RENEWABLE FUELS ASSOCIATION

April 29, 2013

The Honorable Fred Upton
Chairman
Committee on Energy and Commerce
U.S. House of Representatives

The Honorable Henry Waxman
Ranking Member
Committee on Energy and Commerce
U.S. House of Representatives

Dear Chairman Upton and Ranking Member Waxman:

The Renewable Fuels Association (RFA) is the national trade association representing the U.S. ethanol industry. The RFA appreciates the opportunity to respond to the questions posed in the second white paper, "Agricultural Sector Impacts," as part of the Committee's review of the Renewable Fuel Standard (RFS).

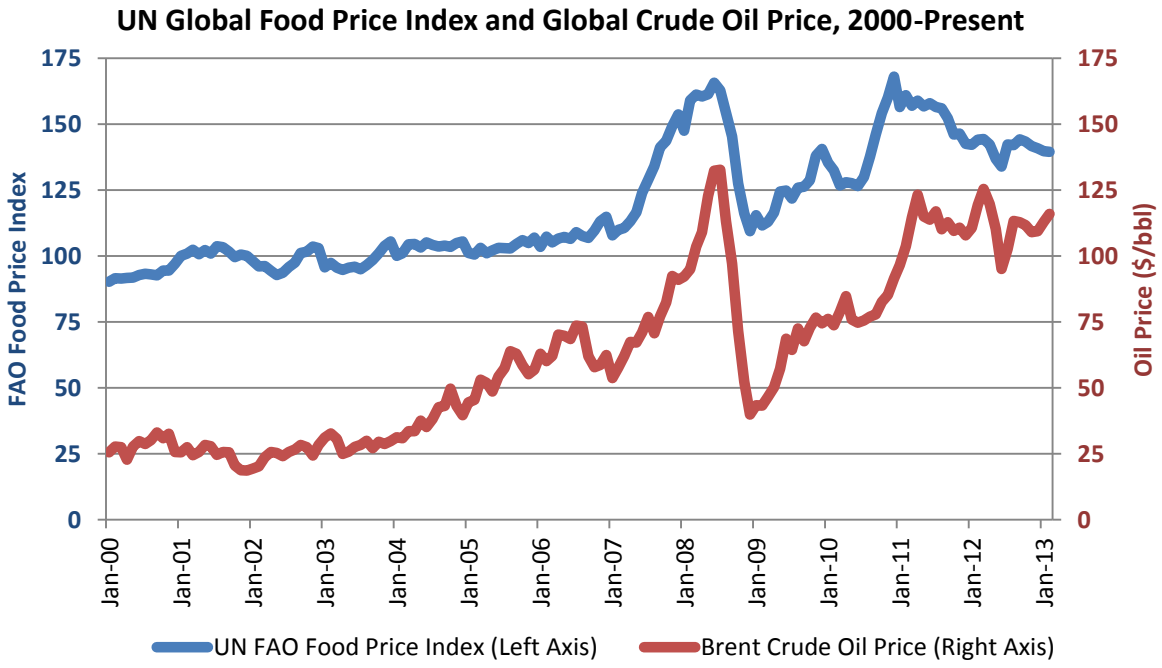
As an initial matter, it is important to remember that a central objective in developing a vibrant and robust ethanol industry was to increase demand for agricultural products and enhance farm income. Girded by the RFS, ethanol has become the single most important value-added market for American grain farmers, stimulating investment in agricultural technology and enhancing economic opportunities for rural communities across the country. The emergence of the ethanol industry over the past decade has served as an incredibly important economic catalyst, transforming the grain sector from a stagnating, surplus-driven marketplace to one that is vibrant, high-tech, and demand-driven. As a result, the net impacts of the RFS and ethanol production on the agriculture sector have been decidedly positive, and U.S. meat output and retail food prices have not been adversely affected.

At the outset, the Committee should consider that any analysis of the impacts of the RFS on the agricultural economy must carefully delineate between the effects of *market-based* ethanol expansion and the effects of the RFS policy itself. The RFS program's primary role has been to create the market certainty and stability necessary to facilitate increased investment in renewable fuels. Since the inception of the RFS in 2005, obligated parties have always blended more ethanol than required. In some years the amount of "discretionary blending" above and beyond RFS requirements has been several billion gallons. This demonstrates that economic factors other than the RFS have also been important drivers of growth in ethanol production. Thus, it is

imperative that the Committee clearly distinguish between economic impacts specifically wrought by the RFS itself and the impacts of the market-based expansion of ethanol production.

While market-driven demand for ethanol has been strong historically, the RFS is *absolutely essential* for stimulating future demand and driving investment in the next generation of feedstocks and biofuels. Without the RFS to drive future growth in renewable fuels, production and use of renewable fuels would stagnate or regress due to 1) the resistance of refiners to produce and sell gasoline blends with greater than 10% ethanol, and 2) abandonment of investments in advanced and cellulosic biofuels due to the lack of market certainty. As a result, consumers would be denied the additional economic and environmental benefits associated with greater ethanol use.

Moreover, while we understand the Committee is interested in specifically examining the impacts of the RFS, it is somewhat counterproductive to examine only the potential impacts of a single transportation energy option (i.e., renewable fuels) in isolation of other competing energy options (i.e., unconventional petroleum). That is, petroleum demand and prices also have important effects on U.S. agricultural and food markets. Every step of the food supply chain is reliant on petroleum products—from the use of diesel fuel in farm machinery, to the use of natural gas in food processing plants, to the use of plastics in food packaging, to the use of gasoline and diesel fuel to transport food to the grocery store or restaurant. The correlation coefficient between global food prices and global oil prices since 2000 has been 0.92, which indicates a near-perfect relationship (1.0 is a perfect correlation).We understand that the economic effects of petroleum dependence are outside of the scope of the Committee's current initiative, but biofuels should not be considered in a vacuum.



Below please find RFA's responses to questions set forth by the Committee on agriculture sector impacts.

1. **What has been the impact of the RFS on corn prices in recent years? What has been the impact on soybean prices? Have other agricultural commodity prices also been affected?**

It is beyond dispute that the emergence of the ethanol industry has positively impacted prices for corn and, to a lesser degree, other crops like wheat and soybeans. Indeed, adding value to farm products was a fundamental reason for developing the ethanol industry in the first place.

Stimulating demand and enhancing the value of local crops was a principal motivation for the tens of thousands of farmers and other rural Americans who invested in the development of ethanol plants in their communities. The RFS created an environment of certainty that gave those investors the assurance and confidence needed to finance the creation of a new American energy industry. However, this does not mean the RFS, by itself, has had a significant direct impact on prices for corn or other crops. A combination of economic factors outside of the RFS has also played a significant role in driving ethanol expansion. Further, market-driven ethanol expansion and the RFS are only two of *many* factors that have contributed to higher prices for agricultural commodities over the past decade.

In every one of the 10 years from 1997 to 2006, the typical corn farmer's cost of production was higher than his returns from selling the corn.[1] In other words, producing corn was a losing proposition in the decade leading up to enactment of the RFS. As a result, U.S. grain farmers became increasingly reliant on government payments as a major source of income. Due in part to the emergence of the ethanol industry, this dynamic has changed.

Net farm income hit a record $118 billion in 2011 and is forecast at $113 billion in 2012; these are the only two years in history in which net farm income has crested $100 billion. Gross crop sales hit a record $220 billion in 2012, while livestock receipts also hit a record level of $172 billion. Net farm income and livestock sales are projected to establish new records again in 2013.[2] Importantly, this revitalization of the American farm economy is having a positive impact on the Federal budget. Government payments to farmers were an estimated $8.59 billion in 2012, the lowest in 15 years. Total government payments in 2012 were less than half of the $20.2 billion spent in 2005—the year the RFS was adopted and the last year corn prices averaged $2 per bushel.[3] Crop payments that are triggered when market prices are below the cost of

[1] USDA-ERS (2013). *Commodity Costs and Returns.* Available at http://www.ers.usda.gov/data-products/commodity-costs-and-returns.aspx
[2] USDA-ERS (2013). *U.S. and State Farm Income and Wealth Statistics, Income statement for U.S. farm sector, 2009-2013F.* Available at http://www.ers.usda.gov/data-products/farm-income-and-wealth-statistics.aspx.
[3] USDA-FSA (2013). *CCC Budget Essentials, FY 2013 CCC Table 35*. Available at http://www.fsa.usda.gov/FSA/webapp?area=about&subject=landing&topic=bap-bu-cc.

production (e.g., loan deficiency payments) have essentially been eliminated. As a consequence of the agriculture sector's economic resurgence, Congress is now considering sweeping changes to the Farm Bill that would further reduce the program's impact on taxpayers and the federal budget.

While the emergence of the ethanol industry has positively impacted corn prices, the magnitude of ethanol's effect compared to other factors influencing corn prices is often greatly overstated. Many in the livestock and poultry sectors have incorrectly assumed that 1) much or all of the growth in corn prices since 2006 is attributable to the RFS and ethanol, and 2) the impacts of ethanol expansion on corn price are entirely attributable to the RFS. Several independent economic analyses have exposed these notions as erroneous.

A recent economic modeling study commissioned by the International Centre for Trade and Sustainable Development (ICTSD) examined the impacts of ethanol policies, including the RFS, on crop prices in the 2005-2010 timeframe.[4] Using a sophisticated partial equilibrium economic model, the study found corn prices in 2009/10 *wouldn't have been any different at all* with or without the RFS in place. Corn prices would have been just 3.3 percent lower, on average, in the entire five-year study period without the RFS and ethanol blender's tax credit, the study found. The effect of the RFS and other ethanol-related policies on other crops is even less. If the RFS had not existed from 2005-2010, wheat prices would have been an average of just 1.6% lower, soybean prices would have been an average of 1.7% lower, and rice prices wouldn't have been any different at all. These results are explained by the fact that economic factors other than the RFS were primarily responsible for ethanol growth: "Higher crude oil prices would have increased the demand for biofuels and would have created strong market-driven investment incentives that would have resulted in a large expansion of the US ethanol industry even without the [RFS and tax credit]."

A related economic modeling study performed by the Center for Agricultural and Rural Development (CARD) at Iowa State University arrived at a similar conclusion.[5] This study examined the factors responsible for the increase in corn prices from 2006 to 2009, finding that only 8% of the total increase was due to the RFS and other ethanol policies. According to the authors, the RFS and blender's tax credit "…have played a minor role in determining the size of the corn ethanol industry. Thus, ethanol subsidies have contributed little to corn prices or to food price inflation."

[4] Babcock, B., for ICTSD (June 2011). *The Impact of US Biofuel Policies on Agricultural Price Levels and Volatility*. Issue Paper No. 35. Note: ICTSD is a Geneva-based non-governmental organization that has been financially supported by OXFAM, the World Health Organization, United Nations, the National Wildlife Federation, and other groups.

[5] Babcock, B., and Fabiosa, J. (April 2011). *The Impact of Ethanol and Ethanol Subsidies on Corn Prices: Revisiting History.* CARD Policy Brief 11-PB 5. Available at http://www.card.iastate.edu/policy_briefs/display.aspx?id=1155

In addition, several analyses examining the impact of the RFS on corn prices were conducted in 2012 in response to the request for a waiver of the 2013 RFS requirements. These analyses consistently demonstrated that the RFS was not a major influence on the corn market, and that waiving the RFS would not meaningfully reduce corn prices. A partial or full waiver of the RFS requirements for 2013 might have resulted in just a 0.5-7.4% reduction in average corn prices for the 2012/13 marketing year, according to most of the analyses. The most comprehensive analysis was conducted by the Food and Agriculture Policy Research Institute (FAPRI) at the University of Missouri. FAPRI estimated that a full waiver of the RFS renewable fuel requirements in 2012/13 might be expected to reduce corn prices by just 0.5%, or $0.04 per bushel.[6] The report found that a waiver might reduce corn use for ethanol by just 1.3 percent in 2012/13 and would only increase corn use for livestock feed by 0.6%, or 25 million bushels (this is roughly two days' worth of corn consumption by the livestock sector).

An analysis conducted by the University of Illinois at Urbana-Champaign and the U.N. Food and Agriculture Organization (FAO) found, "…the total implied support [from the RFS] to corn prices is in the range of $0.11 to $0.14 per bushel. This suggests we might see limited relief in corn prices (via a reduction in ethanol and corn demand) from a mandate waiver…"[7] Assuming average corn prices of $7 per bushel, an $0.11 to $0.14 per bushel impact would be the equivalent of a 1.6-2.0% reduction in corn prices.

Finally, the economic modeling analysis conducted by CARD in support of EPA's decision on the waiver request found, "…it is highly likely that the impact of waiving the RFS program is zero change in corn prices."[8] In the extreme, EPA's analysis concluded that a waiver of the RFS might reduce corn prices just $0.07 per bushel—equivalent to 1% of current corn prices.

2. How much has the RFS increased agricultural output? How many jobs has it created? Have any jobs been lost? What is the net impact on the agriculture sector?

The expansion of the ethanol industry has catalyzed substantial growth in the agriculture sector's output, efficiency, and value. The role of the RFS has been to create a certain and stable market environment for renewable fuels producers and feedstock providers. In turn, this certainty has enabled investment in new agricultural technologies, such as more efficient farm machinery and higher-yielding corn seed. As described above, agricultural gross domestic product (GDP), net farm income, livestock receipts, and crop receipts have all hit new record highs in recent years, indicating that the net impact of ethanol expansion on the agriculture sector has been resoundingly positive.

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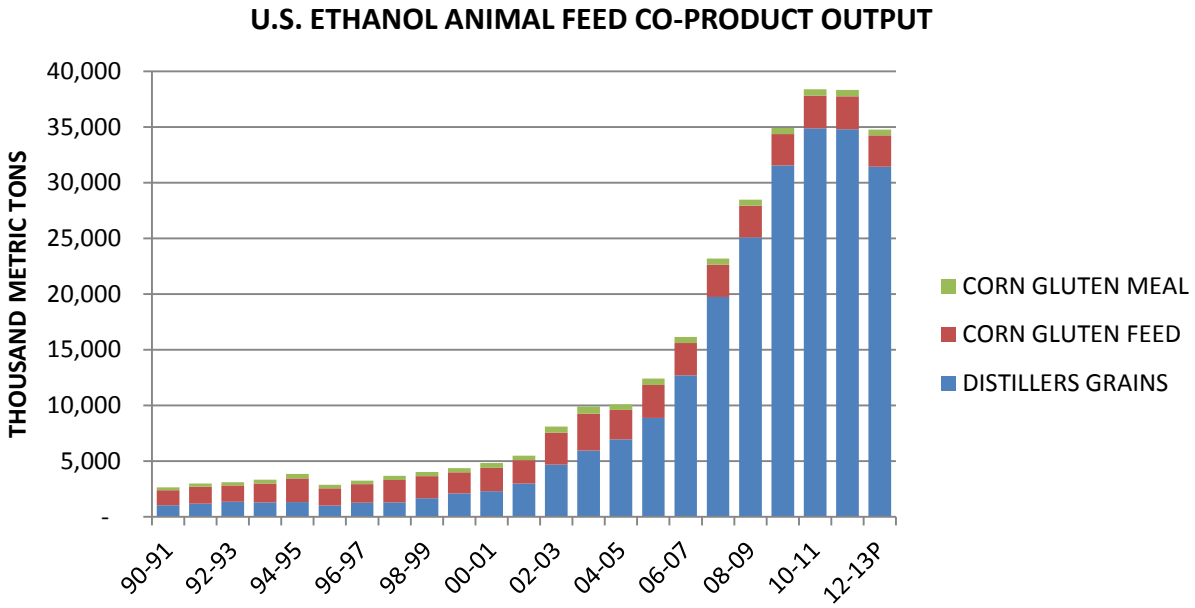
[6] Thompson, W., et al., Food and Agricultural Policy Research Institute (FAPRI), University of Missouri (Oct. 2012).*Renewable Fuel Standard Waiver Options during the Drought of 2012*. FAPRI-MU Report #11-12. Available at http://www.fapri.missouri.edu/outreach/publications/2012/FAPRI_MU_Report_11_12.pdf.

[7] Paulson, N., University of Illinois, and Meyer, S., U.N. FAO (Sep. 6, 2012). *RIN Values: What do they tell us about the impact of biofuel mandates?* farmdoc DAILY. Available at http://www.farmdocdaily.illinois.edu/2012/09/rin_values_what_do_they_tell_u.html.

[8] 77 Fed. Reg. 70,761

Increased Output of Animal Feed Co-products: Expansion of ethanol output has been accompanied by dramatic growth in the production of co-product animal feeds, such as distillers grains, corn gluten feed, corn gluten meal, and distillers corn oil. Any discussion of the ethanol industry's impact on agricultural markets must take the contribution of these valuable feed co-products into account. Every bushel of corn processed by an ethanol plant produces 2.8 gallons of ethanol and approximately 16-17 pounds of high-protein, high-energy animal feed. Accordingly, when animal feed co-products are appropriately considered, the U.S. livestock and poultry industry remains as the top user of corn and derivative products. *Livestock feed is projected to account for 53% of total corn demand in 2012/13, compared to 27% for ethanol*. The U.S. ethanol industry produced some 37-38 million metric tons of animal feed in 2012, including 33-34 million metric tons of distillers grains. According to a recent publication of the U.N. Food and Agriculture Organization (FAO):

> Because of the abundant supply, excellent feeding value, and low cost relative to maize and soybean meal, DG (distillers grains) has become the most popular alternative ingredient used in beef, dairy, swine and poultry diets in the United States and in over 50 countries worldwide. Dietary inclusion rates have been increasing in recent years because of the increasing price of maize and the high energy value DDGS provides to animal feeds at a lower cost.[9]



[9] U.N. Food & Agriculture Organization (2012). *Biofuel Co-products as Livestock Feed.* Makkar, H. (Ed.). Rome, Italy: FAO Press.

The dramatic growth in co-product availability has substantially blunted the impact of higher corn and soybean meal prices for livestock and poultry feeders. Biofuel co-products have only recently been appropriately incorporated into analyses of the ethanol industry's impacts on feed markets. After recently revising the Global Trade Analysis Project (GTAP) model's treatment of co-products, economists at Purdue University concluded, "In general, the livestock industries of the US and EU do not suffer significantly from biofuel mandates, because *they make use of the biofuel byproducts to eliminate the cost consequences of higher crop prices* (emphasis added)."[10]

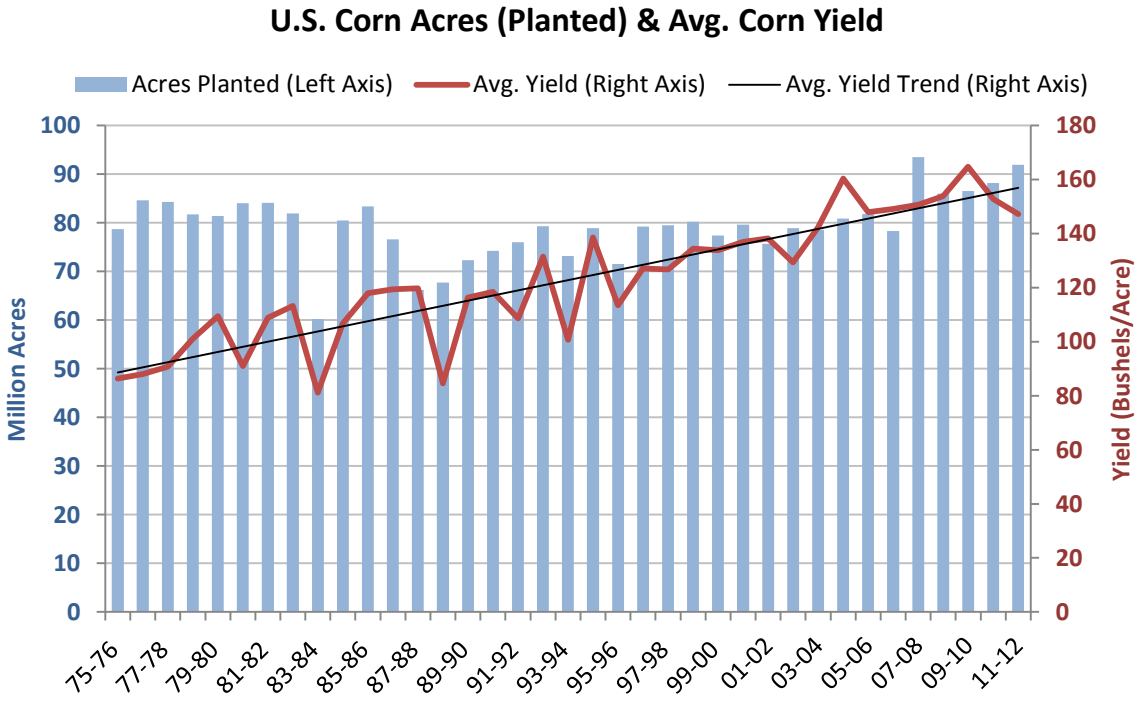
A recent analysis of the potential impacts of a waiver of the RFS on total net feed costs for beef and dairy cattle, hogs, broiler chickens, and laying hens in 2012/13 found that if a waiver *did* result in reduced output of ethanol and biodiesel, supplies of distillers grains and soybean meal would be reduced and their prices would rise. Thus, even with a slight reduction in corn prices, total net feed costs would actually *increase* for all species except for beef:

> …[W]hen viewed in the context of changes in the prices for other key feed ingredients such as distillers dried grains with solubles (DDGS) and soybean meal, the change in total net feed costs for livestock, dairy and poultry feeders would either increase slightly or decrease by a negligible amount if a waiver [of the RFS] was granted. This is due to the fact that if a waiver reduced biofuel output, it would also reduce the available supply of DDGS and soybean meal, which would naturally lead to higher prices for those key feed ingredients.[11]

Increased Corn Output: While the emergence of the ethanol industry has increased demand for corn, U.S. farmers have responded by growing significantly larger corn crops. U.S. corn production has increased tremendously in the "ethanol era." The average annual U.S. corn crop averaged 7.2 billion bushels (bbu.) in the 1980s, 8.6 bbu. in the 1990s, 10.3 bbu. in 2000-2006, and 12.3 bbu. since 2007 (the year EISA was enacted). As a result of larger annual corn harvests and the growing production of animal feed co-products, increased ethanol production has not affected availability of corn for traditional users. Corn supplies available for non-ethanol uses (i.e., the amount of corn and co-products "left over" after net consumption of corn by the ethanol industry) have been larger, on average, since passage of the RFS2 in 2007 than at any other time in history. Corn and corn co-products available for non-ethanol uses averaged 314 million tons (equivalent to 11.2 bbu.) from 2007/08 through 2011/12. This compares to an average of 308 million tons (11.0 bbu.) available for non-ethanol use from 2002/03 through 2006/07 and an average of 300 million tons (10.7 bbu.) from 1997/98 through 2001/02. In other words, the emergence of ethanol as a major source of corn demand has *not* reduced the supply of corn available for other uses, including livestock feed. It is important to note that expanded corn

[10] Taheripour, F., Hertel, T.W. & Tyner, W.E. (2010). *Biofuels and their by-products: global economic and environmental implications*. Biomass and Bioenergy, 34: 278–289.
[11] John M. Urbanchuk, Cardno-ENTRIX (Sep. 2012). *Impact of Waiving the Renewable Fuel Standard on Total Net Feed Costs.*

production has come primarily through increased productivity per unit of land (i.e., yield per acre). In 1980, farmers averaged a yield of 91 bushels of corn per acre and produced a crop of 6.6 bbu. In 2009, just a generation later, farmers produced an average yield of 164.7 bushels per acre and harvested 13.1 bbu. *This doubling in size of the American corn crop was achieved by planting just 3% more corn acres in 2009 than were planted in 1980.*



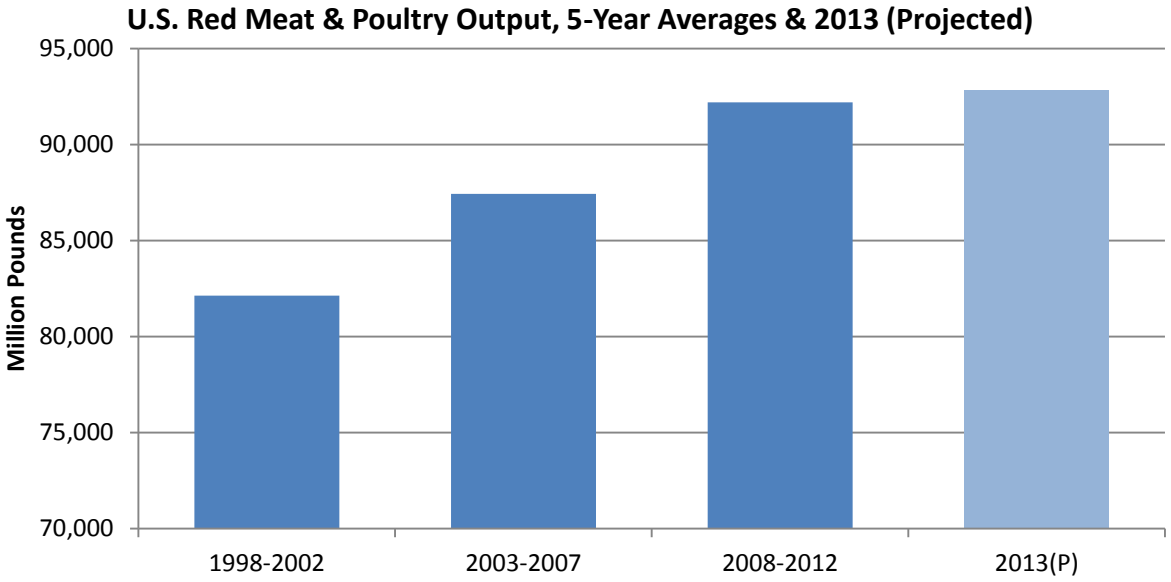
Source: USDA

Impact of Higher Price on Crop Productivity: Recent research shows that when farmers receive higher prices for corn, they re-invest more of their income in technologies that further enhance productivity.[12] Every 10% increase in corn prices translates to a 2.5% increase in average corn yields. For example, if corn prices increase from $5.50 to $6.60 per bushel (20%), yields would increase from 150 bushels per acre to 157.5 bushels per acre. This increase in output is driven entirely by the higher market price paid to the farmer.

Increased Meat Output: Meanwhile, contrary to claims that the RFS has "diverted" grain away from livestock and poultry production, U.S. meat output has grown steadily since the original RFS was enacted in 2005. In fact, 2013 production of red meat and poultry is projected to be the second-highest on record (only behind 2008) and 7% higher than output in 2005.[13] Steady growth in production of red meat and poultry show the fallacy of the notion that ethanol expansion and the RFS have somehow eroded U.S. meat output.

[12] Goodwin et al. (2012). *Is Yield Endogenous to Price? An Empirical Evaluation of Inter- and Intra-Seasonal Corn Yield Response.* Paper presented at Agricultural and Applied Economics Association 2012 Annual Meeting, August 12-14, 2012, Seattle, Washington. Available at: http://ageconsearch.umn.edu/handle/124884

[13] USDA (April 2013). World Agricultural Supply and Demand Estimates.



Source: USDA, WASDE (2013)

Job Creation and GDP Contribution: Expansion of the ethanol industry over the past decade has created and/or supported tens of thousands of jobs across all sectors of the economy. According to an analysis conducted by Cardno-ENTRIX (Attachment A), the production of 13.3 billion gallons of ethanol in 2012 directly employed 87,292 Americans. An additional 295,969 Americans found work in positions indirectly affiliated with or induced by ethanol production. These 383,260 total jobs helped create $30.2 billion in household income and contributed $43.4 billion to the national Gross Domestic Product (GDP). In addition, more than 200 ethanol plants in 26 states paid $7.9 billion in federal, state and local taxes.

Continued implementation of the RFS, as envisioned by Congress, will further add to the biofuel sector's positive impacts on the U.S. economy. New jobs associated with advanced and cellulosic biofuel production will add to the vibrant work force already created by today's grain ethanol industry. A study by Bio Economic Research Associates found direct job creation from advanced biofuels production could reach 94,000 by 2016 and 190,000 by 2022.[14] Total job creation from advanced biofuels, accounting for economic multiplier effects, could reach 383,000 in 2016 and 807,000 by 2022. Direct economic output from the advanced biofuels industry, including capital investment, research and development, technology royalties, processing operations, feedstock production and biofuels distribution, is estimated to rise to $17.4 billion in 2016 and $37 billion by 2022.

Further, a recent peer-reviewed and published economic modeling study (Attachment B) by the Department of Energy (DOE) indicates that "…the net global economic effects of the RFS2

[14] Bio Economic Research Associates (2009). *U.S. Economic Impact of Advanced Biofuels Production: Perspectives to 2030.*

policy are positive with an increase of 0.8% in U.S. gross domestic product (GDP) in 2022…"[15] (for context, 0.8% of current GDP is $121 billion). The positive impact on GDP stems largely from lower oil prices and reduced imports. According to the authors, "The economic benefits of conventional and advanced biofuels are primarily from their effects in reducing the imports and use of oil." Logically, about half of the economic benefits derive from the conventional biofuel requirements of the RFS2, with the remaining half coming from advanced biofuels.

3. Was EPA correct to deny the 2012 waiver request? Are there any lessons that can be drawn from the waiver denial?

Yes, EPA was correct to reject the waiver request. The historic drought of 2012—not the RFS—was the fundamental cause of the higher corn prices that affected all end users of corn (including ethanol producers). As stated by Purdue University economist Christopher Hurt at the height of drought, "Ethanol didn't cause the high prices we're seeing. ***The drought did***."[16] As further evidence that EPA made the correct decision, obligated parties had no trouble whatsoever complying with their RFS obligations for 2012. And even after turning in RINs to demonstrate compliance with the 2012 requirements, more than 2 billion surplus RINs remain available to aid refiners in meeting their 2013 RFS requirements.

EPA had no choice but to deny the waiver requests because the petitions entirely failed to show that the statutory requirements for granting a waiver had been satisfied. The petitioners did not, and could not, demonstrate that RFS implementation was the cause of the higher feed costs facing the livestock and poultry industries; instead, the waiver request letters explicitly recognized that the drought was the root cause of the increase in feed costs during the summer of 2012. Further, the waiver requests did not show that waiving the RFS would alleviate, in any way, the alleged harms to the states' livestock and poultry industries. In order to satisfy the requirements for granting a waiver, petitioners must show that suspending the RFS would redress the claimed harm. However, as discussed above, studies estimating the impact of an RFS waiver on corn prices (a difficult task given the complexity of commodity markets) showed that waiving the requirements in 2013 *might* reduce corn prices by just 0.5-7.4%. Even assuming such reductions would in fact occur in response to a waiver, corn prices would unquestionably remain well above pre-drought levels.

There are important lessons to be learned from the 2012 waiver request. First, the statutory criteria and process for considering a waiver request is both appropriate and effective. Given the goals of EPAct and EISA, Congress was highly specific in identifying the conditions that must be met in order for EPA to grant a waiver under CAA Section 211(o)(7)(A) and provided that even when those circumstances are met, EPA may still deny a waiver request. This high standard

[15] Oladosu, D., et al. (2012). *Global economic effects of U.S. biofuel policy and the potential contribution from advanced biofuels.* Biofuels 3:6, 703-723.
[16] Lucht, G. (Aug. 29, 2012). *Economists Study RFS Waiver*. Iowa Farmer Today. Available at http://www.iowafarmertoday.com/news/crop/economists-study-rfs-waiver/article_87507822-f20d-11e1-9ca3-001a4bcf887a.html.

was created to ensure that the market certainty and stability provided by the RFS could not easily be undermined by frequent or unnecessary waivers of the program's requirements.

Second, the RFS program's inherent flexibility allows actual ethanol production and use to respond rationally to market signals, and ensures the ethanol industry will participate in demand rationing in the event of a feedstock shortage. Congress recognized the need to build flexibility into the program that would minimize the economic impacts of variations and anomalies in the marketplace, while still allowing obligated parties to comply with the program's annual requirements. Because of the flexibility afforded by Renewable Identification Number (RIN) trading and banking provisions, the statutory RFS volumes do not create an absolutely inelastic source of corn demand. The flexibility enabled by the RIN market allowed ethanol production rates to respond immediately to sharply higher corn prices and tighter stocks. Indeed, according to a recent analysis conducted by economists at Purdue University, the reduction in ethanol output since early June 2012 "…shows that markets can and do adjust, with less corn being used for ethanol."[17]

4. Does the Clean Air Act provide EPA sufficient flexibility to adequately address any effects that the RFS may have on corn price spikes?

While it is obvious from earlier responses that we do not believe ethanol or the RFS are having a deleterious impact on corn prices, it is absolutely the case that the Clean Air Act's RFS includes numerous provisions providing flexibility to both obligated parties and the EPA that would mitigate any potential negative impacts on consumers. These provisions include:

- RIN Banking and Trading
- RIN Roll-Over Allowances
- Deficit Carry Forward Provisions
- Small Refiner Exemptions
- RIN Interchangeability
- Annual Renewable Volume Obligation (RVO) Adjustment
- Cellulosic Biofuel Waiver Provisions
- Advanced Biofuel Standard Adjustment
- Total RFS Adjustment
- Future Modification of Applicable RFS Volumes

Each of these provisions is described in detail in the attached RFA Issue Brief (Attachment C). In short, these measures are intended to 1) afford EPA the ability to administratively adjust RFS requirements on an annual basis in light of prevailing fuel market and economic conditions, and 2) provide obligated parties the ability to comply with annual RFS requirements in the event of a

[17] Tyner, W., Hurt, C., and Taheripour, F., Purdue University (Aug. 2012). *Potential Impacts of a Partial Waiver of the Ethanol Blending Rules.* Available at http://www.farmfoundation.org/news/articlefiles/1841-Purdue%20paper%20final.pdf.

shortage of renewable fuel or other market anomaly. Experience to date has clearly demonstrated that both the Agency and obligated parties exercise these provisions when necessary. The Agency, for example, has dramatically reduced the cellulosic requirement each year to date in recognition of the slow pace of commercialization. And obligated parties have made effective use of RIN banking and trading, and RIN roll-over allowances since the program's inception. We believe strongly these flexible provisions are all that are needed to effectively implement the Renewable Fuels Standard.

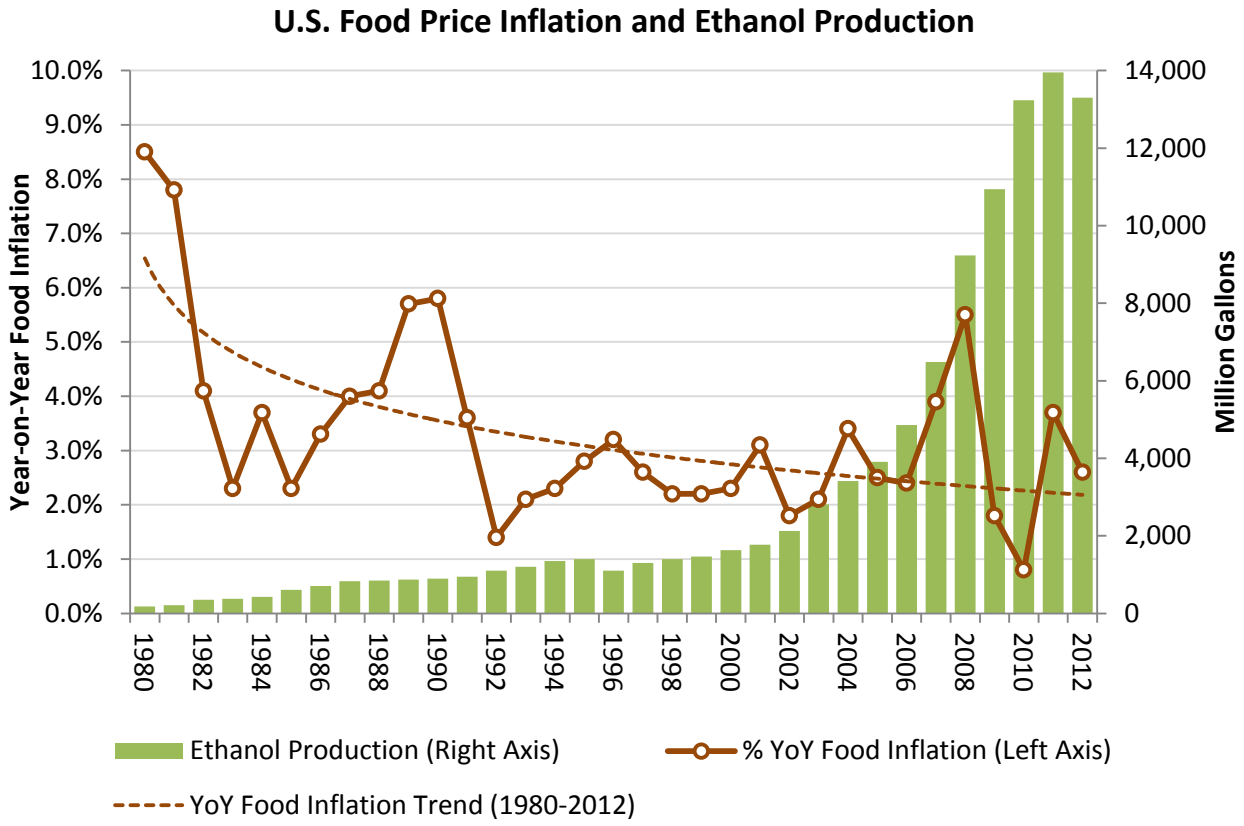
5. What has been the impact, if any, of the RFS on food prices?

There is no credible evidence whatsoever to support the notion that the RFS is adversely affecting consumer food prices. As explained above, the RFS itself has had little direct impact on agricultural commodity prices; and because the farm value of commodities represents such a small share of retail food prices, the impact of the RFS itself on food prices is indiscernible.

The ICTSD analysis referenced above found that retail prices for chicken *wouldn't have been any different at all* had the RFS not existed in the five years from 2005/06 to 2009/10. Similarly, retail beef and pork prices wouldn't have been any different at all without the RFS, with the exception of one year when prices for each would have been higher by $0.01 per pound. As explained by the author, "[t]he reason for such a small price impact is that feed prices make up a small share of retail prices and because the feed cost impacts from ethanol [policy] over this period are small."[18]

The negligible impact of the RFS on retail food prices is further underscored by recent economic modeling by FAPRI, which was also discussed above. The FAPRI work estimated that retail beef prices would be $5.30 per pound in 2012/13 *with or without* a full waiver of the RFS. Similarly, a waiver might result in retail pork prices being reduced by just $0.01 from $3.59 to $3.58 per pound, a 0.04 percent change.[19] Moreover, it is notable that annual food inflation rates have, on average, been *lower* since passage of the RFS than they were in the years preceding the program. Annual food inflation has averaged 2.90% since 2005, the year the original RFS was enacted. By comparison, annual food inflation rates averaged 3.02% in the 20 years prior to enactment of the RFS. Further, two of the lowest annual food inflation rates in the last 50 years have occurred since passage of RFS2 in 2007.

[18] Babcock, B., for ICTSD (June 2011). See footnote 4.
[19] Thompson, W., et al. (Oct. 2012). See footnote 6.



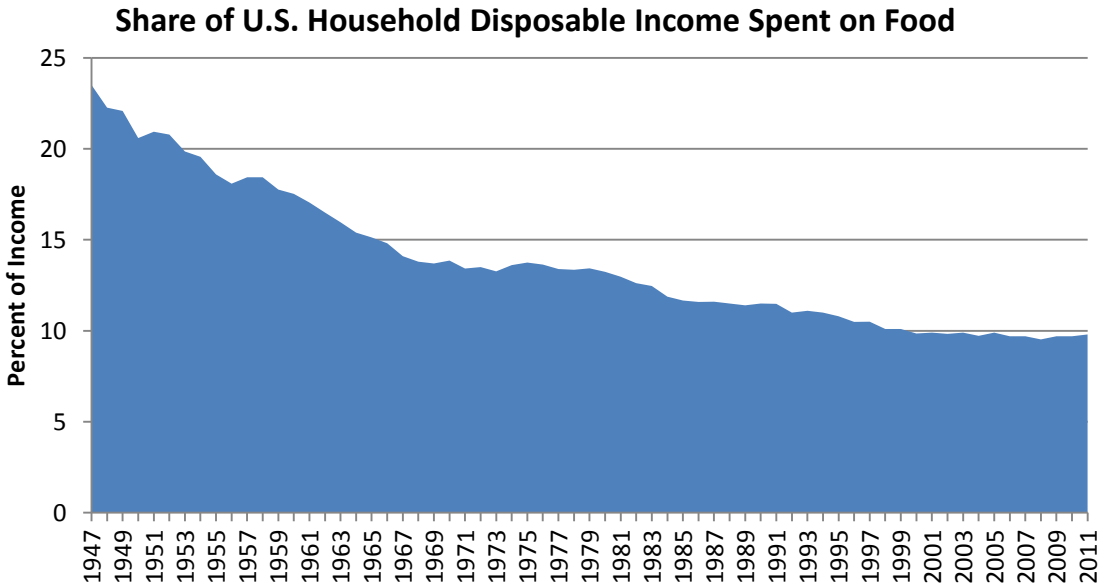
Source: Bureau of Labor Statistics, Energy Information Administration

The lack of any perceptible relationship between the RFS and retail food prices is further illustrated by the fact that the average American household spends less of its disposable income on food today than it did prior to existence of the ethanol industry and the RFS. Since enactment of the RFS2 in 2007, Americans have spent an average of just 9.7 percent of their income on food.[20] In the 10 years prior to adoption of the RFS2, spending on food accounted for 10.0 percent of disposable income. Further, the share of household income spent on food today is less than half of what it was in the early 1950s, and substantially less than the 1960s, 1970s, and 1980s. Spending on food, as a share of income, has trended down steadily since the 1940s and the emergence of ethanol and passage of the RFS have in no way interrupted this trend.

Some have argued that the RFS may disproportionately affect food prices in developing nations, where spending on food represents a much larger share of income. However, there is no indication that the RFS is having any negative impact on food prices in developing countries; and in fact, it could be argued that the emergence of ethanol as a global commodity is improving economic prospects for the rural poor in many developing nations. The DOE study referenced above also estimated impacts of the RFS on global food prices, finding that the policy has only negligible impacts. According to the study, "increases in food commodity prices under the RFS2

[20] USDA-ERS (2013). *Food Expenditures.* http://www.ers.usda.gov/data-products/food-expenditures.aspx

policy were less than 1% throughout the period from 2002 to 2030." Prices for livestock, poultry, and dairy products were shown to remain stable, or even decrease in some years, under the RFS2. Prices for coarse grains and oilseeds were shown to increase by less than 1% as a result of the RFS2.[21]



Source: USDA-ERS

Biofuels have already proven themselves as agents of economic development, environmental improvement, and social progress in many developed nations. We believe biofuels can bring the same benefits to developing nations without jeopardizing food security. In fact, biofuels have the potential to serve as an important tool in *reducing* food insecurity. As stated by the U.N. FAO, "…investment in bioenergy could spark much-needed investment in agricultural and transport infrastructure in rural areas and, by creating jobs and boosting household incomes, could alleviate poverty and food [in]security."[22] The FAO also found that: "Done properly and when appropriate, bioenergy development offers a chance to drive investment and jobs into areas that are literally starving for them."[23]

6. What role could cellulosic biofuels play in mitigating the potential effects of the RFS on corn prices?

Again, as noted several times in our responses, the RFA does not believe the RFS or increased ethanol production is having an unintended negative impact on corn prices. Nonetheless, as cellulosic biofuel feedstocks are most likely to come from agricultural and forestry residues such as corn stover and woody biomass, along with municipal and industrial waste streams, these

[21] Oladosu, D., et al. (2012). See footnote 15.
[22] See http://www.fao.org/news/story/en/item/74708/icode/
[23] Ibid.

fuels should allow us to grow our domestic energy resources without impacting corn supply or prices in any meaningful way. Indeed, to the extent the RFS and advanced biofuels are helping to further reduce global petroleum prices, their commercialization should have a beneficial impact on corn prices by helping to drive down fertilizer costs, diesel prices and other energy inputs that are increasing production costs for all of agriculture today.

7. What impact are cellulosic biofuels expected to have on rural economies as the production of such fuels ramps up?

As noted earlier, the U.S. ethanol industry is already having a significant impact on rural economies as a consequence of the RFS, and those benefits will grow exponentially as the industry continues to evolve and new technologies and new feedstocks are commercialized. The previously cited study by Bio Economic Research Associates[24] found the following benefits from advanced biofuels production:

- Direct Job creation: 94,000 by 2016 and 190,000 by 2022.
- Total job creation: 383,000 in 2016 and 807,000 by 2022.
- Direct economic output: $17.4 billion in 2016 and $37 billion by 2022.

In addition, the previously cited DOE study attributes about half of the economic benefits of the RFS2 to advanced biofuels.[25] This suggests that when fully implemented in 2022, cellulosic ethanol and other advanced biofuels will contribute better than $60 billion to U.S. GDP. It is important to note that while much of this benefit will indeed accrue to rural America where advanced biofuel feedstocks may be grown, the economic effects of these new technologies will also be felt in urban areas where municipal and industrial solid waste will provide feedstocks and where many of these technologies are being developed.

8. Will the cellulosic biofuels provision succeed in diversifying the RFS?

By definition, the cellulosic biofuels provisions of the RFS will succeed in diversifying feedstocks and fuels used in the program, greatly enhancing U.S. energy security in the process. Indeed, that was the intent of the RFS2 program. Congress intended the RFS2 to move the nation beyond oil, and beyond grain ethanol, so as to dramatically transform the nation's transportation energy markets by introducing the world's very first greenhouse gas emissions standard for liquid transportation fuels. By requiring cellulosic biofuels to meet a 60% reduction in carbon and other advanced biofuels to meet a 50% reduction in carbon, Congress sent a powerful signal to the marketplace to invest in these new technologies. While commercial development has not moved as quickly as anyone would like, the fact remains that significant investments have been made in cellulosic and other advanced biofuels and commercialization is imminent. That fact is one of the most important reasons for leaving the RFS2 provisions intact.

[24] Bio Economic Research Associates (2009). See footnote 14.
[25] Oladosu, D., et al. (2012). See footnote 15.

Congress should not be changing the rules in the middle of the game, jeopardizing investments made in good faith and based upon stable federal policy.

9. What is the scale of the impact of the RFS on international agricultural production and global land use changes?

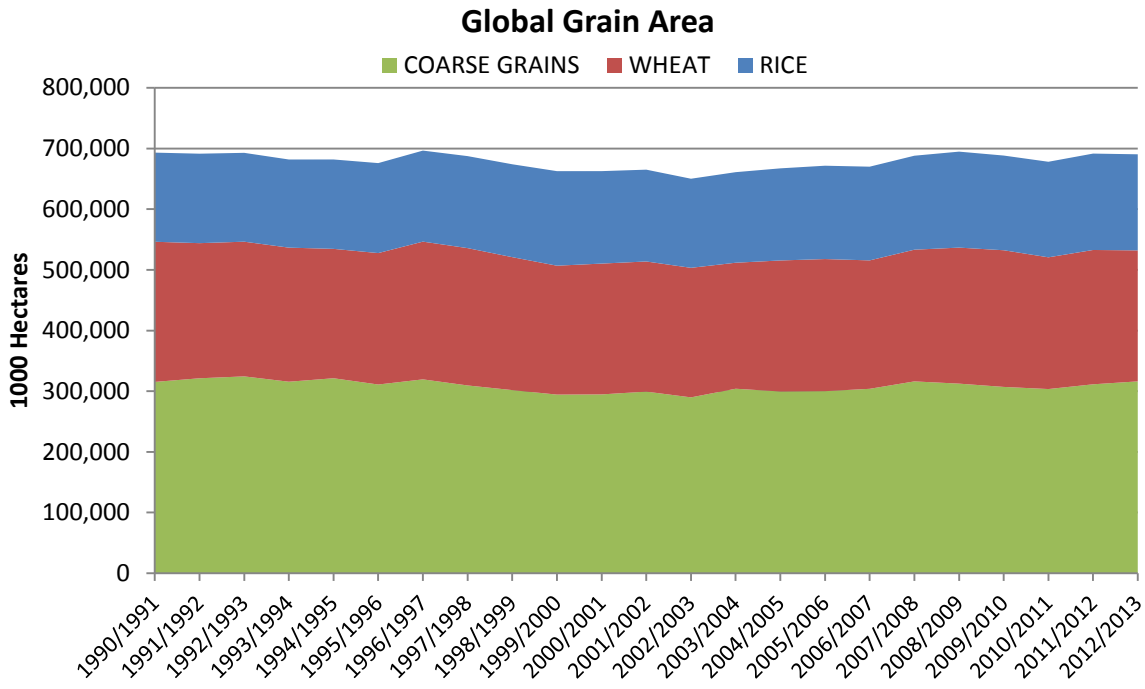
Just as U.S. farmers have reacted rationally to market signals, farmers around the world have also responded to increased demand for commodities by expanding output. However, the RFS and U.S. ethanol production are only minor factors influencing global agricultural production and land use. In response to a broad range of demand drivers, the world's farmers produced a record grain crop (coarse grains, wheat, and rice) of 2.32 billion metric tons in 2011/12. And despite the worst drought in the U.S. in some 50 years, 2012/13 world grain production is the second-largest ever, trailing only the 2011/12 record.[26]

The U.S. ethanol industry's impact on the global grain supply is trivial. On a net basis, the U.S. ethanol industry is projected to use just 2.90% of the 2.72 billion metric ton global grain supply (coarse grains, wheat, and rice) in 2012/13. This means 2.64 billion metric tons of grain and co-products will be available for non-ethanol uses—that is the second-largest amount of grain available for uses other than U.S. ethanol in history, trailing only 2011/12. Looked at another way, the amount of grain available globally today for non-ethanol uses (i.e., grain "left over" after net consumption by the U.S. ethanol industry) is larger than the entire global grain supply in any marketing year prior to 2009/10.

In terms of global land use, the RFS is an inconsequential factor. Studies by USDA and Informa Economics have found less than 1% of the world's major crop area is needed to produce 15 billion gallons of grain ethanol in 2015, as envisioned by the RFS2.[27] This figure is based on active cropland and does not account for the millions of acres worldwide of idle cropland and cropland-pasture that could be brought back into production. When all arable lands worldwide (as recorded by FAO) are considered, just 0.5% is needed to produce 15 billion gallons of grain ethanol by 2015.

Data collected by USDA show that global land use for grain production (coarse grains, wheat and rice) is actually lower today than it was throughout the early 1990s. Only rice—a food grain that is not used for ethanol production—has shown a sustained and steady increase in acreage since 1990. Meanwhile, wheat and coarse grains acreage has tended to fluctuate in response to global market conditions.

[26] USDA (April 2013). World Agricultural Supply and Demand Estimates.
[27] Malcolm, S. A., Aillery, M., and Weinberg, M (2009). *Ethanol and a Changing Agricultural Landscape*, Economic Research Report 86, U.S. Dept. of Agriculture, Economic Research Service.



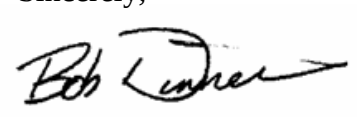
Source: USDA, PSD database

Finally, the recently published DOE economic analysis referenced earlier also examined the agricultural land use impacts of the RFS2, finding that the policy actually results in "…a slight [net] reduction in global land use for agriculture."[28] The modeling showed that any marginal increases in agricultural land use resulting from the RFS2 would be largely constrained to the U.S. and offset by decreases in land use in other regions. This result stands in stark contrast to previous modeling results suggesting the RFS2 would induce significant land use expansion outside of the U.S. The study shows U.S. agricultural land use would be just 0.4% higher (less than 2 million hectares) in 2015 than would be the case without the RFS2 in place. However, slightly expanded land use in the U.S. is more than offset by reductions in other regions by 2022.

* * * * *

Thank you again for the opportunity to comment. If there is any additional information you would like RFA to provide, please do not hesitate to ask.

Sincerely,



Bob Dinneen
President & CEO

[28] Oladosu, D., et al. (2012). See footnote 14.