THE CHANGING PROFILE OF AGRICULTURE IN LINCOLN, LANGLADE AND MARATHON COUNTIES

"The Opportunities and Challenges for Extension Programming In Agricultural Development"

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I. INTRODUCTION

As we head into the 21st Century the challenges facing agricultural development in Lincoln, Langlade and Marathon Counties are much different than those facing the area at the beginning of the last century. At the beginning of the 20th Century the farm that I live on, 12 miles northeast of Merrill in Lincoln County, was a cutover 40-acre parcel owned by a lumber company. The land wasn't purchased for settlement until 1911. The log house I live in was not built until 1915, the year after the Smith-Lever Act was signed into law creating an Extension Service and Lincoln County employed its first county agent, A.H. Cole. However, this early attempt to get Extension established in the county was not entirely successful.

In his first annual report, in 1934, County Agricultural Agent, Gustav Sell took the time to review some of the early history of Extension in Lincoln County.

> "Lincoln County was one of the first counties in the state to establish the office of agricultural agent. That was in 1914. For about eight years A.H. Cole performed the duties of that office. The most characteristic designation for that period agriculturally would perhaps be to call it a "Boom" period. Many city people as well as young farmers came looking for low priced lands to start new farms and build homes. The county agent's office naturally cooperated with (the) countywide endeavor to get new settlers and help them make a start.
>
> Then after the World War conditions changed. Farming was not so profitable. The stream of new land buyers slowed down and practically ceased. Those that had bought at high prices had difficulty making ends meet. The lumber industry slowed down, cutting down still further the new settler's chance for a livelihood while making his farm.
>
> During this after-the-war farm depression opposition developed to the county agent's office for one reason and another to such an extent that in 1922 the office was discontinued. Several attempts to re-establish it were voted down by referendum. So for twelve years the county had no official agricultural leader.
>
> During the winter of 1934 hog producers of the county found it difficult to get organized to participate in the benefits of the Federal Corn-Hog Control program. A county committee of three, appointed to help these folks, after several meetings found it would be quite an extensive undertaking and therefore recommended securing a full time agent for the job. The county board chairman and district attorney drew on the contingent fund to the amount of $300.00 and asked for an agricultural adjustment agent with Federal aid to (begin) July first.
>
> On March 17th the writer met with these officials and the county committee to consider the work, came to an agreement, and moved in to start work on March 20th.
>
> At the May session of the County Board this action of their county officials and committee was approved, and provision made to extend the work to December 31, 1934.

> It was not until along in June, however, that word came that the Federal aid would be available for such extension.
>
> At this May session of the County Board action was also taken to establish a county agent's office on January 1st, but subject to a popular referendum at the November election.
>
> The agricultural adjustment was too busy all season to do any concerted organized campaigning. So the fact that the referendum carried by nearly a 900 majority indicates quite a spontaneous expression of sentiment. Many voters, both rural and city, seem to have come to a realization that the county had been missing out on something by not having an agricultural office."

Reading through Gus Sell's annual reports from his 13 plus years of Extension work, from 1934 to 1947, gives an interesting historical perspective of the area. When Gus Sell started with Extension, Lincoln County had reached its peak in the number of farms, going from 153 in 1880 to 2,106 in 1935. In 1950, just after Gus left Extension, the acreage in farms had also peaked at 256,251 acres. Both have steadily declined since those peaks. Today there are approximately 425 farms on 83,918 acres.

Extension work dealt with some pretty straightforward needs back in those days; such as livestock diseases, drought, an economic depression, producing and preserving food for the home, instituting the first zoning ordinance and eventually helping in a massive national "Food for War" effort. Extension also helped create many of the local farm groups and organizations that flourished in the post and cold war periods. The issues in those days had less to do with concerns and more to do with what people actually needed in order to carve a community out of the north woods, feed and house themselves, and try to profitably market surplus commodity production to a growing nation.

Less than 100 years later the community has changed dramatically. No longer is the supply of healthy food an issue. In fact an oversupply of food has created an economic environment where less than 10% of a person's income goes toward food, steadily increasing the percent used to purchase consumer goods. More of the health problems facing people today are related to over consumption and nutritional imbalance (such as heart disease, stroke and diabetes) than the nutritional deficiency and contagious diseases that plagued the area a century ago.

The problems we face today are no less important than they were when Gus Sell was an agent but they are indeed more complex. In those days logging, farming and their associated industries defined the communities. Today agriculture and forestry are still important industries but they are slowly shrinking in the proportion of their direct economic contribution to the community. Manufacturing, the service sector, all other industries besides agriculture and government account for more than 85% of the areas economic activity.

To help plan for this first decade of the 21st Century the next few sections of this report cover some of the important foundational elements that need to be taken into consideration in order for Extension programming in Agricultural Development to be relevant and successful. Section II is devoted to the issues that people who live in Lincoln, Langlade and Marathon Counties have identified as needing to be addressed in the next 10 years. The two sources of information for the issues were the results of the 1999 UW-Extension Strategic Planning reports and the recommendations for agriculture included in the 2001 Lincoln County Comprehensive Plan.

Section III deals with the actual changes occurring in the agricultural sector based on statistics compiled by the Wisconsin Agricultural Statistics Service, the U.S. Census of Agriculture and the Wisconsin Department of Revenue. The section also includes some of the structural changes going on in the agricultural marketplace that the local agricultural community must be in tune with if they are to be profitable and competitive. Section IV concludes the report by summarizing the data and then outlining a set of programming priorities that would be unique to an Agricultural Development Agent yet complement the work being planned and conducted by the other three specialized agents in Lincoln, Langlade and Marathon Counties.

II. THE COMMUNITY ISSUES

A. Results of the UW-Extension 2000-2004 Strategic Planning Process

In 1999 Lincoln, Langlade and Marathon Counties all took part in a statewide Cooperative Extension four-year program planning process to identify the broad issues that counties felt needed to be addressed over the next four to five years. Each county was given the freedom to use an issue identification process that best fit their local situation. Even though Lincoln, Langlade and Marathon Counties all used a slightly different process, all three counties had some very similar concerns. What follows are the concerns related to agriculture included in each of the counties' reports to the state:

Marathon County

1. A land use plan that provides for natural areas, agricultural land that preserves farms, parks, and recreational areas and controlled urban growth.
2. A stable tax rate for business, agriculture and homeowners
3. A program to maintain a clean environment and promote sound environmental practices.
4. Expanded, cooperative educational programs utilizing cutting edge technology and community resources.
5. A diverse economic base.

Langlade County

1. Develop a more diversified economy within the manufacturing, service and retail industries and to promote the development of locally owned businesses.
2. Protect the natural environment from the effects of development and to conserve and manage natural resources for the benefit of the public good.
3. Curb the negative effects of development into rural areas to maintain the environmental integrity and rural character and reduce the infringement of development upon prime agricultural lands.
4. Need for local agribusinesses to carefully manage crop inputs to minimize any possible negative long-term effects caused by pesticide usage.
5. Need for local agribusiness's to explore the production of alternative crops and alternative production methods that are less capital intensive, more environmental friendly and less fossil-fuel dependent.

Lincoln County

1. Preservation of agriculture as a part of the landscape. Concern over the fragmentation of agricultural and forest areas by rural homes and the wholesale loss of agricultural land by concentrated development.
2. Agricultural development and retention. If farming is going to be a viable part of the local economy new and more diverse enterprises have to be encouraged and existing farms have to be more profitable.
3. Environmental and infrastructure effects of expanded livestock operations. Concern over the large volumes of feed and manure on the environment, odor concerns from non-farm neighbors and damage to roads by hauling.
4. Planning for growth while protecting the environment. Problems having to do with urban sprawl and concentrated development along the waterways in the county.

Based on those concerns and input from their own individual information gathering processes the agricultural agents added their programming priorities to each of the county programming priorities that were a part of those same reports to the University. Below are the county program priorities that relate to agriculture:

Marathon County

1. Land use planning & land use issues
2. Improved production practices for agriculture
3. Improved farm management
4. Improved dairy facilities

Langlade County

1. Develop a more diversified economy within the manufacturing, service and retail industries and to promote the development of locally owned businesses.
2. Curb the negative effects of development into rural areas to maintain the environmental integrity and rural character and reduce the infringement of development upon prime agricultural lands.
3. Protect the natural environment from the effects of development and to conserve and manage natural resources for the benefit of the public good.
4. Need for local agribusiness's to explore the production of alternative crops and alternative production methods that are less capital intensive, more environmentally friendly and less fossil-fuel dependent.

Lincoln County

1. Help the community develop a process to make wise land use decisions and provide them with the information to do it.
    a. Try to preserve agricultural land as a part of the landscape.
    b. Provide assistance for dealing with expanded livestock operations in the rural areas of the county and help develop systems to reduce and deal with conflicts between farmers and their non-farm neighbors.
2. Help the business community, including agriculture, and government services adapt to the rapid changes of the digital information age as they try to stay competitive and meet the needs of their customers and the public.
    a. Agricultural development and retention. If farming is going to be a viable part of the local economy, new and more diverse enterprises have to be encouraged and existing farms have to be more profitable.

B. The Lincoln County Comprehensive Planning Process

In 1999 Lincoln County began working on a comprehensive planning process that gave further guidance to the directions that Extension Agricultural programming should head into. One of the nine required elements of a “Wisconsin Smart Growth” compliant plan is “Agriculture, Natural and Cultural Resources”. Because of that requirement there were several opportunities for rural residents and farmers to provide input on how they would like to see agriculture evolve in the next 20 years.

There were 14 of Lincoln County’s 16 townships involved in the planning process that formally ended in September of 2001 when the County Board of Supervisors voted unanimously to approve the Plan. In that plan there were three major recommendations in regards to agriculture (Page 27-39, Volume 2): 1. Minimize Nonagricultural Development in Farming Areas; 2. Support the Continuation of the "Family" Farm; and 3. Update the County's Farmland Preservation Plan.

The recommendation in regards to the "family" farm also brought with it some restrictions, "The County and Town planning processes showed support for the 'family farm', and general reluctance to promote large 'factory' farm operations in the County. This is the basis for two of the main agricultural towns in the County supporting the *Rural Lands* planned land use designation over the *Agriculture* designation. The *Rural Lands* designation certainly allows farming. However, given the other types and densities of uses in these areas, it will likely be very difficult to commence operations of a large 'factory' farm under these designations."

As far as recommendations targeting Extension directly there were several items that were mentioned: 1) Increase the efficiency in farm operations, provide technical assistance including exploring alternative farming techniques (e.g., grazing); 2) Provide advice on other financial and technical support opportunities; 3) Promote specialty agriculture, directed primarily to providing food and products for the local market; and 4) Work with local stores to promote sales of local products and help develop farmers markets.

III. THE TRENDS

A. DEMOGRAPHIC AND ECONOMIC TRENDS

There are a number of demographic and economic trends that can be looked at when developing programs for Agricultural Extension programming. For the purposes of this report I have chosen three to focus on: who is farming, what are they producing and what is the land base they are producing it on.

1. Changing Number and Mix of Farmers

Statistics show that the number of people in Lincoln, Langlade and Marathon Counties making decisions on the agricultural use of their land has dropped by approximately 12.5% between the 1987 and 1997 U.S. Censuses of Agriculture. During that time period Lincoln county saw a 16% decrease, from 507 to 425 farm operations, while Langlade dropped by 11%, from 510 to 453, and Marathon decreased by 12%, from 3078 to 2703. Across all of the counties there was a loss of 514 farms. The greatest loss was actually between the 1987 and 1992 Censuses where there was an 11% drop. Between 1992 and 1997 the loss slowed to only 1% (Table 1). During that same period the dependence on agriculture for a full-time living had also declined.

From 1987 to 1997 the Ag Census found that the number of people claiming that they farm as their principle occupation declined by 28% in Marathon County, from 2271 operators to 1638, by 25% in Lincoln, from 320 to 241, and by 26% in Langlade, from 390 to 289 (Table 2). During the same time the number of operations where the principle operator worked less than full-time increased by 12% in Marathon County, from 1193 to 1334, dropped by 3% in Lincoln, from 233 to 225, and increased by 15% in Langlade, from 177 to 204 (Table 3). This shift in the dependence on farming to provide full-time livings for people was also seen in the amount of money individual farm operations generated.

Looking at Census sales figures, the number of farms producing less than $25,000 in sales decreased in all three counties between 1987 and 1992 but then increased between 1992 and 1997 (Table 4). From the 1992 to the 1997 Census Lincoln County saw a 23%

increase of farms producing less than $25,000, while Langlade County had a 43% increase and Marathon County went up 20%. Over the 10 year period from 1987 to 1997 there was a 6% increase across all three counties. At the same time that the number of farms generating less than $25,000 in sales decreased and then increased, those with more than $25,000 in sales (Table 5) steadily decreased by 39% in Lincoln County, 34%, in Langlade County, 23% in Marathon County and 26% over all three counties.

These changes also changed the proportion of farms producing below and above $25,000 (Figure 1). In 1987 53% of the farms in Lincoln County had sales less than $25,000, and by 1997 that grew to 65% of the farms. The proportion below $25,000 in sales in Langlade County went from 39% in 1987 to 55% in 1997, while in Marathon County the smaller income generating farms went from 40% to 47%. The less than $25,000 farms in Marathon County were still in the minority in 1997 but they've been gaining ground.

The age of operators hadn't changed all that dramatically between the 1987 and 1997 Censuses. Although state and national statistics have been reporting an aging farm population that wasn't necessarily the case in the three county area. There has only been about a one-year shift upward in the average age of farm operators in the three county area between the 1987 and the 1997 Census of Agriculture. The ratio of farm operators below the age of 44, who still have some productive years ahead of them, to those over 55, who are thinking about retirement, has stayed about 1:1 except in Langlade County where there are about 40% more farmers over age 55 for some reason or another.

If you look just at farms that might be defined as the traditional "family" farm, the number is definitely dropping. But if you look at all farm operations there are still a large number of people making decisions on what is going to be produced and how they are going to produce it. What is changing is what motivates them to farm. There are more and more people owning farms that are choosing to do so as a lifestyle rather than a livelihood.

TABLE 1: TOTAL FARM OPERATIONS
LINCOLN, LANGLADE AND MARATHON COUNTIES

		Years	
County	*1987*	*1992*	*1997*
Lincoln	507	399	425
Langlade	510	418	453
Marathon	3078	2804	2703
Total	4095	3621	3581

U.S. Census of Agriculture

TABLE 2: NUMBER OF FARMS WHERE FARMING IS PRINCIPLE OCCUPATION OF FARM OPERATOR

		Years	
County	*1987*	*1992*	*1997*
Lincoln	320	254	241
Langlade	390	311	289
Marathon	2271	1934	1638
Total	2981	2499	2168

U.S. Census of Agriculture

TABLE 3: NUMBER OF FARMS WHERE PRINCIPLE OPERATOR IS LESS THAN FULL TIME

County		*Years*	
	1987	*1992*	*1997*
Lincoln	233	202	225
Langlade	177	153	204
Marathon	1193	1174	1334
Total	1603	1529	1763

U.S. Census of Agriculture

TABLE 4: NUMBER OF FARMS PRODUCING LESS THAN $25,000 GROSS FARM INCOME

County		*Years*	
	1987	*1992*	*1997*
Lincoln	268	226	279
Langlade	199	172	247
Marathon	1228	1054	1270
Total	1695	1452	1796

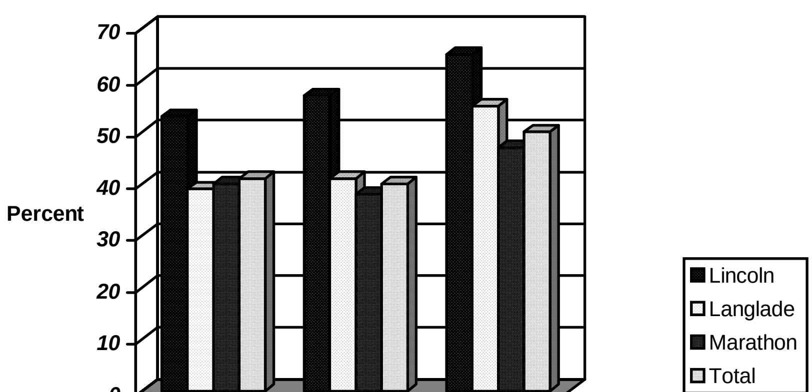
U.S. Census of Agriculture

TABLE 5: NUMBER OF FARMS PRODUCING GREATER THAN $25,000 GROSS FARM INCOME

County		*Years*	
	1987	*1992*	*1997*
Lincoln	239	173	146
Langlade	311	246	206
Marathon	1850	1750	1433
Total	2400	2169	1785

U.S. Census of Agriculture

FIGURE 1: PERCENT OF FARMS PRODUCING LESS THAN $25,000



	1987	*1992*	*1997*
Lincoln	*53*	*57*	*65*
Langlade	*39*	*41*	*55*
Marathon	*40*	*38*	*47*
Total	*41*	*40*	*50*

Years

2. Changing Mix of Agricultural Products

In recent years there have been some inconsistent shifts in the market value of the various sectors of the agricultural economy in Lincoln, Langlade and Marathon Counties. Historically the area has been primarily a livestock based economy because of the cool climate and the heavy soil types that can produce ample supplies of forages to support large ruminant animals, such as dairy and beef cattle. The major exception of course would be the Antigo Flats area in Langlade County known for its potato and vegetable crop production. As livestock leave an area where the soils and climate allow few other cropping options it isn't unusual to see farms go out of production altogether.

From 1987 to 1997 Lincoln County saw a 144% increase in crop related income, from $2.8 million to $6.8 million (Table 6), and a 31% decrease in livestock sales, from $19.5 million to $13.5 million (Table 7). Langlade County saw the same trend in both crops and livestock receipts, however the livestock decline wasn't nearly as drastic as Lincoln County's. Langlade's market value for crops increased 58%, from $18.5 million to $29.1 million, while livestock decreased by only 5 %, from $23 million to $21.7 million. Marathon County also saw increases in crops while its livestock sector stayed relatively stable. Its market value for crops increased from $31.6 million in 1987 to $66.7 million in 1992 but then declined to $50.5 million. The livestock sector in Marathon increased during the ten year period by only 1%, from $151.9 million to $153.8 million.

The change in market values of crops and livestock in Langlade County was spread over all crops but corn and potatoes carried a bulk of the growth. In Marathon County the livestock sector stayed stable in all areas while in the crop sectors the large rise between 1987 and 1992 and then decline in 1997 seemed to be associated with the value of corn crops as well as the dramatic rise and fall of ginseng prices during those periods. In Lincoln County dairy and cattle led the decline in the livestock sector while the large boost in crops came in the nursery and greenhouse area, which went from $252,000 in sales in 1987, to $403,000 in 1992 and then soared to $3,728,000 in 1997. This was more than double Langlade County's $1,428,000 and Marathon's $1,683,000 for the same category in 1997, even though Lincoln County had a smaller increase in nursery and greenhouse operations compared to the other two counties (Table 14).

TABLE 6: GROSS CROP INCOME
(X $1,000)

		Years	
County	*1987*	*1992*	*1997*
Lincoln	2,770	2,179	6,771
Langlade	18,470	22,959	29,180
Marathon	31,601	66,733	50,499
Total	52,841	91,871	86,450

U.S. Census of Agriculture

TABLE 7: GROSS LIVESTOCK INCOME
(X $1,000)

		Years	
County	*1987*	*1992*	*1997*
Lincoln	19,491	14,668	13,518
Langlade	22,960	19,858	21,734
Marathon	151,898	154,215	153,788
Total	194,349	188,741	189,040

U.S. Census of Agriculture

However, dairy is still the king in Lincoln and Marathon Counties. In the 1997 Census the $10.4 million of dairy receipts in Lincoln County accounted for 51% of the total Ag receipts in the county and 76% of the livestock receipts. The proportion was even greater in Marathon County where its $131.3 million in dairy receipts represented 64% of total Ag receipts and 85% of livestock receipts. Langlade County's $17.1 million in dairy receipts only accounted for 34% of all ag receipts but 79% of the livestock receipts.

Farm receipts are only part of the story though since incomes are affected by a combination of the volume of product produced and prices received. It is also important to know how many farms, and thus farmers, are actually engaged in the different types of enterprises because it is people who demand services from the public and private sector, including Extension.

In the period between 1987 and 1997 Lincoln, Langlade and Marathon Counties together and individually have seen a steady decline in livestock farms (Table 8), dairy farms (Table 9), livestock as a percent of all farms (Table 10), dairy as a percent of all farms (Table 11), and dairy as a percent of livestock farms (Table 12). Beef cattle farms seemed to remain stable over the ten-year period of time (Table 13) even though cattle price cycles should have forced some farms out of business by 1997. Lincoln County led all three counties in losses of both livestock farms, dropping by 34%, and dairy farms, off 53%. The county also had the greatest loss in farms (Table 1), with a 16% reduction, and land in farms, dropping by 23% (Table 16).

TABLE 8: NUMBER OF LIVESTOCK FARMS

		Years	
County	*1987*	*1992*	*1997*
Lincoln	401	294	266
Langlade	376	283	262
Marathon	2331	1904	1725
Total	3108	2481	2253

U.S. Census of Agriculture

TABLE 9: NUMBER OF DAIRY FARMS

		Years	
County	*1987*	*1992*	*1997*
Lincoln	255	170	119
Langlade	255	168	125
Marathon	1754	1342	1104
Total	2264	1680	1348

U.S. Census of Agriculture

TABLE 10: LIVESTOCK FARMS AS A PERCENT OF ALL FARMS

		Years	
County	*1987*	*1992*	*1997*
Lincoln	79%	73%	62%
Langlade	74%	68%	58%
Marathon	75%	68%	64%
Total	75%	69%	63%

U.S. Census of Agriculture

TABLE 11: DAIRY AS A PERCENT OF ALL FARMS

		Years	
County	*1987*	*1992*	*1997*
Lincoln	50%	42%	28%
Langlade	50%	40%	28%
Marathon	57%	48%	41%
Total	55%	46%	38%

U.S. Census of Agriculture

TABLE 12: DAIRY AS A PERCENT OF LIVESTOCK FARMS

		Years	
County	*1987*	*1992*	*1997*
Lincoln	64%	58%	45%
Langlade	68%	59%	48%
Marathon	75%	70%	64%
Total	73%	68%	60%

U.S. Census of Agriculture

TABLE 13: BEEF CATTLE FARMS – EXCEPT FEEDLOTS

		Years	
County	*1987*	*1992*	*1997*
Lincoln	85	78	76
Langlade	53	48	65
Marathon	310	289	299
Total	448	415	440

U.S. Census of Agriculture

TABLE 14: NURSERY AND GREENHOUSE FARMS

		Years	
County	*1987*	*1992*	*1997*
Lincoln	4	6	34
Langlade	2	4	55
Marathon	14	29	82
Total	20	39	171

U.S. Census of Agriculture

3. Changing Amount and Value of Farmland

Over the last decade land has steadily been diverted from agriculture in Lincoln, Langlade and Marathon Counties at the same time that farmland values have gone up considerably. In Lincoln County the Ag Census reports for 1987 and 1997 documented that land in farms decreased by 23%, from 109,031 acres in 1987 to 83,918 acres in 1997. Marathon County saw a 11% decrease in farmland from 581,585 acres in 1987 to 515,888 in 1997, while during that same period Langlade County had a 6% decrease, from 132,380 acres to 123,892 acres (Tables 15 and 16).

As far as the value of farmland goes, the Wisconsin Agricultural Statistics Service, using data from the Wisconsin Department of Revenue, Bureau of Equalization (Table 17) reported that from 1992 until 2000 the average price paid for agricultural land continuing in agriculture in Lincoln County increased by 285%, from $242 per acre to $933. At the same time Marathon County jumped 118% from $429 to $939, while

Langlade County saw a 108% rise, from $489 to $1,017 per acre. An even more dramatic change took place in the swamp and wasteland category, a category that is prevalent throughout the agricultural areas. In 1992 an acre of swamp and wasteland in Lincoln County sold for $84 per acre and in 2000 it jumped by 500% to $504. Langlade County had a 486% increase during that period, from $68 to $399, while Marathon County had a 464% increase, from $96 to $542 per acre. It is obvious that non-agricultural investments in land, for things such as rural housing and recreation, are putting tremendous pressure on agricultural land values in the area.

TABLE 15: LAND IN FARMS
(Acres)

		Years	
County	*1987*	*1992*	*1997*
Lincoln	109,031	85,500	83,918
Langlade	132,380	120,383	123,892
Marathon	581,585	529,966	515,888
Total	822,966	735,849	723,698

U.S. Census of Agriculture

TABLE 16: PERCENT CHANGE IN FARM ACREAGES
(Rounded to the nearest %)

		Years	
County	*1987-1992*	*1992-1997*	*1987-1997*
Lincoln	-22%	-2%	-23%
Langlade	-9%	3%	-6%
Marathon	-9%	-2%	-11%
Total	-11%	-2%	-12%

U.S. Census of Agriculture

TABLE 17: FARMLAND VALUE OF AGRICULTURAL LAND CONTINUING IN AG
($/Acre)

		Years	
County	*1992*	*1997*	*2000*
Lincoln	$242	$626	$933
Langlade	$489	$830	$1,017
Marathon	$429	$643	$939
Average	$387	$700	$963

Wisconsin Department of Revenue

B. THE CHANGING AGRICULTURAL MARKETPLACE

Just as the structure of the farming community in the area continues to change so has the marketplace that it sells into. Farmers are at the very beginning of very long chain that stretches from their farm fields to markets around the globe. For instance, only 15% of Wisconsin's dairy production stays in the state with the rest moving into national and international markets.

Area farmers involved in the production of raw commodities (such as meat, milk and fiber) are selling their products to a food manufacturing and marketing sector that is seeing some tremendously rapid changes. There are two changes that shouldn't be ignored. One is the rapid increase in business integration and consolidations in both food manufacturing and marketing, and the other is the double-digit growth in the "natural" foods sector.

1. Vertical Coordination and Consolidation

According to a 1999 report by Mark Drabenstott, Vice-President and Director of the Center for the Study of Rural America at the Federal Reserve Bank of Kansas City, presented to both the U.S. Senate Committee on Agriculture, Nutrition and Forestry, and the U.S. House Committee on Agriculture (Drabenstott, 1999) "Consolidation is certainly not new in agriculture – it has been underway for most of the twentieth century. What is new is the type and speed of consolidation". Drabenstott goes on to describe two types of consolidations – cost savings and supply-chain. "The cost-cutting variety is driven by one simple principle – the low-cost player survives. The supply-chain variety of consolidation is newer but may have bigger implications for the future. This consolidation is driven by a different principle – building innovative alliances to deliver new and better food products to consumers".

In a challenge to producers Drabenstott says, "Looking ahead, the bigger issue is what consolidation means for the producers who remain. Two challenges confront them – one old, one new. The old challenge is pushing costs down to survive in a market with thin margins. The new challenge is to stay in the game when the players are getting much bigger. As supply chains become a more dominant structure in U.S. agriculture, farmers face a simple test – build new relationships or be left out of the game."

The extent of consolidation in the first stop from the farm gate, the processors, has been well documented. One measure of concentration in an industry is the four-firm concentration ratio (CR_4) which is the market controlled by the four largest firms in an industry. Statistics from the USDA's Grain Inspection, Packers and Stockyards Administration (GIPSA) from 1980 to 1998 show that the CR_4 for steer and heifer slaughter went from 36% to 81%, while it went from 34% to 56% for hogs, and from 56% to 68% for sheep and lambs (Raper, 1999). These same trends have also been seen in the dairy and grain crop manufacturing sectors.

The concentration trends in the food retailing industry are covered in a report by Jean Kinsey at The Retail Food Industry Center at the University of Minnesota (Kinsey, 1998). According to the Kinsey report the CR_4 for the top four retail food companies in 1998 (Albertsons, Kroger, Wal-Mart and Safeway) accounted for 22 percent of annual retail grocery sales. They also had 18.5% of individual supermarket stores, but only 4.4% of the total retail food stores. The Kinsey report was done not to look at the impact of consolidations on the prices received by farmers for their products but on the prices paid by consumers and the profitability of the larger retailers. After summarizing several research studies conducted over a 25-year period the report was not able to demonstrate any trends that showed either a negative impact on the consumer or an unbalanced power over the manufacturing segment of the food chain. As a matter of fact, Kinsey points out that "real household food expenditures have fallen by about one-third and the proportion of household income spent on food has fallen from 18% to 11%."

Instead of dwelling on the negative aspects of the consolidation trends there seems to be some tremendous opportunities for those who wish to produce outside of the traditional commodity markets. When Kinsey looked at the types of stores in a market area "when there are more large and similar stores in an area, small firms tend to enter to fill niches with unique products and services" including value-added, ready to eat products. A good example of the demand for these "unique" products that at the same time incorporates the supply-chain principles mentioned earlier, is the tremendous growth in the demand for organic and natural foods.

2. The Growth of "Natural" Foods

There is one area of the food business that has seen gains far above the industry norms, "natural" and organic foods. While the conventional grocery industry has been growing at about 3-5% per year the natural and organic markets have been clicking along at about 20% growth per year throughout the 90's (Richman, 2000 and Phillips and Peterson, 2001). The organic milk and dairy industry grew by 92% just between 1996 and 1997 (Richman, 2000).

In a report to the Organic Growers of Michigan by Michigan State University Economists, Jon Phillips and H. Christopher Peterson, they gave the following summary of a market analysis done by the Hartman Group marketing firm for the natural foods industry:

> "A Hartman Group report studying "earth-sustainable" agricultural products market potential from a consumer perspective found a significant market potential. Their report claims that it is not a niche market but an untapped market. A market that consumers who fall into some definable segments would choose to purchase from because of the perceived quality enhancements from such products. The Hartman Group estimates that at least 30% of the U.S. population would be inclined to purchase such products if they met some of the other purchasing criteria that are important in purchasing decisions: price, taste, availability and/or convenience.
>
> The most important issues all consumers related to agricultural methods were water protection, followed by absence of pesticide residues on food."

The Organic Trade Association (OTA) optimistically anticipate an expansion of the organic market share to 10% of the retail food industry by 2010 (Lohr and Semali, 2000). If they are right it is very likely that there will be an increase in the number of conventional grocery marketers that will likely take part in that growth. Today about half of natural food sales take place in natural food supermarkets and 26% take place in mass-market retail stores (Richman, 2000).

As the natural food industry grows and becomes more mainstream it will also be faced with same the challenges that all segments of the food industry have had to deal with. In a 2000 research report by University of Georgia Economists, Luanne Lohr and Adelin Semali, they say, "numerous studies have shown that as price premiums for organic compared with conventional increase, consumer resistance increases. Natural food store managers report they can obtain higher price premiums than supermarkets, about 33 percent versus 23 percent for product." They go on to say that as supplies increase the price premiums will likely go down as the cost premiums for the wholesales products go down. In other words, Natural foods are not immune to one of the natural laws of economics, supply and demand. And the natural foods business is not immune to the consolidation trends. There were 70 mergers and acquisitions in 1998, a 40% increase over 1997 (Richman, 2000).

IV. EXTENSION PROGRAMMING IN AGRICULTURAL DEVELOPMENT

A. SUMMARIZING THE DATA

1. The Issues

Promoting agricultural development in Lincoln, Langlade and Marathon Counties in the next decade is going to have to be more comprehensive than merely working with the individual components of agriculture as if they weren't in some way connected. Preserving farmland without keeping farms on that land while attempting to meet both the profitability needs of the producers and the communities idea of what kind of agriculture they want in their community will not be sustainable.

The communities have already expressed their desires. There were several key elements that have come out of the various community issue identification and visioning processes that were discussed in Section II of this reports. They were:

- ✓ Maintain farmland and the rural atmosphere as a part of the local culture.
- ✓ Increase the economic diversity of agricultural operations.
- ✓ Develop strategies to diminish the economic pressures on farmland that may force farmers to move land out of agriculture.
- ✓ Promote farming practices that significantly reduce any negative impacts on the environment and the dependence on energy.
- ✓ Promote smaller scale, "family" farms.
- ✓ Provide more opportunities for farmers to market their products locally.
- ✓ Help communities properly site and work with large confinement farms.

In other words, people want to keep farms and farming in the community but only if the farms add to both the economic and environmental health of the community. That is a lot to ask. But rather than dismiss it as being too difficult to achieve, and let market forces and environmental regulators guide development, perhaps it would be worth the effort to take a look at agricultural systems that can meet those demands. Perhaps discover what systems seem to come close to meeting what the community would like to see, then ask what government and the University system can do to promote those types of enterprises and provide them with the support they need to be successful.

2. The People

Although it may be true that the number of traditional full-time farm operations has declined considerably over the years the number of part-time farm operations has actually increased a bit, helping to stabilize the agricultural economy. Where farming at one time was seen as the sole or major enterprise of many rural families today the contribution to family income covers a wide spectrum. Situations ranging from full-time sole income generating operations on one end, to those that produce an equal amount of on and off farm income, to the farm supplementing an outside income and providing people with a preferred lifestyle. The latest numbers would indicate that the numbers of the different types of farms is somewhat more diverse than it used to be. The shift offers some real opportunities to work with new clientele as they try to develop new agricultural operations. On the other hand it creates challenges in Extension educational programming because of the increasing variety of schedules, investments, motivations and farming philosophies of various operators.

3. The Products

Forage based livestock systems are still an important part of agriculture in North Central Wisconsin. Whether it is dairy, beef, sheep, llamas, horses, buffalo or even fallow deer or elk, the natural environment favors growing forages and feeding them to something that can add value to them. Years of forage marketing initiatives attempting to market surpluses out of the area have failed because it is difficult to grow dry hay in North Central Wisconsin. Markets are very local and very volatile. On the other hand, the unique climate, soils and moisture conditions offer some of the finest pastures in the state.

Horticultural crops, as seen by the increase in nursery and greenhouse operations and receipts, are growing in importance. There will definitely be an increased demand for horticultural expertise in the area and most likely an increased need for small business education. When looking at horticultural field crops there are few commodities that seem to prefer the climate and it is difficult to compete with warmer regions to the south that have better drained soils.

Although this report hasn't dealt with forestry it is difficult to ignore its impact in the northern part of the area, especially the byproducts, Christmas trees and greens businesses. It is a very mature industry in the area and closely controlled by the paper industry. The greatest opportunity for farmers has been in making and marketing value added products; such as wreaths, maple syrup, etc..

4. The Land

There is no doubt that the pressure is on for rural lands to be used either for rural residential living or recreation and investment. This pressure has resulted in tremendous growth in land values substantially improving the net worth of farmland owners. But even with Wisconsin's use value law keeping farmland tax assessments down, the increased values make it difficult for operators who want to expand their operation to justify the expense when basing purchases on the net return to their commodities. The relatively stable land rents over the years reflects the ample supply of farmland relative to the farming community's ability and need to pay. For instance, the average farmland rent in Lincoln County has stayed right around $15-$20 per acre since the 1987 Ag Census. If there is local competition it can go up to $30 and if there isn't it can be as low as $10. The numbers in Marathon and Langlade County are slightly higher but they see the same type of local competitive pricing.

The increasing pressure on communities to get involved in land use planning will present a challenge in dealing with the needs and desires of a wide range of communities. At the same time it offers some great opportunities for Extension to help communities look at how agriculture can remain a viable part of the community fabric.

5. The Marketplace

The marketplace is constantly changing and producers that don't have some kind of an idea about how they plan on marketing their products are going to have a difficult time of it. There are some well documented trends that should not be ignored. Commodity producers that are not part of a vertically contracted production system will continually be looking for lower cost ways to produce. By the end of the decade even the low cost producers will have a difficult time keeping in business if they don't eventually contractually align themselves with some kind of branded product.

For those who want to do direct marketing, and are willing to put the time into dealing with customers, there continues to be an interest among a certain percent of the population to support local producers. Surveys done at farmers markets in Wisconsin have found a real desire to purchase local, fresh product and support local farmers.

B. PROGRAMMING PRIORITIES

In response to the past and potential future trends that have been outlined, what follows are the programming priorities that should be focused on into the first decade of the 21st Century if agriculture is to remain a viable part of the area. The efforts are grouped into three main categories that are consistent with programmatic teams already in existence in the Agriculture and Natural Resources Education (ANRE) Program Area of UW-Extension; Land Use, Farm Management and Forages.

1. Land Use: Efforts to keep farming as a part of the landscape

    a) Provide local communities with the resources and support they need to deal with the elements of the comprehensive land use planning process that relate to agriculture, including the implementation phase that may include farmland preservation strategies.
    b) Utilize and/or develop evaluation tools to help assess the economic and environmental impacts of various types and sizes of agricultural enterprises on the community. Federal and state rules in regards to confined animal feeding operations (CAFOs) are being proposed that will impact both siting and management decisions.
    c) Develop a viable menu of farmland and open space preservation options that communities and individuals who wish to preserve land could utilize. This would also include the development of decision-making criteria that could be used in selecting the best option for the local situation.
    d) Provide farmers who may wish to develop their land with the educational resources they need to make decisions in theirs and the communities' best interest.
    e) Work with local communities to develop comprehensive agricultural development plans that keep agriculture as an important economic contributor to the community. The plans need to include all factors that either positively or negatively impacts the growth and sustainability of agriculture while recognizing how it fits into the greater community. Ag development plans also need to complement other comprehensive land use planning efforts.

2. Farm Management: Efforts to help keep farmers on the land by fostering and supporting new and diverse agricultural business ventures for both existing and start-up operations.

    a) Expand educational efforts in developing the business management skills of agricultural entrepreneurs.
    b) Develop greater information resources in the areas of new enterprise financing and marketing.
    c) Help strengthen the local food system. Goals include, but are not limited to, such things as; further development of the area farmers markets into year round markets, better utilization of local products by retailers, and the stabilization and expansion of local food processing capabilities.

d) Provide both full and part-time farmers with the research and information they need to continually improve their labor and capital efficiencies in order to stay cost competitive in their chosen marketplace.
e) Develop agricultural business retention and expansion studies to determine the needs of farms and the agribusinesses that support them.

3. Forages: Assist grazing based livestock farmers expand and improve their ability to add value to forages through systems that are economically, environmentally and socially sustainable.

   a) Continue to work with the Central Wisconsin River Graziers in their efforts to promote economically and environmentally sustainable livestock systems.
   b) Further develop grazing management education and resources for farmers and agribusiness professionals.
   c) Enlist the support of soil and forage specialists to provide the research and educational support needed by grazing based farms to develop and refine their forage management skills.

4. General: Meet the community demand for traditional Extension programs and services through new methods, partnerships and technology.

   a) Continue to support the research, educational and resource needs of full and part time farmers, hobbyists and other area residents in the areas of horticulture, crop production and livestock husbandry.
   b) Maintain relationships with any state or federal regulatory agencies in regards to livestock and food safety or security issues.
   c) Provide support for any youth agricultural production and marketing projects that develop business and marketing skills.

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