

infrastructure such as haul and access roads to logging areas in the Peruvian jungles where rivers represent a ready and inexpensive alternative. One forestry expert estimated that skidding alone represents 20 to 25% of the cost of a delivered log. Availability of the most desired species, Cedro and Mahogany, has been declining and there are indications that these species are in danger of running out entirely. There is little Government intervention of any kind in open Areas with respect to cutting practices.

Log deliveries to mills via river depend upon rains which raise river levels from January to April. Storage facilities for the logs are inadequate within distances that then allow practical movement. Some mills run out of logs and shut down as early as August. Steady operation of the mills will involve a complete revamping of the logging methods and of the transportation arrangements. Wood-supply continues to be the bottleneck in the industry.

Logging in the jungle in most areas is primitive. Desired trees are felled and cut into log length and rolled to the river or at same point where they can be rafted out at high water. Wide rollways can be prepared relatively easily and 16 to 20' log lengths produced. Moving further from water the logs must be cut shorter and shorter as the cost of preparing rollways and rolling them to the river would be prohibitive.

In most areas of the jungle, trucks, skidders and other sophisticated equipment are not yet in widespread use for one main reason -the heavy capital investment required. There is also a lack of gravel for roads, severe mud due to rains complicated by alluvial sands, a changing river level, and many other factors such as remoteness, lack of rapid communication and equipment service. Caterpillar tractors have been tried but the coarse alluvial sand eats the tread so rapidly that after a few months they have to be "sent out" for new and expensive treads. In this respect, large wheeled articulated rubber tire tractors have proved to be more serviceable.

The jungle area is characterized by heavy rainfall. It is absolutely essential for truck roads to be gravelled, if they are to be used consistently. However, in many areas of the jungle, rock and gravel are not available. In other areas, the distance between suitable trees is so great that the cost of a truck road would be economically unsound. The use of the "high lead" (wire cable and winches rigged on tall spars or trees) is not possible in selective logging where only a limited number of trees are removed and therefore there is interference from the trees left standing.