VIT 196

Feasibility Study

Outline

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Specific information needed for feasibility study:

A. Location

1. Choose an area for developing a new vineyard.
2. Map out the exact location – maps and sketches are encouraged
3. Is this a new vineyard site, re-planting or crop switch? Implications?

B. Topography

1. Total area planned for planting
2. Number of hectares of flat land to be planted
3. Number of hectares of rolling slopes to be planted
4. Hills or mountains and the degree of slopes that are plantable
5. Hectares to steep of grade to be planted
6. Indicate land orientation to the sun
7. Elevation range above sea level
8. Location of all permanent fixtures, including water pumps, power lines, roads and other boundaries
9. Frost drainage patterns if applicable
10. Type of irrigation system required
11. Vineyard row direction
12. Preliminary grape variety choices

C. Native flora and fauna

1. The kinds of vegetation in the area including types of trees and density if applicable
2. Past history of agriculture in the specific site including tree removal
3. Original photographs or aerial maps will be useful
4. Shrubs and brush presence
5. Native grass cover if any

D. Climatological data

1. Temperature region designation in terms of degree days in heat summation units for at least five years
2. Monthly temperature data for at least five years showing daily mean temperature, lowest and highest temperature.
3. Frost hazard if applicable
4. Winter freeze if applicable
5. Sunburn – days above 38 C
6. Precipitation – annual rainfall total and monthly totals, snowfall, hail, fog and humidity
7. Sunlight hours – total and monthly to determine effective radiance
8. Wind – prevailing direction, velocity and wind chill factor
9. Other climatic influences like sand storms (in other countries hurricanes and cyclones have an influence on agriculture)
10. Length of the growing season where temperature is above 10 C

E. Soil limitations regarding grape growing

1. Soil series and soil type
2. Soil maps
3. Take soil samples from backhoe pits every 30 cm up to 1.5 m.
4. Soil analysis – Send samples to a competent lab for the following analysis:
   - Soil texture
   - Salinity
   - pH
   - SAR (Sodium absorption ratio)
   - ESP (Exchangeable Sodium %)
   - Soil mineral and nutrient analysis

F. Water quality, quantity and availability

1. Location of the water – well water, reservoirs, desalinated water
2. Water analysis to determine quality for grape growing
3. Type of irrigation system – flood, sprinkler or drip system

G. Soil pests and diseases

1. Analyze the soil for the following pests and diseases:
   - Phylloxera (Insect that feeds on grapevine roots)
   - Crown gall
   - Nematodes (Root knot, lesion, dagger and citrus nematodes)

H. Biological factors affecting the area

1. Large animal life if applicable
2. Birds
3. Above-ground insects and diseases
4. Weeds (Perennial, Annual and Noxicous)
I. Planting stock and variety consideration

1. Source of planting stock – origin
2. Rootstock choice
3. Variety choices – green seedless grapes or possible red and black seedless grapes
   - Variety growth habits
   - Production in tonnage
   - Harvest period
   - Pruning and training
   - Labor intensity of variety
   - If raisins are considered, mechanical options are available
   - Use of final product (Local or export market)

J. Predicted marketability of the crop

1. Current market price for green grapes (local and export)
2. Structure of the market
3. Past and future market trends
4. Hectares planted in other competitive areas
5. Planting trends based on future market demand

K. Vineyard development costs and financial projections

1. Material costs (Irrigation lines, trellis systems)
2. Soil preparation costs
3. Labor costs for first three years and then there-after
4. Cold storage units and packing facilities, especially for export

L. Vineyard equipment list and approximate costs

1. Equipment needed (tractors, sprayers, mechanical weeding etc.)
2. Smaller equipment like pruning shears and thinning clippers