

Agriculture and Our Atmosphere

By Mark Muller, Institute for Agriculture and Trade Policy

We can create an agriculture that not only helps mitigate climate change, but also protects our soil and water along the way.

The Intergovernmental Panel on Climate Change, an international advisory group consisting of 2,500 of the world's leading experts on climate change, recently stated that "the balance of evidence suggests that there is a discernible human influence on global climate." These scientists have found that average global temperature has increased 0.5 to 1 degrees Fahrenheit over the past century, and are expected to increase 2 to 6.5 degrees Fahrenheit over the next century. These increases are believed to be due to emissions of gases that trap heat in the atmosphere, creating a greenhouse effect. The most prevalent of these greenhouse gases is carbon dioxide, which is emitted whenever fossil fuels are burned.

Naturally, much of the energy sector question the science and oppose efforts to limit greenhouse gas emissions, such as the Kyoto Protocol. Initially, many in the agricultural community joined them in opposition, for fear that new taxes on fossil fuels would increase the cost of gasoline, electricity and fertilizers. Agriculture is responsible for 7 percent of total U.S. greenhouse gas emissions. Large industrial farming operations are heavily dependent on cheap energy to provide commercial fertilizers, inexpensive fossil fuels, and low heating and cooling costs. The American Farm Bureau rallied opposition by co-sponsoring a report that called the Kyoto Protocol "An Assault on an American Institution."

The Loss of Carbon in the Soil

The soil has been a source of agricultural carbon dioxide emissions over the past century. Industrial farming operations frequently treat soil as nothing more than a vehicle that delivers

nutrients and water to the plant. Fields are often tilled every year, which breaks soil organic carbon apart and releases carbon dioxide in the atmosphere. Continual soil disturbances do not allow plant and animal matter to break down and become part of the soil. This leads to a poor quality soil and converts soil carbon into atmospheric carbon dioxide. Soils in the corn belt only have 61% of the soil carbon that they once had under natural vegetation.

Yet solutions do exist. Conservation tillage—practices that leave plant residue on the field rather than plow it under—allow carbon to build in soils instead of releasing it into the atmosphere. Soil quality improves as nutrients and water are better retained and earthworms



thrive. Soil erosion is reduced by 50 percent or more, thereby improving water quality. Conservation tillage also requires less tractor work, reducing gasoline use.

Increasing soil carbon provides many agricultural and environmental benefits, and many farmers have already recognized this. Nationally, about 37 percent of U.S. cropland is under conservation tillage. However, conservation tillage can increase financial risk, and the adoption of conservation tillage in Minnesota has stagnated due to these economic concerns. Reducing tillage requires the farmer to

incorporate new management skills and gain knowledge on how to address pest problems without relying on the plow. Second, Minnesota is on the northern edge of the corn belt. Plowing a field in the spring allows the soil to warm quicker and the farmer to sometimes plant slightly earlier. Due to our short growing season, any delay in planting puts the farmer at risk of reduced yield. Presently, not enough financial incentive exists for the risk-adverse farmer to try these techniques.

The Benefits of Valuing Carbon

The climate change issue has provided another valuable reason why carbon should be left in the soil. The cumulative potential for U.S. cropland to sequester carbon through conservation tillage is enormous—up to 107 million metric tons according to a recent report, which constitutes about 4 percent of total U.S. greenhouse gas emissions. Promoting these tillage practices is one method that the U.S. can take to help reach our obligations if the Kyoto Protocol is ratified. Of course, offsetting 4 percent of our fossil fuel emissions is only a small part of the puzzle and does little to alleviate the larger tasks that face our society such as energy conservation and increased use of alternative energy sources. But recognizing the important role that soil has in the carbon cycle can also provide several ancillary benefits to the farmer and the environment.

Promoting the appropriate use of carbon can create other changes in agriculture that protect our natural resources. The production of anhydrous ammonia, a common nitrogen fertilizer, requires intensive energy use. If the pollution costs from this energy use were appropriately incorporated, farmers would have more of an incentive to utilize manure and other natural fertilization sources. Grazing and other beneficial land uses would compare favorably to large confined livestock operations, which rely on cheap energy

Financial Report

By Elka Malkis
Financial Manager

Sales for the 1st quarter of fiscal year 1999/00, July through September, were \$4,494,015. This is a 15% increase over the 1st quarter last year, and includes \$172,865 in sales to other co-ops by our new warehouse.

Our cost of goods this quarter was 61.7% of sales, which means our gross margin was 38.3%, or \$1,721,278. Gross margin is what we have left after paying for the food we sell.

Our next largest expense is payroll. This includes wages, benefits, and payroll taxes, and totaled 24.1% (\$1,082,420) in the first quarter. Of the total spent on payroll, 72% was in wages, 20% in benefits (health/dental/disability insurance, 401K match, discount on purchases, vacation and personal leave, profit sharing) and 8% in taxes and worker's compensation insurance.

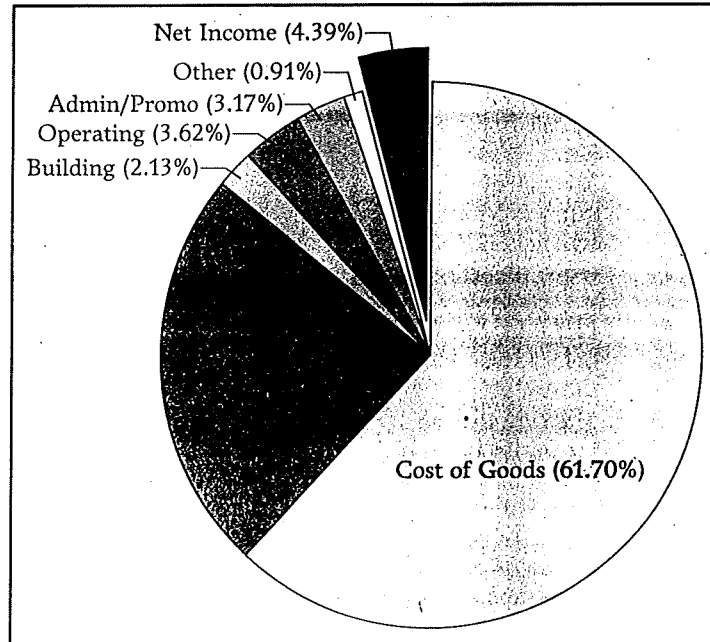
Building expenses, 2.1% of sales, includes rent at the warehouse, property taxes,

utilities and insurance. Operating expenses, 3.6% of sales, covers telephone, bank fees, our two warehouse trucks, supplies, and more. Admin/Promo includes member discounts, office supplies, legal fees, newsletter, classroom, and the like for 3.2% of sales. Other includes some income (class fees, interest earned) and some expense (interest paid and Federal/State taxes). We ended the quarter with a net income of 4.4%, or \$197,260.

Now to the question that's on all your minds: "what effect has Whole Foods had on business since opening

December 17?" The short answer is none, so far. I did a quick analysis of sales growth this year over last, and last year over the one preceding. Here's what I found: this fiscal year, from July 1 until November 30, the average rate of growth was 12.4%. From December 1 until December 26, the rate of growth has been 10.9%, which is a drop of 1.5%. Now 1.5% is not an alarming drop in sales, and though I did briefly consider worrying that it was just the beginning and that there was always the chance things would get worse, I decided against it. Instead, I

looked at what had happened to sales in the month of December 1998 as compared to 1997. Guess what? The rate of growth in December 1998, 12.5%, was down from the 17.4% growth in July through November 1998. If two years constitute a history, the trend is for lower growth in December than in the earlier part of the fiscal year. So, Whole Foods has not had a noticeable impact on our sales, yet. Maybe they never will. After all, natural foods account for a tiny portion of total food dollars spent; there's room for us all to grow and prosper. ☺



Air & Atmosphere, continued

for cooling, feeding and watering the animals. Locally produced foods with minimal processing and packaging would financially benefit compared to the typical well-traveled and highly processed foods found in supermarkets.

Valuing carbon may provide the same benefits to sustainable forestry. Trees store large amounts of carbon, both above and below ground. When a forest is cut, that bank of carbon is lost, and the land's ability to sequester additional carbon is diminished. Placing a value on carbon provides additional incentive to keep forests thriving. Furthermore, this would create opportunities for farmers to diversify their farms by incorporating trees into their crop rotations.

Finally, carbon valuation can promote the use of plant-based products rather than products that rely on fossil fuels and plastics. From ethanol to ink

to fabric, advances have been made that allow plant matter to replace fossil fuels. This shift can not only reduce our carbon dioxide emissions, but also retains more of the production benefits in the Midwest instead of a transnational oil corporation.

Making It Happen

Policy makers are facing the challenge of creating an agricultural policy that provides a framework for farmers and landowners to receive payments for carbon-sequestering practices. International climate change negotiators are currently discussing the feasibility of developing a carbon market. This market would allow farmers and landowners to receive credits for sequestering carbon. As the fossil fuel industry comes under stricter carbon dioxide emission regulations, corporations will be able to buy carbon credits from farmers and landowners. The trading

of carbon credits will provide a cost-effective method of reducing emissions while benefiting our soil and water.

Advocating for a government program that promotes carbon sequestration is another possibility. The Conservation Reserve Program, a land set aside program, has taken millions of acres of cropland out of production for erosion control and wildlife habitat. Perhaps a similar program can be instituted that provides incentives for farmers to utilize carbon-sequestering practices.

Too often farmers are given the perception that in order to remain financially viable, they must forego environmental concerns. We believe that the economic/environmental debate creates a false dichotomy; policies can be created that benefit the farmer, the local economy, and our natural resources. Creating incentives for carbon sequestration is an important step in that direction. ☺