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as a dynamic system

WHEN PEOPLE with different interests and backgrounds talk about agriculture, it immediately becomes apparent that there is no common understanding of what the term encompasses. This fact is in part responsible for misconceptions about the effects of numerous regulations, proposed and enacted, which govern agricultural activities and ultimately affect all of us.

To begin with, let us consider briefly what agriculture *is not*. It is not an activity isolated from the industrial processes of our society. It is not simply a matter of raising and harvesting crops and food animals. It is not an activity engaged in by illiterate and unskilled people unable to do other things. It is not completely controllable by man's actions.

Agriculture *is* a systematized process of converting natural and manufactured resources into the foods, feeds, fibers, and forest products necessary to support life. This process, which provides for the maintenance and protection of human lives, yields various residues along the way. Because a major portion of the residues are potentially or actually reclaimable as resources, the system is cyclic and renewable.

In this concept, agriculture is perceived as a vital process, essential to human existence, and involving a complex system which must remain in balance if it is to function effectively. In this system the farmer initiates and regulates processes that convert natural resources (land, air, water, and energy) and manipulated resources (such as nutrients, seeds and other propagative materials) into usable and needed products.

The products must then be moved into the consumption stage of this life support system. This movement involves many complex and interrelated activ-

ities, including processing, transportation, distribution, communication, finance, and regulation. Preparation and consumption of these products results in some residues which must be removed from the mainstream to ensure a continuous flow of products through the system. Because most of these residues can be converted into their basic state, it is not only possible, but also desirable, to recycle them through the system.

When agriculture is viewed as a dynamic system, it becomes apparent that actions based on natural, political, social, or economic causes which affect any part of this process, can and do affect all parts of the system. Once this is understood, it is not difficult to see why the agricultural community is alarmed by actions, or proposed actions of regulatory agencies (for example), which result in the loss of a pesticide or some other vital resource. The system must have time to adjust to new circumstances. Otherwise, disruption at one point will have unexpected, and in many cases unwanted, consequences at the consumption stage of the cycle.

Dramatic increases in worldwide demand for food and fiber have brought increased pressures to bear on this system. These pressures are compounded by new obstacles and constraints. Those of us who are engaged in research and education, along with other sectors of the agricultural community, are challenged to increase the public awareness of the system's interlocking relationships with other segments of society, its complexity, and its vulnerability to ad hoc manipulation of its components. Our need to keep this vital resource operating efficiently has been brought into sharper focus by economic developments and human need. Lack of understanding may be our greatest obstacle.