Predicting Agricultural Output

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Problem Area

How can the total agricultural production be predicted?

What factors can improve agricultural production and by how much?

These questions will help governments decide how to allocate spending to improve agricultural yield.

Data

We will be getting our data from FAOSTAT, the UN's agricultural organization

Data is freely available at www.fao.org

- Pesticides
- Land Usage
- Machinery

Analysis

We plan to create a regression model for the total value of the agriculture produced in a year

Create a visualization displaying the effect of each variable.

Several Methods:

- Linear Regression (maybe with re-expressions)
- Regression Tree
- Random Forest

Application

We plan to use the model for two purposes:

1. Predict agricultural output from several variables
2. Understand the effect of each variable on the output

Other lurking factors such as wealth and land quality may have significant factors.

We hope to control for these variables. This can be done by including them in the regression.

Outcome

- Show statistical significance of some predictors
- Find a confidence interval bounding the effect of a predictor

A good outcome would be finding that certain predictors have a large effect on agricultural output with high significance.