

# French Agriculture Observed

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French and North Dakota producers share similar challenges. Agricultural populations in both France and the United States declined between 1980 and 2000 (Food and Agricultural Organization). The French agricultural population fell by 2.46 million, a decrease of 55 percent, while in the United States the agricultural population fell by 2.23 million or 26 percent. To survive, producers in both areas are seeking relief through government programs, larger farms, diversification, alliances and niche market development.

Many of the same crops are produced in North Dakota and France. Because of favorable climate, however, French agriculture is more land intense and includes a greater number of enterprises. Wheat, barley and field peas are produced primarily in the Paris Basin. Sugarbeets and potatoes are produced largely in the northern part of the Basin. Corn is produced in the Southwest Region of France. Vegetables and fruits are produced throughout France. Livestock production thrives in areas less suitable for crops, which are generally in the Northwest, Center and Southeast Regions of France.

Statistics are available on production, government policy and trade of agricultural commodities produced in France (U.S. Department of Agriculture). While the statistics are useful in describing the agriculture of France, additional information is needed on farmers' adjustment to a changing agriculture.

Information is needed on how French farmers are adjusting to diversification, market decision-making and alliances. Information is also needed on the markets available to French producers and on farm-level marketing. In addition, information is needed on how farmers are being helped to adjust. This information can be of help to U.S. producers making similar adjustments and to those working with them. Information of this kind is generally unavailable.

To better understand the agriculture of France, George Flaskerud accepted an invitation to participate in the International Farm Show at the Technical Institute for Cereals and Forage (ITCF), Boigneville, France, June 13-14, 2001. Boigneville is about 50 miles south of Paris. Flaskerud also participated in activities at ITCF during May and June.

The purpose of this paper is to convey observations about French agriculture during the study visit. Specific objectives are to illustrate French agriculture and the adjustments being made by their farmers to agricultural changes, to compare the economics of agricultural production in France and North Dakota, and to depict outreach activities.

The ITCF is explained first followed by a description of farm types<sup>1</sup>, agricultural markets and extension activities. The final section offers concluding remarks about French agriculture. Metric measurements and French currency have been converted to U.S. equivalents.<sup>2</sup>

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<sup>1</sup> Names of farmers visited are not identified to preserve anonymity.

<sup>2</sup> The U.S. dollar in May 2001 was approximately equal to 7.05 French Francs. A quintal is equal to 100 kilograms or a tenth of a metric ton. A metric ton is 2204.6 pounds. A hectare equals 2.471 acres. A kilometer equals .621 miles.

## ITCF

The ITCF is in charge of applied research and development for cereal, maize, pulses, potatoes and forages (Cereals of France). It was formed in 1959 as a collective effort by French farmer organizations and is controlled by a board of directors made up of farmers. They work closely with public and private research sectors to meet the technical and economic concerns of producers. They also work closely with local advisors to extend information to producers. Local advisors include chambers of agriculture (located in departments), cooperatives and merchants. Departments are comparable to U.S. counties.

An example of the research/outreach work conducted by the ITCF economics unit is an analysis of the production and marketing components of wheat industries in major exporting countries (Petit, Payoux and Bouquillon). Countries included the U.S., Canada, Argentina, and Australia. Research results were presented to farmers at the international farm show and in other meetings around France and will be discussed in later sections.

Three micro farms (traditional, integrated and large) at the ITCF serve as another example of their work and illustrate how differences in farms impact costs and net returns. The farms they represent varied by size, tillage practices, crop rotations and management methods. The value of the machinery inventory was about the same for each farm.

The farms have been studied since 1990, when the research began with five micro farms. Results from the five during 1994-2000 were reported by Viaux, Retaureau and Lescar. The three farms with the most significant results continue to be studied and are summarized in this report.

Each micro farm examined was 62 acres in size. Research results from each micro farm were extrapolated to a representative farm size for that type. A traditional representative farm was 815 acres, an integrated representative farm was 988 acres, and a large representative farm was 2,076 acres.

The traditional representative farm used a plow and typical rotation. Inputs were applied for high yields. Crop protection decisions were based on observation.

The integrated representative farm used minimum tillage, a typical rotation and minimum inputs. Yield objectives were reduced accordingly. Crop protection decisions were based on observation as for the traditional farm.

The large representative farm employed minimum tillage and a simplified rotation to accommodate farm size. Inputs were applied for high yields, although chemicals were purchased at preseason special prices. Crop protection applications were predetermined. An additional labor unit, harvesting and grain transportation were hired.

Results from seven years of data indicated similar net returns (return to equity) from the three micro farms, on average. Relative to the traditional farm, net returns were 12 percent less for the integrated farm and 9 percent more for the large farm.

Results were also derived just for the wheat enterprise during the seven years. Average total production cost, including all costs of land, family and hired labor, capital and management, was calculated for each farm. The cost was the lowest for the large farm at 90 percent of the typical farm. The cost was the highest for the integrated farm at 107 percent of the typical farm.

The study indicated that costs per unit of production can be reduced by decreasing the machinery investment per unit. Farm size is one way to reduce per unit costs; alternatively, machinery can be shared with other farms.

## Farms

Features of five of the farms visited are highlighted. The features described vary from farm to farm depending on the nature of the operation and operator. Combining highlights of the five farms provides an overview of French agriculture.

### Typical

The typical farm operation visited was located about 62 miles northeast of Paris. It was one of four farms in a village. The operator owned the farm site and machinery, and all cropland was rented. While the farm operation was considered typical in size, ownership and diversity, the farm operator was younger and more educated than most, according to ITCF. He was less than 35 years old and had two years of technical school. About 53 percent of the farmers in 2000 were under age 50 and about 14 percent of all farmers had specialized education, according to ITCF.

The farm was 371 acres and averaged 15 acres per field. Crops included 161 acres of wheat, 37 acres of corn for grain, 37 acres of field peas, 54 acres of sugarbeets, 37 acres of barley for malting, 15 acres of linseed for fiber, and 30 acres of setaside.

The sugarbeets, linseed and corn were custom harvested. There was no storage on the farm; crops were hauled directly to a nearby cooperative elevator and sold for the prevailing cash price (day price). The value of land in the area was \$1,722/acre.

### Diversified

The diversified farm was located near the typical farm. In addition to producing many different crops, off-farm enterprises were also an important part of the operation, making this farm more diversified than most. The farm was 642 acres of which one-third was owned. The operator also custom farmed an additional 494 acres. The farmer was less than 35 years old and had specialized education in agriculture.

Fields averaged 49 acres. They were larger than normal because they had been recently resized. Field size was largely determined by sprayer capacity.

The resizing of fields was made possible by “remembrement,” which is a process where land is exchanged periodically but not money. The purpose of the exchange is to give farmers the opportunity to consolidate their owned and rented land into one contiguous unit. It occurs as needed.

The process is initiated by a meeting of concerned farm owners in an area. If a majority at the meeting adopt remembrement, then every farmer in the area must comply with the process. A committee classifies the land, and rates of exchange are established to accommodate quality differences. Subsequently, a second committee, which includes government representatives, is established to resolve differences and control the process. Remembrement can cost \$29-\$86/acre to establish new boundaries and build new roads. Some of that cost is subsidized by the government.

The operator had one full-time employee for the farming operation. He employed two full-time employees for his other enterprise of boarding horses and dogs. He was part of 100 farmers in a group that employed a shared crop technician.

Crops included 148 acres of sugarbeets, 519 acres of wheat, 99 acres each of malting barley, rapeseed, corn for grain and field peas, 25 acres of flax for seed, 12 acres of oats and 37 acres of setaside. Rotation requirements were six years for rape, four years for field peas, and three years for sugarbeets.

Rape could be planted on the setaside although it had to be sold for industrial use, which received a lower price than rape for food and feed. For this farmer, the yield on the setaside had to be at least 90 percent of the average yield on the balance of the field, according to department policy, to prevent the rape from being sold for the higher valued edible use. The percentage varied by department.

Fields were sprayed 10-11 times: four times with nitrogen, two with herbicides, two or three with fungicides (one of those included an insecticide), and two with a growth inhibitor.

A subsidy payment is received during November following harvest. For this farmer's 2002 harvest, the payment would be \$157/acre for wheat and rapeseed including rapeseed on setaside and \$181/acre for field peas. The size of the payments varies by department depending on yield history.

No combine was owned, so the crops were custom harvested. Trucks were also hired to haul crops from the combine, mostly to the co-op. About 30 percent of the wheat was stored on-farm.

The government payment for storage of the 2001 wheat crop was 12 cents/bushel for eight months. The government storage rate is determined annually by the European Union. For the 2000 crop, the operator also received a payment for wheat storage from a local co-op because of capacity limitations at the elevator. The payment was 8 cents/bushel for the eight months.

Marketing received considerable attention by the producer. He shared his marketing plan for wheat to illustrate the intensity of his marketing. He planned to contract 20 percent for harvest delivery, store 30 percent of the best quality on-farm for sale on a premium contract, store 30 percent at the elevator to be sold periodically on price strength, and sell 20 percent at the average co-op price. The average price method paid a percentage at harvest delivery and the balance at the end of the marketing year.

The price of land was \$3,444/acre in the area, and rent was \$64/acre. Land value was determined by the market while rent was a function of productivity.

Rent in the area was \$20/unit of land productivity. So for an average land productivity on this farm of 3.2 units/acre, the rent was  $20 \times 3.2 = \$64/\text{acre}$ . Units of productivity on the farm varied from 3 to 3.4. The productivity units and value/unit were determined by farmers as

a group within the area. The owners and renters decided by majority vote and the results were binding in the area. The rent and land value have remained steady to rising slightly over the past 10 years, according to the producer.

In the future, the producer expected to see more emphasis on quality, identity preservation and diversification. He was not interested in buying land unless the price was favorable from an investment perspective. He also was not interested in expanding because of the lower subsidy paid to larger farms.

Subsidy payments are limited by "modulation," which is a function of such factors as the department, crops, income and number of employees, according to ITCF. First, an income is derived for a farmer according to acres produced of different crops and average yields for the area. If the derived income exceeds a limit, a reduction rate is calculated and applied to the farmer's subsidy payment. The greater the number of employees, the lower the reduction rate. Payment reductions are used to fund environmental projects. Modulation is a policy of France but not of the European Union, so its future is uncertain, according to ITCF.

## Progressive

Many of the farm operations visited in France were progressive, but one stood out. It was located about 75 miles east of Paris. The manager operated the farm in partnership with his parents and sister. Many changes had been made during his 10 years of management, so the farm was considered to be well situated for the future. He felt that the farm was intensively operated and that it was at its optimum size. The farmer was less than 35 years old and had specialized education in agriculture from the ITCF.

He farmed 1,038 acres. He also custom farmed 148 acres for a cash payment and share of the crop. Field size averaged 62 acres. He employed three people.

The farm was very diversified. Production included 247 acres of wheat, 198 acres of winter barley, 124 acres of spring barley, 62 acres of field peas, 173 acres of sugarbeets, 62 acres of starch potatoes, 111 acres of irrigated edible potatoes, 124 acres of alfalfa, 10 acres of asparagus and 77 acres of setaside.

Half the sugarbeets were raised for the preferred but limited A and B contracts and the balance for a cash price. Prices and quotas for the A and B contracts were determined by the European Union. The cash price was the world price.

The most profitable crop was edible potatoes followed by alfalfa for pellets. The edible potatoes were stored in a controlled environment.

Cereals and field peas were sold to a co-op. Sugarbeets, potatoes and seed wheat were contracted. The seed wheat was a hybrid that is grown on a limited area in France.

Cereals, field peas and potatoes were stored on the farm. Other crops were stored when room permitted. He shared potato equipment, a sprayer and a sugarbeet harvester. He had no plow.

## Part-Time

The part-time farm operation was located about 137 miles south of Paris. The operator farmed about 60 percent of the time and worked the rest of the time as an economic advisor for a farm management group. He was less than 40 years old. The group also employed a marketing advisor.

He rented 914 acres from his father and two uncles at \$43/acre. The land was valued at \$1,435/acre. The farm was larger than average in the area. Wheat, rape and sunflowers were grown. The setaside was planted to a cover crop rather than rape.

He generally stored everything produced. He said it was typical for larger farms in the area to store about 80 percent. He had 22 bins, which held 100 metric tons each, so that quality could be segregated. Because he had storage, he generally did not make preharvest sales.

He sold 20-50 percent of the wheat directly to a mill. He usually sold for the best day price during November-December for delivery when the mill needed the wheat. The grain was picked up on the farm. He worked with his own marketing advisor, who received about \$.63/acre. Rape was sold on the Matif (futures market) for the best day price. Sunflowers were a minor crop for him so he paid little attention to marketing this crop. Farmers in the group marketed much of their production in a similar manner.

He usually did not have an operating loan, although he did this past year. He said about half the farmers he knew have operating loans. He carried hail insurance, which was the exception among the farmers visited.

He generally attempted to grow quality crops by growing the right variety. Limited area was devoted to intense quality production, he said, since quality is so dependent on climate.

He owned two large combines in partnership with three other farmers. Each machine handled the annual equivalent of 128,602-146,973 bushels of wheat. This would be very efficient use of the combines by North Dakota standards.

## Associations

A co-op that owns machinery which is shared by its members is called a CUMA (Cooperative for Shared Use of Machinery). A CUMA is able to get favorable terms on machinery loans. There are approximately 13,500 CUMA in France according to ITCF. Some are small and share only one or two pieces of equipment among three or four farmers while others are very large.

An association that purchases resources and sells production for its members is called a GIE (Group Interested in Economics). There are many GIE in France, according to ITCF.

CUMA and GIE associations were started by a group of farmers near Marbeville in 1982. They currently consist of five local family members plus two others from the next village. Two additional members belonged at one time. Members made decisions jointly. The farm was managed by one of the original members. Marbeville is about 155 miles east of Paris.

Members owned 198 acres out of the 2,348 acres operated by the farm. The GIE rented the land from the members and others, purchased inputs and sold the production. The machinery was owned by the CUMA. When farmers leave the CUMA, they are reimbursed for their share of machinery investment. Members generally tilled their own land and then worked together performing tasks for which they were best suited. They received their own subsidies.

Income and expenses were allocated according to units that depended on land owned and yields. As a result of their joint efforts, their machinery expenses were about \$142/unit versus a \$199-\$213/unit average for the department.

Income per unit equaled \$567 from sales and \$331 from subsidies for a total of \$898. Expenses per unit equaled \$298 for operating, \$106 for hired labor, \$102 for land rent, \$142 for overhead, and \$10 for other. Total expenses per unit were \$658. Consequently, net returns per unit equaled \$240. This amount plus any rent and salary would be the total amount available for family living, debt payment and investment.

The association, through the GIE, planned to buy land when it became available, which they said was seldom. Leases were generally for nine or 18 years, which they indicated was normal in France. According to local regulations, the maximum area that can be owned is 247 acres per man and 124 acres per woman. Land in the area was valued at \$861/acre.

## Markets

Farms are located within 12 miles of an elevator, on average, according to ITCF. Many elevators are still locally owned but feel economic pressure to merge with larger elevators. Branches of a large elevator appeared to be essentially collection points with few if any services. Cooperatives handle 60-70 percent of production and merchants handle the balance.

The location of a nearby delivery point facilitates the use of tractors and wagons. Many of the wagons observed were about equal in capacity to that of the dual-tandem trucks common in North Dakota.

Selling for the elevator average price is the most common way for farmers to sell their crops, according to ITCF. Producers usually collect 90 percent of the price at harvest and the balance in March or June.

Selling for the day price at harvest is the second most common sales method. Farmers collect the whole price at delivery. About two-thirds of the wheat crop is delivered at harvest and the balance is stored from July until January. Rape is usually sold at harvest for the day price or average price.

Contracts are offered by elevators. They generally specify the price, quantity, variety, protein, premium, discounts and Hagberg (milling quality test), according to ITCF.

One elevator visited changed the focus of its operation rather than merge with a large cooperative; it now focuses on quality. They offered a protein premium of \$.12-\$.19/bushel in 2000. Protein premiums generally became significant when the protein was over 10.5 percent. Because of the narrow focus, grain was collected by this elevator from a larger area than normal. Only a few of these types of elevators exist in France, according to the elevator manager.

Several firms in France are involved in making branded baguettes (bread product), according to ITCF. For example, Grand Milling Paris (GMP) is a co-op that makes Banette, and Soufflet is a corporation that makes Baguepi. Both were observed in France. Soufflet contracts directly with farmers while GMP contracts both with co-ops, who contract with farmers, and farmers. These firms and other large entities have diversified and added value by owning mills and bakeries.

The largest port in France at Rouen was visited. Rouen is about 68 miles northwest of Paris. Grain arrived at the port mostly by truck, and cell phones were used to coordinate their efficient arrival. Storage at the port appeared to be limited.

Storage appeared to be handled primarily by large cooperatives that specialized in it. A storage cooperative at Mantes La Jolie was visited. The facility is located between Paris and Rouen.

## Extension

The latest information and analysis is made available to farmers through a number of sources. They include government agencies as well as private enterprises.

The chambers of agriculture in departments would be similar to U.S. county extension offices except that many contain 20 to 50 agricultural specialists. In contrast, relatively few counties have more than one extension agent. Many ITCF personnel would have responsibilities similar to U.S. university extension specialists.

The ITCF economics unit would be comparable to North Dakota State University extension economics. Their farm management research is applied and they hold a number of meetings with producers. Similarly, they analyze alternative strategies for improving farm income and they analyze the impact of government programs on farmers. The analysis they provided at meetings appeared very similar to what is presented by extension in North Dakota.

## International Farm Show

The international farm show was a major outreach activity of the ITCF economics unit. It was a highlight of the field days at ITCF.

The field days lasted two days and were similar to the field days held by experiment stations in North Dakota. Plot tours and seminars were held for producers. In addition, farmers could examine the latest in machinery. Attendance totaled about 8,000 at the farm show.

The field days are held every other year at the ITCF. Each of several institutes in France formerly held their own every year. The number of field days has declined in accordance with the decline in farm numbers.

The international farm show consisted of tents judiciously placed between the plots and the machinery. Each tent was occupied by several representatives from a country. The countries included the U.S., Canada, Argentina, Australia, and Russia, as well as one major importer of French grain, a miller from Morocco.

Poster displays in each tent were standardized in French, and interpreters were available. Farmers toured the tents asking questions about the posters and other issues. Handouts about the posters were available for visitors.

The first poster (Figure 1) in the U.S. tent provided general statistics about the United States and France. For example, the population in the United States is 276 million versus 58.8 million in France. The percentage of the population active in agriculture is 2.1 percent in the United States and 3.5 percent in France. Agriculture is 1.7 percent of gross domestic product in the United States and 2.3 percent in France.

A second poster (Figure 2) compared the United States and France in the production, yield and exports of wheat, corn and soybeans. The wheat yield in France was about 2.5 times the yield in the United States. Both exported nearly half of their wheat. Similar corn yields were achieved by both, but France exported a much greater percentage of production. Soybeans were a minor crop in France.



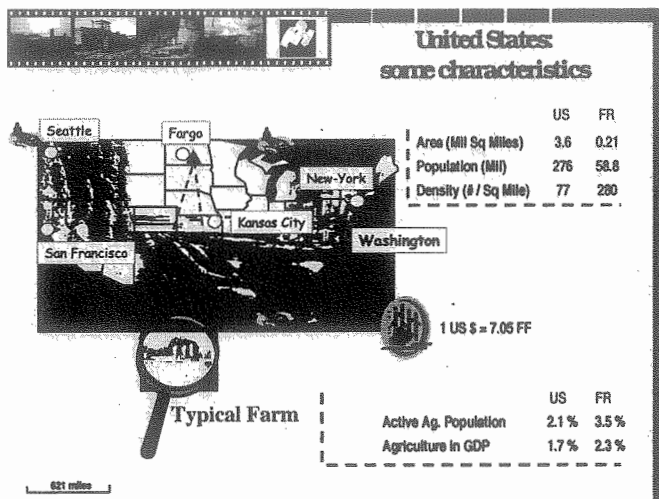


Figure 1. Select characteristics of the United States and France and location of typical farm in North Dakota. (Source: Technical Institute for Cereals and Forage, Boigneville, France.)

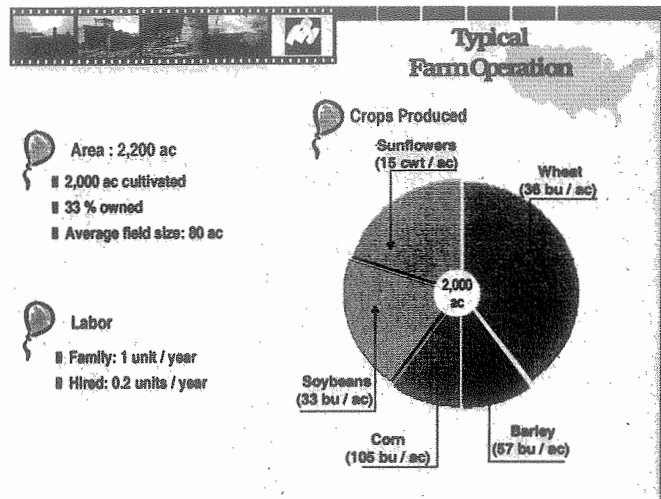


Figure 3. Typical farm operation in North Dakota: crops produced, acres and labor use. (Source: Technical Institute for Cereals and Forage, Boigneville, France.)

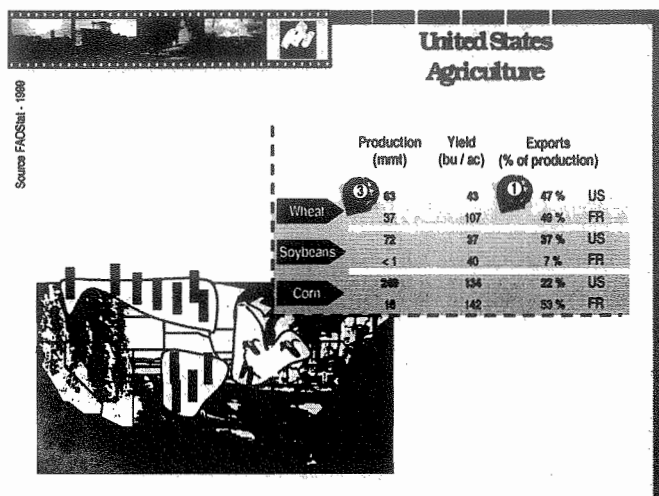


Figure 2. Comparison of select agricultural characteristics in the United States and France. (Source: Technical Institute for Cereals and Forage, Boigneville, France.)

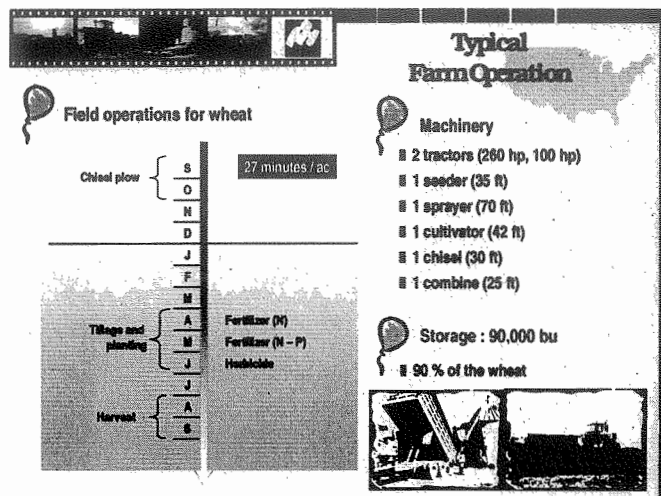


Figure 4. Typical farm operation in North Dakota: machinery complement, field operations for wheat, and storage. (Source: Technical Institute for Cereals and Forage, Boigneville, France.)

Several posters (Figures 3-5) described a typical farm in North Dakota (North Dakota Farm Business Management Education Program). One described acres farmed, labor requirements, crops produced and yields. A second identified the machinery inventory, storage and a schedule of field operations. The size of machinery and tillage time per acre were of particular interest to producers. A third explained the economics of wheat production. The return to equity per unit

of production was considerably lower in North Dakota than in France due to lower yields and subsidies, based on a comparison with returns for a comparable farm in the ITCF handout on France.

A sixth poster illustrated the classes, protein and grades of wheat. A diagram was presented in poster seven showing how wheat moves from the farm to the local elevator, terminal elevator and

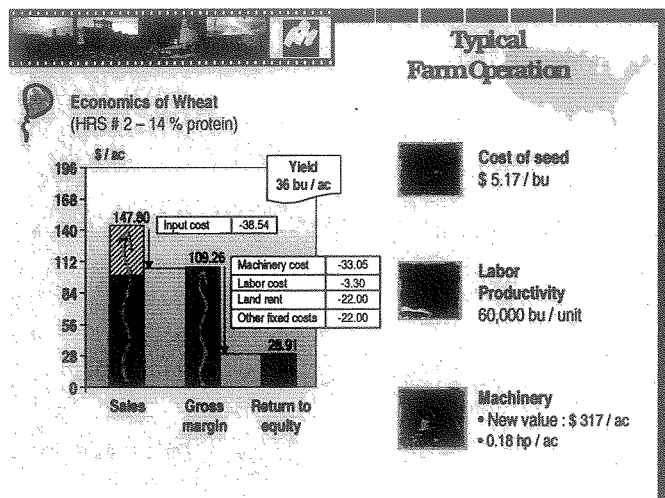


Figure 5. Typical farm operation in North Dakota: economics of wheat production. (Source: Technical Institute for Cereals and Forage, Boigneville, France.)

exporter. The last poster described the advantages and limitations of U.S. wheat at the producer and industry levels and expected changes in the future.

## Meetings

The international farm show was one of many outreach activities by the ITCF economics unit. A meeting presented by Nicoletti to a farm group illustrates the analysis and type of information presented at other events. The information was presented in graphical form using a computer projector.

Economies of size were discussed based on information collected in the country studies by Petit, Payoux and Bouquillon. Achieving these size economies would be possible through such alliances as joint machinery ownership.

A comparison of country information indicated that the cost of producing wheat per unit of production was the lowest in Russia for the farm presented. The next lowest was Australia followed by Argentina, Canada, U.S. and France. Production costs in the United States and France were nearly equal. A note of caution about the comparisons is that the production costs and yields were from example farms for each country and may not be representative.

Based on information received earlier from the farm group, production costs and yields were compared for several crops. Costs of production were also compared for each crop by group member name. This topic generated the most discussion.

Nicoletti also leveraged his outreach activities by working with cooperative and merchant farmer advisors. Day-long sessions would be used to train them on using his methods of analysis and presentations. They would apply methods learned to local groups.

Technical production information is provided mostly by departments, according to ITCF. Agricultural advisors in the departments hold meetings and visit farms about the use of varieties, chemicals, fertilizers and so on. Similar information is provided by companies for their products.

## Concluding Remarks

The standard of living for French producers appeared comparable to that for North Dakota producers. Many homes and other buildings were of historical value, and every attempt was made to preserve them. Education was sought and regarded as important to success.

Technical production expertise appeared to be more available to producers in France than in North Dakota, although marketing advisory services appear to be more available in North Dakota. The farms visited were considerably more diversified than farms in North Dakota. Further, joint ownership of machinery was common in France whereas it is the exception in North Dakota. Consequently, North Dakota producers tend to borrow a greater amount of their operating capital.

The method by which a farmer sells his crops can affect how much operating capital must be borrowed, according to ITCF. Many of those who sell off the combine in July do not need to borrow. January sales may necessitate some borrowing

depending on other crops produced. Rape is a source of income later in the summer and sugarbeets provide several payments. In contrast, the average North Dakota producer who participated in the Farm Business Management Education Program borrowed at least 57 percent of his operating capital in 2000 (North Dakota Farm Business Management Education Program).

Joint ownership of a late-model large combine as well as other seldom used but expensive machinery was very common. Ownership by two or three farmers was typical. Only one farmer was observed to own a combine independently. According to ITCF, the attitude about machinery ownership has changed considerably in the last 10 years. ITCF research and extension and CUMA have successfully facilitated and encouraged joint ownership where relevant.

The sprayer was a major piece of equipment. Most farmers had their own, usually large and sometimes self-propelled.

Every place visited focused on quality. Researchers sought to develop higher protein varieties. Farmers generally strived to produce high quality crops. Many had storage facilities to segregate different qualities. Their motivation was a premium domestic market and the export market which they perceived as becoming more quality oriented.

Farmers were very concerned about the future of subsidies. They appeared to be sufficient for most farms to survive but not great enough to entice young people to stay on the farm unless they were already highly motivated to farm for other reasons. They generally expected that the subsidies would continue but at reduced levels.

A portion of the ITCF annual meeting was devoted to long-range planning, and the issues discussed were similar to those discussed by NDSU extension: relevant programs, multidiscipline efforts, joint working relationships with other institutions and states (countries in their case), and funding.

In summary, French farmers are adjusting to a changing agriculture. Nearly all are managing production risk through diversification. Many are managing marketing risk through more complex, non-traditional marketing methods and by focusing on quality and identity preservation. Financial risk is being managed by most through alliances to lower machinery costs and in some cases through associations to efficiently own machinery, purchase resources and sell production. In addition, the process of remembrement permits consolidation of land into efficient operating units. ITCF, government agencies and private enterprises provide considerable information, analysis and technical assistance to producers. Costs per unit of wheat production appear to be similar for North Dakota and French producers. Due to higher yields and subsidies, however, French farmers are more profitable than North Dakota producers. So even though farms are generally smaller in size, French producers appear to have a standard of living comparable to North Dakota producers.

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