

Breakout 2C – State/Provincial Water and Environmental Efforts

Moderator Tim Kapucian, Senator from Iowa, opened the meeting and introduce the two panelists, Jeff Porter, USDA-NRCS Animal Manure Management Team; and Mike Naig, Deputy Director of the Iowa Department of Agriculture and Land Stewardship.

Manure Management and Water Quality

Jeff Porter discussed manure management, is a huge issue in the country. He calls his team 'The #1 team dealing with the #2 issue'. There is not just one solution to deal with the water quality issue. You need to take a system approach. If it is easy, it would have been done. Concentration of livestock facilities in certain areas of the country has brought about this water quality issue. A recent study shows that the number of farms is dwindling. There is a 4% reduction in farms from 2007 to 2012, but the number of animals does not go down.

According to [this NRCS study](#), 36% of animal feeding operations produce more manure on their farms than they have land to spread it on. Also in the report it said that there were over 200 counties that have excess manure. This number continues to increase.

A problem of distribution

Mr. Porter said he doesn't believe there is a nutrient problem, nor is there a problem with too many animals. What we have is a distribution problem – getting the nutrients to the land that needs it. We need to look at six functions.

- How many animals do they have?
- How are they being fed, and how are they dealing with the feed?
- How are they collecting and storing the manure?
- How is it being treated?
- How is it being transferred from place to place?
- How is it being utilized?

Evaluation options

Some evaluation options are:

- Look at land application – which is the best use of the manures. Only 5% of our cropland receives manure. The problem is getting the manure to where it needs to be utilized. Agronomic practice is one area we need to focus on. We import over 50% of our nitrogen fertilizers from other countries. We have it already in our manures.
- Injection of manure - If we inject our manures, it increases the efficiency and increases the amount of land you need.
- Biological practices – anaerobic digestion. The problem is that the nutrients that go into the digester come out unused. Digesters do not by themselves address the water quality or nutrient issues. Composting can help. Concentrating the nutrients will help with the transportation and distribution.
- Chemical applications, coagulation, nutrient partitioning, volume reduction.
- Thermo chemical processes – gasification, incineration, and hydrolysis. If you e some of these practices, you can see a 90% reduction in volume, making transportation more effective.
- Physical things that can be done – waste separation, pelletizing

- Feed management – an issue that is overlooked so often. You can reduce phosphorous in the manure by 50% just by feed management, and it does not impact the production of the animal.
- Early slaughter – a young animal is more efficient with food.
- Manure transfer – how to get it from Point A to Point B.
- Animal transfer – take the animals where the feed is, instead of taking the feed to the animals.
- Products to be produced – particle board is being made from manure.

There are many ways to address the issue of waste management, but there is not one silver bullet out there that will get rid of the problem.

He finished his presentation by saying his handouts are on the SARL website for anyone who wants to read them.

Livestock issues effect crop issues

Mike Naig next spoke, and focused his presentation on where livestock issues cross over to crop issues. But he emphasized Mr. Porter's statement that there is no silver bullet. One of the policy implications is that we need the flexibility to learn and develop approaches that are flexible and where we can apply new learnings and acknowledge that there is innovation that is needed to be successful.

In Iowa, there are roughly 30 million acres of land in agriculture. Up to 14 million acres of corn, which makes them #1 in the nation. Up to 10 million acres of soybeans, which makes them #2 to Illinois. 88,000 farmers, 400,000 separate land units. Average farm size in Iowa is 345 acres. They have highly productive, high organic matter soil, glacial soil, and weather that cooperates most of the time.

Within that 30 million acres of ag land, they have 9 million acres of land that is tile drained. This started in the late 1800s, and it is critically important to where they are in terms of production.

Iowa's Nutrient reduction strategy

The strategy was finalized 4 ½ years ago by a large group of stakeholders and experts. This came out of the discussions around the Hypoxia Zone in the Gulf of Mexico, which have been going on for decades. But in 2008 there was a [Hypoxia Action Plan](#) to address nutrients from the twelve states in the Mississippi River Basin. In 2011, there was the [Stoner Memo](#) from the EPA which is the foundation of why states should take nutrient management seriously across the Basin. It said EPA is 'encouraging states to work together to take ownership of the issue and show measurable results in water quality.' States, if they worked together to reduce the levels, could potentially avoid the regulatory approach to water quality that is currently being seen in the Chesapeake Bay.

There is an [Hypoxia Task Force](#), made up of 12 states in the area. They share ideas, share plans, measuring common elements across the states. Their strategy is to take the load reduction that has been calculated to reduce the size of the zone, model it and determine each state's share of that. Iowa alone has to reduce their impact by 45%, which is a large amount. This is a generational effort.

Hypoxia Task Force Strategy

How can states go about this?

1. Point and non-point sources, urban and rural are all in this together.
2. It recognizes that innovation is needed
3. Non-regulatory practice based efforts are best.

4. Have your universities do a science assessment of all the practices that would have a nutrient reduction impact.

What is Iowa doing now? The state funded demonstration projects. The other thing is implement a statewide cost share program for practices that are on the science assessment list. Since its inception, 4500 farmers in Iowa have tried a new practice as a result of the cost share program.

Questions followed that dealt with monitoring and de-nitrifying. Funding of the program and caps were discussed. The challenges of non-farmer owned land was mentioned. How to open the door for private engagement was explored.