Conditions for success of contract farming

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Contract farming

- CF is a partnership between the agribusiness firms and farmers.
- The primary condition for CF to be successful is that it should be profitable to both the parties and on a long-term basis. Both the parties should feel that they better with contract than without it.
- Commodity in question should be more remunerative than the next best alternative.
- The advantages of CF must outweigh the disadvantages (e.g. risks and returns).
- In this presentation:
  - Potential advantages and disadvantages
  - Identify factors for success of CF
## CF: Potential advantages and disadvantages to FARMERS

<table>
<thead>
<tr>
<th>Advantages</th>
<th>Disadvantages</th>
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<tbody>
<tr>
<td><strong>Market access:</strong></td>
<td></td>
</tr>
<tr>
<td>■ Assured off take; reduces marketing and transaction costs; reduces price uncertainty; Income stability</td>
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<tr>
<td><strong>Access to inputs:</strong></td>
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<tr>
<td>■ Reduces uncertainty in availability, quality and costs; lower price, reduction in marketing costs; Higher yield and returns</td>
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<tr>
<td><strong>Access to technology/technical:</strong></td>
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<tr>
<td>■ Riskier crops or new technologies</td>
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<tr>
<td><strong>Access to credit:</strong></td>
<td></td>
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<tr>
<td>■ Cash/inputs; facilitate access to credit</td>
<td></td>
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<tr>
<td><strong>Skill improvement:</strong></td>
<td></td>
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<tr>
<td>■ Cultivation of new crops; adoption of new technologies; quality and grading; spillover effects in non-contract crops</td>
<td></td>
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<tr>
<td><strong>Commercial culture and up-scaling</strong></td>
<td></td>
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</table>
## CF: Potential advantages and disadvantages to FIRMS

<table>
<thead>
<tr>
<th>Advantages</th>
<th>Disadvantages</th>
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</thead>
<tbody>
<tr>
<td>- Assured and regular supplies of raw material</td>
<td>- Opportunistic behavior by farmers</td>
</tr>
<tr>
<td>- Optimal utilization of processing capacity, infrastructure and manpower</td>
<td>- Extra-contractual sales</td>
</tr>
<tr>
<td>- Food safety and quality</td>
<td>- High transaction costs of search and contract monitoring and enforcement</td>
</tr>
<tr>
<td>- Better coordination of demand and supply</td>
<td>- High cost of distribution of inputs and services</td>
</tr>
<tr>
<td>- Access to land</td>
<td>- Misuse/diversion of inputs and credit and defaults</td>
</tr>
<tr>
<td>- Economies of scale in purchase of inputs</td>
<td>- Loss of flexibility to seek alternative supply sources</td>
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<tr>
<td>- Reduction in labor costs</td>
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</table>
CF: Indian scenario

- **Opportunities**
  - Changing food basket in favor of high-value fresh as well as processed foods
  - Increasing demand for food safety and quality
  - Amendment of the APMC Act
  - Entry of big players (Reliance, Bharti, Tatas, Mahendras, RPG, Pantaloon, ITC)
  - A number of commodities are now under contract

- **But, there are apprehensions**
  - Unequal partnership; Monopsony, Monopoly, Manipulation
  - Exclusion of smallholders (high transaction and collection costs, lack of quality compliance)
  - Commercialization versus household food security
Evaluation of some CF cases

- **Dairy**: Nestle India Limited - direct and intermediate CF
- **Poultry**: Vekateshwara Hatcheries Limited - direct CF
- **Vegetables**: SAFAL (Mother Dairy Fruits and Vegetables Limited) - producers’ associations
Dairy : Nestle India

- **Early 20th century**: import of condensed milk and infant food
- **Post independence industrial protection policies**
  - leave a promising market or start own production
  - Preferred own production
  - Moga, Punjab
  - 1961 : 511 kg/day
  - Problems in collection: semi-arid climate, lack of irrigation, fodder problem, social taboos

- **Agricultural services unit**
  - Awareness of the benefits of commercial production
  - Credit for tube-well, and purchase of animal
  - Provision of veterinary and agronomic services, cattle feed, medicine, etc.
Expanding business through CF

![Bar chart showing suppliers and milk collected over the years 1970 to 2001. The chart compares the number of suppliers and the amount of milk collected in millions of kilograms for each year.]
CF in dairy: Some success factors

- **Types of contract**
  - Producer-agent/facilitator-firm
    - For small producers; reduce transaction cost, spreads risk
  - Producer-firm: large producers

- **Screening of partners/agents**
  - Space for milk collection, labour, own dairy animals, literate, apolitical (agent)

- **Responsibilities of the agent**
  - motivate, and organize milk collection, facilitate distribution of inputs, services and payments
  - 2% of the value of milk collected

- Contract is written, 1-3 years, renewable, terminated (moral hazards, irregular supply, partisan, non-payment)
- Provision of machines and equipments (milk coolers, water geyser and milk testers, weighing machines)
- Timely milk collection from agreed pick points
- Provision of inputs (cattle feed, medicines, mineral mixture, fodder seed) at market prices at door-step
- Provision of technology (crossbred cows - artificial semen, milking machines)
- Free veterinary services, and training in dairy management
- Transparency in pricing (Fat and SNF), weighing, recording (passbooks)
- Timely payment - every fortnight
- Incentives for quality, price premium, yield competition
- Effective monitoring (21 dairy routes) - collect demand for inputs and services, dispute resolution
- Mutual trust
## Economics of Contract Milk Production

<table>
<thead>
<tr>
<th></th>
<th>Contract</th>
<th>Independent</th>
<th>% difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Milk yield (kg)</td>
<td>11.9</td>
<td>11.4</td>
<td>4.4</td>
</tr>
<tr>
<td>Production cost (Rs/t)</td>
<td>5586</td>
<td>5782</td>
<td>-2.5</td>
</tr>
<tr>
<td>Transaction cost and marketing (Rs/t)</td>
<td>100</td>
<td>1442</td>
<td>-93.1***</td>
</tr>
<tr>
<td>Total cost (Rs/t)</td>
<td>5686</td>
<td>7170</td>
<td>-20.7***</td>
</tr>
<tr>
<td>Price (Rs/t)</td>
<td>9337</td>
<td>8991</td>
<td>3.8</td>
</tr>
<tr>
<td>Net revenue (Rs/t)</td>
<td>3651</td>
<td>1821</td>
<td>100.5***</td>
</tr>
</tbody>
</table>
Milk procurement per supplier (kg/annum)
CF in Broiler Production

- High production and price risk
- Outbreak of disease (mid 1990s)
  - Closure of many small poultry units
  - Adversely affected hatcheries and feed industry
- Aggressive promotion of contract farming
  - (40% broiler production is under contract) with Tamilnadu, Andhra Pradesh, Karnataka and Maharashtra as the leading states
CF in Broiler: some success factors

- Selection of partners
  - Closed units having production infrastructure
  - No poultry related business activities
  - Some labor of their own
  - Written agreement for one year, can be terminated (moral hazards, poor production efficiency/management)

- Share bulk of the cost by providing chicks, feed, medicines, vaccines (80-90% cost) – interest free credit

- Provides veterinary services

- Prices: fixed growing charges- No market/price risk

- Share production risk

- Incentives for higher efficiency, and higher market prices

- Strict monitoring of the contract

- VH has an integrated value chain
  - Hatcheries, feed, vaccines/medicines
  - Poultry processing facilities
  - Retail chain for fresh and processed products
# Economics of broiler production

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<tr>
<td>Transaction and marketing cost (Rs/t)</td>
<td>38</td>
<td>90</td>
<td>58</td>
</tr>
<tr>
<td>Net revenue (Rs/t)</td>
<td>2255</td>
<td>2003</td>
<td>13</td>
</tr>
<tr>
<td>CV across production cycles (%)</td>
<td>3.4</td>
<td>69.5</td>
<td></td>
</tr>
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</table>
Price risk (Rs/kg) - 2001-02
CF: Vegetables

- SAFAL (now MDFVL)- an integrated supply chain- 1988 (i) to cater to the growing demand for fruits and vegetables in Delhi Metro, and (ii) adequate returns to producers.

  Farmers-Producer’ Associations-SAFAL complex- SAFAL retail outlets- Consumers

- Encourages farmers to form associations
  - Highly perishable commodities
  - Less perishable commodities
CF in vegetables: some success factors

- Coordination of demand and supply
  - Advance estimates of demand, and quota allocation for PAs
  - The PA with assistance from the firm decides on the land to be put under different commodities
  - For farmers- PA decides who will produce and how much?
- Assured off-take of quota
- In excess demand- non-members also supply
- Technical guidance
  - Crop calendar (regular supply)
  - Free extension services
  - Training in crop management (food safety :IPM)
  - Grading
- Input supplies- critical inputs, panel of reputed input dealers
- Timely payment
• Pricing – modal price in Delhi market +
  premium for quality
• Dispute settlement - mutual
• Mechanical grading at SAFAL complex
• Own transport arrangements for delivery to
  retail outlets
• Transparency in retail prices
### Economics of contract spinach production

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<tr>
<td>Yield (t/ha)</td>
<td>8.6</td>
<td>8.3</td>
<td>4.0</td>
</tr>
<tr>
<td>Production cost (Rs/t)</td>
<td>1485</td>
<td>1630</td>
<td>-8.9</td>
</tr>
<tr>
<td>Transaction and marketing cost (Rs/t)</td>
<td>35</td>
<td>437</td>
<td>-92</td>
</tr>
<tr>
<td>Total cost (Rs/t)</td>
<td>1520</td>
<td>2067</td>
<td>-26.5</td>
</tr>
<tr>
<td>Price (Rs/t)</td>
<td>3311</td>
<td>3074</td>
<td>7.7</td>
</tr>
<tr>
<td>Net revenue (Rs/t)</td>
<td>1791</td>
<td>1007</td>
<td>77.9</td>
</tr>
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Economics of contract potato production in Punjab (calculated from Kumar 2006)

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<tbody>
<tr>
<td>Yield (t/ha)</td>
<td>25.4</td>
<td>22.0</td>
<td>16</td>
</tr>
<tr>
<td>Total cost (Rs/t)</td>
<td>1220</td>
<td>745</td>
<td>63</td>
</tr>
<tr>
<td>Profit (Rs/t)</td>
<td>2440</td>
<td>1005</td>
<td>143</td>
</tr>
<tr>
<td>Price (Rs/t)</td>
<td>3650</td>
<td>2020</td>
<td>31</td>
</tr>
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Smallholder participation in CF

- Smallholders: small marketable surplus, high marketing and transaction costs
- Dairy
  - $\leq 5$ kg milk/day = 42%
  - $\leq 5$ in-milk animals = 56%
- Broilers
  - $\leq 5000$ chicks = 32%
- Vegetables
  - All ($\leq 2$ha) = 37%
  - Gherkin in Karnataka = 51% (Erappa 2006)
- All crops in Punjab ($\leq 2$ha) = 15% (Kumar 2006)
Share of smallholders in production of high-value commodities

- Sheep and goats: 77.8%
- Dairy animals: 72.7%
- Vegetable area: 61%
- Fruit area: 51.9%
- Operated area: 44.2%
Figure 2: Percent area under cereals on different farm categories, 1998
Water requirement (liters/kg)
Lessons Learnt

- An assured off take of produce and at remunerative prices
- Reduction in transaction and marketing costs
- Risk sharing (price and production)
- Provision of inputs, services and technology
- Incentives (quality, price premium, low cost)
- Timely payment
- Good communication/monitoring
- Long term commitment
- Mutual trust
- Credit for capital intensive commodities
- Insurance (risky commodities)
Role of the Government

- Promote competition (APMC Act)
- Promote producers’ association/SHG
  - Improve bargaining (monopsony and monopoly)
  - Reduce transaction costs
  - Involve smallholders
- Provide credit and insurance
- Effective mechanism for dispute settlement
- Incentives to agro-processing industry to strengthen backward and forward linkages
  - Market fee, taxes on processed foods
- Strengthening of the public infrastructure (road, electricity, communication, etc.)
Thank you