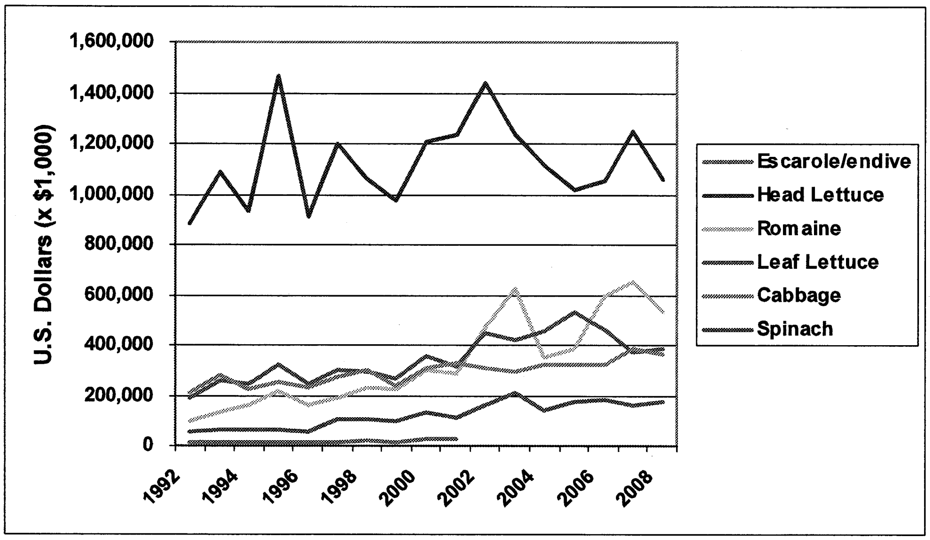
My name is Diane Wetherington W-e-t-h-e-r-i-n-g-t-o-n and I am an Executive Vice President with Intertox which is a science based consulting firm in Seattle, Washington. My role at Intertox is focused on analytical services and analysis. We prepared the marketing data and cost overview for the proposed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

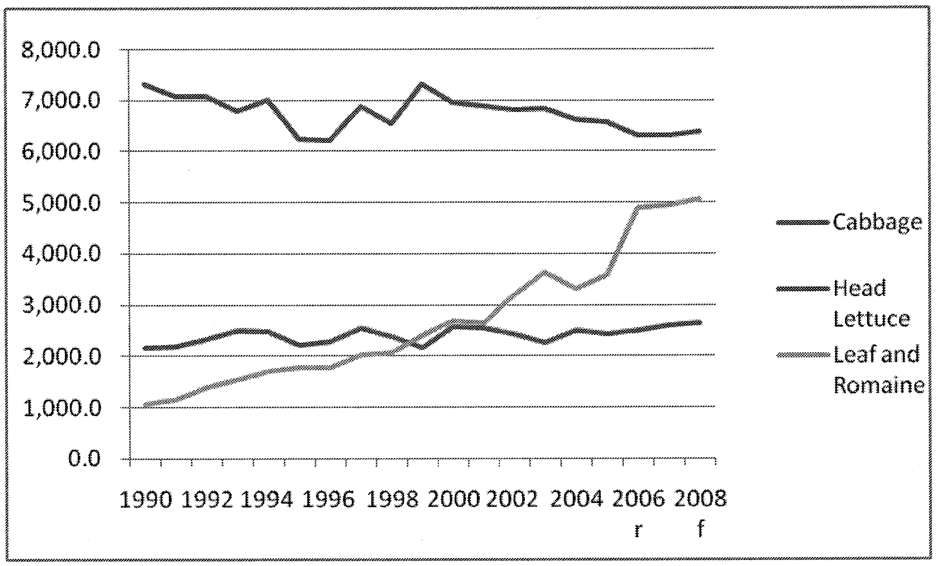
1 USDA. "Vegetables 2008 Summary." National Agricultural Statistic Service. January 2009.
2 USDA National Agricultural Statistics Service, "2007 Census of Agriculture,' United States Summary and State Data, Volume 1, Geographic Area Series, Part 51, Issued February 2009.
3 New Jersey is more than likely 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

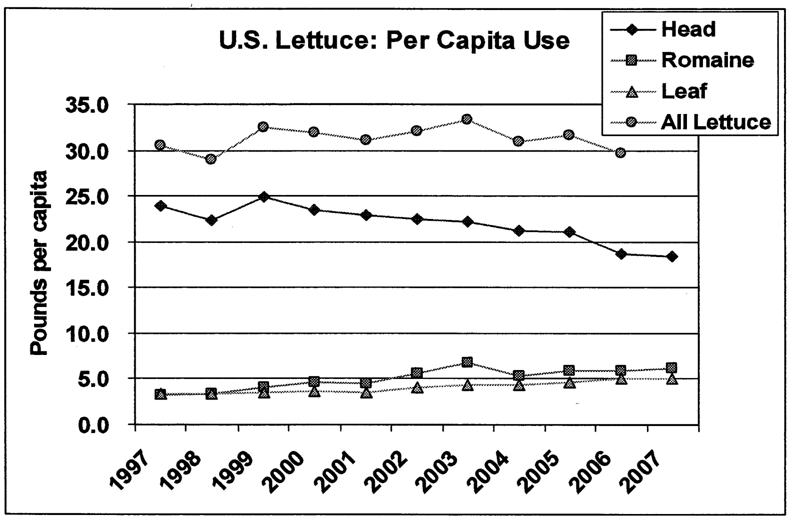
Domestic Utilization (*millions of pounds*)	2000	2001	2002	2003	2004	2005	2006	2007	2008e
Cabbage	2,513.20	2,518.70	2,389.80	2,197.70	2,444.60	2,400	2,455.80	2,591.20	2,617
Head Lettuce	6,624.90	6,558.70	6,494.60	6,465.40	6,240.20	6,245.20	6045.50	6114.80	6145.00
Leaf Lettuce and Romaine	2,367.80	2,290.20	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



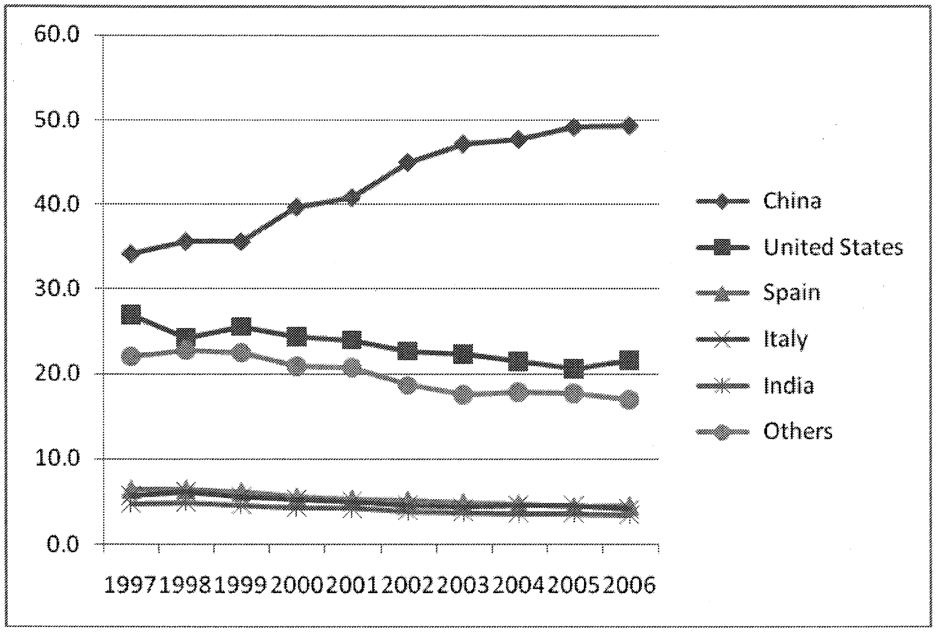
Source: Economic Research Service, USDA.

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.

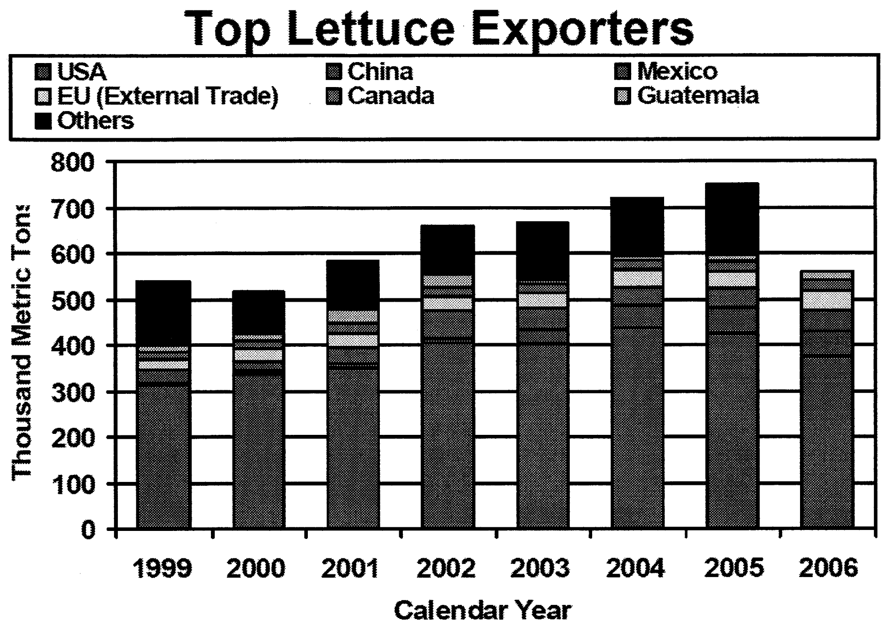
1.1.5.1 Foreign Producers

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.