

## Research Note

### OBSERVATIONS ON THE SOILS OF THE DEPARTMENT OF PANDO (BOLIVIA) AND THEIR PRODUCTIVE POTENTIAL

The soils of Pando appear to be mostly Oxisols, Ultisols and Inceptisols. Most are well-drained; deep (over 60 cm, some even 200 cm); yellowish-brown, reddish-brown and brown are predominant. In general, the soil texture is sandy clay, loamy clay and clay. The clay fraction consists mainly of kaolinite and iron oxides. Although in some cases clay contents are higher than 50 or 60%, soil workability is good due to the nature of the clay and the strong stable structural units. Visible pores and good functional roots were observed at 50 cm depths. The soils are rather low in organic matter and cation exchange capacity; pH ranges between 4 and 5. In areas near Cobija and on the banks of the Tahuamano River, hard crusts of iron oxides were formed upon exposure of the B horizon. The undulating topography favors surface drainage and runoff when cleared of protective cover.

Pando is basically forest country. Exploitation of the native forest resources—timber, rubber, Brazil nuts—is the single most important source of income. There are extensive woodlands with more than 100 species available for wood processing. The volume of valuable commercial wood has been estimated to be 63 m<sup>3</sup>/ha; that of non-commercial wood, 37 m<sup>3</sup>/ha. Most of this volume is in commercial species with trunks over 50 cm in diameter, i.e., mature trees. Total rubber production is estimated at some 1500 metric tons per year of which 80% is exported. Latex is collected by families (some 800–900 kg/family/year) from trees of *Hevea brasiliensis* scattered over various geomorphic surfaces. Brazil nut trees (*Bertholletia excelsa*) are widely dispersed through the area. Most of these nuts are exported to neighboring Brazil; hardly any is consumed locally.

The development of the area, with over 7 million hectares and only 39,000 inhabitants, faces many problems: lack of roads and adequate transportation and communication systems, very limited electric power, large unexplored areas and lack of information as to markets. It is of utmost importance to develop farm and forest management systems that will prevent non-planned land clearing, since high erosion losses are likely to occur on cleared land. Exploitation of the woods, rubber and nuts will prevail for the years to come as a source of income. This would convey a rational and systematic utilization pattern with a gradual substitution of low productive species. The possibility of developing industrial-commer-

cial complexes based on forest products must receive top priority in any program geared towards the economic development of Pando. Beef cattle raising also offers a good potential. The production of tea, cacao, coffee, and fruits also offers some possibilities.

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