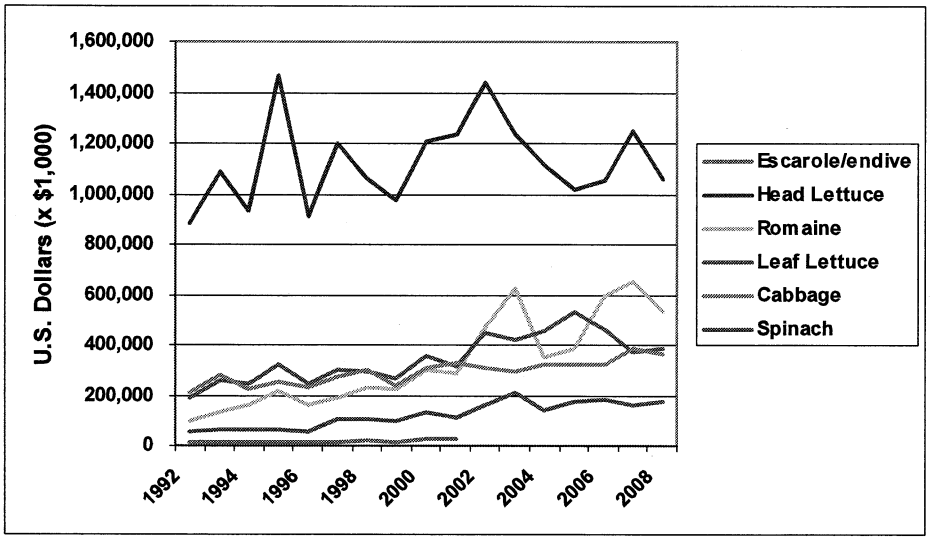
My name is Diane Wetherington W-e-t-h-e-r-i-n-g-t-o-n and I am an Executive Vice President with Intertox which is a science based consulting firm in Seattle, Washington. My role at Intertox is focused on analytical services and analysis. We prepared the marketing data and cost overview for the proposed national leafy green marketing agreement that I will now cover.

1.1 Leafy Green Production Overview

1.1.1 *Market Value*

According to USDA data, the production value for fresh leafy green crops was $2.5B in 2008. Lettuce is by far the largest component of the fresh leafy green group in terms of production value (79% of the $2.5B). Cabbage represents 15% of production crop value and spinach 7%.

Figure 2: Value of U.S. Production 1992-2008



Source: National Agricultural Statistics Service, USDA.

1.1.2 *U.S. Fresh Leafy Green Production*

Production data for major fresh leafy green products is gathered by the USDA's National Agricultural Statistics Service (NASS). NASS publishes data on major fresh leafy green crops in a vegetable report five times a year plus an annual vegetable summary and the Census of Agriculture for the U.S., which is completed every five years. For the vegetable reports and annual vegetable summary, NASS only gathers data on the major producers of the major leafy green crops; therefore, its reports do not include very small producers. None of NASS' reports include data on minor leafy green crops such as radicchio or cress.

Ex. 7

In 2008 a total of 395,000 acres were planted with the major leafy green crops (cabbage, head lettuce, leaf lettuce, Romaine, and spinach). This was a 4.4% decrease from acres planted in 2007 and an 11.5% decrease from 2006.[1]

Table 1: U.S. Acreage Planted

	2006	2007	2008
Cabbage	74,050	74,250	70,200
Head Lettuce	180,700	165,100	151,000
Leaf Lettuce	56,500	55,700	53,900
Romaine	87,100	84,300	82,500
Spinach	42,100	32,900	37,400
Total	440,450	412,250	395,000

Source: National Agricultural Statistics Service, USDA.

1.1.2.1 Percentage of Total Domestic Production by State

In the U.S. head cabbage, leaf lettuce, and spinach are grown in all 50 states. Kale is grown in 44 states, and head lettuce is grown in 45 states.[2]

Table 2: Fresh Leafy Greens Production by State

Leafy Green Crop	Number of States	States	Top 5 producers (by reported acreage)
Cabbage, Head	50		CA, NY, FL, TX, GA
Escarole/Endive	19	AZ, CA, CT, FL, IN, IA, ME, MD, MA, MI, NJ, NY, OH, OR, PA, SC, TX, WA, WI	CA, NJ, FL, OH, NY
Kale	44	All states except: AR, NE, NV, ND, UT, WY	CA, GA, NC, NJ, TX
Head Lettuce	45	All states except: DE, MS, NE, ND, WY	CA, AZ, CO, NM, NY[3]
Leaf Lettuce	50		CA, AZ, NY, CO, MI
Romaine	43	All states except: DE, IA, NV, ND, MS, SD, WY	CA, AZ, CO, MI, NY [8]
Spinach	50		CA, AZ, TX, CO, NJ

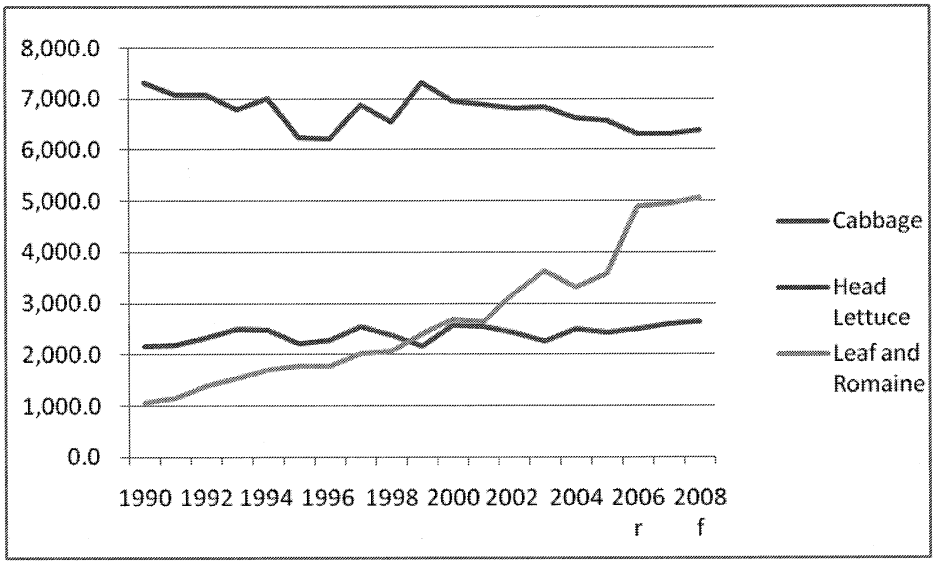
1 USDA. "Vegetables 2008 Summary." National Agricultural Statistic Service. January 2009.
2 USDA National Agricultural Statistics Service, "2007 Census of Agriculture,' United States Summary and State Data, Volume 1, Geographic Area Series, Part 51, Issued February 2009.
3 New Jersey is more than likely in the top 5, but data was withheld from the 2007 Census to avoid disclosing data from individual farms.

1.1.2.2 Ten-Year Production Trend

Since 1997, the U.S. production of total fresh market leafy greens has grown by 25%. Production is not, however, growing for all leafy green crops. Head lettuce declined from 7,230 (millions of pounds) in 1990 to 6,312 million pounds in 2007.

Spinach, leaf lettuce and romaine are the three fastest growing crops in terms of production. Leaf lettuce and romaine productions grew at a rate of 144% while spinach production grew by 95%. As shown in Figure 2, between 1990 and 2008, the trend in lettuce demand may be a shift from head lettuce to leaf and romaine lettuce.

Figure 3: Production Trends for Head Lettuce, Cabbage, Leaf Lettuce and Romaine (millions of pounds)



Source: National Agricultural Statistics Service, USDA.

1.1.3 *U.S. Retail Prices*

1.1.3.1 Iceberg Lettuce

In 1990, the average retail price for iceberg lettuce was 53.8 cents per pound, and in 2007, it was 86.3 cents per pound. The retail price of iceberg lettuce increased 37.7 percent in that 17 year timeframe. From 1997 to 2007, the retail price increased 21.8 cents/lb – a 25.3 percent increase. The lowest retail price for that same time period was 62.7 cents/lb in 1999.

Since 1990 the smallest and largest portions of retail prices for iceberg lettuce that went to retailers were 71.2 percent in 1997 and 80.7 percent in 2005 respectively. The average portion of retail prices going to retailers during those 17 years was 75.9 percent.

Shipping point prices increased 46.1 percent from 1990 to 2007 with the lowest price - 11.4 cents/lb occurring in 1991 and the highest price - 22.2 cents/lb in 2002. The portion of the shipping price that went to retailers ranged from 19.3 percent in 2005 to 28.8 percent in 1997.

Table 3: U.S. monthly average retail price, marketing spread, and shipping-point price for Iceberg lettuce, 1990-2008

		Marketing Spread		Shipping Point Price	
	Retail Value[4,5]	Actual	Portion of retail	Actual[61]	Portion of Retail
	cents/lb	*cents/lb*	*Percent*	*cents/lb*	*Percent*
1990	53.8	41.9	78.0	11.8	22.0
1991	56.2	44.8	79.7	11.4	20.3
1992	53.6	41.1	76.6	12.5	23.4
1993	61	45.4	74.4	15.6	25.6
1994	56.5	40.9	72.5	15.6	27.5
1995	74.5	53.3	71.5	21.2	28.5
1996	60.2	45.6	75.6	14.7	24.4
1997	64.5	45.9	71.2	18.6	28.8
1998	70.4	54.9	78.0	15.5	22.0
1999	62.7	48.9	78.0	13.8	22.0
2000	68.4	51.0	74.5	17.5	25.5
2001	73.7	54.9	74.5	18.8	25.5
2002	80.1	57.8	72.2	22.2	27.8
2003	76.5	55.5	72.5	21.0	27.5
2004	74.2	59.2	79.8	15.0	20.2
2005	80.9	65.3	80.7	15.7	19.3
2006	80.5	63.4	78.7	17.1	21.3
2007	86.3	64.4	74.6	21.9	25.4
2008e	86.5	68.5	79.2	18.0	20.8

Source: Economic Research Service, USDA.

4 Prices are simple 12-month averages.
5 Adjusted to allow for 7% waste and spoilage incurred during marketing.

1.1.3.2 Other Fresh Leafy Greens

2007 prices for other fresh leafy greens such as cabbage, head lettuce, leaf lettuce and spinach ranged from a low of $13.72 per cwt for cabbage to $32.2 per cwt for spinach. While prices for cabbage and all lettuces increased over the past eight years, spinach remained relatively flat with a 1% increase. Between 2000 and 2003, spinach prices increased 17%; however, in 2004, prices decreased 41% and only began to increase in 2006 back to near 2000 price levels.

Table 4: Price of Major Fresh Leafy Green Commodities

Price *$ per cwt (current)*	2000	2001	2002	2003	2004	2005	2006	2007	2008e
Cabbage	12.3	13.09	12.38	12.41	11.97	12.12	12.1	13.72	NA
Head Lettuce	17.3	17.9	21.1	18.1	16.9	15.5	16.9	22	NA
Leaf Lettuce and Romaine	24.24	22.85	28.75	28.98	24.28	25.6	28.36	27.59	NA
Spinach	31.8	32.4	34.2	37.2	22	22.7	29.9	32.2	NA

Source: National Agricultural Statistics Service, USDA.

1.1.4 *U.S. Consumption*

The U.S. consumes head lettuce more than any other fresh leafy green commodities. Cabbage consumption has remained steady since 2000 with the lowest consumption in 2003 and the highest in 2007. Consumption of leaf and romaine lettuce has nearly doubled from 2000 to 2007 as did consumption of spinach as well. However, consumption of spinach peaked in 2005 and has remained approximately 15 percent below peak consumption for the past 3 years.

Table 5: Domestic Utilization of Major Fresh Leafy Green Commodities

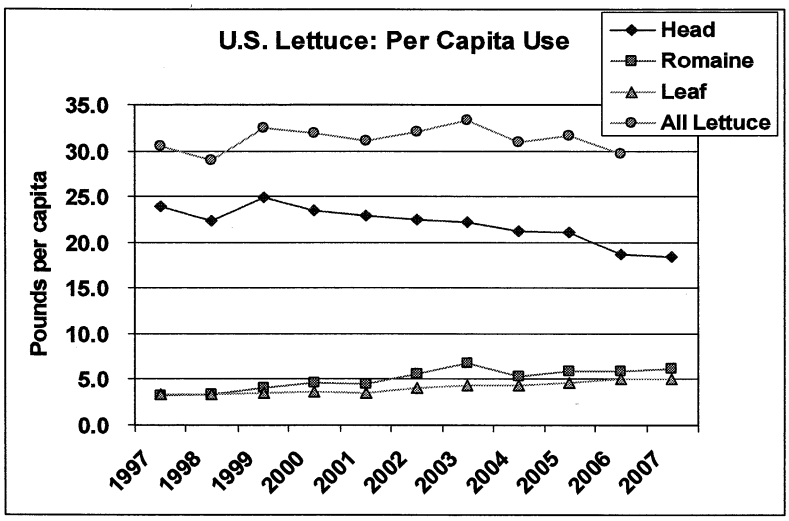
Domestic Utilization *(millions of pounds)*	2000	2001	2002	2003	2004	2005	2006	2007	2008e
Cabbage	2,513.20	2,518.70	2,389.80	2,197.70	2,444.60	2,400	2,455.80	2,591.20	2,617
Head Lettuce	6,624.90	6,558.70	6,494.60	6,465.40	6,240.20	6,245.20	6045.50	6114.80	6145.00
Leaf Lettuce and Romaine	2,367.80	2,290.20	2,764.10	3,218.80	2,859.90	3,147.30	4,491.80	4,567.20	4,660
Spinach	388.2	306.1	412.4	515.3	592.7	738.3	602.9	615.2	606

Source: National Agricultural Statistics Service, USDA.

1.1.4.1 Lettuce Crops

The USDA has kept records of U.S. per capita use of iceberg lettuce since 1960, and use of leaf and Romaine lettuce since 1985. Per capita use of iceberg lettuce has declined since 1995, but use of Romaine and leaf lettuce has steadily increased over the past 10 years.

Figure 4: U.S. Lettuce per capita



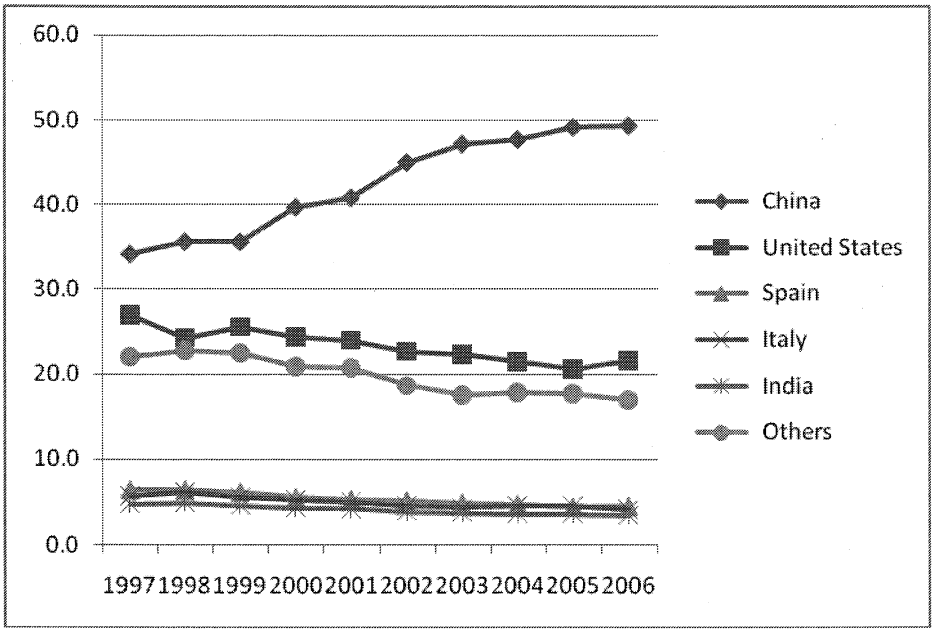
Source: Economic Research Service, USDA.

1.1.5 *Worldwide Fresh Leafy Green Production*

The U.S. is the 2nd largest producer of lettuce in the world with a 21.6% market share, a decrease from 1997 when the U.S. produced 27% of the world's lettuce. China's lettuce production grew from 34.1% to a 49.3% market share during the same period of time. China has become the world's largest leafy green producer with a 51% share of the market in 2008.

Since 1997, the production of all leafy greens in the U.S. has risen by 25%. However, the production of head lettuce has declined by slightly little less than a billion heads per year from 1990-2007 while the production of spinach, leaf lettuce and romaine crops have grown.

Figure 5: Harvested Acreage for Lettuce by Market Share



Source: Economic Research Service, USDA, Vegetables and Melon Handbook, Selected Vegetables Harvested Acreage in Leading Countries, Table 165 data, 2008.

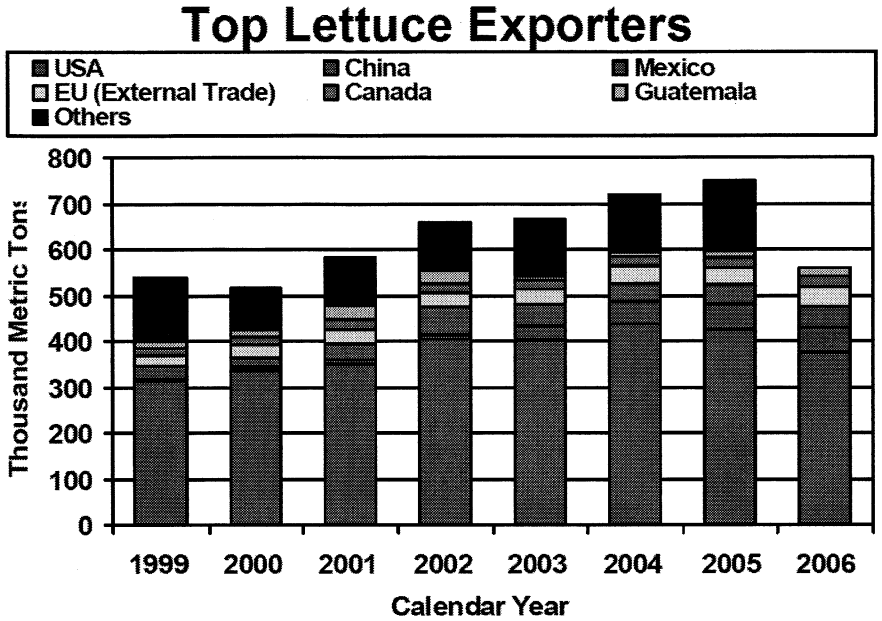
1.1.5.1 Foreign Producers

U.S. fresh leafy green producers compete on both a domestic and international level with foreign leafy green producers. Since 2002, Mexico has been the largest exporter of lettuce to the U.S. followed by Canada, Peru, and Israel. In 2006, Mexico exported 118,169,365 lbs. of lettuce to the U.S. Canada, Peru, and Israel exported 51,944,342 lbs., 1,209,633 lbs., and 365,131 lbs. respectively.

Because much of China's leafy green production is internally consumed, however, the United States still exports more lettuce than China. As the world's largest producer, China is the main competition to the U.S. exports to Asian markets. Although Japan and India both are top 10 global producers, neither country exports more than 0.1% of the lettuce they produce. Mexico is the largest producer in Latin America and was the 9th largest global producer in 2006. Their proximity to the U.S. markets makes them a competitor for both domestic and Latin American markets; however, some of the lettuce from Mexico is produced by U.S. companies. Major producers and exporters in the European Union are Spain, Italy, and France, all of which are among the top ten global producers. Both Spain and Italy produce approximately 2 million pounds annually from 2000-2006. Spain exports an average of 45% of their produce and Italy exports approximately 10% of theirs.[6]

6 All data are from USDA Economics, Statistics, and Marketing Information System, U.S. Lettuce Statistics.

Figure 6: Top Lettuce Exporters



Source: Global Trade Atlas; Bureau of the Census, DOC; and Food and Agriculture Organization (FAO) of the United Nations

1.1.6 *U.S. Leafy Green Exports*

The U.S. exports slightly less than 12% (2006 data) of lettuce crops outside of the proposed production area.[7]

In the United States, there are approximately 11,500 producers (11,481) (USDA 2007 Census of Agriculture), with 89% of the leafy green crop produced by small farms. The 2007 Census defines large producers as having annual sales over $250,000, while the Small Business Association defines large producers as having annual sales over $750,000. The USDA data is most likely incomplete, however, as it is based solely on those producers who responded to their survey and does not include all U.S. producers. Based on the Blue Book, there are approximately 1,285 handlers in the U.S. including approximately 236 shippers. Handlers receive the leafy greens from the field. Processors change the crops into fresh-cut packaged products which are then shipped directly to retail, food service companies or wholesale produce operations. Processing in the sense defined here does not include canning, freezing, extracting, dehydrating or pickling.

Table 6: Small producers by zone and commodity, 2007

7 USDA Foreign Agricultural Service, "The U.S. and World Situation: Lettuce," June 2007.

Table 6: Small producers by zone and commodity, 2007

Zones	Cabbage	Escarole/ Endive	Head Lettuce	Leaf Lettuce	Kale	Romaine	Spinach	All LGs	Percent of Total
1	168	16	117	305	99	151	98	954	17.8%
2	51	0	23	66	10	21	33	204	3.8%
3	283	1	36	178	51	38	96	683	12.7%
4	601	7	82	294	118	77	118	1297	24.2%
5	728	31	205	603	228	173	261	2229	41.5%

Table 7: Large producers by zone and commodity, 2007

Zones	Cabbage	Escarole/ Endive	Head Lettuce	Leaf Lettuce	Kale	Romaine	Spinach	All LGs	Percent of Total
1	38	11	30	45	22	40	37	223	32.9%
2	15	2	10	15	1	11	13	67	9.9%
3	24	1	9	7	8	6	14	69	10.2%
4	49	4	1	7	12	4	9	86	12.7%
5	74	15	23	37	20	25	38	232	34.3%

Source: National Agricultural Statistics Service, USDA.

Most leafy greens are sold by seasonal contract between producers and handlers and these relationships are usually long-term. Each producer typically has three types of contracts in the portfolio: by poundage, by acreage or by the going market price per pound. Any crop for sale not covered in a contract is considered part of the spot market. Historically, almost all produce was handled through the spot market, but today the reverse is true – almost all leafy greens are now sold under contract, at least in the United States. The leafy greens industry is very often described as a "farm to fork industry," which includes producers (growers), handlers (processors, packers, shippers), wholesalers/distributors, agents/brokers, exporters/importers, retail outlets (grocery stores) and food service providers (restaurants, etc.). Small to medium-sized farms often sell directly to consumers at farmers' markets, roadside stands and through community supported agriculture (CSA) programs, as well as to retailers. This is considered part of the spot market. Large farms almost always sell to handlers, either first or second, under contracts.

Head cabbage, leaf lettuce and spinach are grown in all 50 states, with other greens being produced in 43-45 states. In addition to production, handling and processing are also spread out across the country so that leafy greens may be produced in one state, processed in another state and then shipped for consumption to many states.

Leafy Green Crop	Number of States	States	Top 5 producers (by reported acreage)
Cabbage, Head	50		CA, NY, FL, TX, GA
Escarole/Endive	19	AZ, CA, CT, FL, IN, IA, ME, MD, MA, MI, NJ, NY, OH, OR, PA, SC, TX, WA, WI	CA, NJ, FL, OH, NY
Kale	44	All states except: AR, NE, NV, ND, UT, WY	CA, GA, NC, NJ, TX
Head Lettuce	45	All states except: DE, MS, NE, ND, WY	CA, AZ, CO, NM, NY[8]
Leaf Lettuce	50		CA, AZ, NY, CO, MI
Romaine	43	All states except: DE, IA, NV, ND, MS, SD, WY	CA, AZ, CO, MI, NY [8]
Spinach	50		CA, AZ, TX, CO, NJ

Source: National Statistics Service, USDA.

The following five tables represent statistics per crop per acre across the U.S., showing how many acres were planted and harvested and what the total harvest value is, allowing us to determine the value of each acre per crop.

Table 6: Cabbage 2008

Region	Acres Planted (acres)	Acres Harvested (acres)	Yield per acre (cwt)	Production (1,000 cwt)[1]	Value per cwt ($)	Total Value ($1,000)
Zone 1	13,900	13,700	385	5,275	11.7	61,718
Zone 2	2,800	2,800	405	1,134	16.1	18,257
Zone 3	10,600	9,400	340	3192	17.5	55,874
Zone 4	13,800	13,570	284	3,849	13.80	53,098
Zone 5	29,100	28,000	409	11,460	15.50	177,637
Total	70,200	67,470	369	24,910	15	366,584

Source: National Agricultural Statistics Service, USDA.

8 New Jersey is more than likely in the top 5, but data was withheld from the 2007 Census to avoid disclosing data from individual farms.

Table 7: Head Lettuce, 2008

Region	Acres Planted (acres)	Acres Harvested (acres)	Yield per acre (cwt)	Production (1,000 cwt)[1]	Value per cwt ($)	Total Value ($1,000)
Zone 1	118,000	116,000	355	41,180	21.2	873,016
Zone 2	33,000	32,700	360	11,772	15.8	185,998
Total	151,000	148,700	356	52,952	20.0	1,059,014

Table 8: Leaf Lettuce, 2008

Region	Acres Planted (acres)	Acres Harvested (acres)	Yield per acre (cwt)	Production (1,000 cwt)[1]	Value per cwt ($)	Total Value ($1,000)
Zone 1	43,400	42,500	230	9,775	31.2	304,980
Zone 2	10,500	10,300	210	2,163	37.7	81,545
Total	53,900	52,800	226	11,938	32.0	386,525

Table 9: Romaine 2008

Region	Acres Planted (acres)	Acres Harvested (acres)	Yield per acre (cwt)	Production (1,000 cwt)[1]	Value per cwt ($)	Total Value ($1,000)
Zone 1	66,000	64,500	320	20,640	20.7	427,248
Zone 2	16,500	16,400	310	5,084	20.8	105,747
Total	82,500	80,900	318	25,724	20.7	532,995

Source: National Agricultural Statistics Service, USDA.

Table 10: Spinach 2008

Region	Acres Planted (acres)	Acres Harvested (acres)	Yield per acre (cwt)	Production (1,000 cwt)[9]	Value per cwt ($)	Total Value ($1,000)
Zone 1	26,500	26,000	140	3,640	33.4	121,576
Zone 2	5,000	5,000	165	825	34.2	28,215
Zone 3	1,200	1,100	120	132	26	3,432
Zone 5	1,600	1,600	175	280	37.2	10,416
Other[1]	3,100	2,980	120	359	29.9	10,739
Total	119,900	117,580	143	5,236	33.3	174,378

Source: National Agricultural Statistics Service, USDA.

9 Other includes two zones combined.

2.0 EXPECTED ECONOMIC IMPACT OF THE NLGMA

Absent a national marketing agreement, buyers, food service industries, and states will develop and implement their own mandatory standards for producers and handlers– at times for competitive advantage and more than likely not based on scientific data. With a national marketing agreement, the likelihood of producers and handlers being subject to multiple inconsistent requirements is reduced, which in turn should minimize any production cost increases.

The majority of the leafy green industry is already adhering to the marketing agreements in Arizona and California given the volume of leafy green production in those states coupled with the success of the two marketing agreements in obtaining handler acceptance. The California leafy greens industry represents about 75 percent of all the leafy greens produced in the U.S., with 99 percent of that volume already covered by the marketing agreement. The Arizona leafy greens industry represents about 15 percent of all the leafy greens produced in the U.S., with 90 percent of that volume covered by the marketing agreement.

For those growers and handlers not currently participating in a marketing agreement, the implementation of a NLGMA will result in additional costs for some producers and handlers.

Although the national marketing agreement will differ from the California and Arizona agreements, the costs associated with the state agreements are representative of the costs that could result from a national agreement. For this reason, producer and handler level food safety costs were evaluated prior to and after the implementation of the LGMA. Food safety costs prior to the California LGMA were estimated using both the LGMA survey from 2007 and a follow-up phone survey to growers and handlers in California and Washington. Although the number of completed calls was limited, they are instructive for two reasons; first, the interviews validated the operating costs per acre in the enterprise budgets for romaine and leafy greens from 2004 and second, the interviews provided missing data for small handlers and growers who do not currently participate in the California LGMA.

Combining costs from both the LGMA survey and the phone surveys, potential costs for small and large growers and small and large handlers were projected for the implementation of a national agreement. One major finding from the phone calls is that all growers and handlers, both small and large are spending an estimated 1-2% of operating costs on food safety after the implementation of the LGMA.

2.1 Producer Costs

Prior to the LGMA, small growers were spending little if any of their operating costs on food safety – and clearly there was no water testing, dedicated or assigned food safety personal, 3rd party audits or mandatory record keeping. Even if they were making investments in food safety, in many cases it was not separated out in line item budget details and was based on personal time allocation details. Unless there are specific buyer requirements, farmers' market safety programs, or organic certification requirements, food safety expenditures was not a major expenditure or even noted as part of enterprise farm budgets.

With the implementation of the California LGMA, however, costs increased in several areas including[10]

- Food safety personnel costs
- Additional monthly water tests
- Soil amendment tests
- Traceability processes
- Administrative - recordkeeping & documentation

Table 11: Projected food safety costs with NLGMA – small producer

Small producer	$.03 per carton		$.05 per carton	
personnel costs (per ctn)	$3,000	$4,000	$1.6	$2.1
water test (per ctn)	1,000	1,500	0.5	0.8
3rd party audits(per ctn)	2,000	2,000	1.1	1.1
ranch care, pest control, chlorine	500	1,500	0.3	0.8
record keeping		0	0.0	0.0
training		500	0.0	0.3
Equipment			0.0	
Total(per ctn)	6,500	9500	**3.4**	**5.0**

The above costs are based on a representative 200 acre leafy grew farm growing lettuce. While 200 acres was selected based on the SBA definition of a small grower, there are growers with 10 acres and growers with 500 acres that will fall into this category, meaning if they are implementing a food safety program, these will probably be typical costs they will incur.

As shown, the farm spends $3,000-$4,000 on personnel costs, typically a family member or employee who has responsibility for food safety. Water tests are conducted monthly during growing season averaging $35 - $45 per test. Third party audits are not part of the LGMA metrics; however, they are food safety related cost growers are reporting based on specific buyer requirements (3rd party audit costs will not apply to all growers and are

10 Tootelian DH, "California Leafy Green Products - 2007 Signatory Survey Summary Report." 2008.

outside of a marketing agreement). Without the 3rd party audits, costs will decline to $4,500 or approximately $.025 per carton. Pest control, including rodent traps, is another cost growers are reporting that again is not part of the LGMA metrics. The total cost per carton ranges from $.03 to $.05 depending on the specific needs. On a per acre basis, costs range from $35 to $45.

Large producers

Although the LGMA survey was mailed to handlers, a number of growers responded to the survey since they are part of the grower/shipper market in California. California's market structure may be somewhat unique given the average vegetable and melon farm production in the U.S. farm earned $137,000 in 2007 and the average California farm earned $488,000. The result may be that the majority of the leafy green growers selling to handlers are not considered small farms according to the SBA definition.

Again details on food expenditures prior to the LGMA are not readily available; however, it is clear large growers costs increased from 20% to 60% (derived from phone interviews), primarily as a result not of the cost burden from the LGMA but from their starting point on food safety costs. The largest cost increase was from the hiring or assigning of food safety personnel.

Table 12: Projected food safety costs with NLGMA – large producer

	$20 per acre	$30 per acre	$50 per acre	cost per ctn ($20 per acre)	cost per ctn ($30 per acre)	cost per ctn ($50 per acre)
personnel costs (per ctn)	120,000	200,000	250,000	1.3	2.1	2.6
water test (per ctn)	40000	50000	70,000	0.4	0.5	0.7
3rd party audits(per ctn)	25000	25000	50,000	0.3	0.3	0.5
ranch care, pest control, chlorine	5,000	10,000	25,000	0.1	0.1	0.3
record keeping			5,000	0.0	0.0	0.1
training			10,000	0.0	0.0	0.1
Equipment	10,000	15,000	90,000	0.1	0.2	0.9
Total(per ctn)	200,000	285,000	500,000	2.1	3.0	5.3

A large grower, producing 10,000 acres of leafy greens, his total food safety costs with the agreement range from $20 per acre to $50 per acre or $.02 per carton to $.05 per carton. Again, those costs represent 1-2% of total operating costs and include all food safety costs and not just the costs resulting from a national marketing agreement.

For those growers who would be implementing best practices as part of the proposed NLGMA for the first time, costs will increase at the farm level. However, not all practices will need to be carried out in exactly the same fashion in all growing regions. Because of environmental variances, testing procedures and required frequency of testing, costs may vary across growing regions. Exact costs will vary slightly from region to region – what is necessary in Salinas, California may not be necessary in New Jersey. Growers who are not currently operating under one of the respective marketing

agreements will eventually have to implement farm-level standards, as the buying and food service industries will require it — as we have seen in Arizona and California.[11]

2.2 Handler Costs

As signatories of the NLGMA, handlers will be funding the agreement by paying fees. First handlers will pay assessment fees for all leafy green product covered by the agreement. These fees will be determined by the Leafy Green Products Administrative Committee that will administer the terms and provisions of the NLGMA. Handlers other than first handlers will pay inspection service fees for USDA audits. Currently the USDA charges $92 per hour for inspection services at domestic locations and $92 per hour plus travel and per diem for inspection of operations outside the U.S. Total cost of USDA audits will vary based on the size of handler operations. Handlers who are already part of the marketing agreements in Arizona and California would experience additional assessment and audit service fees for fresh leafy greens purchased from suppliers outside of CA or AZ. Handlers that are not signatories of the Arizona or California marketing agreements will most likely face increased cost for additional auditing and certification steps. Other measures under the NLGMA that may impose additional costs are additional traceability processes and/or equipment and additional dedicated food safety personnel. Some costs may be one-time costs to meet requirements of the agreement while other costs would be ongoing.

Table 13: Projected food safety costs with NLGMA – small producer/handler

	$.07 per carton		$.10 per carton	
Personnel costs (per ctn)	5,000	10,000	2.6	5.3
Water test (per ctn)	1,500	1,500	0.8	0.8
3rd party audits(per ctn)	2,000	2,000	1.1	1.1
ranch care, pest control, chlorine	1,000	1,500	0.5	0.8
assessment ($.02)	3,800	3,800	2.0	2.0
Total(per ctn)	13,300	18,800	7.0	**9.9**

For the small handler that is also a producer, food safety costs associated with growing and shipping approximately 200,000 cartons of leafy greens will range from $.07 to $.10 per carton or $67 to $95 per acre. Additional costs handlers pay include a $.02 per carton assessment and increased labor costs.

11 Calvin L, et al., "The Economics of Food Safety: The case of green onions and Hepatitis A outbreaks," USDA Economic Research Service, 2004.

Table 14: Projected food safety costs with NLGMA – large producer/handler

	$.05 per ctn		$.12 per ctn	
personnel costs (per ctn)	150,000	1.6	400,000	4.2
water test (per ctn)	70,000	0.7	50,000	0.5
3rd party audits(per ctn)	25,000	0.3	110,000	1.2
ranch care, pest control, chlorine	40,000	0.4	300,000	3.2
Assessments	190,000	2.0	190,000	2.0
Training				
Equipment				
Total(per ctn)	475,000	5.0	1,050,000	11.1

Large producers/handlers costs are expected to range from $.05 per carton to $.12 per carton depending on their food safety personnel and their production volumes. The above produce/handler is growing, handling and in some cases processing 9.5 million cartons of leafy greens each year. Larger producers/handlers will experience greater assessment costs as their volumes increase. Also, for this group, buyer requirements are more strenuous and require more time and personnel to support.

2.2.1 *Buyer Requirements*

Currently there are many different food safety and quality requirements levied from the buying and food service industries on fresh leafy greens producers and handlers. Today, handlers, including those who have signed on to the Arizona and California marketing agreements are subject to many different requirements from the buying and food service industries. Buyers may develop their own quality and safety standards or adopt established systems such as the Global Food Safety Initiative standards. In 2005, twenty percent of organic handlers that participated in a USDA survey reported that they always require their suppliers to have third-party food safety certification and 20 percent reported that they sometimes have this requirement.[12] Some of these requirements are very costly to implement. This has not deterred the industry from paying for and adding on another layer of GAPs as mandated by these agreements. If a handler does not abide by buyer requirements, their leafy greens products would not be introduced into commerce and could result in a grave economic loss for the handler and grower.

A national marketing agreement would establish consistency in leafy green production and handling practices through the industry supply chain. This would help to mitigate the costs of multiple quality and food safety requirements since buyers do not need to audit producers' production practices as often, and buyers will be less likely to require producers to adopt practices in addition to those included in the national agreement. Though some buying and food service companies may continue to require their handlers to meet additional standards, the best practices outlined in the NLGMA will provide the baseline for all additional requirements as we have seen in Arizona and California.

[12] Dimitri & Oberholtzer. "The U.S. Organic Handling Sector in 2004: Baseline Findings of the Nationwide Survey of Organic Manufacturers, Processors, and Distributors." USDA, Economic Research Service, May 2008.