**What is Agent-Based Modeling (ABM)?**

Agent-based modeling (ABM) is an approach that simulated the behavior of individual agents within a complex system. The agents can be any entity that exhibit behavior of decision-making processes, including people, animals, businesses or governments. ABM represents agents as autonomous, adaptive entities that interact with each other and their surrounding environment. The outcome of the model emerges from the interactions between the agents.

How to use ABM:

1. Model the Agents: Define the agents, including their behaviors, decision-making rules, and interactions with other agents and the environment.
2. Define the environment: The environment in which the agents operate, including the space and time, the resources and the rules governing the interactions.
3. Specify initial conditions: Starting conditions for each agent and the conditions of the environment.
4. Run and tune the simulation.

Applying to the Florida Citrus Supply Chain.

1. Create all necessary agents from stakeholder analysis. Each agent will be autonomous and react based on interactions also from stakeholder analysis.
   1. For example: A farmer agent decides how much water and fertilizer to use based on the weather conditions and the cost of inputs. We can give them ‘live’ data from the ‘Florida Automated Weather Network (FAWN).’
2. Define the environment where the agents will operate. Resources available, and rule that depends on those resources.
   1. For example: We have variables such as temperature, rainfall, hurricanes and transportation costs. Those will be dependent on historic data.
3. Simulate and tune.