

an important issue. What impact would an interregional cooperative and processor-retailer integration have on the Florida dairy industry? The answer to this question is of vital importance to the orderly growth and development of the Florida dairy industry.

## I. OBJECTIVES AND PLAN OF STUDY

The primary objective of this study is to determine the probable impact of an interregional cooperative and various degrees of processor-retailer integration on prices received by and returns to southeast Florida milk producers, processors, and retailers. Since southeast Florida has been in the Federal Milk Marketing Order system since 1957, production, utilization, and price data for this area are more complete and cover a longer period of time than comparable data for Upper Florida and Tampa Bay federal order markets. For this reason southeast Florida (specifically the counties included in Federal Order 13) was selected as the study area (Figure 1).

The method of analysis chosen for this study involves the development and application of an industrial dynamics model.<sup>2</sup> Reasons for selecting this method are discussed in section II. The basic industrial dynamics model is developed in section III and model validation is considered in section IV. Sections V and VI focus on modifications of the basic model used to analyze the impact of an interregional cooperative and processor-retailer integration on net returns to producers, processors, and retailers. Summary and conclusions are given in section VII.

## II. METHODOLOGY

Various methods have been used to study the problems of food and agricultural industries. Wide use has been made of economic models that determine the optimal allocation of product supplies among alternative markets. An optimal allocation is usually found by maximizing or minimizing a particular variable, e.g. minimize processing and transfer costs [11], maximize producer returns [15], or maximize consumer expenditures [1,12]. While optimization models can readily be solved by mathematical techniques, they are somewhat restrictive for analyzing the impact of changes in economic structure and organization on industry performance. Specifically, optimization models have a limited capacity to handle the time-related aspects of industrial behavior.

As an alternative approach, systems analysis has been suc-