_Space age technology comes to agriculture

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They inspect crops in the fields and send the results through an automated reporting system that combines the information and computes the production forecasts. The USDA does have a good working relationship with many foreign departments of agriculture; however, from some countries, reliable crop producing information is difficult to obtain; in other areas, the crop data are completely unavailable. Not many other countries have adequate reporting systems, and the quality of information on crops varies widely from one country to another.

In the United States, and the few other countries with good reporting networks, accurate and timely crop production forecasts are available. In some other countries, however, crop information



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is either not known or is not made available to others. Lack of crop forecasts leads to planting, buying, selling, import, or export, decisions being made on the basis of incomplete information. Consequently, uninformed decisions result in hardto-manage shortages for some and surpluses for others, less than maximum food production, and unrealistic food prices.

The techniques being tested by LACIE have the potential to provide worldwide crop forecasts. The LACIE activities were briefly described by former U.S. Secretary of State Dr. Henry F. Kissinger in an announcement at the 1974 World Food Conference. "Our space, agriculture, and weather agencies will test advanced satellite techniques for surveying and forecasting important food crops. We will begin in North America and then broaden the project to other parts of the world. To supplement the World Meteorological Organization (WMO) on climate, we have begun our own analysis of the relationship between climate patterns and crop yields over a statistically significant period. This is a promising and potentially vital contribution to rational planning of global production."

WHEAT

LACIE is a developmental project for the USDA. The LACIE investigators are trying to determine how much information can be obtained about crops from Earth-observing satellites and from weather observations. For purposes of the experiment, LACIE is restricted to the study of a single crop-wheat.

The use of Earth-observing satellites to gather data on agricultural and other resources is an economically important application of the branch of space technology called remote sensing. In simple terms, remote sensing is the use of instruments to get information about an object without the instruments being in close contact with the object. Aerial photography is a well-known type of remote sensing.

Each of the three agencies of the U.S. government (USDA, NOAA, and NASA), that are jointly conducting LACIE, brings particular expertise to the experiment.

USDA

The USDA has responsibility for the agricultural programs of the U.S. government, and requires

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