

# NEWSLETTER

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## Structural Changes in the U.S. Farm Sector: Causes and Impacts

*Richard D. Taylor and Won W. Koo*

Farming in the United States has changed drastically over the course of the 20th century. It has gone from horse-drawn implements to 300 horsepower 4-wheel drive tractors with all the amenities of a modern home. Because of changes in the level of technology, the typical agricultural producer has grown from one man and 100 acres to a modern commercial operation which now covers hundreds if not thousands of acres. As a result of these developments, farm numbers have fallen in the United States from 6.5 million in 1910 to 2.1 million in 2002 (Figure 1). The USDA estimates that the largest 8% of the farms in the United States produces 53% of all output. North Dakota has matched that trend: the number of farms has fallen from 74 thousand in 1910 to 30 thousand today. The largest 20% of North Dakota farms produces 53% of all output, and the largest 44% produces almost 82% of all output.

### Reductions in Farm Numbers

The drop in farm numbers is not a regional occurrence, and it does not seem to be connected to agricultural policy or world events. Table 1 shows the percentage change in farm numbers in various states across the country. South Carolina lost 86% of its farms from 1910 to 2000, Kansas lost 63%, Iowa lost 56%, and North Dakota lost 59% during the same time period. Since 1980, Indiana has lost 25% of its farms, North Dakota has lost 24%, and Kansas has lost 13% of its farms. The percentage loss for North Dakota during the past twenty years is much larger than the average loss in the United States of 10%.

Figure 2 shows the percentage change in farm numbers by decade in North Dakota. During the 1910s and 1920s, farm numbers increased in the state as more and more land was being farmed. However, that trend changed in 1934. The state lost 6.7% of its farms during the depression years of the 1930s. The decade of the 1940s, which included World War II, saw another 10.3% of the farmers exit. But the trend is not limited to those decades which included war or national economic troubles. During the post-war expansion in the 1950s and 1960s, the state lost 13.6% and 17.9% of its farms, respectively. Even years which had a mixture of positive and negative factors, such as the high commodity prices coupled with increased input and land costs during the 1970s, continued the trend. The state lost an additional 11% of farms during this period. The farm financial crisis and high interest rates occurred early in the 1980s, and North Dakota lost another 16.3% of its farms. The 1990s, and the negotiation of regional free trade agreements, brought hope that increasing exports would strengthen agriculture and support family farms. However, the state lost almost 9% of its farms, albeit at a lower rate than at any time since the 1930s.

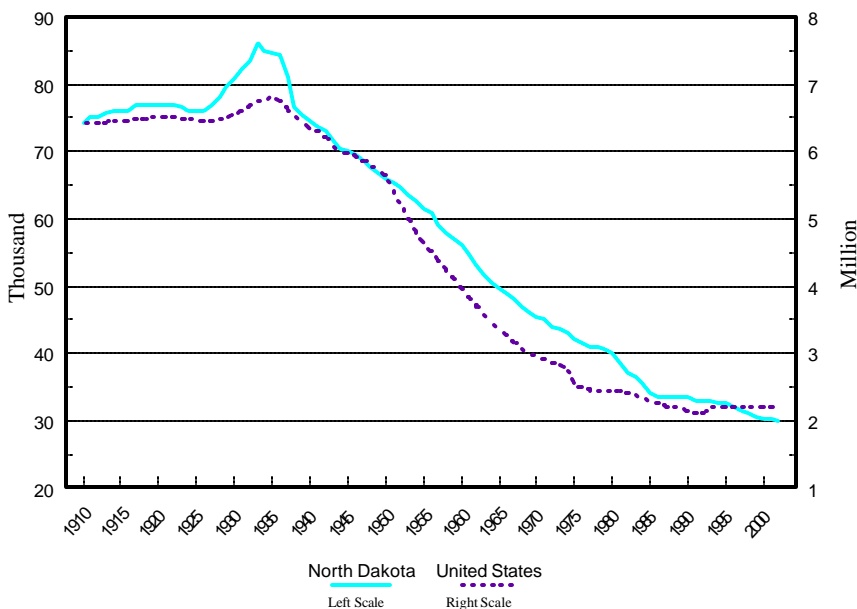


Figure 1. North Dakota and U.S. Farm Numbers

Source: NASS

Table 1. Percentage Loss of Farms in Various States

	AR	IA	IN	KS	ND	SC	US
1910-2000	0.78	0.56	0.70	0.63	0.59	0.86	0.66
1950-2000	0.74	0.53	0.63	0.52	0.54	0.83	0.61
1980-2000	0.18	0.19	0.25	0.13	0.24	0.26	0.10

### Increased Farm Size

Losses in the total number of farms do not mean all farms are shrinking or disappearing. Figure 3 compares the shares of the total land in North Dakota controlled by farms in various size categories. Small farms, less than 499 acres, have steadily decreased in land farmed from 1964 until 1992, when they increased slightly. Farms between 500 and 999 acres decreased from about 31% in 1964 to about 11% in 1997. The share of larger farms, between 1000 and 1999 acres, increased from 1964 until 1974, when the percentage leveled off at about 35%. From 1987 until 1997, the share of larger farms decreased from 35% to about 28%. The land used by the largest farms, which farm over 2000 acres, increased from 22% in 1964 to 56% in 1997. The largest farms seemed to absorb smaller farms until 1987, when the 1000-1999 acre farms began to decrease. Whether the 1000-1999 acre farms were absorbed by the largest farms or whether they increased their size and entered the largest size farm category is unknown. The average size of the over-2000 acre farm has been and remains in the 3,100-3,200 acre range, which indicates that the over-2000 acre farms are not increasing in size themselves but are increasing in number.

### Differences Between East and West

Is this trend of farm losses constant across the state? North Dakota lost 38% of its total farms between 1968 and 1997. Only one county increased the number of farms, Burleigh. It is interesting to note that farm loss is greater in counties with higher-valued land. The Red River Valley counties lost between 45% and 56% of their farms during this time period, while the western counties lost between 15% and 28%. Figures 4 and 5 break down these percentages by farm size for seven western counties and for seven eastern counties. The difference between the West and the East is that the number of small farms (less than 499 acres) in the western counties has remained relatively constant at about 1,000 to 1,100, while the number of small farms in eastern counties has fallen from about 4,300 in 1968 to about 1,850 in 1997. The number of farms greater than 500 acres has fallen 32% in the East and 30% in the West.

The decrease in number of farms is a long-term occurrence. The trend has been, until recently, relatively constant. Farm numbers have decreased throughout the United States, and many states have experienced larger losses than North Dakota. The trend seems to be slowing in recent years, but the main reason for that deceleration is the increase in small "lifestyle farms." The number of commercial farms continues to decrease at about the same rate as before. Earlier in the century, small farms were being absorbed; however, since 1987, the number of farms in the 1000-1999 acre category has also started to decrease. It is not known whether farmers left farming or expanded their farms into the next acreage category.

Within North Dakota, there at first seems to be a disparity between the western and the eastern parts of the state. But when examined more thoroughly, the difference is that the western counties have maintained a majority of their small farms, while the eastern counties have lost most of them. The decrease in the number of larger farms is very similar in counties throughout the state. Both regions have lost over 30% of their farms over 500 acres since 1968.

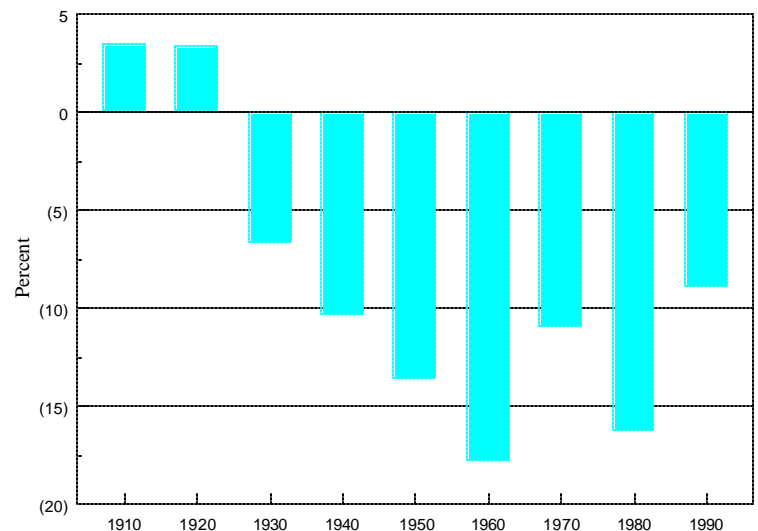


Figure 2. Percent of Farms Loss by Decade, North Dakota

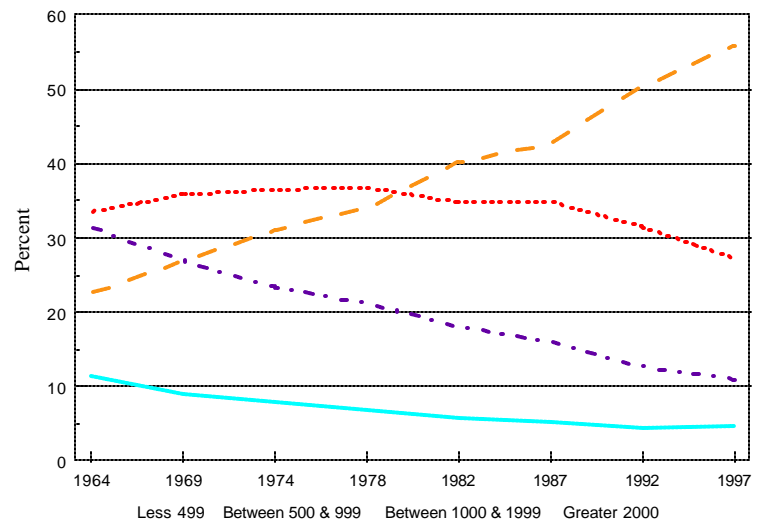


Figure 3. Total Land Farmed by Size, North Dakota

Source: U.S. Census of Agriculture

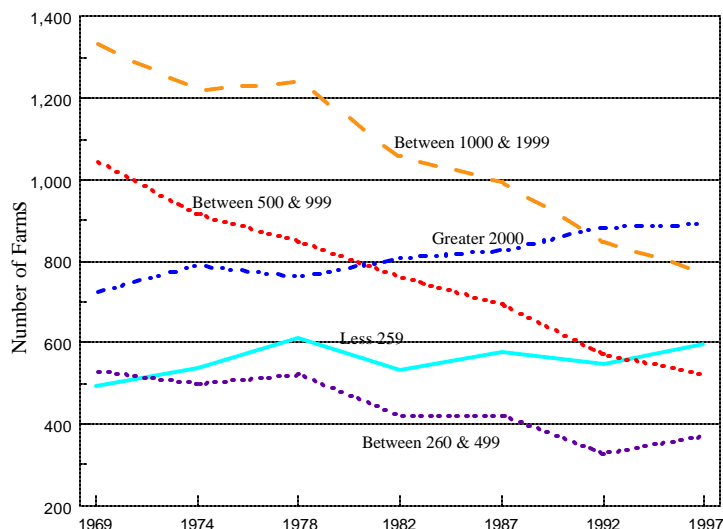


Figure 4. Number of Farms by Size, Western North Dakota  
Source: U.S. Census of Agriculture

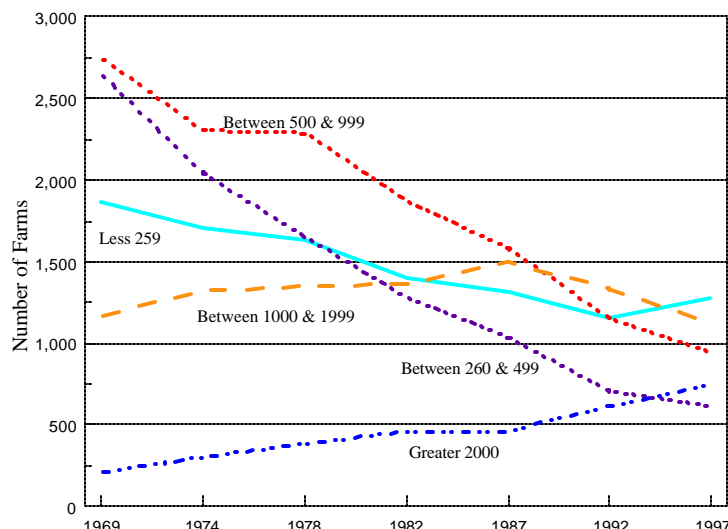


Figure 5. Number of Farms by Size, Eastern North Dakota  
Source: U.S. Census of Agriculture

**Implications and Challenges**

What are the causes for this drop in the number of farms, and what are the impacts on the local and regional economies? Possible reasons for the decreased farm numbers include (1) major changes in farming technology which are biased toward large size farms and (2) increases in competition resulting from the country's movement toward freer trade through bilateral and multilateral free trade negotiations. The technology in farm equipment has changed from horse-drawn equipment to 300 horsepower 4-wheel drive tractors, which allows a family to farm over 2000 acres with no additional hired labor. Larger farms have greater capital to invest in this equipment, and technological development will continue to be driven by increased agricultural competition under multilateral and bilateral trade negotiations. The struggle between producers for markets is no longer national; it has become an international competition.

These structural changes in agricultural production have increased farming efficiency and productivity, which have made U.S. agriculture more competitive in global markets. As long as agricultural trade continues to be liberalized, the nature of production will change as farms increase the efficiency of their operations in order to be more competitive. However, the result of improvements in efficiency will be the reduction of population in rural communities, especially communities which rely on production agriculture. The challenge is to preserve rural communities under the rapidly changing U.S. farm sector.

**A final report, including the 2002 census, will be published in March 2004.**

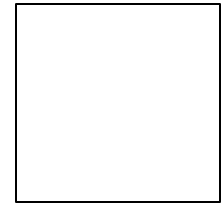
**WTO Negotiations Fail at Cancun**

**Jeremy Mattson**

Negotiations at the WTO ministerial conference held in Cancun, Mexico, from September 10-14, failed to reach a consensus. The modalities phase of negotiations was originally scheduled to be completed by March 31, 2003. The purpose of this phase of negotiations is to set targets, including numerical targets, for achieving the objectives set out in the Doha Ministerial Declaration. The three major areas of negotiation are market access, export competition, and domestic support. The modalities would describe how the final trade agreement would be shaped. However, a settlement on the modalities could not be reached by the March 31 deadline. Many hoped that negotiations at the Cancun conference would result in a decision, but an agreement once again proved elusive. Besides differences on agricultural issues, there were also disagreements between the WTO members on so-called "Singapore issues," which contributed to the collapse in negotiations. These issues include investment rules, competition policy, transparency in government procurement, and trade facilitation. This round of WTO negotiations was scheduled to be completed by January 1, 2005, but an agreement by that deadline now looks highly unlikely.

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**North Dakota State University**  
**Dept. of Agribusiness & Applied Economics**  
**P.O. Box 5636**  
**Fargo, ND 58105-5636**



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Negotiations in March failed because of large differences between the United States, the EU, Japan, the Cairns Group (which includes a number of developing countries), and other countries on issues such as tariffs, export subsidies, and domestic support. A month prior to the Cancun conference, the United States and the EU reached a framework agreement for negotiating these agricultural issues. In response, a group of 21 developing countries, including Brazil, China, and India, provided their own framework. Additional frameworks were proposed by other groups of countries. Developing countries claim that the US-EU plan, which calls for the reduction of the most trade-distorting domestic support measures but allows less trade-distorting support to be maintained, does not include enough of a reduction in subsidies. The group of developing countries wants the blue box eliminated and a cap or reduction on the green box for developed countries. The United States argues that they are willing to cut subsidies, but that the proposal by the developing countries does not offer enough in return in terms of market access. After hearing the positions of the WTO members, George Yeo Yong-Bon, the facilitator of the agricultural negotiations at Cancun, wrote a draft text in the hopes of bridging the gaps and reaching a consensus. Some progress was made, but a consensus could not be reached as many members found the draft either too ambitious or not ambitious enough. The failure of multilateral negotiations will likely lead to increased U.S. focus on bilateral and regional trade agreements.

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#### **Recent Publications**

*Nominal Exchange Rate Misalignment: Is it Particularly Important to Agricultural Trade?* Agribusiness & Applied Economics Report No. 516, August 2003, by Gue Dae Cho, Mina Kim, Edwin Sun, Hyun Jin, and Won Koo.

*2003 Outlook of the U.S. and World Wheat Industries, 2002-2012*, Agribusiness & Applied Economics Report No. 517, August 2003, by Won Koo and Richard Taylor.

*2003 Outlook of the U.S. and World Sugar Markets, 2002-2012*, Agribusiness & Applied Economics Report No. 518, August 2003, by Won Koo and Richard Taylor.

*An Overview of Cuban Agriculture and Prospects for Future Trade with the United States*, Agribusiness & Applied Economics Report No. 519, August 2003, by Jeremy Mattson and Won Koo.

To obtain these publications, contact Beth Ambrosio, Center for Agricultural Policy and Trade Studies, NDSU, at (701) 231-7334, or download from this website: <http://www.ag.ndsu.nodak.edu/capts/publication.htm>