The vitality of our discipline is shown in its undiscourageable effort to gather data on the past, much of it aimed at all-but-impossible prediction of the future, whose byproduct has been models through which population can be understood. Now is no time to stop just because some new variables have to be put into the equations.

Nathan Keyfitz

2.1 INTRODUCTION

World3 is a model of the continuous dynamic interaction between the human population and the global resource base. This resource base may be defined as the environmental and the economic potential to fulfill human needs. The model population and its resources are linked together through numerous, simultaneous causal relationships, which represent changes in either the supply of or the demand for various goods and services.

If the supply of and the demand for any given resource become unbalanced, the model system can generate two types of responses, as shown in Figure 2-1. An economic or technological response can change the supply of the resource. For example, a food shortage may bring about investment in improved seed varieties, or an oversupply of mercury may force a mine to close. Alternatively, a demographic response may change the demand for the resource by altering the population size (a food shortage may increase the death rate; an economic boom may increase the birth rate).

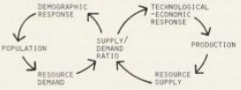

Figure 2-1 Population-resource feedback loops

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