

# Agriculture in New Mexico

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I was asked to prepare a presentation about the relationship between agriculture and water. In particular, what the future may hold for the two.

Having said that, I am almost sure that you think you know what I am going to say: "Agriculture is good," "If you eat, you're in agriculture," "Don't take all the water away from ag." Well, you are sort of right. All of that is true, but the problem that agriculture (ag) faces regarding water is far more complex than just a simple line or phrase, and it has ramifications that reach far beyond the borders of New Mexico or even the United States. We all know that agriculture is the largest consumer of water; we all also know that urban development is the fastest growing consumer of water. It makes sense that ag is going to lose some water to urbanization. But I am here to offer a word of caution. There are some effects of fallowing farmland that often go unseen until it is too late.

So what am I hoping to accomplish here today? Am I hoping to get you to actively oppose any water transfer that might take ag land out of production? No. The fact is I am hoping that the next time you go for a drive through the valley, you might look out your window and say to yourself "hum." That's right, I want you to say hum — "How will our great grandchildren get their food?" If that happens, I will have done my job here today. While I am at it, I would like to try to dispel a few myths that are out there about agriculture.

The United States has always grown more food than we as a country could eat. The U.S. exports

around 24 percent of our annual crop. American farmers grow about 42 percent of the world's corn and 20 percent of the world's beef, and that is where New Mexico farmers and ranchers come into play.

Let's start close to home. Figure 1 is the face of agriculture in New Mexico. Ok, maybe not, but Figures 2 and 3 are. New Mexico's top three agricultural commodities are dairy products (\$1.36 billion per year), cattle and calves (nearly \$1 billion), and hay (over \$225 million). With an economic multiplier of seven, that's about \$17.5 billion of economic activity per year! And it is all because of the cow's four-chamber stomach, or maybe more specifically, it is because of the lowly rumen microbe that resides in the cow's stomach. It is what allows us to raise cows here in the desert, feed them nothing but dry grass, mesquite, and sand and still send a healthy calf to market. This microbe allows us to unlock the food value of woody plants that have no food value to humans. It is because of this little bug that we are able to use such low quality forage to raise a healthy calf. We can then feed that calf some corn and hay and end up with a top quality protein source. So when you are driving home and you go past those alfalfa fields and think to yourself, "they are using all of that water to grow hay, and NOBODY eats hay," remember that hay is what allows us to raise cows; and those cows, along with dairy products from cows, combine with the hay to generate about \$17.5 billion in economic activity every year!



Figure 1. Agriculture in New Mexico



Figure 2. Agriculture in New Mexico - chile field



Figure 3. Agriculture in New Mexico - alfalfa field

We grow a lot of pecans here in New Mexico. In 2009, New Mexico sold about \$133 million worth of pecans. That's money that went directly to the growers and was more than any other state. And with the U.S. ranked as the top pecan growing

country, that makes New Mexico the best place in the world to grow pecans.

Let me give you a little background on New Mexico's farmers. New Mexico farmers are in the business of selling what they can grow. The farmer first looks at what can be grown on his land. He factors in soil conditions, climate, and his own expertise along with the water he has available. Next he looks at the economics of growing a specific crop, and that means looking at the crop's commodity price and factoring in the inputs. You can look at it like this: irrigated agriculture sells inches of water. The farmer looks at what crop he can water that will cost him the least amount of additional money and yield the most money. Quite often alfalfa best fits the bill.

I'd like to talk a little more about today's farmer. The perception of the land rich, dirt poor rube still exists. I have a story that helps make my point. After a failed four-year campaign to rid the Navajo Reservation of ignorance as a teacher, I took a job on a large ranch west of Albuquerque. One of the goals I set for myself and the ranch was to increase the deer and elk population. One way to help accomplish this was to decrease the predator population. So I spent a considerable amount of time and money hunting, trapping, and generally harassing the coyote population. As a result, when someone asked if they could come to the ranch to hunt coyotes I had to tell them that while there were still plenty of coyotes left, I had already taken care of all the stupid ones. The only ones left were survival experts, with senses so honed, that a mere mortal had little chance of catching them out in the open. Today's farmers have something in common with those coyotes; the free market has weeded out all the dumb ones. Those left are businessmen who not only understand economics and trading on a global market, but they have also somehow learned to survive in a business environment where even if you do everything right, Mother Nature can still pull the rug out from under you.

Most people also fail to recognize how technology has impacted agriculture. Today's farmers rely on state-of-the-art technology; from the water delivery systems that use satellite or radio telemetry for turning pumps on and off and for monitoring water use, to high-tech equipment to harvest and process their crops. I'd like to use a farmer who I know as an example of this new way of doing business. He is a hay grower in the Pecos Valley. If you look at any of his fields, you will notice immediately that there are conspicuously

few weeds. That is a feat in and of itself. If you look into any of his hay barns you can't help but notice how green and lush the bales of hay look. An experienced hay buyer would tell you that it's been "put up right." Obviously this guy knows how to grow hay, but there is more. If you ride around in the truck with him, you can't go five minutes without being interrupted by a cell phone call. He'll talk to a buyer just down the street, or across the country who wants four or five bales, or four or five semi-truck loads. The buyer is a customer that he may have done business with for years or someone who just found his website. In one of his hay barns, you will find what he calls "the hay plant." This is where they take big 1,500 lb square bales and cut them into small bales. These small banded bales are then stacked on a pallet and shrink wrapped. The bales can be loaded on a truck with a forklift and shipped across the state, or be loaded into an air-tight sea shipping container and shipped anywhere in the world. This can all be done by a two-man crew. He and his son run a very efficient and successful farming operation.

Today's talk provides me with an opportunity to do a little myth busting. People tend to believe that most farms are in the hands of some big multinational corporation. The truth is that 82 percent of all agricultural products are sold by family farms. And by family farms I mean this: individuals, family partnerships, and family corporations. Ninety-eight percent of all farms in the U.S. are family owned. Yet we are losing farmland at an alarming rate.

Now we get to the heart of the problem—the loss of farmland, or more specifically, the loss of irrigated farmland. It seems to be the natural progression of land ownership: land begins as wilderness, it then becomes pasture, followed by cultivation, growing hay and grain crops. Next you see a transition to row crops, like vegetables, cotton, and chile. Then you start to see trees growing in those fields, fruit or nut trees. Before you know it, houses start growing on this same land. The late Paul Harvey once called attention to this fact when he said, "There is no more farmland and every year there is less, we're paving it, flooding it, leaching it, and building buildings on it." In the past decade, we have lost about 32.6 million acres of farmland in the U.S. That's about five times the size of Yellowstone National Park. And 11 to 12 percent of that loss is from irrigated agriculture.

If you go to Germany and decide to buy a farm, you can do that. If you decide you want to tear the old farmhouse down and build a new one, you can do that too. But if you decide that you want to take that farm out of production and build houses on it, you cannot do that. They have laws in place to protect the existing farms from development. If you ask them why, they will look at you like you are stupid, then tell you that a country must preserve its ability to grow its own food.

Many would argue that we need laws like that in our country. And while it sounds like a good idea, I couldn't disagree more. If you passed a law such as that, you would, in one fell swoop, remove most of the value of that farmland. So a farmer who has been counting on the value of his farm for his retirement and has worked all his life to build a nest egg, would have it taken away. I believe he has the right to sell his land and water out of production. The choice is his. Here is where many think that conservation easements are the silver bullet that we have been looking for. For those of you who aren't familiar with conservation easements, that is where a deed restriction is put on the property that limits how the land may be used or developed in the future. A conservation group may buy an easement on a farm for, say, a quarter of its appraised value. That farm may then be sold to someone else, but the new owner cannot develop it. Often the problem is that a group may be able to afford a quarter of the value of the land, but as a result, the land may be de-valued by more than half. These types of easements are only effective when the price paid is enough to cover the loss of value. Another shortcoming of conservation easements occurs when the seller is required to forfeit some management rights in order to sell the easement. In other words, the buyer will get some input as to how the farm can be run in the future. So while conservation easements will play a role in the future, they are not the total solution.

Today we set out to discuss the future of water. All our lives we have been misled about what the future holds; from the Jetsons to Space Odyssey 2001, we have been unable to foretell what to expect. So first let's talk about what we know. Less than 2 percent of our population produces our food. That means that each farmer or rancher produces enough food to feed 155 people. Every year there are fewer farms and fewer farmers. Bear in mind that in the next nine years, agriculture must produce as much food as it has in the last 6,000 years.

A lot of people believe that we can meet our growing demand with supply from other countries, and to some extent, we can. As efficiencies in other countries improve, supply will increase to feed a growing world population. But this is one area that becomes tricky. Today at the grocery store, you can buy food from around the world, often cheaper than the same product grown here. I don't have a problem with the availability of food from other countries, but I see a very slippery slope that can lead to a dependency on foreign food, and if you have enjoyed being dependent on foreign oil, you are going to love being dependent on foreign food. Food grown outside of the United States does not always meet the standards that U.S. food is required to meet. For example, there are pesticides that have been banned from use on food crops here in the U.S. that are used in other countries. Now you may be thinking, "but in order to enter this country, they must meet our standards." You are right. Sort of. I guess you could say, "They should meet our standards for production and processing. It's hard to tell given that only about one percent of the food that crosses our borders into the country actually gets inspected by the U.S. Food and Drug Administration. And if foreign processing plant inspections continue at the current rate, they should finish inspecting them all in about 1,900 years.

What about the environment? It is estimated that about 80 percent of the wildlife and 75 to 90 percent of the endangered species in the country live on privately owned lands depending on where you are in the country. Wildlife depends on agricultural land for both food and cover. Thanks to the Endangered Species Act (ESA), wildlife has been put at odds with agriculture, often with dire consequences for both. The biggest problem with the ESA is not its intent, which is to protect endangered species, but the fact that it has been used as a club to beat people over the head to promote an agenda. If you talk to a wildlife biologist, they will tell you that when legal action forces compliance, the endangered species rarely reaps the benefits. In California, they had a problem with a little creature, the Delta Smelt, which is a small 2- to 3-inch minnow that lives in rivers in southern California. In 2008, it was determined that the pumping in the San Joaquin Valley was causing this endangered fish greater peril and the courts ordered the irrigation pumps to stop. Prior to the order to stop pumping, Berkeley Economic Consulting, using a model from the U.S. Forest Service known as IMPLAN, calculated that "720 jobs will be lost in the San Joaquin Valley as

a result of the Interim Order. The large majority of these farm jobs are held by low-wage workers living in economically depressed areas." The pumps did stop, and since then economists have been struggling to calculate the actual impacts. Job loss estimates vary wildly from somewhere over 1,400 to 95,000. Despite noble efforts to counter the negative impacts, the economic impacts are disastrous. Positive effects on the Delta Smelt have been hard to determine.

Where are we headed? As E.M. Tiffany once wrote, "I believe in the future of Farming." I love the productivity of American farmers! I think Dr. Lowell Catlett from New Mexico State University's College of Agriculture put it best when he framed it like this: There are about 77.5 million dogs in the U.S., and they are the most well fed dogs in the world! There are about 90 million cats in the U.S., and guess what? They are the best fed cats in the world! I believe that New Mexico farmers, just like farmers all around the country, are going to keep doing what they do best, producing more for the many — with less.

Agriculture has been counted out every few years since the beginning of the industrial revolution. I still hear it from time to time — "agriculture is on its way out." You would think that after 10,000 years people would come to believe that agriculture is here to stay. But many insist that it is on its last leg. I think they are wrong. Much like the coyotes I told you about earlier, farmers have learned to adapt. I would argue that you won't find a more flexible and adaptive business plan in any other sector of business or industry. I think that farmers will continue to increase per acre yields; I think we will see more genetically modified crops that are more drought and heat tolerant; we will see better delivery systems that allow for less waste, maybe something like the device shown in Figure 4. It is called an "in-line processor." It is thought to be capable of stripping electrons from water as it flows through the water. By doing this, the water is unable to bond with impurities like salts. If it works, this would allow the plant to absorb a higher percentage of the water.



Figure 4. In-line Processor

I also see people placing a greater value on food grown here. That can be seen today with people willing to pay more for produce grown locally. I think that if society as a whole is willing to pay a premium for water that does not come at the expense of farms, farmers will be willing to help fill in the gaps. An example of this can be found in west-central Oregon. Oregon's salmon runs were suffering during times of drought. So while some environmental groups sharpened their pencils and talked to their lawyers, others took a different approach. They leased some water rights from working farms. The farmers were able to change their farming practices and did not water during the times of greatest need, and they still stayed in business. The fish got the water they needed to spawn, their farms still produced a crop, and all this was done at a fraction of the cost that would have come about from a court ruling.

The real solutions to our water and food problems, I think, will come from where they have always come from: scientists in big laboratories, and handymen in their garages, and farmers in the fields. There will be concepts so foreign that most will scoff and say it will never work, or be so simple and obvious that we will all collectively slap a hand to our forehead and say, "Why didn't I think of that?"

If people like you and me put our minds to it, I see no reason why urban growth must come at the expense of agriculture. It will take better planning, and great ideas, and it may be harder. I also think that is fitting. It should be harder. Nothing worth having comes easy.