

## **What's Needed to Improve USDA Estimates and Forecasts?**

*NASS and World Board willing to discuss, act on changes if needed - Funding key issue*

Many farmers, traders and analysts will not likely remember when USDA put out its WASDE report the day *after* key USDA reports. In fact, many will not remember when there was no WASDE report as it is now. More will remember when the WASDE and some NASS reports were released in the afternoon before changing to an 11 a.m. CT release time, a change some analysts still think is a mistake that gives high frequency traders and/or extremely fast Internet users an advantage.

Most will also not remember when there was no World Agricultural Outlook Board (WAOB). The formation of the WAOB helped improve some of the communication problems USDA was having at the time, as various USDA officials from different agencies commented on supply and demand issues, frequently confusing the marketplace.

There also were several problems in USDA releasing updated supply/demand forecasts a day after Crop Production and other key reports but by combining the releases, it halted speculation by some inside and outside of USDA as to what the forecasts would be (ending stocks, exports, etc.). Even USDA top economists got into the guessing game at the time, roiling markets.

### **A look at the WAOB**

Some say the impetus for the WAOB-issued WASDE report occurred in 1972 when the former Soviet Union orchestrated a large purchase of U.S. grain at lower prices than demand indicated. This incident, commonly referred to as "The Great Grain Robbery," led to a series of congressional hearings on improving USDA's economic intelligence system. The response was to create a process within USDA to bring all relevant information together for review within OCE's WAOB, which was established by Secretary of Agriculture Bob Bergland on June 3, 1977, with the goal of assuring the consistency, objectivity, reliability, and timeliness of USDA's economic situation and outlook publications. The Soviet action also led to the launch of the USDA Export Sales Reporting system, but that is not the focus for this item. However, other sources more accurately say the major reason for establishing the World Board was testimony ([link](#)) by Howard Hjort, before he became a USDA senior official.

The WAOB applied stringent security procedures to interagency coordination of the WASDE report. From very early morning hours before its 11 a.m. CT release, doors in the "lockup" area are secured, window shades are sealed, and telephone and Internet communications are blocked. Once analysts present their credentials to a guard, they enter the secured area to finalize the WASDE report. Communications with the outside

world are suspended until the report is released. The release date for each monthly WASDE report is published months in advance.

To produce the WASDE report, WAOB manages a system of Interagency Commodity Estimating Committees (ICECs). WAOB senior commodity analysts chair the ICECs that are comprised of representatives from key USDA agencies, including the Economic Research Service (ERS), Foreign Agricultural Service (FAS) and the Farm Service Agency (FSA). There is an ICEC for every major commodity group (i.e., grains, oilseeds, cotton, sugar, livestock, dairy, and poultry). The ICECs rely on FAS for attaché reports and analysis of foreign commodity developments, ERS for domestic and foreign regional assessments, National Agricultural Statistics Service (NASS) for U.S. crop and livestock estimates, FSA for farm policy input, and Agricultural Marketing Service for domestic market information. *(Although NASS estimates are adopted by WAOB in the WASDE, NASS is not a part of the ICECs. After completion of the NASS estimates, they are provided in Lockup to WAOB for their incorporation into the WASDE.)* A key ingredient to WASDE estimates and forecasts is weather information. WAOB agricultural meteorologists continually monitor domestic and foreign weather developments and prepare crop impact assessments.

### **A look at NASS and the production estimates for U.S. crops**

NASS is the statistical branch of USDA and a principal agency of the U.S. Federal Statistical System. NASS also conducts the United States Census of Agriculture every five years. [Link](#) for a historical look at agricultural statistics. [Link](#) to a key event and other things in NASS' history.

A scandal involving advance knowledge of USDA's crop forecasts by a New York cotton speculator that occurred in 1905 led to the establishment of the Crop Reporting Board (now called the Agricultural Statistics Board/ASB). The Crop Reporting Board consisted of several statisticians who provided an independent review of the survey data forwarded from NASS's regional offices. *(At that time NASS had state offices. Regionalization of those state offices occurred much more recently.)*

In addition, a secure system of data collection and release — referred to as the "lockup" system — was established to prevent early release or advance knowledge of USDA's crop forecasts. Field offices forward their estimates to NASS headquarters in an encrypted format, where they are unencrypted and combined under the secure lockup system and released at preannounced scheduled times to the press and public by the ASB.

In 1961, under a USDA-wide reorganization, NASS's immediate precursor — the Statistical Reporting Service (SRS) — was established. In 1986, the SRS was renamed as NASS and the Crop Reporting Board was renamed as the ASB.

Three issues related to NASS' survey methodology and crop estimates are the focus of lawmakers and users of USDA reports. First, a trend has emerged since the early

1990s of declining NASS survey response by farmer participants, and some say growing inaccuracy of some farmer responses. For most crops, NASS production estimates are based on data collected from farm operations via grower survey responses. Lance Honig, Chief of Crops Branch at NASS, added: “This is true; however, it implies that estimates are based *exclusively* on producer reported data. We utilize many additional sources of data, including objective yield, satellite data, administrative data, etc.). The quality of NASS crop acreage and production estimates depends on a high level of participation and truthful assessments by agricultural producers. As the number of respondents falls, some say the statistical reliability of estimates and forecasts declines and the value of NASS estimates for a host of other purposes declines as well. But Honig responded: “I’m not sure this is a fair statement. I agree that less data (lower response) leads to increased variability of the resulting survey indications but doesn’t necessarily make the data less valuable.”

The second issue: the declining survey response impacts more localized or regional estimates first, particularly county-level estimates and those programs that are based on county-level data. In particular, insufficient response rates in some counties have led to unexpectedly wide discrepancies across counties in past farm program payment rates under the county-based revenue support program — Agricultural Risk Coverage (ARC-CO) — established under the 2014 Farm Bill. When those discrepancies generated concern about whether the new revenue program was working as intended, changes were made to program payment structure, lessening the wide discrepancies among some county and crop payment levels.

Third, market participants and policymakers alike insist that NASS estimates be unbiased and objective so as not to influence market prices or volatility. Analysis of NASS data suggests that it is both objective and trustworthy; however, some note that variability of data as measured by market price reactions to NASS estimates appears to have increased in recent years, especially the past few years, not only via NASS estimates but from World Board forecasts. This could also be due in part from changing the release time from the afternoon to late morning while trading is underway. NASS’ Honig: “Just because market reactions are more variable does not necessarily mean that the NASS estimates are the cause. Market participants’ reduced accuracy in predicting USDA estimates could be due to other factors.”

Veteran USDA watchers from outside government say a possible NASS issue may have started with a decision in 2019. That is when NASS announced it was making some changes in how it projects corn, soybean and cotton production and yields in the August Crop Production reports. Among the changes announced, NASS eliminated its “Objective Yield” survey — a field survey — for corn and soybeans, as well as for cotton outside of the state of Texas. NASS continued to conduct field surveys for the September, October and November Crop Production reports for corn, soybeans and cotton.

In August, NASS uses a farmer survey and satellite information to forecast production and yield for corn, cotton and soybeans. This year’s report is Aug. 12.

Some think the loss of USDA's Objective Yield (OY) data in August may be one of the reasons why USDA significantly missed the size of the 2020 cotton crop, and some past issues with other crops. But Honig disagrees with this assessment. "Before making the decision to delay the start of OY until the September forecast," he said, "we reviewed 20 or more years of historic data and determined that the value it was bringing to the process in August was quite limited."

At the time of the OY change, Honig, said: "When you look at the Objective Yield, obviously what we are doing very early in the season is counting plants. And the real strength in the Objective Yield comes when the plants are a little bit more developed."

Until September, USDA mainly relies on survey information from farmers and satellite information. "So, we really felt like, that early in the season, we can get the results we need from those efforts and just delay the beginning of those Objective Yield plots being laid out," Honig said when USDA made the change. The sample counts in the Objective Yield surveys from September through November were also lowered and adjusted for corn and soybeans as well.

### **Declining response rates and NASS estimates**

Let's take an additional look at some of the prior issues mentioned regarding NASS and the World Board, and a few more based on interviews with farmers, private analysts, and former and existing USDA officials.

NASS is having declining response rates to their farmer surveys. The reason or reasons for that are hard to answer. A typical reason cited by some is that many farmers simply do not trust the government, and this is not a current development. Even so, NASS remains the "gold standard". Short of paying farmers to respond to surveys, it's not clear there is an answer to this issue.

Farmers continue to challenge the accuracy of NASS data, but then some producers will tell you they don't give honest responses to USDA inquiries. That begs the question of how farmers can be upset if they themselves are not providing accurate responses to questions asked by NASS. Farmers cannot have it both ways.

Some of the above could be answered by what a growing number of farmers think — they do not "need" the NASS statistical-based data, tending to favor social media. Some remark they see all they need to see on what the crops are like by using social media. Only problem is that many social media postings tend to be of the extremes — the worst of crops or best of crops that are out there. And there is a whole lot of crop in between that. Thus, the solution is not to eliminate the publication of certain information collected by NASS, such as in-season and end-of-season district level estimates for annual crops which was initiated by USDA with no directive from Congress, but rather enhance reporting and published information to reassure the data is valid, say veteran users of USDA information. Honig adds that "without NASS as the independent, unbiased source of data, the market volatility would increase dramatically due to the wide range

of opinions of crop size from private entities. Additionally, the largest entities with the greatest resources would have a significant advantage over smaller groups, and especially individual producers.”

## **WASDE report issues**

As for the WASDE report, questions are rising. But WASDE is not NASS — for May-November, WASDE has some type of survey data to work with. In May and June, it is at least a survey-based winter wheat production estimate. For July it is the survey-based all-wheat estimate. And for August-November, it is the survey-based estimates of spring-planted crops. WAOB’s main forecast tasks are more subjective. And while those questioning World Board forecasts may appear to be numerous because of complaints, the WAOB certainly has its supporters and defenders.

The questions focus on how WAOB analysts compile the resulting balance sheet forecasts, taking that supply data and working through the various demand components. There are some statistic-based items on that side via the monthly industrial reports which provide information on the level of corn used to make ethanol and the level of soybeans used to crush for soymeal and soyoil. That at least tends to narrow the assumptions made by the WAOB for other components of the balance sheet. For example, WAOB analysts no longer have to "assume" an ethanol yield when they assess that usage category. They have the statistical usage data on corn used to make ethanol and then the Energy Information Agency (EIA) data on production of the corn-based fuel. So, they are at least dealing with more accurate extraction rates.

Feed/residual: This one is perhaps the hardest for WAOB analysts as it relies on grain consuming animal units and an assumption of feeding levels. Of course, every livestock operation feeds their animals differently. And sometimes those rations once established are altered by other events, including animal efficiency, weather conditions, availability of alternative feeds that are more-competitively priced and/or pasture. While some dismiss it as feed and "fudge," that may be a somewhat accurate description. There are in some balance sheets an "unaccounted" use category like cotton. Imagine the howls of protest in grain markets if USDA separated out the residual for "unaccounted." One can hear the questions of "How can they say it is unaccounted? It has to be going somewhere!" One can hear the questions of "How can they say it is unaccounted?" Another contact said: "USDA needs to survey how much corn and soybeans and wheat is in transit each month... via rail and barge that will shrink the residual. They should also survey livestock producers." To add anything in the current funding environment is difficult, especially regarding outlook analysis — *more on that, below.*

Exports: The WAOB analysts have data checks here. Weekly grain inspections provide one layer of data, but those are just that — grains/oilseeds inspected for export. There are also weekly Export Sales recaps that provide another glimpse into what exporters report to USDA as being exported. But those two are not the final word. There is Census data that trumps all the rest. And those figures are lagging — i.e., export data from May is released in early July, June in early August, etc. But those are accepted as

the bible on exports. Given that, it forces WAOB analysts to make some assumptions on exports and in the past year some major glitches have occurred, especially regarding China corn imports. Says one grain industry analyst: "China corn import data should come from major origin shipments of corn to China by month... not just China arrival data which is not reliable."

### **Major questions on China corn imports**

Country crop estimates and country import forecasts are other topics garnering more focus. The WAOB has chosen to adopt "official" estimates from other countries — for the most part. Sometimes they will vary from those official forecasts from other governments if their own intelligence says otherwise.

A particular dicey situation is China. China had been reluctant to purchase beyond their announced TRQs for several grains, including corn. However, that changed in the past 12-18 months in the wake of the Phase 1 agreement with China. That saw China start booking more and more U.S. corn only to see USDA leave its forecast for Chinese corn imports from all destinations — and U.S. corn exports to all destinations — woefully shy of the levels signaled by export sales figures and forecasts at the time from some private industry analysts. Private industry estimates of China's total corn imports needs were forecast by some at 20 million to 30 million tons when USDA was holding its forecasts of China's total corn imports at 7 million tons. Yes, some of those shipments could be canceled, not shipped or rolled forward to another marketing year. But those who accurately forecast China's corn imports needs months ahead of USDA say government analysts had some information available, especially as sales to China kept piling up. U.S. corn producers say that the very slow USDA realization of China's big corn import appetite cost them money in early season selling of their crop.

Regarding the China corn import forecast, USDA Chief Economist Seth Meyer responds: "The article points out some instances where the WAOB was initially out of step with industry forecasts, particularly on corn exports to China. It is a fair point to note that the WAOB forecasts were initially slow to anticipate such extraordinary growth in those sales, but it's incorrect to assume that those forecasts were made without careful consideration of all available data and evidence. Evidence at the time, including the existence of the TRQ, historic trade patterns, and statements by government officials provided reason to be cautious in forecasting what would be and has become a historic shift in global corn markets without precedent. However, as evidence grew, WASDE forecasts were consistently adjusted to reflect this new market reality, and each month all WASDE forecasts reflect the best information available at that snapshot in time. As for what the final volume of U.S. corn exports to China will be this year, it's still a forecast, and only time will tell. What the situation also highlights is that as China has emerged as a key driver in agricultural markets, its internal markets have become no more transparent to observers."

Some say the recent country forecasts exposed reliance on foreign government forecasts or actions. WAOB analysts have had a long history of not relying upon what

"traders" think on a given country's import demand needs. But the world grain trade has shifted over the years, and it appears it is time for the WAOB to perhaps rethink their reliance on government-linked information, outside analysts note. USDA's Meyer says, "The WAOB always evaluates the reliability of foreign estimates and may deviate from those estimates at various points in the marketing year as the situation dictates."

When the evidence was stacking up in the form of rising sales of U.S. corn to China, the WAOB fell back on their reliance on official government figures, including that China clearly is exceeding its corn TRQ as they have never previously done. But now the World Board has a precedent they can use for future forecasts of China corn demand: China exceeded their TRQ and now have a period of big corn purchases from the world. But initially, had WAOB made that assumption early, would they have opened themselves to criticism for forecasting something that had never happened before? Most likely. This is where perhaps the trade cannot have its cake and eat it too.

The China corn import situation recalls the time when China started becoming a major importer of soybeans. The writer of this special report vividly recalls Willard Sparks, founder of Sparks Companies (which became Informa and other names), went to China and after learning of China's coming big appetite for world soybeans, Sparks instructed his analysts to significantly increase the firm's forecast for China's total soybean imports, including from the United States. The information at the time was so new and unusual that some Sparks' clients criticized the forecast. As it turned out, Sparks was too low on their forecast and ever since China has been the world's largest soybean importer.

A U.S. industry contact who was significantly ahead of China's corn import needs emailed: "USDA does not add up the U.S. shipments of corn with the outstanding unshipped corn sales to China. Their errors are grossly understating U.S. corn exports since October. China ag Imports in 2020-21 are the most important event in agricultural trade ever and the USDA WAOB has badly missed this forecast event. Even today with just a few weeks remaining in the *Sept./Aug.* marketing year, USDA is understating China world corn commitments by 5-6 MMT. Their annual marketing year price forecast is misleading... where they forecast a weighted average of 2020-21 corn prices on farm. USDA's WAOB uses China import data which cannot be verified and is misleading to the market. USDA does not release bilateral trade data. How to fix this: Congress should require USDA to issue a weekly corn matrix of trade each month (same for wheat and soybeans, meal and vegoils)... a matrix based on each major origin and major destinations for the top destinations and origins and publish that each month." *(Note: USDA's NASS in September releases average crop marketings by month. Also, some observers say a matrix would take substantial time putting together without much improvement in forecast accuracy. Others, however, say it would be helpful for USDA to list the top five importing countries for key commodities each month on a cumulative basis.)*

*(Note: The Foreign Agricultural Service does publish monthly reports on exports and imports by country of various commodities, but not a matrix of U.S. corn, soybean or*

*other crop exports by destination. As noted, some say USDA needs to show bilateral trade.)*

USDA's Meyer responds: "The publishing of the price received by farmers is in no way misleading. Farmers market their crops in different ways (forward marketing and cash as two examples) and that marketing also varies over the marketing year. What price would better reflect the price at which the crop was marketed, that producers received, and customers paid?"

The vast network of USDA attachés is another source of information. But as every single report issued from those foreign posts notes, they are not official USDA forecasts. But sometimes their forecasts align more closely with what markets expect and are not adopted by USDA as official forecasts. They are based on the attachés' network of information within a given country. But are those sources used by attachés' always accurate? That is an "internal" accounting by the attachés that most likely will never see the light of day. It would be akin to keeping a track record of all the private sector pre-report figures compared with the actual figures and then dismissing those who are not very close at all. The attachés must be trusted to glean information from their contacts, including likely field trips within most countries. But as with any information, can it be verified to the point of being adopted wholesale by WAOB? The answer most likely is no.

### **Tools that will see expanding use as they improve**

But the tools are getting better for the use of satellite data and other monitoring services relative to foreign production of several crops. The quality of that data continues to improve and given the advancements in technology, it will continue to improve. Is it at the point where it can be a totally trusted information source? Not yet. But that should become even better as the technology improves. Can the exact crop be determined via that satellite imagery? For some crops yes. But for others not as much. Consider wheat, barley and some other small grains. Are the satellite capabilities able to distinguish between wheat and barley which have a similar appearance even at ground level? And while they may be able to tell exactly what crop is there, can the satellite data indicate yield? The answer to that is no. It can fairly accurately identify what is planted and not planted... or what is harvested. But most likely there is not near enough ability yet to really get into the yield side of the equation. "To be more specific," Honig notes, "WAOB adopts the published NASS estimates for the items listed here. I would contend that satellite data has significant limitations in measuring harvested area. For crops like corn, it is also not able to identify the difference between grain and silage acres."

### **Specific country production issues**

As for specific country crop estimates, the latest potential big miss by the WAOB is the size of Canada's wheat and canola crops. Crop conditions do not stop at geopolitical boundaries. Obviously, the difficult conditions in the U.S. Northern Plains this season stretch into Canada. But USDA did not seem to make much of an adjustment to



Canadian wheat to account for that. Is it a case of Canadian government forecasts that have been mostly absent? And at least relative to attaché reports publicly released, there have only been six on grain and feed since August 2020, with some not even dealing with production, but with regulations. And for oilseeds, only two have been released this calendar year, with the most recent being in March. That is not to say that WAOB analysts cannot pick up the phone and ask for an update. But there frankly is not publicly released data that the WAOB can use as an input. Agriculture and Agri-Food Canada last updated their S/D situation July 20 and *raised* their production forecast for 2021-22 — all wheat (minus durum) at 25.59 million tonnes versus 25.05 million in June. This even after in June they cautioned "persistently warm and dry weather has impacted the majority of the Prairies." For all wheat, including durum, Agriculture and Agri-Food Canada pegged the crop at 31.43 million tonnes in July, up from 31.06 million in June. USDA's July WASDE trimmed the Canada wheat crop to 31.5 million tonnes from 32 million tonnes in the June WASDE (released before the Canada update). In the last WASDE, the WAOB only specified changes in forecasts for Russia and Kazakhstan, but there was no mention in their text on Canada.

USDA, like some industry analysts, was also tardy in coming to grips with the degradation of Brazil's safrinha (winter) corn crop. Some Brazil-based contacts for months have been much lower than USDA and other forecasts.

USDA's Meyer responds: "Crops don't develop instantly but evolve over the course of a growing season when conditions sometimes improve, and sometimes deteriorate further."

Then there is the matter of weather. Temperature is a fairly universal factor. Temperatures do not vary a great deal within most counties. Within a state they do. But precip is the biggest weather wildcard. There can be variations within an acre of ground relative to rainfall, let alone in a county or a state or a country. The bigger the areas the more variance takes place. That makes trying to use precip data in trying to assess production in foreign countries difficult. Yes, there can be precip data generated by government weather agencies, but even there, the variances within a few miles make it still a less-than-exact input into the foreign production aspect.

### **Some initial conclusions and recommendations based on interviews:**

- Money isn't the solution to most problems, but NASS needs more funding to either get back some of the tools they used to use or to help catch up with some new tools used by private industry, with some predicting if there are no changes ahead, USDA will no longer be the gold standard. While USDA uses satellite information, some say private industry has some innovative approaches that should be reviewed.
- Sen. Jerry Moran (R-Kan.) recently noted that some farmers and grain traders have lost confidence in the production estimates from USDA's National Agricultural Statistics Service (NASS) but that he would "advocate for" a \$10 million increase in that agency if Vilsack would promise the problems would be

resolved. If it doesn't solve the problem, "then I'm not doing my job," Vilsack said. A case for more directed ERS and World Board funding targeted to outlook analysis is evident based on our talks.

- A former USDA official said, "When I was at USDA, we had a problem with soybeans stocks. We called in an outside group to comment on the matter and asked them to give suggestions on improvements. It looks like this is needed again for both NASS and the World Board."
- [Link](#) to a USDA session on modernizing estimates and forecasts.
- [Link](#) to a USDA session which dealt with several industry questions.
- Some farmers say they are inundated with too many requests to fill out surveys and when those surveys come, they wish they would be more clearly written.
- A declining farmer survey response rate, and apparently some inaccurate farmer reporting, is a concern seeking some solutions. But Honig said NASS uses "extensive editing processes to help identify inaccurate reporting, whether inadvertent or intentional."
- NASS and the World Board have professional statisticians (NASS) and analysts (World Board). Both agencies say they are open to suggestions and improvement/change. Some lawmakers want to know whether there is evidence that USDA is falling behind in terms of technology to either collect or analyze data. That will likely be a question being asked ahead to USDA personnel.
- Emailed one grain industry analyst: "NASS is also in charge of the Grain Stocks data. And the grain stocks data in the past has been the source of 'evidence' used by analysts to "prove" the production estimate was off. I know the production estimates are frustrating for farmers, but I think the Grain Stocks data (along with the revisions to previous stocks estimates) are a bigger source of frustration for analysts. And when that frustration makes its way into comments, it usually comes out with 'NASS obviously missed the corn crop from last year (or even two years ago).'"

Note: [Link](#) to YouTube video of Grain Stocks breakout session.

- Regarding the Grain Stocks report, a factor is that there is a degree of forecasting involved in the report, Honig remarked during a USDA data users meeting. "These data are typically incomplete on a quarterly basis," he observed. For example, March 1 stocks cover the December-February quarter, and, in March, the Commerce Department only has released export data for December and January. "You are already forecasting out what the third month might look like from a use standpoint," Honig noted. The previous quarter is always up to revision, he noted and, in January, all quarters in the previous marketing year are open to revision. Production is as well, he added. Honig also defended the revisions and pointed out that their measure of uncertainty on something like corn is plus or minus 200 million bushels. "That sounds like a big number, but the way we need to think about it is that there is about a 15-billion-bushel corn crop, so you are talking about a small range we have within those numbers," Honig said. NASS has launched what agency officials say is a "top-to-bottom" review of the Grain Stocks report. That encompasses the surveys used to gather the data, the training of those gathering the data and the statistical work used to generate the eventual estimates. That NASS review is scheduled to be completed by

September 30, with recommendations to be implemented after October 1. Changes that are linked to manuals or training documents will be implemented immediately, while remaining suggestions will be analyzed.

- On demand forecasts, some observers said USDA analysts should at least quiz grain industry and export trade personnel as part of their information gathering. In reality, all of the WAOB Chairs maintain regular contact with industry, and also routinely get contacted by industry with questions, comments and insights.
- Said one former U.S. grain company analyst: “Congress should remove the ability of companies reporting export sales to unknown destinations. China and others use this to hide their actions. Poor/small countries might need this, but China is scamming the USDA rules to their advantage and misleading U.S. farmers and merchandisers.” *(Note: European countries are also heavy users of the unknow destination category.)*
- One industry analyst wrote, “WAOB must respond to industry questions. No answer to my question from any of the senior WAOB analysts.” Twice each year USDA has a Zoom session where members of the world ag community can ask USDA WAOB and NASS analysts questions live. Based on this reporter’s observations, WAOB Chairs and NASS officials in the past have always tried to be accessible and responsive. Contact info is listed in the WASDE report. USDA’s Meyer says, “Questions are always answered, but they may not always like the answer to the questions.” Honig says, “I know this is someone’s opinion, so I’m not necessarily disputing it. But I would like to point out that here at NASS we (me in particular) have worked hard in recent years to be as transparent as possible and highly accessible to answer questions and respond to concerns.”
- Said an observer: “USDA’s WAOB must have crop observers travel each month to other origin crop areas to evaluate crops. They badly missed Brazil drought this year... the worst in 100 years, and ongoing drought in Canada. USDA aggressively cut the U.S. HRS crop yet makes only minor changes to Canada. WHY?” *Note: Some say this is the role of USDA attachés but in the past, World Board analysts have traveled, but such journeys have been curtailed due to the pandemic. That may also be the case with attaché visits and reports.*
- This is the gist of several comments: “USDA’s NASS must send crop scouts / enumerators to U.S. crop areas in all months August through November — not skip any months to save money. They got rid of this practice for August reports, so they have no idea until September the number of plants per acre, ears / acres or pods / acre. Spend the money on farm reports.” *(NASS’ Honig previously commented on this issue.)*
- One grain industry contact wrote: “Go to John Deere, Corteva or some other vendor and contract them to have farmers report yields by crop and location for each major crop. Might be expensive but worthwhile / superior to current system. If too expensive, hire thousands of crop scouts to estimate yields *each week*.” The analyst added: “Use John Deere yield results from tractors as a guide. Pay them and farmers for test plots on their farms... 20,000 - 28,000 test plots for the major ECB, WCB and northern U.S. states. The other source is Corteva yield data. They have way more test plots than NASS. *Note: Test plots are set up by companies to showcase their seed varieties and are not necessarily*

*representative of large fields. Also, this is a sensitive issue as it gets into farmer privacy issues.*

- One veteran USDA watcher said: “NASS must expand sharply to Zoom with farmers with acreage, so we don’t have to wait until June 30 for radical acreage adjustments. Penalties on farmers are appropriate if they misreport what they do each year. Check and verify each June through January.”
- “USDA’s World Board has missed some forecasts badly,” said a veteran industry analyst, “including USDA errors on 2020-21 feed use in corn; and 2021-22 feed use; and continued noncounting of all U.S./Ukraine commitments / shipments to China in 2020-21. Ignoring total export commitments from Ukraine and USA overstates those origin stocks. Meanwhile, price economics tells us tight stocks will push feeders to seek cheaper feed grains like wheat — starting this past month as wheat is 21% cheaper than corn in W. Kansas. Looks like we must wait until September for USDA to get the U.S. and Ukraine corn exports correct to China (8.0 MMT shipped already from Ukraine and 15.2 MMT from the USA). We expect Ukraine to ship another 1 MMT to China in June/August and USA to ship most of the 8 MMT of unshipped sales made to China. USDA is ignoring this demand with a China import forecast of only 26 MMT from the world. Their approach is causing problems in corn and wheat S/D’s. For example, with HRW now 79% the value of corn, they cannot justify only 180 million bushels of wheat feeding in 2021-22 up 80 million bushels from last year. We think 300 million bushels is more realistic. So, USDA’s corn S/D analysis leads to a poor wheat S/D.”
- “Why is the World Board NOT counting the unshipped export sales of corn to China in their S/D forecasts for the U.S? Those commitments bring China’s likely shipments from the major origins to 32 MMT, not the 26 MMT they are using,” said one respondent. “We do not care about China official import data as it might be wrong, and it certainly does not give the market a clear understanding when U.S. and Ukraine corn stocks become acutely tight. That fact is what you exclude from your forecasts. Use the data and tools you have available to better forecast U.S. and Ukraine exports by each corn S/D and by destination, and U.S. carryout.”
- A comment from some analysts was that USDA should change the marketing year for both corn and soybeans, with some saying USDA may be better off starting their crop survey estimates in September rather than August. The trade year for all countries is Oct./Sept, while the U.S. marketing year for corn and soybeans is Sept./August. Naysayers to NASS delaying the first survey estimates for corn and soybeans say that is a long time and would lead to more volatility and that the marketplace needs an early benchmark. For wheat, the trade marketing year is July/June and the U.S. marketing year is June/May.
- A former USDA official said: “I would argue that USDA’s most important functions historically are research and publishing data and forecasts that help those throughout the value chain to make informed decisions. In both cases these are functions the private sector either won’t do or have a private interest that serve their own and not the public’s interest. Therefore, USDA’s reports have to remain the gold standard. Relative to survey responses... this is a gov’t-wide problem...”

declining response rates... but USDA is holding up better than most agencies. Finally, I really believe it is time to name a high-level group to get under the hood and come back with detailed recommendations on how the World Board process can be significantly improved. It is only weakness to ask for outside help if you do it when it is too late... meaning confidence has been so eroded people no longer rely on USDA's monthly reports."

- As for changes to forecasts, each month USDA's World Board issues a revision to its forecasts as information and perspectives change.

---

**USDA's Meyer commented on the overall WAOB when he said:** "The WAOB strives to provide the public with reliable, objective, and unbiased market information. As everyone in the industry knows, forecasting commodity markets and predicting the future is an imperfect science, made even more difficult in an ever-changing world. However, evidence overwhelmingly shows that the track records for providing accurate and timely information are strong for both NASS and the WAOB, extending over dozens of commodities and all regions of the world. Both NASS and the WAOB are the global gold standards for agricultural market information, and we'll continue to devote all necessary and available resources to maintaining that reputation.

"None of this is to suggest there isn't room for improvement in producing WASDE forecasts. The WAOB takes its responsibilities seriously, and always welcomes feedback and ideas for new and innovative approaches. As Chief Economist and former WAOB Chairperson, I'm well aware of the complexities of putting the WASDE together and can't say enough about the dedication and expertise of the teams at NASS and WAOB. I'll continue to support all efforts to ensure WAOB analysts have the best data, analytic tools, and expertise needed to maintain the gold standard reputation of the WASDE."

**Response from former USDA chief economist Dr. Joe Glauber,** currently Senior Research Fellow, Markets, Trade and Institutions Division, International Food Policy Research Institute:

1. "Can the system be improved? Absolutely. In the halcyon days of the 1980s you had lots of economists and experts from ERS, FAS, FFAS, AMS contributing to the WASDE report. The sheer number has declined, and more and more responsibility has fallen on the Board chairs. Some of that reflects productivity gains — you don't need stat clerks to prepare tables, etc. But years ago, ERS had multiple analysts working on a commodity like soybeans or hogs — that's not the case today (nor has it been the case for the past 20 or so years).
2. "Use of Earth Observation data. USDA was an early user of Landsat data and both NASS and FAS use the data in their day-to-day work, but more of an indicator (it looks like there is drying in the Ukraine, let's put someone out in the field to ground truth it). I think more resources should be put into research of the

use of EO data for area and yield estimation. Think of the questions surrounding the prevented plantings situation two years ago or the impact of the derecho in Iowa last year — those seem to be crying out for real-time analysis since an acreage report or crop production report may be several weeks. Maybe this is an area where ERS could hire some expertise and work with FAS and NASS.

3. “The relationship between NASS and WAOB. Your paper does a nice job describing their interaction. They work very closely together, but understand that at the end of the day, the Board must take whatever NASS gives them and make sense of it in their balance sheets. There is no second guessing the NASS estimates although some months (July for example) the Board sometimes makes adjustment to acreage. Btw, I am not advocating that the Board second guess NASS — that is exactly what the Board process was designed to prevent.
4. “There are clearly areas where the forecast errors have shown a bias. U.S. soybean ending stocks were overestimated for years and the source of the error was largely due to the rapid increase in soybean consumption in China. For years, we underestimated China import demand which resulted in underestimating exports and overestimating ending stocks.
5. “The issue of forecasting corn feed and residual has been a problem for many years. Most people don’t realize that the variable is truly a residual — it’s just what’s left over after exports, food use and ending stocks are subtracted from production plus carryin plus imports. We have residuals in all of our balance sheets, but corn sticks out because we don’t have a good measurement for feed use (with soybeans, we have pretty good estimates of exports, imports, stocks, and crush. Seed is a small component that is estimated but it’s very minor compared to something like corn feed use). GCAUs are ok when you are looking at 10-year baselines, but in the short run, the relationship between GCAUs (which are crudely measured) and quarterly feed and residual is not very helpful. I commissioned a study ([Link](#)) by University of Illinois (Scott Irwin and Darrel Goode) back when there was all of the controversy surrounding grain stock estimates and they did a good job debunking a lot of theories about why the grains stocks were off and concluded most of the issues came down to feed and residual.
6. “All of this said, I think it makes sense for USDA to commission a review panel to look at the commodity estimates process. The trick is getting people who are removed enough from the process to be unbiased but who are knowledgeable about what is involved and what is expected. We have done those reviews in the past, and it makes sense to do so periodically. Taxpayers spend a lot of money on agriculture. A small part of that goes to providing information on markets and yet I think it should be the easiest to justify since it provides an important public good. But that doesn’t mean that one should be complacent and not change just because that is the way we have been doing it for years. We should try to

maintain NASS and WAOB as the gold standard for statistics and commodity analysis.

7. “Lastly, I would remiss not to say that the working with WAOB was the greatest pleasure I had as Chief Economist. Granted, I worked with most of them when they started like I did at ERS, so I had known them for a long time. But what a dedicated group of individuals. When the government shut down back in 2013 (?), I remember meeting several analysts on a regular basis for coffee to talk about the markets even though they had all been told to cease and desist using Blackberries, work phones, etc. And even though there wasn't an October WASDE report published that year, there was one prepared b/c they were so dedicated. Another time, I came in to sign the Crop Report and WASDE and the government was shut because of a snowstorm, but all of those guys had been in since 2 am and had slogged through snow to get there. The Board chairs have been exemplary: Dawson Ahalt, Jim Donald, Jerry Bange, Seth [Meyer] and now Mark [Jekanowski]. Great analysts but never an ego — it was always the Board says this, the Board says that...” *(Note: Terry Barr, a long-time respected USDA economist who later worked at the NCFC and CoBank, was acting World Board chairman for almost two years.)*

\*\*\*\*\*

**The following comments are from Terry Barr**, currently CEO, Economic Insights LLC. As noted, he was acting chairman of the World Board for almost two years and also worked for the NCFC and CoBank.

“While the WAOB and the WASDE product receive the majority of the attention, the key to the WAOB success or failure is the ICEC process and the resources provided by the participating agencies. As staffing and related support have been reduced or reallocated away from traditional situation and outlook analysis in each of the agencies, the ability for the ICEC to have a broad-based and meaningful debate within the ICEC has been eroded and the WASDE product has suffered.

“To be successful, the ICEC process requires analysts to have a meaningful internal debate that actively challenges the assumptions and forecasts of every member of the committee. Every member of the committee should come to the meeting with the understanding that their forecasts will be challenged, and they must be prepared to defend their positions. In my experience the more active the debate the more likely you will get a better forecast.

“Equally important is that debate should reveal the critical areas of differences and the types of analytical assumptions that should be communicated along with the forecast numbers. While there is a great focus on the actual numbers, I have always believed that understanding what the ICECs have assumed to arrive at those numbers should be more actively communicated and challenged.”

\*\*\*\*\*

**Bottom line:** *Pro Farmer* has dealt with USDA's NASS and World Board for decades and knows that the statisticians and analysts are professional and want to do their best job. The World Board's task is more subjective than NASS, with surveys to use, but those are coming under more review regarding the need to resurrect some lost tools and/or to modernize them. NASS is currently hamstrung by tight budgets. The World Board has only around 20 staffers, and that includes the meteorologists. But what appears to have caused a lot more work for the World Board in the short run, sources advise, is the Trump administration action to shift many in the ERS from Washington to Kansas City. Many ERS personnel did not want to go to Kansas City and thus left to work elsewhere or retired. ERS analysts assist the World Board but the lack of personnel in the short run has placed more work on the World Board in Washington. Kansas City contacts say ERS has recently hired some very good analysts, but it will take time to rebuild the intellectual capacity that USDA-Washington had relative to outlook analysis. As for NASS funding, Sen. Moran is pushing additional funding.

USDA's Meyer told us, "ERS leadership support for the S&O (situation and outlook) work didn't suddenly fall off as portions of ERS moved to KC. The S&O work was consistently undervalued by previous administrators of ERS, particularly given the large impact those researchers have and the readership their publications draw. Staff numbers have begun to rebound with many good new analysts coming onboard. I believe the new administrator understands the importance of the S&O work."

Many industry analysts expect USDA estimates/forecasts to be the final answer when they are just a snapshot at the time. But the snapshots need to be believable. Some say USDA is behind the proverbial 8-ball.... damned if they do, damned if they don't. Based on our interviews, farmer surveys are too long, hence part of the declining participation rates. Some of those we interviewed openly said many farmers know the least of anyone in terms of what they have (whether it be yields, production, on-farm stocks, etc.). Most simply don't know. However, the best farm operators "know," which is why they are better than most producers.

Some farmers have a general mistrust of USDA/Washington and the rural/urban divide, and a growing number of farmers think USDA does not have their interests in mind. That is not anything new, some say, but this viewpoint has accelerated since the days of social media. NASS and the World Board do not have "an agenda" despite some conjecture to the contrary, say veteran USDA observers, including USDA contacts.

While some in the grain industry think their numbers are better than USDA, the government's crop estimates are still the gold standard, even though there are needed improvements as this Special Report notes.



Lastly, this report did not delve into USDA livestock supply and demand estimates and forecasts. That is a topic for a future report.

**Based on our interviews, here are some gleanings and assessments:**

---

1. The WOAB and NASS need to modernize their processes (forecast models, surveys, etc.). They seem dated, which is causing problems. But that takes time and money.

2. Survey responses are poor... both in numbers and quality. That suggests the survey process and format needs redone.

3. Some information needs to be filtered out... kind of like a garbage in, garbage out situation. That is not saying USDA data is garbage, but it's the garbage in stuff that needs fixed before the garbage out can be improved

4. USDA is swimming upstream... we think they know this. There are too many "experts" that are trying to prove them wrong. That's largely due to social media, and part of the process USDA must deal with.

5. Some respondents mentioned the change in releasing USDA information during market hours — that was not the way it used to be. Some say that must change to "fix" the problem, part of which is the huge price reactions to the data, which puts more focus on USDA being "wrong." But a report timing change does not appear likely. USDA's Meyer told us, "The release time was shifted as trading platforms (such as CME) signaled an intention to be open when the report was released, even during the early release hour. The noon eastern release time reflects a choice to try to achieve maximum liquidity and availability for U.S. market participants. The USDA does not set when markets are allowed to be open and thus the release time was chose given the realities of a modern electronic 24hr trading day."