RALF Project 02-05
Increased productivity and Profitability of Wheat Based Cropping System to Reduce Reliance of Opium Poppy in The Northern Afghanistan
To reduce farmer reliance on opium poppy in northern Afghanistan by increasing agriculture productivity and profitability
Target Area

Balkh

Baghlan

Badakhshan

(Kunduz)
The alternate crops selected for research till 2005

Soybeans
Canola
Safflower
Sesame
Sunflower
Linseed
Peanuts
Rationale:

- Market Demand
- Prospects for local Production
- Potential for acceptance as alternative crop
Market Demand for Ghee & Veg. Oil in Afghanistan

Total Demand = 268,000 mt
Domestic Production = 87,500 mt
Import = 180,500 mt

(Source: CRS, FY05 Bellmon Analysis Afghanistan 01/02/2005)
Prospects for Local Production

Research results
Alternate Crop?

- Value Addition
- Secure Market
- Low Labor
- Fair Credit
- Drought Tolerant
- LEISA

Oil Seed Crops
<table>
<thead>
<tr>
<th>Crop</th>
<th>Average Yield/ha</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soybeans</td>
<td>500-2000 kg/ha</td>
<td>Res. Afg. &amp; FAO</td>
</tr>
<tr>
<td>Canola</td>
<td>1000-1700 kg/ha</td>
<td>Res. Afg. &amp; FAO</td>
</tr>
<tr>
<td>Safflower</td>
<td>400-600 kg/ha</td>
<td>FAO Afg</td>
</tr>
<tr>
<td>Sesame</td>
<td>350-500 kg/ha</td>
<td>FAO Afg</td>
</tr>
<tr>
<td>Sunflower</td>
<td>740 kg/ha</td>
<td>Pakistan</td>
</tr>
<tr>
<td>Linseed</td>
<td>235-335 kg/ha</td>
<td>FAO Afg</td>
</tr>
<tr>
<td>Peanuts</td>
<td>1000-1500 kg/ha</td>
<td>FAO Afg</td>
</tr>
</tbody>
</table>
## Crop Economics

<table>
<thead>
<tr>
<th>Crop</th>
<th>Yield kg/ha</th>
<th>Oil Content</th>
<th>Av.Rate/Kg Afs</th>
<th>Amount Afs</th>
<th>Press Cake</th>
<th>Av.Rate/Kg Afs</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soybean</td>
<td>2,000</td>
<td>14%</td>
<td>50</td>
<td>14,000</td>
<td>86%</td>
<td>10</td>
<td>17,200</td>
</tr>
<tr>
<td>Canola</td>
<td>1,700</td>
<td>35%</td>
<td>50</td>
<td>29,750</td>
<td>65%</td>
<td>10</td>
<td>11,050</td>
</tr>
<tr>
<td>Groundnuts</td>
<td>1,500</td>
<td>42%</td>
<td>50</td>
<td>31,500</td>
<td>58%</td>
<td>10</td>
<td>8,700</td>
</tr>
<tr>
<td>Sunflower</td>
<td>740</td>
<td>32%</td>
<td>50</td>
<td>11,840</td>
<td>68%</td>
<td>10</td>
<td>5,032</td>
</tr>
<tr>
<td>Sesame</td>
<td>500</td>
<td>50%</td>
<td>50</td>
<td>12,500</td>
<td>50%</td>
<td>10</td>
<td>2,500</td>
</tr>
<tr>
<td>Linseed</td>
<td>335</td>
<td>42%</td>
<td>50</td>
<td>7,035</td>
<td>58%</td>
<td>10</td>
<td>4,785</td>
</tr>
</tbody>
</table>
Value Addition - Small Scale Processing at Village Level

- Oil extraction is possible with oil press or Oil expeller

(Oil can also be extracted with solvent but it is not recommended for small scale processing due complexity of operations)
Oil Extraction-Small Scale Processing

• **Ram Press**
  (50 to 100 Kg/day)

**Komet Oil Expeller**
(small hand operated to industrial machines) manufactured by IBG Monforts Germany

• **Täby Press**
(Various Models) Screw Press manufactured in Sweden

• **6yl-94A**
(Various Models) Screw Press manufactured in China
Oil Extraction-Small Scale Processing

*Ram Press*
Oil Extraction-Small Scale Processing
Oil Extraction-Small Scale Processing
Oil Extraction - Small Scale Processing

- Cooking Kettle
- Device to change thickness of cake
- Oil Tank
- Filter Pump
- Foundation Frame
Additional Benefits

• Village Level Processing-Micro Enterprises will . . emerge
• Improved availability for the farmers
• The residue of oil seed will be used as animal feed by the farmers
• Mid term import substitution of vegetable oil
• Improved soil fertility
• Low labor 2nd crop
Challenges

• To finally demonstrate the crop economy
• To continue participatory research and further verify the first years outcomes
• To achieve competitive product standards
• Transfer and probe Appropriate Technology for value addition
Thank you!