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Testimony of David Milligan
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“Voluntary Carbon Markets in Agriculture and Forestry”
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Chairman Scott, Ranking Member Thompson, and Members of the Committee, thank you for the opportunity to testify today. I am David Milligan, president of the National Association of Wheat Growers. I raise wheat, corn, soybeans, and dry edible beans with my son on our farm in Cass City Michigan. Thank you for holding this hearing today to discuss voluntary carbon markets in agriculture and forestry. NAWG is very interested in engaging in the policy discussions, market development and as individual grower members -- understanding the details and weighing the options for participation in voluntary carbon programs, protocols, and markets.

The National Association of Wheat Growers represents state wheat grower associations and grower members in 20 states. The wheat production in each of those states is varied, from the climate, soil, rotations and most importantly the type of wheat and end-use markets for the wheat produced. As a crop that is primarily destined for the food supply the quantity and quality of the wheat we produce is equally important. It is important to point out that there are six different classes of wheat. The six classes of wheat have a variety of end uses – whether it is pizza, pasta, bread, cakes, or crackers – each product has characteristics that rely on a different type of wheat and a different protein content in the wheat and flour. Some wheat – winter wheat – is planted in the fall and harvested in the following summer and some – spring wheat – is planted in the spring and harvested a few months later in the summer.

There are several benefits of growing wheat. Wheat improves soil quality, protects the soil from erosion and reduces weed pressure when added to a crop rotation. Winter wheat provides living plant cover over the winter months. The wheat straw residue left on the field provides a durable residue cover to protect the soil from wind and water erosion. In certain regions, winter wheat can be added to a corn-soy rotation adding a

third crop over the two years and providing a living cover over winter and additional economic revenue from adding a wheat crop.

Like many areas of US agriculture, wheat growers are producing more with less. Over the last 100 years, wheat yields have increased three and a half times with about two-thirds the acres in production. As you may know, there is not commercially available genetically modified wheat and we have not had the level of research and advancement in wheat research that other crops have experienced over the last 25 years. Wheat growers depend on different management strategies including diverse crop rotation, conservation practices, research and breeding including new hybrid wheat varieties, and crop protection tools. Technical assistance from Land Grant University wheat research programs, extension programs, USDA and conservation district employees, and private agronomists is needed to make these systems work and allow growers to make ongoing improvements to their cropping systems.

I mention these production issues because they are some of the unique characteristics that wheat growers must consider when looking at the developing voluntary carbon market opportunities. At this point, NAWG members probably have more questions than answers about participation in voluntary carbon markets.

NAWG Policy

NAWG members have been discussing carbon programs and policies and have developed several guiding statements that were approved by the board earlier this year. NAWG believes that carbon policies and programs should recognize the environmental benefits of agricultural practices. Growers undertake conservation practices at their own expense and while these practices have environmental benefits, they can also have financial costs to install and can impact yield or reduce acreage in production and therefore reduce the income of the farm. NAWG supports voluntary, market-based programs and policies that provide economic opportunities for farmers and that recognize the achievements of growers in protecting and restoring the environment by rewarding early adopters and adding new practices. A voluntary market-based approach allows for growers to have that additional income stream from adopting and maintaining different production and conservation systems. Programs should be science-based, flexible and inclusive to include allowances for regional, geographic, or preferential differences in farming practices. We know very clearly that one specific approach won't work for all the producers across the US, so flexibility in addressing the diverse cropping systems will be essential.

Last year, NAWG joined the Ecosystem Service Market Consortium. ESMC provides a forum where many grower organizations, food companies, input supply companies and technical advisors can come together to discuss the creation of ecosystem service protocols that could work across the US. NAWG is interested in voluntary carbon market opportunities that work for diverse wheat production systems across the country.

Wheat Production

The opportunity to diversify income streams and quantify the environmental benefits of conservation actions is of interest to wheat growers. The potential for additional revenue from carbon or ecosystem service credits must be weighted with the specific characteristics of the farm. Growers must balance the economics of their operation with the uncertainty of undertaking different management systems. Developing the cropping system that works for an individual farming operation can take many years of exploring practices and rotations adding risk to the operation and making changes to those systems also comes with risk. There are several issues unique to wheat production that would likely factor into a wheat grower's decisions on potential participation in voluntary carbon markets:

- Diversity of wheat cropping systems
- Relatively high rate of conservation tillage adoption and treatment of early adopters
- Regional climate, especially production in semi-arid regions
- Winter wheat provides a living crop in the field over winter
- Technical assistance is needed to understand the agronomic and environmental impact of practices, such as nutrient use efficiency and cover crops in semi-arid regions.
- Need to maintain a high-quality wheat crop to meet market demands

Wheat is produced from Washington state to Pennsylvania and down the coast to North Carolina and from Montana to Texas, with wheat production in 42 states. As mentioned earlier, the different classes of wheat, the timing of planting, and end markets allow producers to grow wheat varieties that align with their local conditions and diverse cropping systems. For example, here are a few production scenarios:

- In central Kansas, a wheat grower could also be producing corn, soybeans, sorghum, and alfalfa, practice no-till for over 15 years, and be trying out cover crops – but finding the right mix that works for this cropping system takes time.
- In Colorado, where there is an arid climate, a wheat grower may also produce corn, cattle, and practice no-till for about 15 years, but cover crops are a challenge in the dry climate.
- In Ohio, a wheat grower could also be producing corn and soybeans, and cover crops may be used – but the winter wheat is also in the ground over winter.
- In northern Minnesota, a wheat grower may produce corn, soy, and sugarbeets, but there is not as much no-till in this area due to the colder, wetter climate.
- In dry northern Montana, a wheat grower would also be producing pulse crops and practice no-till for over 20 years and trying different farming practices to conserve water but cover crops not working – however the cropping system has the ground covered most of the year.

- In eastern Washington, a wheat grower could also produce bluegrass seed, lentils, garbanzo beans, dry peas, and canola, and there is more minimum-till than no-till in the area.

From these examples, you can see that wheat growers know the importance of diversifying their cropping systems to meet the unique growing conditions, keeping the ground covered with a growing crop to protect the soil from wind and water erosion, managing plant pest and weed resistance, and pursuing market opportunities by producing crops that fit their geographic location and climate. According to USDA data, 67 percent of wheat growers have adopted conservation tillage – up from under 40 percent in 2004. With wheat production in semi-arid regions, growers take action to protect limited soil moisture and conservation tillage is part of that management system. In the eastern US, where there can be the opposite issue with too much moisture, wheat provides a living cover over winter and reduces erosion and provides durable crop residue as part of a no-till system.

Growers will need technical assistance to understand both the agronomic and environmental impact of additional climate smart practices. As I mentioned, wheat growers have been adopting conservation tillage over the last 15-20 years or more. Still, additional technical assistance will be needed to continue to expand and incorporate further climate smart practices. Whether it is additional practices to sequester carbon or nutrient use efficiency and avoided greenhouse gas emissions, or practices that continue to benefit water quality, growers need to understand the costs and benefits of the practices. Technical assistance can come from different sources but must be from a trusted source for growers to take action to change production systems. Additionally, any recommendations and information must be regionally appropriate given the diverse production regions for wheat.

Regardless of the wheat production region, the most important consideration for wheat growers will be economics. The changes to management systems could impact the quality of the wheat crop, and that impacts their long-term economic viability. If new market opportunities come with costs that don't balance out, growers cannot afford to be involved. And the current uncertainty of costs and obligations for the growers is another layer of questions and not being able to make the scenarios pencil out.

Wheat Production & Voluntary Carbon Efforts

In many voluntary climate efforts (programs, protocols, markets), early adopters of conservation practices are not recognized as potential participants, and growers cannot get credit for years of positive environmental impacts. No-till systems must be continually maintained, and growers must actively manage these systems. Yet many climate efforts indicate that growers who have already adopted conservation practices will not be eligible, or that once a practice has been widely adopted it has become a normalized practice. This view of early adopters does not take into consideration the

long-term management, ongoing investments and environmental benefits to maintaining conservation systems such as no-till.

The uncertainty of the impact of certain conservation practices on cash crops will increase growers' skepticism of participation in voluntary carbon efforts or make participation unlikely. Wheat growers in semi-arid regions are not likely to see the same benefits from cover crops as those in higher rainfall areas. In the semi-arid production regions, cover crops can use the limited soil moisture and adversely impact the moisture available for the wheat crop and are not a recommended practice.

No-till and cover crops are two primary practices that are mentioned in many of the voluntary carbon programs, but these may not be viable options to allow wheat growers to participate in the programs because conservation tillage adoption rates are high, and cover crops are not currently recommended for several wheat production regions. Also, growers planting winter wheat will have a crop in the ground during the traditional winter cover crop timing. This wheat acts as that "cover crop," providing a living cover over-winter and the same carbon sequestration benefits.

Additional climate smart practices that sequester carbon or avoid greenhouse gas emissions must be fully understood by growers – both the agronomic and environmental implications. As mentioned earlier, the technical assistance to understand these practices and the costs and benefits will be critical for adopting more climate smart practices.

Regionally appropriate recommendations and understanding of site-specific cropping systems will be necessary to ensure that wheat systems maintain high quality wheat. Our foreign and domestic customers source wheat and flour based on quality and US wheat growers know the importance of maintaining the supply of high quality domestically sourced wheat. Changes to crop management systems could impact quality that would impact the wheat growers' market and our ability to stay in business. These agronomic impacts must be fully understood and take time to work into a growers' farming operation. As has been outlined in this testimony, wheat production is extremely varied across the country, so those unique localized approaches that allow growers to understand what works on their operation will be essential.

In production agriculture, we talk a great deal about value added products. The grain that we grow in the field goes on to become different products where processing and packaging add value along the supply chain. Wheat becomes flour that becomes that bread that you purchase at the store. That \$3 loaf of bread includes just pennies paid to the farmer for their wheat at the beginning of the supply chain. As voluntary carbon markets develop, growers must see a larger financial return on carbon sequestration or avoided emissions generated on-farm. Those carbon credits generated on farms will not change – they will retain the same amount of carbon throughout the process to the end purchaser. Therefore, growers must be paid substantially for the carbon credits generated, without additional financial reductions along the process.

In addition to these production issues, there is uncertainty about contracts and the data, land ownership and land rental, and financial obligations related to carbon programs. There are so many different carbon program options. Growers must take a great deal of time and effort to review the requirements before making any long-term commitment. It probably will require a grower to use a lawyer to fully understand the contract obligations and long-term implications for their operation. A few of the questions that I am hearing from growers are:

- How is carbon measured - is there a standardized approach for all programs?
- How are baselines determined?
- How are early adopters treated?
- What are the data privacy issues? Data ownership?
- How much does a change in practices cost - not just in terms of seed cost, but farmer time to manage the changes, income forgone resulting from the change in practices, or just the uncertainty of the impact on the crop?
- How easy is it to participate – data entry, time on paperwork details?
- Does a farmer need to own the land? What if there is no long-term rental agreement?
- How does a farmer get paid?
- When does a farmer get paid?
- How does a farmer know how much they will get paid? How do they determine the financial risks?
- What happens if crop protection tools are removed from our toolbox during the life of the contract?

As the committee continues to review these issues, the voluntary carbon markets should be in addition to and not replace the USDA programs. Wheat growers participate in and rely on the voluntary, incentive-based conservation programs and technical assistance that USDA provides. As outlined in this testimony, not all practices are going to work for all wheat growing regions. Wheat production is very diverse in geography and type of wheat grown and the crop management systems are equally varied. USDA conservation has provided the assistance to aid growers in making changes over the years and must continue to do so as we learn more and expand conservation practice adoption. In addition, USDA research funding for wheat research, new varieties, and new technology will be necessary. Research is essential to increasing our productivity and continuing to produce more using less resources.

Many of the management systems would not be possible without access to a variety of crop protection tools. Whether it is glyphosate used to ensure there is no volunteer wheat in the field before planting that can result in disease impacting the planted wheat crop, or to help manage no-till systems or insecticides and fungicides used to protect the growing crop, growers need continued access to these tools. Efforts to restrict the use of these tools or remove products from the market will adversely impact a grower's

ability to manage these conservation systems and could put long term management systems in jeopardy.

Conclusion

NAWG members are cautiously optimistic about voluntary carbon efforts. We see the potential to have both increasingly positive environmental impact and additional revenue stream for those ecosystem services. However, there is still uncertainty if growers can participate based on current conservation practice adoption, diverse rotations that have different crops in the field throughout the year and the impact of some practices on crop production and quality. An added complexity of winter wheat production is its unique system of planting in the fall, providing a living root system over winter with subsequent harvest in the summer. Wheat growers also continue to have questions about the transparency and clarity of requirements, costs, measurement, and carbon pricing of the numerous voluntary carbon efforts before growers today. NAWG looks forward to continuing to be engaged in the discussions surrounding these voluntary efforts. Thank you again for the opportunity to testify today.