

SoyInsights Research Executive Summary

Insights on the Factors Impacting the Success of U.S. Soy

December 2017

SoyInsights is an inclusive process that assembles leaders from all segments of the U.S. soy value chain to determine gaps and barriers facing the U.S. soy industry, and encourage change within the industry to meet competitive challenges.

The primary objective of SoyInsights is to provide industrywide information on issues that might impact the entire U.S. soy value chain long term, including:

- Global market dynamics
- Paradigm shifts
- Innovation and technology advancements

SoyInsights conducted qualitative research with 43 experts from across the soy value chain on the market challenges and opportunities for U.S. soy related to meal, oil and sustainability. The objectives of the research were to gain insight on:

1. What factors will affect U.S. soy industry success?
2. What factors can the U.S. soy industry impact?
3. What meal, oil and sustainability trends could increase soy value chain profitability?
4. What opportunities or barriers should the U.S. soy value chain consider addressing?

The stakeholder research identified several opportunities and challenges the soy value chain will need to consider and contend with over the next 5-10 years.

Top Opportunities and Challenges that Will Affect U.S. Soy Industry Success

MEAL	OIL	SUSTAINABILITY
Maintaining and improving U.S. soy product quality over the rest of the world	Global population and demand growth	Securing export markets/opportunities
Global population and demand growth	U.S. trade policies	Farm profitability; increasing yields

SoyInsights Research Full Report

SOYINSIGHTS INDUSTRY STAKEHOLDER RESEARCH

The SoyInsights stakeholder research focused on gathering qualitative insights and asking experts to name the challenges and opportunities that matter to the industry. The objectives of the research were to gain insight on:

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2. What factors can the U.S. soy industry impact?
3. What meal, oil and sustainability trends could increase soy value chain profitability?
4. What opportunities or barriers should the U.S. soy value chain consider addressing?

What factors will affect U.S. soy industry success?

The research asked experts from soybean meal, soybean oil, and sustainability-related areas to identify the top issues that will affect U.S. soy industry success in the next 1-5 years (2018-2022). And, then in the next 5-10 years (2022-2027).

In the next 1-5 years?	In the next 5-10 years?
Securing export markets/opportunities	Global population and demand growth
Chinese trade relations: demand and regulatory approval	Improving soy component quality using advanced breeding/technology
Farm profitability: increasing yields and reducing the price of production	Consumer behavior; making/using technologies acceptable to consumers
Maintaining and improving U.S. soy product quality over the rest of the world	U.S. trade policies
U.S. trade policies	Farm profitability: increasing yields and reducing the price of production

The majority of participants, especially those in the Oil and Sustainability areas, expressed the importance of maintaining and growing export markets in the short term given that nearly half of U.S. beans are exported. This trend was often mentioned in relation to trade policies, and Chinese demand. In the longer term, the focus shifted to global population and demand growth, especially for Meal and Oil experts, while Sustainability experts focused on farm profitability.

Respondents, particularly those in the Meal area, noted U.S. soy product quality as a factor in both the short- and long-term. Respondents recommended the soy industry focus more on the protein and oil components of soybeans through seed variety development and selection, and constituent market systems, to better define the quality and composition and improve the overall soy product quality. A participant from the Meal industry stated the situation concisely: *“If we can increase the nutritional enzyme level in soy product, we can pack more value in soy. Soy (consists of) a host of different nutrients; the bigger the bundle the better.”* While the concept of

focusing on constituent value may still be emerging for participants in the soy value chain, it represents a significant area of opportunity for education, research and investment.

When discussing technologies acceptable to consumers, experts noted consumers' increased curiosity in the supply chain of products, especially food. Because of this consumer evolution, they predict food companies and processors will need to respond to consumer demands for a transparent supply chain, which can go back to the farm.

Experts also discussed the opportunity to increase productivity through continued investment in research and technological innovations related to data, breeding and inputs. Participants recognized a need to capitalize on technological innovations to improve the nutritional bundle of soybeans for both U.S. soy product quality and farm profitability.

Factors by respondent expertise

The top choice for each focus area is noted in bold in the charts below.

1-5 Years	Meal	Oil	Sustainability	TOTAL
Securing export markets/opportunities	19%	33%	50%	35%
Chinese trade relations: demand and regulatory approval	13%	22%	44%	28%
Farm profitability: increasing yields and reducing the price of production	25%	22%	33%	28%
Maintaining and improving U.S. soy product quality over rest of the world	56%	--	11%	26%
U.S. trade policies	19%	33%	28%	26%

5-10 Years	Meal	Oil	Sustainability	TOTAL
Global population and demand growth	56%	56%	17%	40%
Improving soy component quality using advanced breeding/technology	50%	33%	17%	33%
Consumer behavior; technologies acceptable to consumers	25%	22%	44%	33%
U.S. trade policies	25%	44%	22%	28%

5-10 Years	Meal	Oil	Sustainability	TOTAL
Farm profitability; increasing yields	6%	11%	50%	26%

What factors can the U.S. soy industry impact?

While it's important to be aware of any factors that will impact the industry in the future, it's necessary to prioritize the ones where the U.S. soy industry can realistically have input or influence on the outcome. The research asked which trends the experts saw as opportunities the soy value chain could leverage, or issues the industry could take action to impact.

U.S. soy value chain can most impact:	Meal	Oil	Sustainability	TOTAL
Improving the quality of our product	50%	33%	11%	30%
Establishing new markets for U.S. soy (includes overall market development and demand building)	43%	22%	17%	28%
Marketing U.S. soy health and sustainability benefits	25%	22%	28%	26%
U.S. trade policies	31%	11%	22%	23%
Farm profitability; lowering production costs	38%	11%	6%	19%
Constituent value market system to capture value out of the field	38%	11%	--	16%
New uses of soybeans and supply chains to support them (high oleic, aquaculture)	6%	11%	28%	16%

Improving the quality of our product was noted as the number one answer by both Meal and Oil respondents, and could be viewed both as an opportunity for improvement, or as a challenge to overcome in the case of declining protein levels. Related answers on the use of a constituent value market system, and developing new uses for soybeans, fell just outside the top five answers, but are important to note in that it would be an action that could support improvements in product quality.

Sustainability experts see an opportunity to market U.S. soy health and sustainability benefits.

What meal, oil and sustainability trends could increase soy profitability?

The research sought to understand what trends the experts saw as opportunities that would make the most impact on improving the profitability of U.S. soy. The experts noted the following opportunities or issues to address:

1. Conversion to high oleic soybeans and new uses of high oleic oil
2. Developing new global markets for animal feed and meat protein
3. Improved protein levels
4. Reducing land use impact (more bushels per acre)
5. Processors' investments needed to manage multiple types of soy crops
6. Maintaining and improving domestic transportation infrastructure

Each of the focus areas – Meal, Oil and Sustainability – had specific opportunities or issues. Many of the trends were consistent with those identified in the 2016 research (noted in bold).

Soy Meal Trends to Increase Profitability

- **Developing new global markets for animal feed**
- **Improved protein level**
- **Developing new global markets for meat protein**
- **Measurement of constituent value**
- **Improved farmer understanding of soybean constituent value measurement**

Top Soy Oil Trends to Increase Profitability

- **Conversion to high oleic soybeans**
- **New industrial uses for high oleic soy oil: motor oil, plasticizers and asphalt**
- New biofuels for energy source
- **Continued biofuels subsidies**
- Influencer and marketplace acceptance of CRISPR technology

Top Soy Sustainability Trends to Increase Profitability

- Reducing land use impact (more bushels per acre)
- **Maintaining and improving domestic transportation infrastructure**
- Processors' investments needed to manage multiple types of soy crops
- **Addressing regulation on plant protection products**
- **Addressing water regulations**

What opportunities and barriers should the U.S. soy value chain consider addressing?

Finally, the research asked participants to name the opportunities and barriers that the value chain should address to support continued growth. Respondents wanted to see U.S. soy take an active role in addressing the perceived barriers and taking advantage of competitive opportunities.

1. Regulatory environment for approval and use of seed, traits and crop protection products
2. Capturing meal market opportunities in countries with expanding demand
3. Foreign soybean competition
4. Adoption of healthier and more functional soybean oil options (high oleic and interesterification)
5. Declining soybean protein levels
6. Infrastructure to move product to market

Responses related to regulatory approval spanned both domestic and international approvals, as well as the length of the approval process.

Participants who highlighted the opportunity to capture meal market opportunities in countries with growing demand cited a need to maintain or improve the competitive value/quality of U.S. soy. They also noted trade concerns given NAFTA discussions.

Many also pointed out competition from foreign soybeans as a major barrier both in beans and biodiesel. Consistent with feedback on capturing meal opportunities and declining protein levels, respondents noted opportunities for product improvements to differentiate U.S. soy from competitors. They recommended both breeding and agronomic research to improve protein and nutritional bundle levels. In addition, SoyInsights members suggested research on relative feed value based on components. Some noted that quality is linked to digestion, and that more efforts could be made to index the digestibility of the product.

Those who suggested the adoption of healthier and more functional soybean oil options as an opportunity for the industry to pursue cautioned that it requires adoption by both ends of the value chain – customers and farmers.

Finally, the majority of comments on infrastructure concentrated on needed improvements to locks and dams.

Comparison to 2016 SoyInsights Research

Both surveys emphasized the importance of:

- Growing global demand for animal protein, both for its opportunity to drive U.S. soy markets/profits, and the challenge from international competition to meet the demand.
- The role of regulatory barriers in trade success: winning approval and use of seed, traits and crop protection products in all countries and regions of the world.

However, the 2017 research revealed several new insights on direction for the U.S. soy industry:

- More emphasis on the need to improve the quality of the U.S. soy product (meal/constituents and oil).
- More emphasis on actively seeking export opportunities in countries with growing demand for animal protein.
- More discussion of the importance of understanding consumer awareness, attitudes and changing behavior about food choices and how food is grown for soy's long-term success.
- A new suggestion to market the health and sustainability benefits of U.S. soy more actively.
- Input on the importance of improving U.S. farm profitability using technology to increase yield and reduce production costs, also included mentions of reducing environmental impact this year.