

Dharwad ALPHONSO: Decision Dilemma analysis

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Case Study

Prof. Shilpa Revankar, KUD MTA, Dharwad written for case situation for class discussion. The author has morphed certain names and other identifying information to protect confidentiality.

In November 2020, Narayan, the oldest member of the family who owned the Alphonso farms in Navalur Dharwad, had to decide: Should the family lease the farm to a merchant immediately, or keep the farm to harvest themselves despite the risks of rainy season? An unseasonable rain during the flowering stage could be harmful, damaging at least 35% of the crop and often ruining the entire crop. However, moderate rains at the time of the fruit's maturity could improve the fruit size and quality.

The Navalur Farm

The Navalur Alphonso farm is in the Dharwad district of Karnataka, a state in southern India. The district usually experienced four seasons – the summer from March to May, followed by a regular monsoon season with plentiful of rainfall from June to September, post-monsoon season during the months of October and December, and winter season from January to February. However, delayed monsoons could lead to spells of heavy rain until December. The farm produced Alphonso mangoes and Guava, the premium mango cultivator that had export potential. The Navalur Farm is spread over 60 Acres of land. On average, 1 ton of mangoes was harvested from each acre of land.

Mangoes were graded according to their weight: A grade for mangoes weighing 100 to 150 grams, grade B for mangoes weighing 150 to 200 grams, grade C for mangoes weighing 200 to 250 grams, and grade D for mangoes weighing more than 250 grams. Mangoes are packed in a box made of wood or perforated cardboard and cushioned with papers to protect the fruit from damage. In general, a box contained two dozen of fruit or about 10 kilograms.

Alphonso Cultivation

Alphonso mangoes were known as the “King of Mangoes” because of their sweet taste, golden-coloured creamy flesh, and fruity aroma.

Alphonso trees were planted nine meters apart. Every acre of land held, on average, 100 to 110 trees. For the first three to four years of growth, it was essential to train the mango trees with regular trimming, which involved removing the shoots close to the ground. Once established, Alphonso trees needed limited annual trimming. Well-nourished Alphonso mango trees usually started bearing fruit within three years of planting. The trees were medium height, upright, and spreading.

Flowering in Alphonso mango trees takes place from December to January. Unseasonable rain was harmful if it occurred during the flowering period. Another threat was deep frost, which could occur between January and February. To protect the trees from frost, thatches made of paddy straw were erected to block the winds. The southern side of the thatches was kept open for sunshine and ventilation. Soil moisture was maintained with irrigation, and dry grass and weeds were burned in open areas of the farm to increase the air temperature.

Alphonso trees that were bearing fruit were irrigated one week before flowering and then again after the fruit set. To maintain soil moisture, the trees might be irrigated monthly during the winter season, and then every two weeks from April to October.

The trees' requirements for manure and fertilization varied according to the soil type. In general, Alphonso mango trees needed nutrition based on their age, canopy, and productivity. The most suitable temperature for growing Alphonso mangoes was 22 to 27 °C. Alphonso fruit ripened during June and July.

Narayan's Decision

Based on the weather report released by the Regional Meteorological Centre, Narayan concluded there was a 50/50 chance that unseasonable rain would hit the north Karnataka particularly Dharwad district. Narayan had already invested the equivalent of Rs. 45,00,000 to maintain the farm. If rain hit the region, the mangoes would suffer at least a 40% loss. At the best, Narayan would earn Rs. 35 lakhs in revenues, which meant an immediate loss of Rs. 10 lakhs on his investment. But, if the region was not hit by rain, the farm would earn Rs. 70 lakhs revenues, which meant a profit of Rs. 25 lakhs. Narayan had yet one other option. A fruit merchant offered to lease the farm from December to September for Rs. 48,00,000. This offer was tempting because the lease would generate a return of Rs. 3 lakhs on Narayan's initial investment without incurring the risk of a loss of Rs. 10 lakhs.

A few days earlier, Narayan had learned about a climatology firm that predicted the probability of rain. However, the firm charged a fee of Rs. 35,000. Narayan spoke to the firm's existing clients, seeking information about the accuracy of the firm's past judgments. He found that in 70% of the cases when the Dharwad region was hit by rain, the firm had also predicted rain. However, when the firm predicted rain, there was a 20% chance that the rain did not come.

Narayan needed to decide whether it was worth spending Rs. 35,000 to get information from the climatology firm before deciding whether the family should lease the farm to the merchant immediately or retain the farm until the harvest.

1. Evaluate alternative when making decision.
2. Will Narayan Spend on climatology?
3. Will the farm owner lease out the farm?
4. How much money Narayan makes if he does not purchase climatology information?