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00:00:06,464 --> 00:00:08,633

I think one of the big issues in general is volatility.

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00:00:08,633 --> 00:00:12,429

You've got market volatility going on now with regard to just overall production

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00:00:12,429 --> 00:00:15,849

and and pricing and what's happening out there. Weather volatility of course.

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00:00:15,890 --> 00:00:19,352

You know coming off of last year where we've had very, very dry conditions

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00:00:19,352 --> 00:00:22,355

and then going to very wet conditions and nothing's ever quite the same again.

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00:00:22,355 --> 00:00:23,523

Ongoing disease pressures.

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00:00:23,523 --> 00:00:25,567

And we think about, you know, raise concern about the price of eggs.

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00:00:25,567 --> 00:00:28,486

And one of those things is we've got avian influenza.

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00:00:28,486 --> 00:00:30,989

That's moving of course, into dairy cows as a form of influenza.

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00:00:30,989 --> 00:00:34,409

So always that issue of whether it's pests  
in crops or it's disease

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00:00:34,409 --> 00:00:37,412

in livestock and animals.

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00:00:39,039 --> 00:00:40,957

We really integrate science, right?

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00:00:40,957 --> 00:00:41,791

So we look at it from

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00:00:41,791 --> 00:00:44,878

what's happening to soil health--we're saying  
in front of a field of pennycress here.

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00:00:45,211 --> 00:00:45,879

How does that interact with

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00:00:45,879 --> 00:00:48,131

crop systems?

How does that come into food systems?

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00:00:48,131 --> 00:00:50,467

And so we're thinking about that  
full spectrum

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00:00:50,467 --> 00:00:54,137

that is required to take something  
from its inception from genetics

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00:00:54,679 --> 00:00:58,266

for example, and then get that

into a usable crop or usable product

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00:00:58,266 --> 00:01:01,770

that might be out there being adopted  
by farmers or others in the industry.

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00:01:04,522 --> 00:01:05,106

Big data is

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00:01:05,106 --> 00:01:08,401

becoming really in practice,  
and use by farmers is becoming huge,

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00:01:08,401 --> 00:01:09,861

as they're looking to both increase

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00:01:09,861 --> 00:01:13,031

the efficiency of their crop inputs  
and crop production, or crop nutrients.

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00:01:13,531 --> 00:01:16,868

It's certainly becoming a part of our  
research, as we're able to now identify

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00:01:16,868 --> 00:01:18,578

what's happening  
down to the molecular level

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00:01:18,578 --> 00:01:21,456

in a crop, what's happening out there  
with the weather and the climate,

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00:01:21,456 --> 00:01:23,083

what's happening, water and plant growth

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00:01:23,083 --> 00:01:25,085  
and those kinds of things  
out of the environment.

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00:01:25,085 --> 00:01:26,086  
So our ability to go from that

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00:01:26,086 --> 00:01:29,380  
very small level, to go to the big  
what's happening out there in the world

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00:01:29,798 --> 00:01:32,801  
is really having an impact  
on how we think about agriculture.

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00:01:35,678 --> 00:01:37,680  
Farmers have always been looking for  
that next new thing

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00:01:37,680 --> 00:01:39,015  
to improve their bottom line.

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00:01:39,015 --> 00:01:43,436  
And as a state, our research we've shown  
generates between, you know, \$20

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00:01:43,436 --> 00:01:43,937  
for every dollar

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00:01:43,937 --> 00:01:47,107  
invested to \$40 for every dollar invested,  
depending on what it is.

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00:01:47,565 --> 00:01:49,567

So there's a tremendous impact.

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00:01:49,567 --> 00:01:52,946

So we just have a place that when we hit agricultural research on the ground here,

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00:01:53,279 --> 00:01:55,240

it has one of the biggest impacts in the country.

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00:01:59,452 --> 00:02:00,453

It's really critical.

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00:02:00,453 --> 00:02:01,955

And I think what people often think is

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00:02:01,955 --> 00:02:03,873

the private sector does a lot of research now.

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00:02:03,873 --> 00:02:06,167

And they do.

They're important partners for us.

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00:02:06,167 --> 00:02:08,086

What we do is some of that foundational research.

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00:02:08,086 --> 00:02:10,463

So we're standing out here by this pennycress.

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00:02:10,463 --> 00:02:13,091

And no agribusiness is going to spend 20 years

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00:02:13,091 --> 00:02:15,426

this has been in the making  
to do that work.

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00:02:15,426 --> 00:02:17,595

And that builds the foundation  
for the private sector.

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00:02:17,595 --> 00:02:19,097

If you cut that public funding out

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00:02:19,097 --> 00:02:22,433

and that base foundational piece,  
that long term look at it, you're

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00:02:22,433 --> 00:02:25,186

really cutting out those businesses,  
being able to take that research

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00:02:25,186 --> 00:02:28,148

to the next level  
so farmer can use them broadly.

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00:02:30,441 --> 00:02:33,611

Our ability to look broadly  
at what's happening in this intersection

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00:02:33,611 --> 00:02:36,656

between our natural resources,  
our environment, our food systems,

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00:02:37,115 --> 00:02:38,408

and put that all together now

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00:02:38,408 --> 00:02:41,411

with the science and technology  
that's there with big data, for example,

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00:02:41,786 --> 00:02:44,414

and the ability to actually  
make contributions to that going forward,

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00:02:44,414 --> 00:02:46,791

which is gonna be critical  
for future generations.

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00:02:46,791 --> 00:02:48,585

And I always say, you know,  
sounds like a big idea,

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00:02:48,585 --> 00:02:51,588

but University of Minnesota, you know,  
bring up the Norman Borlaug piece

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00:02:51,880 --> 00:02:55,258

once upon a time had it impact  
the entire world agricultural systems.

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00:02:55,258 --> 00:02:56,676

The research done here.

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00:02:56,676 --> 00:02:59,053

And I think we need a similar type,  
occurrence.

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00:02:59,053 --> 00:03:00,555

Now, we need to make that investment,

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00:03:00,555 --> 00:03:04,809  
make those contributions to ensuring  
we can feed people on on fewer resources.

67  
00:03:05,226 --> 00:03:07,896  
We can provide healthier lives  
and do that on an ongoing basis.

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00:03:10,773 --> 00:03:12,734  
There's  
tremendous interest in sustainability,

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00:03:12,734 --> 00:03:14,194  
of course, and that issue of

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00:03:14,194 --> 00:03:16,946  
they're looking at their future  
and their next generation.

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00:03:16,946 --> 00:03:19,490  
People from the cities  
can come here and experience

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00:03:19,490 --> 00:03:21,576  
what's happening out there in greater  
Minnesota,

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00:03:21,576 --> 00:03:24,370  
what's happening in our Northwoods,  
what's happening on our lakes and rivers.

74  
00:03:24,370 --> 00:03:27,373  
So their work is relevant,  
going forward into the future.