

PolicyPennings by Daryll E. Ray & Harwood D. Schaffer

Some costs of agricultural production go unpaid

As we have previously noted in this series of columns in which we discuss the conceptual model that we use in our analysis of agricultural policy, free markets are characterized by an exchange in which both the buyer and the seller are free to engage or not engage in the transaction. Both parties to the transaction receive a benefit; the seller benefits from the money received while the buyer benefits from the product.

But sometimes the exchange has consequences beyond those experienced by the two parties to the exchange in the short-term and/or the long-term. These consequences are called externalities and if they benefit a third party they are positive externalities. Negative externalities create costs that are not captured in the immediate transaction.

Like many other economic activities, the process of agricultural production creates externalities. One of the oldest of these is deforestation. In ancient times, the deforestation of the hillsides of Lebanon resulted in soil erosion in the short-run and a change in long-run weather patterns that brought about lower rainfall patterns. Further south, the destruction of the forests of the Sharon for lumber and to open up agricultural land resulted in creation of swamps.

Today, deforestation of large areas in the tropics to make the land ready for agricultural production results in the release of carbon that has been stored in the soil, contributing to climate change.

The loss of soil due to the removal of soil particles through the action of air and wind results in a host of consequences. At the beginning of the 20th century, Henry A. Wallace, then publisher of Wallace's Farmer and later Secretary of Agriculture and US Vice President, railed against those he called soil miners—farmers who engaged in agricultural practices that resulted in soil erosion and the creation of gullies that eventually made their land unfarmable. The Dust Bowl was, in part, the result of farming practices that left the land vulnerable to wind erosion.

When we were young university students, experts would talk about establishing a level of soil erosion that was sustainable. Eventually, they came to the answer: zero. And yet we still have not reached that level. The resulting waterborne soil clogs river channels and reduces water quality for aquatic life.

Soil is not the only thing that is carried off farmland and into the nation's rivers, estuaries and coastal waters. Nitrogen and phosphorus leaches from the soil and into the nation's waterways causing algae blooms and imposing costs on municipal water systems. There is also concern that other farm chemicals are also being carried off farm fields and into public waters, creating health risks.

While the use of fossil fuels has reduced the amount of human labor required in agricultural production and lowered the cost of food, it also contributes to the release of fossil-based carbon dioxide into the atmosphere.

We could extend the list of externalities that result from agricultural production, but the point here is to simply note and emphasize their presence. The conceptual model that we use to analyze agricultural policies includes consideration of these and other externalities in the production of agricultural products.

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