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UNITED SOYBEAN BOARD
LONG-RANGE STRATEGIC PLAN
Revised and Approved February 2008

Recommendation by Executive Committee
December 7, 2008

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
(Issues brought forward from 2007 are marked with an *.)

- Sustainability
- Price and Availability of Agriculture Inputs
- Quality *
- Animal Agriculture *
- Rust *

Priority Issues to be recommended at the February 2009 Board Meeting using CONNECTIONS
2008 outcomes.
Committee Goals – LRSP Objective 1

LRSP Objective 1: Annual utilization of 3.5 billion bushels of U.S. soybeans by 2010.

Animal Utilization - Committee Goals:
DM - Preserve the domestic soybean meal market at 98% consumption rate.
DM - Build support for livestock and poultry production in the United States.
DM - Expand targeted animal nutrition opportunities.
DM - Grow meat export opportunities.
DM - Maintain domestic aquaculture markets for soybean meal in the face of increased production costs and low-cost competition from seafood imports.
DM - Set the stage for an opening of aquaculture market opportunities in anticipation of possible future market climate changes that favor aquaculture production.
IM - In markets with large and/or expanding animal agriculture production, sustain and expand soy inclusion rates in animal feeding rations.
NU - Build demand for U.S. soy in aquaculture markets.

Industrial Utilization - Committee Goals:
COM - Build awareness of the soybean checkoff as an effective, efficient and farmer-driven U.S. soy research and promotion program while establishing the checkoff as an impartial resource of soy-related information among all U.S. soybean farmers, the ag value chain and consumer thought leaders.
IM - Global biodiesel industry recognizes soy oil as a prominent feedstock for biodiesel production.
NU - Develop soy-based plastics for petrochemical market.
NU - Develop soy-based lubricants and solvents for petrochemical market.
NU - Develop soy-based coatings/inks/adhesives for petrochemical market.
NU - Develop emerging soy-based technologies for petrochemical market.
NU - Build awareness and demand for soy products.
DM - Increase the use of biodiesel in vehicles to help drive the utilization of 3.5 billion bushels of soybeans.
DM - Increase biodiesel use in the trucking, underground mine and home heating markets.
DM - Meet Environmental Protection Agency requirement to produce 90 percent less particulate matter and NOx.
DM - Increase the use of soybean oil by growing soy biobased products markets.

Market Access - Committee Goals:
CMP - Assure, to the extent possible, maximum competitiveness in the global market for U.S. grown soybeans and soybean products.
CMP - Utilize international alliances to better position U.S. soybeans globally.
CMP - Expand international business development efforts for U.S. Soy.
CMP - Maintain and expand global soy trade through beneficial trade agreements.
IM - Educate and garner support from country specific trade, scientific and regulatory officials on the harmful effects of overseas trade and market access barriers.
Human Utilization - Committee Goals:
DM - Establish market demand for high value U.S. soybean oil and protein that fulfill the needs of global food customers and consumers.
DM - Encourage continued use and growth of soy products by maintaining perception levels of soy health benefits.
IM - Sustain and expand global demand for US soybeans and soy ingredients for use in soy foods and other human nutrition applications.

Supply - Committee Goals:
DM - 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 2010.
DM - Ensure sufficient supply of high quality U.S. soybeans for global customers.
PRO - Increase U.S. soybean trend line yields by 2 percent annually.
PRO - Improve production efficiencies in a sustainable manner.

Industry Relations - Committee Goals:
COM - Build awareness of the soybean checkoff as an effective, efficient and farmer-driven U.S. soy research and promotion program while establishing the checkoff as an impartial resource of soy-related information among all U.S. soybean farmers, the ag value chain and consumer thought leaders.
PRO - Ensure that checkoff funds and public research funds are utilized efficiently and that appropriate research targets are identified, funded and pursued.

Audit & Evaluation - Committee Goals:
A&E - Overcome a lack of knowledge regarding SPARC and USB compliance requirements.
A&E - Ensure the proper internal controls and contractual provisions are utilized and implemented by USB contractors and subcontractors.
A&E - Protect the integrity of checkoff funds and maximize the return on the USB checkoff investments.

Transportation - Committee Goals:
TRS - Position soybean industry stakeholders to benefit from a transportation system that delivers cost effective, reliable, and competitive service

KEY:
DM – Domestic Marketing Committee
IM – International Marketing Committee
NU – New Uses
COM – Communications
PRO – Production
CMP – Competitiveness
A&E – Audit & Evaluation
TRS – Transportation Initiative
Committee Goals – LRSP Objective 2

LRSP Objective 2:
Collaborate on the development and achieve adoption and global acceptance of improved soy technologies and biotechnology.

Animal Utilization - Committee Goals:
DM - Support competitive improvements to the soybean for animal consumption and encourage early adoption of new soybean traits focused on animal consumption.
IM - When specific soybean varieties with precise traits benefiting animal production are commercialized, USSEC will introduce them to the global animal production industry.
NU - Build demand for U.S. soy in aquaculture markets.

Industrial Utilization - Committee Goals:
COM - Build awareness of the soybean checkoff as an effective, efficient and farmer-driven U.S. soy research and promotion program while establishing the checkoff as an impartial resource of soy-related information among all U.S. soybean farmers, the ag value chain and consumer thought leaders.
DM - Increase the use of biodiesel in vehicles to help drive the utilization of 3.5 billion bushels of soybeans.
DM - Increase biodiesel use in the trucking, underground mine and home heating markets.
DM - Meet Environmental Protection Agency requirement to produce 90 percent less particulate matter and NOx.
DM - Increase the use of soybean oil by growing soy biobased products markets.
IM - When specific soybean varieties with precise traits benefiting industrial uses are commercialized, introduce these varieties' byproducts to the global alternative industrial use product manufacturers.
NU - Develop soy-based plastics for petrochemical market.
NU - Develop soy-based lubricants and solvents for petrochemical market.
NU - Develop soy-based coatings/inks/adhesives for petrochemical market.
NU - Develop emerging soy-based technologies for petrochemical market.
NU - Build awareness and demand for soy products.

Market Access - Committee Goals:
CMP - Global market protection for U.S. soybean products.
IM - Assure early adoption of new soy biotech events in key export markets.

Human Utilization - Committee Goals:
DM - Gain food industry, influencer and consumer acceptance and understanding of new biotech traits with health benefits.
IM - When specific soybean varieties with precise traits benefiting human nutrition are commercialized, USSEC will introduce them to the global human nutrition industry.

Supply - Committee Goals:
DM - Support QUALISOY, industry, processors, technology companies and other stakeholders in bringing biotech traits to the market.
DM - Communicate the benefits of biotechnology to strategic market sectors.
PRO - Improve compositional traits to increase the value of U.S. soybeans.
Industry Relations - Committee Goals:
COM - Build awareness of the soybean checkoff as an effective, efficient and farmer-driven U.S. soy research and promotion program while establishing the checkoff as an impartial resource of soy-related information among all U.S. soybean farmers, the ag value chain and consumer thought leaders.
PRO - Ensure that checkoff funds and public research funds are utilized efficiently and that appropriate research targets are identified, funded and pursued.

KEY:
DM – Domestic Marketing Committee
IM – International Marketing Committee
NU – New Uses
COM – Communications
PRO – Production
CMP – Competitiveness
Committee Goals – LRSP Objective 3

LRSP Objective 3:
Promote U.S. sustainable soybean production through responsible stewardship while acknowledging global market needs.

Animal Utilization - Committee Goals:
DM - Gather and make available to the industry information on sustainable animal agriculture practices.
DM - Assist industry in establishing sustainability definitions.
IM - 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.

Industrial Utilization - Committee Goals:
COM - Build awareness of the soybean checkoff as an effective, efficient and farmer-driven U.S. soy research and promotion program while establishing the checkoff as an impartial resource of soy-related information among all U.S. soybean farmers, the ag value chain and consumer thought leaders.
DM - Actively define and promote the greenhouse gas and sustainability benefits of soy biodiesel.
DM – Actively define and promote the greenhouse gas and sustainability benefits soy biobased products.
IM - In markets where industrial products industries must demonstrate the sustainability of their raw material supply chains, US soy oil will be recognized as an economically and environmentally raw material for industrial applications.
NU - Actively define and promote the greenhouse gas and sustainability benefits of soy biobased products.

Market Access - Committee Goals:
CMP - Ensure "sustainability" commodity procurement programs do not harm U.S. soybean product trade.
IM - 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.

Human Utilization - Committee Goals:
DM - Define and gain understanding by key stakeholders of sustainability as it pertains to U.S. soybean production practices for food use.
IM - 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.

Supply - Committee Goals:
DM - Define sustainability as it pertains to U.S. soybean production.
DM - Integrate sustainability into soy product marketing.
PRO - Increase U.S. soybean trend line yields by 2 percent annually.
PRO - Improve production efficiencies in a sustainable manner.
Industry Relations - Committee Goals:

COM - Build awareness of the soybean checkoff as an effective, efficient and farmer-driven U.S. soy research and promotion program while establishing the checkoff as an impartial resource of soy-related information among all U.S. soybean farmers, the ag value chain and consumer thought leaders.

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

KEY:

DM – Domestic Marketing Committee
IM – International Marketing Committee
NU – New Uses
COM – Communications
PRO – Production
CMP – Competitiveness
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 98 percent of U.S. soybean meal in the United States because of the protein content and ideal amino acid profile of soybean meal. 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 increasing exports of animals and meat products.

The landscape of U.S. agriculture is set to evolve with the escalating input costs at all levels of production. Sharp increases in imported energy costs may serve to stimulate the biobased fuel economy, but this scenario also drives changes in planting, harvesting, milling, feeding and processing decisions. Historically, protein was considered the most expensive part of livestock and poultry diets; however, dietetic energy needs have surpassed energy in feed formulation expense.

This change is setting the stage for feed formulations to stray away 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 will significantly affect the U.S. soybean producer's ability to compete for the soybean meal (SBM) market to feed livestock and poultry in the United States.

As feed input costs for corn and soybean meal increase, with soybean meal and soybeans widely fluctuating in price all while U.S. meat production numbers are increased, the market is poised for unprecedented movement. In 2008, U.S. meat production has increased primarily due to increased cow slaughter in the beef sector and hog slaughter through the first quarter. Hog production numbers are expected to recede in the face of sow sell-off and slaughter due to increased production costs. Broiler and turkey meat production has continued to increase through the first quarter; however, broiler expansion is expected to slow significantly through the rest of the year due to higher feed prices and weak broiler meat prices.

Building demand for U.S. meat in foreign markets results in increased demand for U.S. soy. Global meat markets shift continually, making USB efforts to assist in meat export marketing programs critical to the success of U.S. soy producers. 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 exports.

While the U.S. provides one of the safest, most reliable food supplies in the world, meat exports enter foreign countries frozen. Frozen meats face a stigma in many of these countries as sub-par 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. The premise is the preservation of the U.S. consumption of soy products through U.S. livestock and poultry.

Growth in poultry and red meat exports translates into more soybean meal utilization domestically as feed. Projections from the 2007 USDA meat export baseline project show significant soybean meal utilization as meat exports. Exports of chicken meat are projected to top 2,449,000 MT, which represents 80,552,637 bushels of soybeans crushed to create the 1,722,000 MT of soybean meal required to feed those birds. Pork exports will account for over 49 million bushels crushed, turkey exports will call for just over 9.9 million bushels of crush, and beef exports will account for 5.5 million bushels of soybeans crushed for soybean meal in their diets. The entire crush totals 144.4 million bushels to produce the soybean meal to feed domestic animals for meat export. Russia and China continue to top the list of U.S. chicken meat importers, while new growth opportunities are emerging in Central and South America for turkey meat. 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. China has overtaken Russia as the top importer of U.S. chicken of late, and is poised to continue this trend. 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 2007, livestock in the United States consumed over 30 million metric tons of soybean meal, which translates into 1.1 billion calculated bushels of soybeans or 14 billion bushels of soybean crush (bushel equivalents).

Soybean meal is the predominant 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.

Maintaining soybean meal’s position as the premier protein source in animal feed diets is necessary to the viability of the soybean meal 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 four 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.

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 somehow believe wild caught seafood is better than farmed fish. In addition, 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.

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. USB’s Domestic Marketing Committee 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.

Although the domestic aquaculture industry has a membership organization to represent them, the National Aquaculture Association (NAA) is limited in its ability to provide marketing support to the industry due to lack of funds and limited staff.

**Strategic Approach**

The strategic approach for the animal utilization target area is to build demand for U.S.-sourced soybean meal to assist in reaching the annual utilization objective of 3.5 billion bushels through domestic livestock and poultry feed consumption. Within the Animal Utilization strategic approach, it is essential to concentrate on the maintenance and growth of SBM feed markets existing in the United States.

Poultry and livestock consume 98 percent of domestic soybean meal. The migration of meat production to foreign markets would drastically reduce the demand for U.S.-sourced soybeans. The premise is the preservation of the U.S. consumption of soy products through U.S. livestock and poultry. This approach is focused on supporting the #1 customer for U.S. soybean meal – American livestock and poultry producers – and building recognition as to the importance of livestock production among several sectors.

The animal utilization target area addresses the LRSP objective of collaborating on the development and achieving adoption and global acceptance of improved soy technologies and biotechnology by researching the application of new traits on solving problems in feeding soybean meal to livestock. The strategic approach is focused on supporting improvements and early adoption of traits such as increased metabolizable energy and removal of anti-nutritional factors.

The mission of supporting the animal agriculture industry is to create an environment in which a safe, reliable and affordable supply of protein products consistent with evolving consumer values for environmental and animal welfare standards can be provided while assuring animal producers the maximum opportunity to sustain profitable operations.
Success will be driven by a value chain-based coalition of national, state, and local organizations that will work to create the opportunity for profitable U.S. animal agriculture, soybean producers’ biggest customer. This approach builds to the LRSP objective of promoting U.S. sustainable soybean production through responsible stewardship while acknowledging global market needs with our primary customers.

USB’s 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. Any DMC programs need to serve as a complement 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 the existing U.S. aquaculture industry while paving the way for future opportunities.

**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 and providing solutions to digestion 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.

Research conducted on allergenic responses in swine has the ability to affect the entire pig population. Development of an allergenicity model in swine could create models for other species with allergenic responses, including humans.

USB’s Domestic Marketing Committee 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.

The DMC can also build effective industry relationships and assist the National Aquaculture Association, 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.
LRSP Objective 1:

Committee – Target Area
A. Domestic Marketing – Animal Utilization

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

Strategy 1:

a. Demand Building
   Educate animal nutritionists and feed formulators on the consistency, superior amino acid complex, and availability of U.S. soybean meal.

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

Performance Measures:
   i. At least five feed and livestock companies or organizations engaged in supporting new SBM research and development through funding and work-in-kind.
   ii. Two key customer needs pertaining to SBM are identified.

Strategy 2:

b. Demand Building
   Coordinate with leading animal nutritionists to target soybean checkoff investment in animal-related research.

Tactics:
   i. Continued implementation of 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.
   ii. Coordinate with QUALISOY to include U.S. soy farmers, crushers, feeders and processors in the Animal Nutrition Working Group.

Performance Measures:
   i. Provide two strategic value enhancements for SBM through the AAI Animal Nutrition Working Group to QUALISOY, DMC, and other program committees.
   ii. Support for QUALISOY from 10 members of the animal nutrition and feed industry identified.
iii. Firm commitments for ANWG participation through FY 2010 by at least 90 percent of attendees.
iv. At least 90 percent of attendees agree to actively assist USB on issues facing SBM utilization.
v. All attendees comprehend USB’s focus and progress relative to meal improvement efforts over the past 10 years.
vi. The top three issues facing meal utilization in production non-ruminant diets have been identified—composition, processing, measurement.
vii. Confirm that changes in soybean composition affecting SBM are necessary to maintaining a competitive market position for meal globally.
viii. USB’s meal composition targets have been prioritized.
ix. Practical barriers to the most efficient utilization of soybean meal’s nutrient potential have been identified.
x. Initial performance thresholds for industry adaptation of value-adding opportunities have been established.
xi. Identification of a research pathway for soybean meal trait improvements.

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

Strategy 1:
a. Demand Building
Support the domestic animal agriculture industry through the Center for Food Integrity (CFI).

Tactics:
i. Define and direct specific CFI animal agriculture initiatives.
ii. Coordinate a communication network with national, state and local stakeholder groups.
iii. Quickly and accurately address public misinformation around food animal production, in both a proactive and reactive manner (respond to public directly; liaison with state livestock coalitions; ensure available support).
iv. Assemble a broad-based forum of collaborating members, beyond domestic livestock producers, to address food animal industry issues.
v. Conduct an annual strategy conference where food animal coalition members assemble with committee members to plan strategies and tactics that are beneficial for animal agriculture.
vi. Develop a resource center to support domestic livestock production and address livestock industry issues as they arise.
vii. Broaden funding partnerships to include the entire food system in its efforts to support domestic livestock production.
viii. Continue the Value Chain Roundtable of Food/Restaurateur executives and staff to establish goals for communicating safe and sustainable U.S. food production.
ix. Conduct an annual meeting with USDA representatives and Food/Restaurateur sector to address the issues and leverage communication potential.

Performance Measures:

i. Fifteen organizations join CF! Livestock Committee.
ii. All state livestock coalitions represented at the National Animal Ag Strategy conference.
iii. Expansion from livestock producers to food producers within the coalition.
iv. Three national organizations participating in Operation Hometown Outreach.
v. Successful implementation of one CEO Roundtable of the Food/Restaurateur sector with clear direction to move forward.
vi. Representation from the top three from both Food and Restaurant sectors on the roundtable.
vii. Establishment of clear goals and objectives for the Animal Ag Coalition from this sector.
viii. Support from the Food/Restaurateur sector for the Animal Ag Coalition through memberships and funding.

Strategy 2:

b. Demand Building

Gain support from the animal feed industry for QUALISOY.

Tactics:

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

Performance Measures:

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

Goal:

3. Expand targeted animal nutrition opportunities.

Strategy 1:

a. Demand Building

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

USB FY09 Action Plan
Animal Utilization - Domestic Marketing

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Tactics:
  i. Complete research on allergenicity and anti-nutritional factors in swine diets.
  ii. Further research in coordination with USDA-ARS on trait-improved soybeans with reduced anti-nutritional factors.
  iii. Evaluate low-phytate/phosphorus, reduced oligosaccharide soybean meal in swine diets.
  iv. Identify new genetic, processing, enzymatic treatments that improve the value of SBM.

Performance Measures:
  i. Development of an allergenicity model in swine.
  ii. New soybean lines identified with removal of anti-nutritional factors and allergens.
  iii. Accelerated adoption of new traits in feed industry.

Strategy 2:
  b. Demand Building
  Continue information gathering on soybean meal production and consumption numbers in the U.S.

Tactics:
  i. Document the value and sustainability of livestock production in the United States through economic, environmental, land value, and health effects research.
  ii. Conduct an annual update to the Economic Analysis Report on all 50 states with executive summary interpretation.
  iii. Update the Environmental Regulatory Audit to include all 50 states and specifically include new regulations that farmers need to be aware of in their local area.

Performance Measures:
  i. 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.
  ii. Two face-to-face presentations of all researched materials by researchers: 1) Full presentation to the AAI Leadership Team; and 2) Summer States Coalition Meeting.

Goal:
  4. Grow meat export opportunities.

Strategy 1:
  a. Demand Building
  Expand U.S. meat and poultry exports.

Tactics:
i. Promote U.S. poultry exports and provide technical support in maintenance, growth and emerging markets through the USA Poultry and Egg Export Council (USAPEEC).

ii. 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:

i. Grow global poultry consumption by 10 percent in selected countries.

ii. Increase poultry meat exports to China and Russia.

iii. Grow global pork consumption 29 percent by 2015 and 57 percent by 2030.

iv. Increase pork meat exports to Mexico and Japan.

Strategy 2:

b. Demand Building

Enhance perception of U.S. meat and poultry products as high quality among trade organizations and consumers.

Tactics:

i. Re-establish identity of U.S. poultry and red meat as safe in markets that have banned U.S. product from trade.

ii. Focus on building market opportunities and improving consumer acceptance to U.S. poultry in maintenance, growth and new markets.

iii. Address public health and safety issues.

iv. Address concerns or negative connotations affecting meat and poultry export due to consumption of biotechnologically enhanced soybean meal.

Performance Measures:

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

ii. Confidence in US produced chicken is improved by 5 percent in Russian marketplace.

Strategy 3:

c. Demand Building

Support the long-term growth of worldwide protein consumption through increased consumption of U.S.-grown meat, dairy and egg products.

Tactics:

i. Research and document new meat export opportunities.

ii. Build support for turkey exports as their consumption of SBM is currently greater than the meal consumed by beef exports.

Performance Measures:

USB FY09 Action Plan
Animal Utilization - Domestic Marketing
16
i. At least one new growth market for U.S. meat and poultry exports identified and due diligence on the value of that market as compared to maintenance and growth markets completed.

Goal:

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

Strategy 1:

a. Demand Building
Support improved technologies and management practices to optimize production and decrease costs for domestic catfish production.

Tactics:

i. Educate southern catfish producers on the benefits and opportunities for improved production technologies and management practices.

ii. Conduct demonstrations of improved catfish farming technologies and communicate results.

Performance Measures:

i. At least one new management practice concept and at least one new technology has been demonstrated to two separate catfish producers in FY 2009, with evaluation of success or failure leading to next steps.

ii. At least two catfish producers have plans to adopt improved farming technologies and/or practices.

Strategy 2:

b. Demand Building
Support improved technologies and management practices to introduce and establish alternative finfish and shellfish species production to augment traditional domestic aquaculture.

Tactics:

i. Partner with aquaculture producers, academia and stakeholders to evaluate and trial improved technologies and management practices for finfish or shellfish.

ii. Evaluate successes and failures and use learned information to further opportunities.

Performance Measures:

i. At least one non-catfish aquaculture producer trialed a USB-assisted technology or management practice improvement.

ii. A pathway to next steps in technology improvements and better management practices has been determined.

Goal:

USB FY09 Action Plan
Animal Utilization - Domestic Marketing
17
6. Set the stage for an opening of market opportunities in anticipation of possible future market climate changes that favor aquaculture production.

Strategy 1:
   a. Demand Building
      Establish relationships and partnerships with domestic aquaculture organizations.

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

Performance Measures:
   i. 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.
   ii. Checkoff resources have enabled NAA to increase its outreach and communications activities and make headway in building relationships with food industry media.

Strategy 2:
   b. Demand Building
      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:
   i. Support the National Aquaculture Association in outreach and education efforts.
   ii. Through NAA, conduct outreach to food industry and food media through meetings and industry events.

Performance Measures:
   i. Aquaculture benefit messages have been developed and a program is under way to communicate information.
   ii. Food industry and media rely on NAA as appropriate source on the benefits of domestically-farmed finfish and shellfish.

LRSP Objective 2:
   II. Collaborate on the development and achieve adoption and global acceptance of improved soy technologies and biotechnology.

Committee -- Target Area
   A. Domestic Marketing – Animal Utilization
Goal:
1. Support competitive improvements to the soybean for animal consumption and encourage early adoption of new soybean traits focused on animal consumption.

Strategy 1:
a. Demand Building
   Research the value of improved variety soybean meal in livestock diets.

Tactics:
i. Engage the Animal Nutrition Working Group in evaluation of new traits.
ii. Develop a multi-specie animal feeding trial testing the increased availability of energy from reduced oligosaccharide soybeans.
iii. Conduct animal trials on trait-improved soybean meal to demonstrate market value in conjunction with QUALISOY.

Performance Measures:
i. One completed feeding study showing clear difference in animals fed contemporary soybean meal versus improved trait soybean meals.
ii. Feeding trials completed in conjunction with major integrators in poultry and swine feeding, and feed companies for ruminant research.

LRSP Objective 3:
III. Promote U.S. sustainable soybean production through responsible stewardship while acknowledging global market needs.

Committee – Target Area
A. Domestic Marketing – Animal Utilization

Goal:
1. Gather and make available to the industry information on sustainable animal agriculture practices.

Strategy 2:
a. Demand Building
   Establish research-based information clearinghouse of animal agriculture information as a resource tool.

Tactics:
i. Work for the Center for Food Integrity to gather and house information regarding animal agriculture production that will assist the animal agriculture industry.

Performance Measures:
i. Methods for collecting and housing data have been identified.
ii. Input from animal ag industry stakeholders has been gathered to determine what data will be most useful.
iii. A timeline and plan for implementing the resource has been established.

Goal:
2. Assist industry in establishing sustainability definitions.

Strategy 1:
   a. Demand Building
   Coordinate with livestock organizations to establish sustainability definitions within agriculture.

   Tactics:
   i. Conduct roundtable discussions with CFI Animal Ag Committee to build consensus on sustainability definitions.
   ii. Document definitions and agree on a process for ongoing review and modification.
   iii. Communicate findings through CFI.

   Performance Measures:
   i. Successful meetings have occurred with lively discussion and broad participation.
   ii. A document has been created and sent through a review process by stakeholders.
   iii. Circulation of the document has occurred and potential external communication opportunities considered.

Financial Allocations:
Domestic Marketing – Animal Utilization: $4,585,457

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Animal Utilization
International Marketing

Market Environment
Global soybean production for 2007/2008 is estimated at 220.1 MMT. This represents a 7 percent decrease over the production in 2006/2007, which was 235.5 MMT. The U.S. share of the world production is estimated to be 32 percent.

The United States continued as the largest producer of soybeans in the world, followed by Brazil and Argentina in 2007/2008. This year the U.S. total soy production at 70.35 million tons was 19 percent lower than the previous year due to the shift in acres to corn production. 2008/2009 soybean plantings are expected to push soy production to over 80 million tones.

Mexico remains the number 1 export market for soybean meal at 1.4 million metric tons, with Canada following at a close second at 1.33 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 is expected to reach 130 MMT by 2008, which would represent an 18 percent growth rate. This growth is attributed to increased poultry and pork production and international consumption of meat products.

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 6.49 million pounds of broiler production in 2006. 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 243 million tons, followed by the U.S., Japan, Russia, and Mexico.

Brazil has been investing in the modernization and production capacity expansion of their animal feed sector. The sector’s investments for 2006 are seen to be mainly a result of the growth in Brazil’s poultry exports over the last several years.

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 56 percent of Brazil’s animal feed consumption. Brazil’s chicken
exports totaled 2.505 million tons in 2006, down from 2.739 million tons in 2005. Brazil currently is the world’s largest chicken exporter, but the nation is experiencing declines in poultry exports due to Avian Influenza.

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 international SBM demand, which is the fastest and largest growth market, by promoting its use with the livestock and aquaculture industries. International SBM consumption increased 8.9 percent, which represents over 11,400,000 metric tons of growth in soybean meal demand and converts to 530 million bushels of soybeans. In 2007, 57.9 million metric tons of SBM was consumed internationally, of which 7.9 million metric tons was of U.S. origin.

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 percent based on SBM quality and economics of fish production. Global SBM demand for the aquaculture industry is expected to exceed 10 million metric tons within the next decade, with more than 90 percent 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, poultry and aquaculture 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 Korea, USSEC continues efforts to educate dairy farmers on TMR about the feeding value of soy hulls as a source of energy and roughage, in turn aiding the Korean crushing industry to increase its hipro dehulled meal production.
   v. In the Middle East, USSEC will continue to promote the economic advantages and production/logistical benefits of buying and installing extruders for full-fat soybean meal production.

Performance Measures:
   i. In China, 80 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, 40 aquaculture production units will switch to soy-based diets.
   iii. In India, 275 feed manufacturers will use soybeans in their animal feed products.
   iv. In Korea, three crushers will obtain a hipro dehulled meal production of 33 percent.
   v. In the Middle East, there will be a total of 130 extruders installed in the region.
Strategy 2:
  b. Customer Preference

  Tactics:
  i. In Europe, USSEC will continue to conduct feeding trials with U.S. vs. South American soybean meal to showcase the U.S.'s superior digestible amino acid complex traits.
  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 better purchasing practices of soybean meal.
  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, 35 technically advanced and innovative feed companies will become aware of U.S. soybean meal as the preferred protein source.
  ii. In Japan, targeted feed companies will obtain a U.S. soybean meal inclusion rate of 14.1 percent.
  iii. In Latin America, 63 major U.S. soybean meal importers will utilize better purchasing practices.
  iv. In Southeast Asia, 11 core buyers will develop a preference of U.S. soybeans.
  v. In Taiwan, 90 percent of preferred customers will support the U.S. as their first choice for soybean supplies.

LRSP Objective 2:
 II. Collaborate on the development and achieve adoption and global acceptance of improved soy technologies and biotechnology.

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:

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Animal Utilization

New Uses

Market Environment
The rapidly expanding market for farm-raised fish is providing market opportunities for soybean meal and oil both in the U.S. and overseas. The feed industry has recognized for many years that plant-based aquafeeds is an essential requirement for the future development of aquaculture. Soybean meal (SBM) and oil can compete with fish meal and fish oil, the standard source of protein and lipids especially for carnivorous species such as salmon and pompano. Skyrocketing fishmeal prices, coupled with environmental concerns over using fish meal have underscored the need for alternatives. Soy continues to be the preferred alternative because it is readily available, nutritional, economical, renewable and environment friendly.

Strategic Approach
The focus of this strategy is to establish U.S.-sourced SBM 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 which limit the replacement of fish meal with soybean meal and soy protein concentrate (SPC). 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 SBM as a primary source of protein 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 SPC in feed rations for selected species.

It is projected that soybean meal inclusion rates in global aquafeeds overall will increase to 17-25% based on SBM quality and economics of fish production. Global SBM demand for the aquaculture industry is expected to exceed 10 million metric tons within the next decade, with more than 90% of that growth in overseas markets. Both the inclusion rate and total demand numbers for soybean meal are conservative. The global aquaculture industry is the fastest growing sector of animal production. Global demand for cultured aquatic products, given the limitation of zero growth in wild catch, is expected to grow from its 2000 level of approximately 32 million metric tons to more than 53 million metric tons in 2020.

LRSP Objectives 1 & 2:
II. Collaborate on the development and achieve adoption and global acceptance of improved soy technologies and biotechnology.

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. universities, 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.

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. Evaluate the impact of low phytic acid cultivars of soy on the environment and product quality.

iv. 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.

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

vi. 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.

vii. Continue to build a coalition with the aquaculture industry to enhance research and support for soy-based rations.

viii. Build awareness and adoption of soy in aquafeeds through support of the National Academy of Sciences Board on Agriculture and Natural Resources efforts to update a 1993 report on the Nutrient Requirements of Fish.

ix. Align federal programs with the recommendations of the Plant Products in Aquafeed Working Group, and, to the extent possible, develop new sources of funding for researchers.

Performance Measures:

i. Soybean meal and atypical nutrient levels determined for marine shrimp.

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

iii. Nutrition requirements identified and feed formulations determined for pompano.

iv. Quantifiable progress toward the development of new Federal projects or realignment of existing projects to the strategies or goals identified by the USB Animal Utilization Action Plan in general and the Plant Products in Aquafeed Strategic Plan specifically will be demonstrated.
Financial Allocation:
New Uses – Animal Utilization: $780,128

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Industrial Utilization
Communications

Market Environment
While the outlook for soybean acreage, demand and prices is extremely positive, farmers will face other challenges, including skyrocketing input costs, as well as high land prices. In addition, the outlook for the overall U.S. economy is somewhat bleak and will certainly have an impact on the overall attitudes of U.S. consumers, including farmers. But taking all of this into consideration, USB’s March 2008 Producer Attitudes Survey indicates that soybean farmers are overall optimistic for the future.

Ongoing communications efforts by the soybean checkoff targeting soybean farmers continue to be strong. Awareness of checkoff priorities by soybean farmers is high and overall knowledge of checkoff activities is also at a near record high, with a third of farmers able to name three activities of the checkoff and another third able to name two activities. Most importantly, when asked about the continued need for the soybean checkoff program, a full 71 percent of soybean farmers indicated the checkoff is still necessary.

On an internal front, USB continues to strengthen relationships with state soybean checkoff boards. And while recent efforts by the Soy Opportunities Task Force could lead to the assumption that state relations are strained, in fact the checkoff continues to work very closely with the great majority of states, particularly on communications efforts. The FY08 USB Checkoff Leaders Forum drove home the need for an increased focus on two areas for more collaboration: research and communications.

After considering this overall market analysis for FY09, USB Communications Committee farmer leaders have prioritized audiences and communications objectives for the upcoming year. The audiences that the soybean checkoff will target with communications strategies in FY09 include: soybean producers, soybean value chain, consumers and mainstream media and USB Board & QSSBs.

Strategic Approach
Along with soybean producers, communications will also focus on industry influencers, 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 continue to partner with states, processors, extension and seed companies to educate farmers on the need to select for protein and oil, and will also work with biodiesel and biobased product manufacturers and users to continue driving awareness and utilization of industrial 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. Collaborate on the development and achieve adoption and global acceptance of improved soy technologies and biotechnology.
III. Promote U.S. sustainable soybean production through responsible stewardship while acknowledging global market needs.

Committee – Target Area
A. Communications – Industrial Utilization

Goal:
1. Build awareness of the soybean checkoff as an effective, efficient and farmer-driven U.S. soy research and promotion program while establishing the checkoff as an impartial resource of soy-related information among all U.S. soybean farmers, the ag value chain and consumer thought leaders.

Strategy 1:
a. Soybean Producers

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 national 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 who believe perceived biodiesel problems have been resolved.
iii. Demonstrate the soybean checkoff’s key involvement in the development and continued growth of the U.S. biodiesel industry and for soy-based bioproducts.
iv. Increase demand for soy biodiesel among other major diesel users.

Performance Measures
i. Help Increase the use of soy biodiesel among U.S. soybean farmers from 57 percent to 62 percent.
ii. Help reduce the percentage of U.S. soybean farmers citing “availability” as a major reason they do not use soy biodiesel from 45 percent to 40 percent.
iii. Help increase the number of soy biodiesel suppliers, distributors and retailers from 3,400 to 3,500.

Strategy 2:
b. Soybean Value Chain

Tactics
i. Provide support to National Biodiesel Board (NBB), Original Engine Manufacturers, the National Tractor Puller’s Association and the trucking industry to increase the availability and use of soy biodiesel.
ii. Capitalize on the interest in soy biodiesel to create demand for other soy-based bioproducts.

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

Performance Measures
i. Help increase the number of soy biodiesel suppliers, distributors and retailers from 3,400 to 3,500.

ii. Help increase biodiesel sales from 450 million gallons/year to 550 million gallons or more/year.

Strategy 3:
c. Consumer Thought Leaders

Tactics
i. Investigate new opportunities to communicate with consumer audiences on U.S. soybean farmers

ii. Analyze mainstream media's attitude toward soy biodiesel and other agricultural issues.

iii. Investigate non-traditional media outlets to reach consumers

Performance Measure
i. Secure at least 20 stories in mainstream media outlets that include a positive agriculture message on checkoff soy biodiesel and soy biobased products goals and priorities.

Strategy 4:
d. USB Board & QSSBs

Tactics
i. Organize and carry out a reimbursement programs with QSSBs for pre-approved, state-based activities to increase the availability and use of soy biodiesel and/or biobased products.

ii. Coordinate and provide communications support to QSSBs for biodiesel and soy-based bioproduct promotion activities.

iii. Coordinate development of and supply soy biodiesel premiums, advertisements and educational materials for QSSBs.

iv. Fulfill biodiesel information and material requests from USB Directors.

v. Test all new soy biodiesel messages developed to ensure acceptance and effectiveness with target audiences such as soybean farmers, truckers and other major diesel users.

Performance Measures
i. Increase the number of QSSBs eligible for soy biodiesel reimbursement program assistance from six to 10.

ii. Help increase the use of soy biodiesel among U.S. soybean farmers from 57 percent to 62 percent.

iii. Help reduce the percentage of U.S. soybean farmers citing “availability” as a major reason they do not use soy biodiesel from 45 percent to 40 percent.

iv. Help increase the number of soy biodiesel suppliers, distributors and retailers from 3,400 to 3,500.
Financial Allocations:
Biodiesel $863,882

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

- 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 marketplace for soy-based industrial products not only in the United States but in some of our international markets as well. Emerging soy industrial products include: soy methyl esters or modified soy oil for road paving, bioremediation, mosquito control and industrial solvents; polyurethane and polyester plastics for foams, composites and elastomeric coatings such as bedliners and carpet backing; industrial paints and coatings; printing inks and lubricants.
- At the same time, labeling requirements for trans fatty acids and general concerns for fats in the diet have initially reduced consumption and are slowing the growth of consumption of edible soybean oil.
- Rising industrial demand for soybean oil is projected to cause increased U.S. crush leading to additional supplies of soy meal and stable meal prices, offering opportunities for soy meal and protein derivative use in such areas as adhesives and thermoplastics. Global increases in meat and poultry production will help to steady meal prices.

Industrial uses, such as plastics, are growing due to their higher value. Improved technology is needed in the areas of product performance and production cost optimization, as well as support to stimulate market trial and penetration.

Federal and state incentives for biodiesel production and use have become the biggest factor impacting the market demand for soy biodiesel in the near future. The federal tax credit of one penny per percent of soy biodiesel in a fuel blend equates to a $1/gallon incentive, and additional incentives of $0.10/gallon at the federal level and varying incentives at the state level are generating significant interest and increased production capacity for biodiesel. Demand for soybeans in 2007 has led to higher prices. Demand and prices are expected to continue on that path in 2008 and into 2009 due to worldwide demand for food, feed and fuel uses. Increased biodiesel demand has helped increase the price of soybean oil. Soybean oil averaged 37.62 cents per pound in 2007 and the price has risen even higher in the beginning of FY08. At the same time, rising crude petroleum and petrodiesel prices have kept biodiesel prices competitive and demand is growing. Long-term, the federal biodiesel incentives are set to expire in December 2008. Their extension will be dependent on market factors and political policy at that time. Biodiesel has future growth potential as well. In December 2007, the House and Senate both passed H.R. 6, the Energy Independence and Security Act of 2007, which President George Bush signed into law. Among its other provisions, the measure significantly expands the Renewable Fuels Standard (RFS) and will significantly increase the use of biodiesel in the United States. The expanded RFS provided for in H.R. 6 requires a specific renewable requirement for diesel fuel that will be met by biodiesel and other renewable biomass-based diesel fuels. Increasing the minimum renewable requirement in the diesel pool from 500 million gallons in 2009 to 1 billion
gallons in 2012 will create a stable, viable domestic market for biodiesel and an increased demand for soybean oil.

An FY06 survey of Federal Employees’ “perception of use or purchase” of biobased products within the federal government shows that over the past five years, 51 percent of federal employees surveyed perceived an increase. When it comes to purchasing biobased products, nearly 80 percent of agency employees surveyed believe the Federal Mandate/Executive Orders are the top factor used in government purchasing decisions about biobased products. In addition, over the past year, 36 percent of biobased vendors surveyed indicated their sales to federal agencies increased, and about 42 percent of vendors indicated sales to federal agencies increased by more than 50 percent over the last three years.

USB’s work with federal employees also creates a springboard to educate state and local governments as well as the private sector about biobased products benefits. The federal government’s recycled paper programs and adoption of biodiesel helped lead others to switch and they can do the same for biobased products in general.

**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 2009 and beyond are: 1) Original Equipment Manufacturer engine testing; 2) oxidative stability testing follow-up; 3) development for precipitates above the cloud point with B100; and 4) resolution for precipitates above the cloud point with B100.

The research and commercialization approach focuses on increasing acceptance and usage of biobased 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.

Major new 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 much more 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 will have to answer these questions in its biodiesel and biobased products outreach.

**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. The continued high prices of petroleum and natural gas have put soy-based industrial products in a favorable economic position.

The Original Equipment Manufacturer (OEM) engine testing program continues to assess the effects of biodiesel blends (B20) on the performance of modern diesel engine and emissions control systems meeting emissions standards that will go into effect
between now and 2010 for on-road engines, and in the post-2010 timeframe, for off-road engines. This work will include research to understand the impact of B20 on the operation and durability of particle filters and NOx control devices, to optimize engine and emission control systems for operation on B20, and to understand how B20 affects engine component durability. The studies will utilize biodiesel and petroleum diesel that are representative of commercial fuels.

It is well known that changes occur with biodiesel over time that can cause serious problems with engine and fuel systems. This phenomenon has largely been described as "fuel stability". Fuel stability is the leading barrier to securing a B5 and B20 American Society of Testing Materials (ASTM) specification, and must be added to the B100 specification. If the changes that occur over time with some biodiesel can be disproved, or can be prevented with additives, then this would significantly increase the confidence of the OEM community in biodiesel. It may also eliminate this concern in applications of interest to biodiesel and where the fuel could be stored for long periods of time, such as in back-up diesel generators, home heating oil, and tactical military operations.

Promising bench test methods have been developed that indicate the storage life of biodiesel or blends, as well as determine the impact of stability-enhancing additives. These additives, largely anti-oxidants, are known to significantly improve the storage life of biodiesel, perhaps to several years. This work will compare the most promising stability bench tests that can be used in the field with fleet operations and general use, as well as in back-up generators, home heating oil, and tactical military vehicles, in order to develop data needed for inclusion in the B5, B20 and B100 ASTM specifications.

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 markets 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 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. The latest dramatic impact of petroleum and natural gas price increases over the last year has opened unique 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 assists 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 federal 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 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 added in November 2007 when the federal government added biobased product purchasing to its Federal Acquisition Regulation that contains the uniform policies and procedures for acquisition used by federal 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 1-2:**

I. Annual utilization of 3.5 billion bushels of US soybeans by 2010

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

**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 coordinate to key audiences through trade organizations, associations, publications and general media through 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.

Performance Measures:

i. Media coverage increased by 5%, including 15 of the top 20 national market hits.

ii. Increase of 15% in BQ 9000 Accredited Producers/Certified Marketers.

iii. Conduct six Quality Assurance training sessions through Web casts and on-site meetings.

iv. Develop and provide three press releases, three articles, and two magazine promotional ads.

v. Attend four 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 10%.

viii. Conduct one survey of Alliance and Backers members regarding increased support for biodiesel.

ix. Build industry credibility by presenting at 10 major meetings or conferences and answering 50 questions per month.
x. 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. Participate in trade shows and industry meetings.

Performance Measures:

i. Attendance at stakeholders meetings increase year over year.

ii. 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. Quantify the effects of various ULSD blends on new and existing engines in the field through existing programs with OEMs.

v. Encourage adoption of BQ 9000 as a strong recommendation in OEM statements and owner’s manuals.

vi. Encourage the adoption and enforcement of D 6751 and blended fuel specs (once approved by ASTM) by state departments of Weights and Measures.

vii. Evaluate and review fleet results with OEMs. If necessary, conduct additional testing.

viii. Educate diesel mechanics and diesel shop supervisors on biodiesel and biodiesel blends.

ix. Educate OEM dealers on biodiesel and biodiesel blends.

x. Work with NREL to provide industry-wide fuel quality information by analyzing samples of B2-5, B11, B20 and B100 for quality. 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. Publicize the report of results/findings for ULSD blends.
ii. Twenty-five samples of B20 and 25 samples of B100 analyzed for quality, with results included in an annual report.
iii. Conduct 10 training programs on-site or CD-ROM/DVD for diesel mechanics and diesel shop supervisors.
iv. Answer 250 inquiries through the National Biodiesel hotline.
v. Increase the states that have adopted D 6751 to 40.
vi. Ten OEMs will recommend or require BQ 9000 in their owner's manual or warranty statements.
vii. Educate a minimum of 300 OEM dealers.
viii. Positive B20 warranty statements will total over 15 by the end of the fiscal year, up from 11 currently.
ix. The ASTM specifications will be secured and/or maintained for D 6751, B5 and B6 to B20.

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.
ii. 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.

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 precipitates above cloud point, lowering the phosphorus, use of new water and sediment tests, and lowering of the metals content in D 6751, impact of biodiesel on water separators, and limits for movement of biodiesel on the pipeline.
ii. Boost consumer confidence and fuel quality by decreasing testing costs and improving system reliability.
iii. Encourage the development of quicker, less expensive analytical methods for biodiesel.
iv. 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

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presentation of information at conferences and technical meetings.

v. Work with NORA and heating oil technical experts to secure ASTM specifications, UL listings, and B20 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. Ballot ASTM specifications for heating oil and document efforts for UL approvals of Bioheat.

Goal:

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

Strategy 1:

a. Biodiesel

Increase awareness of biodiesel availability and benefits by truckers, underground miners and in the home heating markets.

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. Educate dealers on benefits of Bioheat.

viii. 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. Design and distribute 3000 pieces of Bioheat promotional literature.

ii. Design and place four Bioheat promotional pieces in leading heating oil magazines.

iii. Secure $250,000 of matching funding for Bioheat efforts by NORA.
iv. Increase the number of home heating oil marketers who are providing Bioheat by 20%.

v. Develop a Bioheat hotline and answer 250 inquiries.

vi. Increase awareness among truck fleet managers of the benefits of biodiesel and the issues facing the trucking industry by 30%.

vii. Increase biodiesel use within the trucking industry by truck accessible pumps through an increase of 15%.

viii. Maintain and update biodiesel truck stop database.


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 awareness and usage within the trucking industry of biodiesel’s potential as a lubricity additive by 20%.

xiii. 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.

iii. A new diesel engine and after-treatment testing protocol will be designed and tests performed that demonstrate soy biodiesel’s role in achieving EPA 2007 guidelines that will be reported.

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 Preferred Purchasing Program (BioPreferred), which was authorized by the 2002 Farm Bill.

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. Successful best management practices and/or affirmative purchasing programs for biobased products being used by one or more federal agencies and information about these activities shared with other federal agencies.
iii. More products listed on the USDA List of Designated Items, GSA Multiple Awards Schedule, DoD E-Mail and or/AbilityOne.
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 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.
vii. One or more federal agencies and/or product manufacturers reporting an increase of 10% or more in the purchasing of biobased products.
viii. Specific sales leads or marketing opportunities provided to biobased product manufacturers/vendors.

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.soysbiobased.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 the Grassroots Enterprise electronic system to evaluate readership and interest of the Biobased Solutions for Government newsletter and other 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 early adopter kit information on products and other relevant information to specific individuals in the buying chain as well as to individuals who can affect purchasing decision. Update the contents of the early adopter kits as needed.
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.soysbiobased.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.

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.
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:
Domestic Marketing – Industrial Utilization/Biodiesel: $2,345,655
Domestic Marketing – Industrial Utilization/Research and Commercialization: $543,025

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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 11.0 MMT in 2007, an increase of 479 percent in the last 5 years, demand continues to increase exponentially. Glycerin, a soy biofuel derivative, is being tested for application in animal feeds as an energy source. 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 percent 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 percent of the offset ink market with more than 30 soy ink manufacturers and over 5,000 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. In markets such as Japan and Taiwan, where the U.S. maintains a disproportionately large market share, our crushing customers are becoming increasingly interested in commercializing soy oil-based commercial products. These products would be produced largely with oil derived from U.S. soybeans. Through expanding awareness to stimulate trial and adoption domestically, international markets in turn benefit from these findings. By communicating the output of soy industrial research and development activities to the global marketplace, the U.S. soy industry can further increase U.S. soy’s usage in the industrial sector.

Ability to Impact
USB can impact the Industrial Utilization Target Area by supporting development of new technologies and through research and technology transfer to partners for awareness, interest, trial and adoption. Through transference of this information, USSEC can
continue to maintain strong relationships with our large, preferred customers, thus building on a platform to work with them on finding new industrial uses for soybeans.

LRSP Objective 1:

Committee – Target Area:
   A. IM – Industrial Utilization

Goal 1:
   1. Global biodiesel industry recognizes soy oil as a prominent feed stock for biodiesel production.

Strategy 1:
   a. Biodiesel

Tactics:
   i. Encourage biodiesel usage in international markets through key partnerships which offer incentives for biodiesel production, in turn stimulating demand for U.S. soybean oil.
   ii. Through demonstrations, showcase soybean oil’s advantages over rapeseed oil in biodiesel production.

Performance Measures:
   i. In Taiwan, 4 plants will begin producing biodiesel, as a result of the Taiwan Environmental Protection Agency’s incentive program of USD $10 million to encourage biodiesel usage.
   ii. In Europe, 4 biodiesel crushers will be convinced to us soybeans/soybean oil as an alternative in their biofuels targets.

Strategy 2:
   b. New Uses Research & Commercialization

Tactics:
   i. In Japan, USSEC will continue promoting the commercialization of soy-based products made predominantly from soybean oil.
   ii. In Taiwan, USSEC will initiate new programs to promote soybean oil usage in other industrial applications to create new market opportunities for soy.

Performance Measures:
   i. In Japan, 2 chemical manufacturers will begin utilizing soy-based products.
   ii. In Taiwan, 7 plants will produce soy ink.
LRSP Objective 2:
   II. Collaborate on the development and achieve adoption and global acceptance of improved soy technologies and biotechnology.

Committee – Target Area:
   A. IM – Industrial Utilization

Goal 1:
   1. When specific soybean varieties with precise traits benefiting industrial uses are commercialized, introduce these varieties’ byproducts to the global alternative industrial use product manufacturers.

Strategy 1:
   a. Biodiesel & other industrial applications
      
      Tactics:
      i. Demonstrations will be organized to showcase new U.S. varieties, such as those with increased oil content that would be beneficial to the biodiesel industry.

      Performance Measures:
      i. In Europe, trials will be arranged and executed to highlight the benefits of oil-rich U.S. soybean varieties.

Strategy 2:
   b. New Uses Research & Commercialization
      
      Tactics:
      i. Promotion of the environmental benefits of utilizing soy in industrial applications.

      Performance Measures:
      i. In Taiwan, marketing campaigns will be established and rolled out to promote soy-based products that are economically viable and environmentally friendly.

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. In markets where industrial products industries must demonstrate the sustainability of their raw material supply chains, US soy oil will be recognized as an economically and environmentally raw material for industrial applications.
Strategy 1:
   a. Biodiesel

   **Tactics:**
   i. Promote sustainable technologies for biodiesel production utilizing U.S. soybeans.

   **Performance Measures:**
   i. Provide information and educational seminars to promote U.S. sustainable technologies.

Strategy 2:
   b. New Uses Research & Commercialization

   **Tactics:**
   ii. Position the U.S. soybean industry as a global sustainability advocate that creates demand for and facilitates delivery of sustainable technologies.

   **Performance Measures:**
   ii. Educate importers and end users in international markets that U.S. soybeans pose a reduced environmental impact vs. soybeans from other origins.

**Financial Allocations:**

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<tr>
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Industrial Utilization

New Uses

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

- 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 marketplace for soy-based industrial products not only in the United States but in many international markets, strongly enhanced by the weak dollar. Emerging soy industrial products include: soy methyl esters or modified soy oil for road paving, bioremediation, mosquito control and industrial solvents; polyurethane and polyester plastics for foams, composites and elastomeric coatings such as bedliners and carpet backing; industrial paints and coatings; printing inks; and lubricants.

- At the same time, labeling requirements for trans fatty acids and general concerns for fats in the diet have initially reduced consumption and are slowing the growth of consumption of edible soybean oil.

- Rising industrial demand for soybean oil is projected to cause increased U.S. crush leading to additional supplies of soy meal and stable meal prices, offering opportunities for soy meal and protein derivative use in such areas as adhesives and thermoplastics.

Industrial uses such as plastics are growing due to their higher value and are not dependent on direct subsidies to sustain market growth. Improved technology is needed in the areas of product performance and production cost/formulation optimization to expand applications and increase soy concentration that will stimulate market trial and penetration.

An FY06 survey of Federal Employees’ “perception of use or purchase” of biobased products within the federal government shows that, over the past five years, 51 percent of federal employees surveyed perceived an increase. When it comes to purchasing biobased products, nearly 80 percent of agency employees surveyed believe the Federal Mandate/Executive Orders are the top factor used in government purchasing decisions about biobased products. In addition, over the past year, 36 percent of biobased vendors surveyed indicated their sales to federal agencies increased, and about 42 percent of vendors indicated sales to federal agencies increased by more than 50 percent over the last three years.

USB's work with federal employees also creates a springboard to educate state and local governments as well as the private sector about biobased products benefits. The federal government’s recycled paper programs and adoption of biodiesel helped lead others to switch and they can do the same for biobased products in general.

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), 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.
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. Four industrial markets have been analyzed and selected: 1) plastics; 2) lubricants/solvents; 3) coatings/inks/adhesives; and 4) emerging industrial opportunities.

While the primary focus has been on modification and industrial use of soy oil, additional research projects on industrial uses for soybean meal began in FY08 and will continue in FY09 to balance the expanded oil demand. Examples include: textile fiber from soy meal; thermoplastic products from soy protein for films; and molded products and rubber and adhesive products from modified soy flour for replacement of formaldehyde in engineered wood such as oriented strand board, particle board and plywood.

USB New Uses will continue to expand 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** – The leveraging strategy involves developing new products based on emerging mid-oleic oil from QUALISOY varieties. The greater oxidative stability of this oil is highly desired for food uses and also preferable for some industrial applications such as soy polylols 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.

**Reducing production costs** – This effort’s focus is on developing improved processes to produce soy methyl esters for biodiesel, soy protein concentrates and other uses. New enzymatic catalysts show promise to reduce energy costs associated with production of soy derivatives such as polylols and polyester resins in plastics.

**Expanding use of existing soy technologies** – Expanding the use of existing soy technologies includes developing new product applications such as automotive uses for soy polylols with Ford. A pull-through strategy has been effective in reaching end-users which, in turn, require soy use by intermediate suppliers.

**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 with USB industrial partner spending, exceeding USB contributions by as much as 10:1 in some cases.
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 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. The opportunity for soy industrial product development has also been expanding internationally. In FY09, it is expected that technology transfer and international research into soy-based industrial products and applications will be accelerated.

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 can impact the Industrial Utilization Target Area by supporting development of new technologies and through research and technology transfer to partners for 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 recent surge in petroleum and natural gas prices and the overall “green movement” have put soy-based industrial products in a very favorable economic position and has swung the emphasis to proving out performance and assuring availability and quality of soy-derived industrial materials to the marketplace.

Soybeans can be an effective competitor to petrochemical products both functionally and economically. In FY08, there were 26 new products or application introductions of soy-based industrial products as direct results of checkoff funding, most based on soy oil. It is expected that this number will be equaled or exceeded in FY09 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.
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 latest dramatic impact of petroleum and natural gas price increases over the last year has opened unique 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 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 & 2:**

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

**Committee – Target Area**

A. New Uses – Industrial Utilization
Goal:
1. Develop soy-based plastics for petrochemical market.

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 polyurethanes 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 polyols with and improved performance properties.

iv. Fund research to overcome odor issue and allow higher concentrations
    of soy in automotive applications.

Performance Measures:

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

ii. An increased range of soy polyols with improved reactivity, high
    molecular weight and good processing viscosity developed for
    polyurethanes.

iii. Product specification established for at least two modified soy oil
    polyols.

iv. Odor and color level of soy polyols found acceptable, where applicable,
    to the polyurethane low density flexible foam and adhesive markets.

Strategy 2:

b. New Uses Research and Commercialization
   Industry and government recognition of economic, functional and marketing
   benefits of soy polyester resins and polyurethanes containing soy polyols.

Tactics:

i. Provide technical information and conduct on-site visits with active
   researchers at companies comprising manufacturers, formulators and
   the rest of the supply chain in key plastic markets.

ii. Provide technical information about soy thermoset plastics to military
    and government suppliers for their evaluation and use in procurement
    decisions.

iii. Conduct life cycle studies for flexible and rigid polyurethane foam
    applications.

iv. Pursue non-automotive thermoset soy polyester composite applications
    utilizing simple and complex molding processes.

v. Complete evaluation of thermal insulation value of soy-based
    polyurethane foams versus other insulating materials.
vi. Accelerate interaction with the resin producers and transportation industry (automotive, marine, and rail) to achieve evaluation of soy-based thermoset products.

vii. Transfer technology obtained on market opportunities for soy meal-based thermoplastics.

**Performance Measures:**

i. Market introduction of two new soy-based polyurethane applications.

ii. Introduction of two 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.

v. One additional life cycle study completed, published and distributed.

vi. Market opportunity analysis for thermoplastics completed and published.

**Strategy 3:**

c. New Uses Research and Commercialization

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

**Tactics:**

i. Fund research and development of soy oil as a monomer platform leading to multiple new products and applications in plastics and other target markets.

ii. Identify opportunities for new novel technologies from targeted companies involved in developing soy-based plastics resins and modified rubber.

iii. Monitor and evaluate continuous ozonolysis processing for use in thermoset plastic polyol/diesel fuel additive production.

iv. Explore opportunity for development of isocyanate functionalized soy protein.

v. Explore the opportunity for glycerin/acetol use as an intermediate building block to make a water-soluble polymer.

vi. Pursue the use of glycerin to make acrolein (used in making acrylic acid and other high volume chemicals).

vii. Pursue development of thermoplastic blends using modified soy protein.

viii. Explore outside partnerships and solicit funding support for leveraging USB efforts.

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

x. Transfer information to DOE and USDA via the Technical Advisory Committee on Biomass Research and Development regarding use of proteins as a base chemistry for plastic production.

xi. Explore the opportunity for dioctyl-phthalate replacement with modified soy oil.

xii. 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 plastics manufacturer identified and committed to jointly pursue with USB the use of soy protein in targeted applications for thermoplastics or modified rubber.

iii. One defined project addressing industrial use of soy carbohydrates.

Goal:

2. Develop soy-based lubricants and solvents for petrochemical market.

Strategy 1:

a. New Uses Research and Commercialization
Maximize market penetration by improving both high and low temperature performance of a soybean lubricant base stock in a high quality blended engine oil formulation and improve soy solvent performance properties.

Tactics:

i. Evaluate, as base stocks for engine oil and other lubricant applications, higher oleic soy oils being developed through QUALISOY and other breeding activities.

ii. Monitor and advise industry partners on results of the testing program.

iii. Evaluate, as base stocks for engine oil and other lubricant applications, oils with improved high temperature oxidation stability produced from soybean oil using chemical modification (hydrogenation, catalysis, reformulations, etc.).

iv. Monitor and advise industry partners on appropriate additive formulations to improve high temperature stability and assure low temperature flow.

v. Transfer existing lubricant product formulation technology to a broad range of small lubricant manufacturers.

vi. Monitor new soy solvent product and process development from industry.

vii. Monitor prices of soy-based products versus petroleum and natural gas-derived products to ascertain economic competitiveness opportunities.

Performance Measures:

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

ii. A candidate engine oil formulation with an elevated oleic acid content soybean oil base stock, with an appropriate additive package, meets low temperature flow requirements and key industry engine stand testing standards.

iii. A candidate food grade and/or soy-based hydraulic fluid passing standard bench tests and undergoing high performance pump stand testing.

iv. Three product-market applications for new soy solvents commercialized.
Strategy 2:

b. New Uses Research and Commercialization
Supply of an adequate and timely elevated oleic acid content soybean oil lubricant base stock to meet research needs.

Tactics:

i. Ensure adequate quantities of an elevated oleic acid content soybean oil is produced to supply soybean lubricant base stock for testing needs.

ii. Participate with other high-oleic soy and vegetable oil organizations, as appropriate, in achieving a consistent and readily available product for the engine oil and hydraulic industries.

iii. Work to assure quality and consistency of oil from new varieties.

Performance Measures:

i. Sufficient quantities of mid-oleic oil available for testing and evaluation in non-engine oil applications.

ii. Sufficient quantities of high-oleic soybean oil are available for engine oil testing and evaluation.

iii. Plans being implemented for production of sufficient commercial quantities of improved soybean oil to meet the volume needs of potential users.

Strategy 3:

c. New Uses Research and Commercialization
Acceptance by formulators, original equipment manufacturers and other industry partners of soy solvents and soy blends for high volume lubricants.

Tactics:

i. Work with lubricant manufacturers on the selection of suitable high-oleic candidate or other improved soy basestocks for engine oils, hydraulic fluids and other applications.

ii. Seek outside funding to offset formulator cost of engine stand testing.

iii. Monitor and advise formulation development and perform certification testing of qualified products (engine and pump stand tests) in partnership with knowledgeable formulators.

iv. Quantify impact of qualified soy-based lubricants on energy efficiency, emissions and equipment life.

v. Conduct detailed life cycle analysis for lubricants and solvents based upon data collected from FY08 and FY09.

vi. Provide technical information to targeted companies/individuals in key markets.

vii. Support technology transfer of soy-based transformer fluids and advances with new soy solvents and lubricants.

viii. Transfer soy oil and solvent product property and performance data along with starter formulations to formulators and end users of lubricants and solvents.

ix. Continue support for development and introduction of organic co-solvent blends with products like d’Limonene to enhance methyl soyate properties.
x. Provide information to formulators, distributors, equipment manufacturers, government and end-users on soy solvent properties that enhance performance in market applications.

Performance Measures:

i. Involvement of a third significant formulator of finished products.

ii. Increased interest documented by a major OEM for lubricants.

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

iv. Oxidatively-stable candidate undergoing qualification via specified engine stand tests and selected.

v. Volume of soy oil use in transformer fluids shows significant growth.

vi. Two new soy solvent formulators on board.

vii. Three new soy solvent products introduced.

viii. Life cycle conducted on an additional soy solvent product application.

ix. New soy solvent market opportunity analysis distributed to industrial solvent formulators, suppliers and end users.

x. Market opportunity study for lubricants completed and published.

Strategy 4:

d. New Uses Research and Commercialization

Discovery, research and development of new opportunities and additional applications for soy lubricants and solvents.

Tactics:

i. Provide technical and financial support for new selected R&D opportunities.

ii. Define potential for chemical modification approaches to control high temperature oxidation without loss of low temperature properties in lubricants.

iii. Continue and increase sampling of candidate mid-oleic soy oils for non-engine lubricant applications including transmission fluids and other applications.

iv. Explore outside partnerships and solicit funding support for leveraging USB efforts in both lubricants and solvents.

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.

vi. Conduct field trials with moldicide, bioremediation, paving materials and mosquito larvicide products.

vii. Work with industry to improve soy-based product cost effectiveness in bioremediation.

viii. Define commercial potential of soy asphalt cement replacement and paving materials.

ix. Work with industry to develop, prove and commercialize alternative soy-based solvent chemistries.

x. Support the listing of soy solvents in new solvent industry product data bases by providing any additional required technical property data.
Performance Measures:

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

ii. Two new partners identified for cooperative projects.

iii. Field trials conducted with moldicides, bioremediation, paving materials and mosquito larvicide soy-based products.

Goal:

3. Develop Soy-based Coatings/Inks/Adhesives for Petrochemical Market

Strategy 1:

a. New Uses Research and Commercialization
   Reduce the use of formaldehyde in wood adhesives and develop water-based technology for coatings/inks to increase soy utilization.

Tactics:

i. Work with a major resin company in the development of candidate products from soy protein that can economically compete with urea and/or phenol formaldehyde in interior/exterior OSB, particleboard, medium density fiberboard and plywood production.

ii. Work with technology partners to develop new processes for using soy meal/flour in formaldehyde free wood adhesives.

iii. Determine the technical feasibility of making a water based soy polyurethane stain to replace solvent urethane systems.

iv. Work with a major paint company to develop a hybrid water based paint containing soy to replace conventional solvent alkyd systems.

v. Work with a major university to develop solvent free urethane glue systems.

Performance Measures:

i. A major resin company introduces a candidate adhesive product to the marketplace in 2009.

ii. Technical feasibility study completed on a new route for making formaldehyde free adhesives.

iii. One or more new water based paints commercialized.

iv. Technical feasibility proven for at least one water-based urethane stain.

Strategy 2:

b. New Uses Research and Commercialization
   Industry recognition of economic, functional and marketing benefits of soy-based coatings, printing ink and adhesive technologies.

Tactics:

i. Provide technical information to target companies/individuals in key markets.

ii. Gain industry approval for soy-based products through recognized ASTM standards.

iii. Conduct life cycle studies for soy adhesive and coating systems compared to petrochemical-based systems and communicate information to users and government agencies.
iv. Communicate technical needs along with performance, environmental and economic benefits to downstream users, thereby creating market pull for company adoption.

v. Develop information on market opportunities for soy meal/protein-based adhesives.

**Performance Measures:**

i. A major resin company assumes a marketing role for soy-based adhesives.

ii. One retail paint company producing a new soy-based waterborne resin for use in low VOC, environmentally sensitive coatings marketplace.

iii. Additional companies utilizing the soy-based formaldehyde-free glue system in particle board or oriented strand board production.

iv. Market opportunity analysis for soy-based coatings completed and published.

**Strategy 3:**

c. New Uses Research and Commercialization

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

**Tactics:**

i. Determine a candidate soy-containing powder coating resin for market trials.

ii. Investigate the potential of soy oil polyol urethane formulations for coatings, adhesives and sealants.

iii. Explore outside partnerships and solicit funding support for leveraging USB efforts.

iv. Determine the technical feasibility of using soy polyols in industrial coatings.

v. Determine the technical feasibility of using soy-based resins in paint emulsions (soy oil and water mixture).

vi. Explore other technologies for formaldehyde-free adhesives in wood composites.

vii. Explore soy-based latex adhesives.

viii. Determine the technical feasibility of soy-based labeling glues.

ix. Identify if the variability of soy flour affects performance in wood composite adhesives and determine how to accommodate the natural range of variation through formulation and process adjustment.

x. Determine the technical feasibility for use of glycerin to make polyamines and/or UV curable oligomers.

**Performance Measures:**

i. A new soy-containing powder coating resin commercialized in the agricultural equipment market.

ii. Additional wood composite adhesive product in market development trials.

iii. Technical feasibility established for at least one soy polyol or soy-based resin for coating applications.

iv. One new technology to develop formaldehyde-free wood glue technology identified.
Goal:

4. Develop emerging soy-based technologies for petrochemical market.

Strategy 1:

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

Tactics:

i. Explore new industrial product and market applications for soy protein.
ii. Determine the opportunity for soybean meal to participate in the textile market
iii. Explore the potential for soybean oil/glycerin powered biofuel cells for battery replacement.
iv. Explore outside partnerships with regional farm groups, cooperatives and bioprocessing companies.
v. Solicit funding support for leveraging USB efforts.
vi. Monitor and support co-product glycerin research for multiple uses.

vii. Monitor and explore fermentation and other process work on soy protein that could enhance the opportunity for soy protein industrial uses.

viii. 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.
iii. Field trials conducted with moldicide, bioremediation, paving materials and mosquito larvicide products.

Strategy 2:

b. New Uses Research and Commercialization
   Process improvement for cost and performance benefits.

Tactics:

i. Monitor research and development progress with USB partners.
ii. Determine the current and future role that carbon credits may play in improving the economics for soy industrial products.

iii. Investigate new value-added uses for co-product glycerin uses to offset soy methyl ester (i.e., biodiesel) production costs coordinating activities with plastics and coatings research.
iv. Investigate emerging bioprocessing alternatives for oil, protein, and value-added products from carbohydrates to reduce total processing costs for soy-based end products.
v. Monitor prices of soy-based products versus petroleum and natural gas-derived products to ascertain economic competitiveness opportunities.

Performance Measures:

i. Commercialization potential of two novel soy and soy byproduct manufacturing processes determined.
ii. The potential economic impact of carbon credits is quantified and an appropriate strategy is implemented.

iii. Pricing trend analysis report distributed to key soy industrial partners...

**Strategy 3:**

c. New Uses Research and Commercialization

Industry awareness, trial and adoption of emerging industrial soy-based opportunities.

**Tactics:**

i. Provide technical information on emerging technologies to targeted companies/individuals in key markets.

ii. Conduct life cycle studies of soy-based products versus petrochemical products to determine total system economic and environmental benefits.

iii. Pursue, as appropriate, projects that address market opportunities for soy-based surfactants.

**Performance Measures:**

i. At least two new companies introducing soy-based products.

ii. At least three new soy-based products in development.

iii. Life cycle study on an additional soy-based specialty product application conducted.

iv. Market opportunity study for surfactants completed and published

**Goal:**

5. Build awareness and demand for soy products.

**Strategy 1:**

a. New Uses Research and Commercialization

Provide coordinated communications messages and materials to help industry awareness of technology and products.

**Tactics:**

i. Update and create new collateral materials.

ii. Provide information on soy technology and products and/or manufacturer contact information per industry request or as new technology/products are made available.

iii. Update, print and distribute soy products catalog to industry leaders.

iv. Maintain bi-monthly distribution of New Uses industrial e-newsletter, highlighting new technologies, products and end markets in which they can be used. Enhance newsletter with additional photos, content.

v. Utilize New Uses Web site as a key source for updated information on technology and producers and/or manufacturer contacts. Update site with testimonials from researchers as well as additional content on target areas.

vi. Maintain and increase one-on-one relationships with media representatives to increase their awareness of soy technologies and products.

vii. Develop and distribute media articles, press releases and advisories to targeted industry media.

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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. Awareness of products and technologies increased by 5 percent.
ii. Readership approval of Biobased Solutions maintained at 85 percent or higher.
iii. Web traffic to New Uses Web site increased by 10 percent.
iv. Checkoff-funded technologies and/or products featured in 12 or more trade 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 & collaborate on the development and achieve adoption and global acceptance of improved soy technologies and biotechnology.

**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 preferred purchasing program for biobased products (BioPreferred), which was authorized by the 2002 Farm Bill.
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. Successful “best management” practices and/or affirmative purchasing programs for biobased products being used by one or more federal agencies and information about these activities shared with other federal agencies.

iii. More products listed on the USDA List of Designated Items, GSA Multiple Awards Schedule, DOD E-Mail and/or JWOD.

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 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.

vii. One or more federal agencies and/or product manufacturers reporting an increase of 10% or more in the purchasing of biobased products.

viii. Specific sales leads or marketing opportunities provided to biobased product manufacturers/vendors.

**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 the Grassroots Enterprise electronic system to evaluate readership and interest of the Biobased Solutions for Government newsletter and other 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 "early adopter" kit information on products and other relevant information to specific individuals in the buying chain as well as to individuals who can affect purchasing decisions. Update the contents of the early adopter kits as needed.

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; 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. New Uses – Industrial Utilization

Goal:

1. 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 2 state or national meetings on sustainability.
   ii. Develop 2 communication 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 – Industrial Utilization: $5,704,728

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Market Access
Competitiveness

Market Environment
The competitive market environment in the soybean industry has changed dramatically over the last 5 years and it is projected to continue to do so in the next several years. We have seen South American aggregate soybean production surpass the U.S. and we have seen global trade of palm oil surpass that of soybean oil. In addition, technology for soybean production still remains predominantly in the U.S., but R&D efforts in foreign countries increase substantially. Only approximately 35 percent of global soybean production is in the U.S. With a finite amount of agricultural land in production in the U.S., any increases in acreage are projected to take place overseas. In addition to this production challenge, overseas markets are becoming ever more sophisticated in their ability to control imports, control trade and develop their own agriculture industries. This has been a trend for several years and is not projected to decline.

Domestically, there are numerous competitive products to soybeans: wheat, corn, DDGS, Ethanol, Palm, animal fats, etc. The economics of understanding which is more competitive than another at a particular point in time is a complex model, and one that is not readily controllable or predictable. To complicate this a bit more, efforts exist both in the U.S. in the form of domestic support programs and also internationally in the discussions of the World Trade Organization and the numerous multi and bi lateral trade agreements being made (and not inclusive of the U.S.). The U.S. has been the leader in those discussions, but with more market place turmoil for food/feed/fuel, other markets around the world are challenging the hegemonic position of the U.S. Chaos is a good word to describe this environment, and thriving in such a chaotic environment is the challenge.

One of the most current issues affecting agriculture is the food/feed/fuel debate. There are numerous entities commenting on this issue, but without any real solution in sight, it is expected that markets and people will continue to suffer while others thrive. On top of that issue is the probable introduction or commercialization of at least 3 new biotechnology (GMO) soybean varieties in the U.S. market place, as well as other commodities introducing other GMO products. The global acceptance of this technology will be key to the development of that industry and subsequent opportunities for U.S. agricultural producers. There are numerous international organizations that have or are attempting to impose "oversight" of the legality of these products such as the Biosafety Protocol, Codex Alimentarius, and International Plant Protection Convention. As more GMO products come "on-line", the fervor against them also increases. This is another very complicated area to work in, but is extremely important if those GMO products are to be made available to agriculture producers as well as to consumers.

What has been observed is an increase in the interest of other agriculture producer groups, as well as global animal agriculture and animal feed organizations. Each group understands that they are interconnected with the other members in the value chain of agriculture production. South American soybean producer groups and even the Palm Industry Associations see a need for collaboration in ensuring the success of their producers and industry. These alliances and potential alliances present some challenges, but also offer opportunities for the U.S. soybean production industry.
Strategic Approach

Identify, analyze and act on information that affects the competitive position of U.S. soybean products. In maintaining a position in the global oilseed marketplace, understanding that market is critical. What trade policies and technologies will be implemented? What market development strategies will be initiated? What types of trading agreements will be negotiated? These are a few of the issues that will be collaboratively addressed by USB and the U.S. agriculture industries. Additionally, understanding the trends of our own U.S. soybean producing, processing and consuming industries are key to addressing any pitfalls or roadblocks that may be fast approaching. Understanding the global strategic view of the oilseed market, whether market access barriers, trade policy trends, or competitor threats, will contribute to the U.S. soybean industry developing efforts to aggressively compete.

Global access and competitiveness issues require the collaboration of all industries affected. Research and analysis on any strategic and tactical issue is needed by the oilseed industry before any sound industry statements or positions can be made. In addition, the development of industry task forces or industry initiatives is needed to rally sufficient support to make a change. Every commodity or trade organization represents a distinct constituency, and having all key industries develop one focused stance will ensure a higher probability of success. This means that the National Oilseed Processors Association (NOPA), the North American Export Grain Association (NAEGA), the American Oilseeds Council (AOC), the US Grains Council (USGC) and any one of hundreds of domestic and foreign industry organizations will be utilized to deter harmful global access issues, develop trade negotiating positions, and capitalize on strengths and opportunities that make the U.S. soy product more competitive. Additionally, continual monitoring of the market is necessary in order to preempt any harmful trade practices and to better understand the competitive environment. Lastly, the International Marketing and Competitiveness programs will continue to work in conjunction with the USDA Foreign Agricultural Service (FAS) to address concerns on a government-to-government basis.

Knowing the global competitive position of the U.S. soybean industry and knowing the market factors and economic forces that effect that position will assist USB in keeping the U.S. soybean producer as one of the most productive and competitive soybean producers in the world. This information will provide an early warning to the U.S. soybean producing industry of impending competitive challenges and threats that USB and the U.S. soybean industry can respond to. Trade negotiations with its complexities and long term impacts on soybean product exports and subsequent U.S. soybean producers profitability creates the need for an understanding by USB of those negotiation strategies and tactics. Developing the analysis on current and projected trade policy and domestic support positions will assist in identifying negotiating opportunities that will keep U.S. soybean producers competitive globally. Additionally, tariff and non-tariff barriers remain the tools of choice for countries wanting to influence or control the commodities trade in their countries, or to push other economic or political agendas.

To maintain U.S. soybean product exports, the U.S. soybean industry needs to support and defend those trade avenues as industry and governments look to the U.S soybean production industry for strategic and tactical direction. Strategies for 2009:

- Provide an early warning to the U.S. soybean producing industry of impending competitive challenges such as the decline in the use of the U.S. railway for domestic

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distribution of soybeans and soybean meal, the international and economic pressure to reduce U.S. agriculture producers’ domestic support payments, the economic pressure to establish corporate farms, or the introduction of unfair trading practices either in free trade agreements or in multilateral trade agreements such as the World Trade Organization.

- Monitor and address global economic, industrial, and technological developments, as well as country policies and programs that can facilitate the development, protection, and decline of the U.S. agriculture industry.
- Provide the U.S. soybean industry with intelligence on the strengths, weaknesses, opportunities and threats of soybean producing and importing countries, which will allow USB and the U.S. soybean industry to sustain a competitive advantage.
- Work in coalitions with U.S. agricultural industry to develop industry-wide consensus on trade negotiating issues and specific strategies that would support, defend and advantage the U.S. oilseed and agriculture industry.
- Work with the global oilseed industry to address international trade policy constraints, trade barriers and competitiveness issues.

**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 NOPA, NAEGA, USGC, AFBF, 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.

Intelligence led to the development of global soybean alliances to counter disruptive trade practices by China and to reduce the negative impact of new global regulations restricting the trade of biotechnology derived soybeans and other biotech commodities. Research has assisted the industry in highlighting the inequity of pirated technology use by our export competition, which has resulted in the technology companies aggressively pursuing financial instruments to have the violators pay their share of the technology fee. This will ensure that the Brazilian, Argentinean, and Paraguay producers are facing the same or similar production cost challenges.

By identifying the trade trend ramifications through research and analysis of several proposed free trade agreements, preferential market access may be granted to major soybean markets such as Australia, Central America, and the Andean nations (Colombia, Ecuador, Peru) that annually imported 112 million soybean equivalent bushels valued at $640 million. In addition, USB’s analysis on special and differential treatment, export subsidies, domestic support programs, and export credit programs was and is being used by industry and trade negotiators in the agricultural discussions in the WTO negotiations.

Developing a market and industry monitoring program has led to cooperation with other associations, such as those previously identified, to sustain the U.S. soybean production industry. Working with these other organizations has ensured the enforcement of trade policies that will allow the U.S. to compete with South American producers. USB, through collaboration with the AOC and other commodity organizations, has leveraged checkoff resources to provide
information and technical support, monitor regulations and develop a level playing field for the U.S. soybean industry. Continued competitiveness programs will aid in the development of such collaborative industry initiatives and targeted collection efforts will ensure that USB directors have the information on competitive trends that they can use to lead the U.S. soybean industry.

LRSP Objective 1:
   I. Annual Utilization of 3.5 billion bushels of U.S. soybeans by 2010

Committee – Target Area:
   A. CMP – Market Access

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

Strategy 1:
   a. Undertake market assessments/analyses looking at issues affecting U.S. Soybean producer global competitiveness.

   Tactics:
   i. Explore issues such as 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. Analyze intellectual property rights cases and liability risks of U.S. soybean farmers in the international commodity trade environment.
   iii. Monitor economic, agricultural, and technology developments in competing oilseed production nations.
   iv. Analyze and monitor global agricultural programs that will assist or hinder the competitiveness of the U.S. soybean industry.
   v. Proactively address and build coalitions to address key U.S. soybean marketing, agricultural, distribution, and infrastructure/transportation issues.
   vi. 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 competitiveness 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 analyses 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 7 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. Analysis will be completed identifying and addressing cost and availability of agriculture inputs.
vi. Attend and participate in 15 industry outlook meetings in the U.S.

vii. Attend and participate in 4 global industry outlook meetings outside of the U.S.

viii. A determination will be made on global markets impact on the U.S. soybean production industry

ix. A competitive assessment will be undertaken on the soybean quality attributes in South American soybeans and soybean meal.

**Strategy 2:**

b. Expand international soybean production analysis collection, technology transfer and collaboration efforts.

**Tactics:**

i. Define and direct specific collection and research needs with the USB Production Committee.

ii. Develop country and regional focus on areas of interest around the world.

iii. Participate in global oilseed production conferences gaining insight into new production technologies.

iv. Develop a resource center for such technology transfer information

v. Broaden exchange efforts and serve as the collaboration conduit between U.S. and overseas entities.

vi. Identify new threats and opportunities that should be addressed or capitalized on.

**Performance Measures:**

i. Implement 5 country analysis efforts.

ii. Attend up to 3 Global Oilseed Conferences/Trade Shows that may provide new technology advances for soybean production.

iii. Initiate and develop a global network of institutions, researchers, and universities.

iv. Identify two strategic value enhancements for U.S. soybeans.

**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, Bolivian, 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 a resource center to support global oilseed production and address oilseed industry issues as they arise.

Performance Measures:

i. Full time representation is retained in South America to develop the GGDA and ISGA efforts.

ii. Development of 4 new funding efforts in the USSEC/IM India program.

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

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

v. A minimum of 7 public releases of GGDA/ISGA/IOPD and Palm Industry collaborative efforts on such issues as “Sustainability. Best Management Practices, and Food/Fuel/Feed).

Strategy 2:

b. Expand on the international Joint Industry Development Agreements (JIDA)

Tactics:

i. Define and direct specific JIDA animal agriculture and animal feed initiatives.

ii. Develop, lead, and coordinate Advisory panels between USSEC/IM Producer and Staff leadership, and local animal agriculture and animal feed industry leadership.

iii. Utilize partnerships to develop marketing and technical assistance and other mechanisms that would be useful for the growth of the animal agriculture and feed industries.

iv. Promote the development and use of the soybean complex, as a valuable commodity, which advances the interests of processors and users through product and market development support.

v. Cooperate on the dissemination of research information that is being conducted giving the maximum dissemination of the results, by means of organization of conferences, publication of the results.

Performance Measures:

i. Develop 5 new JIDA’s globally.

ii. Greater recognition of high quality SBM.

iii. Accelerated adoption of new traits in feed industry

iv. Willingness of animal agriculture and feed industry to partner on research activities.

Goal:

3. Expand international business development efforts for U.S. Soy

Strategy 1:

a. Increase the industry partnerships and growth of global soybean consuming industries
Tactics:

i. Capitalize on U.S. soy product utilization overseas by working with companies/organizations globally in their business development planning processes.

ii. Analyze global logistics/infrastructure/market environment to determine what new opportunities should be explored to develop the U.S. soybean product trade.

iii. Conduct studies on "Turnkey" operations and develop business models/plans that can be used by overseas agriculture industry entrepreneurs.

iv. Work with Agriculture Industry Venture Capitalists and interested companies to develop businesses identified as having a high probability of success in the previous analysis.

v. Collaborate with vertically integrated businesses or cooperatives (horizontal businesses) in key markets to achieve market/economic efficiencies.

Performance Measures:

i. Industry partnerships result in 4 new business analysis feasibility studies that are implemented by the targeted companies.

ii. U.S. venture capitalist companies with a focus on agriculture industry development are introduced to domestic and international opportunities.

iii. 4 new business models are developed based off of industry requests.

Goal:

4. 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. soybean products will remain open and additional overseas market opportunities will be made available.

LRSP Objective 2:

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

Committee – Target Area:

A. CMP – Market Access

Goal:


Strategy:

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. Lead the promotion of international acceptance of new and approved biotechnology derived soybean products.

iii. Monitor developments around the world and provide factual information to decision makers and affected industries to attempt to impact the outcome of trade and market rules that would affect the acceptability of biotech products in the food and feed industries.

iv. 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.

v. Research and monitor market access constraints relative to imposition of barriers to trade.

vi. 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. Coordination and collaboration with ASA (Biotech Working Group), USB, and USSEC Leadership on biotechnology acceptance messaging and stewardship.

iii. Analysis and reporting on the value (and possible trade disruptions) of any new biotechnology (GMO) soybeans to the U.S. soybean production industry.

iv. Continual correspondence and discussions with Technology Seed Companies on stewardship programs for their technology.

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v. Representation at 10 international policy setting meetings on biotechnology derived commodities.

vi. Continual correspondence and representation to international policy setting organizations such as CODEX Alimentarius, the Biosafety Protocol, International Plant Protection Convention, UN’s Food and Agriculture Organization, and World Trade Organization, to name a few.

vii. Seven (7) international biotech acceptance education trips will be conducted with USB leadership to key international markets.

viii. All soybean trade related barriers will be challenged, when it is determined to be of benefit to the U.S. soybean producer.

ix. 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

Committee – Target Area
A. CMP – Market Access

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

Strategy 1:
a. Collect and analyze industry information on global sustainable agriculture practices

Tactics:
i. Serve as representation on domestic forums with an international impact and on 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 the International Soybean Growers Alliance “ISGA” to develop an “Americas” Best Management Practices “BMP” for soybean production.

iii. Defend U.S. soybean production against current or proposed overseas programs/policies that will position U.S. soybean production as not being sustainable.

iv. Monitor work of Roundtable on Sustainable Palm Oil, as well as other global efforts.

v. Develop a resource center for global sustainable efforts.

Performance Measures:
i. Representation on the ANSI “Sustainable Agriculture Standard Coalition” will defend against attacks on U.S. soybean production practices and develop sustainable agriculture standards to be adopted by the American National Standards Institute (ANSI) and International Standards Organization (ISO).

ii. Methods for collecting and housing data will be identified and implemented.

iii. A Best Management Practices will be agreed to by ISGA members.

iv. A “Sustainability” definition will be accepted by the IOPD (International Oilseed Producer Dialogue) members.
Financial Allocations:
Competitiveness  $2,095,387

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

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, such as Monsanto’s Roundup Ready 2Yield.
   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 given the upcoming arrival of Roundup Ready 2Yield soybean and the political issues surrounding biotech approvals.

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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 the Middle East, effective responses will be made to five disruptions related to biotechnology issues.

**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:**

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</tbody>
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Human Utilization

Domestic Marketing

Market Environment
Human Utilization accounts for nearly 21 percent of soy use, domestically. Soy oil provides most of the value to soybean farmers within the human uses area.

Soy Oil as a Market Place Leader
Eighty-seven 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 17 billion pounds of soy oil is consumed annually. Soy oil represents 74 percent of the total vegetable oil market in the United States.

However, 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. Some major U.S. municipalities (New York City and others) banned trans fats at restaurants. Current estimates indicate that soy oil market share has dropped by 6 percent over the past two years. Competitive oils, particularly 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 2007. Low-linolenic soy oil, which can be used in light commercial frying, is one part of the solution to the trans fats issue.

The heavy commercial frying and baking industries need more stable oil and USB, working with QUALISOY, will help introduce increased oleic and high-stearic oils in 2009-2010. Farmers will be asked to grow these new soybean varieties to ramp up the increased oleic oil supply to meet end user’s needs. Also in 2010, a mid-oleic/low-saturate soybean variety is likely to be introduced. This will be followed by the introduction of an increased Omega-3 variety in 2012. These varieties are expected to provide consumers with heart health benefits.

The introduction of these new soy oil varieties is significant, not only for maintaining soy oil market share, but perhaps more importantly, for the introduction of biotech traits with specific health benefits into the consumer marketplace. Acceptance of biotechnology by consumers is key to meeting USB’s Long-Range Strategic Plan goals.

Soy Protein and the Soy Health Halo
Eighty-five percent (85 percent) of consumers perceive soyfoods 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 genistene 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 re-evaluated based upon recent research showing that soy protein does little to reduce LDL cholesterol. The Domestic Marketing Committee and the Soy Nutrition Institute (SNI) have sponsored research studies to support re-affirmation of the health claim and an extensive response to FDA’s request for
comments was completed in July. FDA’s re-evaluation could take between one and two years.

If the Food and Drug Administration decides to re-affirm 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 in any new health claim petition.

**Strategic Approach**

The approach to protect soy oil’s 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 buoy 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. Increased oleic oils will provide soy-based trans fat solutions to the baking and heavy fry industries.

In another trans solution initiative, USB’s Domestic Marketing Committee contracted with a well-known researcher at Penn State University to complete a Stearic Acid Literature Review. The Committee also established a broad-based industry coalition on stearic that includes the National Pork Board, the National Cattlemen’s Beef Association, the Chocolate Manufacturer’s Association and numerous other major players. The review has been submitted for publication and will be used to establish that stearic acid is cholesterol-neutral. 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 and high-stearic oils (2009), mid-oleic/low-saturate oil (2010), Omega-3 (2012), and other soy oils targeted for human utilization. Some of these varieties will be developed utilizing biotechnology. In FY09, USB should increase efforts to communicate the benefits of biotechnology prior to the introduction of these new soybean varieties.

USB’s Domestic Marketing Committee 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 $12.1 million in research funding on only $570,000 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 FY09, 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 is the Food and Drug Administration’s (FDA) announcement to re-evaluate the soy and coronary heart disease (CHD) health claim. The Domestic Marketing Committee has worked through the SNI to create a coordinated response to FDA’s request for information on soy and CHD.

Another developing factor that could impact soy oil use as well as consumer perceptions of soy and soybean farmers is the food versus fuel debate. Although this issue is being addressed within the scope of the larger USB Board activities, the Domestic Marketing Committee’s Human Utilization area will need to monitor and provide support and information to help manage the food versus fuel issue.

Domestically, the Committee 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 new Dietary Guidelines for Americans cite 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 SNI 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, government agencies, food processors and manufacturers, bakeries, flourmills 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-linolenic template will provide a good model for future enhanced oil introductions.

Building upon prior successes, USB’s Domestic Marketing programs in Human Utilization can continue to have a major impact and return on investment.
LRSP Objective 1:

Committee – Target Area
   A. Domestic Marketing – Human Utilization

Goal:
   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. Demand Building
      Prepare the marketplace for the introduction of 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. Marketplace adoption of high-oleic oils and marketplace awareness of mid-oleic oil.
   ii. Marketplace awareness of low-saturate and Omega-3 oils in the pipeline.

Strategy 2:
   b. Demand Building
      Coordinate new oil introductions with QUALISOY.

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

   Performance Measures:
   i. Marketplace adoption of high-oleic oils and marketplace awareness of mid-oleic oil.
   ii. Marketplace awareness of low-saturate and Omega-3 oils in the pipeline.
Strategy 3:

c. Demand Building
Use ‘pull-through’ marketing strategy to help create demand and supply of trait-enhanced soybean 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. Marketplace adoption of high-oleic oils and marketplace awareness of mid-oleic oil.

ii. Marketplace awareness of low-saturate and Omega-3 oils in the pipeline.

Strategy 4:

d. Demand Building
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 Health Research Program – Continue support of SHRP to encourage research.

viii. Soy Connection Newsletter – Publish newsletter on a quarterly basis to reach health professionals.
ix. Soy Connection Interactive – Update and maintain Soy Connection Web site.

Performance Measures:
- Continued trend of soy product market growth.
- High consumer perception of soy as healthy, as measured by Consumer Attitudes Study.
- SHRP grants from National Institutes of Health and amount of funds leveraged.

Strategy 5:
- e. Demand Building
  Defend health claim to maintain soy health ‘halo’.

Tactics:
- Soy Nutrition Institute Leadership and Participation – Continue support of SNI as a credible third-party entity.
- Information Dissemination – Provide educational materials to governmental agencies, as requested.
- Provide leadership and guidance to SNI and industry on response to request for information from the Food and Drug Administration.

Performance Measures:
- Re-affirmation of the soy and Coronary Heart Disease claim.
- Maintain high level of consumer perception of soy as healthy, per the Consumer Attitudes about Nutrition study.

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

Strategy 1:
- a. Demand Building
  Research and communicate the health benefits of soy oil and protein.

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

Performance Measures:
- 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. Demand Building

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 newsletter on a quarterly basis to reach health professionals.

v. Soy Connection Interactive – Update and maintain Soy Connection Web site.

vi. Publish fact sheets on benefits of soy.

vii. Publish the soyfoods guide.

viii. Work with the 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 study.

ii. Review product sales trends at retail on an annual basis through the Soyfoods Association of North America’s monitoring mechanisms.

Strategy 3:

c. Demand Building

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 return on investment for SHRP based on National Institutes of Health grants versus USB investment.

ii. Determine research funds expended through the SNI.
LRSP Objective 2:

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

Committee – Target Area
A. Domestic Marketing Committee – Human Utilization

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

Strategy 1:

a. Demand Building

   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 for biotech.
   iv. Conferences and Forums – Participate in appropriate conferences and forums to monitor biotech issues and maintain relationships with influencers.
   v. Disseminate Information – Using various tools, 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. Demand Building

   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. Conferences and Forums – Participate in appropriate conferences and forums that address environmental 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. Demand Building

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 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.

Committee – Target Area

A. Domestic Marketing – Human Utilization

Goal:

1. Define and gain understanding by key stakeholders of sustainability as it pertains to U.S. soybean production practices for food use.
Strategy 1:
   a. Demand Building
      Communicate U.S. soybean industry’s dedication to sustainable agriculture relative to key stakeholder interests.

   Tactics:
   i. Work with Keystone, new ANSI coalition and others to define agricultural sustainability for food production.
   ii. Monitor news, research and activist 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 Allocations:
Domestic Marketing – Human Utilization: $2,334,784

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Human Utilization
International Marketing

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-industrial (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 additional 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-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.
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 continue their aggressive programs of one-on-one contacts with manufacturers, in the context of increasing health awareness in the country.
   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.

   Performance Measures:
   i. In Europe, 13 independent soybean crushers, soy protein ingredient manufacturers and independent full-fat soybean processors will be convinced of the value of U.S. soy.
   ii. In India, 180 food/pharma processors/manufacturers and health care professionals will begin using soy in their products.
   iii. In Latin America, 182 institutional decision makers and soy food processors will become aware of soy protein.
   iv. Through WISHH sponsored activities, 60 soy food manufacturers or distributors will use U.S. soybeans or proteins.

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 Korea, USSEC will continue to educate its preferred customers on the benefits of buying U.S. identity preserved soybeans via containers.
iii. In the Middle East, USSEC will continue to introduce key users on how soy ingredients (i.e. flour, concentrates, isolates, etc.) can positively affect the economics and quality of final products, ultimately increasing their profit potential.

iv. 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.

v. In Taiwan, training programs will continue to enhance the skills and product knowledge of preferred customers’ soy oil sales professionals servicing the HRI (hotels, restaurant and institutional) sector.

**Performance Measures:**

i. In Japan, 460,000 MT of U.S. identity preserved soybeans will be purchased.

ii. In Korea, 1 crusher will buy U.S. identity preserved soybeans in containers.

iii. In the Middle East, 100 key bakeries in the region will import 9,000 MT of U.S. soy flour.

iv. In Southeast Asia, 8 food and beverage processors will develop a preference for U.S. food-grade soybeans.

v. In Taiwan, the HRI sector will consume 326,000 MT of soybean oil.

**LRSP Objective 2:**

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

**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.
Strategy 2:
  b. Customer Preference

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

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

  Financial Allocations:
  IM – Human Utilization: Demand Building $1,031,208
  IM – Human Utilization: Customer Preference $1,289,011
  Total: $2,320,219

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Supply
Domestic Marketing

Market Environment
Maintaining the competitiveness of U.S. soybean producers in the global market requires ongoing quality and compositional improvements. Oil compositional improvements are 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 that went into effect January 1, 2006. These same oil improvements also provide fatty acid profiles necessary to increase the use of soybean oil for industrial applications. Meal compositional improvements are necessary to maintain soybean meal's preferred position as the protein source of choice in poultry and meat production animal rations. Composition improvements that do not sacrifice yield are necessary to increase intrinsic value of the crop, resulting in maximized profit for soybean farmers. Processing quality improvements are also important to meeting future market needs.

The value of soybeans is broken down by its main components of oil and protein. Eighty-two percent of U.S.-consumed soybean oil is utilized as human food for salad oil, frying, baking, margarine and other uses. Although soy oil does not naturally contain any trans fats, consumer health concerns about trans fats has prompted food manufacturers to search for oil alternatives that do not require hydrogenation for use in certain baking and frying applications. In order to maintain market share, new soybean varieties that produce oils that do not require hydrogenation are necessary. With the help of USB and QUALISOY, low-inolenic acid soybeans have been introduced to the market. But other soy oil alternatives are also needed as quickly as possible. USB must continue to move soybean varieties through the research pipeline, such as mid-oleic, high-oleic and high-stearic that can compete with canola, sunflower, palm and other vegetable oil alternatives. Increased Omega-3 oils are also in the pipeline (2012) and will provide additional human health benefits.

At the same time, the surge in biodiesel production is increasing soybean oil demand for this important fuel alternative. Soybean oil is the primary feedstock for biodiesel production in the U.S. As the industry is beginning to refine manufacturing practices, it is known that specific soy oil properties may be beneficial in improving the quality of biodiesel fuel. USB will need to monitor those developments for potential soybean improvements that may optimize soy biodiesel production. In addition, assessment of the impact of high oil soybeans is important. Soybean producers need to understand the impact of high oil varieties on protein composition, meal quality and overall economic return to the producer.

The other major component of soybeans is protein, mainly in the form of soybean meal. The majority of U.S.-produced soybean meal is consumed as animal feed, primarily for poultry and pork. Soybean producers are facing greater competition from alternate protein sources for livestock and poultry as the result of increased biofuels production. The Energy Bill's Renewable Fuels Standard has resulted in dramatic increases in ethanol production. Made from corn, ethanol production results in the byproduct Distillers Dried Grains with Solubles (DDGS). DDGS represent competition for soybean meal use in animal agriculture. At the same time, increased biodiesel production is placing other protein meals on the global market, such as canola meal and sunflower meal. Add to that the fact that increased global biodiesel production is projected to continue to
increase the supply of soybean meal resulting from the need to crush more soybeans to supply the oil for biodiesel manufacture. The animal feed market is experiencing a glut in ingredient alternatives. At the same time, in an unusual market situation, prices for soybean meal are very high, creating concern for animal producers who must feed their livestock.

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 success in 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 tangible nutritional and economic benefits to feed formulators. In addition, removing anti-nutritionals from the meal would enable soybean meal use to increase in aquaculture feeds.

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 has been 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, continued education efforts to encourage seed technology companies to select for protein and oil are critical to the long-term profitability of U.S. producers. 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.

Maximizing return per acre must also include developing varieties that protect yield from stresses, including Asian Soybean Rust, Soybean Cyst Nematode (SCN) 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 during the current period of high corn prices that is being driven by ethanol production. Soybean trait improvements in the areas of reducing input costs or increasing crop value are critical to maintain the economic incentives to farmers to encourage them to continue planting soybeans.

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 business mainstay, driven by consumer expectations. 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.

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.

**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. USB must also have an understanding of how processing impacts the final quality of soybean components and whether processing quality negates or enhances soybean trait improvements. In addition, USB needs to work with the processing industry to find ways to ensure ongoing improvements on soybean product quality post-processing.

At the same time, the Supply strategic approach must focus on soybean yield improvements. The main elements 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 anywhere between 250 and 500 million bushels of soybeans per year to disease over the past few years, depending on the year. Minimizing those losses by developing varieties resistant to major soybean diseases like SCN and SDS will enhance U.S. soybean production.

Developing proper tools for measurement of quality traits through the Soybean Quality Traits project (SQT) 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.

Moreover, USB must document and tell its very positive story on soybean sustainability in order to ensure freedom to operate and continuous acceptance by the food industry. In the 1990 Farm Bill, Congress created a definition of “sustainable agriculture”. This definition is still in effect today. It is as follows:

a. satisfy human food and fiber needs;
b. enhance environmental quality and the natural resources base upon which the agricultural economy depends;
c. make the most efficient use of non-renewable resources and on-farm resources and integrate where appropriate natural biological cycles and controls;
d. sustain the economic vitality of farm operations; and
e. enhance the quality of life for farmers and society as a whole.

This definition represents an excellent foundation for any definition of sustainable soybean production developed by USB. Although soybean producers are excellent stewards of the land and environment, those not directly involved in soybean production and farming do not understand this. Inaction in this area 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.

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 2010

Committee – Target Area
   i. Domestic Marketing – Supply

Goal:
   1. Provide the market with high value U.S. soybean varieties that meet the needs of global customers to ensure demand for 3.5 billion bushels of U.S. soybeans by 2010.

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 2003 - 2008 data becomes available, such as international export data, South American data and South American production impact.
   ii. Quantify the economic impact (oil/protein profit tradeoffs) of higher oil soybean varieties.
   iii. Develop informational messages and educational materials regarding soybean protein and oil quality specifically geared toward seed companies and parent stock producers.
   iv. Communicate the results of economic analysis to the academic community and industry regarding the constituent value of U.S. soybeans.
   v. Maintain and improve the existing soybean value calculator and “InfoBase”.
   vi. Increase the number of data sources to further quantify the economic impact of lower protein soybeans.
   vii. Leverage quality data from state programs where quality testing exists without yield results.

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. 2008 crop information incorporated in InfoBase.
   iv. Two additional data sources acquired that further clarify economic impact in support of SYQ.
   v. State quality testing databases incorporated into InfoBase to support the SYQ economic impact message.

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. Quantify market impact for each procurement program to determine whether programs can be self-sustaining.
iii. Expand processor procurement programs that increase market recognition of protein and/or oil improvements.
iv. Develop awareness programs targeting grain elevator points in North and South Dakota.
v. 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 2008 crop year.
ii. Quantitative assessment provided from processors to support increase in market value due to procurement program.
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 major 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. Evaluate the new, enhanced soybean oil functionality performance and end user acceptance in the marketplace. Build on successful low-linolenic soybean adoption strategies for future trait introductions. Lay the groundwork for the introduction of high-oleic soybean oil.
   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.

Performance Measures:
   i. Market analysis of low linolenic soybean usage shows user acceptance and quality performance characteristics throughout the marketplace. Market is eager for mid-oleic.
   ii. Farmers are receiving a premium that encourages sufficient planting of low linolenic 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. 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 in an ongoing process.
  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 mean 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.
  iii. Report on the impact of processing on meal quality and economics
       enables USB to assess end market value of trait improvements and
       determine whether processing quality projects are in order.
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. Develop strategy for working with processors to improve quality.
  iv. Assess feasibility of enhanced soybean meal traits as recommended by the Animal Nutrition Working Group (ANWG).

Performance Measures:
  i. Initial assessment provides assessment of existing F.I.R.S.T. low-linolenic varieties.
  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. Collaborate on the development and achieve adoption and global acceptance of improved soy technologies and biotechnology.

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

Strategy 1:
  a. Supply - Composition
  As requested by the Biotech Initiative, 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. Work with CAST and others to develop scientific documents supporting the benefits of biotech.
  ii. Conduct Domestic Marketing biotech projects as directed by the Biotech Initiative.

Performance Measures:
  i. The 2002 CAST biotech report is updated for U.S. soybeans.
  ii. Biotech Initiative-directed projects are successfully implemented.

Goal:
  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. Response materials for food vs. fuel inquiries by media and government
       officials are completed.

LRSP Objective 3:
   III. Promote U.S. sustainable soybean production through responsible stewardship
        while acknowledging global market needs.

Goal:
   1. Define sustainability as it pertains to U.S. soybean production.

Strategy 1:
   a. Supply – Composition
      Develop internal USB consensus on sustainability.

Tactics:
   i. Use the definition of “sustainable agriculture” developed by Congress for
      the 1990 Farm Bill as the foundation for any USB definition of soybean
      sustainability.
   ii. Utilize the Competitiveness study on sustainability in international
       markets as a starting point in assessing sustainability from a domestic
       perspective.
   iv. Prioritize soybean sustainability research to benchmark U.S.
       sustainability.

Performance Measures:
   i. Top three aspects of sustainability unique to soybean production are
      identified.
   ii. A plan and timeline for research to provide an initial overview of soybean
       sustainability data is developed.

Goal:
   2. Integrate sustainability into soy product marketing.
Strategy 1:
  a. Supply – Composition
     Develop sustainability messaging strategy.

Tactics:
  i. Develop soy sustainability marketing messages for each target area.
  ii. Incorporate sustainability messaging into domestic marketing efforts through activities in each major market segment.
  iii. Educate industry and other stakeholders on soy sustainability characteristics.

Performance Measures:
  i. At least two key sustainability messages are developed for human, industrial and animal utilization.
  ii. Sustainability messages have been added to marketing activities by year end.
  iii. USB sustainability position has been communicated to major seed companies and processors.
  iv. Domestic Marketing Committee subcontractors are informed of sustainability messages.

Financial Allocations: $2,383,831

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Supply
Production

Market Environment
Maintaining the competitiveness of U.S. soybean producers in the global market requires ongoing quality and compositional improvements. 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-seven percent of U.S.-consumed soybean oil is utilized as human food for salad oil, frying, baking, margarine and other uses. Soy oil does not naturally contain any 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. But other soy oil alternatives are also needed as quickly as possible. USB must continue to support soybean research to develop varieties with traits such as mid-oleic and high-oleic oil to compete with canola, sunflower, palm and other vegetable oil alternatives.

The surge in biodiesel production is increasing soybean oil demand. Soybean oil is the primary feedstock for biodiesel production in the U.S. As the industry is beginning to refine manufacturing practices, it is known that specific soy oil properties are beneficial in improving the quality of biodiesel fuel. To meet the anticipated increased demand for oil, it is appropriate to consider research on novel ways to develop soybeans with increased oil without a concomitant loss of protein.

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, primarily for poultry and pork. Soybean producers are facing greater competition from alternate protein sources for livestock and poultry as the result of increased biofuels production. Ethanol production results in the byproduct Distillers Dried Grains with Solubles (DDGS). DDGS compete with soybean meal use in animal agriculture. At the same time, increased biodiesel production is increasing the amount of other protein meals on the global market, such as canola meal and sunflower meal. 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. The animal feed market is experiencing a glut in ingredient alternatives. At the same time, in an unusual market situation, prices for soybean meal are very high, creating concern for animal producers who must feed their livestock.

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 success in 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 during the current period of high corn prices driven by ethanol production. Soybean trait improvements to reduce input costs or increase crop value are critical to maintain the economic incentives to farmers to continue planting soybeans.

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 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, ultimately enriching the value of U.S.-produced soybeans by moving away from treating all soybeans as commodities and providing customers with soybeans with improved traits.

At the same time, the Supply strategic approach must focus on soybean yield improvements. The main elements 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, depending on the year. Minimizing those losses by developing varieties resistant to 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, and genetic advances in tolerance to drought and other abiotic stresses will help protect yields, farmer profits and U.S. soybean production.

Although soybean rust was less of a problem in 2007 than had been feared, it was detected in more states and more counties and moved farther north than in previous years, indicating that it is still developing and spreading as a disease in the U.S. Soybean rust will continue to have the potential to cause substantial yield loss while, at the same time, 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.
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.

USB must document and tell its very positive story on soybean sustainability in order to ensure freedom to operate and continuous acceptance by the food industry.

**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 with rewards that can be felt 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 can remain 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, so 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, avoiding gaps or unplanned redundancies in research that addresses 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. The impact will be made more in protecting existing yield potential from loss to stresses than in increasing genetic yield potential. 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 to occur. It is imperative that soybean yield research continue to build upon work already done to develop resistant soybean varieties.

The identification of yield genes with the potential to increase soybean yields by as much as 10% or more along with the development of markers for the genes will greatly expedite the process of moving these genes into a wide variety of germplasm adapted to the various 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 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 2007. This program was clearly 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.
Results of this change of emphasis can be seen by the introduction of low-linolenic acid soybean varieties by three companies and by the fact that 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 the 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 available to all plant breeders, not just to breeders in one or two commercial companies.

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 are also helping 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.

New information that low-phytate lines with good yield and good germination can be developed addresses earlier concerns that this might not be possible. Earlier work with oleic acid levels indicated that development of stable mid-oleic varieties in early maturity groups would be difficult, but the new gene alone or in combination with other mid-oleic genes seems to address this issue.

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 plus project is nearing completion, and information from it is already being used by scientists. The sequence will be published in a scientific journal late in 2008.

Low-linolenic soybean varieties, resulting from both public research and from private companies, are being grown under contract, and demand continues to increase. USB-funded researchers have released a number of new lines with one or a combination of low-linolenic, mid-oleic, and high-protein for use by public and private breeders in 2008.

**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, 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 function 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. Assess annually the economic impact of major diseases that affect soybean production areas.

Performance Measures:
  ii. Varieties and/or germplasm are developed with increased resistance/tolerance to biotic and/or abiotic stress to protect yield potential.

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 most constrain production efficiency in the major soybean production areas and develop multi-year research plan(s) to improve efficiency. Ensure that researchers collect, share and publicize significant results.

iii. Support research efforts to develop predictive models for movement of 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 2:
III. Collaborate on the development and achieve adoption and global acceptance of improved soybean technologies and biotechnology.

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 stable 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.

v. Work with public and private sector researchers to identify commercial soybean varieties that exhibit higher protein levels while maintaining commercial agronomic standards.

Performance Measures:
I. Germplasm is developed with improved oil/fatty acid composition characteristics, and functionality of the improved oil is determined.
ii. Traits are identified that improve metabolizable energy, reduce phytate-phosphorus, and improve the balance of limiting amino acids.

iii. Genomics tools such as maps, markers, genomic sequencing, and micro arrays are developed for use by breeders to facilitate selection of progeny from crosses.

Strategy 2:

b. Supply – Composition

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

Tactics:

i. Identify selectable markers associated with genes/QTL for improved compositional traits and make these markers available to other researchers to enable breeders to identify and incorporate genes/QTL more efficiently.

ii. When a trait has been identified and the corresponding gene/QTL has been incorporated into advanced germplasm, facilitate making the improved germplasm available to public and private breeders for inclusion in their breeding programs.

iii. Encourage private sector breeders to include in their breeding programs all traits identified as needed by the market 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 in order to maximize added value throughout the value chain.

Tactics:

i. Utilize third parties (e.g., GIPSA, AOCS) to work with the 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 nearly enough equal 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 increased.

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 that will increase their awareness of the benefits of evaluating soybeans on constituent value rather than treating soybeans as commodities.

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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: $5,745,254
Production – Supply/Composition: $4,717,477

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Industry Relations
Communications

Market Environment
Recent years in the U.S. agriculture industry have been some of the most exciting in history, but this excitement has created many changes and increasing outside pressures. Both prices and demand for most oilseeds and grain have hit record highs. Advances in technology are already allowing U.S. soybean farmers to grow products that meet specific customer demands. While the U.S. saw a significant drop in 2007 soybean acreage, due largely to the ethanol boom, that changed in 2008.

While the outlook for soybean acreage, demand and prices is extremely positive, farmers will face other challenges, including skyrocketing input costs, as well as high land prices. In addition, the outlook for the overall U.S. economy is somewhat bleak and will certainly have an impact on the overall attitudes of U.S. consumers, including farmers. But taking all of this in consideration, USB’s March 2008 Producer Attitudes Survey indicates that soybean farmers are overall optimistic for the future.

Part of this optimism is undoubtedly driven by record demand for U.S. oilseeds around the globe. This demand creates an increased expectation to meet specific customer needs for quality and traits. Right now opportunities to select varieties to meet these demands are somewhat limited, but this will undoubtedly change, particularly with the next generation of biotechnology. This will create an opportunity for the checkoff to serve as an unbiased source of information for farmers when determining how to maximize on-farm profit opportunities.

With this new generation of biotechnology will also come potential backlash from some consumers and other customers of U.S. soy. The soybean checkoff has launched a Biotechnology Initiative to work across the value chain to both drive acceptance of biotechnology, but also to assess what new biotech advances will offer soybean farmers. Sustainability continues to be a buzz among environmental, agricultural, corporate, governmental and countless other entities. While some organizations’ definitions of sustainability attempt to eliminate biotechnology and other advances in U.S. grain production, as well as animal agriculture, others provide a platform for soybean farmers to succeed. Animal agriculture attacks continue to grow by well-funded groups such as the Humane Society of the United States (HSUS) and many others. With the growth of consumer concerns over food safety, efforts by these activist groups seem to be increasing in effectiveness. And while soybean farmers slowly seem to be growing aware of the economic impact of their number one meal customer, ongoing awareness efforts will be needed to ensure support for this key customer.

As issues such as biotechnology, sustainability and animal agriculture continue to be highly visible, a balanced understanding of these issues seems to be lacking in many mainstream media. This creates an opportunity for the checkoff to focus on a targeted list of media and media influencers with accurate, science-based information to ensure U.S. consumers have the facts.

Ongoing communications efforts by the soybean checkoff targeting soybean farmers continue to be strong. Awareness of checkoff priorities by soybean farmers is high and overall knowledge of checkoff activities is also at a near record high, with a third of farmers able to name three activities of the checkoff and another third able to name two activities. Most importantly, when asked about the continued need for the soybean checkoff program, a full 71 percent of soybean
farmers indicated the checkoff is still necessary. It’s also important to note that USB will continue to utilize the soybean checkoff brand in these external communications. Historic research shows a high level of recognition of the soybean checkoff, compared with awareness of USB. In addition, when soybean farmers have the opportunity to participate in a Request for Referendum, they are only presented with the terminology “soybean checkoff,” not the “United Soybean Board” or “USB”.

The next Request for Referendum period carried out by the U.S. Department of Agriculture is scheduled for 2009. While the specific timing of the Request period is unknown, it is the responsibility of USB to communicate how to participate in the Request to soybean farmers.

On an internal front, USB continues to strengthen relationships with state soybean checkoff boards. And while recent efforts by the Soy Opportunities Task Force could lead to the assumption that state relations are strained, in fact the checkoff continues to work very closely with the great majority of states, particularly on communications efforts. The FY08 USB Checkoff Leaders Forum drove home the need for an increased focus on two areas for more collaboration: research and communications.

After considering this overall market analysis for FY09, USB Communications Committee farmer leaders have prioritized audiences and communications objectives for the upcoming year. The audiences that the soybean checkoff will target with communications strategies in FY09 include: soybean producers, soybean value chain, consumer thought leaders and USB Board & QSSBs.

**Strategic Approach**

**Soybean Producers/Industry- Soybean Producers**
Communications to farmers focuses on two kinds of messaging: specific information about the activities and accomplishments of the soybean checkoff along with information that farmers need to know to enhance their competitiveness in the global marketplace. The first kind of messaging, to an extent an investors report to soybean farmers, is mandated by the Act & Order. The second allows USB to provide valuable information that is learned through checkoff research and marketing activities to all soybean farmers.

To accomplish this, USB focuses on a three-tiered approach to soybean farmer communications: paid communications, earned communications and grassroots outreach. Over the past several years, the definition of these strategic approaches has evolved with new technologies in the communications industry, particularly in the area of interactive and Web communications.

All of the strategic approaches within the soybean farmer audience will include a Request for Referendum component, but specific activities will need to be determined after USDA provides the required reach and frequency of notification.

Branding across all of these strategies will continue to be focused on the soybean checkoff, rather than USB. This is especially important in a Request for Referendum period as soybean farmers must be certain of how their checkoff dollars are at work.

**Soybean Producers/Industry- Soybean Value Chain**
Along with soybean producers, communications will also focus on industry influencers, 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. These kinds of outreach and partnership opportunities are vital, particularly as they relate to soy quality initiatives, biotechnology acceptance and sustainability practices. USB’s communications program will also consider new kinds of partnerships that create opportunities for joint education efforts funded by both industry and the checkoff.

The checkoff will continue to partner with states, processors, extension and seed companies to educate farmers on the need to select for protein and oil, and will also work with biodiesel and biobased product manufacturers and users to continue driving awareness and utilization of industrial soy products.

**Soybean Producers/Industry- Consumers Thought Leaders**

The Communications Committee will investigate new opportunities to communicate with consumer audiences. Understanding that the key messages for media outreach will be focused on sustainability, biotechnology and potentially the importance of a domestic food supply, activities will be coordinated between USB and industry groups that are already working on these issues. Ensuring that the checkoff, as well as other ag organizations, is focused on the same messaging points provides a unified front for U.S. agriculture and decreases the chance for fragmented or conflicting messages to media.

In order to first understand mainstream media’s current attitude toward and coverage of U.S. agriculture, and specifically soybeans, an analysis is needed that will include a benchmark of positive coverage. Then, there is an opportunity to reach out to a small, select group of mainstream media with positive attitudes toward soy for a roundtable discussion about the opportunities with soy. From there the checkoff can launch a concentrated effort to reach a select group of mainstream print media. This will likely require an investment of time and resources for farmer leaders to visit these media one-on-one and provide the farmer perspective on the issues.

USB will also investigate non-traditional media outlets for opportunities to break through the clutter. For example, outlets like YouTube are already being utilized well by activist groups such as the Humane Society of the United States, by using clever cartoons, shocking video footage and emotional pleas to target agriculture. This will be somewhat of a departure from traditional checkoff communications, but it is necessary to break through in these media environments. Messages will be thoroughly researched and tested with audiences before launch.

The boom of specialty programming on cable and digital satellite networks has created opportunities to reach a large number of consumers with a relatively small investment of resources. Programming on networks such as the The Discovery Channel, HGTV, the History Channel and The Learning Channel draw large audiences and rely on unique stories and messaging. To increase potential checkoff and soybean messaging within these networks, the checkoff will target producers and network influencers with background information and storylines, as well as unusual facts and potential interviewees.

**Checkoff Organizations/USB & QSSBs- USB Board & QSSBs**

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To build strong checkoff brand awareness among farmers and other audiences, it's imperative that all checkoff communications provide consistent and concise messaging. To do this effectively, internal communications within the checkoff family plays a vital role.

Consistent ongoing communications will be used to ensure board members are aware of checkoff activities. Both proactive and reactive support will be provided to directors, including timely updates of breaking issues and ongoing activities and customized support for speeches, editorials and other activities. Ongoing training and tools will also be provided.

At the state level, the Committee will continue to partner with state staff to develop communications strategies and messages. The QSSB Communications Advisory Committee will continue to exist, allowing state staff to provide advance input on messages, as well as specific tactics. Communications support to states will continue to be focused on both customized support and standardized support. Customized support, such as developing Web sites, creating ads, writing newsletters or planning conferences, is done in lock-step with state staff. Standardized support allows a state to easily implement a communications tool created by USB, as they require little staff resources at the state level.

In FY09, the Communications Committee will focus on increasing opportunities to communicate with QSSB farmer-leaders, both in two-way and one-way communications. This includes regular email updates of USB activities and checkoff priorities, as well as updates of activities at the state level. In addition, the Committee will increase state leader awareness of opportunities to participate in USB meetings. Similarly, it is imperative to have significant USB leader participation at QSSB meetings and other opportunities. By frequently outreaching to state farmer-leaders, it will increase the overall awareness of what is happening at the national level and could lead to new opportunities for partnership and collaboration.

In addition to the former and future leaders of USB and the QSSBs, additional opportunities exist to provide ASA leadership with information about checkoff activities and priorities. Many of the proactive outreaches to USB directors and QSSB farmer-leaders could easily be provided to ASA and state association leadership, increasing the ongoing communications between the two organizations.

**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**
2. Collaborate on the development and achieve adoption and global acceptance of improved soy technologies and biotechnology.
3. Promote U.S. sustainable soybean production through responsible stewardship while acknowledging global market needs.
Committee- Target Area
A. Communications- Industry Relations

Goal:
1. Build awareness of the soybean checkoff as an effective, efficient and farmer-driven U.S. soy research and promotion program while establishing the checkoff as an impartial resource of soy-related information among all U.S. soybean farmers, the ag value chain and consumer thought leaders.

Strategy 1:
a. Soybean Producers/Industry- Soybean Producers

Tactics
i. Develop, produce and distribute four issues of Beyond the Bean. Efforts will continue to build on the success of past issues and serve as the key piece of educational, action-oriented communications about checkoff-funded activities.

ii. Make available relevant enhancements to Beyond the Bean Online that provides additional content and tools to visitors of the site that cannot be provided in the print version of its namesake.

iii. Develop, produce and distribute a production research "annual" that provides soybean farmers and industry with an overview of all the soybean research projects focused on yield improvements, trait enhancements, pest and disease resistance improvements and genomics projects receiving checkoff funding for FY09, which is designed to build awareness of checkoff research funding.

iv. Develop and place checkoff ads/advertorials in ASA publications to increase awareness and understanding of soybean checkoff activities among active soybean producers and gain ASA member support for the checkoff.

v. Develop and place print and radio ads specifically for a national/regional checkoff awareness building effort during the pre-planting/planting and pre-harvest/harvest seasons.

vi. Develop and place advertorial content and interviews on agricultural radio and television outlets that provide extension and repetition of essential checkoff messages and provide increased reach and frequency of media relations efforts aimed at press releases, op-eds and other unpaid message placements.

vii. Update tradeshow booths, premiums and materials as needed to convey checkoff messages to soybean farmers, industry partners and the general public at tradeshows and outreach opportunities throughout the year.

viii. Participate, sponsor and exhibit in tradeshows and outreach events that provide opportunities to share checkoff messages with key audiences, such as Commodity Classic, Farm Progress, National Farm Machinery Show and others.

ix. Partner with QSSBs to provide a united front at state-level tradeshows and outreach events such as the Sunbelt Ag Expo, Michigan State University Ag Expo, Husker Ag Classic, Empire Farm Days, South Dakota Outlook and others.

x. Develop and implement town hall forums or listening sessions to provide an open forum for farmer-to-farmer discussions and allow local soybean farmers to have access to national checkoff farmer-leaders.

xi. Develop, produce and distribute digital, print, audio and video news releases, media tip sheets and op-ed pieces that inform soybean producers, the soybean industry and consumer thought leaders about the activities and accomplishments of the soybean checkoff.
xii. Carry out an assertive media relations effort with the agricultural media to maintain strong relationships, soybean checkoff knowledge and gain earned media coverage of soybean checkoff activities and accomplishments.

xiii. Organize and carry out up to four media events that highlight soybean checkoff activities and accomplishments that gain earned media coverage and help keep soybean farmers well informed about the soybean checkoff.

xiv. Secure sponsorships and actively participate in the annual convention of the National Association of Farm Broadcasters and the Ag Media Summit.

xv. Develop, produce and distribute a print and digital version of a historical list of soybean checkoff accomplishments for agricultural and other media.

xvi. Develop, produce and place videos about modern soybean production or soybean checkoff priority issues on free, interactive Web sites that feature videos, and the USB Web site.

xvii. Secure and utilize a media monitoring service to measure earned media coverage of the soybean checkoff.

xviii. Notification to eligible soybean producers of the request for referendum period and procedures as stipulated by the Agricultural Marketing Service branch of USDA.

Performance Measures

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

ii. Increase the number of farmers who know three activities of the checkoff 3 points to 36 percent and the number of farmers who know two activities 3 points to 36 percent.

iii. Establish a benchmark of farmer awareness of upcoming biotechnology traits.

iv. Increase traffic to www.unitedsoybean.org from an average of 8,900 visitors per month to 30,000 visitors per month.

v. Demonstrate soybean farmers’ practices of sustainability in terms of sound profitable production.

vi. Meet USDA requirements for notification of the Request for Referendum.

Strategy 2:

b. Soybean Producers/Industry- Soybean Value Chain Tactics

i. Demonstrate checkoff support by participating in industry trade shows with our industry partners. Shows potentially include Farm Bureau, National Farmers Union, American Society of Farm Managers and Rural Appraisers, National Association of County Ag Agents, International Poultry Expo/International Feed Exposition and Farm Journal Forum.

ii. Distribute editorials and relevant collateral to industry partners. Editorials will focus on what the checkoff is doing to support farmers and agriculture in general. Encourage industry partners to include the editorials in their publications. Also, work with Publicis Consultants on placement of relevant editorials with food industry partners and publications.

iii. Build on outreach to OEMs with a focus on helping them to “green” their companies through adoption of biodiesel standards and biobased products. Provide materials to help educate these companies and their customers.

iv. Continue quarterly electronic distribution of the Soybean Briefing e-newsletter to update Washington leaders on checkoff activities. The update is for educational purposes only, and will not be used to influence public policy.
v. Continue quarterly electronic distribution of the Bean Check e-newsletter to elevator managers through Feed & Grain Magazine's e-blast service. Increase circulation and enhance our relationship with NGFA by adding a banner ad to NGFA's Web site to link to Bean Check on the web.

Performance Measures
i. Define biotechnology as a value-enhanced trait among the soybean value chain.
ii. Demonstrate soybean farmers' practices of sustainability in terms of sound profitable production.
iii. Increase farmer biodiesel usage from 57 percent to 62 percent.
iv. Increase the number of fuel distributors and retailers offering soy biodiesel from 3,200 to 3,500.

Strategy 3:
c. Soybean Producers/Industry- Consumers Thought Leaders
Tactics
i. Conduct research in the form of focus groups, surveys and published information on the public perception of agriculture to gain a better understanding of how consumers and the general public view farmers and the agriculture industry. The information gained from the focus groups and survey will create a benchmark of awareness that will help soybean checkoff farmer leaders determine the next steps in communicating the benefits of biotechnology and soybean advancements to consumers. A gap analysis will also be conducted across all checkoff communication efforts to ensure consistency of messaging and no audience duplication with consumer thought leader communication efforts.
ii. Continue support of America’s Heartland by providing editorial guidance and in-kind promotion and sponsorships to broaden the outreach of agriculture on rural neighbors and consumers.
iii. Conduct a satellite media tour focusing on messaging about food, feed and fuel. The tour would allow the checkoff to reach large audiences in one quick, single-day outreach. Potentially millions of viewers can be reached by this tour, helping counter some of the mis-information about food prices, biofuels and animal feed.

Performance Measures
i. Secure at least 20 stories in mainstream media outlets that include a positive agriculture message on checkoff goals and priorities.
ii. Demonstrate soybean farmers' practices of sustainability in terms of sound profitable production.
iii. Benchmark the public's general understanding of how biotech can improve the environment.
iv. Define biotechnology as a value-enhanced trait among the soybean value chain.

Strategy 4:
d. Checkoff Organizations/USB & QSSBs- USB Board and QSSBs
Tactics
i. Provide checkoff communications support to QSSB staff on an as-needed basis for "quick turnaround" requests, like customizing a print ad or supplying a photo, and for longer-range communications activities, such as designing a Web site, planning a meeting or developing a newsletter.
ii. Plan and host Roundtable meetings with QSSB staff and farmer-leaders to determine and discuss checkoff communications messages, activities, tools and issues, with a focus on communications professional development.

iii. Create and distribute a survey to QSSB staff to establish an understanding of how USB can better coordinate with QSSBs to communicate to producers, and to enable QSSBs to provide input on USB's communications program.

iv. Communicate pertinent checkoff information, available communications materials and resources, and USB meeting sponsorship opportunities with QSSB staff and farmer-leaders.

v. Conduct in-person visits with QSSBs to foster stronger relationships, share communications ideas and develop support solutions through USB.

vi. Initiate multi-day checkoff partner tours with state and national farmer-leaders to communicate about the checkoff across the state/region, learn about the state/region's agriculture and to build relationships.

vii. Update State Share Library on the USB Web site with new materials, databases and site improvements to foster increased interaction between USB and QSSBs, and amongst QSSBs.

viii. Provide reimbursement funding to QSSBs for pre-approved, state-based communications activities.

ix. Provide co-op funding to QSSBs on a funds-matching basis to run USB-produced print and radio ads, helping to extend USB's national communications campaign to provide soybean farmers with coordinated and consistent checkoff messages.

x. Provide support to the USB Executive Committee, Communications Committee, board and staff including items such as director development and training. Research and complete all USB contractually required documents.

xi. Provide enhancements and additions to the USB Web site that provide valuable information and keep the site up to date and user friendly.

xii. Develop and supply USB Directors, staff, contractors and subcontractors with communication pieces such as the directory, business cards, presentations and speeches.

xiii. Provide comprehensive coverage of, and interaction with, primary USB programs areas through communications.

Performance Measures

i. Ensure two-way communications between USB and QSSBs by providing information about national soybean checkoff activities to QSSBs on a weekly basis, and providing at least four methods for QSSBs to share information with USB on their activities.

ii. Increase the number of QSSBs that use communications support from USB from 20 to 24.

iii. Benchmark the number of QSSB leaders who participate with (engage in 2 way communication) with USB leaders.

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

v. Increase traffic to www.unitedsoybean.org from an average of 8,900 visitors per month to 30,000 visitors per month.
Financial Allocations:
Soybean Producers/Industry: $5,874,394
USB & QSSB Support: $1,900,539

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Industry Relations
Production

Market Environment
USB seeks to ensure that checkoff funds and public research funds are utilized efficiently and that appropriate research targets are identified, funded and pursued. Efforts aim to coordinate the development by state and national checkoff organizations of priorities, strategies and activities to optimize total soybean research sector resources. USB, regional checkoff organizations and QSSBs share information and engage in frequent discussions related to research. This strategy funds numerous efforts, including development of a checkoff database that is used by many to determine what research is being funded and to avoid redundancy. In addition, work continues to accelerate the development of new research tools and new soybean cultivars by enabling increased communication among public- and private-sector researchers to collaborate on research efforts, share technology advances and set 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 are the only organizations providing 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 will 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 simply funding meetings or developing databases. Farmer-leaders and staff spend substantial time participating on planning committees, advisory groups and task forces to ensure that research efforts are addressing issues that the checkoff has identified as being important to soybean farmers. For example, farmer-leaders and staff have participated actively in planning for rust research, genomics and reviews of ongoing national programs of USDA-ARS.

Ability to Impact
Coordination includes facilitating the efforts of the research community to determine how best to map the soybean genome, among other things. As a result of USB funding, a genomics research program has been implemented with leading soybean researchers and excellent progress has been made. A Soybean Genomics Strategic Plan was developed through a collaborative effort of the soybean research community. In addition, rust remains a top priority, and its impact on the soybean crop is continually being evaluated. Coordinated efforts will be supported by USB to develop research plans for future years.
LRSP Objectives 1-3:
I. Annual utilization of 3.5 billion bushels of US soybeans by 2010
II. Collaborate on the development and achieve adoption and global acceptance of improved soybean technologies and biotechnology.
III. Promote US sustainable soybean production through responsible stewardship while acknowledging global needs.

Committee – Target Area
A. Production/Industry Relations

Goal:
1. Ensure that checkoff funds 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 by state and national checkoff organizations of priorities, strategies and activities 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. An annually updated production research database that includes all national, regional and QSSB soybean checkoff-funded projects is provided to interested parties. This database is used by USB and regional committees to increase coordination and minimize unplanned redundancy.
   ii. Research priorities and plans are coordinated among NCSRP, SSRP and USB to redundancy 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 priority soybean research areas and develop strategic plans and action plans to address needs.
ii. Coordinate soybean research initiatives that include university, government and private researchers from across regions and disciplines.

Performance Measures:

i. Because of effective communication and collaboration among scientists who participate in USB-funded programs, checkoff-targeted research priorities are agreed upon, redundancy is reduced, and researchers benefit from the sharing of information among scientists.

ii. Scientists who work within a given area of research (e.g., pathology, genomics, plant breeding) meet to review results, set priorities, establish/review/update strategic plans and agree on action plans to advance their areas of science.

Strategy 3:

c. Research Coordination

Make public agencies and ASA aware of USB research priorities and determine 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, internships, etc., to help 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.

USB FY09 Action Plan
Industry Relations – Production
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ii. Skilled and trained young scientists join the soybean research community.

Financial Allocations:
Production – Research Coordination: $832,841

Program Staff Contact Information:
Ed Ready, Production Program Manager
Phone: 314-579-1598
Email: eready@smithbucklin.com
Compliance and Evaluation
Audit & Evaluation

Market Environment
The Soybean Promotion Research and Consumer Information Act, Order and the accompanying documents specifically lay out the fiduciary responsibilities in administering checkoff funds. USB is required by this federal legislation to ensure that all checkoff funds are used in accordance with the law. Qualified State Soybean Boards are authorized to collect and expend funds under the Act and Order and are subject to annual review by USB. Primary contractors and subcontractors to USB are required to expend funds in accordance with the Act and Order and USB Policy. All checkoff programs are coming under increasing scrutiny. In this environment, the soybean checkoff aims to maintain the highest level of compliance with SPARC and strong internal controls to protect farmer checkoff dollars. This year, the investment of millions of dollars in soybean checkoff revenues for the purposes specified in the soybean Promotion and Consumer Information Act will be made by the United Soybean Board. It is extremely crucial that the United Soybean Board maintain the utmost integrity in their investment and policy decisions.

Strategic Approach
The Audit & Evaluation Committee will continue to set a proactive tone in the compliance and evaluation areas on behalf of the soybean checkoff. The committee will seek programs that provide compliance education and information to farmer leaders and staff at both the state and national level. In FY09, USB will pursue outreach through educational programs, resources and compliance testing in an effort to improve compliance knowledge and develop strong board fiduciaries.

Ability to Impact
The committee will continue to ensure that the board upholds the highest standards in targeting checkoff investments in projects and programs that will result in the best return-on-investment. Evaluations and tracking tools will be employed as a mechanism to help the farmer leaders and staff make sound decisions on programs, policies and resource allocation.

LRSP Objective 1:
I. Annual Utilization for 3.5 billion bushels of U.S. soybeans by 2010

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.

Tactics:
i. Update and distribute compliance manual to all QSSB’s and USB directors as needed.
Performance Measures:
i. Provide accurate compliance information to all QSSBs and USB Directors on an as needed basis.

b. Provide national and state compliance educational opportunities for QSSBs and USB.

Tactics:
i. Hold one compliance workshop a year open to all QSSB staff and directors.

Performance Measures:
i. Provide national educational opportunities and multiple individual state educational opportunities for QDSSBs and USB which generate a 25% increase in overall contacts with state staff and farmer leaders.

Goal:
2. Ensure the proper internal controls and contractual provisions are utilized and implemented by USB contractors and subcontractors.

Strategy 1:
a. Have procedures in place that will successfully implement proper internal controls and contractual provisions.

Tactics:
i. Compliance reviews of 5-7 QSSBs within the year.
ii. Personal contact with all QSSBs on compliance issues and management tactics as well as personal visits by the Compliance Coordinator.
iii. Audits of primary contractors and subcontractors.

Performance Measures
i. Compliance reviews of 5-7 QSSBs successfully completed within the year with no outstanding issues, and those audits cleared by USDA.
ii. Personal contact with all 29 QSSBs on compliance issues and management tactics that result in more positive evaluations of USB performance on the annual survey as well as a 15% positive increase in the approval rating of the Compliance Program.
iii. Audits of primary and subcontractors will identify any compliance or contractual issues and reach resolution on all findings.

Goal:
3. Protect the integrity of checkoff funds and maximize the return on the USB checkoff investments.

Strategy 1:
a. Have effective evaluation tools in place to assure the maximum return on the USB checkoff investments.

Tactics:
i. Use of objective external evaluations as a decision-making tool to analyze and track the impact and effectiveness of the Board’s processes and projects, trends and emerging issues.

ii. Evaluation of a Return on Investment Audit required every five years by the Act and Order.


Performance Measures:

i. Evaluations will be reviewed by all related committees or the Board, with 50% of the recommendations adopted either in total or in part.

ii. The track record of acceptance will be maintained and institutionalized so that the Board can utilize the information in the future.

iii. Any new USB policies will be reviewed and approved by the Board and USDA-AMS.

iv. Evaluations of programs conducted during the year that have relevance to all committees and to the USB Board will be distributed and all information relevant to the impact and effectiveness of the Board will be reviewed.

Audit and Evaluation Financial Allocation: $887,512

Program Staff Contact Information:
Paula Kanyo, United Soybean Board,
Phone: (800) 989-8721
Email: pkanyo@unitedsoybean.org
## UNITED SOYBEAN BOARD
### SUMMARY BUDGET
#### RECOMMENDATION OF THE EXECUTIVE COMMITTEE
##### FOR FISCAL YEAR ENDING SEPTEMBER 30, 2009

<table>
<thead>
<tr>
<th></th>
<th>FY2009 Budget</th>
<th>June 2008 Adjustments</th>
<th>November 2008 Adjustments</th>
<th>FY2009 Budget</th>
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<td>QSSB Collections</td>
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<td>(445,312)</td>
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<td>64,258,594</td>
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<td><strong>Total Budgeted Revenues</strong></td>
<td>$64,125,000</td>
<td>(445,312)</td>
<td>578,906</td>
<td>64,258,594</td>
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</tbody>
</table>

| **BUDGETED EXPENDITURES** |               |                       |                           |               |
| Animal Utilization      | $16,288,252   |                       |                           | 16,288,252    |
| Industrial Utilization  | 9,484,428     |                       |                           | 9,484,428     |
| Supply                  | 12,846,562    |                       |                           | 12,846,562    |
| Human Utilization       | 4,655,003     |                       |                           | 4,655,003     |
| Industry Relations      | 8,879,667     |                       |                           | 8,879,667     |
| Market Access           | 2,393,895     | 1,254,889             |                           | 3,648,784     |
| Allocations to Committees | 1,254,889   | (1,254,889)          |                           | 0             |
| **Total Program Funding** | $55,802,696   | 0                     | 0                         | 55,802,696    |
| USB Evaluation of Programs | 1,116,054   | 0                     | 0                         | 1,116,054     |
| **Total Programs & Evaluation** | $56,918,750   | 0                     | 0                         | 56,918,750    |
| USB Managed Programs    | 1,250,000     | 364,900               |                           | 1,614,900     |
| USDA                    | 500,000       |                       |                           | 500,000       |
| Administrative          | 3,206,250     | (22,266)              | 28,946                    | 3,212,930     |
| New initiatives         | 1,000,000     |                       |                           | 1,000,000     |
| QSSB Assessment Credits | 250,000       |                       |                           | 250,000       |
| **Total Budgeted Expenditures** | $63,125,000   | 342,634               | 28,946                    | 63,496,580    |

| Board Unallocated       | 1,000,000     | (787,946)             | 549,960                   | 762,014       |

Collections estimated upon 3 billion bushels usage at a $9.00 average price at 2/18/08 board meeting.
Collections estimated upon 2.75 billion bushels usage at a $9.75 average price at 6/24/08 USB board mtg.
Collections estimated upon 2.925 billion bushels usage at a $9.25 average price at 11/20/08 USB Executive Committee recommendation.
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<thead>
<tr>
<th>FY2009 ALLOCATION by Committee</th>
<th>International</th>
<th>Domestic</th>
<th>Special</th>
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<td>Marketing</td>
<td>Competitiveness</td>
<td>Production</td>
<td>Marketing</td>
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<td>Animal Utilization</td>
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