent per dollar of operating capital when equity was charged a 10 percent risk premium over the basic rate.

The other five types of cooperatives all performed at category III for 2000-04, averaging positive extra value when charged a basic rate for their use of equity capital.

The averages obscure the fact that performances of individual cooperatives of the same type often varied widely. For example, at the basic plus 10 percent rate, four of the 16 dairy cooperatives ranked in the top 10 of the 65 cooperatives in 2000-04.

At the same time, a dairy cooperative showed the largest drop in rank between the two time periods among the 65 cooperatives. Another dairy cooperative was among the bottom 10 in rank for 2000-04. Similarly, of the three cotton cooperatives represented in the sample, two were in the top 10 in 2000-04 while the third cotton cooperative showed the second largest drop in rank of all 65 cooperatives.

The highest and lowest ranking cooperatives were both fruit and vegetable co-ops. Likewise, there was one grain cooperative in the top 10 for 2000-04, with two grain cooperatives ranking in the bottom 10.

Conclusions

The results of this extra-value analysis show that while all the cooperatives operated in the same general economic conditions of each time period, some saw their performance improve, while other cooperatives' performances worsened between the two periods. However, at least one of each type of cooperative (with the exception of sugar cooperatives) in at least one of the two five-year time periods considered, was

Table 2—Performance of study cooperatives, simple averages by type of cooperative, 1992-96 and 2000-04

	ROE	EXTRA VALUE INDEX					Equity share of operating capital
		BASIC RATE (LIBOR +2)	BASIC RATE +5	BASIC RATE +10	Performance Category	Rank	
1992-1996 Averages							
All (65 cooperatives)	11.9%	4.0	0.3	(3.4)	IV		74.5%
Cotton (3 cooperatives)	18.3%	10.1	5.7	1.3	V	1	88.0%
Dairy (16 cooperatives)	17.0%	8.9	5.1	1.2	V	2	76.6%
Farm Supply (9 coops)	10.5%	2.4	(1.2)	(4.9)	III	4	73.2%
Fruit & Veg. (14 coops)	6.2%	(1.1)	(4.6)	(8.1)	II	6	69.7%
Grain (13 cooperatives)	10.7%	2.4	(1.6)	(5.6)	III	5	79.5%
Other (6 coops)	8.3%	0.6	(3.0)	(6.5)	III	3	70.4%
Sugar (3 cooperatives)	1.9%	(2.8)	(5.7)	(8.6)	II	7	58.5%
2000-2004 Averages							
All (65 cooperatives)	12.2%	5.6	2.3	(1.0)	IV		66.7%
Cotton (3 cooperatives)	22.9%	15.5	11.3	7.1	V	1	83.2%
Dairy (16 cooperatives)	12.5%	6.6	2.9	(0.8)	IV	2	73.7%
Farm Supply (9 coops)	5.1%	0.1	(3.3)	(6.7)	III	7	67.9%
Fruit & Veg. (14 coops)	5.6%	0.5	(2.4)	(5.3)	III	6	58.7%
Grain (13 cooperatives)	8.1%	2.0	(1.5)	(5.0)	III	5	69.2%
Other (6 cooperatives)	9.3%	2.4	(0.4)	(3.2)	III	3	56.1%
Sugar (3 cooperatives)	6.2%	0.5	(2.0)	(4.6)	III	4	50.7%
Change							
All (65 cooperatives)	0.3	1.6	2.0	2.4	=		(7.8)
Cotton (3 cooperatives)	4.6	5.4	5.6	5.8	=	0	(4.8)
Dairy (16 cooperatives)	(4.5)	(2.3)	(2.2)	(2.0)	dn 1	0	(2.9)
Farm Supply (9 coops)	(5.4)	(2.3)	(2.1)	(1.8)	=	(3)	(5.3)
Fruit & Veg. (14 coops)	(0.6)	1.6	2.2	2.8	up 1	0	(11.0)
Grain (13 cooperatives)	(2.6)	(0.4)	0.1	0.6	=	0	(10.3)
Other (6 coops)	(1.0)	1.8	2.6	3.3	=	0	(14.3)
Sugar (3 cooperatives)	4.3	3.3	3.7	4.0	up 1	3	(7.8)

able to add value sufficient to reward members for the use of their capital at a rate representing a 10-point risk premium above the basic rate.

Thus, this exercise of measuring cooperative performance by the extra value method tells us that cooperatives of all types can be very able performers.

Some factors such as a cooperative's pricing policies are not captured by the financial statements and thus are not reflected in the various financial performance measures,

including the extra value measure. The value of intangible cooperative benefits is also elusive and hard to quantify.

However, these benefits are very real for members. For some cooperatives that did not appear to be fully rewarding members for the use of their equity, it may very well be that compensation came through avenues not captured by the extra-value measure.

For references used in this article, please contact the author at Carolyn.liebrand@wdc.usda.gov. ■

Mission to Market Co-ops

continued from page 21

second-nature to them,” Lowery says. “The value is in the education process and teaching kids these things from the very beginning. It becomes more natural to them.”

Just as technology and computers have become second-nature to America’s younger generations, they hope that cooperatives will do the same.

Long-term vision

All of these efforts and accomplishments by the NCBA Marketing Committee support MacDonald’s vision for co-ops. She foresees “wild success” for co-ops in the future, but says advancing the cooperative business model must itself be an exercise in cooperation.

“We did it the first time,” she says of the committee’s work, “but other people have to pick up the gauntlet.”

She is convinced that co-ops’ biggest priority has to be educating the next generation about co-ops and the power of what she considers the most democratic form of business. Perhaps it will give them a reason to believe that they don’t have to mistrust business.

All the responsibility should not be laid on co-ops, though, MacDonald says. Her greatest hope is that business schools will start teaching more about cooperatives.

“Cooperatives are the better business model,” she says. “I see cooperatives as healing the world, bringing peace, educating.” Co-ops are typically much more community oriented than other types of businesses, some of which are now trying to emulate the co-op philosophy of “giving back to the community.”

It is this cooperative difference that keeps MacDonald going — day after day, week after week, year after year. “I absolutely love the people I work with, so I have this great sense of contribution and accomplishment,” she says. “It’s very satisfying to my soul.”

For MacDonald, serving cooperatives is not about the money; it’s not about the recognition; it’s not about the status. It is all about devoting her life to a worthy cause.

It’s a mission you can’t put a price on. ■

Utility Co-op Connection

continued from page 31

Gary Stooksbury, CEO of Aiken Electric Cooperative in South Carolina, echoes Calcaterra’s comments. “I think we were somewhat surprised that there was not more renewable power available in South Carolina.” But, he adds, these studies will help people understand that it will be difficult to rely on renewable energy for 15 percent of the nation’s energy portfolio in the near future.

The biggest surprise contained in the study concerned biomass. “There are as many as a half-dozen sites across the state with wood waste that could be converted to electric power,” says Calcaterra. “Part of the cost of biomass is a function of how far you have to transport the wood. But it is a renewable resource.”

The energy-efficiency study put into perspective what would have the greatest impact, with the additional advantage of being among the easiest programs to implement. Stooksbury explains that the study showed that conservation and wise use of energy offer “the most advantageous and quickest payback.”

For this reason, the decision was made to immediately tackle one of the studies’ recommendations. “We’re launching a massive plan to distribute 7 million compact fluorescent lights (CFLs) to our members, beginning this spring,” says Calcaterra. “Because CFLs use one-third of the energy and last up to 10 times longer than standard bulbs, their total energy savings represents electric power used by about 35,000 homes.”

Affordability

Affordability is a key consideration for South Carolina cooperatives and an additional reason to expand energy conservation and efficiency programs. Conservation efforts that would cost \$500 annually per household are not realistic for many South Carolina rural electric cooperative residents, Calcaterra explains. He notes that more than 20 percent of the co-op’s consumers live in manufactured homes.

Programs that increase heating and cooling efficiency result in savings that the study characterizes as having not just “technical potential,” but also significant “achievable potential.”

Environmentally responsible

Renewable energy, conservation and energy-efficiency programs individually may not achieve significant energy savings. But together, they can, Calcaterra says. “There is no silver bullet, but there may be silver birdshot.”

That’s why net metering — which pays consumers who install their own renewable-energy generation equipment (such as solar panels) in their homes — is part of the South Carolina strategy. “We want those entrepreneurs. We believe in our members. We want to set up a system that gives incentives for helping find solutions,” Calcaterra says.

South Carolina cooperatives expect to be part of the solution. They have invested \$2.5 million to fund research at the University of South Carolina to look for ways to burn coal cleaner.

Calcaterra explains: “We have become very efficient at burning coal. The new plants are far more efficient and cleaner than those built 20 years ago. And those plants were much better than those built 50 years ago. But it has taken us anywhere from 20 to 50 years to accomplish that. We will take care of the problem, but it cannot happen overnight.” ■



From the archives of Rural Cooperatives and its predecessor magazines

50 Years Ago...

From the January 1958 issue of News for Farmer Cooperatives

Cooperatives: tools for self-help

Many agriculture problems today are too big to be handled singly by the individual farmer, notes USDA Farmer Cooperative Service Administrator Joseph G. Knapp in the lead article of a special issue on co-op and self-help efforts nationwide. Knapp asks: Can an individual farmer provide himself with the quality of feed, fertilizer, seed or other supplies that he requires? Can an individual farmer find satisfactory markets for his products, or have any influence in the market in which he operates? The answer to these questions is, of course, “no.” However, through organization, an individual can obtain these and many other benefits for himself.

The form of organization that is peculiarly adapted to the needs of farmers is the farmer cooperative. Through a co-op, an individual farmer can maintain his independence of action as a farmer and still obtain the benefits of large organization. The farmer-owned cooperative not only helps farmers increase their efficiency, and thus their farm income, but its use gives strength and character to the user as well as to the whole rural community and nation.

30 Years Ago...

From the January 1978 issue of Farmer Cooperatives

Co-op's olive pits yield energy

Cooperatives in California are drawing attention for projects that save energy. For example, Lindsay Olive Growers, Lindsay, Calif., is charting a new course through converting its olive pits into a source of fuel.

At Lindsay's headquarters, management struggles over what to do with 27 tons of olive pits every working day. Through the years, Lindsay has tested the pits as livestock feed, fireplace logs, ground cover, soil conditioner, an ingredient in blasting powder, a plastics filler, a bug-bait carrier, olive oil and as a source for making methane gas. However, none of the uses has been competitive with materials already on the market.

On recommendation of Lindsay president Earl Fox, the cooperative's board of directors authorized proceeding with a plan to use the pits as boiler fuel for the plant's steam generation.

J. R. Webster, Lindsay's research director, recently reported: “Last week we burned about 125 tons of olive pits. And we only had 30 gallons of ashes to take to the county disposal site.” Explains Fox: “As fuel becomes more expensive, the savings from the pits will become more valuable.”

Lindsay adapted a unit capable of burning wood chips with 60 percent moisture so that the pits can be fed into the boiler fuel unit in a moist condition. They can be converted into a yield of nearly 4,000 Btu's of heat per wet pound.

10 Years Ago...

From the January/February 1998 issue of Rural Cooperatives

How co-ops give power to the people

Electric co-ops are working to help members feel and act like utility owners.

How is an electric or telecommunications cooperative different from any other business that provides the same service? Electric, telephone and most other types of cooperatives were born out of necessity. There was a need. The neighbors of that community did not have electricity. There was no phone service. These services were long available in larger cities, but not in the small towns and not on the farm. No one was interested in serving these high-cost rural areas.

The emotional reaction that came with electric power was overwhelming. A farmer giving witness in a Tennessee church in the early 1940s said, “Brothers and sisters, I want to tell you this: The greatest thing on earth is to have the love of God in your heart, and the next greatest thing is to have electricity in your house.” Connection of the first telephone lines erased loneliness and provided a connection to friends and neighbors across the countryside.

Neighbors worked together to organize cooperatives and sign up members. They held endless meetings to determine where power lines would go. They worked with employees of the Rural Electrification Administration (one of the predecessor agencies of USDA Rural Development) to make sure the project was feasible and could get the needed financing.

Today, that same cooperative spirit continues. Nationwide, there are 1,000 rural electric co-ops and 1,000 rural telephone co-ops providing the same types of help, services and leadership to rural communities. Members today are working together to ensure that their communities have access to quality education, healthcare, housing and business development. The “co-op way” brings out the best in all of us. ■



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