**Project Objectives**

An Agricultural sector wants to get insights and recommendations to improve their crop production and with this analysis it will be able to make driven decision on what is economically best for the sector and productive revenue.

**Key Questions**:

* How soil type and season affects production.
* What is the best irrigation type for a soil type.
* Best farming season with given inputs like fertilizer, pesticides, water and irrigation type.
* What crop type produced more
* How farming inputs affects crop type and total produced.
* What farm area produce more.
* Best irrigation type for a season

Dataset was gotten from kaggle and was cleaned through Power BI. There was no missing values and it has 50 rows and 10 columns.

**Findings:**

* Loamy soil produced more during the Zaid season.
* Cotton consumed more farm area and produced less.
* Tomato produced more at the end of the final production.
* There is an insignificant relationship between irrigation type and soil type.
* Inputs are not sufficiently put to use.
* Underutilization of farm area.
* Inefficient yield despite high input.
* Silty soil type is best for flood and rain fed irrigation type.
* Sandy soil type is best for drip irrigation.
* Loamy soil type is best use for manual irrigation type.
* Clay soil type is best for sprinkler irrigation type.

**Problems**:

* Inefficient input usage: over use of resources without corresponding yield.
* Underutilization of farm area: more farm area was use for less productive crop.
* Incompatibility between irrigation methods and soil types reduced efficiency of production.
* Over use of some inputs could harm the soil and ecosystem.
* There is inefficient practice which is causing high cost on with no corresponding increase in revenue.

**Recommendations:**

Seminars and workshops should be organized for farmers to help them more insight on how to use and utilize farming equipment and products.

Farmers should have planting schedules base on seasonal performance, with this they will be able to farm a crop type that have a significant relationship with a season.

The use of drip, sprinkler and rain fed for irrigation method for water intensive crops, this helps reduce the quantity of water use on the farm area.

Improve soil health by using organic products such as manure which is very cheap and easy to get, it will help reduce cost.

Using soil rotation helps improves fertility of soil, erosion and optimize resource usage.