Testimony House Committee on Agriculture Subcommittee on General Farm Commodities and Risk Management regarding the hearing:

The Future of Farming: Technological Innovations, Opportunities, and Challenges for Producer

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Deborah Casurella, CEO of Independent Data Management LLC offers the following testimony for the record on the hearing: 'The Future of Farming: Technological Innovations, Opportunities, and Challenges for Producers.

The company was founded in 2012 and funded primarily by farmers to provide technology to make it easier for farmers to submit acreage reports to the USDA. That sounds pretty simple, but like many things in agriculture, it is a bit more complicated than it appears.

We started with software that could take data from a wide variety of precision ag equipment (about 110 different formats), translate that data into usable annotated maps, overlay the government's description of the field called a Common Land Unit (CLU) on the map, give the farmer tools to review and fill in any missing data and print documents that the farmer could take to their crop insurance agent or the Farm Services Agency (FSA) and report. We've grown into a full function acreage reporting suite of tools including a mobile version that allows data capture in the field.

I have over 30 years of hands on experience delivering practical operations and information technology solutions to solve real business problems. I have worked in environments ranging from small startups to large multinationals in insurance (including crop insurance), transportation and health care.

I chaired the AgGateway data privacy policy committee that, together with American Farm Bureau Federation produced the first widely recognized set of privacy standards for ag data. AgGateway is a leading ag industry group. Those privacy standards have been largely adopted by more than 50 ag technology companies.

I am going to talk about precision agriculture (precision ag) technology, how that technology has impacted farmers and their interactions with government programs, USDA and the crop insurance companies and I will suggest that a key way to help farmers, the government and the taxpayers realize some of the potential benefits that have been unlocked is to open the 3rd party channel for acreage reporting and give farmers the option to report from home using commercial off the shelf (COTS) software much like the IRS did in 1986 by allowing taxpayers to use products like Turbo Tax and other third party software to report income tax.

In 2009, I became CIO of an Approved Insurance Provider (AIP) and was surprised at the widespread use of technology in farming. Most impressive are the control systems that run the equipment and the precision agriculture instrumentation that guides them to allow farmers to achieve better yields, use fewer resources, and reduce the impact on the environment.

The adoption rate of this technology is increasing. Some estimates say precision ag is already used on close to 70% of crop acres.

One of the significant by-products is data. Farmers and ranchers are collecting all sorts of information about their operation, but they are last to the trough to get benefits from their own data. The "big ag" companies and equipment manufacturers find ways to collect and aggregate data and use it to their advantage but the application of farm data to directly benefit the average farmer is rare.

When I refer to tabular data, I mean words and numbers. When I talk about geospatial data, think maps.

The Farm Service Agency (FSA) requires farmers and ranchers participating in their programs to submit an annual report on all cropland use on their farms. Crop insurance agents for providers approved by the USDA Risk Management Agency (RMA) also require these reports. But we don't make it easy for the farmer. For years, farmers and ranchers have been required to enter the common information from their acreage reports at both the county FSA office and at their crop insurance agent's office.

Farmers using precision ag start with an electronic version of their planting information including the exact geographic location of each and every seed in the ground. The current reporting process will see that precise data translated somewhere between 3 and 8 times, back and forth between tabular data and maps and from electronic formats to paper and back, all to end up in electronic form (where it started) in the government systems.

For the past seven years, USDA has been working on a new system to better collaborate and streamline the collection of common information that can be securely and electronically shared between FSA and the Risk Management Agency (RMA). For the past 3 crop years, farmers and ranchers been able to provide the common information from their acreage reports just once - - either to FSA or to their crop insurance agent - - and have that common information securely and electronically shared with the other. This is a direct result of USDA's Acreage Crop Reporting Streamlining Initiative (ACRSI) which was reauthorized in the 2014 Farm Bill.

The reporting standard for both RMA and FSA includes geospatial data (maps) along with regular crop and acreage information but much of it is not required. This causes at least two problems. First, even if a crop insurance company collects the geospatial data (and some do), they don't provide it as part of their report because it is not required. And second, FSA and RMA do not require the exchange of optional data with each other. This means that the interagency exchanged data is usually ignored because, to use the data, each agency requires some of the optional data. The end result is that frustrated farmers must visit both the FSA county office and their crop insurance agent's office and share the same information to complete reporting.

There are three main reasons for this:

1. Farmers must validate and sign their respective acreage reports in each office. Electronic signature is accepted in crop insurance, but not yet in FSA reporting.
2. Farmers must provide the program-specific information to the second agency that was not required to report to the first agency.
3. Farmers must complete maps (the geospatial data).

USDA knows this is a problem and has been actively working on it. In 2015, as part of USDA's Acreage Crop Reporting Streamlining Initiative (ACRSI), the FSA conducted a pilot for electronic acreage reporting. One of the things the pilot tested was allowing farmers to use 3rd party commercial software to report their acres. Independent Data Management, using MyAgData® participated as the 3rd party software provider and the pilot was an overwhelming success on several levels:

Farmers that reported using precision ag data saw an average of 4.7% fewer acres reported. The increased accuracy of precision ag data meant a lower crop insurance premium for the farmer, decreased premium subsidies funded by taxpayers, lower indemnity for crop insurance companies and the Risk Management Agency (RMA), and a reduction in claims as yield was not

diluted across unplanted acres. Ultimately this will result in higher guarantees for a producer. Think of the numbers with expanded use. If 25% of acres were reported using a grower's accurate field boundaries and the average was a reduction of reported acres of 4.74%, producer annual premiums and taxpayer subsidies could be reduced by up to $179M. That's only crop insurance premium. What are the savings on indemnities? What if this also applied to Farm Programs?

The 3rd party software provided the bridge because its reporting included not just the required data, but also the optional data and one reporting could be used for both FSA and RMA.

Just using map-based tools to do either precision ag based reporting or electronic manual reporting provided a big reduction in the effort involved to report for the farmers and for USDA.

Despite this success, the 3rd party channel remains closed.

USDA can accept electronic transmissions from any 3rd party. The standards have been out to the ag industry for a year and used for 3 years by the agencies. The FSA and Risk Management Agency (RMA) both understand the benefits. The National Association of FSA County Office Employees (NASCOE) has been supportive of ACRSI. All that is required are minor system changes and a policy change to open the third party channel for reporting.

Farmers plant fields. Let them report what they plant. It is more accurate, saves them time and money, saves the agencies time and money and saves taxpayer money. And the more accurate data helps not only current programs, but future ones be more effective and more efficient saving even more time and money.

Thank you.

Fields as Planted by a Producer

TAXPAYER PAID SUBSIDIES AND BENEFITS FOR CROP INSURANCE AND FARM PROGRAMS COULD BE REDUCED BY 4.73% IF ACRES WERE COLLECTED USING A PRODUCERS ELECTRONIC FIELD BOUNDARIES.

Producer Fields & Common Land Units (CLUs)

WHILE LINES ARE THE PRODUCER'S CLUS.

YELLOW REPRESENTS PLANTED CORN, DARK GREEN IS BEANS, RED HASHING IS CROP PLANTED OUTSIDE OF A CLU, LIGHT GREEN IS IDLE GROUND WITH A CLU.

Customer Connection: Certifying- Can it REALLY be *THAT Painful?* **6 July 2015**

Complaining? Who's complaining?

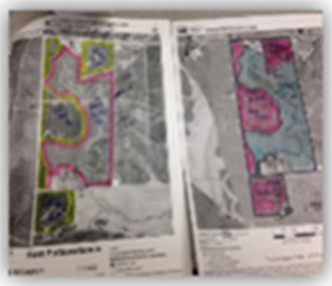
I often hear people joking that as farmers, we like to complain about everything. It hasn't rained – so we complain. It has rained too much – so we complain. Crop prices are high but our yields are low – so we complain. Our yields are high but crop prices are low- so we complain. Equipment, fertilizer, seed costs... way too much, so we complain. And *SOMETIMES*, I admit we might be blowing hot air. However, one complaint is definitely legit – and I can say that because I experienced it firsthand, in the flesh last week. Which one? Certifying acres. I went in thinking "how bad can it be???" I came out shaking my head and mentally exhausted.

Here is the skinny on acre certification. Each year, farmers are required to go into their local county FSA (Farm Service Agency, which is a division of the US Department of Agriculture or USDA) office to verify our crops and acres. We do this post-plant so we can accurately report the number of acres, type of crop and planting date for each field. If we don't certify, we won't be eligible for any applicable federal crop insurance or generalized Farm Programs. It really shouldn't be too difficult given that most farmers keep accurate records of each field (whether documented via GPS or manually). We simply have to verify and sign. Easy peasy (as my kids would say). Or Not.

I would like to begin by saying this blog is in no way a reflection on the kind ladies in the FSA office who helped us. They were terrific - and nearly as frustrated as we were. Our original appointment was for 3:00pm in Oakland, IA- about 35 minutes away. See, you certify at the FSA office in the county that your farms are in... so for the portion of our operation that is in Pottawattamie County, we go to Oakland and then to Atlantic for our Cass county farms. Anyway, [redacted] my husband) was delivering corn to the elevator and wound up 10 trucks deep in line to unload. As a result, we pushed our time slot back and it was nearly 4:00 before we arrived. Unfortunately, they close at 4:30.

We brought along our planting data from our GS3 GreenStar™ monitors, which show the date and acre quantity of all of the fields we planted. Keep in mind that "field" is as we (the farmer) define it. Upon arrival, they handed us several satellite imagery pictures of our farms. First step: use a sharpie to outline the shape of the field, being careful to exclude any building sites, roads, or other non-planted areas. Step 2: use two separate colors (one for corn, one for beans) to highlight where each crop is planted. Step 3: inside each of these areas, write the crop, total acres and planting date. For the most part in a crop rotation like ours (corn → beans → corn → beans), it should be nearly opposite of what we certified last year, unless we put in a corn-on-corn rotation. Again- should be easy peasy. Well, herein lies the problem.

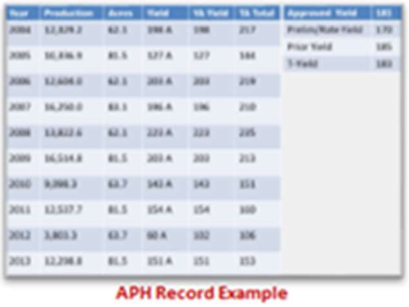

Tracing field outlines


'14 & '15 Certifications - Same Field

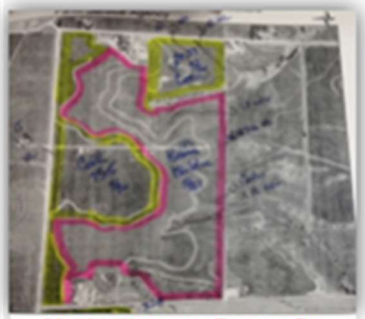
The FSA defines our fields as common land units, or CLUs, using a GIS system that is different than the GPS we use in precision farming. They define a CLU as "an individual contiguous farming parcel, which is the smallest unit of land that has a permanent contiguous boundary, common land cover and land management, a common owner and/or a common producer association". In its simplest form, this sounds much like a farmer would define a field, however the difference is that the FSA designates a field to be "a tract of land separated by permanent boundaries, such as fences, permanent waterways, woodlands, or crop lines that are not subject to change due to

farming practices". Translation: their field definitions don't match ours. Again, because this certification is directly tied to future potential crop insurance claims and/or farm program payments, it is important for both parties that we are as accurate as possible.

For example – let's say we certify that in CLU Field 8, 100 acres of corn were planted on 26 May. Later that summer, a severe wind storm comes through and flattens a good portion of our crop, causing it to be totaled out for damages. If only 94 acres were actually planted, then the government pays out way more than they should. But, if 105 acres were actually planted, we (the farmers) are shorted. More importantly, however, accuracy is critical because it directly impacts our APH, or Actual Production History. If you aren't familiar with APH or how it is used in crop insurance, check out the blog "Sign Me Up – The March 15 Deadline Has Passed" I wrote a couple of years ago. *(Disclaimer- while the crop insurance system changed some with the 2014 Farm Bill, the key information remains the same).* Here's how that works: Let's say we planted 100 acres that yielded 200 bushels per acre. That puts this field's APH for this year at 20,000 bushels. But, if we had certified that there were 106 acres planted – and we yielded this same 20,000 bushels... this field's APH would only 188 bushels per acre (20,000/106). When your crop insurance pays out at 80% (or maybe lower) of your APH, you are pretty protective of ensuring it is accurate!!



APH Record Example



Marking Waterways, Terraces, Etc

What made this experience so painful? Here is just one example...We had a field that our planter monitor said had planted 71.03 acres. The FSA had it as 69.5 acres. Which of us is correct? How can we tell? Here is how it went down: We looked at each of their satellite pictures and notated the size of every terrace, headland and grass waterway (as these weren't planted) so these areas would be taken out of the overall land measurements. You may not be able to tell from the picture, but in tiny print it says 1 = .24 ac waterway, 2= .4 ac headland, 3a and 3b= two parts of a headland around a building totaling .52 ac, and so on. It took 2 of them and 2 of us going over the maps, printouts and the computer system to finally find a 1.89 acre headland that was also indicated as a 1.89 acre crop stand, thus accounting for it twice. One was marked as "9" (which we found on the map) while the other showed up as "H" (that we couldn't find). Once we'd figured that out, it was a pretty easy fix....until we realized we were now off by 5 acres. WHAT? Our "fix" took us in the wrong direction!! Ultimately, we got it straightened out and came within ½ acre of one another. By then, of course, the office was long closed. Thankfully most of our other farms and fields matched pretty closely and we didn't have too much to deliberate on.

At [redacted] we offer producers Automated Crop Reporting, which makes working with our crop insurance agent much easier and more accurate. They will accept our GPS records as required proof for claims, which can also be submitted electronically. However, with certification, because our GPS differs from the FSA GIS system, they cannot accept our precision records as an accurate means of certification. It is a very manual process (I never expected to be coloring maps on paper) that must be repeated in every county we farm in, every year. I'm sure many of our customers are as thankful as we are that we only farm in 2 counties. Still, even 1-2 certifications can be painful. Imagine having to do this in multiple states!