

Keynote: Why Reintegrate Animals?

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Abstract

Animal agriculture has a critical role to play in sustainable farming. By reintegrating animals in the farm, we can both enhance the environment and improve economic opportunities in family farming. Sustainable production livestock production systems are both environmentally sound and economically viable. Consumer preferences for such systems offer the potential to reward sustainable practices and improve family farm income.

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I appreciate the chance to come to a beautiful spot in Michigan and talk about why we should re-integrate livestock production in agriculture and how to do it. It will require some policy changes, and that will require working together because no one of us can do that alone. But if we all pull together, we really can change some of the fundamental public policies that shape how livestock is produced and whether it is integrated with agriculture in a way that is sustainable.

I give a lot of speeches on how we can change directions in agriculture. People often say, "I agree with you, but there is nothing we can do about it. These things have been going on for 50 years, they're going to go on for another 50 years, and there is nothing we can do about it." I have to admit that there are days when I start feeling that way. But when I think it through, I come to the conclusion that they are just flat wrong. They are wrong because there is nothing inevitable about the direction that livestock production or agriculture in general has moved in recent decades. It is not the result of some law sent down from heaven on a tablet of stone. It is the result of decisions made by people, policy choices, policy biases, and priorities by institutions such as Michigan State University; decisions made by people that can be changed by people.

When I study history, I see that it is not made up of trends that just go on forever. History is made up of cycles. It is made up of circumstances where trends go on for a long time. At some point, people decide that that the trend has gone too far and is no longer serving the common good. Then they take steps to change it, and they do change it. That has happened over and over throughout history. We can do it too. What we can't do is turn back the clock. That's clear. But we can steer change.

In livestock production, the last wave of change, starting about 50 years ago, was industrialization and movement into large, concentrated confinement systems. It has been going on a long time. Our challenge is to create the next wave of change in livestock production so that 50 years from now people will be talking about the change that started now to a different type of production, one that re-integrates livestock with agriculture in a way that's good for people, for the land, and for communities.

There are some clear social and environmental reasons to change directions in livestock production. Let me start with the environment. Industrialization has moved livestock production, an enterprise that could and should be an environmental positive, into what is essentially the premier environmental problem in much of rural America today. The core problem with industrialized livestock production is that we are concentrating too much livestock, too much manure, too many nutrients in a small area. It is more than the land, the air, the water, the crops can absorb. We can't afford to ship manure a long distance, in virtually every place with highly concentrated livestock production, we find high levels of phosphorous in the soils. When we overload soil with phosphorus, it runs off, gets in surface water and causes eutrophication. Fish die and we have pollution. As a long term sustainability issue, our mineable supplies of phosphorous are limited. If we end up throwing it all in the water, it will speed the day of reckoning when we don't have the phosphorous that we need to produce food.

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The problems are different with nitrogen. We have dealt with nitrogen in concentrated livestock production by putting the manure in large lagoons. When we put manure in anaerobic lagoons, nitrogen is released into the atmosphere, causing problems. These large anaerobic lagoons also release methane, one of the most potent greenhouse gases. All of that nitrogen released from manure lagoons into the atmosphere means that we have to manufacture a lot more commercial nitrogen, which also contributes greenhouse gases.

When we talk about environmental challenges in livestock production, we usually talk about air quality, odor and surface water quality. But I think the most profound environmental issue confronting our generation is going to be climate change. Ultimately every part of society will have to contribute to a solution. If we find a way to integrate livestock production back into agriculture, to move beyond the industrialized, concentrated systems we have now, it will be a lot easier to deal with the challenges that climate change presents to agriculture, and to livestock production in particular.

The exciting thing about reintegrating livestock is not just that it can reduce pollution and environmental problems. Reintegration can take an industry that when overly concentrated becomes an environmental negative and turn it into an environmental positive. When livestock is widely dispersed and its manure well managed and applied to land, pollution is reduced. If we use manure well on land, we will improve soil quality. When it rains, more rain will be absorbed by the ground, there will be less runoff, and the rain will carry less soil and nutrients into surface water. Also, if we make effective use of manure, we will extend our limited supplies of phosphorous, reduce the need to manufacture commercial fertilizer, and reduce the contribution of greenhouse gases.

One other critical environmental benefit of reintegrating livestock is providing an economic use for land besides row crops. What we have done in industrialized agriculture is to put the livestock in tightly confined systems, produce row crops on the land and ship the crops to the animals. We do not have a good way to use resource conserving crops on our highly erodible land. If we get back to reintegrating livestock production with agriculture, we can get back to growing a lot more resource conserving crops. In the process we can conserve the soil, and keep it where it needs to be. To me, it is an important moral issue to keep that soil in place, producing food for future generations. I believe that we all have a moral obligation to leave the land for the next generation as least as well as we received it.

There are also some profound social and community implications of how we practice agriculture. There are three ways that reintegrating livestock can help create opportunity in agriculture. First, livestock production can provide an avenue for beginning farmers to get into agriculture. These opportunities do not occur when livestock production is in huge, concentrated units but rather when livestock production is at a modest scale and integrated on farm. It provides a way to substitute management and skilled labor for capital. In other words, a person who wants to get into farming may have a lot of management ability and a willingness to work hard, but not much capital. Livestock production is a way to use those resources and get started

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without a lot of capital. In my part of the country the alternative is cash grain production, and let me tell you it's very hard to get started in cash grain production if you don't have a lot of capital. It just doesn't work.

Secondly, we can support more people per acre, or at least more farms, and family farmers and owner-operators per acre if we can integrate livestock back on the farm. As we took hogs and other livestock off the farms, the number of acres needed to make a living went up so much that it set off a dramatic consolidation in crop production over the last five or ten years. Now, without livestock, we have people trying to farm half the county just to make a middle class income, and they are driving their neighbors out of business. It's destroying some of our agricultural communities.

The third way that I think that reintegrating livestock production can strengthen family farms and provide opportunity in farming for people who work the land is that it can create what I call "economies of scope" for mid-sized family farms. We talk a lot about the advantages of being big and the economies of size, but a lot of those are oversold. There are also some advantages of scope when you integrate livestock and crops on the same farm. For example, when a farmer has manure, s/he can use it as a fertilizer and reduce fertilizer cost. With both crops and livestock on one farm, some of the same machinery can often be used for both enterprises, so those costs are spread over more things. When feedstuff is produced right on the same farm where the livestock are, it cuts costs. It cuts transportation cost. It cuts transaction cost. Typically, a farmer feeder would save 10 cents a bushel on corn just by avoiding transportation and transaction costs. So these are some real economies of scope that can help strengthen mid-sized farms.

I think these benefits can go beyond the farm to the larger community. In Nebraska and Iowa, this tends to be a hog issue, but I suspect in Michigan it may be more of a dairy issue. We are often told that we just have to embrace this large industrial livestock production, these mega units, because they will save our community, because they will create jobs. I think there are some flaws in that argument. Once livestock production moves to a large industrialized system, what are the key factors that are going to influence a decision about where to locate that operation? Sparseness of population is one factor, because feedlots don't want to be getting sued every other week. Feed cost is another, because that is the biggest cost in a large livestock unit. Another is cheap labor. If these are the factors on which we are going to decide where livestock is produced, Brazil beats the heck out of us on every one of them. If we are going to move to that kind of industrialized system, ultimately I think it's going to go off shore. That is one reason I think we are overselling this when we tell communities this is how to create jobs.

The second reason I think it is being oversold is that one of the most important factors for communities to survive and thrive into the future is to be attractive places to live. People have got to want to live there; people who have the ability to start new businesses and be entrepreneurial. They have to want to come and raise their family. Places where people really want to live tend to thrive because people come, they start

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businesses, they make things happen. If we don't protect the quality of our rural communities' environment, that will not happen. If we bring in industrialized livestock production at the expense of environmental and air quality, it will be a lot harder to attract families who are going to create those kinds of opportunities and jobs. If we can get back to integrating livestock production on family farms, we don't have to choose. Then we can have both livestock production and a quality of environment and life that can attract a lot of people into our communities.

The last reason this issue is important to communities has to do not with the number of opportunities we have in communities, but with their quality, especially the quality of opportunities in livestock production. One of the things that made agriculture and small communities unique in this part of the country is that, to a much greater extent than elsewhere, the people who worked on farms owned them. They enjoyed the benefits of ownership, and they shouldered the responsibilities. That brought meaning to life and work for generations of rural people, and it created much healthier communities.

Dean McCannell, a sociologist at the University of California, examined the research on the relationship between how we farm and life in the rural community some years ago. He wrote, "Every serious study reaches the same conclusion. Communities surrounded by farms that are larger than a family unit can operate have a few wealthy elites, a majority of poor laborers and virtually no middle class." Now that, my friends, is not progress, that is social decay. But it is exactly what we see in areas where the livestock production is heavily industrialized. One benefit of reintegrating livestock production into agriculture is that we can get back to the kind of production that creates middle class opportunities. That creates stronger communities and is better for everyone.

Well, what do we do? As I said before, we cannot go back. We can't undo change. But we can move forward, and we can steer change as we move. Now I am going to talk about three strategies to steer change in livestock production toward greater integration with agriculture and greater sustainability. First we have to refocus the public agricultural research agenda on livestock production. Agricultural research is in one sense a form of social planning. By that I mean the decisions we make about where we invest agricultural research dollars, about what types of production systems we develop and refine, go a long way in determining what kind of production systems are economically viable. The research ultimately shapes the decisions farmers make about how they produce things. That in turn profoundly shapes life in rural America. To put that in context, I think we started industrializing livestock production about 50 years ago. Over that time period, we have spent, conservatively, hundreds of millions of public dollars in public research institutions, to develop industrialized livestock production. Over that same period, we have not spent a minute fraction of that amount on the alternatives.

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Now let's think about some of the alternatives. They include things like:

- grass based dairy systems
- grass based beef cattle finishing systems. (Not necessarily taking them all the way. In some cases it may mean finishing them totally on grass; in other cases it may mean keeping cattle on grass up until about the last thirty days.)
- raising hogs in hoop houses

What is truly remarkable about these systems is that I am sure we haven't spent one percent of our research dollars on them compared to research spending on industrialized livestock production systems. Yet most studies I've seen say it's a little cheaper to produce milk in grass based dairy systems. It's not much more expensive, maybe a dollar or two a hundred weight at the most, to raise hogs in a hoop house than in confinement. Grass based finishing for beef cattle can be higher or lower depending on the price of corn. If over those 50 years, or even just the last ten or 20 years, we had invested the same dollars in alternative systems as we have invested in figuring out how to raise livestock in confinement, what would be their relative costs of production? I assert that with an equal research investment, in cost of production alone, alternative systems would beat the pants off industrialized livestock and the face of rural America would be much different! We would have a very different livestock production system, a lot more family farms, and a lot fewer dying farm communities.

The key social advantage about alternative systems that makes them better for creating middle class opportunities is that they are management intensive in a way that you cannot separate from labor. Because there is no controlled environment, the people working every day in the barn have to understand what is going on. They have to exercise judgment, they have to make decisions everyday. In other words, the people doing the labor also have to be doing management. It's a very highly skilled form of labor.

Industrialization did just the opposite to livestock production. In confinement, capital is used not just to replace labor but also to deskill labor. A controlled environment allows production to be routinized. The people who are actually doing the work don't need to make decisions. Everything is relatively routine; little judgment needs to be exercised by the people doing the labor. That sets up livestock production in a way that relegates the labor to low wage, unskilled labor.

If we want to reintegrate livestock production on family farms, then we need to focus our research on production systems that tap into the strengths of owner-operated middle class family farms. Their key strength is the presence of a highly skilled, highly motivated, experienced and knowledgeable operator in the field and in the barn doing the work. If we focus our research on playing to those strengths, we can have a very different outcome. That means we would adopt some different strategies. Instead of trying to develop ways to use more capital, to cut the management requirements, we would look at ways that we could develop new knowledge that the farmer can apply to

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reduce the need for purchased inputs, reduce production problems or add value to production.

I think that our Land Grant colleges need to get a much better handle on this issue. It's an issue that I have been working on. I am on the Board of Regents at the University of Nebraska. One of things that strikes me when I talk about this is that we have many researchers who care about these issues, who are sympathetic with them, but who have not been trained to think about them or to understand how the decisions they make in their research are going to impact what happens out on the farm. So I have been advocating for an endowed chair on the social impacts of technology. This would be somebody who spends time analyzing the implications of alternative research directions for life in rural America, for quality, for structure of agriculture, for lots of things. The chair would work with other researchers in planning the research, helping them identify and analyze alternative directions and consider how it will affect life in a rural area, life for family farms. As technology and research become more powerful in shaping and driving change, we need to become much more thoughtful and analytical about where we put our research dollars to get us where we want to go as a society. In this day and age, if we don't put our research dollars behind the kind of production systems, the kind of technologies that get us where we want to go, we are going to end up where we don't want to be, which is what is happening in agriculture today.

The second strategy is to tap consumer support for integrating livestock production back into agriculture. We used to talk about the mass market when I was in college many years ago, but today I think the mass market is gone. We have a more segmented market, with different market niches made up of people who will pay a premium for things produced in ways that give them the unique attributes they are looking for. A few years ago, for example, there was a livestock survey by a *Better Homes and Garden* consumer panel. They found that about two thirds of people said they would pay a premium for pork raised on a small farm, two thirds said they would pay a premium for pork raised humanely and two thirds said they would pay a premium for pork raised in an environmentally responsible way. I think there are some particularly good opportunities here for grass based systems because they have all those benefits, plus I believe they have are health benefits in terms of CLAs. But we make a mistake if we think that consumer support for those attributes is necessarily going to translate into the changes that we are looking for down on the farm, the kind of agriculture we want. It's not automatic.

I'll give you a couple of examples to tell you why I say that. The first farm that I am aware of to put pork into a natural food store was Premium Standard Farms, the hog operation of Continental Grain Company, one of the largest corporate farms in the country. I think at the time they were being fined by EPA for environmental violations and a civil judgment for environmental nuisance. But they were selling their pork in a major natural food store, advertising that their hogs had access to sunshine and fresh air, which I think meant that they had curtains on their confinement buildings to let sun in. All hogs have access to fresh air, because if you don't bring fresh air into a confinement building, they die. So it's a given.

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If you look at the natural beef companies now, at least half are having all their beef fed in very large feedlots. Their feedlots would look no different than any other huge feedlot. There are reasons for that. One is that food companies want to know that they can get the product when they need it – particularly with a specialty product. If they can develop a relationship with some really big operation that can meet all their needs, they know they will have the quantities they need when they need them. It is simpler for them because they have only one operation to oversee to ensure that the animals are fed consistently, and things are done predictably. They only have one operation where they have to enforce whatever production standards they have.

So if we want to capture the market for the kind of agriculture we want, one that's integrated back in with family farms and sustainable agriculture, then we need to do a couple of things. We need to set a meaningful family farm standard that can be used as a marketing tool. Most polls say that consumers trust family farms more than they do large corporate farms to provide safe food and to produce it in a way that is responsible. If we can band small family farms together to offer a product to food companies that can be labeled as coming from a small family farm, that will give them an edge with consumers. That will be worth something to those companies. So we need to develop a meaningful family farm standard tied to labor. With the exception of some very high labor crops, the family farm should be defined as one where most of the labor is done by the family that owns it.

Second, we need to develop new institutions and working relationships to connect farmers and consumers. Part of that is more direct local marketing and local food systems. I'll let other people talk about that. We don't do a lot of that in Nebraska, because we don't have many people. But another part of it is that family farmers and small sustainable farmers need to band together to market more effectively. One thing we are working on now is developing a regional co-operative of family sized farms to market live animals, produced sustainably and humanely. If a food company wants to market natural beef or pork, they will have a co-operative they can go to. They will know they can get the number of hogs or cattle they need, when they need them, produced on small family farms, in a way that meets certain guidelines that mean something to consumers and certain quality standards. Our hope is that this cooperative will put its farmer members in a position to negotiate for a fair price for the product.

The third strategy is that we need to reverse the bias in public policy towards bigness and against integration of livestock on family farms and against, frankly, family farms in general. In general, when we talk about family farming, the single most effective thing Congress could do to strengthen it right now, at least in commodity agriculture, would be to just stop subsidizing the biggest farms to drive their neighbors out of business. We have a commodity program today that says the bigger you get, the more money you get from the government. That means that the roughly \$15 billion that we spend per year on commodity programs does at least as much to help very large farms drive their neighbors out of business as it does keep small farms in business. The law basically

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says to large aggressively expanding farms that set the market for cash rent, that every time they add an acre, they get more money from the government. That ensures that every dollar of farm program payment just gets bid into higher cash rents, and ultimately goes to the landlords, unless the farmer owned the land previously.

But this all relates back to livestock production. As long as we keep throwing federal money away on such dubious purposes, we will not have the money to invest in the kind of initiatives that offer a future to family farming, to rural communities; initiatives that can help build a sustainable agriculture that reintegrates livestock production in agriculture. Think about what has happened in the recent appropriations bills and in the President's budget proposals. The Initiative for Future Farm and Food Systems had \$18 million a year for research to strengthen the viability of small and medium sized farms. It supported a lot of sustainable agriculture projects and a lot of work on sustainable livestock production. It went for one year and was then eliminated by Congress. They brought back a "light" version of it for \$5 million this year, after two years of absence. Again, it was cut right out of the budget. Farm Bill funding for the Value-Added Producer Grant program was \$40 million dollars a year. It could support organizing new cooperatives or could help family farmers band together. A lot of it went to sustainable agriculture projects, helping people band together to market organic and sustainably produced products. Congress cut 60% of it's funding.

The Conservation Security Program (CSP) was originally open to all the nation's producers. In its first year, it was open to only two percent of producers because Congress cut most of the money. I think the CSP is the most innovative new thing in the Farm Bill. It basically says to farmers and ranchers that we are going to pay you based on how intensively you manage your farm to protect the environment. To cut that is just wrong, because we all have an obligation to protect the environment. For too long farm programs have penalized the farmers who were the best stewards. When we talk about grass based systems, one factor is that farmers give up their commodity program payments. So finally we had a program that, instead of penalizing them for doing the right thing, rewarded them. The President, and particularly the House of Representatives, cut it, primarily so they could keep huge payments flowing to the mega farms to help them to drive their neighbors out of business. I just think it's wrong. It's wrong for the environment, it's wrong for farmers, it's wrong for rural America and we need to do better.

Well it's time to close. We've talked a lot the last couple of years about what it takes to make America strong and secure. Without a doubt, part of the solution is a strong military and appropriate domestic security. But I think there is more to making this nation strong. I believe that we can be truly strong only if all of our people feel a stake in its future, if they all have the opportunity to earn a decent income, to put down roots, to gain control of their lives and to gain a stake in the future of the American dream. That is something that livestock production, integrated on family farms, has provided to the people who produce food. It has meant that instead of just being a farm worker, they would actually have a chance to own the fruits of their own labor and to control their own work. That is important.

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It concerns me that America has been drifting away from the kind of a nation where everybody has a stake. The decline in family farming is just one small part of the drift. We can see other signs. Wealth today in America is more concentrated than ever in history, and the share of wealth controlled by the top one percent has almost doubled over the last 25 years. The gap in income is growing, and not just between rich and poor. There was a story two weeks ago in the *Washington Post* about how the gap between the upper middle class and the lower middle class is widening a lot. History teaches us to be wary of that.

My favorite historians are a husband and wife team, Will and Ariel Durant, who wrote a book about 30 years ago called the *Lessons of History*, in which they talked about some of the cycles they saw occurring over and over. They said one of the things that happened repeatedly was that great civilizations would arise and over time they would grow and become more prosperous. As they did so, wealth would become more concentrated. They wrote that either those civilizations took steps to address the concentration or ultimately they would collapse of their own weight, because too few people had a stake in the society to sustain it. They wrote about the fall of the Roman Empire. When the invading armies that toppled the Roman Empire entered the hinterlands, they were bracing for a fight, expecting to be met by resistance. They were met not by resistance, but by slaves listlessly tilling the soil. The point is that no society can be strong, no society can truly thrive, if its people don't have a stake.

So if we want to make America as strong as it can be, if we want to make America as sustainable as it can be to survive in the long haul, then we need to make America as fair as it can be, and as just as it can be, so that all our people who contribute to the nation's prosperity can share in it, and enjoy access to opportunities that give them a stake in the future of America and the American dream. In my judgment, reintegrating livestock production in a way that creates genuine opportunity for people who work with livestock is part of that. It is part of giving people a stake in the future of America by making the country just. That's not by any means the whole answer, but it's one part of it. That is why I think the issues to be addressed by this conference are important ones.