Horticultural Productivity and Postharvest Management
Agro-Ecological Zones of Pakistan

(Pasmi & Gawadar)
Cropping Pattern of Pakistan

Data Source: WRRI, NARC/PARC & Agricultural Statistics of Pakistan.
Developed by: WRRI, NARC/PARC, Islamabad, Pakistan.

LEGEND
- Coarse grain - Wheat
- Coarse grain - Wheat (Cropping mix for Khairif)
- Coarse grain - Wheat (Cropping mix for Rabi & Khairif)
- Rice - Wheat
- Rice - Wheat (Cropping mix for Khairif)
- Rice - Wheat (Cropping mix for Rabi)
- Cotton - Wheat
- Cotton - Wheat (Cropping mix for Khairif)
- Cotton - Wheat (Cropping mix for Rabi & Khairif)
- Sugarcane - Wheat
- Sugarcane - Wheat (Cropping mix for Khairif)
- Sugarcane - Chickpea
- Sugarcane - Chickpea (Cropping mix for Rabi & Khairif)
- Wheat
- Maize - Wheat
- Maize - Wheat (Cropping mix for Khairif)
- Maize - Wheat (Cropping mix for Rabi & Khairif)
- Groundnut - Wheat
- Groundnut - Wheat (Cropping mix for Khairif)
- Groundnut - Wheat (Cropping mix for Rabi & Khairif)
- Rice - Chickpea
- Rice - Chickpea (Cropping mix for Rabi & Khairif)
- Minor cultivation
- Minor cultivation (Cropping mix for Khairif)
- Sandy Desert
- Information not available
Distribution of Cropped Area, Pakistan, 1999-00

Production and Area Cropped of All Fruits in Pakistan by Provinces (1995-96 to 1999-00 Average)
Fruits and Vegetables

• Great demand in the international market, especially mango, apples, dates and citrus

• 12% share in agriculture value addition

• Only 3-5% is being processed

• High post harvest losses (20-40%)

• Citrus and mango account for 48% of all fruits produced in Punjab

• Balochistan produces the second largest volume of fruits, mainly apples and dates
Production of Major Fruits in Pakistan

MINFAL, 2008-09
Periodic increase in Area under Fruits in Pakistan

(MINFAL)
Periodic increase in Production of Fruits in Pakistan

Production (000, Tonnes)

1960 1563.5
1970 1967.1
1980 3322.2
1990 4790.7
2009 6360.9

(MINFAL)
# Yield of Fruits in World

<table>
<thead>
<tr>
<th>Fruits</th>
<th>Yield (Tonnes/Ha)</th>
<th>Best Yield</th>
<th>Best Country</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>World</td>
<td>Pakistan</td>
<td></td>
</tr>
<tr>
<td>Citrus</td>
<td>7.04</td>
<td>10.6</td>
<td>30.5</td>
</tr>
<tr>
<td>Mangoes &amp; Guava</td>
<td>7.4</td>
<td>10.5</td>
<td>40</td>
</tr>
<tr>
<td>Dates</td>
<td>5.7</td>
<td>7.3</td>
<td>15.2</td>
</tr>
<tr>
<td>Apples</td>
<td>14.5</td>
<td>6.8</td>
<td>91.5</td>
</tr>
<tr>
<td>Peaches &amp; Nectarines</td>
<td>11.3</td>
<td>6.03</td>
<td>44.2</td>
</tr>
</tbody>
</table>
Pakistan Ranking in World Fruits Yield

(FAO, 2008)
VEGETABLES
Area Under Major Vegetables in Pakistan

- Potatoes: 145,000 Hectares
- Onion: 129,000 Hectares
- Chillies: 73,800 Hectares
- Tomatoes: 53,400 Hectares
- Garlic: 8,400 Hectares
- Coriander: 3,800 Hectares
- Turmeric: 6,800 Hectares

(MINFAL, 2008-09)
Vegetable Production in Pakistan

(MINFAL, 2008-09)
Area Under Cultivation of Vegetables In Provinces

(MINFAL, 2008-09)
Share of Provinces in Vegetable Production

- Punjab: 4842.4 (000 Tonnes)
- Khyber Pakhtunkhwa: 533 (000 Tonnes)
- Balochistan: 249.7 (000 Tonnes)
- Sindh: 529.6 (000 Tonnes)

(MINFAL, 2008-09)
Periodic increase in Area under Vegetables in Pakistan

Area (000 Hectares)

1970: 150.14
1980: 220.31
1990: 310.76
2008-09: 359.8

(MINFAL)
Periodic increase in Production of Vegetables in Pakistan

Production (000 Tonnes)

- 1970: 1856.75
- 1980: 2689.79
- 1990: 4152.27
- 2008-09: 5485.38
Yield of Vegetables in World

<table>
<thead>
<tr>
<th>Vegetables</th>
<th>Yield (Tonnes/Ha)</th>
<th>Best Yield</th>
<th>Best Country</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>World</td>
<td>Pakistan</td>
<td></td>
</tr>
<tr>
<td>Potatoes</td>
<td>18.0</td>
<td>19.0</td>
<td>46.0</td>
</tr>
<tr>
<td>Dry Onions</td>
<td>19.4</td>
<td>13.2</td>
<td>67.2</td>
</tr>
<tr>
<td>Chilies &amp; Peppers</td>
<td>15.3</td>
<td>2.5</td>
<td>275.0</td>
</tr>
<tr>
<td>Tomatoes</td>
<td>28.2</td>
<td>10.0</td>
<td>48.0</td>
</tr>
</tbody>
</table>
Pakistan Ranking in World Vegetables Yield

- Okra: 20
- Peas: 20
- Spinach: 32
- Cauliflower & Broccoli: 35
- Potatoes: 67
- Eggplant: 68
- Dry Onions: 87
- Melons: 94
- Chilies and Peppers: 102
- Tomatoes: 127

FAO, 2008
FLORICULTURE
Area Under Floriculture in Pakistan

- **Punjab**: 8,700 acres
- **Sindh**: 2,340 acres
- **Balochistan**: 2,095 acres
- **Khyber Paktunkhwa**: 3,865 acres

(Acres) (PHDEC)
Pakistan Trade in Cut Flowers

Export

(Fresh) 24

(Dried) 115

Import

(Fresh) 185

(Dried) 116

(PHDEC)
POSTHARVEST MANAGEMENT
## Average Postharvest Losses in Fruits

<table>
<thead>
<tr>
<th>Fruits</th>
<th>Production (000 Tonnes)</th>
<th>Value ($ million)</th>
<th>Postharvest Losses</th>
<th>Quantity (000, T)</th>
<th>Value ($ million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Citrus</td>
<td>1702.3</td>
<td>185</td>
<td>14.6</td>
<td>248.4</td>
<td>27</td>
</tr>
<tr>
<td>Mango</td>
<td>1034.6</td>
<td>218</td>
<td>25.2</td>
<td>261</td>
<td>55</td>
</tr>
<tr>
<td>Date</td>
<td>625</td>
<td>130</td>
<td>34.6</td>
<td>216.3</td>
<td>45</td>
</tr>
<tr>
<td>Guava</td>
<td>531.6</td>
<td>110</td>
<td>34.5</td>
<td>183.6</td>
<td>38</td>
</tr>
<tr>
<td>Banana</td>
<td>142.9</td>
<td>28</td>
<td>32.1</td>
<td>45.9</td>
<td>9</td>
</tr>
<tr>
<td>Apple</td>
<td>315.4</td>
<td>110</td>
<td>13.6</td>
<td>43</td>
<td>15</td>
</tr>
<tr>
<td>Others</td>
<td>1390</td>
<td>500</td>
<td>25</td>
<td>347.5</td>
<td>125</td>
</tr>
<tr>
<td>All Fruits</td>
<td>5741.8</td>
<td>1281</td>
<td>24.5</td>
<td>1407.4</td>
<td>314</td>
</tr>
</tbody>
</table>

(Ibrahim and Anwar, 2004)
Export of Major Fruits From Pakistan

TDAP, 2009-10
Vegetables Export From Pakistan

(000 US $)

(POTATOES: 99,932,001.58)

(ONIONS AND SHALLOTS: 4,179,254.06)

(MUSHROOM: 376,010.79)

(GARLIC: 36,180,096.92)

(OTHER VEGETABLES: 311,857.69)

(TDAP, 2009-10)
## Pakistan and World Trade in Medicinal Plants in 2008

<table>
<thead>
<tr>
<th>Medicinal Plants</th>
<th>World Export (000 US $)</th>
<th>Pakistan Export (000 US $)</th>
<th>World Import (000 US $)</th>
<th>Pakistan Import (000 US $)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turmeric</td>
<td>2,202</td>
<td>167</td>
<td>12,274</td>
<td>1866</td>
</tr>
<tr>
<td>Sesamum Seed</td>
<td>1,409,77</td>
<td>29,701</td>
<td>1,287,066</td>
<td>58</td>
</tr>
<tr>
<td>Linseed</td>
<td>723,430</td>
<td>127</td>
<td>1,020,732</td>
<td>-</td>
</tr>
<tr>
<td>Garlic</td>
<td>952,975</td>
<td>308</td>
<td>1,005,228</td>
<td>33,105</td>
</tr>
<tr>
<td>Coriander Seed</td>
<td>165,358</td>
<td>257</td>
<td>122,908</td>
<td>3519</td>
</tr>
<tr>
<td>Ginger</td>
<td>575,573</td>
<td>578</td>
<td>287,671</td>
<td>30,885</td>
</tr>
<tr>
<td>Fennel Seed</td>
<td>46,206</td>
<td>1,006</td>
<td>5,718</td>
<td>554</td>
</tr>
<tr>
<td>Caster</td>
<td>7,542</td>
<td>240</td>
<td>3,701</td>
<td>-</td>
</tr>
</tbody>
</table>

(PhDEC)
# Food processing units in Pakistan

<table>
<thead>
<tr>
<th>Type of processing industry</th>
<th>Units</th>
<th>Approximate daily or annual processing capacity</th>
<th>Employment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fruits and Vegetable</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fruits and vegetables</td>
<td>25</td>
<td>45,000 (mt/annum)</td>
<td>15,000</td>
</tr>
<tr>
<td>Fruit juices</td>
<td>30</td>
<td>50,000 (myn tons/annum)</td>
<td>8500</td>
</tr>
<tr>
<td>Beverages</td>
<td>100</td>
<td>600   (myn litres/annum)</td>
<td></td>
</tr>
<tr>
<td><strong>Cereal based</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rice husking and polishing</td>
<td>500</td>
<td>7     (myn tons/annum)</td>
<td>20,000</td>
</tr>
<tr>
<td>Flour milling</td>
<td>700</td>
<td>25    (myn tons/annum)</td>
<td>15,000</td>
</tr>
<tr>
<td>Biscuits and bread</td>
<td>46</td>
<td>46,830 (myn tons/annum)</td>
<td>10,000</td>
</tr>
<tr>
<td><strong>Edible oil</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Edible oil</td>
<td>155</td>
<td>2.7   (myn tons/annum)</td>
<td>12,000</td>
</tr>
<tr>
<td>Cooking oil/ghee</td>
<td>166</td>
<td>1     (myn tons/annum)</td>
<td>20,000</td>
</tr>
<tr>
<td><strong>Sugar sector</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sugarcane milling</td>
<td>77</td>
<td>35,5160 tons cane/day</td>
<td>10,000</td>
</tr>
<tr>
<td>Gur (brown sugar)</td>
<td>350</td>
<td>48,000 (tons/annum)</td>
<td>15,000</td>
</tr>
<tr>
<td><strong>Livestock</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seafood</td>
<td>26</td>
<td>50,000 (mt/annum)</td>
<td>12,000</td>
</tr>
<tr>
<td>Meat</td>
<td>4</td>
<td>6000   (myn tons/annum)</td>
<td>1500</td>
</tr>
<tr>
<td>Dairy</td>
<td>38</td>
<td>79.5   (myn tons/annum)</td>
<td>15,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1989</td>
<td></td>
<td>154,250</td>
</tr>
</tbody>
</table>

Source: Estimates based on report of the APO Multi-Country Study Mission on Rural Based Food Processing Industry, Abdul Hafeez Chaudhary, APO (2004). (Mt = Metric Tons, Myn Tons = Million Tons)
Issues

- Orchard Management
- Nursery production system
- Long term research/breeding programs
- Seed and Environment Control Systems
- Emphasis on minor/major fruits??
- Production technology issues
- Postharvest/Marketing
Yield Potential and Gaps

New scientific discoveries are made and utilized – Biotechnology etc

Successful Applied Research -- Funding and Working Environment

Extension, Education & Health
- Agri. Finance
- Availability of inputs
- Soil Quality – Gypsum
- Proper Ratio of N&P
- Markets&Infrastructure
- Weeds and pest infestation
- Sowing time, plant population

Science

Research

Best Practice

World

Extension

Inputs

X

Average

Gap

Research

25-57%
WATER USE EFFICIENCY
Struggling for Survival-Give Them Seed