

# Advanced Agribusiness Management

Rodney Beard

February 27, 2017



# What is the course about?

Application of modern decision theory in the uncertain environment that the agricultural business operates. Planning, organizing, implementing, coordinating, and controlling problems associated with establishing an agricultural business, achieving firm growth, and operating the firm through time. Use of Jupyter notebooks (Stillwater: Excel) to perform production planning and analysis related to agricultural business operations with linear programming, simulations, and other tools. Analysis of the interaction of resources, prices and production alternatives.

- ▶ Course will be an applied management science course concentrating on applications to agribusiness and farm management.
- ▶ The course will build on techniques you learnt in farm and agribusiness management and in agricultural marketing
- ▶ We will begin with decision theory and agricultural decision analysis (this builds on some things we covered in finance last semester)
- ▶ To keep things focussed on application we will further develop your farm plans using FarmLogs, that we started in Farm and Agribusiness Management.

- ▶ As the course progresses we will move from the farm through the farm-gate and along the farm chain to the market.
- ▶ We will cover roughly 9 topics;
  1. Decision theory
  2. Optimization (Applications: feed-mix, crop rotation)
  3. Inventory management and control
  4. Scheduling

# Then after the mid-term

1. Supply-chain management
2. Facility location
3. Networks and transportation
4. Capital replacement
5. Strategic marketing

# Some examples of topics we will cover include

- ▶ Farm decisions under uncertainty
- ▶ Feed-mix and crop rotation decisions
- ▶ Inventory management for perishable goods
- ▶ Irrigation scheduling
- ▶ Commodity value chain analysis
- ▶ Stock and land auctions

Course is an advanced topics course so you will read more journal papers and present papers in class. We will make quite a bit of use of Jupyter and SciPy in this course to solve applied optimization problems. However we will also begin to move away from textbook theory problems to more realistic problems when applied to your individual "virtual farms". the aim is that you have a toolbox of techniques at your disposal at the end of the course that you can apply in real business situations.



As the course progresses I will be compiling the lecture materials and notes into a GitBook which will be published on-line and updated at regular intervals. Please give comments and feedbacks on the material as the intention is to use this as the textbook in future iterations of the course. A link will be given to you by week 3. Initially the notes in the GitBook will be very rough but they should be more detailed than slides. The GitBook will serve as a form of textbook for us.