

# This Little Piggy Went to Market:

## THE JOURNEY FROM FARM TO TABLE

by Hannah Twaddell

Most American piggies – and cows and corn and cantaloupes – get to market in one of three ways: trucks, which carry about 45 percent of all goods (90 percent of our produce); trains, which carry 32 percent; and barges, which carry 12 percent.



DAVID FREUND

Trucks play an essential role in the movement of agricultural products. But they can necessitate costly public road and bridge investments, and are vulnerable to rapidly rising fuel prices.

### TRUCKS

The use of trucks began to rise sharply after World War II with the development of the interstate highway system. Trucks have long been the primary mode of transport for moving time-sensitive products such as fresh fruits and produce, as well as for getting high-value perishable products from processing plants to retail distribution centers.

While rail and barge are more energy-efficient modes for bulky, low-value commodities such as grain, trucks have even become the predominant mode for these products, especially among inland grain-producing areas far from waterways or major rail lines.

More than half of the communities in this country depend exclusively on trucks to meet their outbound transportation needs. Such reliance poses a critical problem for rural agricultural communities: the increasingly heavy vehicles ruin local roads. Consider two rural Kansas counties. When Ottawa County, population 6,000, lost rail service in the mid-1990s, its annual road

maintenance bill increased from \$1 million to nearly \$7 million. The loss of rail service to Harper County, population 6,400, necessitated a \$27 million investment in roads and bridges to withstand the additional truck traffic.

It's very hard for rural localities to raise these kinds of funds. Rural roadways account for more than half the nation's network, but carry just over four percent of the total vehicle miles traveled. Since state and federal funding formulas are often based upon vehicle miles, rural areas – where traffic is light but trucks are heavy – are at a distinct disadvantage.



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Short-line railroads such as the 59-mile long Caney Fork and Western in south-central Tennessee, often serve agricultural businesses.

### RAIL

Rail is more cost-effective than trucks for transporting large volumes (90,000+ pounds) over long distances (600+ miles). After the railroad industry was deregulated by the Staggers Act of 1980, financially strapped operators reduced their huge fixed costs by abandoning unprofitable lines, consolidating, and charging higher rates in areas where there was little competition.

These changes stabilized the industry, but drastically reduced affordable rail services in many areas, especially rural

communities. Compounding the problem is the fact that coal, cars, and chemicals are more valuable and predictable sources of revenue than soybeans and wheat, which makes it hard for rail companies to justify the expense of serving even the largest farms.

The growing interest in short-line and regional railroads is one bright note in the otherwise gloomy story of diminishing agricultural access to railway systems. These smaller enterprises – which usually operate on track abandoned by the major rail companies – help connect farm businesses not just to regional markets, but also to the larger rail and waterway networks that can carry their products across the country and out to foreign markets.

Local governments, state agencies, and private enterprises are working together in many rural communities to put abandoned tracks back in service. By 2002, the number of short-line and regional railroads had grown to 545, operating over 45,000 miles of track. They accounted for 30 percent of the nation's rail mileage and nearly nine percent of all railroad freight revenues.



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Over half of U.S. grain exports move down the Mississippi. A barge has an average capacity of 52,500 bushels, compared to 3,500 bushels for a jumbo rail hopper car, and 910 bushels for a large semi-trailer.

### WATER

The major problem facing our waterways and ports is growing with the times.

Like railcars and trucks, barges and container ships are also getting bigger. This requires ports to obtain additional land area to store and process goods, and puts demands on the hundreds of locks and dams that facilitate movement across the network. In 1998, the estimated need for waterway construction and rehabilitation totaled some three billion dollars.

Unlike railroads, waterway improvements are largely financed with public monies. The viability of barge transportation for agriculture is further enhanced by the fact that four of the top ten barge firms are owned by four of the nation's largest agribusinesses, ConAgra, ADM, Cargill, and Bunge.

### FOOD MILES

The food we consume literally travels the globe. Carrots from the San Joaquin Valley travel some 1,400 miles to reach the supermarkets of Des Moines, where shoppers can also buy Chilean grapes that have logged 7,270 miles. We can now get just about any food we want, at any time of year, if we are willing to pay the costs – financial and environmental – of transporting it.

A 2001 study by the Leopold Center for Sustainable Agriculture at Iowa State University found that food delivered by conventional means to a group of local hotels, restaurants, and institutions traveled an average of 1,546 miles, while the same foods produced locally traveled under 45 miles.<sup>1</sup> The study concluded that a modest ten percent statewide increase in local and regional produce sales by Iowa farms would net more than 54 million additional dollars, save 350,000 gallons of fuel, and reduce CO<sub>2</sub> emissions by nearly 8 million pounds.

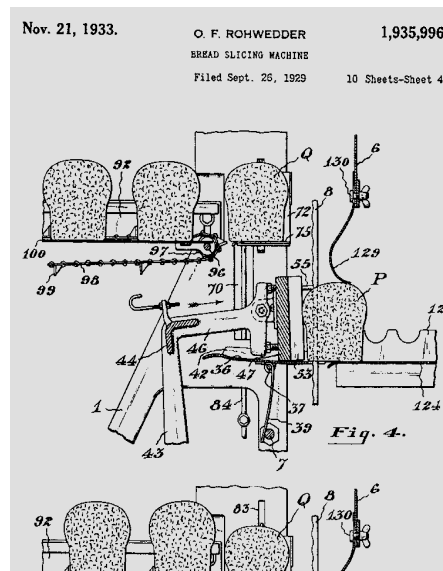
One way of reducing food miles is through community-supported agriculture, where food from local farmers is delivered directly to the consumer or picked up at designated locations. CSA food travels in smaller trucks over shorter distances, and the systems can in some cases make use of short-line railroads.

<sup>1</sup> "Food, Fuel, and Freeways," p. 14 . Available to download at: <[www.leopold.iastate.edu/pubs/staff/ppp/index.htm](http://www.leopold.iastate.edu/pubs/staff/ppp/index.htm)>.

### TRADE GLOBALLY, EAT LOCALLY

American agriculture is expanding in two directions: larger farms are consolidating into agri-businesses with global markets, while the number of small farms is also growing. These major agri-businesses will continue to need heavy-duty rail, water, and highway networks in order to compete in national and global trade markets. But community supported agriculture and other local and regional farming systems present an opportunity for communities to preserve and promote hometown enterprises without having to make huge transportation investments.

In 1928, the farming world was revolutionized by Otto Rohwedder's amazing



bread-slicing machine. Throughout the 20th century, our nation reaped the benefits of unprecedented technological advances in agriculture and transportation. Now, as we enter the 21st century struggling to deal with the unanticipated costs of that progress, the growth in local and regional agriculture may well prove to be the best thing since ... sliced bread. ♦

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### A Look Back & Ahead

Prior to 1800, most goods were transported via rivers and cart paths. The introduction of steam trains in 1830 launched a century of intense railway development. In 1840, there were 3,000 miles of railroad track in America. By 1890 we were transporting goods and passengers along 160,500 miles of track. We also organized the Army Corps of Engineers to build an extensive network of canals, locks, and dams.

Roadways were also built during the 19th century, principally as turnpikes operated by private enterprises, but the big money was in railways until 1916, when the network peaked at 254,000 miles of track. That same year, the Rural Post Roads Act initiated the practice of using federal funds to develop roads.

Throughout the rest of the 20th century, the growth of roadways dominated American spending. Today, trucks can access nearly four million miles of publicly maintained roadways. In contrast, railroads operate over some 174,000 miles of track, the vast majority privately owned.

As we move into the 21st century, agricultural enterprises require more and larger vehicles – trucks, railcars, and barges – to travel longer distances in order to stay cost-effective. This has put a strain on all the networks, triggering the demand for bigger and more expensive roadways, heavier-gauge rail lines, deeper ports (with more land area for container storage), and wider locks along our waterways.

At the same time, however, there is growing interest in local and regional agriculture, which as noted in the article, requires far less "food miles" for transport. It remains to be seen what the balance will be between global/national and local/regional agricultural markets – and how this will affect our future transportation needs, priorities, and investments.