The real net worth of representative farms in the Coastal zone (Tanga and Dar Es Salaam) increased under the current technology. Again in the Dar Es Salaam farm still had a less negative real net worth with new technology. The percentage changes ranged between 26.6 to 37.1 percent. The Kilimanjaro farm was projected to have a decrease in real net worth of 40.1% with new technologies.

Producer profitability, NPV, and RNW for the Kilimanjaro farm declined with the adoption of the new technology. A major problem faced by the producer is the need to purchase a significant portion of the herd’s feed off the farm which combined with the relatively low price for milk in Kilmanjaro lead to the net decline in the projected net real worth over the ten-year period.

The analysis does not predict a positive net farm income for the the Dar Es Salaam farm. Herd size relative to land holding was the largest of the three Tanzanian farms analyzed which raised feed costs significantly. The farm did have one advantage in that Dar Es Salaam has the highest milk price in Tanzania due to its high population density (MOAC. et al.). This contributes to the farm’s net present value and real net worth though negative becomes less negative with the adoption of the new technology. The improvement in revenues were significant but not sufficient to offset the increased costs.

The representative farm in the Dar Es Salaam zone in Tanzania had a zero probability of obtaining a positive net cash farm income under both scenarios. The Kilimanjaro farm experienced a decline in the probability of obtaining a positive net cash farm income from 0.6 under traditional technology to 0.20 under the improved technology. The Tanga farm had a 100% probability of obtaining a positive net cash farm income under both technology scenarios.

### 3.4 Regional Economic Differences in Smallholder Dairy Technology Impact

In general, the representative farms in all the dairy zones in Kenya experienced improvements in NPV, net cash farm income and RNW through adoption of the improved dairy technologies. Only the representative farm in the coffee zone continued to exhibit relatively low probability of economic survival under the improved technology scenario. The improved dairy technologies if adopted in Uganda would appear to be most economically successful in the Kampala dairy zone for both the fenced and zero grazing representative farms. The Highland zero grazing farm would likely be the least affected by adoption of the improved technology. NPV, net cash farm income, and RNW are little affected by the improved technology as compared to the traditional technology.

In these analyses, only the Tanga representative farm in Tanzania would experience economic success through adoption of the improved dairy technologies. NPV, net cash farm income and RNW decline for the Kilimanjaro representative farm with adoption of the improved dairy technology. Hence, little incentive exists to adopt. Although values for these economic variables increase for the representative farm in the Dar Es Salaam zone, mean values remain negative, resulting in little chance for economic success on this farm even with adoption of the improved dairy technology. The probabilities of obtaining positive NPV, net cash farm income and RNW on farms define the dairy zones in each county where improvements in dairy technology are likely to foster technology adoption and expansion of the smallholder dairy industry.