The actual sales volumes of various forestry machinery is difficult to establish due to the proprietary nature of the information. Two (2) equipment surveys will be referenced in this study and although they do not agree in quantities, the trends are the same. The variance is apparently due to the sampling medium. The first reference is the "1980 Pulpwood Producers Census - Southwest and Southeast Technical Divisions, American Pulpwood Association." This census sampled the responses of six thousand association members but did not include high volume contractors who produce less than fifty (50) percent pulpwood. The second inventory is the "Statistical Review of Forest Machinery Sales" which is published by the Farm and Industrial Equipment Institute. The data source for this document is supplied by equipment manufacturers and the accuracy is affected by the reported sales information from only a portion of the total manufacturers who are members of the institute.

a. <u>Feller-Bunchers.</u> The function of a feller-buncher is to grasp a single tree, shear it at ground level, accumulate a number of sheared trees, and then lower them to the ground in a bunch. Smaller sized machines in this category may have only the shearing head and no accumulation feature. The shearing head and feller-buncher head is normally fitted to a conventional prime mover.

The most popular type of prime mover is a front end loader chassis with four (4) wheel drive, rubber tired, and with articulated frame steering. It is normally powered by a diesel engine in the sixty (60) to one hundred seventy-five (175) horsepower range. The price range is from \$60,000 to \$125,000. These machines have a relatively fast ground speed, are reasonably maneuverable, and are ideally suited for clear-cutting operations on flat ground. They are generally too large for thinning and relatively unstable on steep terrain. The stability can be improved by adding a knuckle boom attachment, however this option increases the machine cost by \$50,000 which makes it non-competitive.

A second type of prime mover, and less popular, is a tracked crawler loader with independent track drive. It is usually powered by a diesel engine in the forty (40) to eighty (80) horsepower range. The approximate price range is \$60,000 to \$100,000. This machine has low ground pressure and is relatively stable which make it ideally suited for soft soil conditions or operations on steep terrain. It has a very slow ground speed and high maintenance cost due to track wear.

A recent introduction has been a smaller chassis, rubber tired prime mover sometimes fitted with tracks over the wheels. The machines have independent wheel drives to make them highly maneuverable. They are usually diesel powered in the thirty (30) to fifty (50) horsepower range. The machines were specifically developed for thinning operations. The price range is from \$40,000 to \$90,000. They are very narrow and maneuverable and ideal for flat terrain. Their instability on steep terrain is a definite disadvantage. The two recognized manufacturers of these machines are Mor-Bell (South African design and marketed by Morbark Industries) and Makeri (Finnish design by Makeri Oy and marketed by Forrex, Incorporated). These machines received the largest amount of interest at recent equipment shows and demonstrations.

Sandwell