USB 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.

Purpose:
Invest checkoff funds to benefit U.S. soybean producers.

Mission:
Ensure that U.S. soy is the highest quality and most competitive in a global marketplace.

Strategy:
Engage industry on behalf of U.S. soybean farmers to maximize global utilization of U.S. soy in the feed, food, industrial and energy markets.

Objectives:

2. Approval in the importing countries that comprise 90% of U.S. soy products for each biotech event by the time of its commercialization.
3. Promote U.S. sustainable soybean production through responsible stewardship while acknowledging global market needs.

Priority Issues:

- Maintain and expand the livestock, poultry and aquaculture industries
- Ensure market access for U.S. soy
# UNITED SOYBEAN BOARD
SUMMARY BUDGET
RECOMMENDATION OF THE EXECUTIVE COMMITTEE
FOR FISCAL YEAR ENDING SEPTEMBER 30, 2011

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Collections estimated upon 3.128 billion bushels usage at a $8.75 average price per 2/16/2010 board meeting.
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<th>Global Opportunities</th>
<th>Domestic Marketing</th>
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Domestic Marketing Committee
Animal Utilization

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

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 growth of the U.S. livestock and poultry industries. Poultry, hogs and cattle consume about 98% 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 how modern farming and ranching works 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 needs have surpassed protein in feed formulation expense.

This change increases the possibility that feed formulations may 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 could significantly affect the U.S. soybean producer’s ability to compete for providing protein to feed livestock and poultry in the United States.

Feed input costs for corn and soybean meal are moderating, with soybean meal at $280 per short ton and soybeans at about $9.40 per bushel as of Spring 2010. These declines follow shrinking 2009 U.S. meat production numbers.

U.S. meat and poultry production in 2009 decreased across the board due to a weak global economy and the industries responding to that weakened demand. Cattle on feed fell over 2% for the year. Breeding sows fell over 3%, but market hogs only fell about 2% due to increased pigs per litter. Broiler chicken production fell 3.8% for the year and turkey meat production fell 9.3%. But lower meat and poultry production coupled with targeted export programs have lowered cold storage inventories 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 decreased from the all-time highs of the previous year, resulting in decreased demand for U.S. soy. Several of these markets appear to have stabilized. Global meat markets shift continually, making USB efforts to assist in meat export marketing programs critical to the success of U.S. soy producers. Worldwide animal health issues such as Bovine Spongiform Encephalopathy (BSE), Hoof and Mouth Disease and High Pathogenic Avian Influenza (HPAI) all have detrimental effects on meat and poultry exports.

While the U.S. provides one of the safest, most reliable food supplies in the world, meat and poultry exports enter 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.

Growth in poultry and red meat exports translates into more soybean meal utilization domestically as feed. Projections from the 2010 USDA meat export baseline project significant soybean meal utilization as meat exports. Exports of chicken and turkey meat in 2008, excluding chicken feet, topped 3.2 million metric tons (MT), which represented nearly 2.7 million MT of soybean meal that was fed to those birds. Pork exports
accounted for 1.9 million MT of soybean meal, and beef exports accounted for 160 thousand MT of soybean meal.

Russia and China continue to top the list of U.S. chicken meat importers, while new growth opportunities are emerging in 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 remains the top importer of U.S. chicken, though Chinese imports of U.S. chicken have been increasing. New markets are constantly evolving as U.S. chicken becomes more available globally and more countries develop cold storage and transportation options.

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 2008, livestock in the United States consumed over 29 million metric tons of soybean meal, which translates into 1.5 billion bushels of soybeans.

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), primarily in ruminant diets such as feedlot steers and dairy cattle. Great effort has been made by the ethanol and corn industries to develop standardized testing procedures to 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.

Another issue facing soybean meal is the decreasing protein levels of the U.S. soybean crop, while other vegetable proteins, such as canola, are improving in quality. The ideal amino acid profile of soybean meal continues to give it an advantage, but the relative value to feed formulators may see changes.

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.

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 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 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 would have greater digestibility by changing the complex fiber fraction to digestible sugars. The improved digestibility would result in less wasted phosphorus and less solid waste pollution from swine and poultry manure.
LRSP Objective 1
I. Annual Utilization of 3.5 billion bushels of U.S. soybeans by 2011

Committee – Target Area
Domestic Marketing - Animal Utilization

Goal:
1. Preserve the domestic soybean meal market at 98% consumption rate

Strategy:
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

Goal:
2. Build support for livestock and poultry production in the United States

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

Goal:
3. Expand targeted animal nutrition opportunities

Strategy:
Increase the competitive value of SBM as a key feed ingredient for U.S. animal agriculture.
C. Continue information gathering on soybean meal production and consumption numbers in the U.S.

Goal:
4. Grow Meat Export Opportunities

Strategy:
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. Determine livestock industry customer needs through interaction at trade shows, scientific societies, technical gatherings and working groups.
2. Encourage the feed and livestock industries to support new SBM research.
3. 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 four additional states in 2011 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. – Gain support from the animal feed industry for 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. 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 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.

**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) Summer States Coalition Meeting.

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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 global poultry consumption by 10% in selected countries
• Increase poultry meat exports to China and maintain the U.S. percentage of poultry meat exports to Russia
• Grow global pork consumption 29% by 2015 and 57% by 2030
• Increase pork meat exports to Japan and maintain pork exports to Mexico
• Identify alternative markets to absorb poultry exports that have been blocked by Russia and China and implements marketing strategies.


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 by 5% in Russian marketplace.


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.

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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 in conjunction with QUALISOY

Performance Measures:
- Complete one feeding study that demonstrates a clear difference in animals fed current soybean meal versus improved trait soybean meal
- Begin 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 and coordinate activities with the Sustainability Initiative.

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.

Domestic Marketing Committee
Target Area: Animal Utilization - 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.

Market Environment
The domestic aquaculture industry is 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.

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.
The inland aquaculture industry is facing a significant disease risk from a new strain of viral hemorrhagic septicemia virus (VHSV) recently discovered in the Great Lakes region. The new strain of VHSV has been demonstrated by isolation and infectivity studies to infect and cause significant mortality of a broad range of feral fish species. The affected fish families include the following: Esocidae, Percidae, Sciaenidae, Cottidae, Percichthyidae, Centrarchidae, Clupeidae, and Catostomidae. Alarmingly, VHS has also jumped to other bodies of water across the Midwest with no direct water links to the great lakes. The broadly identified infection risk attests to the nationwide threat this virus may pose to the commercial aquaculture industry. Aquaculture producers need education and tools to help slow the spread and mitigate the risks of this disease.

Although not experiencing the damage of VHS, the southern catfish industry is in serious decline because it cannot compete with low cost imports. The catfish industry relies on tired farming practices, with some reluctance to change. However, younger aquafarmers have exhibited some willingness to try new technology. Auburn University and local Extension services have been working to bring new technologies and management practices to southern catfish producers. Although the program is showing some success, they are limited by funds. The adoption of new production technologies and management practices is critical to improve the cost structure and quality of the U.S. catfish industry.

Offshore fish farms have taken off in international markets such as Chile and China, thanks in large part to USSEC and New Uses programs. However, the U.S. aquaculture industry cannot yet take advantage of offshore aquaculture. DMC can best help by learning from the successes of USSEC and New Uses, while building a foundation with the industry to be ready should offshore aquaculture become a reality.

**Strategic Approach**

USB aquaculture efforts are led by USSEC and New Uses, since the majority of aquaculture opportunities exist overseas until new policies allow a broadening of domestic aquaculture. DMC programs serve as a compliment to existing USSEC/New Uses efforts so as not to duplicate programs and waste checkoff funds. By working through the National Aquaculture Association, and by aligning closely with USSEC and New Uses efforts, the DMC can help existing U.S. aquaculture industry while paving the way for future opportunities. Also opportunities exist to identify unique opportunities for creative approaches to domestic aquaculture niche markets.

**Ability to Impact**

Domestic Marketing has the ability to help U.S. farmed catfish operations improve technologies and management practices through projects to demonstrate the cost reductions, feed gain improvements and efficiency improvements now available. Demonstrations of these practices will encourage adoption by other fish farms and help maintain soybean markets.

Domestic Marketing can also build effective industry relationships and assist the NAA, which has limited available funding, to build outreach activities and market to the food and restaurant industries the health, economic and environmental benefits of aquaculture. Further, DMC can help NAA address disease and other production challenges.
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.
   **Strategies:**
   A. Establish relationships and partnerships with domestic aquaculture organizations
   C. Assist in educating targeted audiences of local aquaculture communities, the food industry and stakeholders on the health, economic and environmental benefits of domestic aquaculture

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.

**Performance Measures:**
- At least one new management practice concept and at least one new technology have been demonstrated to two separate catfish producers in FY 2009, with evaluation of success or failure leading to next steps.
- At least two catfish producers have plans to adopt improved farming technologies and/or practices.
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:
1. Partner with aquaculture producers, academia and stakeholders to evaluate and trial improved technologies and management practices for finfish or shellfish.
2. Evaluate successes and failures and use learned information to further opportunities.

Performance Measures:
- At least one non-catfish aquaculture producer trialed a USB-assisted technology or management practice improvement.
- A pathway to next steps in technology improvements and better management practices has been determined.

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:
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.

Performance Measures:
- Aquaculture benefit messages have been developed and a program is underway to communicate information.
- Food industry and media rely on NAA as appropriate source on the benefits of domestically farmed finfish and shellfish.
Financial Allocation:
Domestic Marketing – Animal Utilization: $4,181,260

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International Marketing Committee
Animal Utilization

Market Environment
The world soybean price decreased by 23% in 2008/09 from the high prices of 2007/08, as demand faltered because of the global economic recession. Soybean prices decline again in 2009/10, as the production rebound outpaces the demand growth derived from the economic recovery, especially in the protein meal sector. Because of weaker competition from corn in 2009/10, U.S. soybean production increased by 13% based on a small area expansion and record-breaking yields. The combined increase in U.S., Argentine, and Brazilian production helped pull the world soybean output up by 20%. The large production rebound is driven by an impressive 65% expansion of the Argentine output, after the previous season’s failure. Global soybean production for 2009/2010 is estimated at 253.5 MMT. This represents an almost 15 percent increase over the production in 2008/2009, which was 220.9 MMT. The U.S. share of the world production is estimated to be 38 percent.

Strong Chinese demand and the weather-reduced Argentine crop harvested in early 2009 resulted in record U.S. soybean exports in 2009/10. U.S. soybean production in 2010 is projected to slip to 3.31 billion bushels or 90.1 MMT, based on 77.1 million acres harvested and a trend yield estimate of 42.9 bushels per acre. The United States continued as the largest producer of soybeans in the world, followed by Brazil and Argentina in 2009/2010. This past marketing year the U.S.’ total soy production reached 80.7 MMT. 2010 soybean plantings are expected to reach 78.1 million acres in 2010, up less than 1 percent from last year. High yields result in an increase in soybean net returns per acre in 2009/10, in spite of slightly lower soybean prices, while lower projected soybean prices and yields reduce soybean net returns in 2010/11.

Mexico remains the number 1 export market for soybean meal at 1.21 million metric tons, with Canada following at a close second at 1.02 million metric tons.

A study from the United Nations Food and Agriculture Organization (UN FAO) predicts: “Net cereal imports by developing countries will almost triple over the next 30 years, while their net meat imports might even increase by a factor of almost five.” 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. International consumption of soybean meal was 152.1 MMT in 2009, which would represent a 3.4 percent decrease over the previous year.

Soybean meal utilization in poultry alone is 54 percent of the international markets followed by swine (30 percent), dairy (9 percent), and aquaculture (7 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.
Predictions indicate that the global broiler trade will increase by 28 percent in the coming decade, reaching 7.6 MMT in 2012. The U.S. exported 6.84 million pounds of broiler production in 2009. The top five broiler meat producing nations in the world are now the United States, China, Brazil, Mexico, and India. China is also the largest producer of eggs in the world with production of 26.6 million metric tons, followed by the U.S., India, Japan, and Mexico.

Local poultry producers are also currently investing in animal feed production expansion, aiming to meet the increasing needs of their chicken farms. The poultry sector currently accounts for about 54 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 US 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.
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:**


**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, USSEC will continue working with the swine and poultry industries to increase soy utilization in animal feeds.

ii. Through the Soy-in-Aquaculture program, USSEC 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, USSEC will continue to promote the economic advantages and nutritional benefits of producing and utilizing dehulled meal.

**Performance Measures:**

i. In China, 17 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, USSEC will continue to promote U.S. soybean meal as the preferred protein source in animal feed rations.
ii. In Japan, USSEC’s 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, USSEC will continue to educate importers on modern
   production techniques.
iv. In Southeast Asia, USSEC 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, USSEC 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, USSEC 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 USSEC 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 USSEC preferred customers the opportunity to see the new U.S. soybean varieties firsthand.

  Performance Measures:
  i. USSEC will 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, US soybean meal will be recognized as an economically and environmentally raw material for animal feed rations.

Strategy 1:
  a. Demand Building

  Tactics:
  i. USSEC will 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. USSEC will 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, USSEC 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. USSEC will continue to alert integrated processors and officials alike that U.S. soybean meal possesses the ingredients needed to be a sustainable product.
  ii. USSEC will 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 USSEC preferred customers to show our dedication to responsible stewardship.

Financial Allocations:
IM – Animal Utilization: Demand Building $ 5,022,918
IM – Animal Utilization: Customer Preference $ 2,506,914
Total: $ 7,529,832

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

Committee – Target Area
   A. New Uses – Animal Utilization

Goal:

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 a standard line of fish in order to compare various feed formulations, having a fish population with a uniform genetic background available to all researchers that could improve the ability to compare results across studies and simplify interpretation of results.

   iv. Develop technical bulletins to communicate research results to aquaculture nutritionists and the feed industry.

   v. 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.

   vi. 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.

   vii. 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.
viii. Identify salmon producer partners with whom to conduct commercial-scale feeding trials to define the effects of soybean meal low in anti-nutritional factors on production and yield.

**Performance Measures:**

i. Nutrition requirements identified and feed formulations verified for California White Seabass, California Yellowtail, Seriola, Cobia and Atlantic Cod.

ii. One member of industry funds or shares research on soybean meal.

iii. 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 Allocations:**

NU – Demand Building: $931,985

**Program Staff Contact Information:**

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Market Environment

The USB Winter 2010 Soybean Producer Attitudes Survey indicated that U.S. soybean farmer usage of biodiesel now stands at 52 percent, an increase of 16 percent since the winter 2005 survey and statistically even with the fall 2009 survey’s performance measure of 51 percent. When USB first measured this in the fall of 2002, 23 percent of all U.S. soybean farmers indicated at that time that they used soy biodiesel.

Fuel suppliers and biodiesel manufacturers who blend soy biodiesel with petroleum diesel for farmers, truckers and other major diesel users had been receiving a one cent federal tax credit for every one percent of biodiesel they blend with petroleum diesel. This tax credit expired at the end of 2009, and at the time of this report, still has not been extended by the U.S. Congress. While many state tax incentives and other initiatives still remain in effect, the lack of the federal tax credit has had a negative impact on the biodiesel industry.

On a more positive note, the expanded 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 500 million gallons of biomass-based diesel in 2009, increasing gradually to 1 billion gallons in 2012. Soy biodiesel qualifies as a biomass-based diesel under the regulations. Even with the RFS2 rules boding favorable for soy biodiesel, the lack of the tax incentive has still had an impact on the availability and use of soy biodiesel with year-to-date biodiesel production in 2010 lagging behind the same time period in 2009.

Estimates for industrial non-biodiesel use of soybean oil in 2010 could amount to between 1.15 and 1.35 billion pounds, or the oil from nearly 120 million bushels of soybeans. This estimate is up from 80 million bushels used in 2006. Soy-based products continue to 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 2011 will focus on industry influencers (including equipment manufacturers and biodiesel producers) providing both proactive and reactive information as necessary. This includes partnerships with industry trade associations as well as other commodity organizations 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 2011 is the superiority of soybean oil as a feedstock for biodiesel. Efforts will be focused on biodiesel producers with the goal of increasing the percentage of soybean oil used in biodiesel production. In addition, in FY 2011 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**


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

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

**A. Communications – Industrial Utilization**

**Goals:**
- Continue building awareness with U.S. soybean farmers of the checkoff’s value in the current and future success of their operations.
- Continue building awareness with U.S. soybean farmers of their critical role in meeting the demand for food, feed, fiber and fuel for a fast-expanding population.
- Increase U.S. consumer awareness of the value that modern production agriculture has in providing the safest, most affordable and abundant food supply in the world.

**Strategy:**

a. Soybean Producers and Industry

**Tactics**

i. Continue to build soy biodiesel availability and use among U.S. soybean farmers by emphasizing soy biodiesel quality and engine performance benefits in all materials and events.

ii. Execute nationwide opportunities, such as the National Farm Machinery Show National Championship Tractor Pulls and National Tractor Pullers Association events to increase the number of U.S. soybean farmers and other diesel users who believe perceived biodiesel problems have been resolved.

iii. Communicate the superiority of soybean oil as a feedstock for biodiesel and Bioheat® production and use.

iv. Demonstrate the soybean checkoff’s key involvement in the development and continued growth of the U.S. biodiesel industry and for soy-based bioproducts.

v. Increase demand for soy biodiesel among other major diesel users.

vi. Provide support to National Biodiesel Board, Original Engine Manufacturers, the National Tractor Puller’s Association, U.S. Department of Energy Clean Cities chapters and the trucking industry to increase the availability and use of soy biodiesel and Bioheat.
vii. Capitalize on the interest in soy biodiesel to create demand for other soy-based bioproducts.

viii. Represent USB and actively participate in biodiesel industry activities and events.

ix. Partner with organizations such as Farm Safety 4 Just Kids, Habitat for Humanity and International Association of Fairs and Expositions to educate on the benefits and raise awareness of soy biodiesel and soy biobased products.

x. Conduct outreach to soybean farmers and consumers via the media on availability of soy biobased products.

**Performance Measures**

i. Help increase the use of soy biodiesel among U.S. soybean farmers to 55 percent.

ii. Help reduce the percentage of U.S. soybean farmers citing “availability” as a major reason they do not use soy biodiesel.

iii. Communicate the superiority of soybean oil as a feedstock for biodiesel to increase the percentage of soybean oil currently used in biodiesel production.

iv. Raise awareness and consumption of soy biobased products.

v. Secure stories in mainstream media outlets that include a positive agriculture message on checkoff soy biodiesel, Bioheat and other soy biobased products goals and priorities.

**Financial Allocations:** $532,738

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Domestic Marketing Committee
Industrial Utilization

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

- The largest soybean crop on record, 3.359 billion bushels, was produced by U.S. farmers in 2009. This production level was more than 10% higher than 2008. The average yield per acre was estimated at a record high 44.0 bushels per acre (4.3 bushels above last year’s yield).
- Record production was achieved both in the U.S. and globally, demonstrating the value in continued commercialization of new products.
- 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 then rising again in the first quarter of 2010.
- The general global recession is negatively impacting sales of all chemical materials including soy.
- 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 as well as the availability of by-product glycerin for industrial uses.
- 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 soy-based biodiesel was an advanced biofuel and could be used to meet biomass based diesel fuel volume obligations. The RFS2 is expected to create a 700 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. Currently three states, NY, ME and Connecticut have tax credits or exemptions and MA has a B-2 (increasing 1% per year to a B5) mandate in place. The city of New York is proposing a B-20 mandate. Pennsylvania, Connecticut, and Vermont have proposed low blends Bioheat mandates for their states. Due to soy oil’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. Examples include the new plywood adhesives made with soy flour which eliminates formaldehyde or soy spray foam insulation which provides significant energy savings. Both show strong growth despite the downturn in construction.
• 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
• The debate over global warming and a potential cap and trade system for greenhouse gas emission could favor soy industrial products. It could also present regulatory and economic challenges to farmers and feedstock supplies. Significant efforts to qualify soy products remain to be completed and federal actions to create a cap and trade system is still far from certain.
• 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, creating 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 Three quarters of surveyed 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.
  o Over half (58 percent) believe corporate sustainability practices are either unaffected or aided by the economic crises.
  o 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.
  o 73 percent of the business leaders surveyed expect sustainability will help them retain and attract customers.
  o 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 42 categories of biobased products, representing approximately 5600 products. Additional designations are underway.


The 2008 Farm Bill directs USDA to complete the “USDA Certified Biobased” labeling program as expeditiously as possible and makes feedstocks and intermediates eligible to receive the label. In 2009, the USDA proposed a federal biobased label as required by the Farm Bill that should be finalized in 2010. This label can play an 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 biobased procurement across the nation. USB-funded public opinion research conducted in January 2009 found that 65 percent of Americans are totally unfamiliar with biobased products. The research also identified that the ability of biobased products to enhance US energy security was the leading benefit of biobased products to the public. “Being good for the environment” followed closely as the second most compelling reason to support biobased products.

The 2009 Economic Stimulus Bill creates 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.

Biobased products are also seen as an opportunity to create U.S. jobs. The young biobased chemicals and plastics industry already accounts for more than 5,700 direct jobs, possibly as many as 40,000 economy-wide, according to the Biotechnology Industry Organization’s white paper released in March 2010, “Biobased Chemicals and Products: A New Driver of U.S. Economic Development and Green Jobs.”

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 will create can play a major role in increasing public awareness of biobased products and their benefits. In February, Ohio’s governor signed legislation into law giving Ohio the strongest state preference for biobased products in the nation. Arkansas and Indiana also have state procurement preferences. All three are modeled after the federal biobased program and will benefit from advancing the federal programs, including promotion of the federal biobased label. Also, 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.

**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, and BQ 9000 Quality Assurance. Four 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.

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 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 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 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 2010 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 hundreds 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 federal biobased program has also triggered states 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 1-2:
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 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.

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 as 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 manufacturers, 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.


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 NOₓ.

**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.
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.

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 in hard copy, as appropriate, and on CD-ROM as well as through the USB www.soybiobased.org resource center.

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 sustainability profile.

iii. Document and analyze existing sustainability studies that pertain to biodiesel. Conduct an assessment of their data and identify, if any, 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 two communications vehicles 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 – Industrial Utilization
Biodiesel: $2,089,524
New Uses – Research & Commercialization: $489,179

**Program Staff Contact Information:**

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International Marketing Committee
Industrial Utilization

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 have rapidly increased from 1.9 MMT in 2002 to an estimated 20.9 MMT in 2009. 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 USSEC 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. US 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 US 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 US 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:

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 US 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 US 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 US 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 US 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.
Financial Allocations:
IM – Industrial Utilization: New Uses Research & Commercialization $68,495
Total: $68,495

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New Uses Committee
Industrial Utilization

Market Environment

- The market environment for industrial utilization of soybean products reflects several factors:
  - 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 - 2010 has negatively impacted sales of all chemical materials including soy.
  - 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 and the introduction of soy adhesives for plywood increased soy meal consumption by an estimated 80-100 million pounds.
  - New soy industrial products continue to be well received in the marketplace due to environmental and sustainability advantages. Examples include the new plywood adhesives made with soy flour that eliminates formaldehyde, and soy spray foam insulation which provides significant energy savings. Both show strong growth despite the downturn in construction.
  - The debate over global warming and a potential cap and trade system for greenhouse gas emissions could favor soy industrial products. An initial project and meeting with the Chicago Climate Exchange created optimism regarding substitution of soy products for petrochemicals that could be used to generate tradable carbon credits. Significant efforts to qualify soy products remain to be completed and federal actions to create a cap and trade system are still far from certain.
  - 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 U.S. with strong utilization and growth in South America as well. U.S. producers are known to be exporting soy polyols and other soy derivatives to Europe and Asia with success. Soybased chemicals from North American companies are being evaluated throughout the world.

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).

The 2008 Farm Bill directs USDA to complete the “USDA Certified Biobased” labeling program as expeditiously as possible and make feedstocks and intermediates eligible to receive the label. In 2009, the USDA proposed a federal biobased label as required by the Farm Bill that should be finalized in 2010. This label can play an 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 biobased procurement across the nation. USB-funded public opinion research conducted in January 2009 found that 65 percent of Americans are totally unfamiliar with biobased products. The research also identified that the ability of biobased products to enhance U.S. energy security was the leading benefit of biobased products to the public. “Being good for the environment” followed closely as the second most compelling reason to support biobased products.

The 2009 Economic Stimulus Bill creates 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.

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, Ohio’s governor signed legislation into law giving Ohio the strongest state preference for biobased products in the nation. Arkansas and Indiana also have state procurement preferences. All three are modeled after the federal biobased program and will benefit from advancing the federal programs, including promotion of the federal biobased label. Also, 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.

**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 and will continue in FY11 to balance the expanding demand for soybean oil. Examples include: textile fiber from soy meal; thermoplastic products from soy protein for films; molded products and rubber and adhesive products based on modified soy flour for replacement of formaldehyde in engineered wood such as oriented strand board, particle board and plywood and large volume 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 into the industrial products marketplace.

**Defending and increasing current markets** – This involves research to increase soy oil reactivity 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. Greater reactivity would provide 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, carbon trading, environmental preferences, increased worker safety regulations and others all favor the substitution of soy 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 being developed by private companies and by the QUALISOY program have greater oxidative stability, which is highly desired for food uses and also preferable for some industrial applications such as soy polyols for polyurethane applications in plastics and crankcase oil or hydraulic fluid formulations in lubricants. Another trend under study is the potential for claiming “carbon credits” for soy industrial products, which would add value and offset material costs, thereby making soy products more affordable and profitable.

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 polyester resins in plastics and to allow economical production of large volume chemicals such as fumaric acid, isocyanates and surfactants.

**Expanding use of existing soy technologies** – Expanding the use of existing soy technologies includes developing new product applications. Existing uses such as automotive uses for cushioning foams made with soy polyols developed by Ford have led to expanded uses of foams in furniture, bedding, and wall decor and can lead to still more uses such as polyurethane gels for shoe soles.

**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 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) has both published the final guidelines for implementing the Federal Biobased Products Preferred Procurement (“BioPreferred”) Program, which was created under the 2002 Farm Bill, and issued multiple rules that include hundreds of biobased products that government agencies are expected to purchase under the program. The guidelines establish the process by which USDA will designate items for preferred procurement by federal agencies and the other rules designate those items. Federal biobased procurement was also aided in December 2006 when the federal government proposed adding biobased product purchasing to its Federal Acquisition Regulation that contains the uniform policies and procedures for acquisition of government agencies.
The federal biobased program has also triggered states to approve legislation that is modeled after the federal biobased procurement programs. Arkansas and Indiana legislatures have passed laws that will have their state government agencies buy biobased products that are designated under the federal program. In late 2007, the Midwestern Governors Association, which includes 11 states, took action to promote biobased products by agreeing to create a common approach to listing biobased products consistent with the federal BioPreferred program. Similarly, the National Association of Counties “Green Government” initiative is receptive to USB outreach on biobased products.

USB will also initiate new outreach and education activities aimed at the private sector’s interest in sustainable practices. Because of USB’s leadership on biobased product outreach to government audiences, private-sector entities 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.

LRSP Objectives 1 & 3:

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 reactivity, which will increase soy content in formulations, 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 provide higher concentrations of soy in foam and elastomer applications.
Performance Measures:

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

ii. Additional soy polyols with an increased range of reactivity, higher molecular weight and good processing viscosity for polyurethanes.

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.

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. A non-automotive company (i.e., furniture) evaluating soy-based polyols for seating applications.

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 oil as a monomer platform leading to multiple new products and applications in plastics and other target markets.

ii. Continue research and development of soy meal, hulls and flour as a filler/extender for modified rubber products and thermoset plastic composites.

iii. Continue development of isocyanate functionalized soy protein.

iv. Continue research on use of glycerin to make acrolein (used in making acrylic acid and other high volume chemicals).
v. Begin the effort to scale up production and trial of water soluble polymers derived from soy meal/protein by industrial partners.

vi. 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, disposables, fillers for composites and rubbers, etc.

vii. Encourage researchers to pursue novel chemistries working with soy protein.

viii. Explore the opportunity for modified soy oil to replace phthalates as plasticizers in polyvinyl chloride and other plastics.

ix. Investigate the use of soy carbohydrates extracted from soybean meal as potential reactive materials (sugar polyols) for 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.

   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 obtained.

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.

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.

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 soy adhesive product for exterior wood panel use is in commercial scale-up.

iii. An additional resin company assumes a marketing role for soy-based adhesives.

iv. 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.

**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.

Performance Measures:

i. At least three new products/applications identified for commercialization pursuit.

ii. Two new partners identified for cooperative projects.

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. Additional industry partners conducting soy-based product trials for hydraulic fluids and other lubricant applications.

ii. Soy oil use in transformer fluids shows continued significant growth.

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:


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 in hard copy, as appropriate, and on CD-ROM, as well as through the USB www.soybiobased.org resource center.

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 two communications vehicles 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.

Financial Allocations:
New Uses – Research & Commercialization $6,815,190

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Domestic Marketing Committee
Supply

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, and increasingly with other vegetable protein sources. 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 and Brazil.

U.S. soybean production reached 3.361 billion bushels in the 2009/10 marketing year (grown in 2009), with yields averaging 44 bushels per acre. Domestic soybean crush reached 1.710 billion bushels, while U.S. soybean exports had a very strong year, reaching 1.375 billion bushels.

Price for the 2009/10 marketing year is projected between $8.90 and 10.40 per bushel. Soybean oil is projected to increase slightly to between 36 and 39 cents per pound. Meal prices are forecast between $265 and $215 per short ton.

The exponential growth of U.S. soybean exports last year was due in part to increasing demand from China, but was hugely impacted by severe drought in South America, which significantly curtailed supplies available for export. Traditionally a whole bean market, U.S. soybean meal exports are growing significantly – up 1.4 million short tons to 9.9 million short tons.

As we move toward FY 2011, the challenges facing U.S. soybeans farmers is increasing. South American production is forecast up dramatically, so prices are softening.

On the flip side, reductions in livestock and poultry numbers are helping livestock and poultry producers to strengthen prices and regain profitability, which is a positive factor in the long run. The meat and poultry sectors are seeing signs of recovery, but that recovery is dependent on keeping a check on supplies, which means fewer pigs and chickens consuming U.S. soybean meal. Also of note, shifts to cheaper cuts of meat during the economic recession are having an ongoing impact on the markets.

Of growing importance will be continued pressure from environmentalists, which will push the animal ag industry toward sustainability initiatives. Opportunities exist for feed ingredients that do more with less and reduce waste emissions. Even more significant are pressures from animal rights activities that are already interfering with the ability of livestock and poultry producers to operate. Organizations like the Humane Society of the United States have made it their goal to end animal agriculture. Their tactical approach includes driving animal ag out of business by implementing regulations that make it unprofitable to operate.

The oil market has seen an interesting year. The 2009 U.S. soybean crop is showing low extraction rates. Also, reduced planting and harvesting area has kept other oilseed production below last year’s levels which is forecast to result in lower ending stocks. At
the same time, the demand side is experiencing significant challenges, particularly in the biodiesel area.

In recent years, biodiesel demand has filled in the demand void in the market that had been created by trans fat labeling. However, as 2011 approaches, the share of oil volume that biodiesel will capture remains uncertain. Biodiesel production could actually see a decline due to forces beyond the control of soybean producers.

First, the EU blocked biodiesel imports in 2009. This was a 400 million gallon market in 2008.

Then, at the end of 2009, the expiration of the biodiesel tax incentive essentially brought the biodiesel industry to a standstill. As of the drafting of this document, the Senate and House are working to reconcile legislation for retroactive reinstatement of this program that enables biodiesel to compete with petroleum fuels. Without it, the biodiesel industry will struggle and soybean oil consumption will be impacted.

But there is some good news. On February 3, 2009, the Environmental Protection Agency’s (EPA) issued the final rule to implement the expanded Renewable Fuels Standard (RFS2) provided for in the Energy Independence and Security Act of 2007 (EISA). The legislation expanded the Renewable Fuels Standard and for the first time specifically provided for a renewable component in U.S. diesel fuel. RFS2 requires the use of 500 million gallons of Biomass-based Diesel in 2009, increasing gradually to 1 billion gallons in 2012.

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 in order to recapture the rest of the market lost due to trans fat labeling. Plantings of high oleic soybeans will begin in the 2010 crop year – enough for testing by food companies. USB anticipates actual usage in food formulations to begin ramping up with the 2011 crop year. 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. soybean 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.

Although compositional improvements represent the future of the U.S. soybean industry, convincing farmers to plant specialty soybeans represents a real challenge. Early adopters must deal with a learning curve in optimizing production of these new beans. High prices have reduced the incentive for farmers to grow specialty beans because of the risk of lower yields for new traits, challenges in identity preservation, and inconvenience of limited delivery dates, which often overshadow the premium incentives for specialty beans. Therefore, Domestic Marketing has begun work on an effort to develop risk management tools that can help soybean farmers mitigate the risk of
planting new specialty trait varieties. This work is not yet complete, and will need additional attention in FY 11.

However, 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, the communications program was not continued through the Communications Committee, and most of the outreach efforts have been minimal or non-existent for the last three fiscal years. This has eroded the inroads made before, and calls for a renewed efforts to educate farmers and seed companies on the importance of improving U.S. soybean quality. Equally important, the momentum gained so far in working with grain elevators to offer incentives for specific protein and oil levels could easily dissolve without continued attention.

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.

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, whether through higher prices, 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:
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 1:
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 2009 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. Develop informational messages and educational materials regarding soybean protein and oil quality specifically geared toward seed companies and parent stock producers.
   iv. Launch the Soybean Quality Toolbox and continue to improve it over time.
   v. Assess amino acid quality as it relates to crude protein and determine how this information can be utilized in marketing efforts.

   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. 2010 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 and plan developed to market information.

Strategy 2:

b. Supply – Composition
Create economic incentives for most 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. Expand processor procurement programs that increase market recognition of protein and/or oil improvements.

iv. Solicit procurement impact data from processor programs to develop a generic procurement impact message.

Performance Measures:

i. Established 2006 protein and oil procurement programs maintained for the 2009 crop year.

ii. Assessment of seed company willingness to participate in protein quality improvements.

iii. Protein and oil procurement programs maintained.

iv. Processor procurement program impact assessment developed and delivered to communications for incorporation into the overall communication message.

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. Ensure that seed germplasm companies incorporate crude protein and oil as part of the screening process when selecting lines to advance through to a commercial status.

iii. Collaborate with seed company sales representatives, farm managers and processor procurement locations to participate in farmer meetings and promote the 19% oil, 35% protein message and the procurement programs.

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 explore 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. Lay 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, especially low-linolenic soybeans.
v. Promote to supply chain participants the health benefits of soybean oil.
vi. Develop risk management tool to help farmers mitigate the risks of adopting improved trait soybeans into their production mix.
Performance Measures:

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

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:

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.

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 2009 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 oil beans) differ from commodity beans in terms of protein, oil and other important characteristics.
ii. Understand how processing impacts economic return to the farmers and quality trait improvements.
iii. Assess feasibility of enhanced soybean meal traits as recommended by the Animal Nutrition Working Group (ANWG).
iv. Determine whether low crude protein beans have better amino acid quality through split sample testing of F.I.R.S.T test plots.

**Performance Measures:**
i. Specialty oil traits are included in InfoBase analysis.
ii. Discussions have been held and documented with three major processors to identify areas were quality improvement programs can be initiated.
iii. ANWG concepts and ideas have been vetted for further action. Applicable programs are put into place.

**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:**
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:**
2. 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:**

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:**

2. Integrate sustainability into soy product marketing.

**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: $2,166,996

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**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. Improved oil 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 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 of oil and protein. Eighty-one percent of U.S.-consumed soybean oil 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 introduced into soybean oil by the partial hydrogenation process undertaken to make the oil suitable for certain baking and frying applications. In order to maintain market share, new soybean varieties are needed that produce 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. New 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.

The surge in biodiesel production has offset the decrease in demand for soybean oil for human food use to date. Soybean oil is the primary feedstock for biodiesel production in the U.S. As the industry is refining its manufacturing practices, specific soy oil properties would be beneficial to improve the quality of biodiesel fuel. To meet the anticipated increased demand for oil, novel ways to develop soybeans with increased oil without a concomitant loss of protein should be considered.

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 pork. 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. 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 demand for oil 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. Maximizing return per acre must include developing varieties that protect yield from stresses, including soybean rust, soybean cyst nematode (SCN), charcoal rot, and drought. 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 of increased demand for corn for ethanol production on corn prices. Soybean trait improvements that reduce input costs or increase crop value are needed to maintain economic incentives to 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 analytical methods and calibrations, the same soybean sample analyzed by two different labs will often provide 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.

**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.

At the same time, the Supply strategic approach must focus on soybean yield improvements. 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 lost between 250 and 500 million bushels of soybeans per year to disease over the past few years. Minimizing losses by developing soybean varieties resistant to, or tolerant of, major soybean diseases like SCN and Sudden Death Syndrome 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 US only a relatively short time (since the 2005 growing season). Rust has continued to develop as a disease in the US 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, 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, 5%, 3% or 2% to total yield potential. Researchers are now able to conduct “nested association mapping” using USB funded research data 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 to introduce many of these genes into a single germplasm line. 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.

**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 at the farmer level, whether through higher prices, reduced crop loss, or improved production efficiencies. 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, yield and research coordination. Impact can also be made through the research coordination strategy by actively engaging the research community to ensure that dollars available for research are well spent and address the needs of soybean farmers and their customers.

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 yield impacting genes 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 continue to build upon work already done to develop resistant 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 adapted to soybean maturity groups across the U.S. Research also can result in the development of a new type of broad-spectrum resistance to SCN. Research to date shows promise in identifying lines that show resistance to 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 2008. This program was responsible for minimizing unnecessary soybean rust fungicide applications and saved soybean farmers untold money. Perhaps most important is the involvement of USB farmer-leaders and staff in rust research planning meetings and the willingness of the checkoff to dedicate funds to address needs in rust research. This level of USB involvement has been instrumental in developing a strategic plan to address rust in the U.S.
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. Commercial companies are also seeking other quality improvements. 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 to researchers for the development of high-yielding soybean varieties with improved traits. Because this genomics research is being done by public researchers using USB funding, the genomics information is publically 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 Cooperative State Research Education and Extension Service and other public agencies.

Based on new information, low-phytate lines with good yield and good germination can be developed, addressing earlier concerns that this might not be possible.

Checkoff-funded genomics research helped to position soybeans to be chosen by 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. The data has been posted on a publicly available web site and information from it is being used by many soybean researchers.

Low-linolenic soybean varieties, resulting from both public research and from private companies, are being grown under contract. Demand for these soybeans continues to increase, and additional low linolenic varieties have been released for commercial production. USB-funded researchers have released a number of new lines with one or a combination of low-linolenic, mid-oleic, and high-protein. These lines are being used by public and private soybean breeders in their breeding programs.

LRSP Objectives 1 & 3:
II. Promote U.S. sustainable soybean production through responsible stewardship while acknowledging global market needs.

Committee – Target Area
A. Production – Supply

Goal:
1. Increase U.S. soybean trend line yields by 2 percent annually.

**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:**

ii. 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. Develop yield data from field trials for one or more major QTL derived from exotic germplasm.

iii. 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 QTL from exotic germplasm are identified and breeding efforts are initiated to incorporate these 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. Develop a multi-year research plan(s) to improve production efficiency. Ensure that researchers collect, share and publicize significant results.
   ii. 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:

Committee – Target Area
   B. Production – Supply

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

Strategy 1:
   a. 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 limiting amino acids, 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.
Performance Measures:
iv. Germplasm is developed with improved oil/fatty acid composition characteristics, and functionality of the improved oil is determined.
v. Traits are identified that improve metabolizable energy, reduce phytate-phosphorus, and improve the balance of limiting amino acids.
vi. 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:
c. 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 establish and implement a joint plan to develop analytical standards.
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:
d. 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:
e. 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. 2008 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: $8,101,332
Production – Supply/Composition: $4,249,879

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Human Utilization accounts for nearly 21% of soy use, domestically. Soy oil typically provides from 35 to 40 percent of the value of the bean.

Soy Oil Remains Market Leader, But Market Share Is Falling
Eighty-one percent of all U.S. soy oil is utilized as human food in salad oil, cooking oils, commercial frying oils, baking, margarine and other uses. About 15 billion pounds of soy oil is consumed annually. Soy oil represents nearly 70% of the total vegetable oil market in the United States. This represents more than a 10% decline in market share since a high of 81% in 2005.

In January 2006, the Food and Drug Administration’s new 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.

To provide soy solutions to this trans fat issue, low-linolenic soybean varieties were introduced in 2004. Farmers planted nearly 2 million acres of low-linolenic soybeans in 2009. 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 oils and high stearic oil in 2010-11. Farmers will be asked to grow these new soybean varieties to ramp up the increased oleic oil supply to meet end user’s needs. The USB value chain analysis projects that high oleic soy oil will add $581MM in producer income annually over the next 20 years. Introduction of high stearic soy varieties is expected in 2012. Also in 2012 Omega 3 soy oil will be introduced. 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-five percent (85%) of consumers perceive soy foods as healthy, an all-time high since USB began measuring consumer attitudes in 1999. However, there is a dark side not reflected in these perception statistics. Attacks on soy, particularly related to soy genistein intake, have increased in number and intensity. Some foreign governments (France, Israel and Japan) have recommended restrictions on soy intake among infants, children and expectant mothers.
The heart health claim is being reevaluated based upon recent research showing that soy protein does little to reduce LDL cholesterol. 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 completed in July. FDA’s reevaluation could take between one and two years.

If the FDA decides to reaffirm the soy health claim, the announcement will provide a great opportunity to create “news” about soy and heart health. Additionally, there is some discussion about the potential for a hypertension health claim for soy, although this is quite preliminary. USB and SNI would play a significant role any new health claim petition.

**Strategic Approach**

The approach to protect soy oils 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 using soy-based solutions. USB was committed to helping gain acceptance of low-linolenic soybeans. These soybeans, with 3 percent or less linolenic acid (versus 7 percent for conventional soybeans), produce oil that needs little or no hydrogenation, thus eliminating trans fats. Through panels at trade shows such as the Institute of Food Technologists, the American Oil Chemists Society and the American Dietetic Association, USB will now communicate the arrival of increased oleic oils to end users and help drive interest and demand in these new oils. Increase oleic oils will provide soy-based trans fat solutions to the baking and heavy frying industries.

In another trans solution initiative, USB-DMC contracted with a well-known researcher at Penn State University to complete a Stearic Acid Literature Review. The review was published in the American Journal of Clinical Nutrition (AJCN) in January, 2010 and is considered a landmark review in establishing the cholesterol neutrality of stearic acid. This research will be valuable in establishing a case for a label change involving saturated fats and stearic fatty acids. Such a change in the treatment of stearic acid would help position interesterified soy oil as a trans-fat solution and create an opportunity for the possible introduction of high stearate oils, which might replace competitive oils domestically and internationally.

The interest in the healthfulness of soy oil has generated development of soybean varieties that could provide human health benefits, create value-added niche markets and help keep the U.S. soy industry competitive. Technology companies have announced plans to introduce high oleic oil (2010) and high stearic oil (2011), Omega-3 (2012), and other soy oils targeted for human utilization. Some of these varieties will be developed utilizing biotechnology. In FY11, 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 $8.4 million three-year grant,
while the SHRP has generated $23.8 million in research funding on only 1 Million in USB investment.

As demand for soy oil use in biodiesel grows, utilization of soy protein gains greater importance. Human utilization continues to be a solid soy protein utilization area. In FY11, USB needs to enable soyfoods companies to continue to drive consumption of soy protein by eliminating potential barriers to increased use. One of these barriers, for example, could be the FDA’s reevaluation of the soy and coronary heart disease (CHD) health claim. 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 3.5 billion bushels of U.S. soybeans by 2011

**Committee - Target Area**

A. Domestic Marketing – Human Utilization

**Goal 1:**

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

**Strategy 1:**
a. Prepare marketplace for introduction of enhanced oils; specifically high oleic oil in FY11.

   **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 2:**

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 and market place awareness of high stearic
   ii. Marketplace awareness of Omega 3 oils in pipeline.

**Strategy 3:**

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 and market place awareness of high stearic

ii. Marketplace awareness of Omega 3 oils in pipeline.

**Strategy 4:**

**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 5:**

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

Strategy 1:
 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 2:
 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 3:
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:
1. Gain food industry, influencer and consumer acceptance and understanding of new biotech traits with health benefits

Strategy 1:
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 2:
   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 3:
   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

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: $2,140,434

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International Marketing Committee
Human Utilization

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:

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, USSEC 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, USSEC 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, 33 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, 328 institutional decision makers and soy food processors will become aware of soy protein.
   iv. Through WISHH sponsored activities, 240 commercial food processors will become aware of potential for soybeans protein in products.
   v. In China, medium and large tofu manufacturers will import 200 MT of U.S. food grade soybeans.

Strategy 2:
   b. Customer Preference

   Tactics:
   i. In Japan, USSEC 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, USSEC will continue to educate processors on the benefits of utilizing soy flour in bakery products.
iii. In Southeast Asia, USSEC 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, 100 key bakeries in the region will import 5,000 MT of U.S. soy flour.

iii. In Southeast Asia, 10 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, USSEC 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 USSEC 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 USSEC preferred customers the opportunity to see the new U.S. soybean varieties firsthand.

  **Performance Measures:**
  i. USSEC will 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, US 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.
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 Allocations:
IM – Human Utilization: Demand Building $ 383,571
IM – Human Utilization: Customer Preference $1,534,286
Total: $1,917,857

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Communications Committee
Industry Relations

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 or stalled 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: Reduction in the livestock sector, more legislation, stricter regulations, fewer farmers, moderate increase in soy stocks, weakening infrastructure, biofuels landscape uncertainty, market volatility
- Environmental Issues: Sustainability pressures, extreme weather conditions, soybean quality challenges

Strategic Approach
-Soybean Farmers
The Communications program 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. It will also provide U.S. soybean farmers with impartial, fact-based 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, it will provide non-checkoff related information meant to help ensure U.S. soybean farmer profitability.

To meet the soybean farmer audience communications objectives, USB will use a combination of the following three subcategories.

--Digital/Internet: Through continued improvements to the official soybean checkoff website (www.unitedsoybean.org), we will provide unique and useful information and tools to support and inform soybean farmers as well as the soybean family, ag and mainstream media.

--Beyond the Bean®: Soybean farmer surveys continue to indicate very high recognition and support for the magazine. In fiscal years 2009 and 2010, the Communications program expanded the use of the Beyond the Bean brand to radio and TV. In 2011, the TV counterpart will transition to web-based video episodes, or webisodes, with brief summaries of each to be broadcast on current ag-related TV shows. A combination of these vehicles will allow us to reach farmers with information, which not only demonstrates the value of the checkoff, but also supports U.S. farmers by providing and/or showing how the soybean checkoff provides profit opportunities.

--Direct Soybean Farmer Communications: The Communications program will reach farmers directly through paid advertising, earned media, and grassroots interaction. We will continue to use USB farmer-directors as credible, primary soybean checkoff spokespersons.

-Soybean Value Chain (including customers)
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, U.S. soy quality, introduction and adoption of new biotech varieties and sustainability practices. Support of these organizations through active partnerships is a visible sign of the checkoff’s support of other trade associations, farm organizations and commodity groups, and 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.

-Consumer Thought Leaders
A growing concern exists in U.S. agriculture that consumers lack an understanding of the value of modern agriculture in their daily lives. An increasing movement among some activists has given the impression that modern production agriculture does not serve consumers’ interests. It is that lack of understanding and awareness which drives the USB Consumer Thought Leaders project within the USB Communications program.

An educational effort targeting the general U.S. population isn’t economically feasible, but targeted efforts to build awareness, provide factual information and counter unfavorable messages, are achievable by using a carefully focused plan and a defined set of “consumer thought leaders.” By this we mean the people who most influence consumers.

The Communications program will use social media, traditional publicity or earned 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 consistent and concise 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. 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.

-Online/Website
The Communications program will increase checkoff news and industry news provided on the website by evolving it into a news magazine and further extending the Beyond the Bean brand. A more content rich and easier to navigate USB website will incorporate news articles, revolving video and audio feeds, and regularly updated USB program area news and information.

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.

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.

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

A. Communications - Industry Relations

1. Committee Goals 1 & 2

- Continue building awareness with U.S. soybean farmers of the checkoff’s value in the current and future success of their operations.
- Continue building awareness with U.S. soybean farmers of their critical role in meeting the demand for food, feed, fiber and fuel for a fast-expanding population.

a. Soybean Farmers

Tactics

i. Manage and maintain U.S. farmer database for USB communications efforts and for request by QSSBs.

ii. Develop, produce and distribute at least four issues of Beyond the Bean magazine.

iii. Develop a special edition of Beyond the Bean that focuses on the 2011 Communications Campaign that will focus on the importance of what happens to U.S. beyond the elevator such as animal ag and exports.

iv. Update and maintain Beyond the Bean’s Internet presence.

v. Continue broadcasts of “Beyond the Bean On-Air® on “AgriTalk” featuring interviews with USB or QSSB farmer-leaders and/or industry partners.

vi. Create a communications campaign focused on what happens to U.S. soy beyond the elevator and the importance of animal ag and exports. This will utilize some paid media components including print ads, radio ads and digital ads. Ensure all campaign materials are available for QSSB use.

vii. Continue to send the Commodity Update via cell phone text message at no cost to U.S. soybean farmers.

viii. Develop and place 10 ads with adjacent advertorials in ASA Today.

ix. Contribute 2-3 stories bi-weekly to the “Checkoff News” section of ASA Weekly Leader Letter.

x. Place checkoff information billboards to air during commodity market segments on major ag TV programs.

xi. Develop shorter episodes of “Beyond the Bean On-Air” for use on the USB website and other web vehicles. Promote using summaries of each program on major ag TV programs.

xii. Sponsor the live taping of “U.S. Farm Report” at Commodity Classic.

xiii. Develop and place checkoff update in state-specific ag publications as chosen by participating QSSBs.

xiv. Contribute 10 articles to the U.S. Soybean Federation’s Soy Hillside Review.

xv. Develop and distribute a USB overview brochure.

xvi. Write and distribute checkoff news releases and audio reports.

xvii. Promote the checkoff’s messages through media events including those focused on the 2011 Communications Campaign.

xviii. Develop and distribute Checkoff Chronicle, a monthly news tip sheet to media.

xix. Write editorials on behalf of USB directors and pitch editorials to media to ensure publication.
xx. Shoot, edit and distribute short videos about checkoff activities to pitch to TV stations and to use at events and tradeshows.

xxi. Monitor media for soybean issues and checkoff media coverage.

xxii. Create graphs, charts and other easy-to-read visuals for earned media communications.


xxiv. Create graphs, charts and other easy-to-read infographics to help communicate the importance of animal ag and exports as part of the 2011 Communications Campaign.

xxv. Develop new educational premiums and information.

xxvi. Sponsor and participate in farmer-focused shows, including Commodity Classic and AgConnect.

xxvii. Continue application-based QSSB tradeshow partnership program.

xxviii. Sponsor and exhibit at NAFB annual meeting.

xxix. Create educational tradeshow visuals to draw and educate attendees at the USB booth.

xxx. Update booth graphics and banner stands to reflect FY 2011 communications campaign.

xxx. Fulfill requests from farmers for soybean checkoff information.

xxx. Sponsor and participate in the ASA/USB REAP Tour and create two educational tours, one in the north and one in the south.

Performance Measures

i. Maintain support of the soybean checkoff at 75 percent.

ii. Maintain Beyond the Bean magazine recognition at 65 percent or greater.

iii. Increase farmer recognition of the importance of maintaining the U.S. poultry and livestock industries to their long-term bottom line by 8 points to 20 percent.

iv. Increase farmer recognition of the importance of increasing export markets and international sales of U.S. soybean to their long-term bottom line by 5 points to 28 percent.

v. Maintain knowledge of other checkoff program area activities at 2010 levels.

vi. Increase the percentage of farmers that believe the checkoff has at least medium to great impact on their bottom line profitability by 3 points to 70 percent.

b. Soybean Value Chain Tactics

i. Leverage existing partnerships and develop new partnerships within the agriculture industry to communicate the importance of agriculture and U.S. soybean farmers.

ii. Partner with farmer influencer groups to cost share educational programs relevant to the U.S. soybean industry.

iii. Develop communications model for two-way communications between the checkoff and elevators/processors.

iv. Provide in-kind support and consultation to the Commodity Checkoff CEO Roundtable group, and work with the organization and/or USDA to develop a “Facts About Checkoffs” presence on the Internet.

v. Continue the Soybean Link e-newsletter that is distributed to industry influencers including elevator/processor management, seed company representatives, farm managers and others.

vi. Continue the “Focus on Soybeans” webcast series in partnership with Plant Management Network.

vii. Sponsor ASA’s SoyStats.
viii. Continue to provide valuable information on the importance of animal ag to the U.S. soybean industry through www.animalag.org.

Performance Measures
i. Partner with two new organizations with mutual communications goals to further extend checkoff messages.
ii. Benchmark value chain’s knowledge of checkoff activities and determine their checkoff information needs.
iii. Maintain support of the soybean checkoff at 75 percent.
iv. Increase farmer recognition of the importance of maintaining the U.S. poultry and livestock industries to their long-term bottom line by 8 points to 20 percent.
v. Increase farmer recognition of the importance of increasing export markets and international sales of U.S. soybean to their long-term bottom line by 5 points to 28 percent.
vi. Maintain knowledge of other checkoff program area activities at 2010 levels.
vii. Increase percent of farmers that believe the checkoff has at least medium to great impact on their bottom line profitability by 3 points to 70 percent.

c. Board & QSSBs
Tactics
i. Draft reports and presentations for USB staff and directors.
ii. Provide planning support for USB meetings.
iii. Produce and distribute the USB Directory and other materials to help USB Directors accomplish responsibilities.
iv. Support USB director and director nominee professional development activities.
v. Coordinate training workshop for USB director leadership.
vi. Provide communications strategic counsel and facilitate breaking issues and crisis communications.
vii. Create a communications menu for both USB directors and staff that outlines how we can support their communications efforts.
viii. Create USB director resource on the USB website featuring tools for USB forms, presentations and other materials.
ix. Compile and distribute USB Board Meeting summary reports for directors to report USB activities and accomplishments.
x. Compile agriculture facts on USB website to be used as a resource by USB directors and staff.
xi. Provide presentation tool kits with updated checkoff messaging to current and past USB Directors.
 xii. Provide funding and staff support for QSSB communications activities, including digital communications, trade shows and meetings along with earned and paid media efforts.
 xiii. Field communications requests from QSSB staff, such as providing video b-roll and supplying premiums, materials, collateral, photos, etc.
 xiv. Compile and distribute the USB Weekly E-mail to States.
xv. Offer application opportunity to provide reimbursement funding to QSSBs for pre-approved communications activities.
xvi. Offer application opportunity to provide co-op funding to QSSBs to place USB print, radio and/or TV ads.
xvii. Provide assistance in customizing print, radio and TV ads.
xviii. Plan and execute QSSB Communications Roundtables.
xix. Purchase additional quantities of USB collateral and premiums to make available to QSSBs at no cost.
xx. Offer QSSBs the opportunity to place one insert in Beyond the Bean magazine each fiscal year. QSSBs will have the option to create the insert on their own or to work with USB to develop the insert.
xxi. Provide assistance in creating, printing and mailing state specific newsletters.
xxii. Plan and implement in-person office visits with QSSB staff.
xxiii. Maintain QSSB resources, such as the State Share Library on the USB website and a database of QSSB leaders.
xxiv. Develop and purchase large quantities of a new premium that will educate children in grades 3-6 about soybeans and agriculture.
xxv. Compile a quarterly mailing of all USB communications materials for QSSB staff.
xxvi. Create unique content about projects at the national level that will be easily reusable at the state level.
xxvii. Facilitate communications evaluation and counseling to QSSBs and offer reimbursement on oversampling of farmer surveys.
xxviii. Assist with collaboration between states including providing scholarships for QSSBs to attend other QSSB tradeshows, meetings or offices.

Performance Measures
i. Provide two new opportunities for two-way communications and collaboration between USB and QSSBs to help the checkoff speak with a unified voice.
ii. Increase the number of USB Directors that use communications support. (Benchmark being set in FY 2010.)
iii. Maintain 100 percent of QSSBs that use USB communications support.
iv. Maintain support of the soybean checkoff at 75 percent.

d. Online/Website Tactics
Create unique content for USB website. The reformatted site will incorporate news articles, revolving video and audio feeds, and regularly updated USB program area news and information that will include but not be limited to:

i. Interactive Internet Tools - Easy to locate Really Simple Syndication and video feeds as well as polling and other interactive features.
ii. Website Partnerships - Website content linking provides the ability to extend USB’s message and increase traffic to USB’s website. This allows for the implementation of a website partnering strategy.
iii. Tracking and support - Measuring the return-on-investment of the website activities and supporting the maintenance and updates to the website.
iv. Internal - Continue to improve and maintain the internal section of the website.
v. Consumer - Update and devote a section of the USB website that provides information to consumers.
vi. Press Room - Continue to improve and maintain the functionality of the website’s press room.

Performance Measures
i. Create and maintain unique web content that is valuable to soybean farmers in finding and capitalizing on profit opportunities.

ii. Develop and grow a database of soybean farmers with which, through e-mail, will maintain an ongoing dialogue to improve our information offerings and approach.

iii. Increase number of first time and repeat visitors and time spent on site.

iv. Increase search engine visibility for more generic soybean and agriculture terminology.

2. Committee Goal 3

- Increase U.S. consumer awareness of the value that modern production agriculture has in providing the safest, most affordable and abundant food supply in the world.

   a. Consumer Thought Leaders

   Tactics

   i. Work with individual QSSBs to develop lists of most important consumer influencers.

   ii. Work with QSSBs to develop and implement plan for outreach and relationship-building with influencers who impact consumer attitudes about food and farming.

   iii. Implement recruitment of spokeswomen for the CommonGround™ program through the QSSBs.

   iv. Work closely with states to develop and implement training for women who will act as the spokespersons for modern U.S. soybean farming and U.S. agriculture.

   v. Begin promotion and publicity efforts in states to get our modern soybean farming and ag messages to the public, using thought leader outreach and using the CommonGround spokespersons.

   vi. Focus promotion and publicity efforts on large, urban and suburban areas of the country aimed at consumers who are most out of touch with the facts about modern soybean farming, agriculture and food.

   Performance Measures

   i. Generally, increase consumer awareness of the importance of modern agriculture in providing their safe, affordable and abundant food supply. Measure change in attitudes among audiences we contact directly.

   ii. Create opportunities to present our messages to more than 500,000 people in our target audience through events and promotions.

   iii. Through partnerships with states, organize at least 50 speaking opportunities which put CommonGround spokeswomen in front of urban target audiences with our key messages.

   iv. Develop relationships with influencers, establishing USB as a credible source of information on the value of modern agriculture.

   v. Reach at least one million key urban and suburban consumers and influencers with our messages through print, online and broadcast media publicity opportunities.

- Financial Allocations
  Soybean Producers/Value Chain/Consumer Thought Leaders - $5,665,276
  USB & QSSBs - $2,102,531

- Program Staff Contact Information Lance Burditt, Communications Program Manager, burdittl@osborn-barr.com; 888/234-4332
Market Environment
The U.S. soy industry has enjoyed a strong track record of growth in the last decade. Seven of the last ten years the U.S. exported record amounts of soybeans. Last marketing year over 55% 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, forty percent 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 USSEC 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 US 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 US soy industry representatives to those markets etc.

USSEC 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, USSEC 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:

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:
1. In China, USSEC will encourage key customers to participate in USSEC Soybean Trade Support Programs.
2. In Asia, key importers will participate in the USSEC Quality Conferences to learn about the new U.S. soybean crop and its attributes.
iii. In East Asia, USSEC 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, 50 key customers will participate in USSEC Soybean Trade Support Programs.

ii. In Asia, 7 key customers will attend the USSEC Quality Conference in Korea and 280 in Japan.

iii. In East Asia, 3 new programs will be initiated to address specific customers’ needs.

iv. In Latin America, 15 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, USSEC will continue its issue monitoring system to keep soybean industry leaders throughout the world informed on EU policy/trade issues.

ii. In Turkey, 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, 100 worldwide soybean industry leaders will confirm they are better informed by utilizing the issue monitoring system provided by USSEC.

ii. Twenty 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. USSEC will 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, USSEC will continue its campaign at establishing U.S. soy as a sustainable resource in the global soy industry.

Financial Allocations:
IM – Industry Relations $ 5,082,322
Total: $ 5,082,322

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Market Environment
USB seeks to ensure that soybean checkoff funds and public research funds are utilized efficiently and that appropriate research targets are identified, funded and pursued. Efforts aim to coordinate development of priorities, strategies and activities by state and national checkoff organizations to optimize total 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 generation of a checkoff database used by many in the public and private sector to determine what research is being funded and to avoid redundancy. 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 work with USDA/ARS and other public funding agencies to determine areas of common interest.

Checkoff organizations, such as the USB, provide the opportunity for coordination of 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 farmer-leaders and staff on teams, committees and task forces provides a “real world” perspective to help researchers understand the needs of farmers. Without this coordination effort, funds may be spent on redundant projects, while other important research targets may be ignored. Coordination is vital if checkoff funds are to be leveraged with public support of research.

Strategic Approach
Research coordination involves more than funding meetings and developing databases. 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 participated in planning for rust research, genomics and reviews of ongoing national programs of USDA-ARS.

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 2008, at the request of soybean breeders, USB funded a meeting of public and private soybean breeders and others to discuss the future of public soybean breeding. This is critical since at this time, more than 95% of soybean varieties purchased by farmers are from private companies. As a result of this meeting, a Strategic Plan for Public Soybean Breeding was generated and was shared at the 2009 Soybean Breeders’ Conference. Coordinated efforts continue to be supported by USB to develop research plans for future years.
LRSP Objectives 1-3:
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:
i. Coordinate research activities and priorities with QSSBs and regional checkoff organizations to maximize efficiency and minimize redundancy of research efforts.
ii. Meet with key states 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 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: $929,661

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International Marketing
Global Access

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. United States 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. USSEC works closely with these industries to bring their concerns to the host nation in efforts to remove or decrease trade barriers. Specifically USSEC 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 USSEC 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:**


**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, USSEC 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.

iii. In Turkey, USSEC is heavily involved in discussions of the stakeholders to carry out the necessary revisions and amendments to the Biotech Law that took power on September 25, 2010. USSEC will remain heavily involved in these discussions so as to circumvent trade issues that may result from strict biotech laws being implemented.

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 Allocations:**

<table>
<thead>
<tr>
<th>IM – Global Access</th>
<th>$342,475</th>
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<td><strong>Total:</strong></td>
<td><strong>$342,475</strong></td>
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Global Opportunities
Market Access

Market Environment
The past year has seen continued global economic turmoil. Despite this, the global market for soy has remained strong yet several factors hang over the industry as fiscal year 2011 approaches.

An unsurprising agreement was reached in the Doha Round of negotiations at the World Trade Organization (WTO) that no final agreement would be reached in 2010. This collective and public realization has allowed negotiators to place serious focus on a timeline for a final agreement in 2011. WTO Director General Pascal Lamay urged the leaders of G-20 in June to recommit their nations to the world trading system and Doha. The U.S. government continues to issue very tough statements regarding the need for the advanced developing countries of Brazil, India and China to make significant moves to further open their markets. Similar statements regarding this came from USTR, Deputy USTR and the Secretary of State.

China, the purchaser of 50% of US soy exports or a quarter of the entire US crop, presents continued opportunity but significant risks to industry. China rapidly devised methods to ban soybean oil from Argentina after restrictions were placed on products manufactured in China. While this will allow additional US SBO to enter the market, it reiterates China’s ability and willingness to engage in trade retaliation. China may be further emboldened by their recent WTO legal victory over the US with regard to chicken products. US Congressional leaders are also considering actions against China if steps are not taken to properly value their currency. In addition, the United States Senate Committee on Finance has requested that the International Trade Commission (ITC) conduct an investigation under section 332(g) of the Tariff Act of 1930 (19 U.S.C. 1332(g)) regarding competitive factors affecting agricultural trade between China and the U.S. These factors could provide a very volatile year in the US soy industry’s largest market.

The US will continue to face serious market access issues from transportation constraints. The continuing capacity problems at US ports will be accentuated by the need to facilitate larger vessels which will be traversing the Panama Canal following the completion of its expansion in 2014. If US export facilities do not accommodate this change, Brazilian ports may well attract additional capacity and receive rates unavailable at US ports. Funding for needed infrastructure improvements – road, rail and water – will be a major focus of the next Congress and will directly impact US soy’s competitiveness.

The President’s commitment to doubling exports continues to provide hope the Administration will turn its focus to trade issues. The free trade agreements with Columbia, Panama and Korea have yet to be submitted to Congress. The European Union has continued to sign agreements around the world. In May, a potential multilateral free trade agreement was discussed by ministers from China, Korea, and Japan. Trans-Pacific Partnership talks were held in June in San Francisco between the US, Australia, Brunei, Chile, New Zealand, Peru, Singapore, United States, and Vietnam regarding how to further integrate trading platforms and the deepening of the agreement.
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
- 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, USGC, ISGA, ASA, USW, NCC, USTR 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 doubled due to the financial and personnel resources provided by the USDA Foreign Agriculture Services, which is afforded only to the International Marketing and Competitiveness programs.

The Committee’s work has led to a new food safety law (passage expected by the time of the USB July meeting) in Vietnam which maintains US soy access to this market. Throughout the process, USB GOC has provided input and comments. Work continues on proposed animal health, plant health and feed directives in Vietnam.

The analysis and alliances created by USB GOC has provided unique abilities for the US producer to impact the ability of US soy to enter global markets. One of the most unique advantages US soy producers have compared to other commodities is a voice at Biosafety Protocol meetings. While the US is not a signatory to the BSP, US soy producers are represented at the meetings where our ISGA partners in Paraguay serve as our conduit.

Another long-term project of the Committee is that of economic analysis work in conjunction with NOPA’s legal work on a WTO challenge to Argentina’s differential export tax (DET) on soybeans. USB GOC has shown this subsidy to SBM, SBO and biodiesel has an annual negative impact to US industry approaching $550,000,000. This research was included in the annual US Trade Assessment and has formed the backbone of outreach which has provided the support of 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.

USB GOC has a long and successful record of leveraging checkoff dollars in partnership with other organizations. These long-standing relationships will be very important as significant trade policies will come to conclusion over the next many months which will impact trade for decades to come.
LRSP Objective 1:
   I. Annual Utilization of 3.5 billion bushels of U.S. soybeans by 2011

   A. Market Access-Competitiveness

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 4 new organizations and support special USB initiatives.
   iv. Develop a global market, industry, regulatory, and trade knowledge center to support USB Directors and USB Committees to assist in the strategic and tactical programs.
   v. Attend and participate in 5 industry outlook meetings in the U.S.
   vi. Attend and participate in 4 global industry outlook meetings outside of the U.S.

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

Strategy 1:
   a. Expand on the Global Grower Development Agreements (GGDA), International Soybean Growers Alliance (ISGA), and International Oilseed Producers Dialogues (IOPD).

   Tactics:
      i. Define and direct specific GGDA/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.

vii. Develop ISGA response and communication resources

Performance Measures:

i. Develop ongoing capabilities of ISGA partnership.

ii. Participation of GGDA/ISGA members in 4 international market access trips to targeted countries of interest.

iii. Successful implementation of 4 GGDA/ISGA Roundtables, with clear direction to move forward.

iv. A minimum of 7 public releases of GGDA/ISGA/IOPD and Palm Industry collaborative efforts on issues of joint interest.

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. Research bilateral agreements and competitor domestic support programs among other countries to lessen the disadvantages that might accrue to U.S. soybean producers.

iii. Monitor, investigate, and analyze trading agreements and negotiations to determine their impact on the U.S. soybean trade and our competitive position.

iv. 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.

v. Provide technical assistance to the U.S. Government, when requested, during negotiations or discussions relating to trade policy.

Performance Measures:

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. soybeans 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.

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.

A. Market Access-Competitiveness

Goal:


Strategy 1:

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.

LRSP Objective 3:

III. Promote US sustainable soybean production through responsible stewardship while acknowledging global market needs

A. Market Access-Competitiveness

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 ISGA 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 GOC 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

**Financial Allocations:**

*Competitiveness* $2,094,958

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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 High Stearate and Omega 3’s which are scheduled for commercialization in the next 2-3 years. These human health traits will combine the ‘reduced stress’ traits currently developed for herbicide resistance along with new agronomic traits. The combination of these traits will increase the value of U.S. soybeans and position them

In a research study conducted at Stanford University, researchers at the ‘program for food security and the environment’ (FSE) noted that a world without commercial fertilizers, pesticides and biotech crops would result in more global warming and likely severe climate change. The report indicated ‘it is not fair to look at only current emissions. You also have to look at alternative scenarios that would replace the current system.” The authors further indicated although direct emissions would be reduced, one would see “greatly increased emissions associated with deforestation and other land use changes” to meet a growing food security need. The authors concluded that modern agriculture has effectively saved considerable land acreage from conversion which is directly associated with greenhouse gas reductions and was estimated “as much as 30% more carbon emissions to the environment.” An interesting question was posed going forward whether there is an opportunity of using agriculture as a way of ensuring that we don’t clear more land and the resulting greenhouse gas emissions. Continued agricultural innovation will be critical to meet the growing food need using an environmentally balanced approach.

The good news is that ag biotech adoption is making progress around the globe with increasing numbers of farmers worldwide adopting biotechnology. The annual survey of global adoption by the ISAAA (International Service for the Acquisition of Agri-Biotech Applications) shows that by 2009 more than 14 million farmers worldwide had adopted biotech on their farms. In 2009, a total of 340 million acres of biotech crops were planted in 25 countries by more than 14 million farmers. Notably, 90 percent, or nearly 13 million, are resource-poor farmers in 15 developing countries. Results from USB’s environmental scan project shows that media reporting has become increasingly more balanced and that consumer surveys even in the European Union show biotech issues are of less concern among consumers than previously. It is of interest than in the past few months a number of EU retailers have made inquiries about the coming value
added soybean events such as the omega-3 and expressed interest in meeting U.S. soybean growers. This is in marked contrast to a virtual silence on biotech topics and a reluctance to meet U.S. soybean representatives in the past few years.

The European Union (EU) has significant credibility among critical overseas markets relative to its position on biotechnology. For example Turkey enacted onerous legislation in late 2009 based on EU legislation. The Turkish legislation went further than the EU however and it was only through efforts by the Turkish industry and the U.S. administration and industry that a total ban on soybean imports was averted. The situation however remains of concern. Similarly in Egypt results from a USB environmental scan seminar held in late 2009 showed how strong an influence the EU has in the Egyptian decision-maker mindset. Efforts of many within the soybean value chain have resulted in a significant shift in attitudes regarding biotechnology among EU food and feed industry stakeholders. However, in light of the numerous biotech traits in the pipeline and the increasing number of biotech corn events commercialized in the U.S. that have not been approved in the EU, it is critical that work continues to leverage and support the efforts by EU stakeholders to educate EU influencers to further promote a positive shift in attitudes toward ag biotech. This is so even for biotech crops that could be cultivated in the EU given the widespread rejection of cultivation by many member states. Soy is grown on a limited acreage in Europe but there are concerns among EU stakeholders than mounting opposition to cultivation could drag import approvals down also. Further the European Commission is carrying out an evaluation of its biotech legislation and it is possible it will propose changes in late 2010 which could include new policies on low level presence of biotech material – an issue that has been pressed strongly by the U.S. and EU value chains.

**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.

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 development 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.

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.

LRSP OBJECTIVES 1 & 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.

A. Market Access – Biotechnology Initiative

Goal 1:

1. Develop a global understanding of biotechnology views in key soybean markets.
Strategy:
   a. 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.
   b. Identify specific actions the biotech committee can undertake in key markets to positively influence biotech acceptance.

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.

Goal:
2. Influence future influencers through both informational and educational platforms which discuss both the science and value to the market.

Strategy:
   a. 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.
   b. Ensure that information developed is leveraged outside of USB sponsored programs.

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.

ii. Collateral materials disseminated to key audiences during farmer-leader missions and speaking opportunities.

iii. Effectively incorporate suggested improvements and conduct a 2010 Biotech Univ. 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.

iv. Successfully introduce Phase II of the middle and high school science teachers biotech curriculum through developing additional lesson plans, vodcast, PowerPoint presentations with speaker notes and conducting a teacher workshop to build excitement among teachers to take an active role.
   a. Educational curriculum is shared with FFA and 4-H to effectively leverage the checkoff investment.

v. Incorporate biotech educational curriculum into the overall World Food Prize education platform to represent biotech as a key tool for agriculture in the future.

vi. Biotech regulations 101 program developed and implemented with target audiences, such as scientists, regulators, and government influencers, research institutes, and private companies.

Goal:

3. Ensure that the positive perception by U.S. soybean growers is shared with key influencers identifying how biotech is a key tool to increase both production efficiency and profitability.

Strategy:

a. Utilize USB farmer-leader outreach opportunities to drive confidence in agricultural biotechnology both in the U.S. domestic market and with key overseas markets.

b. Develop a central location for biotech information access on a global basis through the USB web site.

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. Collaborate with World Food Prize organization in the conceptual development of an education wing.

vii. Assess appropriate communications platform for biotechnology educational tool at World Food Prize Hall of Laureates
   a. Develop maintenance approach of educational tool once communications platform is established

viii. 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

vi. 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

vii. Joint agreement with WFP on the appropriate format for educational materials at World Food Prize Hall of Laureates

viii. Biotech subpage promoted to domestic and international audiences as central hub of information on biotechnology issues

**Financial Allocation:** $1,308,277

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Market Environment
According to the United Nations, the world's population today is 6.5 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 this 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.

Numerous organizations, agencies, universities and governments are addressing these pressures under the heading of sustainable agriculture. Production agriculture’s use of natural resources, and its contributions to quality of life, rural character, biodiversity and greenhouse gas reductions have been the subject of more than 20 indices in the past five years. Other endeavors have defined narrow sets of acceptable agronomic practices for producers to implement.

In the near-term, the issues associated with sustainable agriculture will affect the profitability of the U.S. soybean industry in three 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. The European Commission has passed a renewable fuels directive that includes greenhouse gas (GHG) emission criteria; these criteria strongly discourage the use of soy-based biodiesel as a renewable fuel in Europe. The U.S. dairy industry has set a goal of reducing GHG emissions by 25% by the year 2020, and will encourage the use of feed sources that best help the industry meet this sustainability target. Wal-Mart is considering de-selecting certain food products in an effort to reduce the greenhouse gas emissions of the products that it sells. Loblaw (food retailer) in Canada has already done so.

Input costs: NGOs and government agencies are accelerating efforts to internalize “external” production costs, such as environmental impacts, social ramifications, and health considerations. GHG emissions regulation, water quality regulation, and biodiversity incentives are just a few approaches currently being explored to internalize external production costs. If successful, these efforts are likely to increase farm input costs, from mineral nutrients to seeds, from fuels to crop protection products. 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. A new office established within the USDA will work with the Natural Resources Conservation Service office to expand current subsidies that reward growers for sustainability performance (for example, CRP). The USDA recently announced $50
millon in funding to support growers transitioning to organic methods. 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 will achieve this through several strategic themes:

Advancing soy sustainability – improving the sustainability performance of U.S.
soybeans through agronomic innovations, and developing science-based mechanisms
that accurately and realistically measure the impacts of soybean agriculture.

Engaging with influencers – collaborating with the food, feed, fiber and fuel markets, as
well as other stakeholders, to ensure that the sustainable performance of U.S. soybeans
meets market needs.

Telling our story – educating the food, feed, fiber and fuel markets on how U.S.
soybeans meet their needs for sustainable supply.

This strategy creates a four-step approach that will deliver the maximum value to U.S.
soybean grower profitability:

1. Identify gaps in the marketplace’s understanding of sustainable agriculture and
align soybean sustainability performance data to fill these gaps
2. Build the data that confirms U.S. soybean sustainability
3. Show key markets how U.S. soybeans can help them meet their sustainability
goals
4. Make the case for high value U.S. soybeans

**Ability to Impact**
The U.S. soybean industry has advanced its discussion and consideration of
sustainability ahead of most of production agriculture. USB has a definition of
sustainability as it applies to soybean production, as well as three main 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 Inventory study for soybean production, and
is already integrating this information into other life cycle efforts by the dairy and pork
industries. Other commodity row crops have not yet started this important exercise. 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 market expansion/contraction, input costs and
ecosystem services that will affect 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. This underlying credibility further strengthens the voice of the soybean industry during the development of standards and initiatives.

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:**

   A. Sustainability Initiative – Market Access

**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
   ii. Monitor the development of the Roundtable on Responsible Soy standard
   iii. Monitor development of the ANSI/Leonardo Academy sustainable agriculture standard
   iv. Monitor the development of the Roundtable on Sustainable Biofuels
   v. Monitor the rollout and implementation of the Soja Plus program in Brazil
   vi. Monitor development of other sustainable agriculture standards and evaluate for the necessary level of involvement/participation

**Performance Measures:**
   i. Keystone Field to Market is referenced and modeled in the development of other sustainable agriculture standards
   ii. 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
   iii. European Commission consideration of alternative data and methodologies for determining the GHG emission reduction of soy-based biodiesel in its renewable fuels directive
Strategy 2:

b. Provide the food chain with data that can help guide how companies are measuring the sustainability of supply chains, to ensure that U.S. soybeans remain a supplier of choice

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, GMA and FMI
iv. Integrate new 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 FMI
ii. Identify and begin work on two data gaps regarding soybean sustainability performance
iii. Begin collaborative work with at least six QSSBs on sustainability research projects
iv. 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. Promote soy as resourceful and responsible agriculture

Tactics:

i. Utilize social media tactics to emphasize the benefits of contemporary soybean agriculture
ii. 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
iii. Build data that proves the valuable sustainability benefits of soybeans in a larger crop rotation

Performance Measures:

i. 50% increase in uptake of social media messages from three months after launch to nine months after launch
ii. Complete one study that quantifies the sustainability benefits of soybeans with a crop rotation
Strategy 2

b. 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. As widely as possible, share the USB LCA data

Performance Measures:

i. House the USB LCA data is the soon-to-be-developed National Agricultural Library

ii. Begin two cooperative projects with USDA NRCS, leveraging NRCS tools and/or funding

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. Provide alternative data and methodologies for determining the energy input of soy production

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. Establish credible, accurate and realistic metrics for gauging the impact of soybean cultivation and harvesting on water quality
iii. 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

**Performance Measures:**

i. One completed study that examines a set of production practices and their resultant impacts on a selected 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. Develop a model that assesses yield implications of improving sustainability performance on various soils and climates

iv. Develop an economic sustainability resource that 85% of USB Board members agree is useful

**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. Build a foundation around feeding the world

   Tactics:
   i. Meet with food industry leaders, including brand owners and GMA, to discuss how increasing soybean yields are helping to satisfy both food and fuel needs
   ii. Develop indicators that reflect the productivity of U.S. soybean agriculture
   iii. Integrate the soybean life cycle analysis into other life cycle studies to create consistency around the sustainability performance of U.S. soybeans
   iv. Facilitate a joint industry stakeholder meeting to establish consistent messaging around food vs. fuel
   v. Develop a publication that highlights the yield improvements of soybeans over the past two decades

   Performance Measures:
   i. One meeting with GMA leaders/board members to discuss GMA position on food vs. fuel
   ii. Incorporation of a total-farm-yield metric in selected sustainability standards
   iii. 50% reduction in social media mentions of soybeans in food vs fuel posts

Strategy 2:
   b. Create a unique and individual story for U.S. soy, with connections to the broader agriculture value chain

   Tactics:
   i. Evaluate the risk/reward of establishing sustainability performance goals for the U.S. soybean industry, in congruence with the goals established by the broader agriculture value chain (e.g., dairy)
   ii. Expand www.usbthinkingahead.com blog to include additional guest bloggers and more interactive features
   iii. Create a library of farmer sustainability stories (text, video, audio, etc.)

   Performance Measures:
   i. Achieve minimum of 10 comments monthly on www.usbthinkingahead.com from target audience members
   ii. Collect 10 farmer sustainability stories

Strategy 3:
   c. Enhance the image of soy as humanity’s partner

   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: $1,391,723

**Program Staff Contact Information:**
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Compliance and Evaluation
Audit and Evaluation Committee

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 ensure 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 are under 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 other industry checkoffs. USB maintains compliance with SPARC supporting strong 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 Committee will continue to execute a proactive, positive approach in compliance and evaluation on behalf of the soybean checkoff. USB’s A&E committee will execute programs that provide compliance education and information to director, farmer leaders and staff at the national and the state level. In FY11, USB 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, USB will engage third party evaluators to analyze and test checkoff expenditures and evaluate the effectiveness of USB’s programs.

Ability to Impact
USB’s Audit & Evaluation Committee will continue to ensure 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 Objective 1: Annual Utilization for 3.5 billion bushels of U.S. soybeans by 2012.

Committee – Target Area:
   A. Audit and Evaluation - Compliance and Evaluation

Goal 1:
   1. Overcome a lack of knowledge regarding SPARC and USB compliance requirements.

Strategy 1:
a. Provide accurate compliance information 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 disc for additions, deletions and/or clarifications as necessary.
   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 disc to QSSB’s, Staff and USB directors annually.
   ii. Provide the most accurate compliance information as needed by QSSBs, Staff and USB Directors reflected in the compliance CD 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-survey. Encourage participation through QSSB agenda topic suggestions and scholarship opportunities.

Goal 2:
   2. Ensure appropriate expenditures of SPARC by QSSBs and USB primary and subcontractors and Agreement terms and provisions are executed 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.
   b. Provide personal and reliable service 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 for compliance orientations, compliance issue resolutions 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 five to seven subcontractors on a rotational basis to perform procedures and identify compliance or contractual issues and reach resolution on all findings with possible recommendations to policy change or funding increase/decrease.

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 ensure 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 required every five years.
iii. Evaluation of the See For Yourself project for future facilitation of the program. Information will be compiled from participants pre-travel, post-travel and December Board meeting surveys verifying increased understanding of the checkoff.
iv. Increased transparency in USB policies.
v. Consideration of board wide evaluation project for allocating funds.

Performance Measures:
i. Evaluations will be reviewed by related committees and the Board, with recommendations adopted for positive resolution.
ii. Consideration of annual collection of data from USB and QSSB’s for ROI Study instead of every five years in order to increase accuracy and reduce costs.
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. USB policies will be periodically reviewed and if necessary revised, and approved by the full board and USDA-AMS. USB policies will be available on USB’s website, on CD and via special request.
v. Consideration of budget allocation evaluation that focus on two strategic approaches: 1) a macro approach to target allocation and 2) a periodic project evaluation across all committee program areas.
Goal 4
4. Build USB A&E Committee participation to provide USB director and state participation in all checkoff compliance objectives and to educate perceptions of A&E activities.

Strategy 4:
   a. Effective communication of A&E’s objectives through messages to USB Executive Committee, Board, QSSBs and the soybean farmer.
   b. Create awareness and build participation in the Partnership Workshop
   c. Inform See for Yourself program objectives through communication.

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 by creating a program for Alumni. Increase board member and overall awareness of the positive effect of the program by personal messages from the participants.

Audit and Evaluation Financial Allocation: $1,202,638

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