Appendix- I

A) Abbreviations.

1. APMC - Agricultural Produce Market Committee
2. APP- Area Production and Productivity.
3. APEDA – Agricultural Processed Food products Export Develop Authority
4. BA - Benzyl Adenine.
5. BCR - Benefit Cost Ratio
6. CDF - Cob-Douglas Function.
7. DCA - Double Cropped Area
8. DOA – Department of Agriculture
10. FC - Fixed cost
11. FYM - Farm Yard Manure
12. GA - Gibberellic Acid.
13. GR - Growth Rate
14. GCA - Gross Cropped Area
15. HYV - High Yielding Varieties
16. Ha- Hectare
17. ICMR - Indian Council of Medical Research
18. IPM - Integrated Pest Management
19. IRR - Internal Rate of Return.
20. ICAR - Indian Council of Agricultural Research
22. MAPMRA- Maharashtra Agricultural Produce Marketing Regulation Act
23. MSGGA – Maharashtra State Grape Growers Association
24. NAA - Napthal Acitic Acid.
25. NCA - Net Cropped Area
26. NHB - National Horticultural Board
27. NHM – National Horticulture Mission
28. NPV - Net Present Value
29. NRC - National Research Center
30. PM - Powdery Mildew
31. PPM - Parts Per Million.
32. PBC - Pay Back Period
33. SAU - State Agriculture Universities
34. TSS - Total Soluble Solids.
35. VC - Variable cost

************
B. Websites Referred.

1. www.agmarknet.nic.in
2. www.agricoop.nic.in
3. www.nhb.gov.in
4. www.ncdc.nic.in
5. www.apeda.com
6. www.mahagrapes.com
7. www.icar.org.in
8. www.fao.org
9. www.agriculturalinformation.com
10. www.kisan.net
11. www.nic.in/eximpol
12. www.nhm.nic.in
13. www.mofpi.nic.in
14. www.krishiseva.com
15. www.agriproductsinindia.com
16. www.agricoop.nic.in
17. www.mahaagri.nic.in

*******
Appendix- II

A) Reference Books


27. Rahudkar B.V., Bagayati Phalzade- Draksha, prestige Publication, Pune.


**********
B) Journals


**********
C) Reports, Workshops and Paper presentation


**********
D) Thesis


   *M.Sc. (Agri.) Thesis*, University of Agricultural Sciences, Dharwad.


*************
E) News Papers

1. Agrowon
2. Sakal
3. Loksatta
4. Pudhari
5. Lokmat
6. Maharashtra Times
7. Indian Express
8. Times of India.

F) Periodicals

2. Shetkari, Commissioner of Agriculture, Pune.
5. Drakhavruta, Maharashtra State Grape Growers Association, Pune.
6. Sharad Krishi, CITA, Pune.
8. Agricultural Marketing, Directoret of Marketing and Inespection, Nagpur.
11. Indian Journal of Agricultural Economics by Indian Society of Agricultural Economics, Mumbai.

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Appendix- III

A) Questionnaire (For farmers)

“A Study of Production and Marketing Management of Grapes in Pune District and Strategies for Increasing Productivity and Profitability”

1. Name of the Grape grower: 
   Village: Age: Occupation: 
   Education: Tal: Dist.: 

2. Family information

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Name</th>
<th>Relationship with head of family</th>
<th>Age in Years</th>
<th>Education</th>
<th>Occupation</th>
<th>Income (Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
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<td></td>
</tr>
</tbody>
</table>

3. Cropping pattern

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Season</th>
<th>Crop</th>
<th>Variety</th>
<th>Area (ha)</th>
<th>Total production (Qtls.)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Irrigated</td>
<td>Unirrigated</td>
</tr>
<tr>
<td>1.</td>
<td>Kharif</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Rabi</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Summer</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Annual</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Pernnial</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4. Information about growers physical property
   a. Information about land holding

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Soil type</th>
<th>Area (ha)</th>
<th>Land revenue</th>
<th>Present value (Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Irrigated</td>
<td>Unirrigated</td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
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</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### b. Other property

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Property</th>
<th>Number</th>
<th>Purchase year</th>
<th>Purchase cost (Rs.)</th>
<th>Repairing charges (Rs.)</th>
<th>Remaining life</th>
<th>Present value (Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>House</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Farm building</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>3</td>
<td>Well</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>4</td>
<td>Electric motor</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Drip system</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>6</td>
<td>Tractor</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>7</td>
<td>Spray pump and duster</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Fodder cutting machine</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Plough</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Harrow</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Bullock cart</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Pipe line</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Livestock</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cow</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buffalo</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bullocks</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Others</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 5. Cost of establishment and cultivation

- Area:
- Year of planting:
- Training system type:
- Variety:
- Planting distance:
- Number of plants
<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Operation</th>
<th>Materials</th>
<th>Labour</th>
<th>Cost</th>
<th>Total cost (Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Name</td>
<td>Male</td>
<td>Female</td>
<td>bullock</td>
</tr>
<tr>
<td>1.</td>
<td>Ploughing</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Harrowing</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Layout</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Trenches</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Grafts</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Planting</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>Gap filling</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>Supporting structure</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>Growth management</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>Manure</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>Fertilizer</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>Micronutrients</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td>Inter cultivation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14.</td>
<td>Pest and disease</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15.</td>
<td>Irrigation water Manage.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16.</td>
<td>Grand Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6. **Details of Grape cultivation**

<table>
<thead>
<tr>
<th>Sr.No.</th>
<th>Survey Plot No.</th>
<th>Area (Hector)</th>
<th>Variety</th>
<th>Planting Distance.</th>
<th>Irrigation method</th>
<th>Number of trees</th>
<th>Year of planting</th>
</tr>
</thead>
</table>

8. **Production and disposal / sales of grapes**

<table>
<thead>
<tr>
<th>Sr.No.</th>
<th>Mode</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Quantity sold</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Quantity used for consumption</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Quantity given on gratis</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Quantity used for processing</td>
<td></td>
</tr>
</tbody>
</table>
Detail information about management practices given by the farmer.

1. Source of inspiration:

2. Source of information:

3. Reasons of selecting grape crops:

4. Factors considered for decision

5. Soil selection:
   As per recommendation [Yes/No].

6. Wind breaks planted [Yes/No].

7. Planting layout
   a. Planting distance: As per variety
   b. Planting method used: a) Trench method b) Peat method

8. Plantation management
   a. Variety grown:
   b. Rootstock used:
      i) Own rootstock
      ii) Purchase Rootstock
   c. Training system used

9. Financial management
   a. Source for medium and long term loan
   b. Source for crop loan

10. Labour management
    a. Permanent labour used
    b. Daily paid labour used
    c. Seasonal labour
    d. Contract labour

11. Irrigation method
    a. Drip irrigation
b. Traditional methods
c. Other practices
d. Type of mulching practice followed

12. Nutrition management
   a. As per recommended dose
   b. Above recommended dose
   c. Below recommended dose

13. Types of fertilizer used
   a. Organic manures
   b. Granular fertilizers
   c. Liquid fertilizer
   d. Micronutrients
   e. Integrated nutrient management
   f. Method of application: Single/Split dose

14. Growth regulators
   a. As per recommended dose
   b. Above recommended dose
   c. Below recommended dose

15. Method of growth regulators application
   a. Dipping
   b. Spraying
   c. 1 Dipping + 3 spraying

16. Pest and disease management
   a. Preventive measures
   b. Curative measures
   c. IPM
   d. Other chemicals used

17. Criteria for preventive measures
   a. Climate change
   b. Pest schedule
c. Spraying schedule

d. Sprouting chemicals used: Bordeaux paste/Ready made

18. Mechanization  

19. Preventive measure towards natural calamities

20. Cane development: Super / Sub cane

21. Cane testing followed

22. Pruning time: Early /timely/late

23. Girdling followed

24. Thinning practices: Manual/Natural

25. Harvesting practices

a. Period first (Early-December-January)

b. Period second (Regular-February-March)

c. Criteria for harvesting

   Days after pruning/colour size development/sugar per cent

d. Harvesting time: Single/more than once

26. Post harvest practices

a. Grading: Cleanin/Colour wise/size wise

   *Do you grade the produce?  

   * Name of different grades and quantity produced

   i. qtls. ii. qtls. iii. qtls.

   * Items taken to consideration while grading

   i. Berry size/colour   ii. Size of bunch   iii. Place of market

b. Packing: According to quality/market/demand/cost of packing material
<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Size of packing</th>
<th>Place of market</th>
<th>Quantity packed</th>
<th>Cost of packing</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>20 kg crate</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>5 kg box</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>2 kg box</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

c. Use of other packing materials

Grape guard paper/Lining material/Labels and brand names

27. Mode of Transportation

i) Road  a) Own  b) Hired  ii) Railway  iii) Airways

28. Selection of place market: According to price/cost and easiness in marketing

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Place of market</th>
<th>Marketing channel</th>
<th>Grade</th>
<th>Quantity qtls.</th>
<th>Rate/pack</th>
<th>Gross return (Rs.)</th>
<th>Total cost (Rs.)</th>
<th>Net returns (Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Local</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>With in state</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Outside state</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

2 Marketing cost of grapes

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Place of marketing and channel</th>
<th>Quantity sold (qtls.)</th>
<th>Grading cost (Rs.)</th>
<th>Packing cost (Rs.)</th>
<th>Transport cost (Rs.)</th>
<th>Market expenses (Rs.)</th>
<th>Total marketing cost</th>
</tr>
</thead>
</table>

Selling of grapes

a. In which market you have got higher price?
   Local/State/Outside state

b. Do you sell the produce through co-operative Sangh? Yes/No

c. Do you prepare raisin from grape? Yes/No

1. Quantity of produce used for raisin making Qtls.
2. Total cost for preparing raisin Rs/qtls.
II) Questionnaire for

A) Wholesaler  B) Retailer  C) Commission agent  D) Pre harvest contractor

1. Name: Age:
   Education:
2. How many years your are in this occupation?
3. Jurisdiction
4. How many grape growers you have contracted during this season?
5. During which months you go for contracts?
6. Terms and conditions of contacts
   a. Price :
   b. Harvesting :
   c. Grading :
   d. Packing :
   e. Transportation :
   f. Other :
7. Do you give the advance to the grape growers?
8. Which variety you prefer?
9. Total quantity of grapes marketed
10. What facilities you have provided to the grape growers?
11. Marketing of grapes
   a. Purchase of grapes Rs/kg
   b. Total cost for grading, packing, transportation and storage Rs/kg
   c. Selling price Rs/kg
   d. Place of market Rs/kg
12. Annual average price of grapes 1. This year Rs/kg
    2. Last 4 year
13. Total commission from selling of grapes Rs.