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Private Sector Competitiveness
Enhancement Program



FOOD SAFETY ACTION PLAN

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SECTION I: EXECUTIVE SUMMARY

A. Background and Purpose

The USAID Private Sector Competitiveness Enhancement Program (PSCEP) is a \$6.6 million, three-year program financed by the United States Agency for International Development (USAID) and the people of the United States, designed to promote the competitiveness of select sectors of Azerbaijan's non-oil economy. PSCEP will work in approximately six sectors and eight to ten sub-sectors. Agribusiness, including fruit and vegetable production and processing, and animal products (poultry, dairy) are key sectors for PSCEP support, given the important role of agriculture in Azerbaijan's economy.

PSCEP takes a value chain approach in the sectors that it supports. To formulate a clear strategy in each of these areas, the program has undertaken assessment and actions plans that provide a strategic and operational roadmap for PSCEP actions. In the case of agribusiness, PSCEP has chosen to assess and provide action plans for key segments of the value chain, rather than for each agricultural product. For example, rather than do an action plan for specific products such as tomatoes, persimmons, etc., the program has focused on action plans for packaging materials, cold chain, and other critical agribusiness segments. In the course of program implementation, PSCEP will develop additional analysis of these segments.

This assessment and Action Plan addresses one of the more critical elements of a competitive agribusiness sector: food safety.

B. Food Safety Overview

Although it contributes only approximately 6% of GDP, agriculture in Azerbaijan provides 39% of all employment or jobs for approximately 2.3 million workers. During the Soviet era, Azerbaijan was a major producer of fruits, vegetables and other products consumed throughout the USSR. As the Government of Azerbaijan (GOAJ) seeks to diversify its economy and rely less on extractive sectors which account for nearly 70% of GDP, agriculture, and particularly a competitive agribusiness sub-sector should play a key role in this strategy. However, food product safety and quality must improve if the country's agricultural and processed food industries are to develop effectively. Azerbaijani companies are well capable of penetrating value added domestic and international markets with annual potential sales volume exceeding 100 million AZN per year – but only if they have safety and quality procedures that meet international standards. By simply implementing a successful food safety management program, net revenues increase by roughly 10% for small to medium sized enterprises¹ (FAO 2009), and employment increases by at least two professionals per firm. Improving food safety nationwide, at a minimum, would recover 600 million AZN annually to the economy in lost wages and lost productivity from the direct impact of food borne illness on the Azeri workforce (Buzby *et al.* 2001).

¹ Less than 100 employees.

C. Action Plan

PSCEP will provide enterprise level and industry directed technical assistance to entities identified thru the PSCEP Business Development Service (BDS) system so that these companies can implement internationally accepted standards and realize the increased revenues and growth that will occur as a result of this accomplishment. The strategy is based on the following four pillars:

Pillar 1 *Provide corporate technical support and develop food safety programs* for PSCEP clients that will help them to enter higher value domestic and export markets based upon the company's market potential and sector. Support to these clients will help create a critical mass of companies applying best practices in food safety that will serve as examples for others. The impact of assistance will be synergistic at the sector level will be greater than the sum of assistance to these individual firms.

Pillar 2 *Improve sector capacity in food safety* through train-the-trainer programs within companies and in conjunction with Azerbaijan State Agrarian University, Ganga, as well as with other interested stakeholders, potentially private consulting companies and similar service providers. This will have an impact in strengthening the sector as a whole and create opportunities to forge associative relationships, a key PSCEP objective.

Pillar 3 *Enhance available information of food safety by delivering documentation and outreach materials* for food processors on food safety and international market standards in appropriate languages. This will include developing audit checklists for food safety programs (SSOPs, GMPs, GAP, HACCP, and various ISO standards). It will also include developing market driven commodity and sector based training materials on food quality and safety for suppliers to the food processing industry.

Pillar 4 *Demonstrate results and quantify impact.* PSCEP will provide assessments of market penetration and evidence of increased sales/net revenue, job creation, and new services/infrastructure investments available within the community as a result of these PSCEP efforts. Periodic audits of firms in the program will track compliance with their newly implemented food safety programs and company objectives of continuous improvement.

Specific companies targeted by PSCEP for 2009 are in the juice, nut, and poultry sectors with other sectors/sub-sectors to be added in 2010 and 2011.

D. Expected Results/Impact

Expected results from PSCEP's efforts through this Action Plan include:

- PSCEP will visit and evaluate two new businesses per month based upon BDS assessment of a client company's interest in improving food safety as part of a larger market strategy, increasing their awareness of the importance of food safety to profitability and soliciting their interest and participation in this program. PSCEP efforts will reach approximately 12 businesses in the second half of 2009, 24 in 2010

and 12 in 2011 for a total of 48 with the objective of completing food safety plans for up to 2 companies each quarter during the course of this project.

- Companies for which plans have been developed will increase sales and/or employment by 50% over the industry trend line (for examples of targets for specific companies in different sectors, see Table 1).
- Enhanced access to finance to these enterprises, exceeding US\$30 million.
- Establishment of a mechanism between private and public stakeholders to reach and maintain food safety competence in Azerbaijan through train-the-trainer programs and sourcing of analytical and technical services and availability of third party audit capabilities. These efforts will support the development of the private sector to meet international standards. Projections are that a minimum of two individuals per company will develop the knowledge base to become trainers, or 72 individuals in addition to another 30 from academia or from other interested stakeholders such as industry trade associations or consulting companies. Currently the agribusiness sector is not yet developed to the point where third party audit services are in high demand, however, as the number of food manufacturers that have developed and implemented food safety programs which meet international standards increases, the demand for audit services will also increase. This is because all food safety plans require periodic (at least annual) verification to be conducted to show that a firm is compliant with the requirements of their food safety program, and this verification is usually conducted through an audit, often by an independent third party.

Beyond these more quantifiable indicators, by September 2011 the food safety 'bar' will have been raised throughout the Azerbaijan food processing industry. Companies of varying size, complexity and sophistication will have adopted formalized internationally recognized food safety programs. Food safety awareness will have been raised in the farming community and price differentiation will begin to be present in the overall marketplace for suppliers who provide verifiably safer and higher quality raw materials. Local universities, consulting companies and other stakeholders will be participating actively in providing food safety training and technical services to the food industry. These services will be self sustaining and a good value. PSCEP will assess job creation, market and investment growth as a result of this program.

SECTION II ASSESSMENT

A. Background and Introduction

The Private Sector Competitive Enhancement Program (PSCEP) aims to diversify Azerbaijan's oil-based economy by working in six non-oil sectors and approximately eight to ten sub-sectors, many associated with agricultural production. The project aims to enhance the competitiveness of individual enterprises, but also the entire value chain and production sector. PSCEP has ambitious objectives of increasing employment (30% above industry trend line), sales (50% above industry trend line), and investment (targeting approximately \$50 million in new investments in its first year).

A key element in PSCEP's strategy is the development of sector/value chain "Action Plans" to serve as the strategic and operational map of activities to support each value chain. In the case of agribusiness, PSCEP has chosen to assess and provide action plans for key segments of the value chain, rather than for each agricultural product. For example rather than do an action plan for tomatoes, persimmons, etc., the program has focused on action plans for packaging materials, cold chain, and other critical segments. In the course of program implementation, PSCEP will develop additional analysis of these sectors and their products.

This assessment and Action Plan addresses one of the more critical elements of a competitive agribusiness sector: food safety: a Food Safety Action Plan based upon previous experience with successful programs within Azerbaijan², incorporating additional activities as necessary and focusing on industry and sector directed activities that will increase markets, create jobs and generate investment for agribusinesses in Azerbaijan.

B. The Importance of Food Safety

Market expansion for the Azerbaijan agribusiness sector will depend upon its ability to improve both actual and perceived food safety and quality, reduce losses, and improve production efficiency. To penetrate new and maintain current markets, particularly export markets, companies must meet increasingly stringent food safety standards by improving production methodologies, process control, ensuring that food safety control measures are in place and being able to verify compliance using appropriate records, labeling, and analytical testing (Wilson and Rasco, 2009) and investing in upgraded facilities that meet good manufacturing practice requirements.

One of the key barriers to increasing Azerbaijan's exports and replacing imports of high value agricultural and processed food products in the domestic market has been the lack of ability of Azerbaijani producers to meet the food safety and quality standards required by the buyers. The ADA Group, which is the largest grocery chain in Azerbaijan, wants to increasingly buy from local companies but states that they hesitate to do so because of the noncompliance with recognized product grades and standards, and the poor supplier quality and service of the vast majority of Azerbaijan companies (Deebs, 2009). British Petroleum

²Work of Bledsoe *et al.* (2005, 2006) and Bledsoe and Rasco (2006) including a review of the recommended activities and approaches from the T. Deeb's January 2009, "Food Safety and Quality Management Plan."

also has advised that they want to source more products locally but is not willing to increase local purchases of food and agricultural products because of a lack of qualified domestic suppliers. Combined, these two opportunities represent tens of millions of dollars of potential new revenue for Azeri companies (Id).

The inability of Azerbaijan's agricultural and processed food industry to meet buyer and international food safety standards is well documented. Of twenty plus companies visited under another USAID program between November of 2007 and September of 2008, only three domestic companies were able to meet international food safety and quality norms. It should be noted that USAID projects initiated in 2004/2005, employing two current PSCEP advisors, were responsible for initiating the successful food safety programs for these firms (Bledsoe *et al.* 2005, 2006).

There are many reasons Azeri businesses have not been able to reach food safety standards. One is a *lack of awareness of the international market food safety and quality standards requirements*. Companies have little understanding of how improving food safety can increase profitability by raising purchase price, reducing loss, and providing new higher profit markets. Companies lack access to good information on international market requirements, international industry trends, new technologies and analytical methods and testing capabilities. The second is *undercapitalization* of businesses in the food processing sector both in terms of physical infrastructure (processing facilities and analytical support) and a lack of trained employees. With few exceptions, companies are not able to conduct simple chemical testing, let alone the microbiological and residue testing necessary to verify that their products meet the most stringent technical specifications for food safety and quality. Third, Azerbaijan *lacks the supporting infrastructure* including vendor, distribution, and transportation systems needed to develop and maintain product safety and quality, for example adequate cold chain capabilities. In conjunction with this is a lack of credible government programs for product testing and food plant inspection which has negatively impacted entry of Azeri exports to markets outside the Commonwealth of Independent States (CIS).

Despite a desire to provide such services, regional universities do not have the experience or resources to provide the continuing professional education that would help the agribusiness sector to grow. Universities also do not have analytical laboratories which can support development of local businesses by providing testing services. Furthermore, there are no local providers that can provide cost effective food safety and quality training, education, technical and analytical support for small and medium sized businesses.

It is important for PSCEP to address this serious constraint. The program should help companies meet international best practice standards by providing company and industry directed technical assistance and training, capacity building, outreach, and program assessment. The overall objective should be to assist Azerbaijan companies selected by BDS providers to reach internationally recognized food safety and quality standards and develop the capacity in house and regionally to maintain a base of expertise through train-the-trainer programs. The train-the-trainer program will also provide the materials for others, such as private consultants who may wish to provide training and certification programs for the private sector. Specific industries as identified by PSCEP, initially within the juice, nut, and

poultry sectors, would be targeted, creating value for these companies by working with them to meet the standards which would permit entry into new higher value markets.

C. Assessment

Below is a Strengths, Weaknesses, Opportunities, and Threats assessment of food safety in Azerbaijan.

Strengths Weaknesses Opportunities and Threats – The Azerbaijan Food Industry

Strengths:

- Meat and poultry, fruit/nut, vegetable and dairy production is increasing and enjoys a strong market demand
- Growing affluence of domestic population is increasing the demand for safe and high quality products and along with this, providing a customer base who can afford to pay for and who will begin demanding even safer and better quality food
- Infrastructure that supports food safety efforts are improving, this includes refrigerated warehouses which are being constructed/remodeled as well as continuing, albeit slow, improvements to the country's highway and farm to market road system

Weaknesses:

- Fragmented farm sales and farmers with weak post harvest knowledge regarding product safety and quality
- Poor awareness on the part of farmers of their role in food safety further up the value chain
- Azerbaijan products are perceived as being of low quality in some export markets
- Lack of diversity in export markets with (up to now) focus on markets not demanding of food safety
- Lack of food processors and suppliers fully knowledgeable about food safety
- Difficulty in sourcing packaging, sanitizers, process monitoring materials/equipment that would make international food safety standards easier to reach and maintain
- Lack of analytical services for chemical and microbiological testing
- Lack of locally available technical service providers, including providers of food safety audit services at a cost the industry can afford
- Presence of monopolies, unofficial charges and payments, as well as other non-tariff barriers that negatively impact net revenue diverting funds from food safety

Opportunities:

- Demand for new and improved facilities with the capability to meet international food safety standards
- Added value for existing products by meeting verifiable safety criteria and in conjunction with this improving overall quality
- Development of domestic and international markets that increasingly demand higher quality and will pay for it
- Insufficient, but growing awareness among stakeholders

Threats

- World economic crisis impacting potential markets, investment capital and credit
- Lack of credibility of Azeri food safety agencies and their ability to issue trusted export certificates
- Lack of credible government facilities to inspect or to test product destined for export
- Lack of trusted federal accreditation or certification bodies

C1. Strengths

Meat and poultry, fruit/nut, and vegetable production is increasing and enjoys a strong market demand. Growing affluence of consumers in the domestic market will increase demand for safe high quality products. Upscale local markets have increased their selection of packaged fresh and minimally processed foods. Competitive advantages Azerbaijan producers may have for perishable products and specialty items will make these products competitive regionally if safety and quality can be assured. Infrastructure that supports food safety efforts are improving, this includes refrigerated warehouses have been constructed/remodeled and continuing, although slow, improvements to the country's highway and farm to market roads which make it possible to deliver better quality to local markets.

C2. Weaknesses

Farmers have little knowledge of how production practices and post harvest handling affects product safety and quality. They also have a general lack of awareness of how their activities impact food safety throughout the value chain. The focus of most development projects to date have been on improving production practices and crop selection for small farmers, but not with practices tied to food safety or to the integration of farmers into a more sophisticated food marketing system which would be more profitable for them.

The limited marketing efforts to date have been on dissemination of market information related to spot market prices and trends. Because most farmers are small, it may be possible to institute intensive farming efforts where farmers can play close attention to aspects of food safety programs, for example, EuroGap, allowing small farmers to produce specialty items for high value markets. Straightforward practices such as contract farming are not common, nor is planting to extend the harvest season. The net result is that both processors and farmers have higher input and operating costs with lower market price and net revenues, which keeps both parties from investing in food safety measures that could improve the profitability of each.

Farmers, generally, and most processors are not familiar with many simple technical procedures, including sorting, grading, packing, and packaging that add shelf life and perceived quality to fruits, vegetable, nuts and fresh meat and which result in a higher price. Most fruits and vegetables are packed in the field, or nearby, as "field run" in expensive wooden crates that are impossible to clean and sanitize and are a source of both microbial and physical (wood fragments, metal staples, stone) contamination. Seldom is the produce size graded or sorted as to preferred quality characteristics and often potentially dangerous and visibly physically contaminated (filth, dirt, insects) produce is sold. Likewise decomposed produce which has a greater likelihood of being contaminated with pathogenic bacteria and undamaged product is also sold to processors. Accordingly, buyers tend to purchase the product at lower prices related to the lowest quality aspects of the produce or at best based upon an estimate of what the resultant quality mix will be when the product is sold. Regardless the end result is a lower price to the Azerbaijan farmers, traders and processors. Assistance in better grading of products could be an important area in which PSCEP could work and would result in a safer and higher quality raw material being provided to food processors.

Azerbaijan products are perceived as being of low quality in some export markets. Some of this problem is tied to lack of uniform and consistently high quality raw materials for processing and the pervasive problem with agribusinesses being undercapitalized and underfinanced. However, there is little incentive to provide better products to what are often unreliable markets plagued with predatory pricing practices, dumping, monopolistic control, and various politically motivated non-tariff trade barriers. Roughly 95% of Azerbaijan agricultural products exports are to Russia and regional CIS countries and this lack of diversity of markets has been an industry wide problem. Entry into more reliable international markets will require that Azerbaijan businesses implement food safety programs that meet international standards. Implementation of such programs would permit exports to be directed to more profitable markets as well as to preserve the markets that are already in place in Russia which have recently begun insisting upon improved food safety for imported food products.

There is also a lack of processors and suppliers fully knowledgeable of the operational practices necessary to sell into international markets and meet food safety practices. For example, common day-to-day operational practices, including lot coding, inventory control, temperature monitoring, processing monitoring and plant sanitation records are not compliant with international requirements and are often absent. Preventive maintenance programs and construction specifications necessary to meet good manufacturing practices and sanitation standard operating procedures are also substandard.

A dearth of analytical services for the industry at large continues to negatively impact agribusiness development in Azerbaijan. Some companies have modern analytical laboratories installed to support their own quality control operations, for example Balacans, LLC a co-packer for Coca-Cola. However, there are no analytical laboratories in the country that provide cost effective analytical services for the food industry. University laboratories are not well equipped to support industry needs, despite a willingness to provide these services. Governmental laboratories are also not well equipped or well managed; and because of a continuing practice of decoupling the issuance of test reports with conducting analyses, provide opportunities for fraud. There is also a lack of available and affordable technical services for the food industry, including companies that can provide food safety audits which would verify to the producer and to potential buyers that a company is compliant with international food safety standards. The experience in the United States and in Europe, has been that the development of private third party audit services lags implementation of formalized food safety program implementation in the food industry by a number of years. For example, HACCP-based food safety programs were mandated by the federal government during the mid and late 1990's in the United States, however a high demand for third party auditors did not emerge until about 2005 after the bulk of the food processing companies had developed and implemented formalized food safety programs. The increase in demand for audit services was driven by purchasers who demanded independent verification that supplier companies were in compliance with food safety requirements because the level, rate, and effectiveness of government food safety inspections could not be relied upon to provide proper assurances.

Ineffective government programs impede development of agribusiness by failing to provide the technical support necessary for the sector to grow. Lack of credibility of government food safety agencies and their inability to inspect or test products destined for export using widely adopted transparent international practices or to issue trusted export certificates limits

the ability of Azeri businesses to export food to the European Union and North America. Lack of a trusted national accreditation body makes it more difficult for food processors to obtain international certifications. Farmers and food processor continue to experience significant, increased operating costs due to “indirect charges,” including the costs of monopolies, unofficial charges and payments, as well as other non-tariff barriers in export markets are prevalent throughout the sector. Physical damage and loss of quality to the product resulting from the increased handling of perishable cargoes and delays in shipments results in less safe and lower quality products on both domestic and foreign markets.

C3. Opportunities

Weaknesses are in many ways the mirror images of many significant opportunities within the Azerbaijan food industry for improved product safety. There is a need for new facilities with increased capacity and technology that meet international food safety standards. Improvements to existing operations and construction of new cold storage facilities provide an example of the potential opportunities for all sectors throughout the industry. There are substantial opportunities to develop new profitable domestic and international markets for companies that can meet international food safety standards. Companies with whom I have spoken are interested in entering the European and US markets but need to be able to verify to the importing country as well as to buyers in these markets that they meet the required safety criteria. With the increased prosperity in Azerbaijan the market for verifiably safe food will grow; and although this is a market of only ten million consumers, it is one that should not be ignored. PSCEP has the opportunity through this project to assist roughly 50 companies over the course of this project to develop and implement food safety programs that will meet international standards and propel these companies into new markets and provide training to companies, academics, and other stakeholders on food safety programs and create a market for food safety audit activities that will support the private sector to manufacture verifiably safe food.

C4. Threats

Threats food safety improvement is tied closely to the financial health of the food industry and, specifically, how it might be impacted by a continuation or worsening of the international economic downturn. Possible threats include currency uncertainties – for example, a possible devaluation of Azerbaijan Manat (AZN) would increase the cost to finance infrastructure improvements that would be needed to improve food safety, while appreciation of the Manat versus other currencies will make Azerbaijani products more costly. The tight credit situation worldwide and economic recession in the CIS and Russia and in potential importing countries in the developed world would negatively impact sales in current markets and entry into new ones. Fortunately, food producers are less impacted by a recession than other industries, and may actually experience sustained though slow growth during a recession since people continue to eat and will have a greater likelihood to spend their disposable income on food and entertaining at home or within the local community. Now is an ideal time to invest in long term improvements in food businesses which would not be considered attractive in more prosperous times and to position Azerbaijani companies to take advantage of new markets when the global financial situation improves.

D. Benefits of a Best Practice Food Safety Program

The benefits that will accrue to Azerbaijan from implementation of international best practices in food safety are many, and they will be especially contribute to PSCEP's objectives of creating jobs, sales, and investments.

D1. Job Creation

Everybody wants safe food. In developing countries, the demand for safe food is as great as it is in developed countries, the restriction is availability of a safe food supply and cost. As consumers become more affluent, increased expenditures are made for safer food prior to expenditures on other items (Rasco, 2007, Rasco and Bledsoe 2007a).

Any company wishing to meet international food safety requirements will need additional staff effort to do so. In general, for any medium sized company (50-100 employees), at least one technical professional is tasked full time with managing food safety as part of a total quality management program plus one additional support staff for records management. The primary responsibility of the technical professional is to assure company compliance with a sanitation operating procedure, good manufacturing practices, compliance with customer technical specifications through product and process testing, and more recently a hazard analysis critical control point (HACCP) program (Rasco and Bledsoe, 2005). This individual is also responsible for ensuring that product labeling is compliant with customer, market and legal requirements for that particular food. Additional staffing requirements beyond these basic requirements for a food safety program depends upon the size and sophistication of the operation, product mix, and intrinsic factors associated with the safety of the particular food product manufactured, and the volume of production.

Improved food safety has consistently proven to lead to greater sales and more jobs in sales, logistics, production, and management. These jobs may be direct hires, or hires through vendors and supporting businesses. However, it is difficult to make these projections without having company specific information in hand. Part of the Pillar 4: Assessment will be to make this determination for each participating company.

D2. Increased Sales

Food safety programs save money. Companies in the United States which have successfully implemented HACCP have experienced increases in net revenue averaging 10 percent simply by being forced to pay more attention to what they do (Rasco and Bledsoe, 2009, 2007c). This has reduced losses and improved compliance with market and technical specifications that are already in place. Focusing on product safety and the mandatory inventory programs that accompany it has cut in half the inventory to sales ratio in US businesses with an estimated savings exceeding \$150 M per year (USDA, 2004). Proportionate savings will be realized in Azerbaijan if proper food safety related supply chain management practices are adopted.

Food safety programs increase profitability. Companies with perceived high quality and excellent product safety command higher prices, often a 25% differential in developed countries (Rasco and Bledsoe, 2007b). In a recent survey, 53% of consumer brand loyalty was tied to a customer's perception of food safety (Roosen, 2008) suggesting that development of verifiably safe Azeri brands will have a strong local and potentially regional

following with a potentially greater impact of brand loyalty in the domestic market than what might have been experienced in developed markets where there is an existing expectation that foods sold are safe. In developing countries, discretionary income is spent disproportionately in favor of purchasing better food (Bledsoe *et al.* 2006a). Consumers not only make the choice of purchasing either brand A or brand B, they also make the decision of whether or not to make any purchase at all. Developing brand loyalty for verifiably safe and safely perceived Azeri foods will increase the amount of food purchased from locally produced rather than imported brands, as local manufacturers improve quality and perceived safety.

D3. Increased Investment

While it is difficult to accurately estimate exactly what the level of investment would be for improving food safety at each facility as a result of this project, it is clear that most of the firms participating in the program will require additional personnel as well as investments in infrastructure improvements based upon prior experience in Azerbaijan and elsewhere with similar programs. Based upon experience, these will involve one or more of the following: product handling, cleaning and storage, facilities improvements to reduce the risk of food contamination, improvements with “zoning” of food processing operations to reduce contamination, improved temperature control within a processing or storage area, installation or improvement of temperature monitoring equipment and recording devices, improved packaging and storage of packaging, enhanced sanitation and preventive maintenance practices, improved facilities for employee hygiene, and instrumentation for process monitoring and product testing.

These facilities improvements will enable the participating companies to verify to buyers that enhanced food safety standards can be met, providing these same companies, and their wholesale customers and distributors, with the potential to enter higher value markets. It should be possible for a company implementing an improved food safety program to increase sales within the first year to recoup the cost of food safety improvements, and then in the second year to increase sales by a significant factor because of the market advantage improved and verifiable food safety would provide. One company with whom I worked in 2005, was able to triple local sales within the first 9 months following the implementation of a market driven food safety plan.

SECTION III ACTION PLAN

A. Action Plan Pillars

Implementation of this Food Safety Program will significantly enhance the adoption of food safety and quality management best practices in Azerbaijan. PSCEP will provide enterprise level and industry directed technical assistance to entities identified thru the PSCEP Business Development Service (BDS) system so that these companies can implement internationally accepted standards and realize the increased revenues and growth that will occur as a result of this accomplishment. The strategy is based on the following four pillars:

Pillar 1 *Provide corporate technical support and develop food safety programs* for PSCEP clients that will help them to enter higher value domestic and export markets based upon the company's market potential and sector. Support to these clients will help create a critical mass of companies applying the best food safety practices that will serve as examples for others. The whole of assistance at the enterprise level will be greater than the sum of assistance to these individual firms.

Pillar 2 *Improve sector capacity in food safety* through train-the-trainer programs within companies and in conjunction with Azerbaijan State Agrarian University, Ganga, as well as with other interested stakeholders. This will have an impact in strengthening the sector as a whole and create opportunities to forge associative relationships, a key PSCPE objective.

Pillar 3 *Enhance available information of food safety by delivering documentation and outreach materials* for food processors on food safety and international market standards in appropriate languages. This will include developing audit checklists for food safety programs (SSOPs, GMPs, GAP, HACCP, and various ISO standards). It will also include developing market driven commodity and sector based training materials on food quality and safety for suppliers to the food processing industry.

Pillar 4 *Demonstrate results and quantify impact.* PSCPE will provide assessments of market penetration and evidence of increased sales/net revenue, job creation, and new services/infrastructure investments available within the community as a result of these PSCEP efforts. Periodic audits of firms in the program would track compliance with newly implemented food safety programs and company objectives for continuous improvement.

A1. Enterprise Level Assistance

PSCEP will select companies for food safety technical support based upon the recommendation of BDS and PSCEP technical experts, the client company's interest in developing a more sophisticated food safety program, and the potential market growth, job creation and investment that implementation of improved food safety programs could generate, *i.e.* where the adoption of improved food safety practices leverages investment. Estimates for market growth and job creation for each client in the program will be determined initially as a screening criteria for participation, and then again at the end of the

project. PSCEP will provide clients with the range of food safety programs that may be applicable to their facility as well as guidance as to what would be required for preparation of a fully integrated food protection plan.

Food safety training will be provided at the company level and collectively where the latter proves more effective and efficient on:

- implementation of food safety requirements and development of compliance programs,
- skill development in internal auditing and records maintenance for the client companies based upon the program(s) the company selects,
- compliance audits by PSCEP during course of program (this will be an integral part of the program for companies entering program by the third quarter of 2010, later entrants will not be in the program for a long enough time to benefit from this).

Implementation of specific food safety plans will be based upon:

- Survey of client facility and suggestions for infrastructure improvements necessary to improve food safety and reach international standards and cost estimates for these improvements,
- Critical path analysis incorporating infrastructure improvements at client facilities and professional development needs,
- The availability of appropriate product monitoring and analytical testing services necessary for compliance with international standards; and assistance provided to locate service providers or to develop analytical capability on site or regionally.

Table 1 in the next page highlights companies selected for initial action during the remainder of 2009 (July – December). The program also anticipates support to additional companies in the cold storage, poultry, fish, vegetable, and fruit processing industry currently under review by BDS providers.

Table 1. PSCEP Assisted Companies – Third and Fourth Quarters, 2009

| Company | Sector and Potential Sales | Potential Impact for Company³ | PSCEP Contribution |
|-------------------------------|---|---|---|
| Balacans LLC, Balacan | Juice and juice concentrates | Potential entry into US and European market. Addition of 20 full time employees and increased sales of \$100,000 to \$200,000 per month, a minimum 50% increase in total sales. | Provide technical assistance with ISO 22000 compliance, a program required by many European buyers. |
| OON Candy Factory, Zagatala | Chocolate candies and roasted hazelnuts | Double sales in first year from current base of \$23,000-45,000 per month. Add 3 to 5 full time employees over and above the current base of 8-12. Greater domestic market penetration and export sales to EU and North America. Planning initial 1 ton shipment to Canada in fall, 2009. | Provide SSOP, GMPS, HACCP, food defense and traceability program. This will allow company with the capability to provide food safety records (HACCP) with shipments to foreign buyers who request this information. |
| OON Hazelnut Factory, Eliabad | Bulk sorted hazelnuts | Greater ability to ship to higher value foreign markets; Russian market is not always reliable due to delays. Double sales in first one to two | Provide SSOP, GMPS and assist with the development of improved traceability records from farmers. This will allow |

Industry trendlines for projected sales increases in the domestic market are as follows: juice consumption on a per capita basis would remain constant and increase at a rate tied to population growth, or 0.8% per year. Domestic increase in chicken, candy, and fresh fruit and vegetable consumption would follow personal income growth. Current GDP growth is 11.6% overall and 6% in the agriculture sector. A realistic estimate is that baseline growth for these foods should be in the range of 6% per year for 2009- 2011. Development of export markets would be predicated upon a company's compliance with market driven requirements including food safety standards and the competitive advantage their products may have over those of other suppliers in the same market.

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| | | years. This hazelnut factory is sole source of raw material supply to the OON Candy Factory. | company to verify the source and quality of raw materials to candy factory, a condition of sales into EU and North American markets. |
| NAA, Ganga | Cold storage | Increase quality and ability to export to higher value markets. \$6.8 million investment (2009) in infrastructure improvements that will enhance product quality and safety. | Provide assistance with GMPs, food protection program and traceability programs for new products and potential markets. |
| Davachi LLC, Quba | Poultry processing | Company would like to enter export markets. Total utilization of materials for higher value animal feeds but product safety and quality must be assured. Increase full time employment by 23. Expected sales increase of 20 million dollars in the first year. | Provide technical assistance with current food protection program, compliance with most current international guidelines. |
| Up to 7 additional companies to be determined by BDS | Cold storage, poultry, fish, fruits and vegetables | Increase in sales and/or employment by 50% over industry trend line. | 0.5 month technical expert, plus local technical assistant, for duration of project. |

A2. Improving Sector Capacity in Food Safety

PSCEP will improve food safety capacity through train the trainer programs within companies, in conjunction with Azerbaijan State Agrarian University in Ganga, and with other interested stakeholders (for example BDS service providers or technical consulting companies within Azerbaijan). Involvement of the State University is crucial, as it is a common characteristic in all developed and many developing countries implementing best practices in food safety.

There are individuals throughout the country who have HACCP and food safety training as part of other USAID programs and who may be willing to participate in train-the-trainer programs that would be offered during 2010 as part of this project. PSCEP will:

- Assist with placement of student interns in food companies using best practices. Currently the company NAA offers internships for students at Azerbaijan State Agrarian University in Ganga.⁴ BDS and PSCEP would assist client companies in similar student placements. Students would have had classroom training in food safety, food technology and food analysis as part of their academic programs before placement with a firm,
- Provide technical expertise to companies and other stakeholders to improve capacity to conduct safety and quality assessments including: product grades and standards for raw and processed agricultural commodities, process control monitoring, food safety (chemical and microbiological testing), and detection of economic fraud that could impact food safety and quality,
- Coordinate efforts among client firms and other stakeholders to provide more sophisticated analytical testing to food processing businesses.

Through the end of 2009, PSCEP will provide technical expertise to at least 7 companies in addition to those listed above in A1 on product grades and standards, process control and monitoring, food safety specifications for higher end markets. As part of this activity, current international best practices in process control, food safety management, and detection of economic fraud will be provided.

A3. Provide Outreach Materials

In support of the activities described above, PCEP will provide outreach materials to support the efforts of trainers, food processors and farmers on food safety and international market standards in appropriate languages. PSCEP will:

- Develop training materials for food safety trainers. These materials could be distributed through BDS and others to build capacity in the private sector to conduct food safety training,
- Develop commodity and sector based training materials on food quality and safety for suppliers to the food processing industry. These materials would include product grades and standards, food safety testing requirements, process monitoring requirements, testing and detection of economic fraud,
- Develop audit checklists for food safety inspections (SSOPs, GMPs, GAP, HACCP, ISO standards).

⁴ The company, NAA recently received a PSCEP-supported \$6.8 million investment from the Caspian International Investment Company to expand its cold storage facilities.

Through the end of 2009, PSCEP will begin development of train the trainer material for sessions to be conducted in 2010. PSCEP will also begin to develop audit checklists for the food safety programs listed above that BDS client companies could use to monitor their food safety activities.

A4. Provide Assessment and Follow-up Food Safety Audits

PSCEP will provide ongoing assessments of market penetration or evidence of increased sales or net revenue, job creation or new services/infrastructure available within the community as a result of these PSCEP efforts. This includes:

- Conducting audits of firms in the program to assist them track compliance with their newly implemented food safety programs. As resources permit, determine if a client company wants to move to a higher standard and develop or implement a more rigorous program, and if so, help them to do this.
- Develop projections of market penetration or evidence of increased sales, increase in net revenue, job creation, new services provided or available within community as a result of PSCEP program.

B. Impact and Benchmarks

Expected results from PSCEP's efforts through this Action Plan include:

- 2 new businesses per month will be visited and evaluated based upon BDS assessment of a client company's interest in improving food safety as part of a larger market strategy, increasing their awareness of the importance of food safety to profitability and soliciting their interest and participation in this program. PSCEP efforts will reach 12 businesses in the second half of 2009, 24 in 2010 and 12 in 2011 for a total of 48 and assist them with completion of a food safety plan.
- Companies for which plans have been developed will increase sales and/or employment by 50% over the industry trend line. Examples of increased sales are presented in Table 1 for companies with which PSCEP is currently working.
- Enhanced access to finance to these enterprises, exceeding US\$30 million.
- Establishment of a mechanism between private and public stakeholders to reach and maintain food safety competence in Azerbaijan through: train-the-trainer programs, sourcing of analytical and technical services, and availability of third party audit capabilities which would support the development of the private sector.

Beyond these more quantifiable indicators, by September 2011 the food safety 'bar' will have been raised throughout the Azerbaijan food processing industry. Companies of varying size, complexity and sophistication will have adopted formalized internationally recognized food safety programs and will have implemented these. Food safety awareness will have been

raised in the farming community and price differentiation will begin to be present in the marketplace for suppliers who provide verifiably safer and higher quality raw materials. Local universities, consulting companies, and other stakeholders will be participating actively by providing food safety training and technical services to the food industry. These services will be self sustaining and a good value. PSCEP will assess job creation, market and investment growth as a result of this program.

| Pillar 2: Improve sector capacity in food safety | | | | | | | | | | | | |
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| 2009 | | | | | | | | | | | | |
| Initiate Train the Trainer program with Az. State Agr. U | | | | | | | | | | | | |
| 2010 | | | | | | | | | | | | |
| Supervise/monitor Food Safety Training program offered by Az. State Agr. U | | | | | | | | | | | | |
| Initiate internship program with Az. State Agr. U | | | | | | | | | | | | |
| 2011 | | | | | | | | | | | | |
| Continue internship program with Az. State Agr. U | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| Pillar 3: Provide outreach materials | | | | | | | | | | | | |
| 2009 | | | | | | | | | | | | |
| Audit checklists for GMP, HACCP, ISO22000, EuroGap, ISO 27000 | | | | | | | | | | | | |
| 2010 | | | | | | | | | | | | |
| Commodity specific safety and quality manuals (2 sectors) | | | | | | | | | | | | |
| 2011 | | | | | | | | | | | | |
| Commodity specific safety and quality manuals (2 sectors) | | | | | | | | | | | | |
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| | | | | | | | | | | | | |
| Pillar 4: Program Assessment | | | | | | | | | | | | |
| 2009 | | | | | | | | | | | | |
| Initial market assessments and audits | | | | | | | | | | | | |
| 2010 | | | | | | | | | | | | |
| Market assessments | | | | | | | | | | | | |
| Company third party audits | | | | | | | | | | | | |
| 2011 | | | | | | | | | | | | |
| Market assessments | | | | | | | | | | | | |
| Company third party audits | | | | | | | | | | | | |
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Projected level of effort: This project as outlined here, presumes that 0.5 full time of a technical consultant hired on a 6 day week would be able to complete this assignment within the time outlined. The technical expert(s) would require the as value chain specialist (half time), office support, a travel budget for visiting companies in the outlying regions. A competent technical translator would be required to translate the training and outreach materials generated during this project. Graphic art and publication support would be need. Posting these materials on the internet would be helpful. A technical translator might be required for presentations and for meetings with client companies.

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