

# Epilogue.

## DEVELOPING LAND SYSTEMS MAPS FOR OTHER AREAS

This work demonstrates the feasibility of undertaking a comprehensive assessment of tropical land resources on a continental basis, given the support of national scientists, in a short period of time. The computerized land-systems approach facilitates the synthesis and management of information now available in various forms in many organizations throughout the world. It permits a thorough analysis of climate, landscape, and soil factors, and provides a rapid means of quantifying these environmental constraints for specifying the desirable germplasm traits for pasture and crop cultivars. It provides a geographical base for the transfer of successful seed-based agrotechnologies from one location to another, and brings to light general research needs.

It complements work being carried out by national programs and help they are receiving from international projects, including the FAO land resource studies; activities in the International Soils Museum, Wageningen; the U.S. AID funded Soil Management Support Services and IBSNAT (International Benchmark Sites Network for Agrotechnology Transfer) programs based at the University of Hawaii and the University of Puerto Rico; and the tropical soils research program at North Carolina State University.

The land-systems data base is already being put to good use in developing and transferring new pasture-plant and food crop cultivars over tropical America, and is proving a novel way to investigate basic climate/landscape/vegetation/soil relationships per se. However, experience shows that crop cultivars often do just as well in continents away from their centers of development, always providing climate and soil circumstances are comparable (Purseglove, 1974). It is interesting to reflect, therefore, that tremendous mutual benefits lie in store for all countries if similar surveys and analyses could be extended throughout the tropics in general.

With a tropic-wide land-systems base, crop varieties and agro-technologies successfully developed in one tropical ecosystem could then be transferred to other environmentally compatible areas with a much greater degree of potential success than is currently possible. This is not to suggest that production difficulties will not arise. Every continent has specific biological problems (pests, diseases, weeds, and soil microorganisms) that could affect the successful transfer of technologies. Nevertheless, considerable time and effort will be saved by ensuring compatible matches between seed-based agro-technologies and climate-soil environments, rather than using the "hit or miss" methods still largely in vogue today.

There would be many additional benefits arising from such a global information system. Not the least would be the progressive build-up of information on cultivars well-adapted to the many climate-soil environments of the tropics, enhancing the ability of nations to better plan and manage

production problems in environmentally, socially, or economically fragile regions. In short, a tropic-wide land-systems database would be an invaluable resource for individual nations now striving to meet the escalating need for food in an ever-changing world.