

THE IMPORTANCE OF ACID SOILS FOR AGRICULTURAL PRODUCTION IN THE HUMID TROPICS OF BRAZIL

Raphael David dos Santos

EMBRAPA, National Soil Survey and Conservation Unit, Brazil

The humid tropics of Brazil comprise the western part of the State of Maranhao, the northern sections of the States of Mato Grosso and Goias, the States of Para, Amazonas and Acre and the Territories of Amapa, Roraima and Rondonia. Here a wide variety of soils developed from different parent materials is found, interrelated with various types of vegetation and climates.

At the beginning of my work in this vast area in 1971 I first believed that the soils of higher fertility and lower acidity should be used for the cultivation of annual and perennial crops, whereas I considered the acid moderately heavy to heavy loams suitable for timber exploitation followed by forest regeneration and management. Natural mixed stands of rubber trees, of Brazil nut trees or other valuable interesting native species found in this area could also be used economically. I was of the opinion that the poor sandy soils should remain untouched and be kept as plant and animal reserves. Our land use maps were based on three classes, i.e. land use for primitive, semi-intensive or intensive non-irrigated farming systems.

With the development of new colonization projects in the Amazon area following the settlement of peasants from northeast and south Brazil, while at the same time a more refined land classification system including new objectives like stock farming and silviculture was being developed, our opinion was reformulated. The best soils, i.e. those with a higher natural fertility and pH, should be used for annual food crops and for more demanding perennial crops like cocoa and coffee. The more acid medium to heavy textured loams of lower fertility should be reserved for the other perennial crops and for stock farming, in which case fertilizers and other financial inputs would be required. As to the use of the poor sandy soils of the Amazon area my opinion remained unchanged, i.e. they should remain untouched and kept as reserves and germplasm banks. Wherever this policy was applied, the land users showed increased interest in the development of the land resulting into a better management of their agricultural activities.

In view of this success and with the purpose of disseminating technical information among the Amazonian farmers, additional aspects with regard to specific crops and local conditions were included in the regional land use policy. For each land use unit occurring on our maps, even for the eutrophic soils, practical parameters were taken into account and information on crop choice based on soil characteris-

tics, climate and the requirements of the crops was given. Much attention was being paid to the needs of the farmer. Production models and alternatives of low or relatively low input farming systems for small farmers were emphasized. Advice on pasture expansion, reforestation and enrichment plantings in exploited forest was similarly presented.

The final objective of this policy is to exert an increasing control and to restrict the nomadic agricultural activities particularly in the extensive areas of low fertility acid soils. Allowing the continuation of a type of shifting cultivation that is devoid of its primitive traditions, would otherwise lead to increasing areas of degraded, abandoned land following the wave of peasant settlers.

Many may think that this task is not without risks. But if the increasing numbers of large and small farmers will have to get access to better technology and social progress, there hardly are alternatives.

The achievements in the field of land use mapping and production systems are the result of co-operation between the National Soil Survey and Conservation Unit, the Planning Department of the Ministry of Agriculture, FAO and research officers of EMBRAPA. There is, of course, no doubt that such efforts should receive more substantial support and permanent co-operation from the member countries of the Amazonian Co-operation Treaty, especially since all of them have similar poor acid soils and a similar climate.

Finally, I would like to repeat that within the framework of our present land use policy for the Amazon area, we think that the poor sandy soils should remain untouched because of their strong limitations to agricultural practices.

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Edited by:

J.F. Wienk
Centre for Agricultural Research
Paramaribo, Suriname

H.A. de Wit (eds)
Faculty of Natural Resources,
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