## TOPIC 2

### Plant location - location factors, site selection, location theory and models

**What is plant location?**

Plant location refers to the choice of region and the selection of a particular site for setting up a business or factory.

**DEFINITION**

A plant layout can be defined as follows: Plant layout refers to the arrangement of physical facilities such as machinery, equipment, furniture etc. with in the factory building in such a manner so as to have quickest flow of material at the lowest cost and with the least amount of handling in processing the product from the receipt of material to the shipment of the finished product.

**What is an ideal location?**

An ideal location is one where the cost of the product is kept to minimum, with a large market share, the least risk and the maximum social gain. It is the place of maximum net advantage or which gives lowest unit cost of production and distribution. For achieving this objective, small-scale entrepreneur can make use of locational analysis for this purpose.

**SELECTION CRITERIA**

The important considerations for selecting a suitable location are given as follows:

a) Natural or climatic conditions.

b) Availability and nearness to the sources of raw material.

c) Transport costs-in obtaining raw material and also distribution or marketing finished products to the ultimate users.

d) Access to market: small businesses in retail or wholesale or services should be located within the vicinity of densely populated areas.

e) Availability of Infrastructural facilities such as developed industrial sheds or sites, link roads, nearness to railway stations, airports or sea ports, availability of electricity, water, public utilities, civil amenities and means of communication are important, especially for small scale businesses.

f) Availability of skilled and non-skilled labour and technically qualified and trained managers.

g) Banking and financial institutions are located nearby.

h) Locations with links: to develop industrial areas or business centers result in savings and cost reductions in transport overheads, miscellaneous expenses.

i) Strategic considerations of safety and security should be given due importance.

j) Government influences: Both positive and negative incentives to motivate an entrepreneur to choose a particular location are made available. Positive includes cheap overhead facilities like electricity, banking transport, tax relief, subsidies and liberalization. Negative incentives are in form of restrictions for setting up industries in urban areas for reasons of pollution control and decentralization of industries.

k) Residence of small business entrepreneurs want to set up nearby their homelands

**PLANT LAYOUT**

The efficiency of production depends on how well the various machines; production facilities and employee's amenities are located in a plant. Only the properly laid out plant can ensure the smooth and rapid movement of material, from the raw material stage to the end product stage. Plant layout encompasses new layout as well as improvement in the existing layout. It may be defined as a technique of locating machines, processes and plant services within the factory so as to achieve the right quantity and quality of output at the lowest possible cost of manufacturing. It involves a judicious arrangement of production facilities so that workflow is direct.

**IMPORTANCE**

Plant layout is an important decision as it represents long-term commitment. An ideal plant layout should provide the optimum relationship among output, floor area and manufacturing process. It facilitates the production process, minimizes material handling, time and cost, and allows flexibility of operations, easy production flow, makes economic use of the building, promotes effective utilization of manpower, and provides for employee's convenience, safety, comfort at work, maximum exposure to natural light and ventilation. It is also 99 important because it affects the flow of material and processes, labour efficiency, supervision and control, use of space and expansion possibilities etc.

**ESSENTIALS**

An efficient plant layout is one that can be instrumental in achieving the following objectives:

a) Proper and efficient utilization of available floor space

b) To ensure that work proceeds from one point to another point without any delay

c) Provide enough production capacity.

d) Reduce material handling costs

e) Reduce hazards to personnel

f) Utilise labour efficiently

g) Increase employee morale

h) Reduce accidents

i) Provide for volume and product flexibility

j) Provide ease of supervision and control

k) Provide for employee safety and health

l) Allow ease of maintenance

m) Allow high machine or equipment utilization

n) Improve productivity