



FY 2012 Action Plan

Long-Range Strategic Plan

Financial References

FY12 Summary Budget & Committee Allocations

Target Areas

Animal Utilization

Industrial Utilization

Supply

Human Utilization

Industry Relations

Market Access

Audit and Evaluation

UNITED SOYBEAN BOARD/SOYBEAN CHECKOFF LONG-RANGE STRATEGIC PLAN 2011-2016

After 20 years of steady successes, the checkoff is now facing a worldwide demand that requires a 50 percent increase in protein by 2030.* We must continue striving for even greater yields to meet this growing demand while differentiating our U.S. soy products and services in the global marketplace.

CORE VALUE: The board, with honesty and integrity, collectively and individually, is committed to working within the letter and spirit of applicable law and regulation to achieve maximum value for each soybean farmer's checkoff dollar.

MISSION: Effectively invest and leverage soybean checkoff resources to maximize profit opportunities for U.S. soybean farmers.

VISION: U.S. soybeans will be the leader of the global oilseed industry.

STRATEGY: Create and maintain partnerships that differentiate and increase the utilization of U.S. soy in a changing global market.

STRATEGIC OBJECTIVES

- 
MEAL: Increase the value of U.S. soybean meal to the entire value chain.
Measurement: Changes in volume and value of U.S. soy meal.
- 
OIL: Increase the value of U.S. soy oil to the entire value chain.
Measurement: Changes in volume and value of U.S. soy oil.
- 
FREEDOM TO OPERATE: Ensure that our industry and its customers have the freedom and infrastructure to operate.
Measurement: Increase in acceptance of today's agriculture practices by influencers, customers, regulators and influential consumers.
- 
CUSTOMER FOCUS: Meet our customers' needs with quality soy products and services to enhance and expand our markets.
Measurement: Improvement in customer relationships by key segments.

PRIORITY ISSUES

PROTECT AND SUPPORT THE U.S. ANIMAL AGRICULTURE INDUSTRY

Measurement: Number and size of production facilities by species.

INVESTMENT IN TRANSPORTATION INFRASTRUCTURE

Measurement: Increase in public and private investment in soy transportation modes.

*United Nations Food & Agriculture Organization

www.UnitedSoybean.org



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THE SOYBEAN CHECKOFF PROVIDES ALL U.S. SOYBEAN FARMERS WITH **PROFIT OPPORTUNITIES**



U.S. soybean farmers helped create the soybean checkoff as part of the 1990 farm bill. The U.S. Department of Agriculture established the farmer-driven United Soybean Board (USB) in 1991.



No other major U.S. row crop has experienced the amount of demand growth over the last two decades as has U.S. soybeans. U.S. Department of Agriculture (USDA) statistics show global demand for U.S. soy has increased more than 140 percent since 1991.



U.S. soybean farmers planted 59 million acres of soybeans in 1991. By 2011, that number increased to 75 million acres. In all, U.S. soybean farmers have produced 50 billion bushels of soybeans over the last 20 years.



The first year farmers formed USB, the price of U.S. soybeans averaged \$5.58 per bushel. In 2011, U.S. soybean farmers will likely sell their soybeans for nearly \$12-\$12.50 per bushel.



When the checkoff began in 1991, the United States exported 684 million bushels of soybeans. In 2011, U.S. soybean farmers helped export 1.45 billion bushels of soybeans, more than double the amount at the start of the soybean checkoff.



UNITED SOYBEAN BOARD
SUMMARY BUDGET
TREASURER RECOMMENDATIONS
FOR FISCAL YEAR ENDING SEPTEMBER 30, 2012

	<u>FY2012 BUDGET</u>	<u>Feb ADJMTS</u>	<u>June ADJMTS</u>	<u>Committee Allocations</u>	<u>Oct/Nov ADJMTS</u>	<u>FY2012 BUDGET</u>
BUDGETED REVENUES						
QSSB Collections	\$ 92,179,688		2,155,312		(463,125)	93,871,875
Investment Income	0					0
Carryover Funds	0		5,000,000			5,000,000
Total Budgeted Revenues	\$ 92,179,688	0	7,155,312	0	(463,125)	98,871,875
BUDGETED EXPENDITURES						
Animal Utilization	\$	7,605,805	12,913,632	1,603,883	461,948	22,585,268
Industrial Utilization		12,101,165	75,270	1,532,936	317,717	14,027,088
Supply		16,595,290			1,970,621	18,565,911
Human Utilization		2,805,172	3,374,039	419,058	594,414	7,192,683
Industry Relations		10,514,527		659,243	2,289,469	13,463,239
Market Access		5,513,109		273,000		5,786,109
Allocations to Committees	73,770,298	(55,085,068)	(8,562,941)	(4,488,120)	(5,634,169)	0
Total Program Funding	\$ 73,770,298	50,000	7,800,000	0	0	81,620,298
USB Evaluation of Programs	1,475,406	1,000	156,000	0	0	1,632,406
Total Programs & Evaluation	\$ 75,245,704	51,000	7,956,000	0	0	83,252,704
USB Managed Programs	3,000,000		124,425		824,470	3,948,895
USDA	300,000					300,000
Administrative	4,608,984	0	107,766	0	(23,156)	4,693,594
New Initiatives	3,000,000		(3,000,000)			0
Impact Projects	3,000,000		(3,000,000)			0
Next Gen			6,000,000			6,000,000
QSSB Assessment Credits	25,000					25,000
Total Budgeted Expenditures	\$ 89,179,688	51,000	8,188,191	0	801,314	98,220,193
Board Unallocated	3,000,000	(51,000)	(1,032,879)	0	(1,264,439)	651,682

Collections estimated upon 3.375 billion bushels usage at a \$11.50 average price at February 15, 2011 board meeting.

Collections estimated upon 3.31 billion bushels usage at a \$12 average price at June 30, 2011 board meeting.

Collections estimated upon 3.1 billion bushels usage at a \$12.75 average price at Treasurer's recommendation.

FY2012 ALLOCATION by Committee	International Marketing	Global Opportunities	Production	Domestic Marketing	New Uses	Communications	Special Initiatives	Total
Animal Utilization								22,585,268
Customer Preference	6,359,232							6,359,232
Demand Building	8,158,283			5,941,753	1,126,000			15,226,036
Aquaculture Initiative							1,000,000	1,000,000
Industrial Utilization								14,027,088
Biodiesel	84,619			2,969,303		565,577		3,619,499
New Uses - Research & Commercialization				695,144	9,712,445			10,407,589
Supply								18,565,911
Composition - Improve varieties/germplasm			4,733,009	3,079,394				7,812,403
Yield			10,753,508					10,753,508
Human Utilization - Protein/Oil								7,192,683
Customer Preference	2,363,787							2,363,787
Demand Building	1,429,310			3,399,586				4,828,896
Industry Relations								13,463,239
Producers/Value Chain/Thought Leaders						6,736,488		6,736,488
USB & QSSBs						2,691,405		2,691,405
Research Coordination			1,035,346					1,035,346
Industry Partnership Initiative							3,000,000	3,000,000
Market Access								5,786,109
Global Access								0
Competitiveness		2,786,109						2,786,109
Biotech Initiative							1,500,000	1,500,000
Sustainability Initiative							1,500,000	1,500,000
Recommended Allocation to Cmtee								0
Treasurer's Recommendation								0
Proposed Allocation for FY 2012	18,395,231	2,786,109	16,521,863	16,085,180	10,838,445	9,993,470	7,000,000	81,620,298

Animal Utilization

Domestic Marketing Committee

LRSP Objective #1

Annual utilization of 3.5 billion bushels of soybeans by 2011

DMC Animal Utilization Goals for LRSP Objective #1

- I. Preserve the domestic soybean meal market
- II. Build support for livestock and poultry production in the United States
- III. Expand targeted animal nutrition opportunities
- IV. Grow meat export opportunities

LRSP Objective #2

Approval in the importing countries that comprise 90% of U.S. soy products for each biotech event by the time of its commercialization.

DMC Animal Utilization Goals for LRSP Objective #2

- V. Support competitive improvements to the soybean for animal consumption
- VI. Early adoption of new soybean traits focused on animal consumption

LRSP Objective #3

Promote U.S. sustainable soybean production through responsible stewardship while acknowledging global market needs.

DMC Animal Utilization Goals for LRSP Objective #3

- VII. Assist industry in establishing sustainability definitions
- VIII. Coordinate with livestock organizations to establish sustainability definitions within agriculture

Market Environment

Increasing domestic utilization of U.S. soy is tied directly to the status of the U.S. livestock and poultry industries. Poultry, hogs and cattle consume about 97% of U.S. soybean meal in the United States because of its protein content and ideal amino acid profile. The growth of both the soybean and livestock sectors is dependent on the United States' ability to expand the U.S. livestock sector through increased domestic meat consumption while growing exports of meat and meat products.

U.S. livestock and poultry producers continue to face increasing pressure from animal rights and environmental activist groups. At the same time consumers, several generations removed from the farm, do not understand modern farming and ranching operations and are susceptible to misleading messages about animal agriculture. Further, research indicates that many in modern society view their pets as family members, which further increases their vulnerability to disingenuous communications ostensibly directed at animal welfare concerns. Animal rights groups have proven effective at mainstreaming their positions and masking their intentions by adeptly leveraging messaging from those who oppose contemporary agriculture (for instance

filmmaker Robert Kenner, author Michael Pollan and others in the organic, “natural” and local food movements).

The landscape of U.S. agriculture continues to adjust to high input costs at all levels of production. Sharp increases in energy costs are driving changes in planting, harvesting, milling, feeding and processing. Historically, protein was considered the most expensive part of livestock and poultry diets. Now dietetic energy has surpassed protein in feed formulation expense. And energy is likely to remain the most expensive component of the diet for the foreseeable future.

We are seeing feed formulations diverge from the typical corn-soy diet that has been prevalent in the United States since the 1960’s to diets formulated from a tremendous variety of feedgrains and oilseeds. This nutritional platform transition is already affecting the U.S. soybean farmer’s ability to compete in providing protein to feed livestock and poultry in the United States.

After moderating in 2010, feed input costs for corn and soybean meal are accelerating, with soybean meal over \$350 per short ton and soybeans at over \$13.00 per bushel as of March 2011. These increases follow surging 2010 soybean exports.

U.S. meat and poultry production in 2010 was mixed due to a weak domestic economy, while situations are improving in many developing nations. Broiler chicken production increased 3.9% for the year and turkey meat production was even with 2009. Cattle on feed increased nearly 3% for the year. Breeding sows fell a little over 1%, and market hogs declined by less than 1% due to increased pigs per litter. January broiler meat in cold storage was up about 23% from a year ago, while turkey was down almost 16%. And pork bellies in cold storage were down about 4% from last January. Targeted meat and poultry export programs have helped keep cold storage inventories of pork and turkey low and put U.S. meat and poultry producers in a good position if the global economic environment improves.

This past year, the demand for U.S. meat and poultry in foreign markets was mixed from 2009, but overall demand was up slightly, resulting in improved demand for U.S. soy. Global meat markets shift continually, making USB efforts to assist in meat export marketing programs critical to the success of U.S. soy producers. Currently, the U.S. dollar is gradually decreasing in value compared to many other currencies, providing a competitive advantage for U.S. meat and poultry products. Worldwide animal health issues like Bovine Spongiform Encephalopathy (BSE), Hoof and Mouth Disease and High Pathogenic Avian Influenza (HPAI), depending on when and where they occur, can have detrimental effects on meat and poultry exports or can create new opportunities for U.S. products.

While the U.S. provides one of the safest, most reliable food supplies in the world, meat and poultry exports enter many foreign countries frozen. Frozen meat and poultry face a stigma in many of these countries as inferior to fresh, locally raised meats. Many foreign markets critically need education on the equality of frozen to fresh products, as well as safe cooking procedures to either prevent or deactivate pathogens in meat preparation.

The migration of meat production to foreign markets would drastically reduce the demand for U.S. sourced soybeans. So preserving and expanding the U.S. meat and poultry industries is critically important to supporting U.S. soybean farmers.

*USB FY12 Action Plan
Animal Utilization – Domestic Marketing Committee*

Growth in poultry and red meat exports translates into more soybean meal utilization domestically as feed. Projections from the 2010 USDA meat export baseline indicate significant soybean meal utilization as meat exports. Exports of chicken and turkey meat in 2009, excluding chicken paws topped 3.4 million metric tons (MT), which represented nearly 2.3 million MT of soybean meal that was fed to those birds. Pork exports accounted for 1.8 million MT of soybean meal, and beef exports accounted for 150 thousand MT of soybean meal.

Mexico and Russia top the list of U.S. chicken meat importers, while new growth opportunities are emerging in the rest of the world, including West Africa. Maintaining Russia's position as a top importer of U.S. poultry has proven challenging due to the Russian political scene, and the use of U.S. poultry as a maneuvering point in trade debates. Russia was displaced as the top importer of U.S. chicken by Mexico in 2010. Broiler exports to Mexico increased nearly 20 percent in both 2009 and 2010.

The combined markets of China and Hong Kong also remain very important to U.S. poultry producers. Combined, these markets account for 253 thousand metric tons of U.S. chicken in 2010, the third largest export market. New markets are constantly emerging as U.S. chicken becomes more available globally and more countries develop cold storage and transportation options, rising 7.9 percent in 2009 and 33 percent in 2010.

The United States continues to compete against in-country production, as well as against Brazilian chicken exports. The partnership between the soybean checkoff and the USA Poultry and Egg Export Council focuses on maintaining the existing markets and growing new markets through education and trade servicing.

In 2009, livestock in the United States consumed over 27 million metric tons of soybean meal, which represents about 80% of total domestic soybean use and about 98% of domestic soybean meal consumption.

Soybean meal is the leading non-animal protein source used in diet formulations for poultry, pork and beef due to its unique protein quality. However, there is competition from substitute ingredients. The increase of ethanol production from dry grind ethanol plants has increased the tonnage of Distillers Dried Grains with Solubles (DDGS) available worldwide, and has replaced portions of soybean meal (SBM), initially in ruminant diets such as feedlot steers and dairy cattle and now in swine diets.

Great effort has been made by the ethanol and corn industries to develop standardized testing procedures, reduce variability in DDGS and conduct research to increase the amount of DDGS that can be used in monogastric diets for hogs and chickens. Much of the research has focused on replacing corn, not SBM, in rations to use the lipid energy present in DDGS to replace the starch from corn. Some SBM is removed in this process; however, DDGS do not have the same nutrient profile as SBM and cannot replace it on a 1:1 basis without amino acid supplementation. Due to a combination of reduced variability and falling amino acid prices, DDGS use in swine and poultry diets is increasingly common.

Another issue facing soybean meal is the gradual decline of crude protein levels in the some regions of the U.S. soybean crop. The upper Midwest represents the most

protein-challenged region. Data from the USSEC soybean quality survey shows that soybean protein levels averaged 34.77 percent between 1986-1995, 34.52 percent between 1996 and 2005 and further declined to 34.08 percent between 2006 and 2010. Processors in the region have difficulty making high protein meal, which results in discounts on soybean meal that impact the price farmers are paid per bushel. Regardless of the many inherent values of soybean meal, such as an ideal amino acid profile, energy values, consistent availability and easy handling, soybean meal is still traded based on NOPA standards of minimum protein guarantees.

Meanwhile other vegetable proteins, such as canola, are improving in quality. The ideal amino acid profile of soybean meal continues to give it advantage primary position in the ration, but alternative ingredients have displaced significant amounts of soybean meal. For example a leading nutritionist for a major hog integrator recently told USB staff that for every 100 lbs of DDGS added to the ration, 40 lbs of soybean meal comes out.

Maintaining soybean meal's position as the premier protein source in animal feed diets is necessary to the viability of the soybean market. In the United States, meal drives the value of soybeans. While soybean oil may be worth twice as much on a per unit basis, the bean provides three times the amount of meal by weight. The sheer volume of meal drives the commodity value for whole soybeans, not just the value of oil. It is also important to remember that oil can be stored for much longer periods of time than meal, due to the differences in shelf life. That means that meal must always trade at a price to move, and will be impacted by the price of alternative ingredients.

Strategic Approach

The animal utilization target area's strategic approach is to build demand for U.S.-sourced soybean meal through domestic livestock and poultry feed consumption to assist in reaching the annual utilization objective of 3.5 billion bushels. This approach focuses on the maintenance and growth of animal agriculture in the United States.

Poultry and livestock typically consume about 98 percent of domestic soybean meal. The migration of meat production to foreign markets would drastically reduce the demand for U.S.-sourced soybeans. Maintaining and growing the U.S. soybean market is directly tied to preserving and growing the U.S. livestock and poultry sectors—the #1 customer for U.S. soybean meal. Building recognition of meat and poultry producers, from the taxes they pay to the jobs they provide, is important, as is accentuating their commitment to animal welfare, care of the environment and producing healthy and affordable food for U.S. consumers.

When addressing Objective 2 of the long range strategic plan (LRSP) (achieving adoption and global acceptance of improved soy technologies and biotechnology) by researching the application of new traits that bring increased value to soybean meal as a protein and energy source in feed rations. The strategic approach focuses on supporting improvements and early adoption of traits such as increased metabolizable energy, improved amino acid availability and removal of anti-nutritional factors.

USB's mission to support the animal agriculture industry focuses on efforts to bring the agricultural and food industry together to create an environment in which a safe, reliable and affordable supply of protein products is available—consistent with evolving consumer values for environmental and animal welfare standards, while assuring animal

producers the maximum opportunity to sustain profitable operations. This mission's success will be driven by a value chain based coalition of national, state, and local organizations that will work to create profitable opportunities for U.S. animal agriculture, soybean producers' biggest customer. This approach advances the LRSP objective of promoting U.S. sustainable soybean production through responsible stewardship while acknowledging global market needs with our primary customers.

Ability to Impact

USB can impact the animal utilization target area by supporting U.S. livestock, poultry and aquaculture industries. This includes increasing awareness of the importance of these industries to U.S. soybean farmers, educating consumers on the benefits of modern livestock production and providing solutions to nutrition and environmental issues.

Supporting domestic livestock and poultry production by communicating the importance of livestock to soybean producers helps to ensure long-term domestic soybean meal customers. By encouraging the export of U.S.-produced pork, chicken and beef, more soybean meal is used domestically, and the domestic livestock industry is supported by increasing the availability of animal protein worldwide.

USB can also facilitate greater demand through development of composition-modified soybeans, such as low-phytate and reduced-oligosaccharide soybeans that have greater digestibility through changing the complex fiber fraction to digestible sugars. The improved digestibility results in greater energy availability to poultry and may create less wasted phosphorus and less solid waste pollution from swine and poultry manure.

LRSP Objective #1

Annual Utilization of 3.5 billion bushels of U.S. soybeans by 2011

DMC Animal Utilization Goals for LRSP Objective #1

- I. Preserve the domestic soybean meal market at 98% consumption rate

Strategies:

- A. Educate animal nutritionists and feed formulators on the consistency, superior amino acid complex, availability and efforts to enhance U.S. soybean meal.
- B. Coordinate with leading animal nutritionists to target soybean checkoff investment in animal related research

- II. DMC Animal Agriculture Goal II -- Build support for livestock and poultry production in the United States

Strategies:

- A. Support the domestic animal agriculture industry through the Center for Food Integrity
- B. Maintain effective links between the animal feed industry and QUALISOY

- III. Expand targeted animal nutrition opportunities

Strategies

- A. Increase the competitive value of SBM as a key feed ingredient for U.S. animal agriculture.

- B. Continue information gathering on soybean meal production and consumption numbers in the U.S.

IV. Grow Meat Export Opportunities

Strategies

- A. Expand U.S. meat and poultry exports
- B. Enhance the perception of U.S. meat and poultry products as high quality among trade organizations and consumers
- C. Support the long-term growth of worldwide protein consumption through increased consumption of U.S.-grown meat, dairy and egg products.

DMC Animal Utilization Strategy I.A. – Educate animal nutritionists and feed formulators on the consistency, superior amino acid complex, and availability of U.S. soybean meal.

Tactics:

1. Review up-to-date soybean and SBM research in feed rations and educate feed industry with relevant information.
2. Determine livestock industry customer needs through interaction at trade shows, scientific societies, technical gatherings and working groups.
3. Encourage the feed and livestock industries to support new SBM research.
4. Develop and identify customer needs for soybean meal.

Performance Measures:

- Engage at least three feed and livestock companies or organizations in supporting new SBM research and development through funding and work-in-kind.
- Identify two key customer needs pertaining to SBM.

DMC Animal Utilization Strategy I.B. – Coordinate with leading animal nutritionists to target soybean checkoff investment in animal related research.

Tactics:

1. Continue to implement the Animal Nutrition Working Group plan that will stimulate information sharing to QUALISOY within the next three years focused specifically on meal enhancement for animal utilization.
2. Coordinate with QUALISOY to include U.S. soy feeders and processors in the Animal Nutrition Working Group.

Performance Measures:

- Identify the two most important strategic value enhancements for SBM through the Animal Nutrition Working Group to QUALISOY, DMC, and other program committees.
- Identify support for QUALISOY from two members of the animal nutrition and feed industry.
- Obtain firm commitments for ANWG participation through FY11 by at least 90% of attendees.

- Have at least 90% of ANWG members agree to actively assist USB on issues facing SBM utilization.
- Ensure ANWG members understand USB's focus and progress on meal improvement over the past 10 years.
- Confirm that changes in soybean composition, affecting SBM, are necessary to maintain a competitive market position for meal globally.
- Prioritize USB's meal composition targets.
- Identify practical barriers to the most efficient utilization of soybean meal's nutrient potential.
- Establish initial performance thresholds for industry adoption of value-added opportunities.
- Identify a research pathway for soybean meal trait improvements.
- Identify and pursue paths for commercialization of new soybean traits.

DMC Animal Agriculture Goal II -- Build support for livestock and poultry production in the United States

DMC Animal Utilization Strategy II.A. – Support domestic animal agriculture through the Center for Food Integrity

Tactics:

1. Define and direct specific CFI animal agriculture initiatives.
2. Coordinate a communication network with national, state and local stakeholder groups
3. Quickly and accurately address public misinformation around food animal production, in both a proactive and reactive manner (respond to public directly; liaise with state livestock coalitions; ensure available support)
4. Assemble a broad based forum of collaborating members, beyond domestic livestock producers, to address food animal industry issues
5. Conduct an annual strategy conference where food animal coalition members assemble with the committee to plan strategies and tactics that are beneficial for animal agriculture.
6. Develop a resource center to support domestic livestock production and address livestock industry issues as they arise.
7. Broaden funding partnerships to include the entire food system in its efforts to support domestic livestock production
8. Continue the Food System Roundtables that include restaurants, food retailers, meat processors and other food chain stakeholders to establish goals for communicating safe and sustainable U.S. food production.

Performance Measures:

- Implement Farmers Feed US in two additional states in 2012 using a combination of USB and partner funds
- Ten organizations join CFI Livestock committee
- All state livestock coalitions represented at the National Animal Ag Strategy conference

- Identify two to three states without livestock coalitions and work with leaders to establish initial framework and strategy for the formation of a coalition
- Expand representation of food producers within the coalition
- Continued successful Food System Roundtables with clear direction to move forward.
- Representation from the top three from both Food and Restaurant sectors on the national roundtable.
- Support from the Food/Restaurateur sector for the Animal Ag Coalition through memberships and funding.

DMC Animal Utilization Strategy II.B. – Maintain effective links between the animal feed industry and QUALISOY

Tactics:

1. Utilize partnerships from the ANWG and feed industry outreach projects to build recognition for QUALISOY
2. Build platform of support for QUALISOY research programs and trait improvements
3. Collaborate with the animal agriculture supply chain by supporting QUALISOY efforts on those traits that specifically affect livestock production.

Performance Measures:

- Willingness of ANWG members to participate in QUALISOY hosted activities
- Greater recognition of QUALISOY in the feed industry beyond the ANWG
- Accelerated adoption of new traits in feed industry
- Willingness of feed industry to partner on QUALISOY research activities

DMC Animal Agriculture Goal III – Expand targeted animal nutrition opportunities

DMC Animal Utilization Strategy III.A – Increase the competitive value of SBM as a key feed ingredient for U.S. animal agriculture

Tactics:

1. Continue to evaluate low phytate/ phosphorus, reduced oligosaccharide soybean meal in animal diets
2. Identify new genetic, processing, and enzymatic treatments that improve the value of SBM

Performance Measures:

- Publishing and presentation of research evaluating new soybean lines with removal of Anti-Nutritional Factors
- Demand for new traits from feed industry

DMC Animal Utilization Strategy III.B. – Continue information gathering on soybean meal production and consumption numbers in the U.S.

Tactics:

1. Document the value and sustainability of livestock production in the United States through economic, environmental, land value, and health effects research.
2. Conduct an annual update to the Economic Analysis Report on all 50 states with executive summary interpretation.

Performance Measures:

- Delivery of a written report and executive summary of the economic analysis for all 50 states, including PowerPoint presentations, including all support data that can be delivered by farmers or staff.
- Two face-to-face presentations of all researched materials by researchers: 1) Full presentation to the Animal Utilization Leadership Team; and 2) North American Animal Agriculture Leaders Session.

DMC Goal IV – Grow Meat Export Opportunities

DMC Animal Utilization Strategy IV.A. – Expand U.S. meat and poultry exports

Tactics:

1. Promote U.S. poultry exports and provide technical support in maintenance, growth and emerging markets through the USA Poultry and Egg Export Council (USAPEEC).
2. Promote U.S. pork exports and provide technical support in maintenance, growth and emerging markets through the U.S. Meat Export Federation (USMEF).

Performance Measures:

- Grow poultry consumption by 5% in selected countries
- Maintain poultry meat exports to China and Russia
- Grow global pork consumption 24% by 2020 and 57% by 2030
- Increase pork meat exports to Japan and Mexico
- Identify alternative markets to absorb poultry exports that have been blocked by Russia and China and implement marketing strategies.

DMC Animal Utilization Strategy IV.B. – Enhance perception of U.S. meat and poultry products as high quality among trade organizations and consumers.

Tactics:

1. Re-establish identity of U.S. poultry and red meat as safe in markets that have banned U.S. product from trade.
2. Focus on building market opportunities and improving consumer acceptance to U.S. poultry in maintenance, growth and new markets.
3. Address public health and safety issues.
4. Address concerns or negative perception affecting meat and poultry export due to consumption of biotechnologically enhanced soybean meal.

Performance Measures:

- Consumer perception of U.S.-produced poultry and meat as safe and wholesome improved.

- Confidence in U.S. produced chicken is improved in Russian marketplace.

DMC Animal Utilization Strategy IV.C. – Support the long-term growth of worldwide protein consumption through increased consumption of U.S.-grown meat, dairy and egg products.

Tactics:

1. Research and document new meat export opportunities.
2. Build support for turkey exports as their consumption of SBM is currently greater than the meal consumed by beef exports.

Performance Measures:

- Identify at least one new growth market for U.S. meat and poultry exports and conduct due diligence on the value of that market as compared to maintenance and growth markets.
-

LRSP Objective #2

Collaborate on the development and achieve adoption and global acceptance of improved soy technologies and biotechnology

DMC Animal Agriculture Goals for LRSP Objective #2

- V. Support competitive improvements to the soybean for animal consumption and encourage early adoption of new soybean traits focused on animal consumption

Strategies:

- A. Research the value of improved variety soybean meal in livestock diets.
- B. Engage the Animal Nutrition Working Group in evaluation of new traits.

Tactics:

1. Conduct animal trials on trait improved soybean meal to demonstrate market value

Performance Measures:

- Complete additional feeding studies in broilers and swine that demonstrate a clear difference in animals fed current soybean meal versus improved trait soybean meal
 - Begin discussions on feeding trials in conjunction with major integrators in poultry and swine feeding, and feed companies for ruminant research
-

LRSP Objective #3

Promote U.S. sustainable soybean production through responsible stewardship while acknowledging global market needs

DMC Animal Agriculture Goals for LRSP Objective #2

VI. Gather and make available to the industry information on sustainable animal agriculture practices

Strategies:

A. Establish research based information clearinghouse of animal agriculture information as a resource tool

VIII. Assist industry in establishing sustainability definitions.

Strategies:

A. Coordinate with livestock organizations to establish sustainability definitions within agriculture

DMC Animal Agriculture Strategy VII.A. – Establish research-based information clearinghouse of animal agriculture information.

Tactics:

1. Develop the Center for Food Integrity's ability to gather and house animal agriculture information to assist farmers, ranchers and others in animal agriculture

Performance Measures:

- Identify methods for collecting and housing data.
- Gather input from animal ag industry stakeholders to determine what data will be most useful.
- Establish a timeline and plan for implementing the resource.

DMC Animal Agriculture Strategy VIII.A. – Coordinate with livestock organizations to establish sustainability definitions within agriculture.

Tactics:

1. Conduct roundtable discussions with CFI Animal Ag Committee to build consensus on sustainability definitions.
2. Document definitions and agree on a process for ongoing review and modification.
3. Communicate findings through CFI.

Performance Measures:

- Participate in successful meetings with lively discussion and broad participation.
- Create a document and send for review by stakeholders.
- Circulate the document and consider potential external communication opportunities.

Animal Utilization

Domestic Marketing Committee – Aquaculture

LRSP Objective #1

Annual utilization of 3.5 billion bushels of U.S. soybeans by 2011

DMC Aquaculture Goals for LRSP Objective #1

- I. Maintain domestic aquaculture markets for soybean meal in the face of increased production costs and low cost competition from seafood imports.
- II. Set the stage for an opening of aquaculture market opportunities in anticipation of possible future market climate changes that favor aquaculture production.
- III. Engage with the Aquaculture Initiative to conduct programs for U.S.-produced aquaculture that help achieve the strategic objectives of the Initiative.

Market Environment

The domestic aquaculture industry faces many challenges, among which are competition from low cost imports, a strict and multifaceted regulatory environment that can be overwhelming, opposition from the fishing industry and environmentalists and consumer confusion about fish farming.

The domestic aquaculture industry is also limited in its ability to expand because of the high demand for shoreline and inland waterways for recreation and residential use. The industry faces opposition from the fishing industry and consumers, who often believe wild caught seafood is better than farmed fish. Navigating the waters of local and federal regulations can be overwhelming and costly for many producers, while imports are produced without many of the restrictions under which U.S. producers must operate.

On the other hand, increasing consumer awareness of seafood sustainability and declining numbers of many marine species has created an opportunity for the U.S. aquaculture industry to capitalize on the sustainability, health and economic benefits of farm-raised seafood. In addition, the United States Department of Agriculture (USDA) and Department of Health and Human Services (HHS), recently released the 2010 Dietary Guidelines for Americans. The new guidelines strongly urge Americans, including pregnant and breastfeeding women, to eat seafood at least twice each week for heart and brain benefits. Demand is only going to grow. There has never been a more favorable time for U.S. aquaculture to grow and thrive.

The consumer trend toward locally grown foods also offers great potential for domestic aquaculture. Fish farmers across the country have many opportunities to sell their products through local farmers markets, niche ethnic markets, restaurants featuring locally grown products and other innovative outlets. However, most aquaculture producers are unfamiliar with how to tap into these new revenue opportunities. Education and training will help expand opportunities and profitability for U.S. finfish and shellfish producers.

Meanwhile, the southern catfish industry is making strides in reversing a trend of serious decline due to production inefficiencies and the inability to compete with low cost

imports. For many years, the catfish industry has relied on tired farming practices, with some reluctance to change.

A USDA proposed rule requiring inspection of catfish and catfish products by USDA's Food Safety and Inspection Service (FSIS) will impact the domestic catfish industry. The 2008 Farm Bill amended the Federal Meat Inspection Act making catfish an amenable species under the Act, thereby requiring that all catfish undergo inspection by FSIS. The 2008 Farm Bill also requires the Secretary of Agriculture to define the term "catfish" for this new inspection program. The proposed rule provides two options for the definition of catfish and seeks public comment on the issue by June 24, 2011. One way or another this rule will impact the domestic catfish industry. Whichever way it unfolds, the domestic catfish industry must improve its quality and cost structure to compete with not only imports but other seafood alternatives as well.

The good news is that innovative aquafarmers have exhibited willingness to try new technologies and management practices. Over the past three years, Domestic Marketing, either alone or in partnership with New Uses Committee, has funded efforts to improve the technology, structure and management practices of the southern catfish industry.

These programs have breathed new life into the Alabama catfish industry. Auburn University and local Extension services have been working to bring new technologies and management practices to southern catfish producers. The adoption of new production technologies and management practices is critical to improve the cost structure and quality of the U.S. catfish industry. Efficiencies and profitability have improved for those willing to engage and adapt. But much more work needs to be done.

Strategic Approach

DMC programs will focus on marketing and outreach activities to educate consumers, the food industry, dietitians and health care practitioners on the environmental, health and economic benefits of U.S farm-raised finfish and shellfish. DMC also focuses on helping U.S. producers improve production efficiencies and learn techniques to access untapped domestic seafood markets. The Domestic Marketing role serves as a complement to existing USSEC/New Uses efforts so as not to duplicate programs and waste checkoff funds. In addition, Domestic Marketing will engage with the new Aquaculture Initiative to assist in achieving its strategic objectives related to domestic aquaculture markets.

Ability to Impact

Domestic Marketing projects have already made excellent progress in helping U.S. catfish operations improve technologies and management practices through projects demonstrating the cost reductions, feed gain improvements and efficiency improvements now available. Operations implementing these practices are showing that profitability is achievable, which is encouraging adoption by other fish farms and helping maintain soybean markets.

Though its education and outreach activities with the National Aquaculture Association Domestic Marketing has forged new relationships with the aquaculture industry that have expanded the reach of both organizations. Domestic Marketing has gradually ramped up its programming with NAA, building on each previous year's success. The voice of the aquaculture industry is being heard by the food, restaurant and retail media as well

as health care practitioners and they are spreading NAA/USB messages to their constituents about the health, economic and environmental benefits of aquaculture. Hundreds of aquaculture producers are implementing practices learned at USB-funded workshops, improving their businesses and expanding the voice of domestic aquaculture. Each new success opens the door for another opportunity.

LRSP Objective #1

Annual utilization of 3.5 billion bushels of U.S. soybeans by 2010

DMC Aquaculture Goals for LRSP Objective #1

- I. Maintain domestic aquaculture markets for soybean meal in the face of increased production costs and low cost competition from seafood imports.
Strategies:
 - A. Support improved technologies and management practices to optimize production and decrease costs for domestic catfish production.
 - B. Support improved technologies and management practices to introduce and establish alternative finfish and shellfish species production to augment traditional domestic aquaculture.
- II. Set the stage for an opening of aquaculture market opportunities in anticipation of possible future market climate changes that favor aquaculture production.
 - A. Establish relationships and partnerships with domestic aquaculture organizations
 - B. Assist in educating targeted audiences of local aquaculture communities, the food industry and stakeholders on the health, economic and environmental benefits of domestic aquaculture

- III. Support the Aquaculture Initiative.

Strategies:

- A. Engage with the Aquaculture Initiative to conduct programs for U.S.-produced aquaculture that help achieve the strategic objectives of the Initiative.

DMC Aquaculture Goal I.

Maintain domestic aquaculture markets for soybean meal in the face of increased production costs and low cost competition from seafood imports.

DMC Aquaculture Strategy I.A. – Support improved technologies and management practices to optimize production and decrease costs for domestic catfish production

Tactics:

- 1. Educate southern catfish producers on the benefits and opportunities for improved production technologies and management practices.
- 2. Conduct demonstrations of improved catfish farming technologies and communicate results.
- 3. Support collaboration among the entire catfish production chain to improve quality at critical control points.

Performance Measures:

- Catfish producers show acceptance of validity of new Auburn technology practices and calls or e-mails seeking additional information have increased by 10%.
- At least two additional catfish producers have plans to adopt improved farming technologies and/or practices.
- Data collection methodology is proven for each critical control point with benchmarks established and improvement timeline set.

DMC Strategy II.A. – Support improved technologies and management practices to introduce and establish alternative finfish and shellfish species production to augment traditional domestic aquaculture.

Tactics:

- Partner with aquaculture producers, academia and stakeholders to evaluate and trial improved technologies and management practices for finfish or shellfish.
- Investigate ways to integrate innovative value capture augmentation, such as utilizing waste streams for fertilizer, to make aquaculture production more profitable.

Performance Measures:

- Verifiable data proves performance of new technologies as a benchmark and goals are set for next phase of continuous improvement.
- USB and program partners evaluate successes and failures and use learned information to revise or expand upon opportunities.

DMC Aquaculture Goal II

Set the stage for an opening of market opportunities in anticipation of possible future market climate changes that favor aquaculture production.

DMC Aquaculture Strategy II.A. – Establish, relationships and partnerships with domestic aquaculture organizations

Tactics:

1. Continue membership in the National Aquaculture Association (NAA) and participate in USSEC/New Uses led stakeholder events.
2. Evaluate other opportunities to support the NAA and engage with stakeholders through USSEC/New Uses as appropriate.

Performance Measures:

- DMC directors and staff have a clear understanding of the objectives of the NAA and understand how USB can help NAA to achieve those objectives.
- Checkoff resources have enabled NAA to increase its outreach and communications activities and make headway in building relationships with food industry media.

DMC Strategy II.B. – Assist in educating targeted audiences of local aquaculture communities, the food industry and stakeholders on the health, economic and environmental benefits of domestic aquaculture

Tactics:

*USB FY12 Action Plan
Animal Utilization – Domestic Marketing Committee*

1. Support the National Aquaculture Association in outreach and education efforts.
2. Through NAA, conduct outreach to food industry and food media through meetings and industry events.
3. Conduct workshops at the local level to educate the aquaculture industry and producers on sustainability issues, regulatory compliance, media relations and community relations.
4. Train aquaculture entrepreneurs how to broaden marketing opportunities for their product lines in untapped and innovative market outlets such as local farmers markets, niche retail outlets and local food service.

Performance Measures:

- Media recognizes NAA as the central voice for the U.S. aquaculture industry, utilizing NAA as a source in checking facts on news stories.
- Food industry and media rely on NAA as appropriate source on the benefits of domestically farmed finfish and shellfish.
- NAA reaches 3000 dietitians and health professionals, and chefs in trade show and web outreach.
- NAA conducts 10 workshops around the country to train local aquaculture producers.
- Five aquaculture producers test new marketing opportunities for their product.

DMC Aquaculture Goal III

Support the Aquaculture Initiative.

DMC Strategy III.A. – Engage with the Aquaculture Initiative to conduct programs for U.S.-produced aquaculture that help achieve the strategic objectives of the Initiative.

Tactics:

1. Stay informed of Aquaculture Initiative progress on identifying strategic objectives and goals.
2. Through USB Directors serving jointly on DMC and the Aquaculture Initiative, offer ideas on how DMC can engage and develop programs that fit identified needs.

Performance Measures:

- Domestic Marketing is engaged in helping the Aquaculture Initiative.
- Ideas are developed and shared with the Aquaculture Initiative and/or DMC embarks on projects brought to it by the Aquaculture Initiative

Financial Allocation:

Domestic Marketing – Animal Utilization – Demand Building: \$5,479,804

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Animal Utilization

International Marketing Committee

Market Environment

With lower 2011/12 U.S. soybean supplies and higher South American soybean supplies on hand this fall, U.S. soybean exports are projected at 1.54 billion bushels, slightly below the 2010/11 level despite a projected increase in global import demand led by China. Ending stocks for 2011/12 are projected at 160 million bushels, down 10 million from 2010/11, leaving the stocks-to-use ratio at 4.8 percent.

The U.S. season-average soybean price for 2011/12 is projected at \$12 to \$14 per bushel compared with \$11.40 per bushel in 2010/11. Soybean meal prices are forecast at \$350 to \$380 per short ton, compared with \$350 per ton for 2010/11.

U.S. oilseed production for 2011/12 is projected at 99 million tons, down 1 percent from 2010/11. Reduced soybean production accounts for most of the decline. Soybean production is projected at 3.285 billion bushels, down 44 million from the 2010 crop mostly due to lower harvested area. Soybean supplies are projected at 3.47 billion bushels, down less than 1 percent from 2010/11 as larger beginning stocks partly offset lower production. Soybean ending stocks for 2010/11 are projected at 170 million bushels, up 30 million from last month due to reduced exports. Soybean crush for 2011/12 is projected at 1.655 billion bushels, up fractionally from 2010/11 as a lower extraction rate offsets reduced total soybean meal demand. Lower soybean meal export demand projected for 2011/12 is only partly offset by a small increase in domestic soybean meal use, leaving total soybean meal use down 1 percent from 2010/11.

Global soybean production is projected to increase less than 1 percent to 263.3 million tons. The Argentina crop is projected at 53 million tons, up 3.5 million from 2010/11 crop based on a higher harvested area and yields. The Brazil soybean crop is projected at 72.5 million tons, down 0.5 million from the projected record 2010/11 crop. A 3 percent increase in harvested area is more than offset by a return to trend yields. China soybean production is projected at 14.8 million tons, down 0.4 million from 2010/11 due to lower area and yields.

Protein meal consumption is projected to increase 7.8 percent in China, accounting for 54 percent of global protein consumption gains. Global soybean exports are projected at 98.7 million tons, up 2.8 percent from 2010/11. China soybean imports are projected at 58 million tons, up 3.5 million from 2010/11.

Canada was the number 1 export market for soybean meal at 952,000 metric tons, with Mexico and the Philippines following with each importing about 905,000 metric tons

Steady long run growth in the livestock sectors of developing countries in Asia, Latin America, North Africa, and the Middle East accounts for most of the growth in world coarse grain imports projected during the next decade.

Foreign countries that were once primary export opportunities for U.S. meat and poultry are growing their own domestic livestock industries. Soybean meal utilization in poultry alone is 55 percent of the international markets followed by swine (32 percent), dairy (10 percent), and aquaculture (9 percent). Expansion into high value products, such as full

fat soybean meal, bypass soybean meal for ruminants, and starter diets for piglets and chicks is providing new market opportunities for U.S. soy products in international feed markets.

Poultry producers are currently investing in animal feed production expansion, aiming to meet the increasing needs of their chicken farms. The poultry sector currently accounts for about 55 percent of Brazil's animal feed consumption. Brazil currently is the world's largest chicken exporter.

Canada is a major competitor with the U.S. in pork exports to Asia and Mexico. Brazil is also a major pork exporter.

Growth in aquaculture production is expected to continue at the current growth rate of 9 percent per year. Land-based meat production is currently growing at about 3 percent. Increases in world aquaculture production will be driven by increases in the Chinese production, with South and Southeast Asia, Latin America, the Caribbean and Europe providing smaller increases. Freshwater species and mollusks are expected to dominate aquaculture production in the near future but demand for high value marine species continues to grow.

U.S. soybean meal faces increasing competition from global soybean producers, synthetic amino acids and other crops such as canola, corn and sunflower. Co-products, such as those from the production of ethanol, represent an additional competitive threat.

Strategic Approach

The focus of this strategic approach is to establish U.S.-sourced soybean meal as the protein supplement of choice in animal rations throughout the world. One of the key components of increasing utilization of soy that encompasses the international animal production industries is to establish positive relations within the animal agriculture industries. These relationships are bridged through technical assistance programs, attendance at short courses and educational seminars, such as bio-security management, feed formulation, etc. Another key approach is establishing a market for value enhanced U.S. soybean meal. This is meal that can be identified as having specific attributes that differentiates it from commodity soybean meal.

Ability to Impact

USB can impact the animal utilization target area by supporting the global livestock, poultry and aquaculture industries. In addition, USB can continue to build demand and preference for U.S. soybeans and SBM by supporting export strategies and continuing to research the use of value-added SBM in livestock, poultry and aquaculture. By making compositional improvements to U.S. soybeans that end-users demand, the U.S. soybean industry can build customer preference.

USB can build demand in global aquaculture for soy-based diets. This includes supporting research to optimize the use of soybean meal and SPC in feed rations for selected species. It is projected that soybean meal inclusion rates in global aquafeeds overall will increase 17-25% based on SBM quality and economics of fish production. Global SBM demand for the aquaculture industry is expected to exceed 10 million metric tons within the next decade, with more than 90% of that growth in overseas markets. Both the inclusion rate and total demand numbers for soybean meal are conservative. The global aquaculture industry is the fastest growing sector of animal production.

Global demand for cultured aquatic products, given the limitation of zero growth in wild catch, is expected to grow from its 2000 level of approximately 32 million metric tons to more than 53 million metric tons in 2020.

LRSP Objective 1:

- I. Annual utilization of 3.5 billion bushels of U.S. soybeans by 2012.

Committee – Target Area:

- A. IM – Animal Utilization

Goal 1:

1. In markets with large and/or expanding animal agriculture production, sustain and expand soy inclusion rates in animal feeding rations.

Strategy 1:

- a. Demand Building

Tactics:

- i. In China we will continue working with the swine and poultry industries to increase soy utilization in animal feeds.
- ii. Through the Soy-in-Aquaculture program, we will increase the use of soy in global aquaculture production by shifting the industry away from traditional feeding practices that are manure-based (in the freshwater sector) and fresh-fish based (in the marine sector).
- iii. In India, efforts continue to focus on targeted feed manufacturers who still have limited awareness of the economic and nutritional potential for soy in either existing products or new products.
- iv. In the Middle East we will continue to promote the economic advantages and nutritional benefits of producing and utilizing dehulled meal.

Performance Measures:

- i. In China, key feed millers will increase their soybean consumption by attending nutrition and technical production seminars and assisting them with the use of advanced production technology and marketing.
- ii. Through the Soy-in-Aquaculture program, 90 aquaculture production units will switch to soy-based diets.
- iii. In India, incremental domestic consumption of soybean meal will be 300.
- iv. In the Middle East, there will be a total of 20 crushers will be dehulling in the region.

Strategy 2:

- b. Customer Preference

Tactics:

- i. In Europe, we will continue to promote U.S. soybean meal as the preferred protein source in animal feed rations.
- ii. In Japan, technologies are continuing to be utilized by the target audience showing consistent usage of U.S. soybean meal in the industry.
- iii. In Latin America we will continue to educate importers on modern production techniques.

- iv. In Southeast Asia we continues to focus on the core buyers of bulk soybeans in the region who have the highest purchasing potential and ability to capture the value that U.S. soybeans have to offer.
- v. In Taiwan we will continue to educate new key buyers on the benefits of U.S. soy vs. soy of other origins.

Performance Measures:

- i. In Europe, 150 end users of soybean meal will utilize U.S. soybean meal as their preferred protein source.
- ii. In Japan, targeted feed companies will obtain a U.S. soybean meal inclusion rate of 13.7%.
- iii. In Latin America, 180 Latin American animal production companies and feed mills will learn modern production techniques.
- iv. In Southeast Asia, 43 companies will purchase U.S. soybean meal when the price is competitive.
- v. In Taiwan, the U.S. will maintain a market share of 75%.

LRSP Objective 2:

- II. Approval in the importing countries that comprise 90% of U.S. soy products for each biotech event by the time of its commercialization.

Committee – Target Area:

- A. IM – Animal Utilization

Goal 1:

- 1. When specific soybean varieties with precise traits benefiting animal production are commercialized we will introduce them to the global animal production industry.

Strategy 1:

- a. Demand Building

Tactics:

- i. Organize feeding demonstrations in target markets that validate the efficacy of the new traits in animal production.
- ii. Organize informational campaigns in target markets about new soybean varieties to educate the global animal production industry on the benefits of utilizing U.S. soy.

Performance Measures:

- i. Feeding demonstrations will be arranged in a number of target markets to showcase the U.S. new soybean varieties and their benefits vs. South American soybeans.
- ii. Informational campaigns such as mailings, one-on-one meetings with the industry, and presentations at key conferences will be held to showcase the new U.S. soybean varieties and their benefits to the global soybean industry as a whole.

Strategy 2:

b. Customer Preference

Tactics:

- i. Offer educational programs to preferred customers in target markets to introduce new U.S. soybean varieties that will enable these preferred customers to purchase those varieties that meet their needs.
- ii. Provide preferred customers the opportunity to see the new U.S. soybean varieties firsthand.

Performance Measures:

- i. Continue to provide avenues, such as trade shows and international trade team visits to the U.S., to allow interested importers and U.S. suppliers to develop relationships leading to U.S. soy purchasing sales of the new varieties.
- ii. Arrange U.S. site visits with companies producing the new U.S. soybean varieties to showcase to our preferred customers the new and exciting benefits U.S. soy has obtained through these new traits.

LRSP Objective 3:

- III. Promote U.S. sustainable soybean production through responsible stewardship while acknowledging global market needs.

Committee – Target Area:

A. IM – Animal Utilization

Goal 1:

1. In markets where feed industries must demonstrate the sustainability of their raw material supply chains, U.S. soybean meal will be recognized as an economically and environmentally raw material for animal feed rations.

Strategy 1:

a. Demand Building

Tactics:

- i. Continue its educational campaigns in Europe to emphasize the strides that have been made in the U.S. soybean industry in regards to sustainability, ultimately leading to an increase in U.S. imports for livestock feeds.

Performance Measures:

- i. Continue Grower Leader Trade Missions to Europe in order to educate European industry and government officials on the U.S. soybean industry's dedication to sustainability and the animal production industry.
- ii. Through participation at key conferences and presentations to the European animal agriculture industry, we will continue its campaign at establishing U.S. soy as a sustainable resource in the animal agriculture industry.

Strategy 2:

b. Customer Preference

Tactics:

- i. Continue to alert integrated processors and officials alike that U.S. soybean meal possesses the ingredients needed to be a sustainable product.
- ii. Position U.S. soybean meal vs. soybean meal of origins to European animal agriculture officials in which these officials ultimately realize that U.S. soybean meal should be their soybean meal of choice.

Performance Measures:

- i. Offer educational seminars in all global markets to preferred customers to show our dedication to responsible stewardship.

Financial Allocation:

Contingent on Board approval at 2011 June Board Meeting

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Animal Utilization

New Uses Committee

Market Environment

Aquaculture is the fastest growing animal agricultural industry. Aquaculture producers are seeking more efficient and sustainable ways to cultivate healthy species to satisfy growing market needs in a world whose population and food requirements are growing rapidly. The availability of quality protein ingredients for aquafeeds is a critical concern of aquaculture producers and feed manufacturers. Static supply of fishmeal, long the staple ingredient for high quality aquacultural feeds, is insufficient to meet the growing feed protein needs of the global aquaculture industry. Additional renewable and sustainable protein alternatives are needed. The rapidly expanding market for farm-raised fish is providing market opportunities for soybean meal, soy oil and soy protein concentrate both in the U.S. and overseas. The feed industry has recognized for many years that plant-based aquafeeds are an essential requirement for the future development of aquaculture. Soy continues to be the preferred alternative because it is readily available, nutritional, economical, renewable and environmentally friendly.

Typically soybean oil, which is 20% of a whole soybean, will sell for at least two times the price per pound of whole soybeans. Soybean meal, which is the remaining 80%, will sell for about 10% less per pound than whole soybeans. Animal feed soy meal is valued for its protein, but over half of soybean meal is composed of soluble and insoluble carbohydrates which have little or even negative feed value and therefore represents a barrier to capturing the incremental value of the soybean meal or the whole soybean. More focus on developing technologies that will enhance the domestic usage and value of soybean meal with specific emphasis on the lower value constituents is needed making it more competitive with products such as fish meal and other alternative protein sources.

Strategic Approach

The focus of this strategy is to establish U.S.-sourced soybean meal as the protein supplement of choice in aquafeed rations throughout the world. The strategic approach includes targeted research based on USB-supported planning to determine factors that limit the replacement of fish meal and oil with soybean meal and oil, and soy protein concentrate. Federal government intramural and competitive programs will be aligned with the findings of the research needed to increase the use of soy in aquaculture diets. Based on research results, the benefits of soy-based diets will be promoted globally through USSEC/ASA-IM and domestic communications and feeding demonstrations. Efforts will continue through the USB-Aquaculture Industry Coalition to build interest in, and promote the demand for soy as a primary source of protein and oil in domestic and international commercial fish rations.

Ability to Impact

USB can impact the animal utilization target area by building demand in the global aquaculture industry for soy-based diets. This includes supporting research to optimize the use of soybean meal and oil and soy protein concentrate in feed rations for selected species.

It is projected that soy inclusion rates in global aquafeeds overall will increase to 20-30% based on quality and economics of fish production. Global soybean meal demand for the

aquaculture industry is expected to exceed 10 million metric tons within the next decade, with more than 90% of that growth in overseas markets. Both the inclusion rate and total demand numbers for soybean meal are conservative. The global aquaculture industry is the fastest growing sector of animal production. Global demand for cultured aquatic products, given the limitation of zero growth in wild catch, is expected to grow from its 2000 level of approximately 32 million metric tons to more than 53 million metric tons in 2020.

LRSP Objectives 1 & 3:

- I. Annual utilization of 3.5 billion bushels of U.S. soybeans by 2011.
- II. Promote U.S. sustainable soybean production through responsible stewardship while acknowledging global market needs.

Committee – Target Area

- A. New Uses – Animal Utilization

Goal:

1. Build demand for U.S. soy in aquaculture markets.

Strategy 1:

- a. Demand Building
Support research related activities that will enhance marketing efforts to increase use of soy products in aquafeeds.

Tactics:

- i. Utilize the services of U.S. and foreign universities, research centers, federal agencies, and other organizations to improve understanding of the factors that limit the replacement of standard fish-meal based diets with soy-based diets in selected species.
- ii. Refine Stearidonic Acid (STA) soy oil replacement of fish oil to increase omega-3 fatty acid content in fish being fed soy-based diets.
- iii. Develop technical bulletins to communicate research results to aquaculture nutritionists and the feed industry.
- iv. Collaborate with Domestic Marketing to educate catfish producers on the opportunities for more favorable economics by demonstrating and communicating the benefits of improved production technologies and management practices and use learned information to further opportunities for other fish species.
- v. Build stronger the coalition and develop a process to coordinate checkoff investments with the aquaculture industry to enhance research and support for soy-based rations with specific goals that are believed to provide for competitiveness of the U.S. domestic aquaculture industry.
- vi. Align federal programs with the recommendations of the Plant Products in Aquafeed Working Group, and, to the extent possible, develop new sources of funding for researchers.

Performance Measures:

- i. Nutrition requirements identified and feed formulations verified for selected species.

- ii. Quantifiable progress toward the development of new Federal **projects** or realignment of existing projects to the strategies or goals identified by the USB Animal Utilization Action Plan in general and the Plant Products in Aquafeed Strategic Plan specifically will be demonstrated.

Financial Allocation:

New Uses – Animal Utilization – Demand Building: \$1,126,000

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New Uses Committee Industrial Utilization FY2011

Market Environment

The market environment for industrial utilization of soybean products reflects several factors:

- The prices of competing petrochemicals remain extremely volatile. Petrochemical prices rose sharply in 2007 and 2008 reflecting the high cost of crude oil and natural gas, before falling in late 2008 and the first quarter of 2009. Prices continued to climb throughout 2010 and the first quarter of 2011. Supplies of several key petrochemicals, such as propylene and styrene, have become extremely tight as plants shut down in 2008 have not re-opened and sales are on allocation with prices at all time highs.
- Typically soybean oil, which is 20% of a whole soybean, will sell for at least two times the price per pound of whole soybeans. Soybean meal, which is the remaining 80%, will sell for about 10% less per pound than whole soybeans. Animal feed soy meal is valued for its protein, but over half of soybean meal is composed of soluble and insoluble carbohydrates, which have little or even negative feed value and therefore represents a barrier to capturing the incremental value of the soybean meal or the whole soybean. More focus on developing technologies that will enhance the domestic usage and value of soybean meal with specific emphasis on the lower value constituents is needed to allow use of the protein in soybean meal as a raw material in industrial products such as adhesives, fibers and coatings and at the same time using the carbohydrates for industrial chemicals.
- The general global recession of 2008-09 has negatively impacted sales of all chemical materials including soy based chemicals; however, the global economy after massive government intervention is recovering. Product demand and consequently chemical and plastics demand is increasing. For example sales of products such as plywood made with soy adhesives increased in the last quarter of 2010 and first quarter of 2011 as demand for furniture and cabinetry have risen
- As the economy has improved in some regions of the world, plastic and chemical demand has begun to recover and prices have begun to rise.
- Despite the difficult economy, sales of soybean oil for industrial products rose to over a billion pounds in 2009 and continued to grow in 2010. For example, soy spray foam insulation continues to grow taking market share from fiberglass and other insulation types.
- New soy industrial products continue to be well received in the marketplace due to environmental and sustainability advantages.
- The “2011 State of Green Business Report” shows a dramatic shift is occurring in mainstream business: Companies are thinking bigger and longer-term about sustainability -- analysis of businesses in 2010 shows that even during economically challenging times, many companies invested more in their sustainability activities and made bold new sustainability commitments.
- Interest in soy industrial products is global in scope. Soybased chemicals from North American companies are being evaluated throughout the world. Recent

studies of soy and other biobased plastics project strong continued growth through 2020 and beyond.

Typically, soy industrial uses such as plastics are growing due to their higher value and/or lower cost as well as the increasing demand for environmentally friendly products. No direct federal subsidies are available to stimulate market growth. Some assistance is being given, however, by a Federal Procurement Preference “BiopREFERRED” program that calls for all government agencies to buy biobased products unless they are not readily available, cost competitive, or perform as well as traditional products. The Food, Conservation, and Energy Act of 2008 (2008 Farm Bill) reinforces and strengthens USDA’s BioPreferred Program for listing biobased products eligible to receive federal purchasing preference (including ways to accelerate the listing of finished products that use intermediate biobased ingredients and/or biobased components). USDA has completed designation of 50 categories of biobased products, representing over 5000 products. Additional designations are underway. USDA has identified over 100 item categories for potential designation under the preferred procurement program.

The 2008 Farm Bill directed USDA to complete the “USDA Certified Biobased” labeling program as expeditiously as possible and makes feedstocks and intermediates eligible to receive the label. On January 20, 2011, USDA published the final rule to initiate the voluntary product certification and labeling program for qualifying biobased products. The new USDA label will clearly identify biobased products and play a very important role in increasing biobased products awareness. The label is particularly important to the Farm Bill’s intent to make the federal procurement program a market development tool for increasing biobased procurement across the nation. USDA estimates that there are 20,000 biobased products currently being manufactured in the United States and that the growing industry as a whole is responsible for over 100,000 jobs.

The 2009 Economic Stimulus Bill created some new opportunities to increase the purchasing of biobased products by federal agencies as well as state and local governments, particularly in the areas of energy efficiency improvements for government buildings, road and other infrastructure repair and construction, and housing weatherization programs. The use of biobased products will help to create “green jobs,” reduce dependence on imported oil, and support sustainable development.

The Obama Administration has also embraced biobased products by including them in Executive Order 13514 “Federal Leadership in Environmental, Energy, and Economic Performance.” As a result, government agencies can use biobased products to help them meet the Administration’s requirements for energy efficiency, petroleum reduction, sustainability and more. Under the Executive Order, agencies are directed to ensure that 95 percent of new purchases of products and services, except for weapon systems, are to be for environmentally preferable products and services, including biobased products, when they meet agency performance requirements.

USB’s work with federal employees creates a springboard to educate state and local governments as well as the private sector about biobased product benefits. The federal government buys more than \$500 billion in goods and services annually. The federal recycled paper programs and adoption of biodiesel helped lead others to switch and they can do the same for biobased products in general. Federal procurement as well as the

biobased label that USDA will create can play a major role in increasing public awareness of biobased products and their benefits. In February 2010, Ohio's governor signed legislation into law giving Ohio the strongest state preference for biobased products in the nation. Similar legislation is under consideration in other states. The Ohio law is modeled after the federal biobased program and will benefit from advancing the federal programs, including promotion of the federal biobased label. Municipalities and public entities in Ohio are also signing up to participate in the biobased preference program. In June 2010, Ohio State University announced that it will be using the soy-based toner cartridges in its laser printers. Arkansas and Indiana also have state procurement preferences. In addition, the Midwestern Governors Association is working on a biobased procurement initiative based on the federal Biopreferred program. Counties through their National Association of Counties, are also interested in biobased programs as part of their overall environmental and energy efficiency efforts. More than 30 counties from across the nation have expressed interest in trying biobased products through a USB demonstration. In 2010, Arlington County, Virginia—a national leader in environmental activity—integrated soy biobased products into its “Green Games” competition to encourage commercial property owners/managers and office tenants to “green” their buildings.

Strategic Approach

The Industrial Utilization target area encompasses both new uses research and commercialization. The strategy involves supporting research of new product applications for plastics, coatings (i.e., paints and stains), inks, adhesives, fibers and emerging industrial opportunities while working to increase awareness, interest, trial, and adoption of soy-based products within industry and the federal government.

Strategies for New Uses Research and Commercialization involve a multi-faceted approach.

Diversifying – This strategy focuses on multiple areas with significant potential for soy use to reduce the risks associated with dependence on a few large markets such as food and biodiesel and demonstrate successful results across a balanced portfolio for emerging markets. The following industrial markets have been analyzed and selected: plastics; coatings/inks/solvents; adhesives; fibers; and emerging industrial opportunities.

Research projects on industrial uses for soybean meal were increased in FY10 through FY11 to balance the expanding demand for soybean oil. Examples include: textile fiber from soy meal; thermoplastic products from soy protein for films; molded elastomers and rubber products using soy meal as a reactive filler; adhesive products based on modified soy flour for replacement of phenolic-formaldehyde resin in engineered wood products such as oriented strand board, particle board and plywood and large volume specialty chemicals such as surfactants, fumaric acid used in coatings and plastics, isocyanates, lactic acid and acrolein/acrylic acid.

USB New Uses will continue research to utilize glycerin from the production of soy biodiesel for potential fits as a building block chemical for plastics and complex chemicals..

Defending and increasing current markets – This involves research to develop soy oil derivatives to provide base technologies to defend current markets in inks and coatings, the largest current markets for industrial uses of soybean oil at an estimated quarter

billion pounds annually. New soy derivatives could also allow for increased soy content and expanded applications in plastics, coatings and adhesives.

Leveraging current trends – Several trends such as new soy oil types through genetic engineering, increased environmental and worker safety regulations and others all favor the substitution of soy derivatives for petroleum-based chemicals. Leveraging these trends means anticipating emerging needs and positioning new soy products to fill those needs. For instance, new soy oils with higher levels of oleic acid have been developed by private companies which have greater oxidative stability. These are highly desired for food uses and also preferable for some industrial applications such as lubricants.

Fundamental research is needed to uncover new potential properties of soy and to develop sustainable new processing technologies allowed by trends such as biotechnology and bioprocessing. Leveraging these new technologies should provide cost-advantaged new industrial products from the whole soybean and all of its components.

Reducing production costs – These efforts focus on developing improved processes to produce soy methyl esters, soy protein concentrates and other soy intermediates for a variety of uses. New enzymatic catalysts show promise to reduce energy costs associated with production of soy products such as protein concentrates and isolates and to allow economical production of large volume chemicals such as fumaric acid, and surfactants.

Expanding use of existing soy technologies – Expanding the use of existing soy technologies includes developing new product applications. Existing technologies such as the use of soy polyols in flexible foams for furniture and automotive seating is being expanded into additional markets such as shoes and tire fill. Use of soy adhesives in plywood requires additional effort to become an adhesive for oriented strandboard and particleboard.

Leveraging resources – To effectively leverage USB resources, this approach will seek matching funds from federal programs and/or commercial partner contributions. A majority of projects have commercial partners identified prior to funding. In some cases, USB industrial partner spending exceeds USB contributions by as much as 10:1.

Expanding awareness to stimulate trial and adoption – This is a three-pronged approach: 1) transfer new technology and develop partnerships with corporate parties; 2) provide technical and marketing support for commercial start-ups; and 3) monitor regulatory changes and their impact. This also involves communicating the output of soy industrial research and development activities to QSSBs and USB's International Marketing, Domestic Marketing, and Production programs.

The Soy-based Products Outreach tactical approach focuses on increasing acceptance and usage of biobased industrial products within the public and federal markets. The federal market is large and can be a market leader for other levels of government and the private sector. The strategic focus for biobased products is on leveraging USB's efforts with manufacturers and federal agencies, and promoting the various incentives and drivers in place within the federal government to move biobased products into the market.

USB will continue to promote the use of biobased products through the federal procurement system by continuing trial and adoption programs with identified federal agencies. These efforts are even more important now since the U.S. Department of Agriculture (USDA) published final guidelines that establish provisions for the Federal Biobased Products Preferred Procurement Program, which requires all federal agencies to preferentially purchase biobased products designated by USDA as eligible under this program. The new guidelines establish the process by which USDA will designate items for preferred procurement by federal agencies. Federal agencies must assure within one year after the publication of this final rule that their procurement practices require the preference of biobased products consistent with this rule. So far, six items (categories of products such as penetrating lubricants, roof coatings, hydraulic fluids, etc.) have been designated by USDA and additional items will be designated in the coming year.

Ability to Impact

USB has already impacted the Industrial Utilization target area as witnessed by the double digit rise of soy oil industrial use over the past three years and the launch of multiple successful new products. This has been accomplished by supporting development of new technologies and through technology transfer to partners creating awareness, interest, trial, and adoption. USB-sponsored Technical Advisory Panels (TAPs) and participation at selected trade/tech shows have been particularly successful in fostering the advancement of soy-based industrial products and applications.

The current volatility of petrochemical prices and the overall “green movement” have positioned soy-based industrial products in a very favorable position with potential chemical and fabricated products manufacturers. There is a strong desire in the market for change to domestically-produced, environmentally favorable and more price-stable raw materials and products.

Soybeans can be an effective competitor to petrochemical products both functionally and economically. In FY10, there were more than two dozen new product or application introductions of soy-based industrial products as a result of checkoff funding. It is expected that this number will be equaled or exceeded in FY11 as the significant growth of product introductions continues from expanded industrial company involvement in the target market areas of plastics, lubricants, coatings, inks, adhesives and solvents. Additionally, many new soy products have been introduced as indirect results of checkoff-sponsored research.

Industrial use of soybean oil other than biodiesel is estimated to be over a billion pounds annually or about 5% of the amount produced annually by the U.S. crush. Biodiesel use of soybean oil is estimated to be at least twice that level currently and if levels mandated by the U.S. Renewable Fuel Standard are achieved by 2012, use could be as high as 3 billion pounds annually or an additional 15% of the U.S. crush. An overall goal for combined industrial and biodiesel use of 25% of U.S. domestic soybean oil production or currently about 5 billion pounds is believed to be attainable by 2015 without disruption of the market.

Industrial use of soybean meal and its derivatives is estimated to be about 100 million pounds annually or about 0.13% of the U.S. crush. An overall goal of 500 million pounds of industrial use by 2015 is believed to be attainable without disrupting the market.

Checkoff funding has been effective in the development of new technologies through research and in transferring technologies to partners to gain trial and adoption. The checkoff can support research to reduce processing costs for soy products to further improve competitiveness. The checkoff cannot influence regulatory issues, but has responded to regulations that favor soy product use by developing products that have economic advantages in meeting regulations and assisting in the development of procurement standards and guidelines that encourage active adoption.

USB will continue to promote the use of biobased products through government procurement by continuing trial and adoption programs with identified federal, state and/or local agencies. These efforts are even more important now that (USDA) has issued multiple rules that include thousands of biobased products that government agencies are expected to purchase under the program and the Federal Acquisition Regulation. This program contains the uniform policies and procedures for acquisition used by federal government agencies, including requirements for biobased purchasing.

The newly launched “USDA Certified Biobased Product” labeling program creates a major new opportunity to identify and promote the use of biobased products in both the public and private market, including the consumer market.

The federal biobased program has also triggered states (Ohio, Arkansas, Indiana) to approve legislation that is modeled after the federal biobased procurement programs. The Midwest Governors Association has launched a biobased initiative while the National Association of State Procurement Officials has included biobased in their annual “green procurement” conference. The National Association of Counties has also promoted biobased products to counties. All of these efforts create new opportunities for biobased products.

USB will also initiate outreach and education activities aimed at the private sector’s interest in sustainable practices. According to *Siemens*, over half (58 percent) of business leaders believe corporate sustainability practices are necessary and are unaffected by the current economic crises; 73 percent expect sustainability will help them retain and attract customers; and 61 percent of the companies interviewed have a person or team dedicated to sustainability. Because of USB’s leadership on biobased product outreach to government audiences, private-sector entities, such as the hotel industry, have shown interest in USB serving as a resource to their greening and sustainability programs. Widespread media coverage on land use studies and food vs. fuel debates have already prompted existing biobased customers as well as potential users of biobased products to ask questions about the sustainability of soy as a feedstock for biobased products. These questions must be addressed or they will undercut the progress of the biobased economy. USB’s recent work on updating the lifecycle analysis of soybeans provides an important tool in positioning soy biobased products as environmentally beneficial.

LRSP Objectives 1 & 3:

- I. Annual utilization of 3.5 billion bushels of U.S. soybeans by 2011.
- II. Promote U.S. sustainable soybean production through responsible stewardship while acknowledging global market needs.

Committee – Target Area

- A. New Uses – Industrial Utilization

Goal 1:

1. Develop soy-based chemicals as replacements for petrochemical plastics.

Strategy 1:

a. New Uses Research and Commercialization

Improve soy polyol and soy polyester resin formulations, to increase soy content in finished products, expand applications and enhance manufacturing processes and quality control.

Tactics:

- i. Fund, monitor and advise industry on research that addresses improved performance of soy polyols for polyurethane foams and elastomers (rubber-like materials) and polyester resins.
- ii. Provide independent technical information to basic suppliers, formulators, molders and fabricators on performance of soy polyols and soy polyester resins and the corresponding processes/product research.
- iii. Monitor and advise academic and industrial partners on the development of soybased plastics with improved performance properties.
- iv. Fund research to develop polyurethane formulations utilizing higher concentrations of soy polyol in foam, coatings, elastomer and adhesive applications.
- v. Fund research in the use of soybean meal and/or protein products in manufacturing thermoplastics and composites.

Performance Measures:

- i. At least five new soy-based polyester resin composites or soy polyol-containing polyurethane formulations in tests with parts manufacturers.
- ii. At least two polyurethane formulations for new applications.

Strategy 2:

b. New Uses Research and Commercialization

Industry and government recognition of economic, functional and marketing benefits of soybased plastics utilizing both soybean oil and meal.

Tactics:

- i. Provide technical information via TAP's, trade/tech shows and on-site visits to active researchers at companies comprising manufacturers, formulators and the rest of the supply chain in plastic markets.
- ii. Conduct life cycle studies for soy plastic products and applications to provide scientific data in support of sustainability claims.
- iii. Pursue non-automotive thermoset soy polyester composite applications utilizing simple and complex molding processes.
- iv. Accelerate interaction with the resin producers and transportation industry (automotive, marine, and rail) to achieve evaluation of soy-based thermoset products.
- v. Transfer technology for soy protein-based thermoplastics.

- vi. Explore outside partnerships and solicit funding support for leveraging USB efforts.
- vii. Partner with International Marketing to expand awareness of soy product alternatives in select international markets.

Performance Measures:

- i. Market introduction of two new soy-based polyurethane applications.
- ii. Introduction of one or more new soy-based polyester resin applications.
- iii. One additional automotive company and their tier suppliers evaluating soy thermoset plastic applications.
- iv. One additional non-automotive company (i.e., furniture, bedding) evaluating soy-based polyols for flexible foam applications.
- v. One or more international companies testing use of soy polyols and/or polyester resins for manufacturing outside the U.S.

Strategy 3:

- c. New Uses Research and Commercialization
Discovery, research and development of new soy oil and meal industrial opportunities for plastics.

Tactics:

- i. Continue research and development of soy meal, hulls and flour as a filler/extender for modified rubber products and thermoset plastic products.
- ii. Continue development of isocyanate functionalized soy protein.
- iii. Continue research on use of glycerin to make acrolein/acrylic acid (used in making polyacrylic acid and other high volume polymers).
- iv. Complete the optimization research on the production of water soluble polymers derived from soy meal/protein and begin the effort to scale up production and trial by industrial partners.
- v. Investigate additional types of thermoplastic (non-durable plastics that are biodegradable and/or recyclable) applications for soy meal, flour, concentrates and hulls, including but not limited to films, thickeners, disposable goods, fillers for composites and rubbers, etc.
- vi. Encourage researchers to pursue novel chemistries working with soy protein.
- vii. Support the technology development for modified soy oil to replace phthalates as plasticizers in polyvinyl chloride and other plastics.
- viii. Investigate the use of soy carbohydrates extracted from soybean meal for potential use in thermoplastics and/or thermoset plastics.

Performance Measures:

- i. At least two new candidate products/formulations and/or processes eligible for further development.
- ii. At least one additional plastic manufacturer identified and committed to jointly pursue with USB the use of soy protein in targeted applications for thermoplastics or modified rubber.
- iii. At least one project involving a large volume soy chemical in scale-up stage.

Goal 2:

- 2. Develop soy-based coatings, inks and solvents for the petrochemical market.

Strategy 1:

a. New Uses Research and Commercialization

Industry recognition of economic, functional and marketing benefits of soy-based coatings, printing inks and solvents technologies.

Tactics:

- i. Provide technical information to target companies/individuals in key markets via TAP's, trade/tech shows and one-on-one contacts.
- ii. Conduct life cycle studies for soy coating systems compared to petrochemical-based systems and communicate information to users and government agencies as necessary.
- iii. Communicate technical needs along with performance, environmental and economic benefits to downstream users, thereby creating market pull for company adoption.
- iv. Monitor new soy solvent product and process development from industry.
- v. Continue support for development and introduction of organic co-solvent blends with products like d'Limonene to enhance methyl soyate properties.
- vi. Provide information to formulators, distributors, equipment manufacturers, government and end-users on soy solvent properties that enhance performance in market applications.
- vii. Monitor prices of soy-based products versus petroleum and natural gas-derived products to ascertain economic competitiveness opportunities.
- viii. Assist in pesticide registration of a mosquito larvicide product.

Performance Measures:

- i. One major paint company producing a new soy-based waterborne resin for use in low VOC, environmentally sensitive coatings marketplace.
- ii. At least three new soy solvent products/applications identified for commercialization pursuit.
- iii. Two new partners identified for cooperative solvent projects.
- iv. Soy-based mosquito larvicide registration completed.

Strategy 2:

b. New Uses Research and Commercialization

Discovery, research, and development of new soy industrial opportunities for coatings, printing inks and solvents.

Tactics:

- i. Investigate soy-containing powder coating resin for additional markets and conduct plant trials.
- ii. Explore outside partnerships and solicit funding support for leveraging USB efforts.
- iii. Seek new applications using soy polyols in industrial coatings.
- iv. Seek new applications using soy-based alkyd resins in water-based paint emulsions (soy oil and water mixture).
- v. Support the development of water-based soy polyurethane stain to replace solvent urethane systems.

- vi. Investigate the utility of soy meal/flour and its derivatives in paints and coatings.
- vii. Work with a major paint company to develop hybrid, water-based paints containing soy.

Performance Measures:

- i. New soy-containing powder coating resin commercialized.
- ii. Technical feasibility established for at least one soy polyol or soy-based resin for coating applications.
- iii. One or more new water-based paints commercialized.
- iv. At least one soy/acrylic stain in commercial scale-up.

Goal 3:

- 3. Develop soy-based adhesives for the petrochemical market.

Strategy 1:

a. New Uses Research and Commercialization

Increase the use of soy meal and flour in wood adhesives by industry recognition of economic, functional and marketing benefits of soy-based adhesive technologies.

Tactics:

- i. Provide technical information to target companies/individuals in key markets via TAP's, trade/tech shows and one-on-one contacts.
- ii. Work with industry partners in the development of candidate products from soy protein that can economically compete as adhesives in interior/exterior oriented strand board, particleboard, medium density fiberboard and plywood products.
- iii. Work with companies to increase the use of formaldehyde-free interior plywood adhesives.
- iv. Work with academic and industrial partners to develop solvent-free urethane glue systems.
- v. Assist industry partners in testing to meet industry standards.
- vi. Conduct life cycle studies for soy adhesive systems compared to petrochemical-based systems and communicate information to users and government agencies as necessary.
- vii. Communicate technical needs along with performance, environmental and economic benefits to downstream users, thereby creating market pull for company adoption.

Performance Measures

- i. Use of soy meal/flour in interior plywood adhesives is increased by 10 percent.
- ii. At least one new soy adhesive product for exterior wood panel use is launched commercially.
- iii. At least one company utilizing the soy-based formaldehyde-free glue system in particle board or oriented strand board production.

Strategy 2:

b. New Uses Research and Commercialization

Discovery, research, and development of new soy industrial opportunities for adhesives.

Tactics:

- i. Investigate the potential of soy oil polyol urethane formulations for adhesives and sealants.
- ii. Explore outside partnerships and solicit funding support for leveraging USB efforts.
- iii. Explore other technologies for formaldehyde-free adhesives in wood composites.
- iv. Investigate other adhesive uses for soy outside of wood applications.

Performance Measures:

- i. One additional wood composite adhesive product in market development trials.
- ii. One new technology to develop formaldehyde-free wood glue technology identified.

Goal 4:

4. Develop soy-based technologies for fibers in the petrochemical market.

Strategy 1:

- a. New Uses Research and Commercialization
Discovery, research and development of basic resin production and production technology for soy protein fibers.

Tactics:

- i. Develop new soy protein resins for producing fibers and related products.
- ii. Develop economical production processes for staple fiber production.
- iii. Test new soy fibers for physical characteristics and develop finishing agents and process aides to modify and improve properties as necessary.
- iv. Determine best market fits for initial test fibers and perform economic analysis of value to the soybean industry.

Performance Measures:

- i. At least one new soy fiber developed and in limited production trials.
- ii. At least two additional resins under development.

Strategy 2:

- b. New Uses Research and Commercialization
Industry recognition of economic, functional and marketing benefits of soy-based fibers.

Tactics:

- i. As available, provide test fibers from research to industrial producers for evaluation.
- ii. As available, provide test fibers from research to industrial users for evaluation.
- iii. Conduct one-on-one meetings with potential producers and users of soy fibers.

- iv. Attend and present at appropriate technical conferences related to fibers.
- v. Conduct a technical advisory panel on fibers alone or in conjunction with other soy topics.
- vi. Conduct life cycle studies for soy fibers compared to petrochemical-based fibers and communicate information to users and government agencies as necessary.

Performance Measures:

- i. A clear route to commercialization of at least one soy fiber is mapped from academic research through production and commercial use with candidate partners at each stage.
- ii. At least one major fiber producer or user participating in USB-sponsored research.

Goal 5:

- 5. Develop soy-based technologies for emerging opportunities in the petrochemical market.

Strategy 1:

- a. New Uses Research and Commercialization
Discovery, research and development of new soy oil and meal technologies.

Tactics:

- i. Evaluate the impact of current soy composition and processing on oil and meal relative to use in industrial applications:
 - 1. What changes in oil and meal composition are desirable for industrial uses and are these in-line with current biotechnology efforts to alter soy composition for the food and feed markets?
 - 2. *Do current soy processing practices impact oil or meal performance in food, feed and industrial applications and how can they be improved?*
 - 3. Are there emerging new technologies for processing soybeans and separating oil, protein, and carbohydrates that might improve soy products in the food, feed, fuel and industrial markets?
- ii. Investigate new technologies such as olefin metathesis for oil modification to value-added products
- iii. Explore new industrial product and market applications for soy protein and carbohydrates.
 - 1. In addition to plastics, coatings, adhesives and fibers already identified what other markets might utilize soy protein? Determine the opportunity for the production of basic commodity chemicals, such as fumaric, succinic and acrylic acids from soybean meal and other soy products such as glycerin.
 - 2. Investigate the use of bioprocessing using novel enzymes and/or chemical conversion to make industrial products from soy carbohydrates and cellulose.

- iv. Continue to research the use of soy glycerin and meal to make a range of commodity surfactants for the detergent and industrial processing markets.
- v. Explore the potential for soybean oil/glycerin powered biofuel cells for battery replacement.
- vi. Provide technical information to target companies/individuals in key markets via TAP's, trade/tech shows and one-on-one contacts.

- vii. Explore outside partnerships with regional farm groups, cooperatives and bioprocessing companies.
- viii. Solicit funding support for leveraging USB efforts.
- ix. Monitor and support co-product glycerin research for multiple uses.
- x. Monitor and explore fermentation and other process work on soy protein that could enhance the opportunity for soy protein industrial uses.
- xi. Explore processes that could add industrial use value to lower value soy components such as sugars, cellulose/hemicellulose and lignins.
- xii. Fund research on the use of soybean oil and or meal for use in rubber production.
- xiii. Fund research on the use of soybean oil and or meal for use in paper production.

Performance Measures:

- i. At least three new products/applications identified for commercialization pursuit.
- ii. Two new partners identified for cooperative projects.
- iii. At least one new soy product for rubber processing is undergoing plant trials of a major rubber product such as tires.

Strategy 2:

- b. New Uses Research and Commercialization
Leverage new types of soybean oil being developed through genetic engineering and/or oil modification for industrial uses.

Tactics:

- i. Evaluate high-oleic, high steridonic and other genetically modified soy oils for industrial applications.
- ii. Evaluate, as base stocks for lubricant applications, oils with improved high temperature oxidation stability produced from soybean oil using chemical modification (hydrogenation, catalysis, reformulations, etc.).
- iii. Monitor and advise industry partners on appropriate additive formulations to improve high temperature stability and assure low temperature flow.
- iv. Build awareness and support technology transfer of soy-based transformer fluids and advances with new soy lubricants.
- v. Transfer conventional soybean oil formulation technology to existing lubricant formulators and encourage partnerships with soybean oil suppliers to expand the range of lubricant products.

Performance Measures:

- i. Research quantities of genetically and chemically improved oils developed for evaluation by formulator partners.

- ii. Additional industry partners conducting soy-based product trials for hydraulic fluids and other lubricant applications.
- iii. Existing formulation technology for lubricant products transferred to lubricant formulators and new lubricant products such as greases, transformer oils, metal working fluids, total loss lubricants and others being launched commercially at a regional or national level.

Goal 6:

- 6. Build awareness and demand for soy products.

Strategy 1:

- a. New Uses Research and Commercialization
Provide coordinated communications messages and materials to help industry awareness of technology and products.

Tactics:

- i. Update and create new collateral materials.
- ii. Provide information on soy technology and products and/or manufacturer contact information per industry request or as new technology/products are made available.
- iii. Update, print and distribute soy products catalog to industry leaders.
- iv. Maintain bi-monthly distribution of New Uses industrial e-newsletter, highlighting new technologies, products and end markets in which they can be used. Enhance newsletter with additional photos, content.
- v. Utilize New Uses Web site as a key source for updated information on technology and producers and/or manufacturer contacts. Update site with testimonials from researchers as well as additional content on target areas.
- vi. Maintain and increase one-on-one relationships with media representatives to increase their awareness of soy technologies and products.
- vii. Develop and distribute media articles, press releases and advisories to targeted industry media.
- viii. Create media database that will serve as a resource to help facilitate contact with key media outlets.
- ix. Supply meeting support and collateral materials for trade shows and industry meetings.

Performance Measures:

- i. Increase industry awareness of soy-based products and technologies based on FY10 benchmark.
- ii. Maintain high readership of *Biobased Solutions* by increasing average newsletter open rate 2 percentage points to 26.6 percent.
- iii. Web traffic to New Uses Web site increased by 5 percent to over 34,000 visitors per year.
- iv. Checkoff-funded technologies and/or products featured in 20 or more trade and online publications.

Strategy 2:

- b. New Uses Research and Commercialization

Reduce obstacles and leverage incentives to increase government and private sector purchasing of soy-based products.

Tactics:

- i. Identify and communicate information as well as respond to questions concerning performance and content standards, environmental information, including sustainability, and product certification methods to reduce uncertainty of quality and consistency among customers.
- ii. Track and review technical implementation issues related to the Federal BioPreferred Program.
- iii. Track government purchasing activities that provide opportunities to expand the use of soy-based products.
- iv. Participate in government and industry meetings related to the procurement of biobased products.
- v. Identify and initiate demonstration projects or educational outreach activities with entities that want to increase the use of biobased products.
- vi. Track government and private-sector “sustainability” activities that provide opportunities to expand the use of soy-based products and participate in government and industry meetings related to the sustainability issue.
- vii. Work with agencies to identify best management practices that are effective in expanding the use of biobased products.
- viii. Work with agencies to provide information on soy-based products that can be incorporated into their affirmative purchasing programs for USDA-designated biobased items.
- ix. Identify pending contracting, subcontracting, and other sales and marketing opportunities with government agencies and share information with biobased product manufacturers and vendors.
- x. Assist product manufacturers getting products listed with GSA, DoD E-Mall, AbilityOne (formerly JWOD) and USDA.
- xi. Survey and/or otherwise gain information from product manufacturers and/or federal agency personnel about the level of biobased product purchasing within the federal government.
- xii. Survey public opinion about biobased products to provide information to government and private-sector environmental and sustainability leaders.

Performance Measures:

- i. Demonstration projects or educational outreach efforts initiated with three or more entities that are implementing biobased purchasing programs.
- ii. Identify and communicate potential government marketing and sales opportunities to biobased product manufacturers.
- iii. More products listed on the USDA List of Designated Items, GSA Multiple Awards Schedule, DoD E-Mall and or/AbilityOne.
- iv. Conduct bioproducts market research, such as an attitude/use survey, of federal agencies.
- v. Conduct a bioproducts sales survey of biobased product manufacturers.
- vi. Conduct public opinion research to assess private-sector attitudes on biobased products in environmental “greening” and sustainability

programs, provide resulting information to government and private-sector leaders and track changes over time.

Strategy 3:

c. New Uses Research and Commercialization

Increase awareness and knowledge within private, federal and public sectors regarding biobased product performance and benefits to stimulate growth of biobased products.

Tactics:

- i.** Support soy-based product manufacturers in their efforts to increase awareness and adoption of their products.
- ii.** Expand and update the USB www.soybiobased.org resource center of user testimonials and other information related to biobased product purchasing and use.
- iii.** Monitor government and environmental awards programs, such as the White House Closing the Circle Award, for successes in soy-biobased products that can be shared throughout the government and with biobased manufacturers.
- iv.** Use an electronic system to distribute information and to evaluate readership and interest in materials that are distributed electronically, as well as support research survey work.
- v.** Survey and/or otherwise gain information from government and private-sector audiences about the level of awareness, knowledge, and attitudes toward purchasing of biobased products.
- vi.** Continue to provide information on products and other relevant information to specific individuals in the buying chain as well as to individuals who can affect purchasing decisions.
- vii.** Continue to update and distribute the Biobased Best Practices Guide to the federal audiences.
- viii.** Respond to questions about performance, sustainability, content, certification and testing issues raised by entities interested in using biobased products.
- ix.** Attend and participate in conferences and meetings that provide opportunities to share information about the availability and benefits of products to the government purchasing community and the sustainability community.
- x.** Work with, and leverage the efforts of, officials at the U.S. Departments of Agriculture and Energy, Office of the Federal Environmental Executive, Environmental Protection Agency, Office of Management and Budget, Department of the Interior and others who are working to increase the use of biobased products.
- xi.** Identify informational resources on biobased products and purchasing that will be useful to the purchasing community and that can be posted on the USB-approved electronic resource center/Web site.
- xii.** Provide information for national, state and local bioproduct promotion activities that will increase availability and use of bioproducts within a state.

Performance Measures:

- i. Distribution list for the newsletter (currently 10,469) increased by 300 people who are involved in government procurement.
- ii. Four new informational materials added to the electronic resource center/Web site www.soybiobased.org.
- iii. Testimonials of six “Biobased Champions” documented and distributed.
- iv. Specific information about the availability and benefits of biobased products provided to at least 200 individuals who are: 1) potential users of biobased products; 2) in the federal procurement system; 3) federal environmental staff; and/or 4) state, local, and private-sector representatives; and 5) sustainability opinion leaders.
- v. Information provided to one or more QSSBs to help in state- or local-based product promotion programs.

Goal 7:

- 7. Actively define and promote the greenhouse gas and sustainability benefits of soy-biobased products.

Strategy 1:

- a. New Uses Research and Commercialization
Define sustainability as it pertains to soy-biobased products.

Tactics:

- i. Ensure that key stakeholders are informed of the results of USB-funded research and other relevant research on the environmental, lifecycle and sustainability attributes of soybean production and soy-based products.
- ii. Work with the biodiesel industry to define and document the biodiesel and biobased product impact on sustainability issues with an emphasis on land use.
- iii. Communicate biobased product’s sustainability benefits to key influencers in industry, media, and state and federal agencies.

Performance Measures:

- i. Participate in at least two state or national meetings on sustainability.
- ii. Develop one communications tool to showcase soy-biobased products’ sustainable benefits.
- iii. Monitor sustainability studies that pertain to soy-biobased products.
- iv. Communicate sustainability benefits of biobased products to key influencers in government agencies as well as with industry and private-sector entities. Ensure accurate assessments of soybeans as a biobased feedstock and their impact on sustainability are widely known and used consistently across the country.
- v. Participate in industry efforts to foster credible sustainability initiatives, including discussions on sustainability standards that would impact biobased products.
- vi. Coordinate with industry on responses to studies or other challenges that would undermine the sustainability and environmental reputation of biobased products.

Industrial Utilization
Domestic Marketing Committee

LRSP Objective #1

Annual utilization of 3.5 billion bushels of soybeans by 2011

DMC Industrial Utilization-Biodiesel Goals for LRSP Objective #1

- I. Increase the use of biodiesel in vehicles to help drive the utilization of 3.5 billion bushels of soybeans.
- II. Increase biodiesel use in trucking, underground mine, railroad and home heating markets.
- III. Meet Environmental Protection Agency (EPA) requirements to produce 90 percent less particulate matter and NO_x.

DMC Industrial Utilization-Biobased Products Goals for LRSP Objective #1

- I. Increase the use of soybean oil by growing soy biobased products markets.

LRSP Objective #2

Approval in the importing countries that comprise 90% of the U.S. soy products for each biotech event by the time of its commercialization.

There are no goals or strategies under the Industrial Utilization Target Area in Domestic Marketing related to LRSP Objective #2

LRSP Objective #3

Promote U.S. Sustainable soybean production through responsible stewardship whild acknowledging global market needs.

DMC Industrial Utilization-Biodiesel Goals for LRSP Objective #3

- I. Actively define and promote the greenhouse gas and sustainability benefits of soy biodiesel.

DMC Industrial Utilization-Biobased Products Goals for LRSP Objective #3

- I. Actively define and promote the greenhouse gas and sustainability benefits of soy biobased products.

Market Environment

The market environment for industrial utilization of soybean products reflects several factors:

Rising food prices for one will play a role. New numbers from the Labor Department showed the biggest jump in food prices since 1974. Numbers released by the U.S. Labor Department in March of 2011 show food prices sky-rocketing in February by 3.9 percent. The sharp increase in food prices are attributed to rising fuel prices, unrest in the Middle East and rising food costs brought on by severe weather and crop shortages in Florida and abroad.

Petrochemical prices rose sharply in 2007 and 2008 reflecting the high cost of crude oil and natural gas, before falling in late 2008 and the first quarter of 2009 then rising again in the first quarter of 2010 and have risen again in the first quarter of 2011.

Despite the difficult economy, sales of soybean oil for industrial products rose to over a billion pounds and the introduction of soy adhesives for plywood increased soy meal consumption by an estimated 80 – 100 million pounds.

Actions by European countries to curtail exports of biodiesel from the US cast some doubts on the near term demand for soybean oil to make biodiesel in Europe. However policies in the U.S. such as the federal Renewable Fuel Standard should result in increased volume of high grade glycerin as demand for renewable glycerin increases.

On March 26, 2010 EPA issued a final rule for the Renewable Fuel Standard (commonly known as RFS2). In the final rule, EPA validated that soybased biodiesel was an advanced biofuel and could be used to meet biomass based diesel fuel volume obligations. Due to biodiesel's position as America's advanced biofuel, the RFS2 will create an 800 million gallon demand in 2010 for biodiesel rising to one billion gallon demand in 2012.

Bioheat shows great promise as a new market. The home heating oil market is 8 billion gallons a year. The 24 state chapters of the National Oilheat Research Alliance voted unanimously to begin the process of converting their industry to 5% Bioheat by 2012 and to 100% Bioheat by 2050. Due to soyoil's good cold flow properties the Bioheat market provides a unique opportunity for soy-based Bioheat.

New soy industrial products continue to be well received in the market place due to environmental and sustainability advantages.

The "2011 State of Green Business Report" shows a dramatic shift is occurring in mainstream business: Companies are thinking bigger and longer-term about sustainability -- analysis of businesses in 2010 shows that even during economically challenging times, many companies invested more in their sustainability activities and made bold new sustainability commitments.

Three quarters of firms view sustainability as consistent with their profit mission and are engaging in activities. This is a doubling of activity over the past three years.¹

Interest in soy industrial products is global in scope. A study released by the LMC group has estimated soy oil industrial use for plastics in Asia to surpass levels in the US with strong utilization and growth in South America as well. US producers are known to be exporting soy polyols and other soy derivatives to Europe with success.

American business support for sustainable practices is increasing, and therefore, creates opportunities for biodiesel and biobased products. "Sustainability will continue to become part of standard corporate practice" according to "2009 Greening of Corporate America - The Pathway to Sustainability—from strategy to action"²:

- o Over half (58 percent) believe corporate sustainability practices are either unaffected or aided by the economic crises.

¹ "2009 Greening of Corporate America The Pathway to Sustainability—from strategy to action"; published by Siemens Industry Inc., McGraw-Hill Construction, 2009.

² A 2009 report by Siemens and McGraw-Hill Construction.

- Activity in green building has dramatically increased over time, with 21 percent expecting to green more than 60 percent of their building portfolio in 2009, up from less than 10 percent in 2006.
- 73 percent of the business leaders surveyed expect sustainability will help them retain and attract customers.
- 61 percent of the companies interviewed have a person or team dedicated to sustainability.

Typically soy industrial uses such as plastics are growing due to their higher value and/or lower cost as well as the increasing demand for environmentally friendly products. No direct federal subsidies are available to stimulate market growth. Some assistance is being given, however, by the Federal Procurement Preference “Biopreferred” program that calls for all government agencies to buy biobased products unless they are not readily available, cost competitive, or perform as well as traditional products. The Food, Conservation, and Energy Act of 2008 (2008 Farm Bill) reinforces and strengthens USDA’s BioPreferred Program for listing biobased products eligible to receive federal purchasing preference (including ways to accelerate the listing of finished products that use intermediate biobased ingredients and/or biobased components). USDA has completed designation of 50 categories of biobased products, representing over 5000 products. Additional designations are underway. USDA has identified over 100 item categories for potential designation under the preferred procurement program.

The 2008 Farm Bill directed USDA to complete the “USDA Certified Biobased” labeling program as expeditiously as possible and makes feedstocks and intermediates eligible to receive the label. On January 20, 2011, USDA published the final rule to initiate the voluntary product certification and labeling program for qualifying biobased products. The new USDA label will clearly identify biobased products and play a very important role in increasing biobased products awareness. The label is particularly important to the Farm Bill’s intent to make the federal procurement program a market development tool for increasing biobased procurement across the nation. USDA estimates that there are 20,000 biobased products currently being manufactured in the United States and that the growing industry as a whole is responsible for over 100,000 jobs.

The 2009 Economic Stimulus Bill created some new opportunities to increase the purchasing of biobased products by federal agencies as well as state and local governments, particularly in the areas of energy efficiency improvements for government buildings, road and other infrastructure repair and construction, and housing weatherization programs. For example, the Wilmington Delaware Housing Authority used stimulus funding to make public housing more energy efficient with a soy-based roof coating. The use of biobased products will help to create “green jobs,” reduce dependence on imported oil, and support sustainable development.

The Obama Administration has also embraced biobased products by including them in Executive Order 13514 “Federal Leadership in Environmental, Energy, and Economic Performance.” As a result, government agencies can use biobased products to help them meet the Administration’s requirements for energy efficiency, petroleum reduction, sustainability and more. Under the Executive Order, agencies are directed to ensure that 95 percent of new purchases of products and services, except for weapon systems, are to be for environmentally preferable products and services, including biobased products, when they meet agency performance requirements.

USB's work with federal employees creates a springboard to educate state and local governments as well as the private sector about biobased products benefits. The federal government buys more than \$500 billion in goods and services annually. The federal recycled paper programs and adoption of biodiesel helped lead others to switch and they can do the same for biobased products in general. Federal procurement as well as the biobased label that USDA has created can play a major role in increasing public awareness of biobased products and their benefits. In February 2010, Ohio's governor signed legislation into law giving Ohio the strongest state preference for biobased products in the nation. Similar legislation is under consideration in other states. The Ohio law is modeled after the federal biobased program and will benefit from advancing the federal programs, including promotion of the federal biobased label. Municipalities and public entities in Ohio are also signing up to participate in the biobased preference program. In June, Ohio State University announced that it will be using the soy-based toner cartridges in its laser printers. Arkansas and Indiana also have state procurement preferences. In addition the Midwestern Governors Association is working on a biobased procurement initiative based on the federal Biopreferred program. Counties through their National Association of Counties, are also interested in biobased programs as part of their overall environmental and energy efficiency efforts. More than 30 counties from across the nation have expressed interest in trying biobased products through a USB demonstration. In 2010, Arlington County, Virginia—a national leader in environmental activity—integrated soy biobased products into its "Green Games" competition to encourage commercial property owners/managers and office tenants to "green" their buildings.

Strategic Approach

The Domestic Marketing – Industrial Utilization target area has two strategies: 1) biodiesel; and 2) research and commercialization. The strategic approach for biodiesel includes the continued support of the National Biodiesel Board's efforts in the areas of Industry Communications and Coordination, Technical and Operations Support, BQ 9000 Quality Assurance and the Advanced Biofuels Initiative. Six additional strategies for FY 2011 and beyond are: 1) Alkali metals and engine oil impact on 2011 and beyond particulate trap and NOx after-treatment; 2) follow-up on maintaining and improving the ASTM standards for biodiesel and biodiesel blends; 3) UL tank, piping, and dispenser and pipeline transport approvals; 4) Bioheat efforts for B100 and "legacy safe" levels; and 5) biodiesel sustainability 6) State Reg. and Environmental Support.

The research and commercialization approach focuses on increasing acceptance and usage of biobased products within the public and federal markets. The strategic focus for biobased products is on leveraging USB's efforts with manufacturers and federal agencies, and promoting the various incentives and drivers in place within the federal government to move biobased products into the broader market.

Ongoing issues to be addressed in both the bioproducts and biodiesel areas are "sustainability" and "land use". Potential biodiesel and biobased products users around the world are frequently asking the question, "Are the soybeans being grown in a sustainable manner and were rainforests or wildlife habitats directly or indirectly disturbed or destroyed in order to grow this crop"? USB's peer-reviewed life cycle profile released in February 2010 documents multiple energy and environmental benefits of

U.S. soybean farming and processing. It confirms why manufacturers are increasingly using U.S. soy in green chemistry for a wide array of biobased products.

Ability to Impact

Biodiesel – USB can continue to support the use of biodiesel fuel to farmers, truckers and the general public and work to increase awareness and usage of soy-based products within the federal government. Although the current economic environment for biodiesel is challenging we expect to see continued demand growth for biodiesel long term.

The NBB regulatory team will provide analytical support to state soybean organizations and other stakeholders leading state and regional biodiesel initiatives. Understanding the regulatory and legal landscape at the state, federal and even international levels, is key to the overall effectiveness of many initiatives, especially as these issues have become significantly more complex and regional in nature with the advent of low carbon fuel standards. The program will educate and equip stakeholders and coalitions with technical expertise, enhancing their chances of success.

As biodiesel becomes more successful, it is and will continue to come under increasing attack. Opponents of biodiesel seek to raise doubt among consumers and policy makers by falsely accusing biodiesel of being unsustainable. While science does not support the accusations, opponents of biofuels are still spending millions of dollars on negative campaigns to convince the public otherwise. The misinformation has permeated common beliefs and severely threatens the well-being of the biodiesel industry. NBB is making great strides in FY11 to combat faulty science and misinformation. Those efforts must continue and increase in FY12. NBB must continue its proactive defense against allegations that biodiesel will harm the world's food supply or environment. Areas of concentration include:

Lifecycle Analysis: Lifecycle analysis encompasses greenhouse gas emission (GHG) modeling, as well as energy balance and environmental impacts

Indirect Impacts: Lifecycle accounting methods proposed by USEPA, California, and others apply huge penalties to US biodiesel for indirect impacts such as tropical deforestation. The technical and philosophical errors in these models require scrutiny.

Carbon Accounting: We will monitor and participate in the scientific debate evolving with regard to carbon accounting.

Food and Fuel: We must continue to use scientific analysis to dispel the false assertions and make the reality of biodiesel's relationship to food security more widely known.

Water Quality: We will work with producers and feedstock suppliers to quantitatively defend biodiesel's reputation with regard to water quality.

Sustainability Certification: The federal Renewable Fuel standard includes certification of direct land use and indirect land use change through the definition of renewable biomass and required GHG thresholds.

The Sustainability Awareness project is designed specifically to promote the results and conclusions developed through Sustainability Analysis. As Sustainability Analysis shores up scientific arguments, Sustainability Awareness will educate key audiences, and the public at large, on the results. The sustainability awareness project allows us to effectively engage key public audiences and ensure their perception of biodiesel is based on accurate information.

The Original Equipment Manufacturer (OEM) engine testing program saw significant success in FY2010 with the announcement by General Motors and Ford Motor Company of support for B20 in their 2011 model year engines. Issues identified in 2010 which require further testing in order to facilitate support of B20 by other companies are the impact of alkali metals on long term durability of particulate matter traps and NOx technology and options for addressing higher engine oil dilution with B20 when in-cylinder post injection is used with some light duty engines. At present, several companies only support B5 due to concerns in these areas and the lack of support for over B5 may adversely impact potential actions by states and fleets to encourage use of B20.

The National Oilheat Research Alliance announced their intent to move to B5 in the entire heating oil pool by 2012. B5 is already allowed in the D396 heating oil specification as of 2008. NORA will then move to the 'legacy safe' level of biodiesel (anticipated to be in the range of B20 or higher) within 15 years, but sooner if possible. This will require a new ASTM specification for a higher level of biodiesel than the B5 now approved in D396, but existing equipment will be able to be used. NORA will then transition all heating oil to B100 by the year 2050. This will require a B100 ASTM specification and potential new equipment or retro-fits to existing equipment where the legacy safe level is not B100.

The EPA ruling in the Renewable Fuel Standard that biodiesel from soybean oil is an 'advanced biofuel' presents a significant opportunity for volume. This volume increase will encourage pipeline shipment of soy based biodiesel. It is estimated that transportation savings of up to 25 cents per gallon can be achieved by pipelining biodiesel blends.

To maintain the ASTM specifications and biodiesel usage we now have, additional efforts are needed in the areas of oxidation stability, water and particulate levels, and cold weather operability methods specifications and solubility of minor compounds in Ultra Low Sulfur Diesel (ULSD). ASTM working groups are active in each of these areas, and it is possible ballots will be needed in FY11. A ballot to create two grades of biodiesel—Number 1 and Number 2—is being voted on in the spring of 2011 and may go to main the committee for a vote in FY11. The required use of 5% biodiesel in Number 1 diesel fuel was waived in Minnesota this winter due to the concerns with minor compounds in some ULSD, and the new Number 1 grade biodiesel is needed to address those concerns. Supplying a quality biodiesel product to consumers is a top priority. In order to help ensure biodiesel quality, the BQ 9000 Accreditation Program was developed and is being promoted to producers, marketers and consumers. It is a cooperative and voluntary program for the accreditation of producers and marketers of biodiesel. The program is a unique combination of the ASTM standard for biodiesel,

ASTM D 6751, and a quality systems program that includes storage, sampling, testing, blending, shipping, distribution, and fuel management practices.

Research and Commercialization – Soybean oil can be an effective competitor to petrochemical products both functionally and economically. In the past decade, scores of new soy industrial products have been launched as a result of checkoff funding, including plastics, lubricants, coatings, inks, adhesives and solvents.

Checkoff funding has been effective in the development of new technologies through research and in transferring technologies to partners to gain trial and adoption. Volatility in petroleum prices and long-term projections for increased demand continue to create opportunities for soy-based industrial products to compete. The checkoff can support research to reduce processing costs for soy products to further improve competitiveness. The checkoff cannot influence regulatory issues, but has responded to regulations that favor soy product use by developing products that have economic advantages in meeting regulations and by providing technical information to assist in the development of procurement standards and guidelines that encourage active adoption. The checkoff can also take advantage of the new, growing private sector interest in adopting sustainable business practices by providing information to companies and sustainability opinion leaders about the benefits of using more sustainable products made with renewable, biobased feedstocks. USB can document successful biobased product purchasing by the government to validate the role biobased products can play in helping the private sector achieve its sustainability objectives.

USB will continue to promote the use of biobased products through government procurement by continuing trial and adoption programs with identified federal, state and/or local agencies. These efforts are even more important now that (USDA) has issued multiple rules that include thousands of biobased products that government agencies are expected to purchase under the program and the Federal Acquisition Regulation. This program contains the uniform policies and procedures for acquisition used by federal government agencies, including requirements for biobased purchasing.

The newly launched “USDA Certified Biobased Product” labeling program creates a major new opportunity to identify and promote the use of biobased products in both the public and private market, including the consumer market.

The federal biobased program has also triggered states (Ohio, Arkansas, Indiana) to approve legislation that is modeled after the federal biobased procurement program. The Midwest Governors Association has launched a biobased initiative while the National Association of State Procurement Officials has included biobased in their annual “green procurement” conference. The National Association of Counties has also promoted biobased products to counties. All of these efforts create new opportunities for biobased products.

USB will also initiate outreach and education activities aimed at the private sector’s interest in sustainable practices. According to *Siemens*, over half (58 percent) of business leaders believe corporate sustainability practices are necessary and are unaffected by the current economic crises; 73 percent expect sustainability will help them retain and attract customers; and 61 percent of the companies interviewed have a person or team dedicated to sustainability. Because of USB’s leadership on biobased

product outreach to government audiences, private-sector entities, such as the hotel industry, have shown interest in USB serving as a resource to their greening and sustainability programs. Widespread media coverage on land use studies and food vs. fuel debates have already prompted existing biobased customers as well as potential users of biobased products to ask questions about the sustainability of soy as a feedstock for biobased products. These questions must be addressed or they will undercut the progress of the biobased economy. USB's recent work on updating the lifecycle analysis of soybeans provides an important tool in positioning soy biobased products as environmentally beneficial.

LRSP Objectives 1-2:

- I. Annual utilization of 3.5 billion bushels of US soybeans by 2011

Committee – Target Area

- A. Domestic Marketing – Industrial Utilization/Biodiesel

Goal:

1. Increase the use of biodiesel in vehicles to help drive the utilization of 3.5 billion bushels of soybeans.

Strategy 1:

- a. Biodiesel
Communicate with engine manufacturers, stakeholders, biodiesel producers, biodiesel consumers and the media regarding the many benefits of soy biodiesel

Tactics:

- i. Target soy biodiesel messages and communicate with key audiences through trade organizations, associations, publications and general media using a comprehensive communications and coordination effort and to assure a smooth transition into the National Renewable Fuel Standard.
- ii. Promote and advertise fuel quality by educating users, marketers and suppliers about the ASTM specification and BQ 9000 quality assurance program.
- iii. Encourage sales of biodiesel blends and build industry credibility.
- iv. Document the environmental, economic and societal benefits of increased biodiesel production and use.
- v. Provide technical, economic and information support to agencies, ASA, state soybean associations, and other stakeholders in the areas of fuel management, operations and maintenance, and on national biodiesel incentives.
- vi. Support QSSBs and other industry stakeholders in their biodiesel programs and activities.
- vii. Coordinate and prioritize biodiesel industry needs with biodiesel, petrodiesel, OEM, government and academic experts.
- viii. Provide support to state biodiesel coalitions.
- ix. Provide timely updates to Alliance and Backer members to assist them in staying current on the biodiesel industry.

- x. Monitor, analyze and report regulatory and legislative activities relevant to the use of biodiesel to USB and allied organizations.
- xi. Maintain www.biodiesel.org as the leading source of credible biodiesel information.
- xii. Establish biodiesel as America's advanced biofuel

Performance Measures:

- i. Increase earned media, including 20 placements in national or top 50 media markets.
- ii. Increase the number of BQ-9000 companies in FY 2011 by 15% from the ending number in FY 2010.
- iii. A new BQ-9000 Laboratory Program was launched late in FY10. Certify 4 laboratories under the program in FY11.
- iv. Develop and provide two press releases, two articles, two letters to the editor and provide 40 interviews to journalists covering biodiesel issues.
- v. Attend five face-to-face meetings supporting state biodiesel coalitions.
- vi. Develop a consensus-based biodiesel priorities program and secure NBB board member approval.
- vii. Growth of the Biodiesel Alliance and Backers membership by 200 organizations or individuals.
- viii. Conduct one survey of Alliance and Backers members regarding increased support for biodiesel.
- ix. Build industry credibility by presenting at 15 major meetings or conferences, 5 face to face meetings, and answering 50 questions per month.
- x. Launch new interface to improve usability, accessibility and clarity of www.biodiesel.org.
- xi. Increase public awareness of biodiesel.

Strategy 2:

- b. Biodiesel
Collaborate with the biodiesel industry to develop biodiesel technical strategies and provide technical assistance to the biodiesel industry.

Tactics:

- i. Gather stakeholders together for discussions on quality, product availability, and other industry issues.
- ii. Develop industry steering committees to input to and help execute technical projects.
- iii. Participate in trade shows and industry meetings.

Performance Measures:

- i. Attendance at stakeholders meetings increase year over year.
- ii. Organize and attend a minimum of 2 industry steering committee meetings.
- iii. Domestic Marketing committee farmer-leaders attend at least three biodiesel meetings or events.

Strategy 3:

- c. Biodiesel
Continue to gain and build support of the OEMs.

Tactics:

- i. Respond to field-related technical inquiries posed by the various OEM manufacturers.
- ii. Collaborate with OEMs to facilitate and respond to specific inquiries from fleets.
- iii. Maintain a National Biodiesel hotline to assist users, OEMs and fuel dealers as the National Renewable Fuel Standard is implemented.
- iv. Encourage adoption of BQ 9000 as a strong recommendation in OEM statements and owner's manuals.
- v. Educate diesel mechanics and diesel shop supervisors on biodiesel and biodiesel blends.
- vi. Educate OEM dealers on biodiesel and biodiesel blends.
- vii. Work with NREL to provide industry-wide fuel quality information on B2-5, B11, B20 and B100 for quality.
- viii. Provide resources to secure and/or maintain the ASTM specifications for biodiesel and represent the U.S. biodiesel industry in international specification negotiations with OEMs to ensure soybean oil biodiesel is not unfairly restricted or penalized for non-performance reasons.

Performance Measures:

- i. Work with NREL to share NREL fuel survey results in a minimum of 3 OEM meetings, webinars or conference calls.
- ii. Conduct 10 training programs on-site or CD-ROM/DVD for diesel mechanics and diesel shop supervisors.
- iii. Answer 250 inquiries through the National Biodiesel hotline.
- iv. Fifteen OEMs will recommend or require BQ 9000 in their owner's manual or warranty statements.
- v. Educate a minimum of 300 OEM dealers.
- vi. Positive B20 warranty statements will increase from 55% of OEMs to 65%.
- vii. The ASTM specifications will be maintained for D 6751, B5 and B6 to B20.
- viii. Represent the biodiesel industry at a minimum of 2 international specification meetings or conferences.

Strategy 4:

- d. Biodiesel
Ensure production and marketing of high-quality biodiesel products.

Tactics:

- i. Educate biodiesel producers on the critical issue of product quality and specifications through collaborative efforts at ASTM and educational webinars on fuel quality.

- ii. Encourage the adoption and enforcement of D 6751 and D7467 by state departments of Weights and Measures.
- iii. Work with the National Biodiesel Board and other stakeholders to document quality standards.

Performance Measures:

- i. Producer survey indicates improved perception of biodiesel quality.
- ii. Incidences of quality issues are reduced year over year.
- iii. Increase the states that have adopted D 6751 from 44 to 47
- iv. Increased state adoption of D7467 for B6 to B20 blends by 20%.

Strategy 5:

- e. Biodiesel
Respond to industry technical needs and develop and promote new and additional ASTM standards.

Tactics:

- i. Provide resources to address ASTM issues such filter clogging above the cloud point, solubility of minor compounds in ULSD, lowering of existing specifications for adequate PM trap control (i.e. phosphorus or other metals), use of new water and sediment tests, impact of biodiesel on water separators, confirming oxidation stability values, and parameters needed for movement of biodiesel blends on the pipeline.
- ii. Provide resources to coordinate and address approvals of biodiesel and biodiesel blends with tanks, pumps, and dispensers with UL, California Water Board, and other approval bodies.
- iii. Provide resources to work with the Jet Aircraft manufactures, pipeline companies, and petroleum companies on securing technical approval for shipment of biodiesel blends on US pipelines.
- iv. Boost consumer confidence and fuel quality by decreasing testing costs and improving system reliability.
- v. Encourage the development of quicker, less expensive analytical methods for biodiesel.
- vi. Work with technical experts to showcase major technical efforts with targeted biodiesel stakeholders (i.e., users, regulators, decision makers, etc.) through placement of technical articles in prominent trade publications, earned media, and development and presentation of information at conferences and technical meetings.
- vii. Work with NORA and heating oil technical experts to secure ASTM specifications, UL listings, and equipment support by burner manufacturers.

Performance Measures:

- i. Execution of research, including a public report, to support issues identified at ASTM.

- ii. Documentation of new test methods and their cost savings.
- iii. Four major technical efforts will be showcased in trade publications.
- iv. Presentation at six major conferences showcasing technical efforts.
- v. Identification and execution of research, including public reports, for addressing approvals of tanks, pumps, and dispensers.
- vi. Identification and execution of research, including public reports, for addressing approvals of biodiesel blends in US pipelines.
- vii. Maintain D6751, B5 in D975 and D396, and the new specification for B6 to B20 for on/off road use, D7467.
- viii. Ballot ASTM specifications for heating oil in blends higher than B5 and document efforts for UL approvals of Bioheat.

Goal:

- 2. Increase biodiesel use in trucking, underground mine, railroad, and home heating markets.

Strategy 1:

- a. Biodiesel
Increase awareness of biodiesel availability and benefits by truckers, underground miners, railroad, and home heating markets and to fleets that want to use biodiesel to reduce their green house gas emissions.

Tactics:

- i. Promote the use of biodiesel/low blend biodiesel to key organizations and influencers in the trucking industry and home heating oil market.
- ii. Promote the use of biodiesel to key organizations and influencers in new and important markets for biodiesel such as underground mines and greenhouse gas markets.
- iii. Create targeted biodiesel messages through collateral materials, special events and tours for dissemination to key audiences.
- iv. Provide information and technical support in the areas of fuel management, operations and maintenance.
- v. Support QSSBs in their truck industry outreach activities.
- vi. Promote the use of biodiesel in the home heating oil market as Bioheat.
- vii. Address issues developed through the use of a railroad industry steering committee.
 - i. Educate fuel terminal operators, fuel distributor/dealers, and oil burning equipment companies on the benefits of Bioheat™.
 - ii. Utilize the newly designed Bioheat™ web site to educate consumers and dealers on benefits of Bioheat.
 - iii. Continue the strategic marketing relationships with organizations such as the American Trucking Association, Mine Safety and Health Administration, and the Oil Price Information Service.

Performance Measures:

- i. Prepare and conduct 12 face-to-face meetings, training seminars or webinars to educate potential Bioheat distributors and dealers.
- ii. Increase the number of licensees of the Bioheat trademark from 225 to 250.
- iii. Secure \$250,000 of in-kind or matching funding for Bioheat efforts by NORA, other regional heating oil organizations and heating oil dealers.
- iv. Increase web traffic on the Bioheat web site by 25% for dealers and 50% for users through promotion and awareness efforts.
- v. Maintain the Bioheat hotline and answer 250 inquiries.
- vi. Increase biodiesel use within the trucking industry by truck accessible pumps through an increase of 15%.
- vii. Maintain and update biodiesel truck stop database.
- viii. Maintain and promote BioTrucker.com.
- ix. Identify and execute two projects needed to support biodiesel use in railroads.
- x. Assist three truck fleets in implementing biodiesel to help reduce their carbon footprint.
- xi. Increase the number of fuel distributors and/or petro.
- xii. Increase number of fuel distributors and/or petroleum marketers selling low blends of biodiesel and achieving greater farmer use of low blends by 20%.

Goal:

3. Meet Environmental Protection Agency (EPA) requirement to produce 90 percent less particulate matter and NO_x.

Strategy 1:

- a. Biodiesel
Jointly fund biodiesel emissions research with DOE and OEMs.

Tactics:

- i. Provide funds for incorporation of soy biodiesel in U.S. Department of Energy (DOE) and OEM new diesel engine and after-treatment device (catalyst and muffler technology) testing and design.
- ii. Coordinate and create unified messages and materials that demonstrate soy biodiesel's benefit as a diesel fuel additive to increase lubricity.
- iii. Publish research results and communicate findings.

Performance Measures:

- i. Soy biodiesel included in DOE and OEM diesel engine and after-treatment testing.
- ii. The biodiesel industry will invest in DOE and OEM engine and after-treatment testing.
- iii. Testing will be performed, reported, and presented in a minimum of 2 conferences on biodiesel alkali metal content long term

- durability impacts on 2010 and beyond Particulate Matter Traps and NOx After-Treatment technologies.
- iv. Testing will be performed, reported, and presented at a minimum of 2 conferences on biodiesel's impact on engine oil when in-cylinder post-injection is used with the 2010 and beyond particulate matter trap equipped engines.

Committee – Target Area

B. Domestic Marketing – Industrial Utilization/Research and Commercialization

Goal:

- 1. Increase the use of soybean oil by growing soy biobased products markets.

Strategy 1:

- a. Research and Commercialization
Reduce obstacles and leverage incentives to increase government and private sector purchasing of soy-based products.

Tactics:

- i. Identify and communicate information as well as respond to questions concerning performance and content standards, environmental information, including sustainability, and product certification methods to reduce uncertainty of quality and consistency among customers.
- ii. Track and review technical implementation issues related to the Federal BioPreferred Program.
- iii. Track government purchasing activities that provide opportunities to expand the use of soy-based products.
- iv. Participate in government and industry meetings related to the procurement of biobased products.
- v. Identify and initiate demonstration projects or educational outreach activities with entities that want to increase the use of biobased products.
- vi. Track government and private-sector “sustainability” activities that provide opportunities to expand the use of soy-based products and participate in government and industry meetings related to the sustainability issue.
- vii. Work with agencies to identify best management practices that are effective in expanding the use of biobased products.
- viii. Work with agencies to provide information on soy-based products that can be incorporated into their affirmative purchasing programs for USDA-designated biobased items.
- ix. Identify pending contracting, subcontracting, and other sales and marketing opportunities with government agencies and share information with biobased product manufacturers and vendors.
- x. Assist product manufacturers getting products listed with GSA, DoD E-Mall, AbilityOne (formerly JWOD), USDA, and other government purchasing entities or programs

- xi.** Survey and/or otherwise gain information from product manufacturers and/or federal agency personnel about the level of biobased product purchasing within the federal government.
- xii.** Survey public opinion and/or support market research about biobased products to provide information to government and private-sector environmental and sustainability leaders.

Performance Measures:

- i.** Demonstration projects or educational outreach efforts initiated with three or more entities that are implementing biobased purchasing programs.
- ii.** Identify and communicate potential government marketing and sales opportunities to biobased product manufacturers.
- iii.** More products listed on, or made available through, the USDA List of Designated Items, GSA Multiple Awards Schedule, DoD E-Mall, AbilityOne, and/or other government purchasing programs or entities
- iv.** Conduct bioproducts research, such as an attitude/use survey, of federal agencies.
- v.** Conduct a bioproducts sales survey of biobased product manufacturers.
- vi.** Conduct public opinion or market research to assess private-sector attitudes on biobased products in environmental “greening” and sustainability programs and provide resulting information to government and private-sector leaders.

Strategy 2:

- b.** Research and Commercialization
Increase awareness and knowledge within private, federal and public sectors regarding biobased product performance and benefits to stimulate growth of biobased products.

Tactics:

- i.** Support soy-based product manufacturers in their efforts to increase awareness and adoption of their products.
- ii.** Expand and update the USB www.soybiobased.org resource center of user testimonials and other information related to biobased product purchasing and use.
- iii.** Monitor government and environmental awards programs for successes in soy-biobased products that can be shared throughout the government and with biobased manufacturers.
- iv.** Use an electronic system to distribute information and to evaluate readership and interest in materials that are distributed electronically, as well as support research survey work.
- v.** Survey and/or otherwise gain information from government and private-sector audiences about the level of awareness, knowledge, and attitudes toward purchasing of biobased products.
- vi.** Continue to provide information on products and other relevant information to specific individuals in the buying chain as well as to individuals who can affect purchasing decisions.

- vii. Continue to update and distribute the Biobased Best Practices Guide to the federal audiences.
- viii. Respond to questions about performance, sustainability, content, certification and testing issues raised by entities interested in using biobased products.
- ix. Attend and participate in conferences and meetings that provide opportunities to share information about the availability and benefits of products to the government purchasing community and the sustainability community.
- x. Work with, and leverage the efforts of, officials at the U.S. Departments of Agriculture and Energy, Office of the Federal Environmental Executive, Environmental Protection Agency, Office of Management and Budget, Department of the Interior and others who are working to increase the use of biobased products.
- xi. Identify informational resources on biobased products and purchasing that will be useful to the purchasing community and that can be posted on the USB-approved electronic resource center/Web site.
- xii. Provide information for national, state and local bioproduct promotion activities that will increase availability and use of bioproducts within a state.

Performance Measures:

- i. Distribution list for the newsletter increased by 300 people who are involved in government procurement.
- ii. Four new informational materials added to the electronic resource center/Web site www.soybiobased.org.
- iii. Testimonials of six "Biobased Champions" documented and distributed.
- iv. Specific information about the availability and benefits of biobased products provided to at least 200 individuals who are: 1) potential users of biobased products; 2) in the federal procurement system; 3) federal environmental staff; and/or 4) state, local, and private-sector representatives; and 5) sustainability opinion leaders.
- v. Information provided to one or more QSSBs to help in state or local-based product promotion programs.

LRSP Objective 3:

- III. Promote U.S. sustainable soybean production through responsible stewardship while acknowledging global market needs.

Committee – Target Area

- A. Domestic Marketing – Industrial Utilization/Biodiesel

Goal:

- 1. Actively define and promote the greenhouse gas and sustainability benefits of soy biodiesel.

Strategy 1:

- a. Biodiesel
Define sustainability as it pertains to soy biodiesel.

Tactics:

- i. Document and benchmark the biodiesel impact on sustainability issues with an emphasis on land use.
- ii. Develop and/or document organizations, experts, and studies that accurately define sustainability, and the benefits of biodiesel using the defined criteria.
- iii. Communicate biodiesel's sustainability benefits to key influencers in industry, media, and state and federal agencies. Ensure accurate assessments of biodiesel's impact on sustainability are available for use, and that they are widely known and used consistently across the country.
- iv. Participate in industry efforts to promote sustainability initiatives.

Performance Measures:

- i. Work with credible third-party organizations to accurately document the impact of the biodiesel demand on sustainability and land use.
- ii. Identify three organizations or experts that will be willing to respond to attacks on biodiesel's sustainability profile.
- iii. Document and analyze existing sustainability studies that pertain to biodiesel. Conduct an assessment of their data and identify, , needed research.
- iv. Participate in four state or national efforts to define sustainability and ensure biodiesel impacts are fully recognized and appreciated in these efforts.
- v. Communicate biodiesel sustainability benefits to five key influencers in the media and industry.
- vi. Respond to negative biodiesel sustainability stories, usually within 24 hours.
- vii. Participate in two collaborative industry efforts to promote biodiesel and biofuels sustainability benefits.
- viii. Provide biodiesel sustainability information to Alliance and Backer members as well as scientists who have signed the scientists' declaration of support of biodiesel.

Committee – Target Area

B. Domestic Marketing – Industrial Utilization/Research and Commercialization

Goal:

1. Actively define and promote the greenhouse gas and sustainability benefits of soy biobased products.

Strategy 1:

- a. Research and Commercialization
Define sustainability as it pertains to soy biobased products.

Tactics:

- i. Ensure that key stakeholders are informed of the results of USB-funded research and other relevant research on the environmental, lifecycle and sustainability attributes of soybean production and soy-based products.
- ii. Work with the biodiesel industry to define and document the biodiesel and biobased product impact on sustainability issues with an emphasis on land use.
- iii. Communicate biobased product's sustainability benefits to key influencers in industry, media, and state and federal agencies.

Performance Measures:

- i. Participate in at least two state or national meetings on sustainability.
- ii. Develop one communications tool to showcase soy biobased products' sustainable benefits.
- iii. Monitor sustainability studies that pertain to soy biobased products and report on efforts by third parties to define, measure or assess the sustainability of products.
- iv. Communicate sustainability benefits of biobased products to key influencers in government agencies as well as with industry and private-sector entities. Ensure accurate assessments of soybeans as a biobased feedstock and their impact on sustainability are widely known and used consistently across the country.
- v. Participate in industry efforts to foster credible sustainability initiatives, including discussions on sustainability standards that would impact biobased products.
- vi. Coordinate with industry on responses to studies or other challenges that would undermine the sustainability and environmental reputation of biobased products.

Financial Allocation:

Domestic Marketing – Biodiesel: \$2,738,451
New Uses R&C [Biobased Products]: \$641,099

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Industrial Utilization

Communications Committee

Market Environment

The USB Winter 2011 Soybean Producer Attitudes Survey indicated that U.S. soybean farmer usage of biodiesel dropped to 43 percent, which is down from previous years. This is believed to be from the lack of availability and the drop of production in 2010 when a one cent federal tax credit for fuel suppliers and biodiesel manufacturers expired. This tax credit expired at the end of 2009, and was not reinstated until early 2011.

The Renewable Fuels Standard (RFS2) issued by the U.S. Environmental Protection Agency this year provided for a renewable component in U.S. diesel fuel. RFS2 requires the use of 800 million gallons of biomass-based diesel in 2011, increasing gradually to 1 billion gallons per year by 2012. Soy biodiesel also qualifies as an advanced biofuel.

Estimates for industrial non-biodiesel use of soybean oil continue to rise as well. Soy-based products benefit from “green” trends. As these green trends grow and increase in popularity with the American consumer, awareness and sales of soy-based products will likely continue to increase.

Strategic Approach

Along with soybean farmers, communications in FY 2012 will focus on industry influencers (including equipment manufacturers and biodiesel producers) and other potential users of biodiesel and biobased products (such as truckers and governments) providing both proactive and reactive information as necessary. This includes partnerships with industry trade associations to accomplish checkoff priorities. Ongoing outreach with these organizations, and one-on-one interactions with their leadership, allows checkoff farmer-leaders to promote priorities and engage these organizations in activities that will help accomplish USB objectives.

The checkoff will work with biodiesel and biobased product manufacturers and users to continue driving awareness and utilization of industrial soy products. A significant message the checkoff plans to continue to convey in FY 2012 is the superiority of soy as the premier green feedstock by promoting its positive environmental attributes. Efforts will be focused on communicating the fact that soy biodiesel is an advanced biofuel. In addition, in FY 2012 more emphasis will be placed on communicating about and raising awareness of soy biobased products with both rural and urban audiences. The checkoff will capitalize on the current “green” trends to help raise awareness of soy biobased products and partner with other organizations to further extend the positive story of soy products.

Ability to Impact

USB is responsible to every contributor of the soybean checkoff, each of whom has a vested interest in the activities of the checkoff. Within the soybean industry, USB is

largely viewed as a reliable, third-party resource. The combination of the two allows USB to make a strong impact on the soybean industry.

LRSP Objectives

MEAL: Increase the value of U.S. soybean meal to the entire value chain.

OIL: Increase the value of U.S. soy oil to the entire value chain.

FREEDOM TO OPERATE: Ensure that our industry and its customers have the freedom and infrastructure to operate.

CUSTOMER FOCUS: Meet our customers' needs with quality soy products and services to enhance and expand our markets.

A. Communications – Industrial Utilization

1. Committee Goal: Educate the U.S. agriculture value chain about soybean checkoff activities and priorities while also engaging them to serve as partners in addressing challenges and opportunities for U.S. soybean farmers.

Industrial Utilization – COM - Tactics

- i. Continue USB partnership with Clean Cities Coalitions and QSSBs to communicate and educate about the benefits of biodiesel and Bioheat[®].
- ii. Create a farm-focused version of the National Biodiesel Board Advanced Biofuel campaign, available for use by QSSBs.
- iii. Partner with QSSBs to conduct soy-based product trials with state governments in an effort to add more soy-based products to their procurement lists.
- iv. Maintain consumer soy products guide with updates online and print additional copies of Soy Products Handbook as needed.
- v. Continue sponsorship of and outreach at National Farm Machinery Show tractor pulls.
- vi. Work with OEM dealership networks to improve biodiesel education of dealers.
- vii. Sponsor the 2012 National Truck Driving Championship held by the American Trucking Association.
- viii. Conduct farmer and industry market research to learn more about perceptions and understanding of biodiesel.
- ix. Partner with the International Association of Fairs and Expositions to conduct a reimbursement program for fairs that use soy-based products.

Performance Measures

- i. Partner with other USB program areas and value chain representatives to identify at least two new opportunities to position soy as the premier green feedstock.
- ii. Partner with QSSBs to add soy biobased products to at least three state government product procurement lists.
- iii. Create at least two new partnerships that increase the knowledge of consumer influencers about this green, biobased attributes of U.S. soy.

Financial Allocation:

Communications – Industrial Utilization - Biodiesel: \$532,757

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Industrial Utilization

International Marketing Committee

Market Environment

In the international marketplace, the food vs. fuel debate continues to be a hot discussion topic. In European markets, soybeans and soybean products continue to be strongly influenced by the rapidly growing bio-energy demand for raw materials. Rising costs for petrochemical raw materials (crude oil and natural gas), along with changing environmental regulations and industry standards, are creating significant opportunities in the global marketplace for soy-based industrial products. EU biodiesel production capacities rapidly increased from 1.9 MMT in 2002 to an estimated 21.1 MMT in 2010. Opportunities for vegetable oils in the biofuels industry grow every year in particular in Europe where there is the expectation that an inclusion rate of 10% has been mandated for all biofuels by 2020.

Two driving factors for soy-based products include a higher standard of living and government rules/regulations that support environmentally friendly products. Japan and Taiwan are markets that demonstrate these two traits and have IM new use programs in place. In Japan, soy ink has been successfully marketed over the years and accounts for over 60% of the offset ink market with more than 30 soy ink manufacturers and 5,492 soy ink users. With the marked success in the ink industry, focus has somewhat shifted to other potential opportunities such as solvents, coatings and soil-bioremediation. Currently, in Taiwan, soybean and soybean products are not yet commercially recognized for their environmental benefits, and work continues to disprove this incorrect information and educate processors and end-users of soy's benefits in industrial uses.

Strategic Approach

Through the strategy for new uses research and commercialization that involves supporting research of new product applications for plastics, coatings (i.e., paints), inks, adhesives, lubricants, solvents and emerging industrial opportunities while working to increase awareness, interest, trial and adoption of soy-based products within industry and the federal government, this strategic approach also has ramifications in our export markets. U.S. based adopters and marketers of new soy bio-based products need to have as part of their business development portfolio plans to expand their sales international either through the export of their products or the licensing of their technology. Working with the New Uses Committee to identify interested U.S. based manufacturers of soy bio-based products, IM will work with those firms to identify opportunities in export markets and provide consulting and marketing services to push those export products in the new markets.

Ability to Impact

USB can impact the Industrial Utilization Target Area by supporting development of new technologies by assisting U.S. based manufacturers of soy bio-based products expand their sales into export markets. Provision of consulting and marketing services will assist these firms develop international sales more quickly while at the same time mitigating risks that can arise in the international market place.

LRSP Objective 1:

- I. Annual utilization of 3.5 billion bushels of U.S. soybeans by 2012.

Committee – Target Area:

- A. IM – Industrial Utilization

Goal 1:

1. Focus on efforts to expand products and technologies in coatings, adhesives, lubricants, plastics and specialty chemicals.

Strategy 1:

- a. New Uses Research & Commercialization

Tactics:

- i. Provide to U.S. based manufacturers of soy bio-based products services to prepare them to be successful exporters and services to identify potential importers of their products.

Performance Measures:

- i. Four U.S. based manufacturers of soy bio-based products will enter into agreements with IM to utilize export readiness consulting services and begin to identify and communicate with potential export customers.

LRSP Objective 3:

- III. Promote U.S. sustainable soybean production through responsible stewardship while acknowledging global market needs.

Committee – Target Area:

- A. IM – Industrial Utilization

Goal 1:

1. Focus on efforts to expand products and technologies in coatings, adhesives, lubricants, plastics and specialty chemicals.

Strategy 1:

- a. New Uses Research & Commercialization

Tactics:

- i. Provide to U.S. based manufacturers of soy bio-based products services to prepare them to be successful exporters and services to identify potential importers of their products.

Performance Measures:

- i. Four U.S. based manufacturers of soy bio-based products will enter into agreements with IM to utilize export readiness consulting services and begin to identify and communicate with potential export customers.

Budget Allocation:

Contingent on Board approval at 2011 June Board Meeting

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Production Committee Supply

Market Environment

Maintaining the competitiveness of U.S. soybean producers in the global market requires ongoing quality and compositional improvements while maintaining or increasing yield. Continued improvement in oil quality is needed to maintain competitiveness with other food use oil sources, especially in light of the Food and Drug Administration's trans-fats labeling requirements for food items. Improved meal is necessary to maintain soybean meal's position as the preferred protein source in animal rations for poultry, milk, and meat production. Composition improvements that do not sacrifice yield are necessary to increase crop value, resulting in maximized profit for soybean farmers.

The value of soybeans is determined by its main components, oil and protein. Eighty-seven percent of soybean oil consumed in the U.S. is utilized for salad oil, frying, baking, margarine and other human food uses. Soy oil does not naturally contain trans-fats, but trans-fats are produced by the partial hydrogenation process used to make the oil suitable for certain baking and frying applications. In order to maintain market share, new soybean varieties are needed that produce functional oils that do not require hydrogenation. With the help of USB and QUALISOY, low-linolenic acid soybeans have been introduced to the market. Low linolenic/mid-oleic soybean oil is being tested by some food companies and universities. High oleic / low linolenic soybean varieties are also needed to compete with other oilseed sources to produce healthier oils for human consumption, and also as an improved source of frying oil. Soy oil alternatives are needed as quickly as possible. USB must continue to support soybean research to develop varieties with oil composition that is competitive with canola, sunflower, palm and other vegetable oils.

So far, the surge in demand for soybean oil for biodiesel production has offset the decrease in demand for soybean oil for use in human food. Soybean oil is the primary feedstock for biodiesel production in the U.S. As the biodiesel industry improves its manufacturing practices, modifications of specific soy oil properties would be beneficial to improve the quality of biodiesel fuel. To meet the anticipated increased demand for oil, novel ways of producing soybeans with increased oil without a concomitant loss of protein need to be developed. Development of stable high oleic content in varieties would also contribute to better quality oil for biodiesel production.

The other major component of soybeans is protein, primarily in the form of soybean meal. The majority of U.S.-produced soybean meal is consumed as animal feed, mainly for poultry and swine. Soybean producers are facing greater competition from alternate protein sources for livestock and poultry as a result of increased biofuels production. Ethanol production from corn results in the

byproduct, Distillers Dried Grains with Solubles (DDGS). DDGS compete with soybean meal use in animal agriculture. Demand for increased biodiesel production is also increasing the amount of other protein meals on the global market, such as canola and sunflower meals. In addition, increased global demand for biodiesel production will increase the supply of soybean meal resulting from the need to crush more soybeans to meet the oil demand for biodiesel manufacture. In all, the animal feed market is experiencing a glut in ingredient alternatives. When making choices, animal nutritionists look closely at ingredient composition and least-cost options to formulate diets. U.S. soybean producers will have a greater chance of maintaining market share as a protein source for animal feeds if they can offer enhanced compositional traits to their customers. For example, increasing the energy value of soybean meal would provide a tangible benefit to feed formulators.

The majority of U.S.-produced soybeans are sold on the commodity market, which compensates growers based on market price/bushel x volume. Market price is determined by the demand for the major components, oil and meal, in the marketplace. Maximizing return per acre, through increased yield, must include developing varieties that protect yield from stresses, including fungal diseases, insect pests, soybean cyst nematode (SCN), drought, and flooding. Increasing yield potential through genetic modifications and developing production practices that minimize variable production costs will also help maximize returns per acre.

Maximizing return per acre for soybean production is even more critical given the impact on corn prices of increased demand for corn for ethanol production. Soybean trait improvements that reduce input costs or increase crop value are needed to maintain economic incentives that encourage farmers to continue planting soybeans.

A critical component of developing compositional improvements is the ability to measure improvements accurately and reliably. The market needs a consistent process to measure components such as oil, protein, fatty acids, amino acids, soluble sugars and phytate-phosphorus. While various organizations have their own unique analytical methods and/or calibrations, the same soybean sample analyzed by two different labs often results in different composition values. A process to implement uniform measurement and results-reporting throughout the value chain will ensure that increased intrinsic soybean value is identified and can be properly rewarded by domestic and international buyers.

Strategic Approach

The overall strategic approach for Supply involves improving soybeans to enhance component quality for oil and protein. This will ultimately enrich the value of U.S.-produced soybeans, providing customers with soybeans with improved traits by moving away from treating all soybeans as commodities. This approach will ultimately secure the place of U.S. soybeans in the world market as

the key source of vegetable oil and protein for human consumption and animal feeding.

At the same time, the Supply strategic approach must focus on soybean yield improvement. The main elements of the approach are to protect existing yield potential from biotic and abiotic stresses by identifying new resistance traits and to increase the existing yield potential. According to the annual USB-funded “Soybean Disease Loss Estimate,” the U.S. has consistently lost between 250 and 500 million bushels of soybeans per year to a variety of diseases over the past few years. Minimizing losses by developing soybean varieties resistant to, or tolerant of, major soybean diseases like SCN, seedling diseases and *Phytophthora* will enhance the value, profitability and consistency of U.S. soybean production. Most soybean crops suffer at some point from drought stress. Genetic advances in tolerance to drought and other abiotic stresses will help protect yields, farmer profits and U.S. soybean production.

Although soybean rust has been less of a problem than had been feared, it has been in the U.S. only a relatively short time (since the 2005 growing season). Rust has continued to develop as a disease in the U.S. and continues to have the potential to cause substantial yield loss, particularly in the South, while increasing the cost of production due to increased fungicide use. Other soybean diseases, such as charcoal rot, frogeye leaf spot, and sudden death syndrome, are spreading and increasing in incidence, reducing yields, particularly when coupled with drought.

In the past, the soybean checkoff funded relatively little research designed to increase genetic yield potential, largely because seed companies have concentrated on increasing yield, and checkoff support would provide a relatively small incremental increase in resources devoted to this area. However, with the genomic tools now available, this has changed. Researchers have determined that yield is influenced by numerous different genes, with some genes or Quantitative Trait Loci (QTL) contributing, for example, 2 to 5% of total yield potential. Researchers are now able to effectively use techniques such as “nested association mapping” by making use of USB-funded research discoveries including the sequenced soybean genome, genetic markers, and analysis of the soybean germplasm collection for 50,000 SNP markers. This approach couples genomics tools with other breeding approaches to identify genes that affect yield and learn how these genes function when inherited together. This approach has the potential to result in substantial soybean yield increases.

Developing proper tools for measurement of quality traits through measurement projects will provide the standardized reference chemistry and harmonized NIR measurements needed to help change the market view of soybeans from a whole bean commodity to a component-driven market that addresses buyers’ needs.

The Production Committee has elected to defer making changes to the Action Plan to better address the new structure approved by USB in response to the organizational analysis currently being conducted. Following the results of that decision, the Action Plan will be modified to better address the current Strategic Plan within the new structure.

Ability to Impact

Impact in the Supply target area can be shown through the development of tools and traits that add value to the U.S. soybean crop and rewards farmers with increased yield, reduced losses, improved quality and better returns due to more efficient production practices. This effort will ensure that the U.S. soybean industry remains competitive in the global market by providing buyers of U.S. soybeans the traits they need, while maintaining or increasing yield for U.S. soybean producers. It is important to note that research to improve the U.S. soybean is an ongoing journey, not a destination. Any U.S. soybean crop improvements will likely be incorporated into foreign soybeans within three to four years. Continuous research for incremental improvements can impact supply through the strategies of composition and yield.

Soybean yield can be impacted by USB's research efforts to develop varieties that are resistant to biotic and abiotic stresses and by research to stack numerous genes that impact yield into single germplasm lines. As is the case with all plant breeding efforts, the impact will not be realized for several years due to the length of time required for such research. It is imperative that soybean yield research build upon work already done to provide continuous improvement of soybean varieties.

Identification of genes with the potential to increase soybean yields and the development of genetic markers for these genes will expedite the process of moving yield-improving traits into germplasm of soybean maturity groups adapted across the U.S. Research also can result in the development of a new type of broad-spectrum resistance to SCN. Research has shown promise for developing lines that have broad resistance to soybean rust. The soybean rust sentinel plot program successfully provided an early warning system to keep farmers across the U.S. informed of the location and movement of the disease during 2009. This program was also responsible for minimizing soybean rust fungicide applications when disease presence was not indicated and saved soybean farmers millions of dollars.

Soybean composition can be impacted in at least two ways. First, because USB has emphasized the need for improved compositional traits and has funded public research, seed companies have also recognized that while yield and agronomic properties will always be vital, improved composition to meet global competition is also important. This change in emphasis can be seen by the introduction of low-linolenic acid soybean varieties by three companies. Low

linolenic/mid-oleic oil is being tested by several food companies and others. Two soybean seed companies are set to release high oleic soybean cultivars. Commercial companies are also seeking other quality improvements including increased stearidonic acid (omega 3) and low saturate soybeans.

Second, USB can impact soybean composition by continuing to fund research to improve compositional traits by understanding gene regulation of specific traits and by interacting with seed companies to ensure quality traits are included as part of germplasm advancement. Current genomics efforts will impact composition by providing necessary tools for researchers to develop high-yielding soybean varieties with improved traits. Because this genomics research is being done by public researchers using USB funding, the genomics information is publicly available to all plant breeders.

People throughout the value chain have become involved in the USB-sponsored quality component measurement program. Without USB's involvement, this would have been difficult, if not impossible. Genomics research efforts are providing scientists with much needed tools and have helped put soybean researchers in a position to compete for research grants from the National Science Foundation, USDA's NIFA research program and other public agencies.

Initial development of soybean lines with low oligosaccharides and/or high sucrose levels have been shown to increase the digestible energy content of meal in preliminary animal feeding trials. These traits, therefore, can significantly increase the value and marketability of soybean meal.

Checkoff-funded genomics research helped to position soybeans as the choice of the Department of Energy's Joint Genomics Institute for sequencing. This \$11 million project is completed, resulting in 8x sequence coverage of the soybean genome. These data have been posted on a publicly available Web site and information is being used by many soybean researchers. Currently the sequenced genome is being used to map the entire soybean germplasm collection (19,000 + accessions) for key traits. The next step is to determine the function of these key genes and the factors that control their expression.

LRSP Objectives 1 & 3:

- I. Annual utilization of 3.5 billion bushels of U.S. soybeans by 2011.
- II. Promote U.S. sustainable soybean production through responsible stewardship while acknowledging global market needs.

Committee – Target Area

- A. Production – Supply

Goal:

1. Increase the production of an improved soybean to meet the needs of the end user.

Strategy 1:

a. Supply – Yield

Improve average U.S. soybean yields by increasing the level of plant resistance to environmental stress, targeted pests and diseases in elite germplasm.

Tactics:

- i. Continue to support research programs on soybean rust, drought tolerance, SCN and other priority biotic and abiotic stresses.
- ii. Identify genes/QTL involved in resistance of plants to targeted biotic/abiotic stresses and determine the functions of these genes/QTL.
- iii. Support genomics research to develop tools that increase plant breeding effectiveness and efficiency. Identify markers associated with genes for resistance to targeted biotic and abiotic stresses and make the markers available to other researchers.
- iv. Annually assess the economic impact of major diseases that affect soybean production areas.

Performance Measures:

- i. Protect soybean yield potential by developing varieties and/or germplasm with increased resistance/tolerance to biotic and/or abiotic stress.

Strategy 2:

b. Supply – Yield

Accelerate the process of developing and introducing new traits into elite germplasm that will lead to high-yielding varieties.

Tactics:

- i. Provide support to a research team(s) that can develop transformation technology for use with USB-targeted traits and with germplasm from other USB-funded projects within the yield and composition strategies.
- ii. Collect exotic germplasm with desired yield, composition, and stress resistance traits.
- iii. Develop yield data from field trials for one or more major QTL derived from exotic germplasm.
- iv. Support functional and structural genomics research to improve the potential and efficiency of soybean breeding.

Performance Measures:

- i. Improved systems for genetic engineering are discovered and implemented, so that targeted traits may be incorporated into soybean more efficiently.
- ii. Major yield, composition and stress resistance genes/QTL from exotic germplasm are identified and breeding efforts are initiated to incorporate these genes/QTL into adapted germplasm.
- iii. Genomics tools such as maps, markers, genomic sequencing and micro arrays are developed for use by breeders to make selections more efficiently and effectively.

Goal:

- 2. Improve production efficiencies in a sustainable manner.

Strategy 1:

- a. Supply – Yield
Increase yield potential by identifying superior production practices, predictive models and monitoring systems and helping to ensure that this information is made available to producers.

Tactics:

- i. Support research to identify and improve management practices that constrain production efficiency in the major soybean production areas.
- ii. Develop multi-year research plan(s) to improve production efficiency. Ensure that researchers collect, share and publicize significant results.
- iii. Support research efforts to develop predictive models for movement of soybean rust and other air borne pests and diseases.

Performance Measures:

- i. Specific on-farm recommendations are developed that farmers can adopt to maximize production efficiency.
- ii. Recommendations and research results are communicated to farmers, certified crop advisors, and other interested parties via web sites, meetings, and literature.
- iii. Systems are developed to predict and monitor plant disease spore movement.

LRSP Objective 1:

- I. Annual utilization of 3.5 billion bushels of U.S. soybeans by 2011.

Committee – Target Area

- B. Production – Supply

Goal:

*USB FY12 Action Plan
Supply-Production*

1. Improve compositional traits to increase the value of U.S. soybeans.

Strategy 1:

b. Supply – Composition

Identify oil and meal traits and the genes that influence those traits to improve the quality and value of U.S. soybeans.

Tactics:

- i. Continue to develop germplasm lines with targeted levels of specific fatty acids and oil that are stably expressed across different environments.
- ii. Conduct industry functionality tests on “new oil” to qualify and quantify improvements.
- iii. Identify genes affecting the synthesis of traits of importance, including essential amino acids found to be limiting, plus improved content of protein, metabolizable sugars, and fatty acids.
- iv. Identify genes that reduce phytate-phosphorus in soybeans in order to reduce phosphorus excretion in poultry/swine operations and increase available phosphorus for animals.

Performance Measures:

- i. Germplasm is developed with improved oil/fatty acid composition characteristics, and functionality of the improved oil is determined.
- ii. Traits are identified that improve metabolizable energy, reduce phytate-phosphorus, and improve the balance of limiting amino acids.
- iii. Genomics tools such as maps, markers, genomic sequencing, and micro arrays are developed for use by breeders to facilitate selection of progeny from crosses.

Strategy 2:

b. Supply – Composition

Incorporate genes conferring targeted compositional quality traits into elite germplasm in order to meet the needs of soybean end users.

Tactics:

- i. Identify selectable markers associated with genes/QTL for improved compositional traits and make these markers available to other researchers to enable breeders to identify and incorporate genes/QTL more efficiently.
- ii. When a trait has been identified and the corresponding gene/QTL has been incorporated into advanced germplasm,

- facilitate making the improved germplasm available to public and private breeders for inclusion in their breeding programs.
- iii. Encourage private sector breeders to include traits identified as needed by the market in their breeding programs to complement existing compositional improvements.

Performance Measures:

- i. Genes for improved compositional traits are identified and incorporated into elite soybean germplasm in MG 00-VII.
- ii. Adapted/improved germplasm is made available to commercial and public breeders for incorporation into elite soybean varieties.
- iii. Genomics tools are developed, shared, and used by soybean breeders to develop germplasm and varieties more efficiently.

Strategy 3:

- b. Supply – Composition
Develop analytical standards that accurately and reliably measure quality traits to maximize added value throughout the value chain.

Tactics:

- i. Utilize third parties (e.g., GIPSA, AOCS) to work with industry to develop analytical standards and a plan for their implementation throughout the entire market chain.
- ii. Solicit inputs and agreement by industry participants for all phases of the plan.
- iii. Work with key manufacturers of analytical equipment to ensure their understanding of the needs of the soybean value chain. Ensure that, to the extent possible, improved equipment for precise measurements can be used readily throughout the value chain, from the elevator to the end user.
- iv. Develop an efficient, effective wet chemistry analytical method(s) for determining levels of amino acids, phytate-phosphorus, and carbohydrates.

Performance Measures:

- i. Project member companies and organizations reach consensus on wet chemistry analytical standards for traits of interest. Laboratory training and certification programs are developed and implemented.
- ii. Consensus is reached among a core group of industry companies on both primary (wet chemistry) and secondary (NIR, for example) methodologies to be used in support of project goals.
- iii. A library of samples is established and made available through AOCS. These samples can be used by participating analytical

laboratories to standardize their equipment and improve their NIR calibrations. An NIR certification and proficiency process is developed.

Strategy 4:

- b.** Supply – Composition
Support efforts to develop analytical technology that measures attributes rapidly, consistently, and cost-effectively.

Tactics:

- i.** Continue efforts to ensure industry adoption of the best analytical methods for timely and cost-effective measurement of oil, protein, and fatty acid composition.
- ii.** Work with NIR manufacturers and others to ensure that when the same soybean sample is measured with different instruments or at different points in the value chain, the results are similar enough to meet the needs of the value chain.
- iii.** Continue to build the lab certification and proficiency testing programs necessary to standardize test results.
- iv.** Generate a database of wet chemistry values for use in developing calibration files.
- v.** Refine wet chemistry analytical methods to measure amino acid levels more consistently and efficiently and explore methods for other soybean meal attributes, such as phytate-phosphorus and soluble sugars.

Performance Measures:

- i.** An industry-accepted analytical approach is developed to measure soybean meal and oil traits of importance to end users.
- ii.** Labs continue to participate in the proficiency program and variation in lab-to-lab results is reduced.
- iii.** The database of wet chemistry values for use in developing calibration files is enlarged.
- iv.** The NIR technical committee continues to work together to standardize NIR measurement to meet the needs of the value chain.

Strategy 5:

- b.** Supply – Composition
Producers will be provided with information on regional variation in soybean composition to increase their awareness of the benefit of evaluating soybeans on constituent value rather than treating soybeans as commodities.

Tactics:

- i. 2010 NASS and IM survey data will be incorporated into the survey database.
- ii. Additional seed samples for NIR analysis will be collected by collaborating with universities, USDA, or private seed companies.
- iii. Assuming successful development of NIR technology for analysis of soybeans and soybean meal, samples will be analyzed and a soybean composition profile will be developed for each region that will make it possible to provide data for protein, oil, fatty acids, amino acids, phytate-phosphorus, and digestible sugars.
- iv. Soybean composition on a regional basis will be communicated to stakeholders in the value chain.

Performance Measures:

- i. A regional soybean assessment of oil and meal components is developed for U.S. soybeans.
- ii. A database and specific reports for value chain stakeholders is developed, and results are reported on a Web site.

Financial Allocations:

Production – Supply/Yield: \$11,900,273

Production – Supply/Composition: \$5,062,788

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Supply
Domestic Marketing Committee

LRSP Objective #1

Annual utilization of 3.5 billion bushels of soybeans by 2011

DMC Supply Goals for LRSP Objective #1

- I. Provide the market with high value U.S. soybean varieties that meet the needs of global customers to ensure demand for 3.5 billion bushels of U.S. soybeans by 2011.
- II. Optimize protein and oil levels of the U.S. soybean crop.
- III. Create economic incentives for most U.S. soybean farmers to plant higher quality compositional trait varieties, specifically higher levels of crude protein.
- IV. Assess and recognize the market value and economic impact of soybean components.
- V. Develop the capability to effectively measure soybean attributes rapidly and cost effectively.
- VI. Evaluate and commercialize improved varieties.
- VII. Provide support to QUALISOY in its efforts to support the introduction of new traits valued by customers.
- VIII. Ensure sufficient supply of high quality U.S. soybeans for global customers.
- IX. Optimize quality throughout the supply chain.

LRSP Objective #2

Approval in the importing countries that comprise 90% of U.S. soy products for each biotech event by the time of its commercialization.

DMC Supply Goals for LRSP Objective #2

- I. Support QUALISOY, industry, processors, technology companies and other stakeholders in bringing biotech traits to the market.
- II. Communicate the benefits of biotechnology to strategic market sectors.

LRSP Objective #3

Promote U.S. Sustainable soybean production through responsible stewardship while acknowledging global market needs.

DMC Supply Goals for LRSP Objective #3

- I. Document market data that can be used in USB sustainability efforts.
- II. Integrate sustainability into soy product marketing where applicable.

Market Environment

U.S. soybeans compete on two different fronts. Domestically, U.S. soybeans are crushed for their meal and oil, each of which competes with alternative ingredients. Soybean meal competes with feed ingredients such as distillers dried grains with solubles (DDGS), meat and bone meal, synthetic amino acids and increasingly with other vegetable protein sources such as canola meal. Soybean oil competes with palm, canola, sunflower, and other vegetable oils. In export markets, U.S. soybeans not only

compete with alternative products, but also against soybeans from other countries, primarily Argentina for meal and Brazil for whole beans.

For the crop planted in the spring of 2010, which will be marketed through to fall of 2011, U.S. soybean farmers planted 77.4 million acres of soybeans, of which 76.6 million acres were harvested. Average bushels per acre were 43.5, which was down slightly from the previous year bu/acre. Total production reached 3.329 billion bushels, of which 1.655 billion bushels were crushed domestically and 1.590 billion bushels were exported.

Whereas the booming demand for soybean exports, primarily driven by China's insatiable demand, is a tremendous boon for U.S. soybean farmers, the gradual slowing of domestic crush is a concern. Two main factors are impacting domestic crush. The first is stagnation in domestic livestock and poultry production. (Lengthy explanation of these trends can be found in the Animal Utilization Action Plan.) The second is a decline in the amount of soybean meal utilized in animal rations due to competition from other ingredients, including Distillers Dried Grains with Solubles (DDGS), synthetic amino acids and even canola meal. For example, a leading nutritionist on the animal nutrition working group stated that for every 100 lbs of DDGS added to the ration, 40 lbs of soybean meal are removed from the ration.

As of the drafting of this Action Plan, the prospective plantings report had not yet been released. However, at the USDA Ag Outlook Forum in March 2011, USDA Chief Economist Joseph Glauber projected an additional 9.8 million acres of land coming to production for the 2011 crop year. This increase will include more wheat, more cotton, more corn and reduced rice. Soybean area is predicted largely flat. Total acreage planted is forecast at 254.8 million acres, the highest since 1998.

Glauber further projected soybean harvest at 3.345 billion bushels. Strong exports will continue at 1.575 billion bushels, while domestic crush is predicted at 1.765 billion bushels, allowing a modest increase in ending stocks.

The livestock and poultry industries are once again facing very high feed costs with tight margins. Overall domestic meat production will remain flat. Pork and beef exports are projected up, while poultry exports will decline slightly. Meat and poultry prices will see large increases next year, according to Glauber. Livestock and poultry producers are watching inventories and carefully managing flock and herd sizes.

In fact, food prices overall are expected to jump. We all remember increased food prices in 2007, which moderated slightly thereafter. But now, Glauber is predicting a 3 to 4 percent jump in food prices in 2011. Consumers definitely feel it, Tyson Foods just completed a comprehensive National Hunger Survey which showed 25% people in the U.S. are now "food insecure" meaning they are *very worried* about having enough money to buy enough food.

And USB should expect the resurgence in the food vs. fuel outcry. The RFS 2 and the renewal of the biodiesel tax incentive, combined with increasing food prices make for a perfect storm of anti-biodiesel sentiment This will impact the soy biodiesel industry, especially since consumers, the animal ag industry and influencers do not at all understand the relationship between soybean meal and oil components and the fact that

increased use of soybean oil for biodiesel results in increased supplies of meal for food production. Education in this area will be increasingly critical in FY 2012.

Conversely, although food prices are going up, the amount of farmer income from every consumer dollar spent on food is not about 12 cents, versus 20 cents ten years ago. And, for restaurant food, only 3 cents of every dollar spent gets back into the farmers' pocket. Most of the food cost is for labor, processing, transportation.

Human food use of soybean oil is remaining fairly steady. Low linolenic soybean oil has fulfilled its promise as a trans fat alternative for light frying applications. New varieties such as high oleic must be brought on to the market if in order to recapture the rest of the market lost due to trans fat labeling. High oleic soybean oil is highly anticipated by the food industry. As high oleic has improved properties that apply to biodiesel and biobased products, this improved soybean oil will increasingly benefit U.S. soybean producers.

Not only are ongoing oil compositional improvements critical to maintaining the competitiveness of U.S. soybeans producers in the global market, but so too are meal traits. Meal compositional improvements are necessary to maintain the preferred position of soybean meal as the protein source of choice in poultry and swine production animal rations. Composition improvements that do not sacrifice yield are necessary to increase intrinsic value of the crop, resulting in maximized profit for soybean farmers. Processing quality improvements are also important to meeting future market needs.

The majority of U.S.-produced soybeans are sold on the commodity market, which compensates growers based on market price/bushel x volume. U.S. soybean producers, accustomed to receiving revenue based on yield, are generally unaware of the negative market response due to lower/declining protein levels. Efforts through the Select Yield and Quality (SYQ) Initiative to increase declining U.S. oil and protein levels have been important in helping U.S. producers remain competitive in the global market. Now folded into the Domestic Marketing Committee, the SYQ initiative was initially somewhat successful in increasing awareness of oil and protein goals of 19 percent oil and 35 percent protein in geographic regions that are agronomically challenged to meet these levels.

However, after three years of declining investment, the outreach program was not continued through the Communications Committee which resulted on lost momentum and the Domestic Marketing voted to renew attention in the area and re-launched efforts to education farmers, agronomists, seed dealers, and seed companies on the importance of component quality in U.S. soybeans in 2010. The new campaign focuses on educating stakeholders on the economic importance of producing soybeans with high levels of protein and oil, as well as the importance of component quality in remaining competitive in export markets against other soybean producing countries and competitive in domestic markets against other feed ingredients such as DDGS, canola meal and synthetic amino acids. The first year of the re-launch got the program up and running again and has made significant strides in rebuilding stakeholder partnerships and trust that USB is committed to quality. Domestic Marketing is now poised to really drive the messages home and step to the next level of engagement in quality improvement.

But the real value of soybean meal is its many combined characteristics, such as amino acid profile, energy values and other performance attributes. In FY 2012 the quality program should not only continue to work on the immediate needs of protein and oil levels to meet NOPA trading standards and maximize farmer profitability and competitiveness, but also identifying, documenting and marketing the other unique attributes of soybean meal that make it highly valuable in feed formulations.

While we must maximize profitability based on the current market structure of NOPA trading rules, which is unlikely to change, it is important that the inherent properties of soybean meal are valued by nutritionists to their true level. Work needs to occur to document aspects of soybean meal, such as sucrose, phosphorus, fiber and other characteristics utilizing scientifically recognized research methodology. Partnerships with USSEC are important to have a consistent strategy and goals.

Further, the SYQ Education and Outreach program can evolve to not only encourage farmers to select varieties that will produce higher component levels, but also include messaging about the unique benefits of U.S. soybean meal.

This leads to a discussion to the ability to provide these improvements through biotechnology, where other methods fall short. However, biotechnology presents market acceptance issues among some consumers and several export markets. Opposition to biotechnology must be addressed in order for U.S. soybean producers to achieve desired yield and compositional improvements.

To accelerate adoption of new varieties that target health and functionality improvements, USB has engaged the industry by founding the QUALISOY Board. QUALISOY's primary focus is to facilitate industry cooperation to identify and commercialize soybean improvements that address major market issues.

A critical component of developing compositional improvements is the ability to measure those improvements accurately and reliably. The market does not have a consistent process to measure components such as fatty acids, amino acids, soluble sugars and phytate-phosphorus. While various organizations have their own analytical methods and calibrations, the same soybean sample analyzed by two different labs will often produce different results. A process to implement uniform measurement and results reporting throughout the value chain will ensure that increased intrinsic soybean value is identified and can be properly rewarded by domestic and international buyers.

Overshadowing the entire agricultural industry, including all aspects of soybean production and all markets for soybean products, is the emerging issue of "sustainability." Sustainability is quickly becoming a food industry mainstay, driven by consumer expectations, political ambitions, and industry desire to not be left behind. Mega food corporations are driving down sustainability practices as directed by top-level leadership. Suppliers are being held accountable for sustainable practices, and agriculture is frequently targeted as the biggest culprit in environmental impacts. Furthermore, the animal agriculture industry will be forced to implement practices defined as sustainable by forces outside the industry, putting additional strain on an already struggling industry.

The U.S. soybean industry will be forced to document and show ongoing improvement in sustainable practices if it does not set the facts straight, develop its own standards and document continuous improvements using methodology that makes sense for U.S. producers. Although USB has created a Sustainability Initiative to address these issues, the scope of “sustainability” is huge, and impacts every USB Committee and Target Area.

Strategic Approach

The overall strategic approach for the Domestic Marketing Supply Target Area focuses on providing U.S. soybean markets with the quantity and quality soybean products they demand through processing and compositional improvements to enhance component quality for oil and protein. This approach will ultimately enrich the value of U.S.-produced soybeans by moving away from treating all soybeans as commodities and providing customers with soybeans with improved traits.

In order to understand customer needs, it is important to collect market data on soybean consumption and usage for oil, meal and whole beans by market segment. Further, collaboration with industry is a must on efforts to improve the availability and selection of varieties that optimize protein and oil levels in a measurable way. In addition, USB needs to work with the processing industry to find ways to ensure ongoing improvements on soybean product quality post-processing. Finally, USB must work to identify and quantify, in a scientifically verifiable manner, the other potential characteristics of U.S. soybeans that provide advantages to global customers. Potential areas for investigation include metabolizable energy, digestible amino acids and handling characteristics. Working closely with animal nutritionists and USSEC should be important aspects of this effort.

Of course, in order to extract value from soybean quality improvements, we must have the ability to measure them. Developing proper tools for measurement of quality traits through the AMMS effort will provide the standardized reference chemistry needed to help change the market view of soybeans from a whole bean commodity to a component-driven market that addresses buyers' needs. To complement the research aspects of the Supply target area, it is important that any process to change market behavior include: 1) an industry commitment to provide incentives for higher quality soybeans; and 2) an assurance that varietal data on composition is available to aid farmers in choosing the best varieties. Engaging the industry is critical to driving market acceptance.

In order to ensure viable markets for improved varieties, USB must continue to drive acceptance of biotechnology. Efforts to document the measurable benefits of biotechnology and utilize that information throughout marketing efforts for all target areas are critical to the long-term success of U.S. soybean producers. Biotechnology also offers soybean producers the opportunity to further improve their ongoing sustainability efforts by allowing farmers to produce more food, feed, fuel and fiber with fewer resources.

Although soybean producers are already excellent stewards of the land and environment, those not directly involved in soybean production and farming do not understand this. Failing to inform our markets on soybean sustainability benefits will invite outside market forces, including food companies and NGOs, to develop and

implement their own concepts of how farmers should practice sustainable agriculture and force their own notions upon farmers. Soybean producers need to set the agenda for their own sustainable practices or someone else will do it for them. Biotechnology ties closely to sustainability, as biotech enhancements will increasingly allow soybean producers to produce more using fewer resources.

Ability to Impact

Impact in the Supply target area can be shown through the development of tools and traits that will add value to the U.S. soybean crop with rewards that can be felt at the farmer level. Such rewards would include higher prices, retention of market share for soybean meal, gaining market share back for soybean oil, mitigating crop losses, or capitalizing on production efficiencies. This effort will ensure that the U.S. soybean industry can remain competitive in the global market by providing buyers of U.S. soybeans the traits they need without sacrificing yield for U.S. soybean producers. It is important to note that research to improve the U.S. soybean is an ongoing journey, not a destination. Any U.S. soybean crop improvements will likely be incorporated into foreign soybeans within three to four years, so continuous research for incremental improvements can impact supply through the strategies of composition, yield and partnerships with processors. Impact can also be made by actively engaging the industry to drive market acceptance of biotechnology and sustainable practices.

LRSP Objective 1:

- I. Annual utilization of 3.5 billion bushels of U.S. soybeans by 2011

Committee – Target Area

- A. Domestic Marketing – Supply

Goal:

1. Provide the market with high value U.S. soybean varieties that meet the needs of global customers to ensure demand for 3.5 billion bushels of U.S. soybeans by 2011.

Strategy:

- a. Supply – Composition
Optimize protein and oil levels of the U.S. soybean crop.

Tactics:

- i. Refine analysis of economic impact of lower crude protein as 2011 data becomes available, such as international export data, South American data and South American production impact.
- ii. Communicate the results of the various SYQ and special project economic analyses to the academic community and industry regarding the constituent value of U.S. soybeans.
- iii. Assess amino acid quality as it relates to crude protein and utilize this information in marketing efforts.
- iv. Enhance messages to include additional scientifically verified data illustrating the other performance enhancing characteristics unique to U.S.-produced soybean meal.
- v. Update the Soybean Quality Toolbox and continue to improve it over time.

Performance Measures:

- i. Negative economic impact of lower protein and oil levels in U.S. soybeans demonstrated to farmers, seed companies and farm managers.
- ii. Understanding of the window of ideal component balance for optimal producer profit is gained.
- iii. 2011 crop information incorporated in InfoBase and Soybean Quality Toolbox.
- iv. Amino acid analysis of F.I.R.S.T. samples compared to crude protein levels USB partners determine how this information should be used related to marketing U.S. soybeans.

Strategy 2:

b. Supply – Composition

Create economic incentives for upper Midwest U.S. soybean farmers to plant higher quality compositional trait varieties, specifically higher levels of crude protein.

Tactics:

- i. Build on existing procurement program successes to continue processor recognition of the value of compositional improvements.
- ii. Involve seed technology companies in the SYQ program and evaluate the ability of USB to influence their breeding programs.
- iii. Continue processor procurement programs that increase market recognition of protein and/or oil improvements.

Performance Measures:

- i. Established 2006 protein and oil procurement programs maintained for the 2011 crop year.
- ii. Processors participate in spreading the quality message to farmers, seed companies and the value chain.

Strategy 3:

c. Supply – Composition

Assess and recognize the market value and economic impact of soybean components.

Tactics:

- i. Work with seed variety companies to ensure that crude protein and oil information on all commercial varieties is available.
- ii. Convince seed companies to incorporate crude protein and oil as part of the screening process when selecting lines to advance through to a commercial status.

Performance Measures:

- i. At least three seed companies incorporate oil and protein data into communications through product literature and company Web sites.
- ii. Farmers and farm managers are provided with varietal comparisons of protein and oil levels for all varieties currently available through existing procurement programs.

Strategy 4:

- d. Supply – Composition
Develop the capability to effectively measure soybean attributes rapidly and cost effectively.

Tactics:

- i. Continue efforts to ensure industry adoption of the best analytical methods for timely and cost effective measurement of oil, protein and fatty acid composition.
- ii. Continue to build the lab certification and proficiency testing program to standardize test results.
- iii. Generate a database of wet chemistry values for use in developing calibration files.
- iv. Refine wet chemistry analytical methods to measure amino acid levels and implement methods for other soybean meal attributes, such as phytate-phosphorus and soluble sugars.

Performance Measures:

- i. Industry-accepted analytical approach developed to measure quality soybean meal and oil traits in soybeans that meet targets identified by end users.
- ii. Labs continue to participate in the proficiency program and variation in lab-to-lab results is reduced.
- iii. Database of wet chemistry values for use in developing calibration files generated.

Strategy 5:

- e. Supply – Composition
Commercialize and evaluate improved varieties.

Tactics:

- i. Facilitate commercialization of soybean oil options with improved health profiles and functionality.
- ii. Communicate “trans solutions” message about trait improvements such as the low-linolenic and high-oleic soybean oils to food companies and related participants in the soybean oil supply chain.
- iii. Build on successful low-linolenic soybean adoption strategies for future trait introductions. Continue the process of laying the groundwork for the introduction of high-oleic soybean oil by providing testing samples to food companies.
- iv. Serve as a catalyst to close the gap between farmers, seed producers, processors and end users so that the entire industry can benefit from the production of specialty varieties.
- v. Promote to supply chain participants the health benefits of soybean oil.
- vi. Evaluate the net energy value of varieties with altered sugar composition and study animal performance of diets utilizing those soybeans.

Performance Measures:

- i. Market analysis of low linolenic soybean usage shows user acceptance and quality performance characteristics throughout the marketplace. Market is eager for additional oil alternatives.

- ii. Farmers are receiving a premium that encourages sufficient planting of specialty soybeans and end users have adequate supply to encourage continued and expanded usage.
- iii. Economic value of new soybean varieties is understood and can be utilized in determining if and how those varieties can be moved toward market introduction.

Strategy 6:

- f. Supply – Composition
Provide support to QUALISOY in its efforts to support the introduction of new traits valued by customers.

Tactics:

- i. Increase awareness of QUALISOY to oil refiners, food and feed industries.
- ii. Engage key industry participants regarding the changing dynamics and impact of trait improvements or “outside” factors such as biodiesel demand on soybean meal.

Performance Measures:

- i. Key industry participants are informed regarding changing market dynamics for soybean meal and oil and are also informed regarding QUALISOY’s role in making soybean trait improvements.
- ii. The number of companies utilizing QUALISOY as a source for information continues to increase.

Goal:

- 2. Ensure sufficient supply of high quality U.S. soybeans for global customers.

Strategy 1:

- a. Supply – Composition
Identify, document and quantify markets for U.S. soybeans.

Tactics:

- i. Quantify consumption of U.S.-produced soybeans by component and by market segment on an ongoing basis utilizing the Market View Database.
- ii. Quantify trait valuations throughout the supply chain, quantify their economic benefit to soybean farmers and assess other market implications such as biodiesel demand.
- iii. Utilize QUALISOY to engage the market in identifying trait(s) for future enhancement in order to meet end user requirements.

Performance Measures:

- i. Database of historic soybean consumption and utilization of U.S.-produced soybeans from 2001 through 2011 marketing years enables USB to assess historic market conditions and make decisions on future priorities.
- ii. List of prioritized soybean meal and oil traits that are both technically feasible and of sufficient market value for commercialization enables USB

and QUALISOY to move forward in the trait enhancement research pipeline.

Strategy 2:

- b. Supply – Composition
Optimize soybean quality throughout the supply chain.

Tactics:

- i. Document how specialty varieties (such as low-linolenic and high-oleic oil beans) differ from commodity beans in terms of protein, oil and other important characteristics.
- ii. Assess feasibility of enhanced soybean meal traits as recommended by the Animal Nutrition Working Group (ANWG).
- iii. Determine whether low crude protein beans have better amino acid quality through split sample testing of F.I.R.S.T test plots.
- iv. Coordinate with USSEC to document in a scientifically recognized and verifiable manner the various characteristics of U.S. soybean meal compared to other meal from other soybean producing regions and countries. Examples would be available energy (sucrose levels), phosphorus and fiber.
- v. Once differences are identified, determine the economic benefits of these characteristics in animal rations.

Performance Measures:

- i. Specialty oil traits are included in InfoBase analysis and Market View Database. Information is distributed to USB and stakeholders and utilized in decision making and communications.
- ii. Feeding trial of low raffinose/stachyose soybeans in swine diets is conducted and follow up activities are documented.
- iii. ANWG concepts and ideas have been vetted for further action. Applicable programs are put into place.
- iv. Protocols for soybean and meal sampling methods and testing have been determined and agreed upon by IM and DMC.
- v. Measurement opportunities utilizing new technologies such as Ramen have been explored with a plan of work documented.

LRSP Objective 2:

- II. Approval in the importing countries that comprise 90% of U.S. soy products for each biotech event by the time of its commercialization.

Goal:

- 1. Support QUALISOY, industry, processors, technology companies and other stakeholders in bringing biotech traits to the market.

Strategy 1:

- a. Supply - Composition
Provide funding and staff support for biotech marketing projects to complement Biotech Initiative efforts and assist the Biotech Initiative in achieving its objectives.

Tactics:

- i. Incorporate biotech messages into QUALISOY activities.

Performance Measures:

- i. Biotech messages are utilized as appropriate in communications materials related to improved oil varieties.

Goal:

- 2. Coordinate with the industry to communicate the benefits of biotechnology to strategic market sectors.

Strategy 1:

a. Supply – Composition

Conduct targeted communications efforts to food industry and health influencers and government and media that correct misconceptions and inform regarding biotech benefits.

Tactics:

- i. Prepare biotech messaging specific to dietitians and health professionals for use as necessary.
- ii. Utilize biotech messaging in addressing food issues.
- iii. Utilize biotech messaging for addressing fuel issues for biodiesel and biobased products.

Performance Measures:

- i. Printed materials are developed for dietitians and health care professionals and messages are incorporated into electronic media.
- ii. Dietitians and health care professionals demonstrate knowledge of biotech benefits.

LRSP Objective 3:

- III. Promote U.S. sustainable soybean production through responsible stewardship while acknowledging global market needs.

Goal:

- 1. Document market data that can be used in USB sustainability efforts.

Strategy 1:

a. Supply – Composition

Collect various data, such as soybean supply and consumption, soybean yield, and soybean quality data that helps USB document its progress on sustainability.

Tactics:

- i. Document soybean production, yield, consumption and component quality data.

Performance Measures:

- i. Data is provided to USB organization.

Goal:

2. Integrate sustainability into soy product marketing where applicable.

Strategy 1:

- a. Supply – Composition
Utilize sustainability messages.

Tactics:

- i. Incorporate sustainability objectives as developed by Sustainability Initiative into domestic marketing efforts through activities in each major market segment.

Performance Measures:

- i. Sustainability objectives have been added to marketing activities.

Financial Allocations:

Domestic Marketing – Supply – Composition: \$2,839,983

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Human Utilization

International Marketing Committee

Market Environment

As consumers today become increasingly educated about the benefits of soy, many are looking to increase the intake of soy in their diets. While many still look to traditional soyfoods, such as natto, miso, tofu and soymilk, as sources of soy protein, an increasing number of products are becoming fortified with soy protein, such as breakfast shakes, baked goods, cooking oils and salad dressings, offering new and inventive ways of boosting their soy intake. Growth potential in international markets remains high for value-enhanced soy products such as soy milk powder, texturized soy protein, soy protein concentrates and soy protein isolates as companies look to capitalize on the increasing demand for high-soy diets.

In Japan, the inclusion of soy ingredients in consumer food products has been growing rapidly. Examples include soy peptides in soda and water and soy proteins in beer. The growth of soymilk consumption in Japan closely mirrors the increasing consumption in the U.S. In the Middle East, commercial bakeries have introduced commercially viable traditional baked products that are soy protein-enriched.

The World Initiative for Soy in Human Health (WISHH) program is increasing consumption of soy protein in the developing world. With USAID's approval of the five Value-Added Soy Proteins for food aid purchase, private voluntary organizations have shown increased willingness to conduct pilot programs and consider requesting soy protein in their programs. There has also been interest from commercial non-food aid markets for use of soy protein in meat and dairy analogues in Central America, Asia and Africa.

Strategic Approach

Efforts internationally will focus on encouraging and assisting soy processors to produce soy protein products, such as soy flour, isolates, concentrates, and texturized soy protein. Other efforts will promote the use of and trade in U.S. processed value added soy proteins. In addition, assistance will be provide to promote the use of these products by food processors, flour mills, bakeries, government entities, and hotel-restaurant-institutes (HRI) operations. Continued efforts will be made to build relations with soy-based food operations that represent traditional soy products that include tofu, natto, miso, soymilk, as well as value-enhanced soy protein products such as soy flour, isolates, concentrates, and texturized soy products. This strategy will build confidence and preference for variety specific U.S. food grade soybeans, as well as U.S. processed soy proteins, as challenges continue to increase from alternative sources of supply. Specific strategies will vary by market size.

Oil strategies will generally fall into two categories: 1) building loyalty for soy oil in markets where U.S. oil faces less competition from competing origins of soy oil but attempts to counter market share loss to competing oils, and 2) building loyalty with local crushers who market soy oil derived primarily from U.S. soybeans. Most international strategies are targeted at the HRI sector, not the consumer market due to the high cost of such efforts.

In food grade soybean promotion, the strategy has been to build loyalty to U.S.-origin variety specific soybeans designed for a particular end-use. The competition is generally from Canadian and Chinese origin soybeans. Due to concerted marketing efforts to the Japanese soy food trade, the decline in U.S. market share has been reversed and the U.S. market share continues to increase year after year. The U.S. has seen successful entry into markets in Southeast Asia and Taiwan. This is a market segment where not only does the soybean have to perform, but the relationship between supplier and user is paramount to continued success. International strategies are focused on building those relationships with use of buyers team travel to the U.S., hosting seminars with attendant mini tabletop trade shows, and introducing and escorting potential suppliers to end-use customers.

In Asian countries, soyfoods – rich sources of high quality protein – have been popular with health-conscious consumers for several decades. More recently, the popularity of soyfoods in these countries has increased markedly because of research suggesting that these foods may offer substantial health benefits beyond their role in meeting nutrient needs. Much of the soy protein strategy internationally is aimed at building demand for U.S.-origin soy protein in new applications unknown in local markets. This includes focusing on the nutritional as well as the functional properties of soy protein products in the baking, meat processing and food processing industries.

The WISHH program focuses on building demand for U.S.-origin soy protein in developing countries in Asia, Central America and Africa. Strategies include introducing soy protein as a food ingredient in indigenous staple foods that have broad market appeal, and providing product samples so that potential customers can experience the product in their own factories/facilities. The strategy also includes working with/through national government and non-governmental agencies and international private voluntary organizations interested in development, education and nutrition; a new market development concept is gaining ground in international circles targeting populations at the “base of the economic pyramid”. WISHH will work with private and public partners to further market growth among the populations that need soy the most. In addition to WISHH, the India program has a varied program with multiple strategies. From working with entrepreneur development to participation in trade shows and working with national and provincial government feeding programs, the strategies target all segments of society, from the poorest of the poor to wealthy Indians seeking healthier food.

Ability to Impact

Throughout the world, USB can impact individual consumers, health professionals, government agencies, food processors and manufacturers, bakeries, flourmills and the hotel-restaurant-institute (HRI) sector about perceptions of soy healthfulness. This is accomplished through education and communications about the economic, functional, and health benefits of utilizing soy protein and soy oil in human food.

LRSP Objective 1:

- I. Annual utilization of 3.5 billion bushels of U.S. soybeans by 2012.

Committee – Target Area:

- A. IM – Human Utilization

Goal 1:

1. Sustain and expand global demand for US soybeans and soy ingredients for use in soy foods and other human nutrition applications.

Strategy 1:

a. Demand Building

Tactics:

- i. In Europe, educational seminars will be conducted to further increase the use of U.S. soybeans and soy protein products by the target audience.
- ii. In India we will promote the production of soy dal to major food processors and the promotion of soy flour in breads subsidized by public feeding programs.
- iii. In Latin America, soy protein promotional activities will continue to convince new and established companies of the advantages of using soy protein.
- iv. WISHH will continue to provide technical assistance and new product/food technology support to private companies and private voluntary organizations in the developing world.
- v. In China we will continue efforts to promote U.S. food-grade soybeans to medium and large tofu manufacturers in Shanghai and southern China.

Performance Measures:

- i. In Europe, soy protein ingredient manufacturers will consume U.S. soy in the form of isolates, concentrates, flour and IP beans.
- ii. In India, three additional food processors will purchase the necessary extrusion equipment to produce soy dal analogue and one state feeding program will adopt a soy flour inclusion rate for all publically subsidized bread production.
- iii. In Latin America, institutional decision makers and soy food processors will become aware of soy protein.
- iv. Through WISHH sponsored activities, more than 200 commercial food processors will become aware of potential for soybeans protein in products.
- v. In China, medium and large tofu manufacturers will import more than 200 MT of U.S. food grade soybeans.

Strategy 2:

b. Customer Preference

Tactics:

- i. In Japan, we will continue its campaigns to the Japanese soy food trade assuring them of the reliability of the U.S. identity preserved system.
- ii. In the Middle East, we will continue to educate processors on the benefits of utilizing soy flour in bakery products.
- iii. In Southeast Asia, we will continue to deliver the message that U.S. specialty food-grade soybeans offer a wide variety of characteristics, provide consistent quality and increase processing performance.
- iv. In Taiwan, soy-in-baking seminars and workshops will educate the industry on the benefits of utilizing soy in bakery products.

Performance Measures:

- i. In Japan, 410,000 MT of U.S. identity preserved soybeans will be imported.
- ii. In the Middle East, key bakeries in the region will import 5,000 MT of U.S. soy flour.
- iii. In Southeast Asia, food and beverage processors will try U.S. food-grade soybeans in research and development.
- iv. In Taiwan, there will be 22 bakery products utilizing soy ingredients available.

LRSP Objective 2:

- II. Approval in the importing countries that comprise 90% of U.S. soy products for each biotech event by the time of its commercialization.

Committee – Target Area:

- A. IM – Human Utilization

Goal 1:

- 1. When specific soybean varieties with precise traits benefiting human nutrition are commercialized, we will introduce them to the global human nutrition industry.

Strategy 1:

- a. Demand Building

Tactics:

- i. Baking trials will be organized to highlight the benefits of using the new U.S. soybean varieties developed for human nutrition.
- ii. Continue informational campaigns in target markets on the benefits of utilizing U.S. soy for human consumption.

Performance Measures:

- i. Baking trials will be conducted in key target markets to highlight the new U.S. soybean varieties.
- ii. Conduct roundtable meetings and educational events to emphasize the safety of U.S. soy for human consumption.

Strategy 2:

- b. Customer Preference

Tactics:

- i. Offer educational programs to preferred customers in target markets to introduce new U.S. soybean varieties that will enable these preferred customers to purchase those varieties that meet their needs.
- ii. Provide preferred customers the opportunity to see the new U.S. soybean varieties firsthand.

Performance Measures:

- i. Continue to provide avenues, such as trade shows and international trade team visits to the U.S., to allow interested importers and U.S. suppliers to

develop relationships leading to U.S. soy purchasing sales of the new varieties.

- ii. Arrange U.S. site visits with companies producing the new U.S. soybean varieties to showcase to our preferred customers the new and exciting benefits U.S. soy has obtained through these new traits.

LRSP Objective 3:

- III. Promote U.S. sustainable soybean production through responsible stewardship while acknowledging global market needs.

Committee – Target Area:

- A. IM – Human Utilization

Goal 1:

1. In markets where food industries must demonstrate the sustainability of their raw material supply chains, U.S. soybean meal will be recognized as an economically and environmentally raw material for food production.

Strategy 1:

- a. Demand Building

Tactics:

- i. Position the U.S. food-grade soybean industry as a global sustainability advocate that creates demand for and facilitates delivery of sustainable technologies.

Performance Measures:

- i. Educate importers in international markets that U.S. food-grade soybeans pose a reduced environmental impact vs. soybeans from other origins.

Strategy 2:

- b. Customer Preference

Tactics:

- i. Increase positive awareness of economic or ecological advantages of U.S. identity preserved soybeans throughout the global product lifecycle, from production through end-product application.

Performance Measures:

- i. Key meetings and educational seminars will take place in target markets to educate those in the human nutrition industry of the traceability and extra steps taken to preserve the integrity of identity preserved soybeans.

Financial Allocation:

Contingent on Board approval at 2011 June Board Meeting

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Human Utilization

Domestic Marketing Committee

LRSP Objective #1

Annual utilization of 3.5 billion bushels of soybeans by 2011

DMC Human Utilization Goals for LRSP Objective #1

- I. Establish market demand for high value U.S. soybean oil and proein that fulfills the needs of global food customers and consumers.
- II. Encourage continued use and growth of soy products by maintaining a high level of consumer and influencer perception of soy health benefits.

LRSP Objective #2

Approval in the importing countries that comprise 90% of the U.S. soy products for each biotech event by the time of its commercialization.

DMC Human Utilization Goals for LRSP Objective #2

- I. Gain food industry, influencer and consumer acceptance and understanding of new biotech traits with health benefits.

LRSP Objective #3

Promote U.S. Sustainable soybean production through responsible stewardship whild acknowledging global market needs.

DMC Human Utilization Goals for LRSP Objective #3

- I. Monitor and assess food industry sustainability issues related to soy.

Market Environment

Human Utilization accounts for nearly 21% of soy use with most of that value being derived from soy oil usage. Soy oil typically provides from 35 to 45 percent of the value of the bean.

Acceptance of New High Oleic Varieties Critical to Soy Oil Use

Eighty-three percent of all U.S. soy oil is utilized in human food for salad oil, cooking oils, commercial frying oils, baking, margarine and other uses. About 14.5 billion pounds of soy oil is consumed annually in the United States. Soy oil represents 65% of the total vegetable oil market domestically; however this is a significant decline from a few years ago when soy oil market share stood at 81% and nearly 17 billion pounds.

In January 2006, the Food and Drug Administration's trans fat labeling regulations went into effect. Food manufacturers and food service operators began reformulation of their products or processes in order to eliminate trans fats. Competitive oils, particularly high oleic canola and palm have experienced increased usage because they provide the functionality needed for many food formulations.

To provide soy solutions to the trans fat issue, low-linolenic soybean varieties were introduced in 2004. Farmers now plant nearly 2 million acres of low-linolenic soybeans. Low-linolenic soy oil, which can be used in light commercial frying, is one part of the solution to the trans fats issue. Without low linolenic soy oil in the marketplace,

producers would have suffered a \$700 million loss with market share going to competitive oils.

However, the heavy commercial frying and baking industries need more stable oil and USB, working with QUALISOY, will help introduce increased oleic oil in 2012. Farmers will be asked to grow these new soybean varieties to ramp up the increased oleic oil supply to meet end user's needs which is estimated to be 3-5 billion pounds. The USB value chain analysis projects that high oleic soy oil will add \$581MM in producer income annually over the next 20 years. Also in 2012 Omega 3 soy oil will be introduced. Both of these varieties are expected to provide consumers with heart health benefits.

The introduction of these new soy oil varieties is significant, not only for regaining soy oil market share, but incrementally growing the soy oil market and, perhaps more importantly, for the introduction of biotech traits with specific health benefits into the consumer market place. Acceptance of biotechnology by consumers is key to meeting USB's LRSP goals.

Soy Protein and the Soy Health Halo

Eighty-four percent (84%) of consumers perceive soy foods as healthy. However, soy foods companies do not see the perception of soy's healthfulness translating to soy sales. USB research shows that only about a third of consumers actually purchase soy regularly. Some soy foods companies believe that the negative soy campaigns led by the Weston A. Price Foundation and others contribute to the lack of consumer motivation to purchase soy foods.

From USB's perspective, soy protein for human use is a very minor part of farmer's business representing only around 1-3 percent of sales. However, the soy health halo primarily emanates from soy food's perceived health benefits which seem to provide license for soy's use in many new uses and even animal feed.

The soy heart health claim continues to be reevaluated by the FDA, but they have established no timeline for completion of the evaluation. The DMC and the SNI sponsored research studies to support reaffirmation of the health claim and an extensive response to FDA's request for comments was submitted in July, 2009.

Strategic Approach

The approach to protect and recapture soy oil market share domestically will include support of industry efforts to commercialize soy-based oils needing no hydrogenation and support of industry and QUALISOY efforts to develop soybeans with enhanced traits and characteristics.

USB continues to complement the efforts of the soy industry to solve the trans-fat issue and provide end-users with soy-based solutions. USB is committed to helping gain acceptance of high oleic soybeans. These soybeans, with 70 percent or more high oleic, produce oil that provides the stability needed for high heat frying and some baking applications. Some speculate that high oleic soybeans could become the new commodity soybean with its potential for broad use by the food industry and its advantages to the industrial segment.

The new high oleic oils also may provide health benefits since these varieties produce reduced and low saturated fat oil. Through QUALISOY, USB will provide \$1 million for clinical studies on high oleic over the next few years. Also, technology companies have announced plans to introduce Omega-3 (2012), and other soy oils targeted for human utilization.

Most of these new varieties will be developed utilizing biotechnology. In FY12, USB should continue its efforts to communicate the benefits of biotechnology prior to the introduction of these new soybean varieties.

USB-DMC will also continue its focus to leverage funds for research, marketing and promotion of soy oil and soy protein. Through programs such as the Soy Nutrition Institute, QUALISOY and the Soy Health Research Program (SHRP), USB's investments gain significant return. QUALISOY received an initial \$8.4 million grant in 2005 and additional funding is likely in 2011-12. Meanwhile the SHRP has generated \$25.4million in research funding on only \$1 million in USB investment. It is expected that the recent \$1 million USB commitment for high oleic clinical studies will be followed by leveraged industry funding.

Although a recent study by Informa Economics concluded that soy protein for human utilization is an extremely small market for USB, the health halo around soy foods transfers to soy oil and even some new use applications. Therefore, continued defense of the benefits of soy is important to our industry.

As noted, USB-DMC has worked through the Soy Nutrition Institute to create a coordinated response to FDA's request for information on soy and CHD. Another recent effort involved providing information to the National Toxicological Program on the safety of soy genistein.

Domestically, USB-DMC will focus on communicating the health benefits of soy oil and soy protein to key audiences. Soy oil is a major source of Omega-3 fatty acid consumption for Americans. The most recent Dietary Guidelines for Americans cites the need for Americans to increase their intake of good fats such as those found in fish, nuts, and vegetable oils. Soy oil is also a good source of Vitamin E. Opportunity exists to grow the non-hydrogenated soy oil market. USB and the Soy Nutrition Institute are credible resources on soy and health and will play important roles in responsible communications about soy health benefits.

Ability to Impact

Throughout the world, USB can impact individual consumers, health professionals, non-government organizations, food processors and manufacturers, bakeries and the hotel-restaurant-industrial (HRI) sector about perceptions of soy healthfulness. This is accomplished through education and communications about the economic, functional, and health benefits of utilizing soy protein and soy oil in human food. USB can significantly impact the domestic soy oil market share through support of soy-based solutions to the trans fat issue. Through the QUALISOY effort, USB can move improved traits into the market, which will provide solutions to end user needs and protect the current soy oil market.

The success of low linolenic soybean varieties demonstrates USB's ability to impact market introductions and the low lin template will provide a good model for future enhanced oil introductions.

Building upon prior successes, USB-DMC programs in Human Utilization can continue to have a major impact and return on investment.

LRSP Objective #1:

- I. Annual utilization of X.X billion bushels of U.S. soybeans by 201X

Committee --Target Area

- A. Domestic Marketing – Human Utilization

Goal:

1. Establish market demand for high value U.S. soybean oil and protein that fulfills the needs of global food customers and consumers.

Strategy:

- a. Prepare marketplace for introduction of enhanced oils; specifically high oleic and Omega 3 soy oil in FY12

Tactics:

- i. Media Relations- Target food publications, influencer newsletters, trade journals and ag media for placement of articles on new oils and benefits
- ii. Trade Show Participation- Reach food industry decision-makers, thought leaders and influencers with exhibits, panels and presentations at key trade shows
- iii. Trade Advertising- As appropriate use advertising in key trade journals to promote awareness and trial of new oils
- iv. Conferences and Forums -Participate in forums and conferences of influencers and academicians
- v. Food Industry Relations - Maintain contact with key executives in food industry through one-on-one meetings and forums

Strategy:

- b. Coordinate new oil introductions with QUALISOY

Tactics:

- i. Provide staff support for QUALISOY marketing and communications efforts
- ii. Develop annual plan for each target area
- iii. Coordinate trade show appearances with USB programming

Performance Measures:

- i. Market place adoption of high oleic oils
- ii. Marketplace awareness of Omega 3 oils

Strategy:

- c. Use “pull through” marketing strategy to help create demand and supply of trait enhanced oils

Tactics:

- i. Media Relations- Target food publications, influencer newsletters, trade journals and ag media for placement of articles on new oils and benefits
- ii. Trade Show Participation- Reach food industry decision-makers, thought leaders and influencers with exhibits, panels and presentations at key trade shows
- iii. Trade Advertising- As appropriate use advertising in key trade journals to promote awareness and trial of new oils
- iv. Conferences and Forums -Participate in forums and conferences of influencers and academicians
- v. Food Industry Relations - Maintain contact with key executives in food industry through one-on-one meetings and forums

Performance Measures:

- i. Market place adoption of high oleic oils
- ii. Marketplace awareness of Omega 3 oils in pipeline.

Strategy:

- d. Research and communicate health benefits of soy oil and soy protein to encourage continued use and new food product development

Tactics:

- i. Soy Nutrition Institute leadership and participation – Continue support of SNI as a credible third party entity and research initiative
- ii. Media Relations- Target food publications, influencer newsletters, trade journals and ag media for placement of articles on new oils and benefits
- iii. Trade Show Participation- Reach food industry decision-makers, thought leaders and influencers with exhibits, panels and presentations at key trade shows
- iv. Trade Advertising- As appropriate use advertising in key trade journals to promote awareness and trial of new oils
- v. Conferences and Forums -Participate in forums and conferences of influencers and academicians
- vi. Food Industry Relations - Maintain contact with key executives in food industry through one-on-one meetings and forums
- vii. Soy Nutrition Institute leadership and participation – Continue support of SNI as a credible third party entity
- viii. Soy Health Research Program – Continue support of SHRP to encourage research
- ix. Soy Connection Newsletter – Publish SCN on a quarterly basis to reach health professionals
- x. SoyConnection Interactive – Update and maintain SoyConnection website

Performance Measures:

- i. Continued trend of soy product market growth within the retail sector
- ii. High consumer perception of soy as healthy, as measured by Consumer Attitudes Study
- iii. SHRP grants from NIH and amount of funds leveraged

Strategy:

- e. Defend health claim to maintain soy health “halo”

Tactics:

- i. Soy Nutrition Institute leadership and participation – Continue support of SNI as a credible third party entity
- ii. Information Dissemination -Provide educational material to governmental agencies, as requested
- iii. Provide leadership and guidance to SNI and industry on response to request for information from the Food and Drug Administration

Performance Measures:

- i. Eventual reaffirmation of the Soy and CHD health claim
- ii. Maintain high level of consumer perception of soy as healthy, per the Consumer Attitudes About Nutrition study

Goal:

- 2. Encourage continued use and growth of soy products by maintaining a high level of consumer and influencer perception of soy health benefits.

Strategy

- a. Research and communicate the health benefits of soy oil and protein

Tactics

- i. Trade Show Participation – Use exhibits, experts, panels and presentations to communicate to key audiences the health benefits of soy
- ii. Media Relations – Use traditional and new media to reach influencer audiences regarding the health benefits of soy
- iii. Information Dissemination -Provide educational material to governmental agencies, as requested
- iv. Soy Nutrition Institute – Support SNI research into the health benefits of soy oil and protein including potential new health claims
- v. Provide support and sponsorship of key health professional, research groups

Performance Measures:

- i. Complete key research projects on soy and health
- ii. Maintain consumer perceptions of soy as healthy as measured by the Consumer Attitudes Study
- iii. Gain measurable support for research through SNI and the Soy Health Research Program

Strategy:

- b. Encourage everyday use of soy for good health

Tactics:

- i. Media Relations- Target food publications, influencer newsletters, trade journals and ag media for placement of articles on benefits of soy consumption

- ii. Trade Show Participation- Reach food industry decision-makers, thought leaders and influencers with exhibits, panels and presentations at key trade shows
- iii. Conferences and Forums -Participate in forums and conferences of influencers and academicians
- iv. Soy Connection Newsletter – Publish SCN on a quarterly basis to reach health professionals
- v. SoyConnection Interactive – Update and maintain SoyConnection website
- vi. Publish fact sheets on benefit of soy
- vii. Publish the Soyfoods Guide
- viii. Work with SNI on positioning soy within the Dietary Guidelines for Americans

Performance Measures:

- i. Maintain or increase weekly purchase and usage levels as measured by the Consumer Attitudes About Nutrition
- ii. Review product sales trends at retail on an annual basis through SANA's monitoring mechanisms

Strategy:

- c. Leverage USB funds for research into health benefits of soy

Tactics:

- i. Soy Nutrition Institute – Support SNI research into the health benefits of soy oil and protein including potential new health claims
- ii. Soy Health Research Program – Continue support of SHRP to encourage research

Performance Measures:

- i. Measure ROI for SHRP based on NIH grants versus USB investment
- ii. Determine research funds expended through SNI

LRSP Objective #2

- II. Approval in the importing countries that comprise 90% of U.S. soy products for each biotech event by the time of its commercialization.

Goal

- 1. Gain food industry, influencer and consumer acceptance and understanding of new biotech traits with health benefits

Strategy:

- a. Establish clear link between biotech oils and health benefits to consumers

Tactics:

- i. Media Relations- Provide story ideas to industry trade journals regarding healthy new oils, the benefits of biotech and the functionality for food applications
- ii. Trade Show Participation – In all scheduled trade shows promote the introduction of biotech derived oils and their benefit to human health

- iii. Biotech Education- Work with existing biotech organizations to educate influencers and/or consumers on the benefits of biotech. All research indicates that the knowledge of biotech results in support.
- iv. Conference and Forums – Participate in appropriate conferences and forums to monitor biotech issues and maintain relationships with influencers.
- v. Disseminate Information – Using various tools to provide information to key influencer groups on biotech benefits and benefits of new oil introductions on human health.
- vi. Monitor news and research – Important to respond to negative news or research, as appropriate.

Performance Measures:

- i. Gain placement of articles and electronic media stories on benefit of biotech oils
- ii. Establish benchmark awareness of biotech and health benefits and assess awareness against benchmark after educational effort.

Strategy:

- b. Communicate environmental and sustainable benefits of biotechnology to strategic market sectors, thought leaders and influencers.

Tactics:

- i. World Food Prize Participation – Continue support of WFP, an organization that views biotech as critical to world issues around human health, sustainability and malnutrition.
- ii. Trade Show Participation- As appropriate communicate health, environment and sustainability messages to influencers, food companies and thought leaders at trade shows and conferences
- iii. Media Relations- Gain story placement on biotech benefits to human health, the environment and sustainable agriculture. .
- iv. Conference and Forums – Participate in appropriate conferences and forums that address environment and sustainability issues within the food sector

Performance Measures:

- i. USB receives recognition for World Food Prize sponsorship
- ii. At least two major stories are published regarding biotech benefits in the food area
- iii. Additional contacts are made and mailing list is enhanced through collection of data at trade shows

Strategy:

- c. Address soy biotechnology food issues as appropriate, capitalizing on industry partnerships and providing appropriate leadership.

Tactics:

- i. Issues Monitoring-Monitor soy biotechnology issues, news and activist's efforts
- ii. Issues Management -Provide support, as needed, if a biotech event occurs

- iii. Influencer Communications -Communicate benefits of biotech for human health, environment, and world hunger
- iv. Media Relations – Conduct media relations, as appropriate and as needed

Performance Measures:

- i. Conduct environmental scan to establish benchmarks on issues to determine awareness, understanding and criticalness. In follow-up survey determine positive movement.

LRSP Objective #3

- III. Promote U.S. sustainable soybean production through responsible stewardship while acknowledging global market needs

Goal

- 1. Monitor and assess food industry sustainability issues related to soy.

Strategy:

- a. Define and gain understanding by key stakeholders of sustainability as it pertains to U.S. soybean production practices for food use.

Tactics:

- i. Work with Keystone, ANSI and others to define agricultural sustainability for food production
- ii. Monitor news, research and activists efforts and sustainability and “green” efforts of key food companies and retailers
- iii. Communicate soy sustainability to key stakeholders

Performance Measures:

- i. Establishment of workable sustainability standard for food production.
- ii. Understanding of soy’s sustainability by stakeholders as determined by either qualitative or quantitative research

Financial Allocation:

Domestic Marketing – Human Utilization: \$2,805,172

Program Staff Contact Information:

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Industry Relations *Communications Committee*

Market Environment

The factors listed below can best be described as items that must be taken into consideration with all communication efforts regardless of the target audience.

- **Economy:** Slow economic growth and recovery, possible higher interest rates, flat GDP growth, increased energy costs, possibility of more taxes
- **Technology:** New technology approved by third world countries, expanding access to information for farmers and consumers
- **International:** Zero tolerance, increased competition from Argentina, Brazil and other South American countries, more growth in China
- **Domestic:** More legislation, stricter regulations, fewer farmers, moderate increase in soy stocks, weakening infrastructure, market volatility
- **Environmental Issues:** Sustainability pressures, extreme weather conditions, soybean quality challenges

Strategic Approach

-Soybean Farmers

The Communications program will research, develop and create original soybean checkoff information and provide unbiased, useful soy-related facts, figures, and data through an integrated marketing communications plan that includes paid and earned media, presence at major industry events, digital and mobile channels, and other communications vehicles. It will meet the communications requirement of the federal law that created the soybean checkoff by keeping U.S. soybean farmers well informed of the checkoff's activities and accomplishments as well as provide information related to other checkoff-funded USB program areas, support committees, special board initiatives and task forces that address the board's priority issues. In addition, the Communications program will provide non-checkoff related information meant to help ensure U.S. soybean farmer potential for profitability.

-Soybean Value Chain (including customers)

The Communications program will continue to leverage soybean checkoff funds by partnering with segments of the U.S. soy value chain to address common constraints. USB defines the soybean value chain as every touch point of the soybean, ranging from soybean farmers and farmer organizations to technology providers and processors to researchers and government and commodity groups to end users like the food industry, animal ag producers and industrial product manufacturers.

To have the greatest impact and to leverage USB funds whenever possible, we will continue to develop relationships with industry influencers. Outreach and partnership

opportunities remain vital, particularly in relation to animal agriculture, transportation infrastructure, technology transfer and freedom to operate. Active partnerships of other trade associations, farm organizations and commodity groups creates increased opportunities for one-on-one interactions to drive awareness of the soybean checkoff's efforts to create more demand for U.S. soy and to build opportunities for soybean farmers to profit.

-Consumer Thought Leaders

USB's Consumer Thought Leaders communications program will use a grassroots approach along with publicity opportunities to increase consumer awareness of the value of modern U.S. agriculture production. The Communications Committee effort will align with the objectives of the U.S. Farmers and Ranchers Alliance and will collaborate with all other significant agriculture efforts that share the objectives of USB's CommonGround™ program.

The Consumer Thought Leaders project will strategically develop and maintain relationships with key influencers related to food and farming issues on a state and national level to become a reliable source of information. In addition this project will continue to work with QSSBs and other partners to create opportunities for farmers to reach key consumers and empower farmers to effectively speak out about the value of today's agriculture. USB will promote these issues and activities to ag and mainstream media as well as stakeholders in agriculture.

The Communications program will use a mix of social media, traditional publicity or earned media, paid media and direct thought leaders relationship-building as the foundation for this effort to influence consumer attitudes about the importance of modern U.S. production agriculture.

-Board & QSSBs

In order to effectively communicate to soybean farmers and other audiences, all checkoff communications must provide coordinated, consistent messaging. To do this, it's necessary to provide ongoing internal communications about checkoff programs, activities, issues and priorities to the entire soybean checkoff family, including USB Directors, QSSBs and other soybean organizations. The Communications program will engage in two-way dialogue with the entire board to determine needs and preferences. By keeping the checkoff family informed and by providing a menu of flexible communications tools and support, the Communications program will continue working to ensure U.S. soybean farmers consistently see, read or hear how their checkoff investments are being used to help build demand for soybeans and profit potential for each individual U.S. farmer.

Ability To Impact

USB is responsible to every contributor of the soybean checkoff, each of whom has a vested interest in the activities of the checkoff. Within the soybean industry, USB is largely viewed as a reliable, third-party resource. The combination of the two allows USB to make a strong impact on the soybean industry.

LRSP Objectives

MEAL: Increase the value of U.S. soybean meal to the entire value chain.

OIL: Increase the value of U.S. soy oil to the entire value chain.

FREEDOM TO OPERATE: Ensure that our industry and its customers have the freedom and infrastructure to operate.

CUSTOMER FOCUS: Meet our customers' needs with quality soy products and services to enhance and expand our markets.

A. Communications - Industry Relations

1. Committee Goal

Create awareness with soybean farmers about their leading customers, checkoff activities and accomplishments while serving as an independent, third party resource of information to help create profit opportunities for U.S. soybean farmers.

a. Soybean Farmers

Tactics

- i. Develop, print and distribute four issues of *Beyond the Bean*[®] magazine.
- ii. Develop a special edition of *Beyond the Bean* that focuses on one area, such as animal ag or U.S. transportation infrastructure.
- iii. Sponsor "AgriTalk" broadcasts of "Beyond the Bean On-Air" segments to feature checkoff content and interviews with checkoff farmer-leaders.
- iv. Continue the Beyond the Elevator communications campaign with new print, radio and digital ads, and make these ads available for QSSB use.
- v. Manage and maintain farmer database for USB communications efforts and for request by QSSBs.
- vi. Continue to send commodity price updates, along with periodic checkoff information, to farmers via text message.
- vii. Place advertorials in QSSB publications or other statewide publications of each QSSB's choice.
- viii. Promote www.unitedsoybean.org through various types of online ads, such as banner, embedded video, pay-per-click and Facebook ads, as well as search engine marketing.
- ix. Sponsor DTN University, an educational event targeted at young farmers.
- x. Sponsor *Farm Journal's* Soybean College, an event focused on educating farmers on soybean agronomics and helping them grow better soybeans.
- xi. Place advertorials in *ASA Today*.
- xii. Contribute stories to the *ASA Weekly Leader Letter*.
- xiii. Place advertorials in USSF's *SoyHillside Review* newsletter.
- xiv. Continue developing and posting short, web-based "Beyond the Bean On-Air" segments to the USB website.

- xv. Sponsor tapings of ag TV programs such as the “U.S. Farm Report” and “Ag Day” at major ag trade shows, including Commodity Classic, National Farm Machinery Show and Farm Progress Show.
- xvi. Create graphics that communicate key issues through data collected from checkoff funded research.
- xvii. Generate original articles, video and audio content specifically for distribution to U.S. soybean farmers online.
- xviii. Promote the checkoff’s messages by coordinating and executing earned-media events.
- xix. Create and distribute audio news releases to agriculture media regarding checkoff activities.
- xx. Shoot, edit and distribute short informational and educational videos about checkoff activities.
- xxi. Use media-tracking services to measure checkoff media coverage.
- xxii. Develop and implement aggressive media relations strategy to promote checkoff accomplishments and activities.
- xxiii. Cover international marketing events coordinated by the Soybean Transportation Coalition and USSEC.
- xxiv. Coordinate desk-side meetings between USB farmer-leaders and targeted publications.
- xxv. Record and distribute expert commentary as podcasts on issues important to USB.
- xxvi. Increase USB visibility at Ag Media Summit and the NAFB annual meeting.
- xxvii. Distribute high-quality, but low-cost premiums to ag journalists at designated media events.
- xxviii. Research improvements to the USB website to make it more user-friendly for farmers.
- xxix. Continue application-based QSSB tradeshow partnership program.
- xxx. Develop new educational premiums and information to match the current campaign.
- xxxi. Sponsor and participate in the REAP Tours.
- xxxii. Develop two new games for tradeshows and QSSB use.
- xxxiii. Sponsor and participate in national farmer-focused shows, including Commodity Classic, Farmfest and National Farm Machinery Show.
- xxxiv. Sponsor and participate in conventions for the next generation of farmers, including FFA, 4H and the Farm Bureau Young Farmer & Rancher Program.
- xxxv. Create additional educational tradeshow visuals to draw and educate attendees at the USB booth.
- xxxvi. Update booth graphics and banner stands to reflect FY 2012 communications campaign.
- xxxvii. Fulfill requests from farmers for soybean checkoff information.

Performance Measures

- i. Maintain support of the checkoff at 78 percent.
- ii. Increase the visibility of checkoff content by 10 percent.
- iii. Increase farmer recognition from 15 to 20 percent of the importance of the U.S. poultry and livestock industries to their long-term bottom line.
- iv. Increase farmer recognition from 21 to 24 percent of the importance of international sales to their long-term bottom line.
- v. Maintain knowledge of other soybean checkoff program area activities (non-International Marketing or Animal Ag related) at 2011 levels.

b. Board & QSSBs

Tactics

- i. Research, compile and distribute USB reports.
- ii. Provide staffing and communications support for USB meetings.
- iii. Provide USDA liaison to coordinate all communications approvals.
- iv. Produce and distribute the annual *USB Directory*.
- v. Provide communications strategic counsel and facilitate breaking issues and crisis communications.
- vi. Provide a communications liaison for all USB committees and initiatives.
- vii. Manage and host USB website.
- viii. Enhance the USB Director's section of the USB website.
- ix. Fulfill ongoing requests for communications support.
- x. Draft presentations, speeches, talking points, collateral for USB staff and directors.
- xi. Plan and implement new USB director board orientation and train new USB Communications Committee members.
- xii. Implement USB director training workshops on an individual or board-wide basis.
- xiii. Provide technical assistance for all USB issued laptops and smartphones.
- xiv. Compile and distribute USB Board Meeting wrap-up reports.
- xv. Create staff directory to serve as an internal support tool.
- xvi. Distribute new checkoff communications materials to directors each quarter.
- xvii. Provide program areas and initiatives showcase opportunities at board meetings.
- xviii. Sponsor ASA's Soybean Leadership College
- xix. Funding and staff support for QSSB communications activities, including trade shows and meetings along with earned and paid media efforts. Provide assistance for quick turn-around communications requests from QSSB staff, such

- as for photos or video b-roll or supplies of premiums or collateral materials.
- xx. Compile and distribute the USB State Weekly E-mail.
 - xxi. Offer application opportunity to provide co-op funding to QSSBs to place current USB print, billboard, radio and/or TV ads.
 - xxii. Offer application opportunity to provide reimbursement funding to QSSBs for pre-approved communications activities.
 - xxiii. Plan and execute QSSB Communications Roundtables.
 - xxiv. Provide assistance in customizing print, radio and television ads.
 - xxv. Purchase additional quantities of USB collateral and premiums to make available to QSSBs at no cost.
 - xxvi. Provide staff and funding to support QSSB social media and web needs such as creating a QSSB website or helping with a social media plan for QSSBs.
 - xxvii. Offer QSSBs the opportunity to place one insert in *Beyond the Bean* each fiscal year. QSSBs will have the option to create the insert on their own or to work with USB to develop the insert.
 - xxviii. Provide assistance in creating, printing and mailing state specific newsletters.
 - xxix. Plan and implement in-person office visits with QSSB staff.
 - xxx. Maintain QSSB resources, such as the State Share Library on the USB website and a database of QSSB leaders.
 - xxxi. Facilitate communications evaluation and counseling to QSSBs and offer reimbursement for oversampling on USB's farmer surveys.
 - xxxii. Offer scholarship funds for QSSBs to visit other QSSB offices, meetings or events. Also offer funds for QSSBs to visit O&B if desired.
 - xxxiii. Develop training sessions for new staff to acclimate them with USB organization or host a "communications boot camp" that would include refreshers of basic communications areas.
 - xxxiv. Compile a quarterly mailing of all USB communications materials for QSSB staff.

Performance Measures

- i. Increase board member satisfaction with a board wide communication/sharing of information. (Establish benchmark through survey this summer.)

- ii. Increase number of USB Directors who use USB communications support from 25 percent (17 directors) to 43 percent (30 directors).
- iii. Provide two new opportunities for two-way communications and collaboration between USB and QSSBs to help the checkoff speak with a unified voice.
- iv. Maintain 100 percent of QSSBs that use USB communications support.
- v. Achieve 75 percent of QSSBs to use out primary communications message.
- vi. *Support all other committee objectives (since the committee supports the board & QSSBs in reaching all audiences).

2. Committee Goal

Educate the U.S. agriculture value chain about soybean checkoff activities and priorities while also engaging them to serve as partners in addressing challenges and opportunities for U.S. soybean farmers.

a. Soybean Value Chain

Tactics

- i. Continue building and maintaining an online database system of soybean value chain influencers and others with an interest in the soybean industry.
- ii. Continue the Soybean Link e-newsletter four times per year to communicate soybean checkoff priorities and emerging issues that may affect the U.S. soybean and general agriculture industries to the soy value chain. Develop one additional issue to educate Washington leaders on soybean checkoff programs and activities.
- iii. Distribute *Beyond the Bean* magazine to Value Chain
- iv. Work with one elevator/processor to develop a two-way communications model that that supports the efforts of both parties while sharing the priorities of the checkoff.
- v. Partner with Waterways Council, Inc., to co-sponsor the organization's informational paid media campaign designed to raise the level of knowledge and awareness of the importance of the U.S. inland waterways systems.
- vi. Continue exploring and developing partnership efforts with general farm organizations including, but not limited to, American Farm Bureau Federation and National Farmers Union to reach beyond just their meetings to focus on priorities they share with the checkoff.
- vii. Partner with USB Global Opportunities and other appropriate program areas to determine most effective way to execute third party, independent analysis of primary factors and costs impacting the U.S. soy sector's freedom to operate.
- viii. Partner with QSSBs and the land grant university research and extension community to further communicate research results and marketing information to U.S. soybean farmers. USB will

build a flexible communications support program that will help meet varying needs of technology and information transfer. USB will work closely with QSSBs for buy-in first and then encourage involvement at the level they choose.

- ix. Sponsor 12 editions of "Focus on Soybeans" webcasts, a non-profit, web-based resource housed on the Plant Management Network (plantmanagementnetwork.org), which is a site managed by the American Society of Agronomy, American Phytopathological Society, and the Crop Science Society of America.
- x. Partner with ASA and other value chain partners to help promote the Conservation Legacy Awards Program and to share the winners' sustainability stories with a larger audience.
- xi. Sponsor the production of the American Soybean Association's SoyStats, which is a 36-page printed reference guide of soy-related facts.

Performance Measures

- i. Increase value chain knowledge of checkoff activities by five points to develop additional leveraging opportunities.
- ii. Create three new partnerships to further extend checkoff messages.
- iii. Identify and create a communications partnership to address a common constraint of a vulnerable segment of the soy value chain.

3. Committee Goal

Support U.S. soybean farmers' freedom to operate while increasing U.S. consumer awareness of the value that today's production agriculture has in providing the safest, most affordable and abundant food supply in the world.

a. Consumer Thought Leaders

Tactics

- i. Provide guidance and support to develop effective consumer outreach plans and implement outreach and education activities in states participating in the CommonGround program.
- ii. Develop CommonGround collateral materials such as brochures, signs, fact sheets, educational premiums, media and influencer kits, etc. to educate and inform a variety of audiences; includes gathering research and information to be used in materials.
- iii. Develop video content to educate audiences on modern farming practices and the realities of today's farming and food.
- iv. Provide participating CommonGround states the ability to request funds needed for their consumer and influencer outreach activities through a reimbursement program.

- v. Conduct outreach to the news media and influencers on both the state and national level through media pitching, relationship building and hosting events with influencers to make sure they have a clear understanding of the value of modern agriculture.
- vi. Support, develop and motivate volunteer CommonGround spokeswomen through regular communication, materials and resources to help prepare them to answer consumer questions and address issues.
- vii. Update and add resources to the CommonGround website that specifically address consumers' questions about food and farming.
- viii. Engage in online conversations with target audiences through search optimization, social media and online engagement tools such as surveys, contests and online publicity to ensure the facts about modern agriculture are better understood.
- ix. Expand and increase strategic partnerships between CommonGround and other organizations, including outreach to current partners such as NCGA and outreach and coordination with new and potential partners.
- x. Support a broad agriculture advocacy effort based on the approach and resources of CommonGround by creating materials and opportunities for those outside of CommonGround who wish to reach consumers and influencers with the true story of today's farming.
- xi. Provide guidance and support to develop effective consumer outreach plans and implement outreach and education activities in states participating in the CommonGround program.
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- xvii. Update and add resources to the CommonGround website that specifically address consumers' questions about food and farming.
- xviii. Engage in online conversations with target audiences through search optimization, social media and online engagement tools such as surveys, contests and online publicity to ensure the facts about modern agriculture are better understood.
- xix. Expand and increase strategic partnerships between CommonGround and other organizations, including outreach to current partners such as NCGA and outreach and coordination with new and potential partners.
- xx. Support a broad agriculture advocacy effort based on the approach and resources of CommonGround by creating materials and opportunities for those outside of CommonGround who wish to reach consumers and influencers with the true story of today's farming.

Performance Measures

- i. Improve trust and understanding of today's agriculture among key consumer and influencer audiences by reaching more than 10 million people with positive and useful information about the value of today's farming.
- ii. Continue to build the national CommonGround consumer awareness program through partnerships with QSSBs, state and national corn organizations, and other partners. Launch CommonGround programs in partnership with all 31 QSSBs.
- iii. Train more than 100 volunteers as skilled, confident and credible CommonGround spokeswomen to be active in CommonGround activities in their states and/or national efforts.
- iv. Extend outreach to consumers and influencers from states with agriculture to at least five states that have little or no connection with production agriculture.
- v. Host at least four advocacy workshops and provide ongoing resources through www.findourcommonground.com to share the CommonGround approach and resources to help a broad agriculture audience to be more effective advocates for today's farming.
- vi. Build visibility and awareness of CommonGround as an important shared resource for all of agriculture by driving more than 1 million media impressions in agriculture media.

Financial Allocations

Communications – Industry Relations:

Producers/Value Chain/Consumer Thought Leaders - \$5,218,516

USB & QSSBs - \$1,919,908

To be allocated - \$2,322,289

Program Staff Contact Information

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Industry Relations

International Marketing Committee

Market Environment

The U.S. soy industry has enjoyed a strong track record of growth in the last decade, with U.S. soy exports breaking records four consecutive years. Seven of the last ten years the U.S. exported record amounts of soybeans. Last marketing year over 58% of U.S. soy production was exported. Sustaining this strong export demand is crucial to the long term viability of the U.S. soy industry as this strong demand converts into higher farm gate prices for U.S. soy producers.

Despite this success, and strong export shipments, the U.S. soy industry only represents 35% of global soy production. Additionally U.S. soy acreage has very limited ability to expand while its prime competitor, Brazil, has vast acreage it can put into soy production. The U.S. soy industry faces a global market place in which it is not the low cost producer, and in some instances especially when competing against exports from northern Brazil it is facing soy that frequently exceeds the U.S. in terms of prevailing industry measures of quality (protein & oil). Marketing any product in which you must face off against competitors that have 'cheaper and better' products is always going to be one of the most difficult environments to succeed.

Despite these competitive pressures U.S. has been able to maintain disproportionate market demand in many key markets. For example the U.S. market share tops ninety percent in Mexico and Indonesia, tops eighty percent in Japan, tops seventy percent in Taiwan and Central America, tops sixty percent in the Middle East and tops forty percent in China. The later number, 40% market share in China, results in 60% of all U.S. soy exports.

In order to succeed in this marketing environment the U.S. soy industry must differentiate its products from that of its competitors and identify specific value enhanced characteristics and attributes upon which it can be promoted and marketed that justify its higher price.

Regular interaction with industry associations and government agencies provide vital information on identifying and circumventing potential market access issues.

Strategic Approach

Maintaining a point of contact for soy importers and processors as well as industry associations and government agencies throughout is a critical factor in the long term success of the U.S. soy industry globally. Beyond a point of contact it is imperative that the U.S. soy industry maintain in-market representation that can respond quickly to address and resolve issues as they arise. These in-market representatives regularly interact with key executives in the soy importing and processing sector to determine what other opportunities exist to increase U.S. soy exports as well as ascertain if current programs are meeting their needs and expectations. Regular interaction with key importers and processors provides the necessary contacts to keep doors open for IM contractors involved in animal, human and aquaculture utilization.

Market presence includes an office providing a point of contact for the soy industry, trade associations and government agencies in those respective countries to access the U.S. soy industry. Office presence in these markets will provide the US soy industry with a local address and dedicated communication channels. Market presence also includes regularly interaction with key executives in the soy importing and processing sectors and maintaining a network of trade servicing professionals that implement direct managed projects that specifically target industry decision makers and representatives across the entire soy complex. Examples of these activities include conferences, teams consisting of buyers or decision makers to the USA, organizing teams of U.S. soy industry representatives to those markets etc.

IM has maintained relationships in a variety of countries for decades. For example, the US soy industry has maintained uninterrupted market presence in Japan and Europe for over fifty years and in other key markets such as Mexico and Taiwan for over thirty years.

In the area of Industry Relations, we will specifically:

- Develop and maintain relationships with the largest soy importers, processors and end users of U.S. soy as well as international trade associations and government agencies.
- Stress the technical and trade servicing that is provided when purchasing U.S. soy.
- Provide technical trade servicing with importers and processors of U.S. soy to strengthen and create demand for their products.
- Utilize the skills, knowledge and products of allied industries that support the further consumption of U.S. soy.

Ability to Impact

USB can impact the industry relations target area by maintaining key relationships in the global soy marketplace. Regular interaction with customers at all levels within U.S. soy importing companies, trade associations and government agencies provide clear avenues for communication and collaboration across the entire soy complex.

LRSP Objective 1:

- I. Annual utilization of 3.5 billion bushels of U.S. soybeans by 2012.

Committee – Target Area:

- A. IM – Industry Relations

Goal 1:

1. Maintain key relationships worldwide to ensure the entire soy complex realizes the benefits of importing U.S. soy, whether those benefits are nutritional or service-related.

Strategy 1:

- a. Communication to Soybean Value Chain

Tactics:

- i. In China, we will encourage key customers to participate in USSEC Soybean Trade Support Programs.

- ii. In Asia, key importers will participate in the IM Quality Conferences to learn about the new U.S. soybean crop and its attributes.
- iii. In East Asia, we will reach out to the soy trade to identify specific customers' needs.
- iv. In Latin America, customers will be informed of the opportunity that exists in utilizing risk management tactics.

Performance Measures:

- i. In China, key customers will participate in IM Soybean Trade Support Programs.
- ii. In Asia, key customers will attend the IM Quality Conference in Korea and in Japan.
- iii. In East Asia, new programs will be initiated to address specific customers' needs.
- iv. In Latin America, customers will adopt risk management techniques for their companies.

LRSP Objective 2:

- II. Approval in the importing countries that comprise 90% of U.S. soy products for each biotech event by the time of its commercialization.

Committee – Target Area:

- A. IM – Industry Relations

Goal 1:

- 1. Maintain key relationships worldwide to ensure biotech event approvals are granted in advance of commercialization.

Strategy 1:

- a. Communication to Soybean Value Chain

Tactics:

- i. In Europe, we will continue its issue monitoring system to keep soybean industry leaders throughout the world informed on EU policy/trade issues.
- ii. Key information will be disseminated in reference to biotech products to ensure Turkish trade and industry associations and U.S. soy suppliers are well-informed that biotech products are not harmful to consumers.

Performance Measures:

- i. In Europe, worldwide soybean industry leaders will confirm they are better informed by utilizing the issue monitoring system provided by IM.
- ii. Key industry trade associations and officials will use their influence to encourage the adoption of more practical and workable measures for regulating biotech products in Turkey.

LRSP Objective 3:

- III. Promote U.S. sustainable soybean production through responsible stewardship while acknowledging global market needs.

Committee – Target Area:

A. IM – Industry Relations

Goal 1:

1. Maintain key relationships worldwide to ensure the entire soy complex is aware of the U.S.' sustainable soybean production methods.

Strategy 1:

a. Communication to Soybean Value Chain

Tactics:

- i. Continue its educational campaigns to emphasize the strides that have been made in the U.S. soybean industry in regards to sustainability, ultimately leading to an increase in U.S. imports.

Performance Measures:

- i. Through participation at key conferences and presentations to the entire soy value chain, IM will continue its campaign at establishing U.S. soy as a sustainable resource in the global soy industry.

Financial Allocation:

Contingent on Board approval at 2011 June Board Meeting

Program Staff Contact Information:

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Production Committee Industry Relations/Research Coordination

Market Environment

USB seeks to ensure that soybean checkoff funds and public research funds are utilized efficiently and that appropriate research targets are identified, developed, and funded. Efforts aim to coordinate development of priorities, strategies and activities by state and national checkoff organizations to optimize accomplishments from both soybean research sector resources. USB, regional checkoff organizations and QSSBs share information and engage in frequent discussions related to research. The Research Coordination strategy provides funds for numerous efforts, including publication of a searchable web-based checkoff-funded soybean research database allowing public and private sector funding agencies to avoid redundancy by determining what research is already being conducted using checkoff funds. In addition, the development of new research tools and new soybean cultivars is accelerated by enabling increased communication among public- and private-sector researchers. This communication results in collaborative research efforts, sharing technology advances and setting research priorities for improvement of U.S. soybeans. USB and AgSource also work with USDA/ARS and other public research funding agencies to determine areas of common interest.

Checkoff organizations, such as the USB, provide the opportunity for coordination of soybean research among the government, public universities and private industry. These activities require an “honest broker” that is not seen as having a profit motive or a possible conflict of interest. Participation by USB farmer-leaders and staff on teams, committees and task forces provides a “real world” perspective to help researchers understand the needs of soybean farmers. Without this coordination effort, funds may be spent on redundant projects, while other important research targets may be missed. Coordination is also a viable means of leveraging private and public support of research.

Strategic Approach

Research coordination involves more than funding meetings and developing databases. USB farmer-leaders and staff spend substantial time participating on planning committees, advisory groups and task forces to ensure that research efforts address issues that the checkoff has identified as being important to soybean farmers. For example, farmer-leaders and staff actively participate in strategic planning sessions for soybean composition, genomics, soybean diseases including rust and review ongoing USDA-ARS national programs. Workshops have also been organized to bring together key researchers to develop strategic plans for research efforts in areas including management of soybean aphid, nematodes, stink bugs and soybean seedling diseases.

The Production Committee has elected to defer making changes to the Action Plan to better address the new structure approved by USB in response to the organizational analysis currently being conducted. Following the results of that decision, the Action Plan will be modified to better address the current Strategic Plan within the new structure.

Ability to Impact

Coordination includes facilitating efforts of the research community to determine the best approaches to address research issues important to soybean growers. For example, a Soybean Genomics Strategic Plan was developed through a collaborative effort of the soybean research community. This plan has been revised biennially and has been an invaluable guide to researchers and funding agencies. As another example, rust remains a top priority, and its impact on the soybean crop is continually being evaluated. Lastly, in 2011, at the direction of the Production Committee, staff organized three workshops involving university and USDA researchers to discuss research needs and strategies for addressing management of soybean aphids, the impact of nematodes other than SCN on soybean production and the management of stink bugs in soybean. A separate workshop was organized that developed direction for future research to enhance soybean meal quality by reducing seed phytate and oligosaccharides. Research Coordination supports an annual survey of the impact of soybean diseases that serves as a key information source for focusing disease management research efforts in the public and private sectors by determining the relative importance of various diseases on soybean production.

LRSP Objectives 1-3:

- I. Annual utilization of 3.5 billion bushels of U.S. soybeans by 2011.
- III. Promote U.S. sustainable soybean production through responsible stewardship while acknowledging global needs.

Committee – Target Area

- A. Production – Industry Relations

Goal:

- 1. Ensure that checkoff and public research funds are utilized efficiently and that appropriate research targets are identified, funded and pursued.

Strategy 1:

- a. Research Coordination

Facilitate the coordination and development of priorities, strategies and activities by state and national checkoff organizations to optimize use of total soybean research resources.

Tactics:

*USB FY12 Action Plan
Research Coordination-Production*

- i. Coordinate research activities and priorities with QSSBs and regional checkoff organizations to maximize efficiency and minimize redundancy of soybean research efforts.
- ii. Meet with state checkoff boards individually to create an ongoing dialogue and sharing of priorities and activity plans.
- iii. Participate in international, national, state and regional conferences, research meetings and project reviews. Invite regional staff and leaders to attend selected Production Committee meetings.

Performance Measures:

- i. Develop and annually update a production research database that includes all national, regional and QSSB soybean checkoff-funded projects. This database, available to all interested parties, is used by USB and regional committees to increase research coordination and minimize unplanned funding redundancy.
- ii. Research priorities and plans are coordinated among NCSRP, SSRP MSSB, state checkoffs and USB to reduce redundancy and to increase coordination of research efforts.

Strategy 2:

b. Research Coordination

Accelerate development of new research tools and new soybean cultivars by facilitating increased communication among public and private sector researchers to coordinate research efforts, share technology advances, set strategies and priorities for the improvement of U.S. soybeans.

Tactics:

- i. Facilitate workshops and planning meetings for public and private researchers to identify and prioritize soybean research areas and to develop strategic and action plans to address needs.
- ii. Coordinate soybean research initiatives from university, government and private researchers across regions and disciplines.

Performance Measures:

- i. Checkoff-targeted research priorities are agreed upon, redundancy is reduced, and researchers benefit from the sharing of scientific information because of effective communication and collaboration among scientists in USB-funded programs.
- ii. Scientists working within given areas of research (e.g., pathology, genomics or plant breeding) meet to review results,

set priorities, establish, review and update strategic and action plans to advance science in their areas.

Strategy 3:

c. Research Coordination

Share updated USB research priorities with public agencies and ASA. Identify opportunities for USB and public agencies to coordinate research efforts to ensure efficient use of all available research funds.

Tactics:

- i. Directly and/or through subcontracts, USB will provide staff to develop good working relationships and to serve as technical liaisons with ASA.
- ii. USB staff and Board members will meet, as appropriate, with key personnel in public agencies and will invite key people to attend committee meetings and USB-sponsored research workshops and symposia

Performance Measures:

- i. Good working relationships are established with USB and key personnel in public agencies to explore areas of research to address issues of common interest.
- ii. ASA is provided with information on areas of research interest and advised on technical issues surrounding these areas.

Strategy 4:

d. Research Coordination

Attract, encourage and train future generations of soybean research scientists.

Tactics:

- i. Provide financial support (such as fellowships, scholarships and internships) to attract highly qualified students into studies in areas of research important to soybean farmers.

Performance Measures:

- i. Highly qualified students are identified, selected and funded to pursue and achieve degrees in areas of research important to soybean farmers.
- ii. Skilled and trained young scientists join the soybean research community.

Financial Allocations:

Production – Research Coordination: \$1,107,485

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Global Opportunities

Market Environment

The past year has seen continuing recovery in global economies but several sectors and individual countries continue to struggle. However, global agricultural has seen a return to historically high prices in many ag commodities driven by continued growth and demand in emerging country economies and tight commodity supplies. Several countries placed export quotas or bans on their local agricultural production claiming food security issues. Food security again became a globally hot topic as government transitions occurred in Tunisia and Egypt influenced in-part by the countries citizens concern on the escalating lack of affordability of basic food staples such as bread. This internal country turmoil is still occurring in several Middle East countries.

Along with the impact on basic food security, high agricultural prices are creating other reactions. One key change is the increasing investments made in the agriculture industry and in agricultural land. Large investment funds are increasing their stake in the ag industry as industry profits have increased and the large populations in the developing world economies are increasing their purchases of higher value foods. Increasing speculation in land purchases by foreign investors is causing several countries with undeveloped land resources such as Brazil, Ukraine, and several countries in Africa to examine their regulations on land ownership and limit or stop purchases by non-citizen individuals or companies. In addition to company investments, government agencies are participating in foreign land purchases. Countries such as China or oil rich/land poor Middle East counties are seeking to improve their food security by purchasing foreign agricultural land. Additionally, investment capital that has been in the U.S. housing market is seeking real estate investments in farm land competing against U.S. farmers for land ownership.

The increasing food consumption highlights the positive role of biotechnology in meeting the world's growing food requirements and also the need for ag production to ensure sustainable production methods. Continuing focus on biotech and sustainability issues is required as several countries such as Turkey implement unscientific and trade distorting legislation that impacts U.S. soy and ag exports. Europe remains the center of discussion for many of the biotech and sustainability issues as they consider implementing policies such as Renewable Energy Directive (RED) which would limit use of U.S. soybean oil in European biodiesel.

The discussion on sustainability agriculture continues to increase as multi-national companies consuming large volumes of soy seek varying levels of certification of sustainable soybean production. Many U.S. farming regulations promote and ensure sustainable agriculture production, however the multitude of sustainability certification schemes currently do not recognize or give credit to these regulated production methods.

The President's National Export Initiative to double U.S. exports provides opportunity for all ag exports and the Administration is placing increased focus on Free Trade Agreements (FTAs). FTAs with Colombia, Panama, and Korea were finally approved by U.S. government after years of internal U.S. debate. The FTAs still need final approval by three countries with full implementation expected in next few months. Immediate results of increased U.S. agricultural products including soy should occur as lower tariffs are implemented. The U.S. already has low tariffs on many agricultural products and the FTAs will increase the competitiveness of U.S. ag exports.

FTAs will continue to gain importance as the WTO Doha round of negotiations is completely stalled after 10 years, with several observers pronouncing the negotiations unworkable. Divisions remain between developed countries such as the U.S. and advanced developing countries such as Brazil – key areas of disagreement include agricultural and manufacturing industries. Although movement in WTO negotiations is limited, the WTO is still a key factor in global trade. China rapidly ascended in international trade after it entered the WTO in 2001 and Russia, another large global economy, is seeking membership in WTO. Russia's inclusion in WTO could happen next year after more than a decade of discussion and preparation.

Europe continues to aggressively seek FTAs with global trading partners and has completed 56 FTAs with negotiations ongoing with 63 additional countries. This compares to the U.S. 11 FTAs and negotiations ongoing with 11 additional countries.

Transportation provides a key component of market access with the U.S. enjoying some logistical advantages over other soy producing countries. However, these advantages can become disadvantages if the needs to improve U.S. infrastructure is not met. Continuing concerns linger on the ability of U.S. ports to accept larger ships that will be transiting the Panama Canal upon completion of its expansion; improvements are needed to a quickly aging river lock system; large and growing markets in Asia are requiring increasing rail and port capacity in the Pacific Northwest and west coast. Bunge and its business partners are completing a new port facility in the PNW but this will not fulfill all the needs of the export industry.

Containerized shipments of ag products are continuing to recover to pre 2008 economic downturn levels but have not returned to historic highs. Analysis and market support is ongoing to develop containerized shipment markets to Europe coordinating the needs of U.S. exporters, Europe importers, and the large container shipping lines.

Strategic Approach

Defining "Market Access" is in terms of global policy and regulatory issues (challenges), impediments for industry development/growth in the global market place, and issues relating to global competitiveness of soybean producers that impact broader than an individual committee including:

- International trade agreements, WTO, analysis and monitoring of multi- and bi-lateral trade agreements, and market access issues

*USB FY12 Action Plan
Global Opportunities*

- Global regulatory process and market impact
- Research and analysis of legislative activities (issues analysis)
- Monitor domestic issues of importance to the Board
- Communicate and conduct outreach efforts on all activities and outcomes of each project to all impacted stakeholders
- Evaluate the use and impact of project outcomes by stakeholder; integrate the planning process with the USB Long-Range Strategic Plan and Committee Action Plans.
- Integrate and communicate regarding market access issues across all USB committees

Ability to Impact

USB resources have an ability to impact this strategy. Checkoff funded global access and competitiveness strategic approaches are coordinated with organizations such as USDA-FAS, NOPA, NAEGA, FAEA, USGC, USMEF, USAPEEC, USDEC, ISGA, ASA, USW, USTR, STC and other organizations. Each of these organizations' contribution to the aggregate effort is critical to the ability to impact these strategic approaches due to their global scope and scale. The ability to impact these approaches is multiplied due to the financial and personnel resources provided by these and other partners.

The Committee's work has led to a new food safety law in Vietnam which maintains US soy access to this market. Throughout the process, USB GO has provided input and comments. GO continues to provide critical input as this law works its way through the regulatory writing and implementation phases. Work also continues on proposed animal health, plant health and feed directives in Vietnam in conjunction with USGC.

USB GO has shown the Differential Export Tax (DET) on soybeans in Argentina is a soybean meal, soybean oil and soy biodiesel subsidy which causes an annual negative impact to US industry of approximately \$550,000,000. Working with our partners at the National Oilseed Processors Association (NOPA), GO has built support not only in the USG but from the governments of Japan, Canada and the EU for the elimination of DETs. A two pronged approach is being taken – one to include a ban on DETs in the Doha round and a WTO legal challenge to the Argentine scheme.

The Doha Round appears to be on its deathbed though many diplomats are urging parties to salvage what they can most often citing agriculture. Even if agriculture is "salvaged," it is highly unlikely a ban on DETs will be included. GO will work with industry and partner organizations to examine the legal challenge route as well as other alternatives to eliminate this global trade distorting measure.

GO will continue to provide the monitoring and analysis that allows the Committee to be the early warning system to the various USB committees and initiatives.

LRSP Objective 1 and 2:

*USB FY12 Action Plan
Global Opportunities*

- I. Increase the value of U.S. soybean meal and soybean oil to the entire value chain

A. Market Access

Goal:

1. Assure, to the extent possible, maximum competitiveness in the global market for U.S. grown soybeans and soybean products.

Strategy 1:

- a. Undertake monitoring and market analyses looking at issues affecting U.S. Soybean producer global competitiveness.

Tactics:

- i. Monitor economic indicators, trade/industry practices and trade trends to ensure that the U.S. soybean industry will maintain its competitiveness in the global soybean/oilseed industry.
- ii. Monitor economic, agricultural, and technology developments in competing oilseed production nations.
- iii. Analyze and monitor global agricultural programs that will assist or hinder the competitiveness of the U.S. soybean industry.
- iv. Proactively address and build coalitions to address key U.S. soybean marketing, agricultural, distribution, and infrastructure/transportation issues.
- v. Direct agricultural analysis on behalf of USB and take oversight responsibility for sensitive analysis required by the Board.

Performance Measures:

- i. Categorization and prioritization of those issues influencing the U.S. soybean industry will be developed and will document what should or can be done to affect them to the U.S. soybean industry's benefit.
- ii. Global monitoring completed will be used by USB Directors and USB Committees to determine the best recourses to achieve the USB LRSP objectives.
- iii. Monitoring and analysis work will be used to build domestic and international industry relationships with GO, international IM staff and special USB initiatives.
- iv. Attend and participate industry outlook meetings in the U.S.
- v. Attend and participate global industry outlook meetings outside of the U.S.
- vi. Attend and participate in allied soy and other industry meetings.

Goal:

2. Utilize international Alliances to better position U.S. soybeans globally

Strategy 1:

*USB FY12 Action Plan
Global Opportunities*

- a. Expand on the Soybean Growers Alliance (ISGA) and International Oilseed Producers Dialogues (IOPD).

Tactics:

- i. Define and direct specific ISGA & IOPD oilseed agriculture initiatives.
- ii. Lead and coordinate a communication network with Uruguayan, Paraguayan, Argentinean and Brazilian soybean producer organizations.
- iii. Lead and coordinate a communication network with Palm Oil producer organization leadership in Indonesia and Malaysia.
- iv. Lead and coordinate a communication network with the International Oilseed Producer Dialogue, which has representatives from over 10 leading oilseed producing countries.
- v. Quickly and accurately address global public misinformation around oilseed production, in both a proactive and reactive manner-respond to public directly.
- vi. Conduct quarterly and annual strategy conferences where Oilseed coalition members assemble to plan strategies and tactics that are beneficial for oilseed production industry.

Performance Measures:

- i. Develop ongoing capabilities of ISGA partnership.
- ii. Participation of ISGA members in international market-access trips to targeted countries of interest.
- iii. Successful implementation ISGA meetings.

Goal:

- 3. Maintain and expand global soy trade through beneficial trade agreements

Strategy 1:

- a. Develop analysis on current and projected trade policy and domestic support positions that will assist in defending and identifying negotiating opportunities that will keep U.S. soybean producers competitive globally.

Tactics:

- i. Work with oilseed and other alliance industries in researching and monitoring the WTO negotiations modalities formulation and the development of other multi-lateral and bi-lateral discussions.
- ii. Monitor, investigate, and analyze trading agreements and negotiations to determine their impact on the U.S. soybean trade and our competitive position.
- iii. Provide information from the farmers' perspective to the U.S. soybean industry if a WTO challenge on soybean subsidies in domestic farm legislation is mounted.
- iv. Provide technical assistance to the U.S. Government, when requested, during negotiations or discussions relating to trade policy.

Performance Measures:

*USB FY12 Action Plan
Global Opportunities*

- i. ASA and USB will work collaboratively to provide support to and defense of programs assisting U.S. soybean producers in the trade discussions.
- ii. USB-provided analysis/input, requested by any government entity or oilseed alliance industry, will be accepted into their responses to challenges of domestic government support programs or other programs affecting the profitability of U.S. soybean farmers.
- iii. Intelligence collected and analysis completed on current and projected trade agreements and negotiations will result in trade negotiation modalities that include the major thrusts of the U.S. soy industry.
- iv. As a result of analysis and research conducted by USB and utilized by others, current overseas markets for U.S. soybean products will remain open and additional overseas market opportunities will be made available.
- v. Continued input on behalf of US soy on new Vietnamese laws affecting industry in coordination with other commodity associations and FAS-Hanoi.

Goal:

4. Global market protection for U.S. soybean products.

Strategy1:

- a. Support and defend the international trade avenues for U.S. soybean products.

Tactics:

- i. Work in conjunction with other agricultural interest groups in monitoring and attempting to rectify trade-disrupting actions of offending foreign entities and multilateral organizations.
- ii. Monitor developments around the world on trade and market rules that would affect the acceptability of biotech products in the food and feed industries.
- iii. Investigate and address actions by individual countries that could constrain access for U.S. soybeans in that market either as a result of technical or non-tariff barriers to trade.
- iv. Provide and develop information regarding effects of existing or proposed overseas impediments to trade and utilization to the U. S. government, when requested, during dispute resolution or discussions relating to trade barriers.

Performance Measures:

- i. USB provided analysis/input, requested by any government entity or oilseed alliance industry, will be accepted into their responses to trade barriers.
- ii. All soybean trade related barriers will be challenged, when it is determined to be of benefit to the U.S. soybean producer.
- iii. Reactive analysis and research conducted on imposed or contemplated trade barriers on U.S. soybean products will be dealt with expeditiously.

*USB FY12 Action Plan
Global Opportunities*

LRSP Objective 3:

I. Freedom to Operate: Ensure that our industry and its customers have the freedom and infrastructure to operate

A. Market Access

Goal:

1. Ensure “sustainability” commodity procurement programs do not harm U.S. soybean product trade.

Strategy 1:

a. Monitor and analyze industry information on global sustainable agriculture practices

Tactics:

- i. Monitor international forums on sustainability issues such as the Roundtable on Responsible Soy and provide representation to such global discussions on agriculture sustainability.
- ii. Work with partner organizations to provide global responses to various sustainability initiatives
- iii. Monitor work of Roundtable on Sustainable Palm Oil, Roundtable on Responsible Biofuels, Soya Plus, as well as other global efforts.

Performance Measures:

- i. Coordinated responses from ISGA members with USB GO leadership
- ii. IOPD statement on sustainability agreement.
- iii. Close work on a regular basis evident with various global stakeholders and alliances on behalf of US soy

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Market Access

Biotechnology Initiative

Market Environment

Plant biotechnology has played a key role in feeding and fueling a growing planet since the technology was commercialized in the mid 1990's. Corn yields are 33% higher than they were in 1996, and soybean yields have increased 16% during that same time period. This huge productivity gain has enabled countries such as the U.S., the largest user of biotech crops, to feed more people in an environmentally sustainable manner. New traits scheduled for commercialization in the next 5 years will provide additional agronomic tools for producers to further increase their soybean production levels.

For example, the current generation of biotech has enabled farmers to use fewer chemicals and adopt reduced tillage conservation techniques. And the next generation promises to help plants resist drought and better utilize other critical nutrients. In addition, biotechnology has helped facilitate the birth of a new rural economy in America that is powered by biofuels and other value-added agricultural endeavors that have been made possible by a thriving ag economy. Technology has allowed the development of human health traits such as Omega 3's which are scheduled for commercialization in the next 2-3 years. Human health traits will combine the 'reduced stress' traits currently developed for herbicide resistance along with new agronomic traits. The combination of new traits will increase the value of U.S. soybeans and position them

The year 2010 marked the 15th year of commercial production of biotech crops, during which time an accumulated 2.47 billion acres have been produced. According to the respected annual survey on biotech adoption round the world carried out by the International Service for the Acquisition of Agri-biotechnology, this represents an 87-fold increase, making biotech the fastest-adopted crop technology in the history of modern agriculture. The global area of approved biotech crops in 2010 was 365 million acres. According to USDA, nearly 93 percent of the U.S. soybean acreage is now planted with biotech varieties and that soybean yields have increased 12 percent since 1995.

Since 1996, adoption of biotechnology has led to an increase in farm incomes by \$64.7 billion, according to an April 2011 report published by UK agricultural economists Graham Brookes and Peter Barfoot of PG Economics Ltd. The largest gains in farm income have been in the soybean sector, largely from cost savings. For example, the \$2 billion additional income generated by herbicide-tolerant biotech soybeans in 2009 was equivalent to adding 2.7 percent to the value of the crop in the biotech-growing countries or adding the equivalent of 2.3 percent to the value of the global soybean crop in 2009.

Results from USB's environmental scan project shows that overall media reporting continues to be more balanced and in a number of cases, particularly in the EU, increasingly more positive. This is in part due to the number of authoritative reports that emphasize the benefits of ag biotech. Of considerable interest was a report published in December 2010 by the European Commission in which its Research, Innovation & Science Directorate General showed that ag biotech crops were as safe as their conventional counterparts.

The Commission's report summarized the results of 50 research projects addressing primarily the safety of biotechnology for the environment and for animal and human health. Launched

between 2001 and 2010, these projects received funding of \$350 million from the EU and form part of a 25-year long research effort on biotechnology.

In a positive step, several EU retailers continue to explore ways to reframe the biotech debate by leveraging the sustainability benefits of biotech crops. In the past six months USB directors, staff and consultants have met several of the large EU food retailers and processors to seek ways forward. Many EU retailers are concerned about imports of soy from South America. They are worried that activists and consumers don't like the idea of soy being produced on land reclaimed from rainforest areas. As such these retailers look to the Roundtable on Responsible Soy (RTRS) to provide some form of "cover" that the soy was produced responsibly. That said some retailers are also concerned that the RTRS does not include US soy and that some of the large South American producers have withdrawn. These retailers have reached out to US soybean growers to seek information about the sustainability of US soy as a counter to RTRS claims.

Elsewhere in the EU, the first ever positive vote on a biotech issue by the EU's expert standing committee on biotech resulted in a qualified majority of votes in favor of replacing the zero tolerance on non-EU approved biotech crops with a threshold of 0.1%. While this is not necessarily a realistic threshold it nevertheless breaks the zero tolerance that had previously resulted in lost markets in 2009 because of traces of EU-unapproved corn in soybean shipments. The threshold does not apply to food and EU food interests are pressing the European Commission to bring forward a proposal for food on the same lines as that for food.

Activist groups continue to campaign against biotech soy in the EU. A particular campaign focuses on demands for labeling for meat, milk and egg products derived from animal and poultry fed biotech ingredients. This campaign has had some success but the difficulty for feed processors being able to obtain sufficient non-biotech soy at cost effective premium which has brought a welcome dose of reality into non-biotech soy demands. Finally, a proposal by the European Commission to allow Member States to take the final decision for cultivation of biotech crops in their regions created considerable controversy with almost all sides opposed. At the same time the Commission launched an 18-month evaluation of the EU's biotech legislation with the aim of bringing forward a proposal in 2012 for an overhaul of Regulations 1829 and 1830 (Novel Food & Feed and Traceability & Labeling), Directive 2001/18 (deliberate release into the environment) and the EFSA authorization process (which would also impact applications for import and processing).

Outside of the EU, one of its applicant countries – Turkey – enacted stringent biotech legislation in September 2010 which effectively banned any biotech products that had not been approved by a biosafety committee which had not been set up when the law was implemented. Significant efforts by USDA FAS, USSEC and USB helped secure import and processing approvals in January 2011 for feed use for the three main biotech soybean events that have been commercialized. However concern remains high about implementation of Turkey's legislation and continued effort is needed to help develop greater clarity and consistency. Of concern is the situation regarding the use of oil derived from soybeans processed for animal feed. There is confusion as to whether or not the oil has been approved for food use given that the soybeans were imported for feed use and not food. NGOs are expected to challenge the simplified procedure that allowed the soybeans to be cleared by Turkey's Biosafety Committee. The Turkish authorities continue to press the technology providers to submit full dossiers. The companies continue to refuse to do so citing the lack of clarity, assurances of confidentiality and liability issues as the main concerns for their unwillingness to submit the dossiers.

Increased potential for biotech adoption and acceptance continues to be the case in South East Asia where the most promising policy shifts have been seen in Indonesia. After nearly a decade of stagnation on biotech developments, a new Agriculture Minister in 2010 galvanized the biotech community and stimulated several actions, notable promoting biotechnology as an important part in the aim to increase food security, improve export competitiveness, and raise farmer incomes and the setting up of the Biosafety Committee for Transgenic Products. This was a positive step for biotech in Indonesia and the committee is expected to drive implementation of regulations. For example, in early May 2011, the committee approved the Roundup Ready and Roundup Ready 2 Yield soybean events which had been under consideration for a long time

Additional work needs to be carried out by Indonesia's Biosafety Committee and the government to ensure clear and workable implementing regulations. FAS Jakarta and FAS Washington DC have concerns about the lack of clear implementing measures and the comparative inexperience and appreciation among regulators regarding the fast-moving adoption of biotech across the world. FAS Seoul (Korea) for example believed that much could still be done to bring the message to Korean regulators that biotech adoption is happening rapidly and that there is a need to streamline and harmonize their legislation to cope with the increasing number of biotech events being commercialized worldwide. For example, the European Commission's Joint Research Centre estimates there could be 125 new biotech events commercialized by 2015. Currently there are fewer than 40.

Given the number of soya biotech traits in the pipeline and the increasing number of biotech corn events commercialized in the U.S. that have not been approved in some overseas markets such as the EU, it is critical that work continues to leverage and support the efforts by EU stakeholders to educate regulators and influencers to improve assessment processes and ensure timeliness on technical, scientific and even political authorizations

Domestically, consumer perception of biotechnology is stable. However, with more of the population moving away from rural settings, a direct connection to food production by consumers is continuing to diminish. As a result, confusion exists about biotechnology and the role it plays in feeding the world—now and in the future. Today's students have less knowledge of agriculture, including biotechnology, than ever before. Yet, these students must also be the researchers and influencers of biotechnology in the future. This creates the need to educate middle and high school students about the science behind biotechnology and the impacts it has on world food supply and alternative fuels. With biotechnology becoming more prevalent in today's world, educating students on biotechnology will ensure advancements of biotechnology in the future. These students are an adaptable, educated cohort, and just as they did with other technologies such as computers and personal communication devices, they will learn to adopt and continue researching and furthering biotechnology in the classroom and beyond.

Additionally, it is important that biotech advances be understood and accepted by consumers here and abroad. Accurate information coming from educated but unbiased journalists will have a significant impact on the public's view of biotechnology. Providing journalism students with knowledge about the science, business and political issues surrounding biotechnology will lead to more balanced reporting and greater consumer acceptance.

Strategic Approach

Within the Biotechnology Initiative, there are three major strategic focus areas: 1) assess the level of biotech acceptance from a global perspective, which focuses on numerous overseas markets and involves continual monitoring of issues, trends and shifts in attitudes, and also allows for a global view of the biotech arena, which will help USB position itself as the leader in biotech adoption and acceptance efforts by knowing where to focus activities; 2) create unique educational platforms to drive acceptance of biotechnology and demonstrate the benefits of biotechnology among various target audiences; and 3) focus on outreach efforts to domestic and international audiences to drive confidence in agricultural biotechnology.

Ability to Impact

There are approximately 12 key biotechnology soybean traits that could be commercialized within the next five to seven years, including drought resistance, improved nitrogen efficiency, mid- and high-oleic oil, high-stearic oil, Omega-3 oil, and others. Therefore, it is crucial that adoption and acceptance of ag biotechnology does not become a limiting factor in order to differentiate these products from commodity soybeans.

The slowness of the EU's authorization process continues to be a concern. The EU is the second largest market for U.S. soybeans with a value in excess of \$1 billion a year. While the positive vote by EU member states in February 2011 for a low level presence (LLP) of EU-unapproved biotech events found in shipments was welcome, concern remains that the measure covered feed only and not food and feed. This will be a major issue for US exporters of soy protein supplies destined for the EU food market given the increasing number of corn events not approved in the EU being commercialized in the US. Pressure needs to be maintained by the EU food industry and US soy interests on the European Commission to bring forward a proposal to cover an LLP for food to avoid lost markets should EU-unapproved events be found in 'soy food' shipments.

Acceptance of ag biotech products in the European Union (EU) consists of two different aspects. The European officials and politicians (both at European Commission/Parliament level in Brussels and in the individual 27 member states) are looking for solutions for the European feed and livestock sectors to somehow 'fix' the delays in the EU's biotech approvals system as well as find a solution to the zero tolerance for unapproved-in-EU biotech events. These issues gained the attention of officials when it seemed likely that the Roundup Ready #2 soybean trait would be commercialized before EU approval. Pressures from the European feed and processing sectors along with continued outreach from the U.S. soybean producer resulted in EU approval of Roundup Ready #2 and Liberty Link soybeans in time before U.S. commercialization. Those EU industry approvals were one of the direct results of the campaign of U.S. soybean farmer-leader trips and dissemination of USSEC ag biotech informational documents across 25 of the EU's 27 countries during FY08. However, with new traits continuing to be developed and commercialized and a regulatory system that is too subject to politization, it is critical to maintain educational momentum to ensure timely authorizations of new traits after the scientific review by European Food and Safety Authority (EFSA). Given that from mid 2009 there is a new European Parliament which has increased powers of scrutiny of ag issues including biotech. There has been a substantial (nearly 40%) turnover of Members of the European Parliament (MEPs) and the 'new' MEPs have little track record or knowledge of biotech issues as evidenced in recent meetings. Further there is a new European Commission which began its five-year mandate in February. While the new Commissioner with responsibility for biotech took a science based decision to approve the first cultivation in 12 years of a biotech

event (a potato) in March his decision caused considerable controversy and refocused attention on cultivation issues. While such issues are not of primary importance for U.S. growers, as noted above, there is the potential for the issue to ‘spill over’ to importing and processing issues of biotech crops. The EU feed and food chain have asked for U.S. soybean support in outreach and educational efforts with MEPs and new Commission staff given the years of experience U.S. soybean growers have with EU issues.

Of interest is that the recent controversy over low level presence and the potato authorization have not appeared to impact consumers as might have been the case previously. The European Commission’s own EU-wide survey of 27,000 of its citizens reveals that a large fraction of EU citizens feel they simply don’t know enough about ag biotech to make an informed decision. Thus, their perceived reluctance on “GMOs” could be changed if they were provided with facts showing that biotech crops could positively impact important issues they care about, such as reducing climate change and preventing ruinously high food prices. Indirect proof of that concept is provided by the fact that Australian government citizen surveys revealed that providing them with information regarding the ability of biotech crops to help alleviate some of Australia’s and the world’s perceived most-pressing problems resulted in the Australian public switching to a more pro-ag biotech position. Pressure from NGOs on politicians and misleading communications to the public over the past decade has resulted in significant delays in approval of new biotech events. A key to future success is information to address new biotech traits, and the resulting benefit of helping to feed the world while maintaining economic viability in local markets. Information such as this potentially allows for the political systems to modify its regulatory process in a balanced manner to address social concerns with new technology.

A website, GetBiotechSmart.com, was established as a communication tool helping teachers bring biotechnology into their classrooms this year and in future years, targets education, outreach, and engagement of high school and middle school science teachers. The website goal is to engage teachers such that the majority of the educational information is developed by teachers and shared with other teachers – ‘*teachers talking to teachers.*’ As part of this strategy, the annual Excellence in Biotechnology grant provides teachers an opportunity to purchase necessary tools to teach biotechnology in their classrooms. Through the grant, grant winners share their biotechnology lessons through the NSTA National Conference, demonstrations at state or regional conferences/workshops, and with other teachers at the GetBiotechSmart.com Teachers Workshop. During the GBS.com Teachers Workshop, teachers network with other teachers about biotechnology and share how they are bringing biotechnology into the classroom—spreading the biotechnology to other teachers and their students. Success of the website is reflected by the number of teachers engaged in the website (goal 1,300 teachers) and the number of students reached (estimated goal of 97,500 at 75 students per teacher).

USB’s Biotech University program is an example of providing facts about biotechnology to positively impact the discussion. Journalism students tend to have a lack of knowledge about science, yet their coverage will be shaping the public’s perception of biotechnology in the coming decades. Biotech University is seminar designed to educate journalism students about biotechnology. The students hear expert speakers, view lab demonstrations, and tour a working farm. After the seminar, the students compete in a reporting contest for a chance to win scholarships or attend a biotechnology conference overseas and blog about their experiences. Despite plenty of competition for the student’s attention, the event has been a success. Student evaluations of Biotech University have been positive and the overall quality of the reporting

contest submissions has been solid. Budding journalists with little to no understanding of biotechnology have come away with a base of knowledge on the subject that will impact their reporting on it as these students fan out across the globe as reporters and editors of tomorrow.

Globally, biotechnology adoption and acceptance is promising, but it is incumbent upon the supply chain to ensure that regulatory approvals are in place. In order to meet food production goals for the projected global population of nearly 8 billion by 2020, biotechnology is required.

Tactics/Performance Measure

- I. Annual utilization of 3.5 billion bushels of U.S. soybeans by 2011.
- II. Approval in the importing countries that comprise 90% of U.S. soy products for each biotech event by the time of its commercialization.

A. Market Access – Biotechnology Initiative

1. Assess current global biotechnology market through an environmental scan to identify potential areas of opportunity for promotion of biotechnology benefits, and determine ways to approach shifting attitudes toward biotech in targeted countries to garner acceptance of biotech traits globally.

a. Biotechnology Initiative

Tactics:

- i. Perform updates to a global environmental scan in 14 key soybean markets to determine ongoing understanding of issues and opportunities in biotech acceptance
- ii. Identify and confirm key influencers in each targeted region
- iii. Develop reporting system using tailored matrix for at-a-glance tracking and overview of current issues status
- iv. Monitor surveys of key opinion formers to gauge shifts in market behavior regarding biotechnology acceptance
- v. Monitor relevant industry organizations, governments, news wire services and trade and business media
- vi. Provide recommendations regarding potential actions to promote biotech acceptance in key markets

Performance Measures:

- i. Identify the top 10 key markets to monitor biotech attitudes/views to gauge where USB can further complement ongoing market efforts to drive biotech acceptance.
- ii. Identify and implement 2 strategies to address the ongoing efforts and also emerging efforts that will positively position the biotech conversation
- iii. Distribute the environmental scan and solicit feedback from key influencers and collaborators. Identify specific examples where the scan has been an effective tool with key influencers in monitoring attitudes or providing an early platform to develop key tactics.

- iv. Identify key speaking opportunities where USB farmer leaders can positively position the benefits of biotechnology and encourage the implementation of favorable biosafety regulations.
2. Establish unique informational and educational platforms to drive acceptance and promote benefits of biotechnology on a global scale, and to position USB as the leader in global soy biotech acceptance efforts.
- a. Biotechnology Initiative

Tactics:

- i. Develop additional or supporting communications materials in support of biotech education that demonstrate the benefits of biotechnology, especially the use of biotech to provide sustainable and healthy food and feed to a growing world population
- ii. Conduct an educational program for journalism students to increase awareness of the benefits of biotechnology, and nurture future advocates for ag biotech within print and broadcast media
- iii. Establish an middle and high school science teacher curriculum which promote biotechnology as a key tool for global agriculture to support the added food requirements for a growing population
- iv. Leverage biotech education curriculums in the development of educational tools as part of the new World Food Prize Hall of Laureates
 - a. Develop maintenance approach of educational tool once communications platform is established
- v. Conduct a training program aimed at key regulators to foster a new era of knowledge on ag biotech risks and regulatory assessments

Performance Measures:

- i. Brochure(s) created, translated, printed and distributed to key audiences in targeted overseas markets. Update on a 'as needed basis'.
- ii. Collateral materials disseminated to key audiences during farmer-leader missions and speaking opportunities. Update on a 'as needed basis'.
- iii. Effectively incorporate suggested improvements and conduct a 2010 Biotech Univ. of Missouri course which targets current journalism students.
 - Enlist future biotech advocates identified within university journalism programs to develop a draft program at another university journalism program.
 - Introduce the student workshop platform to another leading ag journalism school and provide recommendations on establishing a self sustaining workshop program.
- iv. Successfully introduce Phase III of the middle and high school science teachers biotech curriculum, which includes creation of additional teacher resources, expanding grant program, and continued promotion of the initiative with the goal of reaching 112,500 students through 1,500 teachers. A key focus for this phase is teachers taking a more active role in developing 15 lesson plans and posting them on the website. Explore participation in regional science teachers meetings to complement the national meeting.

- v. Develop a soy biotech educational kiosk as part of the overall World Food Prize education platform to represent biotech as a key tool for agriculture in the future. To ensure a continued and current biotech message into the future, develop a monitoring/update process for the kiosk.
 - vi. Biotech regulations 101 program developed and implemented with target audiences, such as scientists, regulators, and government influencers, research institutes, and private companies. Explore a regional concept targeted at supporting the Turkey feed industry as they reach out to moderate the implication process for upcoming biotech events seeking regulatory approval.
3. Utilize USB farmer-leader outreach opportunities to drive confidence in agricultural biotechnology with key overseas markets.
- a. Biotechnology Initiative

Tactics:

- i. Identify biotech-related research studies and provide to select audiences in a cost-effective format
- ii. Establish credible and sustainable 'farmer voice' among overseas markets regarding the use of biotechnology relative to sustainability and operational efficiencies
- iii. Develop program of meetings and/or events with media; seek to implement roundtable meetings where possible
- iv. Host team of European producers on a tour of select U.S. agricultural sites
- v. Facilitate panel discussion on biotechnology for targeted future agricultural leaders in countries that remain resistant to biotechnology
- vi. In collaboration with South American growers, establish a 'one voice' conversation through a joint organization (i.e. ISGA) to support the global outreach message of biotech advantages to meeting a growing global food and feed need.
- vii. Update and promote biotech subpage of the USB web site as centralized information source for both domestic and international audiences

Performance Measures:

- i. Secure opportunities for USB director-led mission in identified countries or regions to support benefits of biotechnology
- ii. Deliver series of meetings and briefings with key audiences
- iii. Maintain ongoing dissemination of material and information to key contacts
- iv. Educate key European agricultural producers on the benefits of biotechnology to rural economic development and the environment
- v. Develop a cadre of European spokespersons to advocate for biotechnology in their homeland. Gather information and messages from European producers that will enable the U.S. soybean industry to more effectively communicate and cooperate with the European markets
- vi. Gain agreement on a 'joint statement' on the production benefit for biotech traits which meet market needs and establish an initial tactical plan on areas of collaboration.
- vii. Biotech subpage promoted to domestic and international audiences as central hub of information on biotechnology issues

Financial Allocation:

Biotechnology Initiative: \$1,500,000

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Market Access

Sustainability Initiative

Market Environment

According to the World Bank, global population today is 6.8 billion. By the year 2025, there could be as many as 8 billion people to feed and clothe. Much of the population by this time will have standards of living that have significantly improved from current conditions, requiring more and different kinds of food. Production agriculture will need to produce as much food in the next 40-80 years as it has in the past 12,000 years in order to meet increasing demand.

At the same time, production agriculture will face additional pressures due to public and policy expectations that it remain economically viable, improve environmental performance and further enhance the well-being of communities and stakeholders.

In 2010-2011, government regulations and industry-led certification schemes have congealed the nebulous, conceptual discussion about sustainability into real impacts on the market. Overseas markets have mandated individual farm audits on the use of natural resources, contributions to quality of life, rural character, biodiversity and greenhouse gas reductions. Best management practices are being dictated up the value chain to producers.

In the near-term, the issues associated with sustainable agriculture will affect the profitability of the U.S. soybean industry in four ways:

The expansion or contraction of markets: Sustainability criteria are being and will be used to enhance or erode market access for U.S. soybeans. In Europe, the Renewable Energy Directive threatens to reduce imports of U.S. soy. Europe's grocers and even its feed industry have committed to sourcing soy that complies with voluntary certification schemes. U.S. domestic customers, especially those that are multi-nationals, are considering whether to mandate their soy suppliers comply with standards such as the Roundtable on Responsible Soy (RTRS), International Sustainability & Carbon Certification (ISCC), or GlobalGAP, among others.

Competitiveness: Certification schemes supported by soy customers create an equivalency between U.S. and South American sustainability performance; empirical data do not support such an equivalency. Production dynamics and infrastructure give Brazil an advantage in capturing economic value from certified sustainable soy, at the expense of U.S. producers. Extremely large quantities of certified soy are securing \$1+ premiums in South America.

Input costs: NGOs and government agencies are accelerating efforts to internalize "external" production costs, such as environmental impacts, social impacts, and health considerations. Regulations on GHG emissions and water quality, and monitoring of biodiversity and land use, are just a few approaches currently being explored to internalize external production costs. If successful, these efforts are likely to increase farm input costs for mineral nutrients, seeds, fuel and other materials. For example, an Informa Economics study funded by USB showed that soybean production costs could increase approximately \$11/acre as a direct result of cap-and-trade carbon legislation.

Ecosystem services and markets: Debate about how to incentivize production agriculture to improve sustainability performance has led to the development of new sources of revenue for growers. USDA's Office of Ecosystem Services and Markets will work with the Natural Resources Conservation Service office to expand current subsidies that reward growers for sustainability performance (for example, the revamped CSP program). By assigning a dollar value to elements such as fresh water, biodiversity, biomass, carbon, etc., sustainable agriculture is creating incremental revenue opportunities for growers. Nevertheless, these opportunities need to be carefully developed in order to ensure agriculture remains primarily focused on providing food, feed, fiber and fuel, and to a lesser extent on providing ecosystem services.

Strategic Approach

The Sustainability Initiative's strategic approach is focused on delivering the maximum value to U.S. soybean grower profitability. It is best articulated in the internal USB sustainability goal: *define and implement sustainable initiatives for the benefit of the U.S. soy industry while maintaining the social license to be the global supplier of choice.*

USB pursues three program goals to ensure that all undertakings contribute to the strategic approach. These program goals are:

1. Establish the USB soybean sustainability position as an accepted global definition, complementary to efforts of agriculture industry allies.
2. Engage the value chain to promote sustainable practices that reflect a unique shared platform.
3. Establish science-based mechanisms for assessing baselines and progress that enable continual improvements in sustainability measures by the U.S. soy value chain.

Achieving these long-term goals will deliver the maximum value to U.S. soybean grower profitability. The sustainability performance of U.S. soy is superior to any other production region, and USB will emphasize this fact in a way that argues a case for value-added, premium quality U.S. soy.

Ability to Impact

The U.S. soybean industry is leading the discussion and consideration of sustainability among most of production agriculture. USB has defined sustainability as it applies to soybean production, and set three main program goals that direct its work in this area. USB is supporting science-based efforts to measure the sustainability performance of U.S. soybeans, and state soybean boards have accumulated significant amounts of data that inform and validate these measurements. USB has completed an updated Life Cycle Impact Assessment for soybean production, and is already integrating this information into other life cycle efforts by the dairy, pork and beef industries. Other commodity row crops (e.g., cotton, rice) are following this approach. In short, the U.S. soybean industry has taken a leadership position on this issue and has earned significant credibility, both in the U.S. and abroad.

Beyond the special credibility of U.S. soybean growers, production agriculture in general has a legitimate ability to impact the issue favorably for producer profitability. More than 80 percent of consumers trust farmers regarding sustainable practices. Sustainable

agriculture standards currently in development are consistently seeking producer input, and those that eschew it are being marginalized even by the most liberal NGOs.

Finally, the sustainability performance of U.S. soybeans is very good. While planted acres of soybeans have increased between 1987 and 2008, energy use per acre has decreased 54 percent; soil loss per acre has decreased 37 percent; and GHG emissions per acre have decreased 24 percent. The credibility of the U.S. soybean industry and its ability to impact this issue is reinforced not only by USB's commitment, but by the on-the-farm performance of the industry.

LRSP Objective 1:

I. Annual utilization of 3.5 billion bushels of U.S. soybeans by 2011.

Goal:

1. Engage the value chain to promote sustainable practices that reflect a unique shared platform.

Strategy 1:

- a. Champion the U.S. soybean position with existing initiatives/standards

Tactics:

- i. Participate in Keystone Field to Market (FtM), and promote FtM to all related efforts
- ii. Monitor the development and/or adoption of key standards, including Roundtable on Responsible Soy, ISCC, GlobalGAP, Roundtable on Sustainable Biofuels, and others
- iii. Monitor development of the ANSI/Leonardo Academy sustainable agriculture standard
- iv. Monitor the rollout and implementation of the Soja Plus program in Brazil
- v. Monitor development of other sustainable agriculture standards and evaluate for the necessary level of involvement/participation
- vi. Research and evaluate the sustainable agriculture initiatives in place or under development by domestic and international governments, and prepare briefing materials that demonstrate how U.S. soybeans meet or exceed sustainability performance requirements

Performance Measures:

- i. Keystone Field to Market is referenced and modeled in the development of other sustainable agriculture standards
- ii. Field to Market metrics and methodologies become widely adopted as default measurements for soy sustainability performance
- iii. All relevant standards receive input from the U.S. soybean industry as necessary and are developed in a way that is favorable to U.S. soy production
- iv. U.S. soy is benchmarked (non-disclosure) against key standards
- v. European Commission consideration of alternative data and methodologies for determining the GHG emission reduction of soy-based biodiesel in its renewable fuels directive

*USB FY12 Action Plan
Market Access – Sustainability Initiative*

- vi. All major standards support technology neutrality

Strategy 2:

- b. Provide the food chain with data that can help guide how companies are measuring the sustainability of supply chains, and demonstrate how U.S. soy is a superior product when measured

Tactics:

- i. Coordinate with QSSBs to leverage data that can support U.S. soybeans as a preferred product
- ii. Build new datasets that demonstrate the high sustainability performance of U.S. soybeans
- iii. Contribute to the development of sustainability metrics with key food chain groups, such as Wal-Mart, Tyson, Grocery Manufacturers Association (GMA) and others
- iv. Integrate soybean LCA data into other extant LCA projects
- v. Collaborate with food industry stakeholders to gather performance data

Performance Measures:

- i. Make one presentation about U.S. soybean sustainability performance at an event sponsored or organized by Wal-Mart, GMA or Food Marketing Institute (FMI)
- ii. Begin collaborative work with at least six QSSBs on sustainability research projects
- iii. Begin collaborative work with at least two food industry stakeholders on sustainability research projects

Goal:

- 2. Establish the USB soybean sustainability position as an accepted global definition, complementary to efforts of agriculture industry allies.

Strategy 1:

- a. Ally with highly respected third parties to build credibility around the performance of U.S. soybeans for specific applications

Tactics:

- i. Cooperate with USDA NRCS and other government organizations on sustainability projects
- ii. Consciously drive sustainability reporting projects through credible academic institutions
- iii. Leverage checkoff dollars into larger sources of funding (grants, co-funding) for landscape-scale sustainability projects
- iv. As widely as possible, share the USB LCA data

Performance Measures:

- i. House the USB LCA data in the soon-to-be-developed National Agricultural Library
- ii. Begin two cooperative projects with USDA NRCS, leveraging NRCS tools and/or funding
- iii. Achieve \$1MM in leveraged funds

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Market Access – Sustainability Initiative*

Strategy 2:

- b. Differentiate the sustainability performance of U.S. soy as a value-add element of the product

Tactics:

- i. Communicate the business benefits of using a data-driven, performance-based approach to sustainable agriculture
- ii. Build performance metrics for non-U.S. soy production, for comparison purposes
- iii. Explore additional revenue opportunities for producers created by positive sustainability performance
- iv. If applicable, publish benchmarking results between a certification standard and a scenario of practices in a particular region

Performance Measures:

- i. Initiate a Field to Market or similar initiative in Brazil
- ii. Quantify the potential revenue opportunities for producers participating in ecosystem service trading schemes

LRSP Objective 2:

II. Approval in the importing countries that comprise 90% of U.S. soy products for each biotech event by the time of its commercialization.

Goal:

- 1. Engage the value chain to promote sustainable practices that reflect a unique shared platform.

Strategy 1:

- a. Collaborate with the value chain on sustainability performance data quantification that shows real benefits of U.S. soy that alleviate or supersede concerns about biotechnology

Tactics:

- i. Coordinate with the Biotechnology Initiative on outreach to European food processors and grocers
- ii. Emphasize the contributions of biotechnology to enhancing overall farm sustainability performance, from both an agronomic and social/nutrition perspective
- iii. Emphasize nutritional composition in sustainability metrics

Performance Measures:

- i. Complete a legitimate study outlining the performance contributions of GM crops
- ii. Conduct one joint mission to Europe with the Biotechnology Initiative

LRSP Objective 3:

III. Promote U.S. sustainable soybean production through responsible stewardship while acknowledging global market needs.

Goal:

1. Establish science-based mechanisms for assessing baselines and progress that enable continual improvements in sustainability measures by the U.S. soy value chain.

Strategy 1:

- a. Utilize and develop science-based metrics

Tactics:

- i. Provide alternative data and methodologies for determining the GHG emission reduction of soy-based biodiesel compared to petroleum fuels
- ii. Provide an alternative methodology for calculating indirect land use related to soy in biofuels
- iii. Identify data gathering gaps, where necessary datasets are not readily available or accessible
- iv. Support Keystone Field to Market efforts to develop indicators for water quality, biodiversity, and socio-economic factors
- v. Identify undeveloped indicators that would be highly favorable to soybeans, and begin developing those indicators

Performance Measures:

- i. Generate, and submit for peer review, data and methodology on the impact of indirect land use in soy-based biodiesel
- ii. Identify and begin work on two data gaps regarding soybean sustainability performance
- iii. Establish credible, accurate and realistic metrics for gauging the impact of soybean cultivation and harvesting on water quality
- iv. Among NGOs, achieve broad acceptance of U.S. soybeans' sustainable performance when measured against common metrics

Strategy 2:

- b. Enhance farm efficiency and soy sustainability performance

Tactics:

- i. Explore data collection opportunities, perhaps cooperating with existing QSSB work, that will be a cornerstone of best practice resources
- ii. Support the development of realistic economic components in the Keystone Field to Market Fieldprint Calculator as a resource for scenario planning
- iii. Evaluate the economic impacts of improving sustainability performance on farms in varied geographies
- iv. Integrate sustainability performance metrics into farm management software platforms

Performance Measures:

- i. One completed study that examines a set of production practices and their resultant and varied regional impacts on a selected

*USB FY12 Action Plan
Market Access – Sustainability Initiative*

- sustainability indicator (e.g., timing of crop protection applications and resultant impact on water quality)
- ii. Methods for collecting and housing state- or county-level data have been identified
- iii. Advance the ZedX yield/performance model into the second pilot phase
- iv. Develop an economic sustainability resource that 85% of USB Board members agree is useful
- v. Begin collaboration with farm management software provider (Finpack, FarmWorks) on integrating sustainability metrics into programs

Strategy 3:

- c. Articulate the social sustainability benefits of soybeans with enhanced nutritional traits

Tactics:

- i. Collaborate with the Domestic Marketing Committee on efforts to promote soybeans with enhanced nutritional traits – for both food and feed applications
- ii. Understand any sustainability trade-offs with enhanced nutritional trait soybeans, as a first step to measuring an environmental impact/nutritional content ratio

Performance Measures:

- i. One completed study showing how the environmental impact/nutritional content ratio of soybean agriculture can meet market needs for quality product combined with high sustainability performance

Goal:

- 2. Establish the USB soybean sustainability position as an accepted global definition, complementary to efforts of agriculture industry allies.

Strategy 1:

- a. Promote the data-driven, performance-based approach to sustainability as the superior business solution

Tactics:

- i. Promote indicators that reflect the productivity of U.S. soybean agriculture
- ii. Market the soybean life cycle analysis and encourage its use in related projects, to create consistency around the sustainability performance of U.S. soybeans
- iii. Demonstrate the agronomic challenges associated with the varying impacts of similar best management practices under different climatic and soil conditions in the U.S., possibly through a farm visits program
- iv. Develop a publication that highlights the yield improvements of soybeans over the past two decades

Performance Measures:

- i. Incorporation of a total-farm-yield metric in selected sustainability standards
- ii. Maintain and support domestic soy customers' intent to not align with sustainability certification schemes for soy

Strategy 2:

- b. Promote soy as resourceful and responsible agriculture

Tactics:

- i. Utilize social media tactics to emphasize the benefits of today's soybean agriculture
- ii. Build data that proves the valuable sustainability benefits of soybeans in a larger crop rotation
- iii. Publish and promote results of funded studies that verify the high sustainability performance of U.S. soy
- iv. Create a library of farmer sustainability stories (text, video, audio, etc.)

Performance Measures:

- i. Increase in use of new media to communicate messages about sustainability performance
- ii. Complete one study that quantifies the sustainability benefits of soybeans with a crop rotation
- iii. 50% reduction in social media mentions of soybeans in food vs fuel posts

Strategy 3:

- c. Collaborate with other USB committees to ensure consistency in sustainability messaging across checkoff activities

Tactics:

- i. Where appropriate, work with Communications Committee to utilize traditional media vehicles to promulgate the USB sustainability definition and goals
- ii. Incorporate sustainability elements into the annual Consumer Attitudes Study conducted by the Domestic Marketing Committee

Performance Measures:

- i. Establishment of a baseline for consumer awareness of U.S. soybean industry sustainability; the baseline will be used to assess improvements in future years

Financial Allocations:

Sustainability Initiative: \$1,500,000

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Market Access

International Marketing Committee

Market Environment

The market is seeing various impediments in the global marketplace that once provided the U.S. a competitive advantage and is now being challenged. These advantages included a superior infrastructure system, a vibrant livestock industry, preferential access to technology, and a sustainable quality product (consistent protein/oil levels and foreign matter) in our soy products. The U.S. soybean producers' competitors are also capitalizing on U.S. marketing innovations, and production and transportation technologies, which are resulting in the rapid development of their soybean industry and a much more customer-oriented marketing approach.

Foreign countries are implementing a multitude of trade barriers for their domestic industry protection, economic and agricultural security, as well as for geopolitical reasons. These same countries are incorporating U.S. agricultural technology, production and agronomic practices that are challenging the competitive and comparative advantages of the U.S. soybean producer. U.S. soybean product exports are affected by these market access, trade policy, and competitive disadvantages. Global and country specific trade policy barriers to biotechnology are surfacing, not only for scientific reasons, but for several of the reasons previously stated. Tariffs still exist in some very populated markets and phytosanitary and non-technical barriers to trade have become the foreign markets tool of choice to limit U.S. soy market access. Discriminatory trade agreements and global trading rules that can distort domestic and export support programs are continually being debated in global trade policy setting organizations, such as the World Trade Organization. The continued expansion of South American soybean production and global palm oil production must be factored into the competitive positioning of U.S. soy.

Strategic Approach

Domestic and international trade policy issues are important to maintaining or increasing market access. Trade liberalization is vital in creating greater global economic growth and thus greater demand for pork, poultry, fish and soy products. Establishment of trade barriers by international governments that limit soy imports or inflate their prices often adversely affect the soy crushing, poultry and livestock, and food processing industries. IM works closely with these industries to bring their concerns to the host nation in efforts to remove or decrease trade barriers.

Specifically IM will:

- Identify global access issues and bring them to the attention of competent authority to be addressed
- Monitor adherence to existing trade/market access rules
- Suggest areas where market access for U.S. product could be improved
- Develop and implement approved strategies to address market barriers
- Define and address impediments to market growth or retention

Rapidly growing, large volume international markets provide fast changing environments for development of market access issues that can limit U.S. exports. These markets are especially important as the U.S. has significant market share in China, Southeast Asia, Middle East/Eurasia, and Latin America. These markets provide the opportunity to work with expanding crushing and feed industries in promoting the interests of open access to imports of U.S. soy products without excessive duties, phytosanitary concerns, and restrictive trade policies. The international crushing and feed industry are often very supportive of IM initiatives in market

access, as it allows them the opportunity for easier and often less expensive import of soy products.

Large international mature markets may create protectionist trade policies that can cause constraints on the import of U.S. soy products. In addition some markets often have very sophisticated feed and food industries that react rapidly to consumer concerns on issues such as biotechnology. Markets such as Europe, Japan, Taiwan, and Korea historically import vast quantities of U.S. soy products, and maintaining open access to these markets is extremely important.

Many international markets provide opportunities to address market access on a wide variety of topics. Just as developing countries have rising economies, they also have a developing regulatory system. The regulatory system is often plagued by lack of scientific information, lack of appropriate authorities to develop regulations (such as no FDA type authority), and adoption of protectionist regulations.

Ability to Impact

Checkoff and FAS funded global access activities are coordinated with the previously identified organizations to magnify the impact of USB provided resources. Examples of the impact include: 1) keeping open access for genetically modified soy in the EU and China; 2) access for genetically modified soy protein in Russia; 3) reduction in the number of alleged U.S. soy pathogens in India's phytosanitary barriers from 14 to 4; and, 4) assistance in assuring that soy varieties developed from biotechnology were not commercialized domestically until import approvals were gained in major export markets.

LRSP Objective 1:

- I. Annual utilization of 3.5 billion bushels of U.S. soybeans by 2012.

Committee – Target Area:

- A. IM – Market Access

Goal 1:

- 1. Educate and garner support from country specific trade, scientific and regulatory officials on the harmful effects of overseas trade and market access barriers.

Strategy 1:

- a. Global Access

Tactics:

- i. Positively influence the interpretation and implementation of issues that could impact overseas market U.S. soybeans.

Performance Measures:

- i. In Europe, through outside consulting, the EU's Regulations and authorizations of biotech products and proposed legislation on biofuels will be continuously monitored for their impact on the U.S. soy industry.
- ii. Determine the number of instances where U.S. soybean production industry intervention has resulted in positive trade flows.

LRSP Objective 2:

- II. Approval in the importing countries that comprise 90% of U.S. soy products for each biotech event by the time of its commercialization.

Committee – Target Area:

- A. IM – Market Access

Goal:

1. Assure early adoption of new soy biotech events in key export markets.

Strategy 1:

- a. Global Access

Tactics:

- i. Prepare for upcoming biotechnology events and collaborate with key contacts to ensure a smooth and timely approval process.
- ii. Provide factual scientific information on the safety of biotech products and U.S. soybean products to manufacturers and processors of soy for use in food, feed, and oil.

Performance Measures:

- i. Through outside consulting, IM-Europe will continue to be informed of developments related to the implementation of the EU's biotech regulations especially any issues covering the authorization of new biotech events and the political issues surrounding biotech approvals.
- ii. Provide opportunities for U.S. producers to discuss the benefits of biotech products and significance of U.S. soybean products to international industry and regulatory contacts.

LRSP Objective 3:

- III. Promote U.S. sustainable soybean production through responsible stewardship while acknowledging global market needs.

Committee – Target Area:

- A. IM – Market Access

Goal:

1. Educate and inform global opinion leaders on the critical role biotech soybeans play in assuring economically and environmentally sustainable soy production system in the USA.

Strategy 1:

- a. Global Access

Tactics:

- i. Provide scientific data on U.S. pesticide, fungicide, herbicide use to address establishment of pesticide residue limits that do not hinder U.S. soy exports.

Performance Measures:

- i. Promote the sustainability of U.S. soy through key trade summits and events regarding global sustainable agriculture.

Financial Allocation:

Contingent on Board approval at 2011 June Board Meeting

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Compliance and Evaluation Audit and Evaluation Committee Action Plan FY12

Market Environment

The *Soybean Promotion Research and Consumer Information Act (SPARC)*, *Order* and accompanying documents, specifically lay out the fiduciary responsibilities in administering checkoff funds. United Soybean Board (USB) is required by this federal legislation to confirm that all checkoff funds are used in accordance with federal law. Qualified State Soybean Boards (QSSB)s are authorized to collect and expend checkoff funds under the *Act and Order* and are consistently reviewed for SPARC compliance by USB. Primary contractors and subcontractors of USB are required to expend funds in accordance with the *Act and Order* and USB Policy. Checkoff programs experience increased oversight and scrutiny for compliance. As a result, the soybean checkoff's objective is set the standard for the highest level of compliance in regard to industry. USB maintains compliance with *SPARC* supporting internal controls of the soybean farmer's checkoff dollar. Since investment of millions of dollars from soybean checkoff for the purposes specified in the *Soybean Promotion and Consumer Information Act* will be made by USB, it is critical USB maintains the maximum integrity in their investment and policy decisions.

Strategic Approach

USB's Audit & Evaluation (A&E) Committee commits to a proactive, positive approach in compliance and evaluation on behalf of the soybean checkoff. A&E will implement programs that provide compliance education and information to farmer leaders and staff at the national and the state level. In FY12, A&E will provide outreach through educational programs, resources, and compliance testing in an effort to improve compliance knowledge and develop strong national and state board fiduciaries. Furthermore, A&E will engage third party evaluators to analyze and test checkoff expenditures and evaluate the effectiveness of USB's programs in relation to USB's new Long Range Strategic Plan.

Ability to Impact

A&E will make certain USB upholds the highest standards in targeting checkoff investments in programs that will result in the highest return-on-investment. Evaluations assist farmer leaders and staff in formulating systematic methodologies for decisions on programs, policies and resource allocation.

LRSP Mission: Effectively invest and leverage soybean checkoff resources to maximize profit opportunities for U.S. soybean farmers.

Committee – Target Area:

- A. Audit and Evaluation - Compliance and Evaluation

Goal 1:

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*USB FY12 Action Plan
Audit and Evaluation*

1. Provide consistent education to improve understanding of SPARC and USB compliance requirements.

Strategy 1:

- a. Provide accurate compliance guidelines to all QSSB's and USB directors annually.
- b. Provide accurate SPARC compliance information to QSSBs and USB directors on an as needed basis.
- c. Provide national and state compliance educational opportunities for QSSBs and USB.

Tactics:

- i. Maintain Compliance Manual information for additions, deletions and/or clarifications as necessary and seek to improve the delivery platform for instant notification of any change for all users.
- ii. Understand SPARC and periodically review Federal Register changes and additions to SPARC for effective communication.
- iii. Provide an opportunity to educate, interact and resolve compliance issues.

Performance Measures:

- i. Update and distribute compliance manual content to QSSB's, Staff and USB directors on a constant evolving platform providing the most up to date information and eliminating errors and confusion due to out-of-date information.
- ii. Provide the most accurate compliance information as needed by QSSBs, Staff and USB Directors reflected in the compliance manual and USB website.
- iii. Offer one compliance workshop annually for QSSB staff and board members and USB directors and staff focusing on current compliance issues. Investigate current compliance and emerging issues by engaging QSSB staff throughout the year and conducting a workshop pre and post survey. Encourage participation through QSSB agenda topic suggestions and scholarship opportunities.
- iv. Explore extending education outreach by engaging state board directors by offering a compliance workshop.

Goal 2:

2. Verify appropriate checkoff expenditures by QSSBs and USB primary contractors and subcontractors and Agreement terms and provisions are fulfilled by USB primary contractors and subcontractors.

Strategy 2:

- a. Perform procedures that test proper internal controls regarding governance, investments, collections, disbursements and programs at QSSB level.

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- b. Provide personal, reliable education to QSSBs by partnership with USB.
- c. Test Agreements of USB, primary contractors and subcontractors for compliant use of checkoff funds.

Tactics:

- i. Review five to seven QSSBs annually.
- ii. Increase contact with QSSBs regarding compliance.
- iii. Engage Third Party Independent Accountant Firm to perform Agreed Upon Procedures on primary contractors and subcontractors to ensure proper use of checkoff funds.

Performance Measures

- i. Compliance reviews of 5-7 QSSBs annually on a 3-year rotation with findings noted, cooperation to attain 100% resolution and concurrence by USDA.
- ii. Personal visits with QSSBs regarding governance, financial internal controls, marketing plans and budgets, conducting compliance orientations for QSSB board members and staff, assisting in conducting assessments of research projects, financial reviews and compliance issue resolution and management tactics that strengthen QSSB compliance understanding and QSSBs relationships with USB.
- iii. Engage Third party Independent Accountant Firm to perform Agreed Upon Procedures to test expenditures and agreement provisions of primary contractors and subcontractors. Annually select one Primary contractor and at least one subcontractor per committee or seven subcontractors to perform procedures and identify compliance or contractual issues reaching resolution on all findings with possible recommendations to policy change or funding recommendations.

Goal 3:

- 3. Protect the integrity of checkoff funds and achieve maximum value for each soybean farmer's checkoff dollar.

Strategy 3:

- a. Use of effective evaluations to validate the maximum value for each checkoff dollar.

Tactics:

- i. Objective, independent, external evaluations as a decision-making tool to analyze the impact and effectiveness of the Board's processes, projects and programs.
- ii. Return on Investment evaluation requirement every five years.
- iii. Evaluation of the See for Yourself project for future facilitation of the program. Information will be compiled from participants pre and post travel and December Board meeting surveys verifying increased understanding of the checkoff.

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- iv. Creating future leaders through soybean checkoff grassroots supporters.
- v. Increase transparency in USB policies.
- vi. Consideration of board wide evaluation project for allocating funds by target area.
- vii. Creation of baseline measurements for the Long Range Strategic Plan.

Performance Measures

- i. Evaluations will be reviewed by related committees and the Board, with recommendations adopted for positive resolution.
- ii. Annual data collection of national and state checkoff expenditures for Return on Investment analysis to increase data integrity and accuracy and reducing costs of the five year analysis.
- iii. Evaluation of USB's grassroots *See for Yourself* participant responses from pre to post travel showing an overall increased understanding of their soybean checkoff.
- iv. Continue the education and leadership development of the *See for Yourself* participant by creating an ambassador program thereby creating support and education of the checkoff and fulfilling the board's need for future leadership.
- v. USB policies periodically reviewed, revisions recommended and approved by the full board and USDA-AMS. USB policy revisions will be consistently updated through USB's website, eliminating out-of-date and unreliable resource documentation.
- vi. Consideration of budget allocation evaluation that provides farmer directors with the processes for planning and allocating resources using metrics focusing on USB's Long Range Strategic Plan providing the ability to evaluate the progress relative to the plans and a means to visualize the progress.
- vii. Create, collect and report baseline measurements for USB's Long Range Strategic Plan that require investment beyond current measurements enabling the farmer with a more effective process.

Goal 4

- 4. Expand communication of A&E activities with all USB audiences creating positive perceptions of A&E accomplishments through education and information.

Strategy 4:

- a. Effective communication of A&E's objectives through consistent messages to USB Executive Committee, Board, QSSBs and the soybean farmer.
- b. Create awareness and build director participation in the Partnership Workshop participation by providing national and state participation in all checkoff compliance objectives
- c. Inform *See for Yourself* program objectives through communication.

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Tactics:

- i. Improve communication.
- ii. Increase QSSB and USB farmer leader participation.
- iii. Provide consistent messages regarding *See for Yourself* program and attendees.

Performance Measures

- i. Increase internal and external communication efforts through committee liaisons, USB Issues, Beyond the Bean articles, press releases, etc.
- ii. Increase QSSB participation by accommodating their requests for agenda items. Increase A&E Committee member participation in Partnership Workshop to assist in building positive relationships with QSSB board members and staff in hopes for future collaboration in projects, activities, and overall soybean checkoff education.
- iii. Increase communication to past and present *See for Yourself* attendees through the Ambassador program. Increase board member and overall awareness of the positive effect of the program by personal messages from the participants.

Audit and Evaluation Financial Allocation: \$ 1,632,406

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