Mexico’s Agricultural Export Sector: Focus on Fresh Produce

DR. ROBERTA COOK
Dept. of Ag and Resource Economics
University of California Davis

cook@primal.ucdavis.edu

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Overview

• Basics, framing the industry and the issues
• Understanding the forces behind the U.S.-Mexico fruit and veg trading relationship
• U.S. consumption and supply trends for some key fruit and veg
• Changes in US fresh produce imports from Mexico - pre-Nafta to the present
• Case studies: protected culture and tomatoes, and berries
• Mexican domestic fruit and veg demand and changing market structure
• Conclusions
Agricultural Harvested Area in Mexico, by Key Sector, 2008, 20.5 Million Hectares Total

- Grain: 67%
- Fruit and other perennials: 17%
- Vegetables: 4%
- Ornamentals: 12%

Source: Evolucion de la Oferta Horticola en Mexico, 1989-2009, CAADES
Agricultural Production Value in Mexico, by Key Sector, 2008, 306 Million Pesos Total

- **Grain**: 8%
- **Fruit and other perennials**: 19%
- **Vegetables**: 41%
- **Ornamentals**: 32%

Source: Evolucion de la Oferta Horticola en Mexico, 1989-2009, CAADES
Mexico
Some Basics

• Fresh produce trade patterns are largely determined by seasonality and ideal growing locations by season by product (rainfall, humidity, elevation, soil types, temperature), distance to market, technical production and postharvest requirements (e.g., ethylene, can’t ship tomatoes with leafy greens).
• Fresh produce is generally harvested and shipped daily and daily changes in weather can affect both supply and demand, making markets very volatile; combined with high production costs markets are very risky and prices may not always cover total costs - requires substantial capitalization to withstand low markets.
• Fresh produce items are consumer-ready products, directly impacted by food marketing trends.
• The 23 largest U.S. grocery buyers now control around 72% of U.S. grocery sales.
• Structural change in N. American markets is impacting demand, production, procurement practices, marketing channels and the importance of marketing services (including product differentiation, category development and social responsibility) – with major implications for all growers and shippers throughout N. America. Scale is increasingly important to competitive wherewithal.
• Large retail and foodservice buyers demand year-round supply, increasingly provided by U.S. grower-shippers which import during the off-season, including from Mexico. Large Mexican growers have generally not been able to put together yr-round deals themselves.
Forces Behind U.S. Imports of Fresh Produce from Mexico

• Most of our fruit and veg imports from Mexico are in fresh form. There is also a frozen broccoli, cauliflower and strawberry export industry.

• Seasonality drives shipments and trade in fresh produce and Mexico has always had and will have climatic advantages making it a critical player in U.S. fresh produce supply.

• The U.S. imports from Mexico (in declining order) because we either:
  1) do not produce enough during certain seasons, usually the winter months
  2) do not produce (virtually) many tropical products
  3) do not produce enough of the product type desired in the U.S. (e.g. vine-ripe tomatoes vs. mature green)
  4) have higher costs at point of shipment (FOB) or landed into specific markets.

• What determines relative competitiveness is not just production costs, but also harvest, transportation, logistics/handling and marketing costs to reach specific markets - landed costs.
Crops where Mexico has a landed cost advantage at the U.S. border (asparagus, green onions, radishes, cilantro) require bunching at harvest. These crops can be grown close to the U.S. border in Baja California and Sonora (e.g., the Mexicali-San Luis valley) and have displaced U.S. production. This displacement was led by Ca. grower-shippers who control most of the production and marketing of these crops year-round regardless of production location, and has benefited both Mexico and the U.S.

For most other crops production did not shift to Mexico since NAFTA. The U.S. will always have advantages in serving its home market without trade barriers or breaking the cold chain. Rapid growth in Mexican exports to the U.S. have been driven by growth in consumption of key crops like tomatoes and other winter veg, mangoes, grapes, avocados, and in some cases due to new crops, e.g., berries. Hence, the export outlook for Mexico continues to largely depend on U.S. demand trends, which have been generally favorable - but crop specific.
• In 2010 Mexico supplied 68% of U.S. fresh vegetable and 27% of fresh fruit imports ($6 billion total value). Mexico’s small share of fruit imports is partly due to virtual non-participation in banana trade.
• Mexico is a powerhouse fresh fruit and veg exporter; 2010 export fruit value was $2.339B plus $4.310B veg exports to the world ($6.649B total).
• The U.S. is the predominant market for Mexican fruits and vegetables (importing an average of 83% of Mexican fruit exports and 91% of veg exports in 2008-10).
• Like the U.S., Mexico is generally not competitive in the EU market for most crops (avocados a major exception for Mexico).
• Mexico does not have internationally competitive production of oranges and grapefruit and hence the U.S. still dominates in this trade to Asia.
• Mexico is attempting to better access the Asian market as a diversification strategy but the U.S. will remain the principal market due to proximity and high demand.
• About 26% of Mexico’s production of fresh produce is estimated to be exported (v. 15% pre-NAFTA) - most production is still for domestic use.
• Hence, employment and revenue in the Mexican hort. sector is first dependent on trends in Mexican consumption (110 million inhabitants); then on U.S. demand trends.
Forces Behind U.S. Imports of Fresh Produce from Mexico

• The state of Sinaloa is the largest Mexican exporter of fresh produce, followed by Baja, Sonora, central Mexico, and Michoacán for avocados; the crops grown and seasons are different in these regions and their competitive outlooks vary.
• For many crops (especially fruit) the primary market is domestic while others face dual markets, and others are totally export-oriented. These factors greatly influence performance.
• The leafy green sector is not an important exporter from Mexico whereas exports of 6 winter vegetables from the state of Sinaloa are: Tomatoes, bell peppers, cucumbers, eggplant, sweet corn and squash – the identical product line as in Florida – the direct competitor. CA doesn’t produce those crops during the winter.
• Sinaloa’s competitive advantage is that it rarely freezes during the winter whereas the competing region in N. America, Florida, has a much higher freeze risk. In addition, it has large grower-exporters, many of which are well-capitalized, rapid technology adopters, efficient, with strong food safety programs, and several of which control their own marketing.
• Food safety standards for export-oriented producers are essentially the same as in the U.S. since they must be 3rd party certified (just as U.S. growers). This is not the case for producers oriented to the domestic market. Food safety programs require significant investments and are a barrier to entry.
Key Lessons

• The relative competitiveness of the U.S. industry is because more than being labor-intensive fruits and veg are information/knowledge- technology- capital- and marketing-intensive.
• The U.S. has traditionally held the advantage in the latter.
• However, Mexico is developing protected culture of key export crops: tomatoes, sweet peppers, and cucumbers; these are also knowledge-technology- and capital-intensive. This should continue to strengthen its competitiveness.
• U.S. grower-shippers are playing a greater role in the sourcing and marketing of Mexican fresh produce (including in some cases joint ventures in packing sheds, not just production) and some retailers are attempting to import directly, led by Walmart. This means that non-value-adding costs are gradually being driven out of the system, improving Mexico’s competitiveness.
• Yet Mexico still lags in marketing and logistics; Mexican export marketing is still too fragmented, with smaller players marketing through brokers which can be disruptive to markets.
• Security concerns are increasing costs and decreasing logistical efficiency.
Where are we?

• Most produce crosses in Nogales although central Mexico ports of entry are growing as veg production diversifies into central Mexico using protected culture. This has contributed to greater market fragmentation, impeding Mexico’s competitiveness and ability to expand, profitably.

• Larger producers have an advantage; small scale growers, in Mexico just as elsewhere, are usually not competitive in export markets. They must focus on their domestic markets. There are exceptions for organics and other specialty items.

• So fresh produce exports don’t begin to solve Mexico’s social problems in the subsistence sector. In key export regions production is controlled by large growers meeting the scale requirements of the marketplace.

• There are opportunities to assist smaller producers to meet market requirements, but these programs should not focus just on exports but rather on the domestic market.

• Mexico is a powerhouse fruit and veg producer (globally) with a large and growing population, plus it has proximity to the largest fresh produce import market in the world.

• However, ag productivity growth likely precludes large growth in acreage for most crops, barring major shifts in demand, plus growth in labor productivity is reducing labor needs/ha.

• The latter forces may offset labor growth under normal market conditions.
U.S. Consumption and Supply Trends for Select Fresh Produce Items
US PER CAPITA VEGETABLE CONSUMPTION, POUNDS, 1976-2009

<table>
<thead>
<tr>
<th>Year</th>
<th>Processed Vegetables, Excl. Potatoes</th>
<th>Processed Potatoes</th>
<th>Fresh Potatoes</th>
<th>Fresh Vegetables</th>
</tr>
</thead>
<tbody>
<tr>
<td>1976</td>
<td>359</td>
<td>115</td>
<td>119</td>
<td>49</td>
</tr>
<tr>
<td>1987</td>
<td>125.3</td>
<td>80.4</td>
<td>37.4</td>
<td>150</td>
</tr>
<tr>
<td>1991</td>
<td>415.4</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: USDA/ERS, Vegetables and Melons Situation and Outlook Yearbook, May 2010, compiled on estimated share of fresh and processed mushrooms and sweet potatoes, by Dr. Roberta Cook, UC Davis.
US Per Capita Utilization/Consumption of Fresh Tomatoes (1985-2010\textsuperscript{P})

Pounds per capita


\textsuperscript{P}=Preliminary
U.S. Fresh Tomatoes: Production, Consumption, Imports, and Exports, 1990-2010

### Fresh Tomato Sales in US Supermarkets: Share of Total Tomato Category Sales, by Tomato Type, in Quantity and Value, 2010 vs. 2005 vs. 1999,

<table>
<thead>
<tr>
<th>Type</th>
<th>Share of Value</th>
<th>Share of Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greenhouse:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Round/beef</td>
<td>12</td>
<td>14</td>
</tr>
<tr>
<td>TOV/Cluster</td>
<td>31</td>
<td>29</td>
</tr>
<tr>
<td>Round field</td>
<td>16</td>
<td>21</td>
</tr>
<tr>
<td>Roma</td>
<td>16</td>
<td>13</td>
</tr>
<tr>
<td>Snacking</td>
<td>26</td>
<td>23</td>
</tr>
</tbody>
</table>

Sources: CTC, IRI, and The Perishables Group *May not sum to 100 due to rounding and retailer-assigned PLU codes.
U.S. Per Capita Utilization/Consumption of Lettuce, by Type, 1985-2010F

Source: Gary Lucier, USDA/ERS, September 2010

- All: 28.2 lbs
- Leaf: 4.0 lbs
- Romaine: 7.1 lbs
- Head Lettuce: 17.1 lbs

F=Forecast
U.S. Fresh Iceberg Lettuce Market, 1960-2010

Forecast: International Trade Not a Major Factor


U.S. Fresh Romaine & Leaf Lettuce Market, 1990-2010 Forecast

Production

Total Consumption / Utilization

Exports

Imports

U.S. Fresh Broccoli: Production, Consumption, Imports, and Exports, 1990-2010

Source: Vegetables and Melons Situation and Outlook Yearbook, May 2010, USDA/ERS.
US Per Capita Utilization/Consumption of Select Fresh Market Vegetables (1985-2010F)

Source: Vegetables and Melons Situation and Outlook Yearbook, May 2010, USDA/ERS  F=Forecast
US PER CAPITA FRUIT DISAPPEARANCE/CONSUMPTION, POUNDS 1976-2009

Source: Fruit and Tree Nuts Yearbook, ERS/USDA, 11-1-10
U.S. Per Capita Consumption of Avocados and Strawberries
1985-2009, and 2010 estimate for strawberries

Pounds per capita

Source: Fruit and Tree Nuts Yearbook, ERS/USDA, 11-1-10
US fresh strawberry production and trade, 1993-2010

Production
Exports
Imports

U.S. Per Capita Consumption of Fresh Raspberries, Blackberries* and Blueberries, 1992-2010

Sources: Fruit and Tree Nuts Yearbook, ERS/USDA, 11-1-10 thru 2009; preliminary estimates by Agnes Perez of ERS/USDA for 2010. *NASS/USDA does not report US production in many states and trade data are imperfect due to overlap in some berry tariff codes.
U.S. Per Capita Consumption/Utilization of Melons, by Key Type, 1985-2009

Pounds per capita

Source: Fruit and Tree Nuts Yearbook, ERS/USDA, 11-1-10
Changes in U.S. Fresh Produce Imports Pre-NAFTA to the Present

Caveats:

• It is important to note that NAFTA was only one of many factors influencing trade patterns, and often far surpassed by other market forces. Hence, causality is not implied.

• Growth in Mexican exports to the U.S. doesn’t preclude expansion in the U.S. industry as well, nor does it mean that imports from Mexico represent a high share of U.S. utilization.
US Fresh Produce Trade, $Million, 1994-2010

Source: http://www.fas.usda.gov/gats; BICO-10

$6 billion in 2010 imports from Mexico
## U.S. Horticultural Imports from Mexico, in Value and Volume, 1991-93 vs. 2008-10

<table>
<thead>
<tr>
<th>Crop</th>
<th>1991-93</th>
<th>2008-10</th>
<th>% Change</th>
<th>1991-93</th>
<th>2008-10</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Value (million dollars)</td>
<td>Volume (thousand metric tons)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vegetable</td>
<td>923</td>
<td>3,787</td>
<td>310</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Fruit</td>
<td>322</td>
<td>2,118</td>
<td>558</td>
<td>586</td>
<td>2,194</td>
<td>274</td>
</tr>
<tr>
<td>Fruit Juice</td>
<td>40</td>
<td>182</td>
<td>356</td>
<td>147</td>
<td>486</td>
<td>230</td>
</tr>
<tr>
<td>Nuts</td>
<td>55</td>
<td>221</td>
<td>300</td>
<td>17</td>
<td>74</td>
<td>327</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Crop</th>
<th>1991-93</th>
<th>2008-10</th>
<th>% Change</th>
<th>1991-93</th>
<th>2008-10</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tomatoes</td>
<td>229</td>
<td>1,252</td>
<td>447</td>
<td>312</td>
<td>1,138</td>
<td>265</td>
</tr>
<tr>
<td>Peppers</td>
<td>120</td>
<td>563</td>
<td>369</td>
<td>124</td>
<td>569</td>
<td>359</td>
</tr>
<tr>
<td>Cucumbers</td>
<td>73</td>
<td>250</td>
<td>242</td>
<td>179</td>
<td>452</td>
<td>153</td>
</tr>
<tr>
<td>Squash</td>
<td>60</td>
<td>204</td>
<td>240</td>
<td>83</td>
<td>248</td>
<td>198</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Crop</th>
<th>Value (million dollars)</th>
<th>Volume (thousand metric tons)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1991-93</td>
<td>2008-10</td>
</tr>
<tr>
<td>Onions</td>
<td>92</td>
<td>189</td>
</tr>
<tr>
<td>Asparagus</td>
<td>29</td>
<td>169</td>
</tr>
<tr>
<td>Lettuce</td>
<td>4</td>
<td>89</td>
</tr>
<tr>
<td>Cauliflower, broccoli</td>
<td>4</td>
<td>79</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Commodity</th>
<th>From World (%)</th>
<th>From Mexico (%)</th>
<th>Per Capita Use (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cucumbers</td>
<td>28 54</td>
<td>31 40</td>
<td>2.2 2.9</td>
</tr>
<tr>
<td>Onions</td>
<td>-20 3</td>
<td>7 4</td>
<td>7.4 9.3</td>
</tr>
<tr>
<td>Squash</td>
<td>23 48</td>
<td>19 41</td>
<td>1.7 1.9</td>
</tr>
<tr>
<td>Tomatoes</td>
<td>9 36</td>
<td>16 36</td>
<td>7.1 8.6</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Commodity</th>
<th>From World (%)</th>
<th>From Mexico (%)</th>
<th>Per Capita Use (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asparagus, fresh</td>
<td>12</td>
<td>79</td>
<td>30</td>
</tr>
<tr>
<td>Bell peppers</td>
<td>5</td>
<td>45</td>
<td>13</td>
</tr>
<tr>
<td>Broccoli and cauliflower, processing</td>
<td>66</td>
<td>90</td>
<td>45</td>
</tr>
<tr>
<td>Chile peppers</td>
<td>35</td>
<td>76</td>
<td>16</td>
</tr>
</tbody>
</table>

### U.S. Fresh Berry Imports from Mexico, in Value and Volume, 1991-93 vs. 2008-10

<table>
<thead>
<tr>
<th>Crop</th>
<th>1991-93</th>
<th>2008-10</th>
<th>% Change</th>
<th>Value</th>
<th>1991-93</th>
<th>2008-10</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strawberries</td>
<td>15</td>
<td>162</td>
<td>981</td>
<td>Million dollars</td>
<td>12</td>
<td>79</td>
<td>562</td>
</tr>
<tr>
<td>Blackberries, mulberries, loganberries</td>
<td>*</td>
<td>114</td>
<td>208,420</td>
<td>Million dollars</td>
<td>*</td>
<td>36</td>
<td>65,315</td>
</tr>
<tr>
<td>Raspberries</td>
<td>*</td>
<td>83</td>
<td>529,349</td>
<td>Million dollars</td>
<td>*</td>
<td>12</td>
<td>229,067</td>
</tr>
</tbody>
</table>

* = Imports average less than $500,000 in value and/or less than 500 metric tons in volume.

<table>
<thead>
<tr>
<th>Crop</th>
<th>Value (million dollars)</th>
<th>Volume (thousand metric tons)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1991-93</td>
<td>2008-10</td>
</tr>
<tr>
<td>Avocados</td>
<td>1</td>
<td>521</td>
</tr>
<tr>
<td>Grapes</td>
<td>59</td>
<td>325</td>
</tr>
<tr>
<td>Watermelon</td>
<td>18</td>
<td>205</td>
</tr>
<tr>
<td>Limes</td>
<td>20</td>
<td>160</td>
</tr>
</tbody>
</table>

### Select U.S. Fresh Fruit Imports from Mexico, in Value and Volume, 1991-93 vs. 2008-10

<table>
<thead>
<tr>
<th>Crop</th>
<th>1991-93</th>
<th>2008-10</th>
<th>% Change</th>
<th>1991-93</th>
<th>2008-10</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Value (million dollars)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Avocados</td>
<td>1</td>
<td>521</td>
<td>51,258</td>
<td>1</td>
<td>267</td>
<td>47616</td>
</tr>
<tr>
<td>Grapes</td>
<td>59</td>
<td>325</td>
<td>451</td>
<td>40</td>
<td>132</td>
<td>231</td>
</tr>
<tr>
<td>Watermelon</td>
<td>18</td>
<td>205</td>
<td>1,037</td>
<td>89</td>
<td>408</td>
<td>358</td>
</tr>
<tr>
<td>Limes</td>
<td>20</td>
<td>160</td>
<td>687</td>
<td>87</td>
<td>349</td>
<td>303</td>
</tr>
<tr>
<td>Mango</td>
<td>63</td>
<td>136</td>
<td>117</td>
<td>80</td>
<td>194</td>
<td>142</td>
</tr>
<tr>
<td>Papaya</td>
<td>4</td>
<td>62</td>
<td>1,432</td>
<td>7</td>
<td>108</td>
<td>1,359</td>
</tr>
</tbody>
</table>

| **Volume (thousand metric tons)** |         |         |          |         |         |      |
| Avocados  | 1       | 267     | 47616    | 1       | 267     | 47616|
| Grapes    | 40      | 132     | 231      | 40      | 132     | 231  |
| Watermelon| 89      | 408     | 358      | 89      | 408     | 358  |
| Limes     | 87      | 349     | 303      | 87      | 349     | 303  |
| Mango     | 80      | 194     | 142      | 80      | 194     | 142  |
| Papaya    | 7       | 108     | 1,359    | 7       | 108     | 1,359|


<table>
<thead>
<tr>
<th>Fresh Commodity</th>
<th>From World (%)</th>
<th>From Mexico (%)</th>
<th>Per Capita Use (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grapes</td>
<td>15 24</td>
<td>4 8</td>
<td>3.4 3.7</td>
</tr>
<tr>
<td>Limes</td>
<td>66 100</td>
<td>82 98</td>
<td>0.4 1.1</td>
</tr>
<tr>
<td>Mangos</td>
<td>92 100</td>
<td>85 65</td>
<td>0.4 0.9</td>
</tr>
<tr>
<td>Papayas</td>
<td>8 91</td>
<td>27 59</td>
<td>0.1 0.5</td>
</tr>
<tr>
<td>Strawberries</td>
<td>-8 -5</td>
<td>2 7</td>
<td>1.6 3.0</td>
</tr>
<tr>
<td>Watermelon</td>
<td>1 16</td>
<td>5 13</td>
<td>6.3 6.8</td>
</tr>
</tbody>
</table>

Case Studies

• Technology and product diversification are increasing domestic competition for the two leading tomato producer/export regions (Sinaloa and Baja California). Protected culture (PC) is a major new force for this dual market crop (export and domestic markets are both important to profitability for grower-exporters).

• The development of new PC producers throughout Mexico is bringing new tomato products into the domestic market, competing both with traditional small producers in central Mexico and growers in Sinaloa and Baja in their seasons.

• Bushberries are a totally new export sector generating employment in central Mexico.
Advances in food safety and traceback, Harvest Mark; greenhouse tomatoes and product differentiation.
High tech color and size sorters and automatic fill machines meets product differentiation and new product form.
Protected Culture in Mexico
Area of Protected Culture Horticultural Crops in Mexico, 1980-2009, Hectares

Most of this area is shade house rather than greenhouse, around 70% is tomatoes, and most is from Sinaloa (3,389 HA). Bell peppers (primarily red, yellow and orange) and cucumbers account for most of the remainder.

Source: Evolucion de la Oferta Horticola en Mexico, 1989-2009, CAADES, Sept. 27, 2010
Mexican Protected Culture is Changing the N.A. Fresh Tomato Industry

• Initially: projects close to coastal areas, Sinaloa and Baja, “low” technology. Remember that even low-tech PC is high-tech re open-field.
• Later: projects moving to higher elevations. Better systems, technologies for growing: computer controls and heating and often hydroponic.
• Now: projects in all types of environments and with all levels of technology and progressing toward development/application of the right technology for the right location. Not there yet.
• Being a relatively new player, Mexico has benefited from technological advances and the experience of other areas - Spain, Netherlands, Israel, Canada, U.S. But none of these packages are a perfect fit. The learning curve is steep and ongoing with advantages for the innovators, and faster adaptation and diversification of technological alternatives than ever.
• PC is capital-intensive with construction costs (excl. growing costs) for basic shade houses ranging from $50,000-$88,000/hectare to $438,000 for medium-tech to $1.1 million for high-tech greenhouses.
• Production using protected culture substantially increases yields, quality and decreases pest/disease pressure and labor use compared to open-field production. Premium pack-out yields can be upwards of 2.5 times higher for shade houses and 10 times for high-tech greenhouses.
Mexican Protected Culture is Changing the Tomato Industry

- Hence, for formerly large open-field production areas like Sinaloa and Baja Ca., which are converting growing shares of their area to PC, acreage and employment is declining for any given production volume. In Sinaloa veg area declined by 23% over the last decade while production was similar.

- The Mexican govt. supports greenhouse construction with various financial incentives in part as a strategy to stimulate employment in areas which had limited horticultural production and little to no tomato production (e.g., in central and north central Mexico). However, the new acreage is likely insufficient to increase employment significantly in these areas.

- Earlier govt. interventions were ill-advised but today investment projects are larger and more market-based.

- The Mexican govt., simultaneously, has been working with growers in major hort. areas like Sinaloa to improve worker conditions, including through investment in housing, schools, school meals and health programs.

- Working conditions in PC are superior to open-field and greater training and skill are required. The combination of the aforementioned is reducing worker turnover for some of the Sinaloa PC growers and is mutually beneficial.
Key Berry Trends
The Mexican Fresh Berry Export Sector, Mainly Bushberries

- The U.S. imports fresh berries because we cannot produce or do not produce enough during the winter months - not due to any cost advantages in Mexico.
- Major changes in fresh trade patterns include the emergence of Mexico as a replacement for Canada, Chile and Guatemala for raspberries; and Mexico's powerhouse role in blackberries.
- Bushberries represent a totally new export industry for Mexico, centered in the Bajio (central Mexico), with relatively little domestic demand.
- Central Mexico offers proximity to the US market and temperate weather conditions year-round.
- Varieties focused on flavor have contributed to the growth in demand, in particular for blacks.
- Both the blackberry and raspberry industries were developed by foreign investment, initially from Chile for blacks and from Ca. (Driscoll) for raspberries. Ca. firms control most of the export-oriented production.
- Berries are highly perishable, expensive to grow, and capital-, technology and marketing-intensive.
- Technology, variety and other issues have limited the expansion in the strawberry industry (for exports), both in the Bajio and Baja (early spring producer). Most of Mexico’s strawberry production is for domestic consumption.
Fresh Raspberry Production and Imports, 1992-2010

Million lbs

Production

Imports

US Fresh Raspberry Imports by Key Country of Origin, 1990-2010

Source: GATS/FAS/USDA online data queries.
U.S. Fresh Blackberry Production and Imports, 1990-2010 (but NASS tracks only OR and most US production is processed)

U.S. Fresh Blackberry Imports by Source, 2006-2010

Source: GATS/FAS/USDA online data query.
Mexican Fruit and Vegetable Domestic Demand
Mexican Modern Retail Sector, 2009

• The number of modern food retailing stores is estimated to have reached 10,473, just over double the 5,055 stores in 2002.

• Much of the growth came from convenience stores, up from 3,000 in 2002 to around 7,400 in 2009.

• Approximately 45 percent of food sales now take place in the formal retail sector, placing the total retail food market at over US$120 billion (others estimate $121-$124 billion).

• This is incenting supplier growth/consolidation, direct sales from grower-shippers to retail chains, bypassing wholesale markets, and higher quality standards. This benefits the large export-oriented grower-shippers - who are facing the same trends in the U.S. and already meet the requirements.

Sources for the first three points: BMI and Rabobank.
Supermarkets and chains are to be found throughout the country...

Source: Rabobank
Expenditures in Mexico on foods consumed at home by food category favor animal protein.

- Cereals: 10%
- Meat: 22%
- Fruit and veg: 21%
- Others: 18%
- Dairy: 16%
- Beverages: 13%

Source: Rabobank with data from INEGI, 2004 survey.
Conclusions

- Product differentiation and growth in U.S. year-round demand for more fruits and veg, including tropica6s, will continue to offer large and expanding export opportunities for Mexico. Trends are favorable but are no panacea for Mexico's social problems in the ag sector. For most crops the rate of growth will be moderate.

- New export sectors are emerging – bushberries.

- Mexico will continue to benefit from growing demand for important tropical crops like avocados, mangoes and limes not just in the U.S. but elsewhere.

- Fresh produce markets are increasingly competitive at all levels of the value chain and production and market requirements will continue to grow for producers everywhere.

- While protected culture is still a small part of veg acreage it is a factor which will gradually slow the rate of growth in labor demand in the Mexican veg sector.

- Growth in labor demand will come in large part from the growth in domestic fruit and veg demand.

- Consumption of fruits and veg in Mexico should growth with population and income, however, as income rises part of the growth in food demand is shifting to animal protein.