**Continuous & periodical harvesting**

**Continuous harvesting**: means that forest harvesting operations take place year-round, day by day or year by year continuously.

**Periodic harvesting***:* means harvesting operations at a specific time during the year after that will stop until next year to carry out operations again and so on.

**The continuous harvesting is preferred than periodic harvesting because it provides the following advantages**

1. Optimal use of skilled labor

2. Easy forest product marketing

3. Provide continues income and stable job opportunities

4. Assistance in the development of the forest.

 **Planning the timber harvest**

**Harvesting plan** is that theoretical part of harvesting processes which clarify the harvesting processes steps, style, and techniques used and time needed for each processes. In addition to extensive information about the sale and manufacture of timber and the environment and conditions of natural regeneration and trade with companies and its objectives.

Forests grow under a wide range of topographic and climatic conditions, from sea-level swamps to high mountain slope and from the tropics almost to the Arctic Circle. Harvesting timber crops, therefore, is performed under extremely variable conditions of climate, accessibility, species, size of timber, kind of product, and available transportation facilities

Before a harvesting operation of any kind is planned, full information about the forest area in which it is to be conducted must be obtained. With such knowledge costly mistakes can be avoided with respect to the location of camps and road or other transportation installations and the selection of equipment and methods for the various operations involved in harvesting.

**The objectives of a timber survey are twofold:**

1- To make an accurate map showing all topographic features, timber types, and any special feature valuable for planning and caring out a logging operation

2- To secure all the information needed for the preparation of an accurate and detailed estimate of the timber by types, species, age classes, and square-mile blocks or other units and secure a summary by townships or districts.

Many changes occur in the size and condition of timber within even a few years' time, due to growth, fire and other damage, and cutting; therefore, earlier estimates often are no longer accurate. Also, species formerly considered valueless often come into use, and smaller trees grow to merchantable size, which increases the volume to be harvested. Hence, it is usually necessary to cruise or at least carefully inspect forest areas before harvesting operation are initiated to supply the information needed for sound planning.

***-Types of operation possible***

The harvesting operation consists of a number of distinct steps, each of which can be analyzed separately, although each must be integrated closely with the others for efficiency.

**The principal steps in harvesting timber crops are:**

1. selection of trees for cutting
2. cutting, which includes felling, delimbing and bucking
3. bunching, or stump piling, preliminary to skidding or yarding
4. Skidding, or forwarding, to the landing or loading point over unimproved terrain.
5. Loading on the vehicles or dumping into the water for towing or driving
6. Transportation from the forest to transfer point, mill, or market

**Factors that influence the choice of operating methods**: -

There are some factors that delimitate to choice the harvesting operation work type with regard to

1. Region topography
2. Location factor
3. The location environmental

However, these conditions are allowing to choose more than one type the harvesting operation, there are another factors depended on to choose the suitable way for this operation, these factors are: -

1. **Size of product**

Since the transportation of forest products within and from the forest constitutes most of the effort and expense in harvesting operations, those conditions which affect the movement of the products have the most weight in determining the kind of operation to be conducted.

**Large products** such as logs require the application of power either animal or mechanical, even for bunching.

**Small products** such as pulpwood cut to 4 or even 8 ft (feet) lengths from small trees, may be and frequently are bunched and loaded by hand.

1. **Daily and annual output required**

The large operator e.g.(large sawmill) has a choice between trucks or railroad, but the small operator is nearly always limited to trucks.

The large soft wood operator also has a choice of river driving, towing, rafting, or barging if his mill or market is located on a suitable water way.

1. **Amount to be harvested per acre**

One important requirement for railroad logging or for costly private truck road is that the timber being harvested be concentrated so that the mileage is not disproportionate to the amount harvested per mile.

1. **Labor**

Timber harvesting is often conducted in undeveloped regions where local labor is scarce or unavailable. Consequently provision must be made to house and feed the workers.

In other sections forests are intermingled with farms and settled communities, and loggers can commute to and from the woods in their own cars or in crew busses provided by their employers.

1. **duration of operation**

The length of time during which harvesting is to be done influences the kind of operation. Short-term operations of only a few weeks or months do not justify expensive improvements, even though the daily or annual production is large.

Railroad used in harvesting saw timber require not only a heavy daily volume but also a long- term operation to permit writing off the cost over a large amount of timber.