

References

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Global Agricultural Systems: Simulating Reality

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Learning is better achieved when the topic is dynamic and the teaching method stimulates students. Teaching can be made more a science, and less an art if faculty are willing to put the onus of learning on students yet provide them with the opportunity to be creative. Simulation exercises aid faculty in stimulating students to learn because simulations combine "... the potential of being representative of some aspects of reality with the human tendency to engage in gaming" (Butts, 1975, p. 2).

This article illustrates the use of a simulation exercise which was designed to assist students in recognizing geo-political factors in global agricultural systems. It is a process-driven simulation which means the focus is on the means rather than the end. Students concentrate on the basic dynamics of the political process so that — as in reality — the simulation becomes an open-ended experience where the consequences of an action, or lack of action, lead to new situations to which students need to react. The dilemma for faculty is how to construct simulations that will be realistic without being too complicated or so simple that they are unrealistic. One possible solution is to use real information and situations but alter the presentation (Wilms and Steinbrink, 1971).

Global Agricultural Systems:

Agriculture is global. Climatic perturbations in the Soviet Union affect American wheat farmers. Surpluses of sugar on the world market can give headaches to beet and cane sugar farmers in the midwest, Louisiana and Hawaii. And, of course, a frost in Florida causes the price of orange juice to rise. Even on the local scene the law of supply and demand can make or break a truck farmer.

There are probably no other commodities that react so intimately to change in the system than those provided through agriculture. Students need to become aware of the linkages of agricultural systems and one strategy to accomplish this is the use of simulation. However, background noise (prior knowledge, perceptions, and attitudes) in a global simulation can be great and may overshadow the processes under study. When a place, person or event is mentioned, most

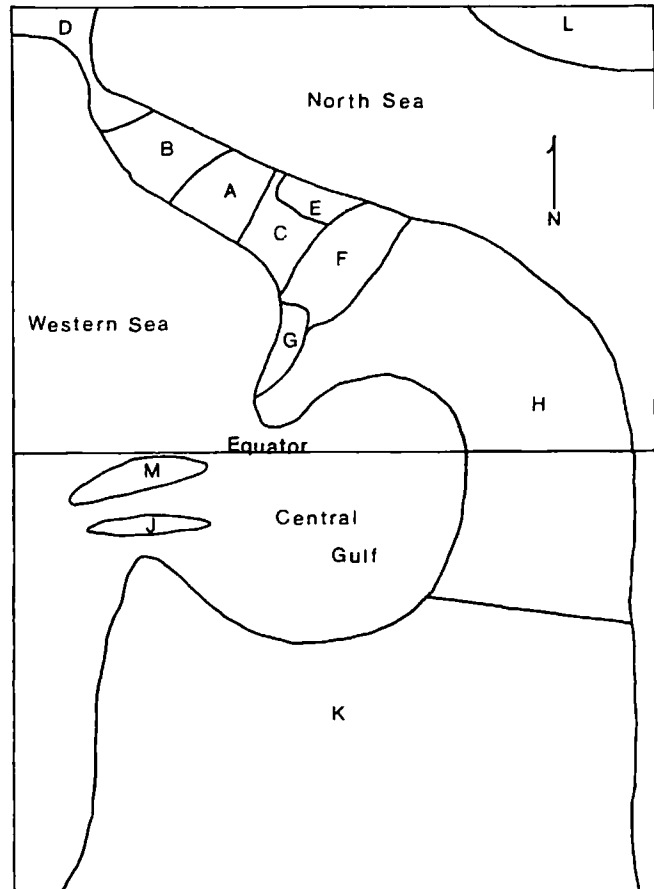


Figure 1. Global Agricultural Systems

people react one way or another. The reactions may range from friendly to indifferent to hostile. These reactions are background noise and may affect judgement. So, if we are to neutralize background noise and concentrate on the interactions of the global system, then we need to provide students with a sense of the make believe. However, if the exercise is going to illustrate valid processes, then it needs to be based on reality.

Figure 1 is an example of the type of map that can be used as a prop for a global agricultural systems simulation. A map provides a place image to the viewer and serves to focus attention on the simulation rather than on a real situation (Naughton, 1978). As such, it should be displayed as a wall map or on an overhead projector — if students receive it as a handout they will

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create background noise should they invert the map and recognize the region. If you turn the page upside down you should recognize that this is an approximation of the southern United States, Central America, and the Caribbean Basin.

Table 1 The Setting and Scenarios

Background Setting

1. Countries A, B, C, D, E, F, G, H, J, & M all grow the same export crops (primarily sugar cane, coffee, and bananas).
2. Primary importing countries are K & L.
3. Country A is on friendly terms with Country J.
4. Countries C, E, F, & K are not on good terms with Country A and may at times be openly hostile to Country J.
5. Neutral countries are B, D, G, H, L, & M.
6. Country A is a poor, primarily rural, agricultural nation. It has a plantation economy, Plantations are mostly owned or controlled by multi-national corporations based in Country K.

Scenarios

- #1 Most of the countries in the region grow the same tropical export crops and sell them primarily to K & L. Competition is great and one of the buyers (K) is not very friendly to Country A.
Because Country A is dependent on agricultural exports for revenue what should its relationships be with Countries K & J?
- #2 It has been suggested by the Minister of Agriculture that the plantations be nationalized in order to improve the life of the peasants and stop the outflow of capital to foreign owners.
What could be possible reactions other countries in the map area might have to this move? Should the government nationalize the plantations.
- #3 Country A nationalizes the plantations. Countries C, E, F, & K cease to have diplomatic and economic relations with Country A.
What are the government's options for remaining economically viable?

In the simulation using Figure 1, the class represents the cabinet Country A (in reality Nicaragua) and selects among themselves a prime minister and ministers of agriculture, foreign trade, defense, and whatever else the class wants. The actors play appropriate roles based on their perceptions of what these should be. The cabinet rules by majority with the prime minister as group leader and spokesman. Three scenarios are provided (Table 1), one at a time. The cabinet takes about 10 minutes debating each scenario and then announces a decision. Since the scenarios are sequential, the instructor is able to structure the simulation to assure some semblance to reality. Before introducing a new scenario the class should discuss the consequences of any actions which are proposed.

At the conclusion of the class the map is inverted and a discussion can be held on the real situation in Central America. While students may not be aware of all the nuances of the reality of Central America, they can get an appreciation for the processes which contribute to the position in which Nicaragua finds itself, regardless of any innate background noise

students may possess concerning that country's role in global geo-politics.

Conclusion:

Simulation provides a means for emphasizing or highlighting processes so that they can be observed. Complexity can be modelled so that students better appreciate how end-products or consequences have been achieved. The processes that result in the end-product are often not predictable but then, global agricultural systems are themselves often unpredictable. Perturbations caused by climate, politics, religion, prejudices, and any number of other events or people can result in change. Preparing students to interact with and observe these dynamic systems is a goal that can be reached to some extent by simulating the system. We will not necessarily provide answers for students but we can give them an understanding of the processes that go into the formation of reality.

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**BOOK
REVIEWS**

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James C. Beierlein, Kenneth C. Schneeberger and Donald D. Osburn. *Principles of Agribusiness Management*. Englewood Cliffs: Prentice-Hall, Inc., 1986. Hardbound \$25.95.

This latest introductory agribusiness text is designed to meet the needs of students at 2- and 4-year colleges who are either taking their first or only course in agribusiness management. It is written in a straightforward, non-jargon-filled style that makes the book very readable. The traditional topics are presented in a sequence built about the application of four of the five functions of management: planning, organizing, controlling and directing. In addition to the traditional topics, there is a chapter on using computers for better management. Absent is any coverage of the selling profession in agriculture and the selling process and there is just a brief discussion of financing the agribusiness and this with respect to cooperatives only.

There are six major sections to the book. Chapters 1 and 2 comprise Part I and are concerned with the breadth and scope of