MEMORANDUM

TO: BOARD OF ACME CORPORATION

FROM: SIQI ZHANG, HUIBO JIA, QIYU YE, MARK RUSSEFF

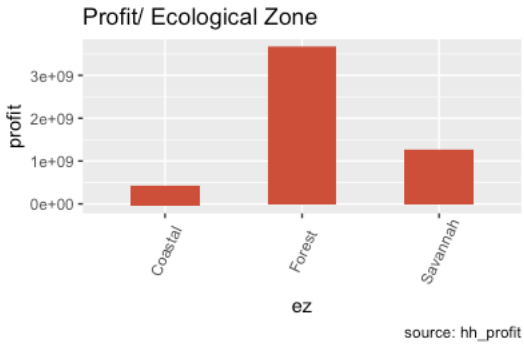
SUBJECT: EXPLORITORY DATA ANALYSIS OF AGRICULTURAL PROFIT AND MARKET CONDITIONS IN GHANA.

DATE: DECEMBER 7, 2018

Our team has completed an initial data analysis of the agricultural market in Ghana in order to determine the effect of certain inputs on agricultural profit. This memo will provide an overview of our findings, for further details please reference the accompanying statistical analysis.

The analysis has found that there is no evidence that educational attainment has any effect on agricultural profit. This does not mean that there is no effect, only that further analysis of educational attainment may be required to determine if a relationship exists. Our data analysis did, however, show that there are some characteristics that do have a determinable effect on agricultural profit per acre:

Ecological Zone – There are three distinct ecological zones represented in the data: coastal, savannah, and forest. The models show that there is a notable relationship between ecological zone and agricultural profit per acre. The ecological zone with the largest effect holding all other inputs constant is the forest zone, where you can expect to see an agricultural profit of approximately 1,100,000 Cedi[1] more than in the coastal zone. The savannah zone falls in between at approximately 600,00 Cedi more. These findings suggest that the coastal zones of Ghana, likely due to a high population density, are suboptimal for maximizing agricultural profit.

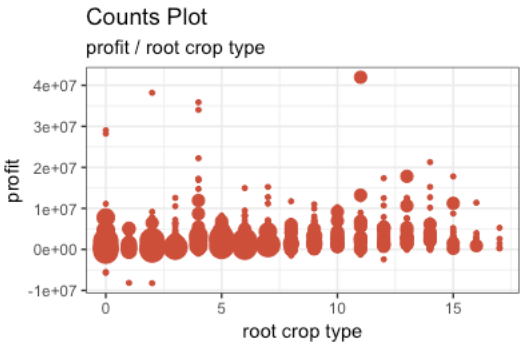


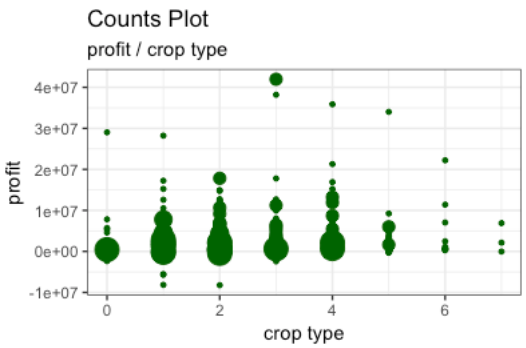
Market – Whether or not a household has access to a public market has a significant effect on their level of agricultural profit. If a household has access to a public market our models suggest that they would see a decrease in profit per acre of roughly 100,000 Cedi holding all other inputs constant. This finding confirms that rural populations with a lower population density are significantly more reliant on agriculture for both a means of household profit and consumption.

[1] All money amounts are in the local currency, Cedi. In 1998, the official exchange rate was 2,313 Cedi = 1.0 USD

Crop Selection – We specified a model of all agricultural crops in order to determine the variety of crops that were the largest determinant of household agricultural profit per acre. The majority of crops that had a significant positive effect on agricultural profit were root crops, including Onions, Cocoyam, Cassava and Plantain. Although it should be noted that root crops are also more susceptible to negative effects on agricultural profit, we found evidence that both Leafy vegetables and Eggplant lower household agricultural profit per unit. The plots below show, for illustrative purpose, that there are very different profit profiles for each crop type. So emphasizing careful crop selection should be an important consideration moving forward.

It is our team's recommendation that ACME Corp. focus their sales efforts on locations that are rural, far from high population density areas and in a forest or savannah ecological zone. Within





those geographic areas, it would be recommended that the sales force first approach farmers who farm primarily the root vegetables cited above. It is also worth noting that while this analysis can give us some information about the effect of certain inputs on agricultural profit it is by no means exhaustive; some further analysis may be required.