CHAPTER V

PROJECT IMPLEMENTATION, MONITORING AND EVLAUATION

Project Implementation /Project Management

- Putting into practice what was proposed in the project document (i.e. transforming the project proposal into the actual project.)
- Project implementation require Planning , Organizing, Directing and Controlling activities
- **Planning** involves deciding what has to be done when and by whom
- The resource need to be **organized** through activities such as procurement and recruitment
- **Directing (authorizing)** the planned activities towards a coherent objective is also a major management role
- It also involves **motivating** the most expensive and important resource of the project –the people.
- The activities also need **Control** to ensure that they fit within the limit (financial, time) set.

Project Implementation /Project Management

Project Planning

- project planning process
- Area of planning
- Tools of Planning
- Hierarchy of plan

Project Organization

- Line Staff organization
- Divisional organization
- Matrix Organization

Project Directing

Monitoring and Evaluation

Project Implementation /Project Management

Project Planning

- In project management the first function happened to be project planning.
- The project planning will try to address questions like,
  - ✔ What need to happen (what has to be done)?
  - ✔ Who is going to do it?
  - ✔ When each activity will be done?
- The plan is the basis for estimating the resource requirement
- Plan as a working tool used to help decision making and guide future activity.
- In many instances people might be so involved in the plan that the project objective are forgotten and the planning becoming an end in itself rather than a means to an end.

Project Implementation /Project Management

Project Planning

The project planning process are consists of the following activities

1. Identification of essential activities:
   - This involves listing of all relevant activities need to be implemented
   - It involves dividing the project's activities into its major parts with each of those being further divided into sub parts.
   - This is continued until we reach a manageable unit of work for which responsibility can be defined.
   - To make planning effective by dividing works into manageable element which can be easily planned, budgeted and controlled
   - To assign responsibility for work elements to project personnel and outside agencies
   - To develop monitoring, control and information system
   - To define the work to be done in detailed manner

Project Implementation /Project Management

Project Planning

The project planning process are consists of the following activities

2. Determine logical sequence of activities:
   - All identified and listed activities will be ordered in appropriate logical sequence

3.Estimation of time and resource requirement:
   - For each activity the estimation of time (starting and completion) required is carried out
   - The resource requirement for each activity and the responsible person for its implementation is determined.

4.Present the plan in systematic and transparent form

Project Implementation /Project Management

Project Planning

Area of planning (What do we plan)

The comprehensive project planning covers the following area

A. Planning the project work:
   - The activity related to the project must be spelt out in detail. They should be properly scheduled and sequenced

B. Planning the manpower:
   - The man power requirement for the project must be estimated and the responsibility *for* carrying out the project work must be allocated

C. Planning the financial resources (Money):
   - The estimated expenditure for each planned activity and resource must be budgeted.

D. Planning the information system:
   - The information flow and required information for monitoring the projects progress must be planned (defined ahead)

Project Implementation /Project Management

Project Planning

Tools of Planning

- There are a number of tools that can be used to communicate the project plan.

1. Gantt chart

- The Gantt chart is also referred to as the progress chart.
- It is a chart showing the timing of project activities using horizontal bars.
- It is one of the techniques of project scheduling, which depicts the frequency of activities and determines the period of time for implementation.

How to determine a GANTT chart

- Determine the parts or implementation phases of the project and the sequence in which the associated activities shall be carried out
- Then estimate the amount of time required for each activity
- List the activities that can be carried out at the same time and identify those to be carried out sequentially
- Time represented on the horizontal axis, and activities on the vertical axis.
- Bars are entered to indicate the time period allocated for each activity and the state of progress at any particular point in time.

Project Implementation /Project Management

Project Planning

Activity	Time in week (months) or even days				
	Jan	Feb	Mar.	April	May
Activity 1	37 days				
Activity 2		30 days			
Activity 3			41 days		
Activity 4				45 days	
Activity 5					58 day

Merit of Gantt chart

- ✔ It is simple to understand
- ✔ Can be used to show progress
- ✔ Can be used for man power planning

Limitation of Gantt Chart

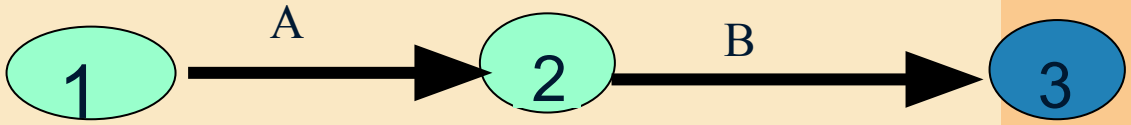
- ✔ It can not show interrelationship among activities on large and complex projects
- ✔ There may be a physical limit to the size of the chart
- ✔ It can not cope with frequent change or update.

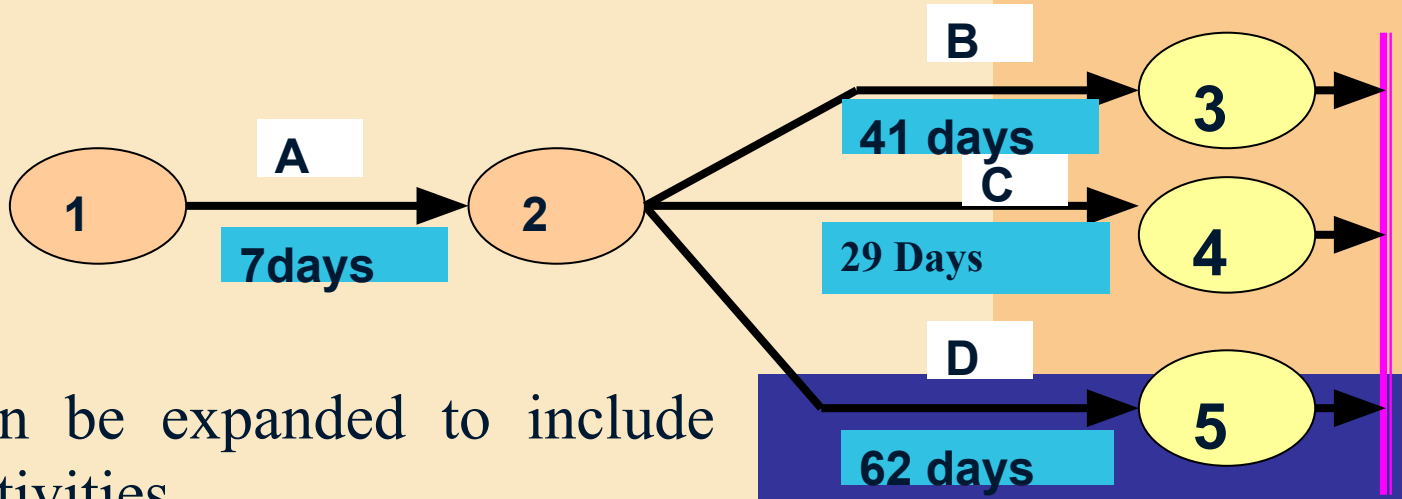
Project Implementation /Project Management

Project Planning

2. Net Work technique: CPM/PERT

- These are more sophisticated than the traditional Gantt chart. Here the activities, events and their interrelationships are represented. by a net work diagram.
- This also called an arrow diagram
  - ✔ Activity A run from event 1 to event 2 by itself. Activity B can not be started until activity A is completed.

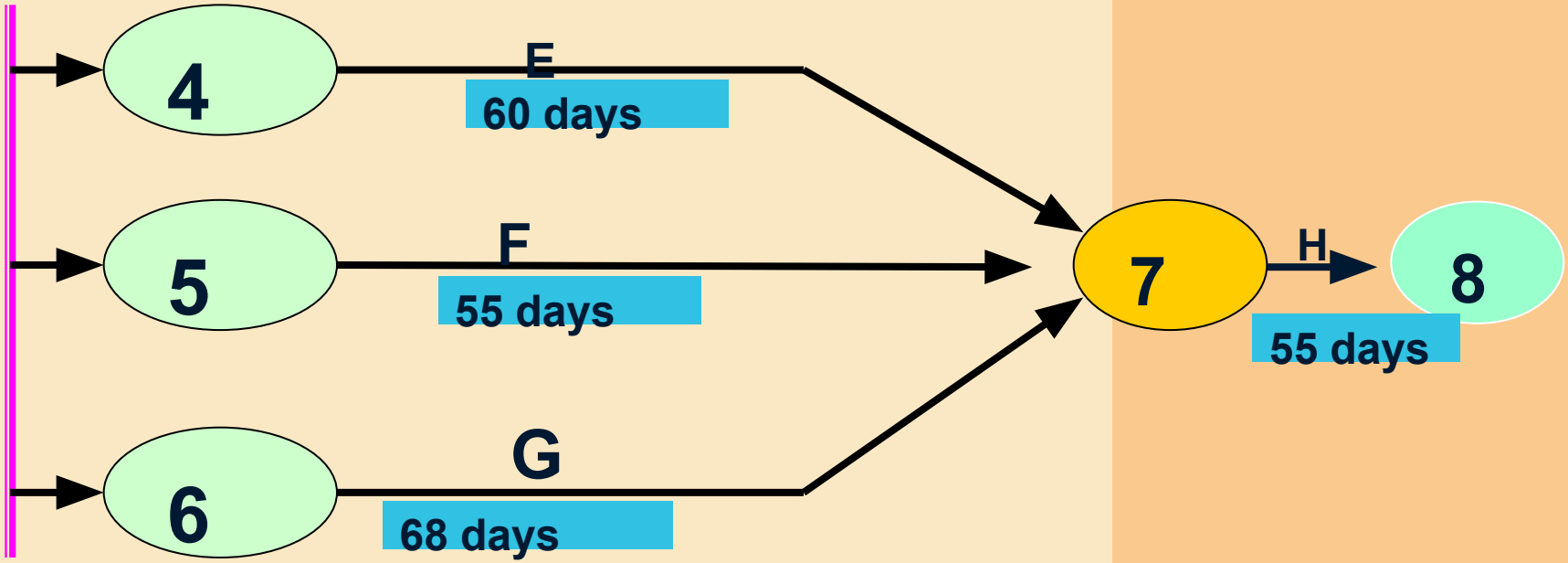




This can be expanded to include more activities

Project Implementation /Project Management

Project Planning



Advantage

- ✔ It handle inter-relationship among project activities
- ✔ They identify the activities which are critical to the completion of the project on time
- ✔ It can handle very large and complex projects
- ✔ It can be easily updated

Limitation

- ✔ They are not easily understood by the project person
- ✔ They do not define an operational schedule which tells who does what

Project Implementation /Project Management

Project Planning

Hierarchy of plan

- A large project may be consist of a large number of activities.
- such large project with a number of activities can not be easily visualized
- For large project a hierarchy of plan, having different level of detail, is needed to be prepared. Such plan has a number of levels.

Level 1. It is highly summarized plan

- It shows the border activity of the project such as,
  - ✔Engineering design
  - ✔Procurement plan
- It may help to make rough estimation for overall resource and outlay
- Such a plan is useful for a strategic planning and establishing project objectives and policies.

Project Implementation /Project Management

Project Planning

Hierarchy of plan

Level II: Activities shows in level one are presented in great detail.

- This will provide a more detailed estimation of various stages of the project
- It facilitate,
  - ✔ Identification of individual responsibilities for different work package
  - ✔ Aggregate manpower planning
  - ✔ Broad schedule of project work

Level III: It provide planning of week to week even day to day activities of a project. It is based on very detailed estimate of resource requirement

Project Implementation /Project Management

Project Organization

- The traditional form of organization is a functional division of management and a well-defined hierarchical structure. Typically, a firm is organized into various departments such as,
  - ✔ Production Department, Purchasing Department, Marketing
  - ✔ Finance, Personnel, Engineering (maintenance), Research and Development

Some of these departments have a line function and other a staff function

- **Line managers** have the principal responsibility for achieving the goal of the firm and are vested with decision making authority.
- **Staff Managers** primarily serve in an advisory capacity (supportive function).
- Within the staff department they enjoy administrative power.
- The traditional form of organization is quite appropriate for handling established operations.
  - ✔ Established operations are characterized by
    - ✔ a continuous flow of repetitive works
    - ✔ with each department attending to its specific function

Project Implementation /Project Management

Project Organization

- However, the traditional form of organization is not suitable for project management. This is because,
- A project is
  - ✔ non routine,
  - ✔ non repetitive
- undertaking often plagued with many uncertainty
- The relationship in a project setting are dynamic temporary, and flexible
- A project requires a coordination of efforts of individuals drawn from different functional areas and contribution of external agency.
- As a result project management calls for a different form of organization.

Project Implementation /Project Management

Project Organization

Some of the most important project organizational forms are,

- Line Staff organization
- Divisional organization
- Matrix Organization

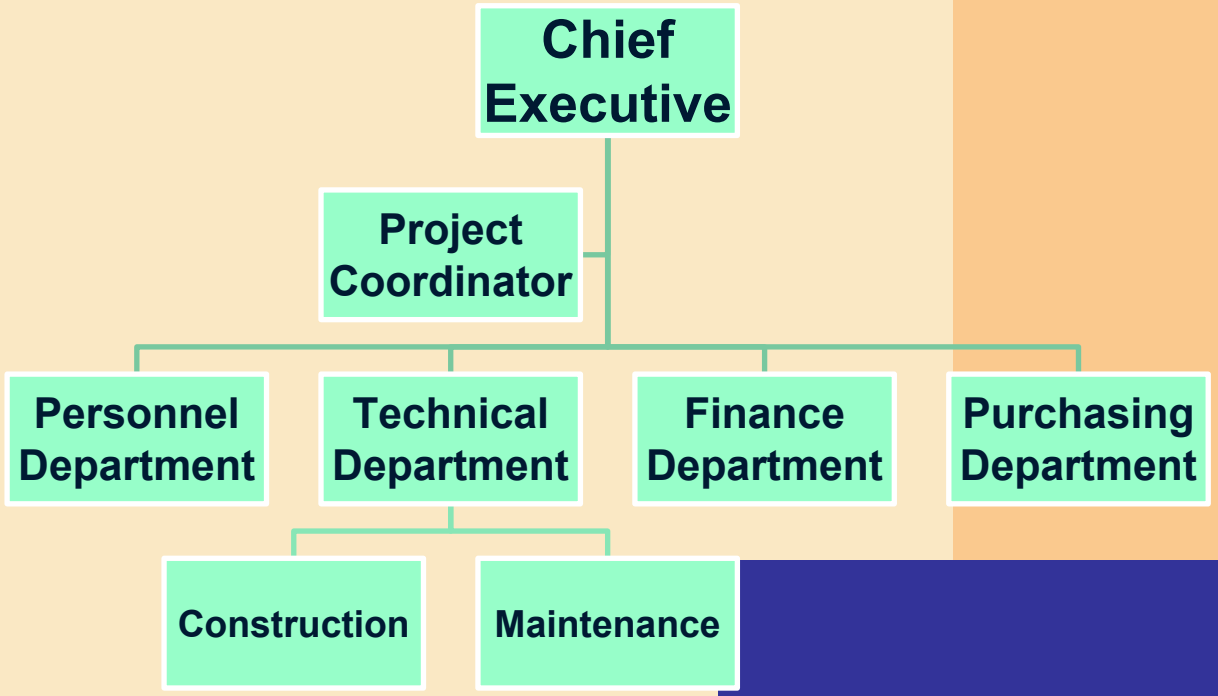
A) Line staff Organization

- In this form of organization, a person is appointed with primary responsibility of coordinating the work of the people in the functional department.
- The project coordinator does not have authority and direct responsibility of the line management. He serves as an assistant to chief executive.
- He does not make any decision for the project, nor does he provide any staff service to the functional department who make all the decision relating to the project.

Project Implementation /Project Management

Project Organization

- He collect information and communicate the same to the chief executive.
- Such organization may be chosen by a chief executive who want to directly control the project but can not devote much time to keep track of details.
- Such arrangement may work for small project



Project Implementation /Project Management

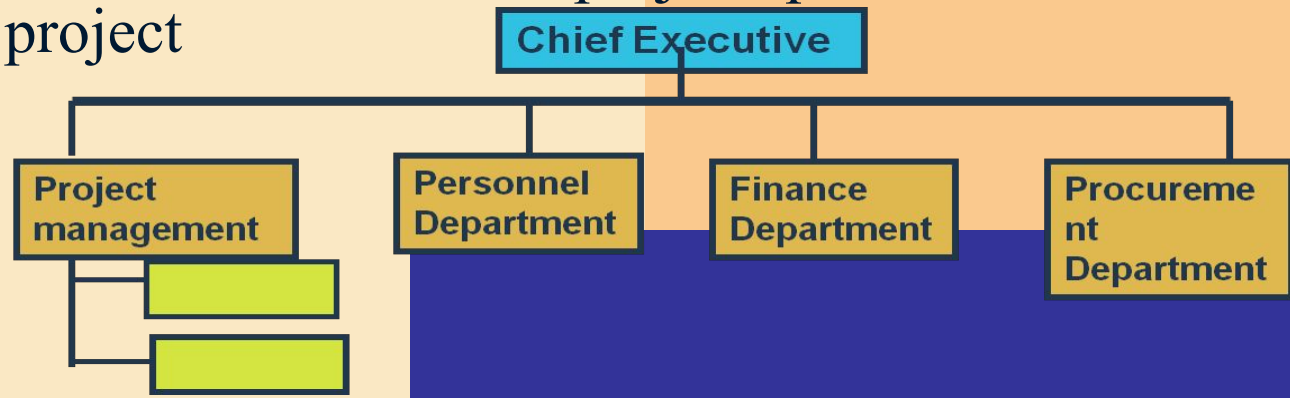
Project Organization

B) Divisional Organization

- Under this form of organization a separate division is set up to manage and control the project.
- It is headed by the **project manager** and has his own personnel over whom the project manager have full line authority
- In general, this form of organization implies the creation of a separate goal oriented division of the company with its own functional department.
- This is strong form of project organization and it facilitate
  - ✔ the process of planning and control,
  - ✔ brings about better integration of efforts
  - ✔ and strengthen the commitment of project personnel to the objective of the project

Limitation

- ✔ It may lead to inefficient utilization of resources of the firm
- ✔ It may result in an unnecessary duplication of specialists



Project Implementation /Project Management

Project Organization

C) Matrix Organization

- The matrix form of organization seeks to achieve the twin objective of efficient use of resources and effective realization of project objectives. (At the cost of greater organizational complexity).
- In a matrix organization, the personnel working on the project have a responsibility
  - ✔ to their functional superior and
  - ✔ to the project manager
- That means the authority is shared between the project manager and the functional manager
- The authority and influence of the project manager cut across the traditional vertical line of command.
- The project manager integrate the contribution of personnel in various functional departments to words the realization of project objectives

Project Implementation /Project Management

Project Organization

C) Matrix Organization

Project Management	Functional Departments		
	Manager 1	Manager 2	Manager 3
Project manager A	A1	A2	A3
Project manager B	B1	B2	B3
Project manager C	C1	C2	C3

Flow of project authority

Flow of functional Authority

Project Implementation /Project Management

Project Organization

C) Matrix Organization

- The matrix form of organization is not similar to the traditional organizational theory.
- In such form of organization,
  - ✔ There is dual subordination
  - ✔ The hierarchical principle is ignored
- These all implies that the matrix form of organization involves greater organizational complexity and creates conflict situation
- It may also cause some confusion to those who are used to a single reporting relationship.
- Yet it seems to be a better vehicle for the pursuit of the twin objectives, effective utilization of resources and effective attainment of project objectives.

Project Implementation /Project Management

Project Direction

- Once plan, and appropriate organizational arrangement is established the stage is set for the smooth take off.
- The sailing may not always be smooth.
- In many cases a project will face difficulty at the beginning of its implementation.
- It will take quite a long time before it will gate some sort of stability.
- Project direction refers to the use of authority to carry out the activities of the project on the desired time.
- Authorizing the implementation of the plan would constitute project direction.
- When plan and schedule are authorized they become working document and depending on the importance attached to them it can even become work orders
- Which means executing body or individuals will be compelled to strictly follow the plan.
- In general, if authorization is not there, plan and schedule may not work and the whole effort will be changed into unnecessary paper work.

Project Implementation /Project Management

Project Direction

- This means plan, system, and procedure would not produce any result unless they are authorized for implementation.
- The project manager will be authorized to spell out the details and issue directives for realization of the same.
- The project manager need to provide direction related to the following issues.
  - ✔ Scope of the work
  - ✔ Specifications of results of completed works.
  - ✔ Division of work (Imported, local department , contract, etc.)
  - ✔ Schedule of work
  - ✔ Budget for work
  - ✔ System and procedure of work
  - ✔ Coordination of work
  - ✔ Authority and accountability of work
  - ✔ Control of work
- It can be issued formally in the project manual (through work shop or meetings)

Project Monitoring and Evaluation

- The concept of project Monitoring and Evaluation are used in many ways
- We can think of M&E as a part of continuous
  - ✔ observation
  - ✔ information gathering
  - ✔ supervision (control)
  - ✔ and assessment.

The Need for Monitoring and Evaluation

There are many reasons for carrying out project M&E

- Project managers and other stakeholders need to know to what extent their project is meeting its objectives
- M&E build greater transparency and accountability in terms of use of project resources
- Information generated through M&E provide project staff with a clearer basis for decision-making
- Future project planning and development is improved when guided by lessons learned from project experience

Project Monitoring and Evaluation

What is Monitoring?

- Project monitoring is an integral part of day-to-day management Its purpose is to provide the information by which management can identify and solve implementation problems, and assess progress in relation to what was originally planned.
- Monitoring represents an on-going activity to **track project progress against planned tasks.**
- Monitoring implies observing and controlling the project's activities.
- As soon as the project is launched, control or monitoring becomes the dominant concern of the project management.

The goal of monitoring

- To ensure that the implementation is proceeding as per the plan
- To provide records of input use, activities and results
- To warn of deviation from the initial objective
- In general, project manager must compare the time, cost and performance of the project with the *budget*, *time* and the *tasks* defined in the approved project plan.
- This must be done in an integrated manner at regular intervals, not in a haphazard, arbitrary way

Project Monitoring and Evaluation

The goal of monitoring

- Any significant departures from the budget and the schedule must be reported immediately,
- This will help the project manager to adapt the project schedule, the budget and/or the work plan to keep the project on track.
- The project progress and changes must be documented and communicated to the team members in a consistent, reliable and appropriate manner.

What should be monitored?

- a regular comparison of performance against target
- Volume of work being completed
- Quality of work being completed
- Costs and expenditures compared to the plan
- Attitudes of people working on the project and others who are involved with the project,
- a search for the cause of deviation
- Cohesiveness and co-operation of team members

Project Monitoring and Evaluation

What monitoring should accomplish?

- Communicate project status and changes to other project team members
- Inform management (and clients) about the status of the project
- Provide the justification for making project adjustments
- Document current plans compared to the original project plan

Criteria for Successful Project Control

- Use the project plan as the primary guide for co-ordinating your project.
- Consistently monitor and update the plan.
- Remember that quality communication is a key to control
- Monitor progress on the project against the plan on a regular basis
- Adapt the project schedule, budget and/or work plan as necessary to keep the project on track.
- Document project progress and changes and communicate them to team members.

Project Monitoring and Evaluation

- In many cases project control appeared to be in effective. Some of the reasons are,

1. **Poor information system**: Some of the weaknesses observed in information system are,
   - ✔ Delay in reporting: This will delay initiation of timely action to curb the adverse development
   - ✔ Unreliable Information: When incorrect information is provided to the project manager the control and follow up will become meaningless
2. **Human factor:** When the operational mangers lack experience, training, competence and inclination to words controlling activity of the project
3. **The characteristics of the project:** When project is very large and complex involving many people the task of control become difficult.
   - ✔ Keeping track of personal performance and expenditure on a large number of activities is demanding
   - ✔ Coordination and communication problems multiply when several organization are involved in the project

Project Monitoring and Evaluation

- Proper communication is a key for successful monitoring of the project activities
- There are Formal and Informal ways to tell what's going on

Formal Communication

i. Reports – Status reports must be completed by all team members so that progress and problems can be identified easily and early.

✔Use a standardised form at regular, predetermined intervals.

ii. Audits – Usually performed by objective outsiders who review progress, costs and current plans.

iii. Project review meetings – Periodic meeting of key team members, and supervisors to get together to resolve issues

✔Frequency will depend on size and nature of project and problems experienced.

Informal

- ✔ General conversations with the team members
- ✔ Ongoing interaction with stakeholders
- ✔ Observations (management by walking around)

Project Monitoring and Evaluation

Meaning of Evaluation

- Project evaluation represents a systematic and objective assessment of ongoing or completed projects in terms of their design, implementation and results.
- In addition, evaluations usually deal with strategic issues such as
  - ✔ project relevance,
  - ✔ effectiveness,
  - ✔ efficiency in the light of specified objectives,
  - ✔ Project impact and sustainability.

1. Periodic evaluations of ongoing projects are conducted at regular interval.
   - ✔ to review implementation progress,
   - ✔ to predict project's likely effects and
   - ✔ to highlight necessary adjustments in project design
2. Terminal evaluations (or final evaluations) are evaluations carried out at the end of a project. It is carried out

- ✔ to provide an overall assessment of project performance and effects/impact,
- ✔ to assess the extent to which the project has succeeded in meeting their objectives and their potential sustainability.

Project Monitoring and Evaluation

Types of Evaluations

- The type of evaluation you undertake to improve your programs depends on what you want to learn about the program.
- In general, there are two main categories of evaluations of development projects:
  - ✔ **Formative evaluations** and **Summative evaluations**

Formative evaluations: This is also called process evaluations.

- ✔ It examine the development of the project and may lead to changes in the way the project is structured and carried out.
- ✔ These types of evaluations are often called interim evaluations.
- ✔ One of the most commonly used formative evaluations is the midterm evaluation.

- **In general, formative evaluations are process oriented and involve a systematic collection of information to assist decision-making during implementation of a project.**

Project Monitoring and Evaluation

Questions typically asked in those evaluations include:

- To what extent do the activities and strategies correspond with the plan? If they are not in harmony,
  - ✔ Why are there changes? Are the changes justified?
- To what extent did the project follow the timeline presented in the work plan?
- Are activities carried out by the appropriate personnel?
- To what extent are project actual costs in line with initial budget allocations?
- To what extent is the project moving toward the anticipated goals and objectives of the project?
- Which of the activities or strategies are more effective in moving toward achieving the goals and objectives?
- What barriers were identified? How and to what extent were they dealt with?
- What are the main strengths and weaknesses of the project?
- To what extent are the project beneficiaries satisfied with project services?

Project Monitoring and Evaluation

Summative evaluations:

- This **is** also called outcome or impact evaluations (terminal evaluation)
- Summative evaluations are usually carried out as a program is ending or after completion of a project in order to "sum up" the achievements, impact and lessons learned.
- Such evaluation look at what a project has actually accomplished in terms of its stated goals.
- There are two types of summative evaluations
  - ✔ ***End evaluations:*** aim to establish the situation and to identify the possible need for follow up activities either by donors or project staff
  - ✔ ***Ex-post evaluations:*** are carried out two to five years after external support is terminated.
  - ✔ The main purpose is to assess what lasting impact the project has had or is likely to have and to extract lessons of experience.

Project Monitoring and Evaluation

Summative evaluation addresses questions like,

- To what extent did the project meet its overall goals and objectives?
- What impact did the project have on the lives of beneficiaries?
- Was the project equally effective for all beneficiaries?
- What components were the most effective?
- What significant unintended impacts did the project have?
- Is the project replicable?
- Is the project sustainable?

- As in monitoring, evaluation activities must be planned at the project level.
- Baseline data and appropriate indicators of performance and results must be established.
- Many organizations do not have the resources to carry out the ideal evaluation.
- Therefore, it is recommended that they recruit an external evaluation consultant to lead the evaluation process.
- This would increase the objectivity of the evaluation.

Project Monitoring and Evaluation

- Project strengths and weaknesses **might not be interpreted fairly** when data and results are analyzed by project staff members.
- When the organization can not afford outside help, and/or prefers to carry out the evaluation using its own resources,
- **it is recommended to select an experienced evaluation expert to advise on**
  - ✔ **developing the evaluation plan,**
  - ✔ **selecting evaluation methods,**
  - ✔ **and analyzing and reporting results**

CHAPTER VI

SOCIAL COST BENEFIT ANALYSIS

Social Cost Benefit Analysis

- Social Cost Benefit Analysis mean
- How they differ from financial analysis?
- Public Goods and Externalities
- Steps to follow for SCBA

Social Cost Benefit Analysis

- SCBA became important in late 1960s and early 1970s (Public Projects)
- Social Cost Benefit Analysis (SCBA) is a tool developed for evaluating projects from the society's point of view
- Now a days it is also getting importance in private investment project as they have to be approved by different government agencies.
- SCBA is different from financial analysis in that,
  - ✔ Financial analysis takes into account only those costs and benefits falling on the decision maker
  - ✔ It also focus only on those tangible benefit or costs
- In General, SCBA is a social decision making machinery, which evaluate all major intangible costs and benefits arising form a contemplated course of action

Social Cost Benefit Analysis

Need for SCBA?

- Financial Cost-benefit analysis is quite successful in quantifying the tangible benefits and costs so as to choose the best project with the highest BCR or NPV
- However, such analysis failed to evaluate or assign value **for intangibles** like, **benefit to the natural environment and to the society**
- Which means some projects which seems very profitable when they are valued at market prices might be unattractive from the viewpoint of the **society**,
- **As a result, SCBA deviate from the financial (private) cost and benefit of the project.**

Social Cost Benefit Analysis

- The market price which forms the basis for computing the monetary cost and benefit from the point of view of the project owner will not reflect social values
- This is due to the existence of
  - ✔**Public Goods (Collectively consumed goods)**
  - ✔**Externalities**

Public Good (Collectively consumed goods)

- These are goods served (consumed) on the basis first come first serve. Public goods are goods that are
  1. **Non-excludable:** It is not possible to exclude others from consuming public goods
  2. **Non rival in consumption:** Once they are available the additional consumption up to capacity constraint does not reduce the availability of the good
- The free rider problem arises when a consumer or producer doesn't pay for the use of them

Social Cost Benefit Analysis

Externality

- Externality is said to be exist when the production / consumption activity of one party affects the production/consumption activity of another party without any payment for the effect

Negative externalities

- ✔Project may have a harmful external effect like pollution
- ✔pollution produced by local automobiles,
- ✔Sound produced by economic agents
- ✔Water pollution by a steel industry

Positive externalities:

- ✔Project may create certain infrastructure facilities like road which will benefit people in the nearby community
- ✔pleasure from observing your neighbor's flower garden
- ✔an orchard located next to a beekeeper.

Social Cost Benefit Analysis

- If there are externalities, there is deviation between private and social benefits and costs.
- The equilibrium condition for the private decision-maker is Marginal Private Cost (MPC) equals to Marginal Private Benefit (MPB), i.e., MPC=MPB
- For the society, an efficient allocation requires that Marginal Social Cost (MSC) equals to Marginal Social benefit (MSB), i.e., MSC =MSB .
- If there is positive externality in production the firm produces at point where MPB = MPC. But this is different from the socially efficient level as MSB (= MPB+MEB) > MPB. (E=External)
- Such positive or harmful effects of the project are not valued by the market as they are intangible and the **transaction takes place outside the market.**

Social Cost Benefit Analysis

- **Redistribution effect:** A private project mostly are not concerned how the benefits are distributed across various groups in the society.
  - The society is , however, concerned with the distribution of benefits across different groups.
  - In the SCBA redistribution effect of the proposed project is also considers in evaluating the project.
  - In choosing a particular project the **additional benefits** derived from a particular project should **exceed the corresponding additional cost**
  - The cost benefit analysis can be undertaken in three steps
    - ✔ **Step-1:** This step involves the identification of alternatives to be assessed.
    - ✔ **Step-2:** In this step a prediction of the **likely consequences** associated with each alternative projects
    - ✔ This means the likely effect of the project on the social and environmental aspects is predicted

Social Cost Benefit Analysis

For Example:

- Consider a development project - Construction of Dam.
- In this step the possible intangible benefits that a project may bring to the community and on the environment is predicted.
- These are benefits like,
  - ✔ The number of unemployed people that would get employment opportunity
  - ✔ Benefit obtained from the infrastructure improvement (saved time , reduced cost, etc.)
  - ✔ Decrease yearly flood damage (soil erosion, deforestation, reduced property damage)
  - ✔ Recreational benefit to the society
- Intangible Cost (harmful impact of the project)
  - ✔Deforestation created by the project
  - ✔Number of people displaced from the site

Social Cost Benefit Analysis

Example 2

- Consider the Railway project:
- Here we need also to identify and describe changes that can be brought out by the project in the transport sector.
- The Railway projects might have the following social benefits and costs

Potential benefits:

- ✔ It reduces motor vehicles operation and maintenance cost to both government and private sector as they switch over from road to railways.
- ✔ It will reduce travel time of people using the road (opportunity cost of time)
- ✔ Reduce atmospheric pollution in the city
- ✔ Reduce investment and operation cost of road
- ✔ Reduce traffic accident in the city

Expected cost of the project

- ✔Loss of revenue to private investor
- ✔Number of people losing their job

Social Cost Benefit Analysis

- **Step-3: Involves the task of estimating (assigning) values for the cost and benefits occurring as a result of implementing the project**
  - Estimating the cost or the benefit of intangibles is some what difficult and require the application of both direct and indirect method.
  - Consider the case of a project that might cause damage on the environment say, **west disposal to the river or air pollution**
  - Let us consider the nature of the cost involved in environmental quality (**cost valuation**)
  - Cost of environmental problem refers to the **west disposal cost** imposed on the society by the production and consumption activities of the project
  - **West Disposal Cost**: is the sum of pollution prevention cost and pollution cost (i.e.,)
    - ✔**West Disposal Cost = Pollution Prevention Cost + Cost of Pollution**

Social Cost Benefit Analysis

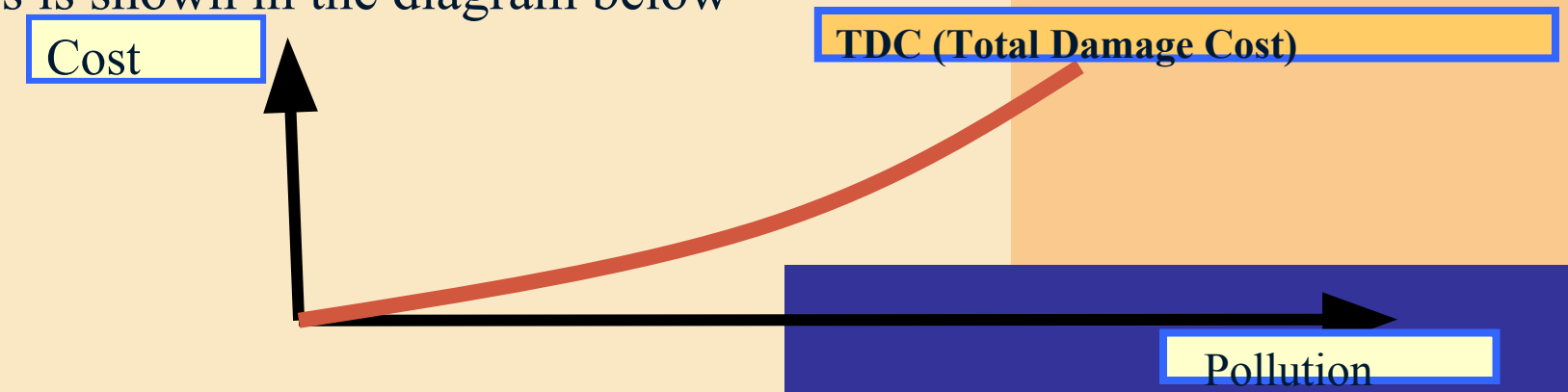
- **Pollution Prevention Cost:** are those costs incurred to prevent the pollution either partly or fully.
  - These are costs like,
    - ✔ Costs incurred by local government (society) to treat its sewage before dumping it into the river.
- One example of social cost of pollution prevention is the additional transport cost accepted by suburban dwellers who work in a city.
- Some people prefer to reside in suburbs and incur additional expense on transport rather than be a part of the polluted atmosphere in the city.
- These costs are incurred for the purpose of avoiding the problem of congested city and hence come under pollution prevention cost.

Social Cost Benefit Analysis

- **Pollution Cost:** these can be either **pollution avoidance cost** or **welfare damage cost**.
- **Pollution avoidance costs:** are private or public expenditure made to avoided pollution damage once pollution has already occurred
  - ✔ Once the environmental damage has occurred a society can choose either to avoid the damage through some remedial measure or to bear it
  - ✔ The cost of such measure is considered as a best estimate to value the damage **(cost of the project)**
- **Welfare Damage:** The damage that are neither prevented nor avoided cause **welfare damage.**
  - ✔ Such damages are both real and financial.
  - ✔ These are observable deterioration of physical asset and properties.
  - ✔ It can also be in the form of deterioration of the health of living beings.
  - ✔ Projects that results in water and air pollution create health hazards and increase the medical expense to the society to maintain a given standard of health

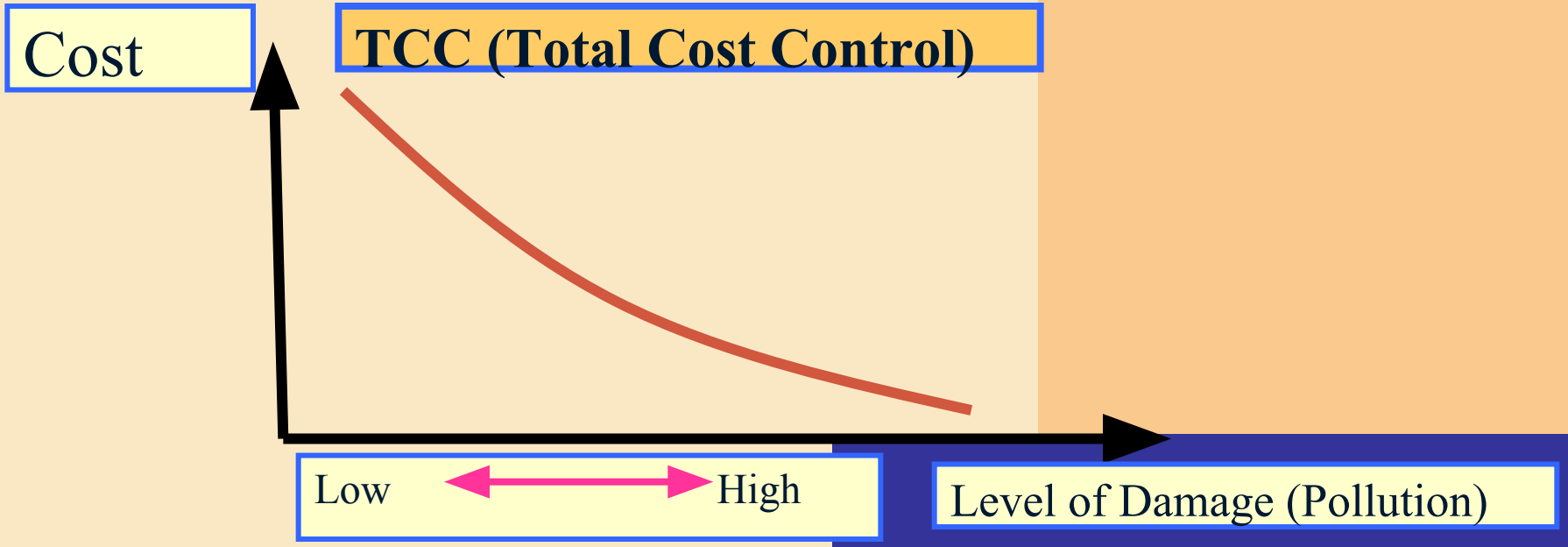
Social Cost Benefit Analysis

- There are, certain welfare costs of pollution damage which can not be directly measured.
- At most we can measure them by finding out sum of money needed to pay to avoid such damage. In general,
  - ✔ West Disposal Cost = Pollution Prevention Cost + Pollution Cost
  - ✔ Pollution Cost = Pollution Avoidance Cost + Welfare Damage Cost
- Waste disposal costs are in general alternative costs of real cost
- That is, direct and indirect outlays that could be incurred either to prevent pollution before it occurred or to avoid the damage from pollution after it has occurred.
- The pollution damage cost to the society increases with pollution increase. This is shown in the diagram below



Social Cost Benefit Analysis

- **Cost of pollution control** increases as a society attempts to decrease the damage (or to increase environmental quality)
- This reflects the fact that the more pollution is reduced the higher will be the cost to the society in effort to control an additional unit of pollution
- The following graph shows the relationship between the cost of damage control with the level of damage

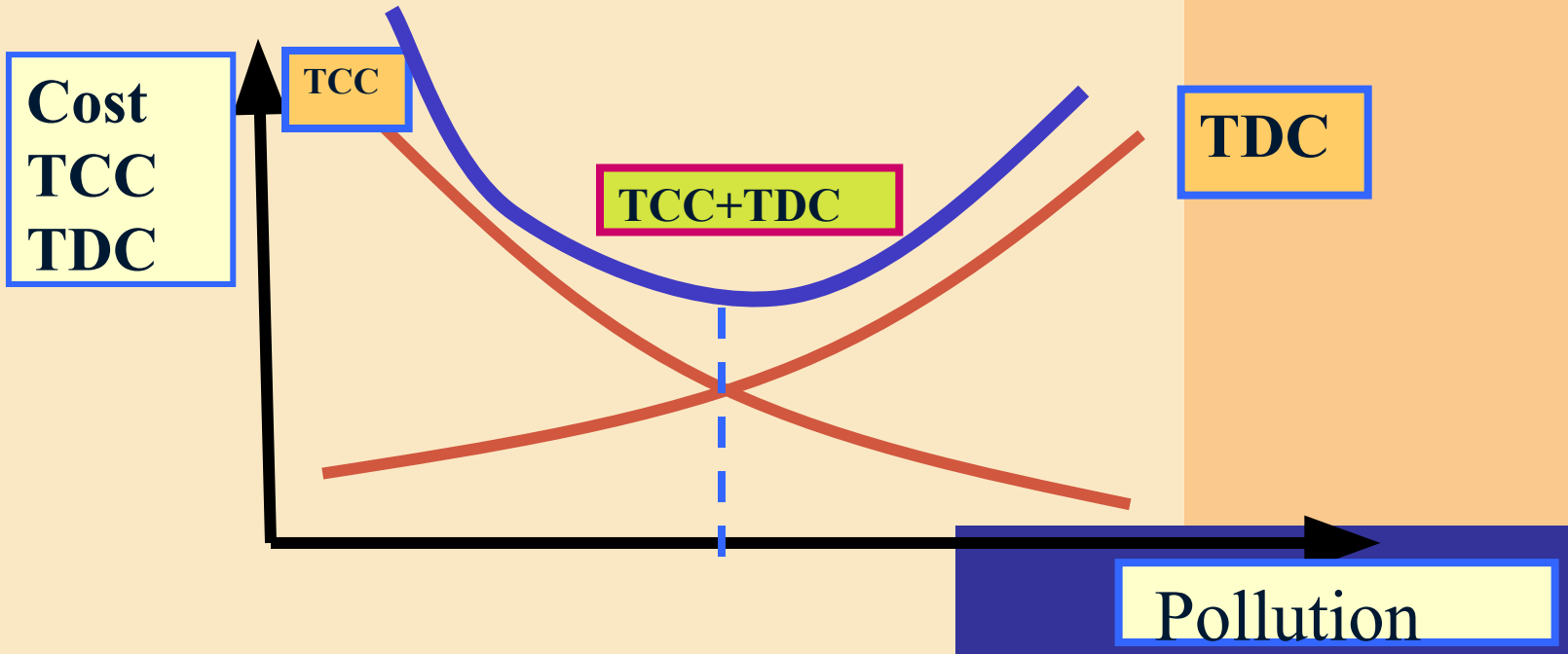


Social Cost Benefit Analysis

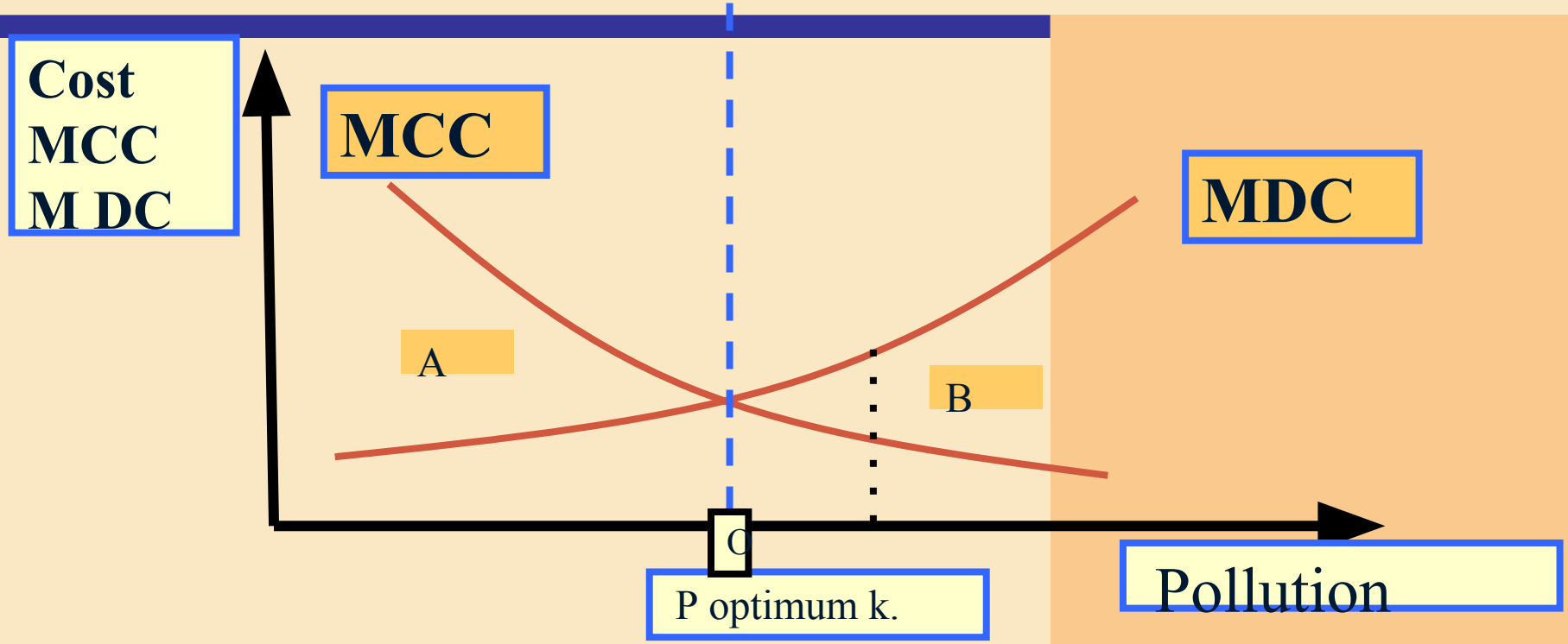
- The reasonable goal of the society is to minimize the sum of the Total Damage Cost of pollution and the Total Cost of Controlling pollution. i.e.,

  Min TDC + TCC

- The relationship b/n the total damage cost and total cost of control is presented bellow.



Social Cost Benefit Analysis



- The pollution level OK represents a situation where MDC > MCC
- The marginal damage for the society is higher than its cost of control
- Generally the cost of damage inflicted by the project can be estimated by considering the above cost concepts of west disposal.

Social Cost Benefit Analysis

I. Direct method

- Direct methods are largely based on survey. These methods are useful in valuating the benefit of a project where indirect methods are inadequate.
- Direct method is an attempt to elicit preference directly by the use of survey and experimental technique

2. Indirect Method

- These are the method largely used on the basis of actual peoples behavior in contrast to the use of hypothetical situation.
- This method of valuating benefit relies on the actual market price of the product, the production of which has consequence on environment.
  - Change in environmental quality lead to changes in productivity which in turn will affect the price of the product through a change in output. Such changes can be observed and measured.

For example,

- A reduction in soil erosion may increase yields. Comparison of output with and without soil conservation scheme shows the difference in productivity arising from soil conservation

Social Cost Benefit Analysis

- Like wise, improvement in the water supply by reducing salinity may improve the crop productivity.
- Similarly a project which brings adverse effect on the quality of soil (erosion or pollution) may result in reduction in crop production. .

CHAPTER VII

PROJECT FINANCING

PROJECT FINANCING

- After projecting or estimating the cost of the proposed project , the next step is to identify means of financing the project.
- There are basically two sources available for financing the fund requirement of a project internal sources and external source.
- The project is normally financed from external source unless it is very small.
- Generally no project is offered 100% assistance even if the project is highly profitable since the institutions expect a minimum stake for the promoter to ensure his involvement.
- A generally applied financing pattern for an industrial project is to cover the initial capital investment by equity and long-term loans to varying extents, and to meet working capital requirements by additional short- and medium-term loans from national banking sources.

PROJECT FINANCING

- In all cases, a balance needs to be struck between long-term debt and equity.
  - ✔ The higher the proportion of equity the less the debt service obligations and the higher the gross profit before taxation.
  - ✔ The higher the proportion of loan finance, the higher the interest payable on liabilities.
- In every project, therefore, the implications of alternative patterns and forms of financing must be carefully assessed; a financing pattern should be determined that is consistent with both availability of resources and overall economic returns.
- To meet the cost of project the following means of finance are available.
  - Capital (equity) financing
  - Loan financing (debt financing)
  - Debenture capital
  - Supplies credit (credit financing)
  - *Leasing*
  - Incentive sources

PROJECT FINANCING

Capital (Equity Financing):

- On way of financing the project is by issuing equity.
  - Equity and long term investment are often used to cover the initial capital investment for an industrial project and to meet working capital requirements.
  - When institutional capital is scarce and cost of borrowing is very high, equity capital covers the initial capital investment and working capital requirement.
  - Equity can be raised by issuing two types of shares: ordinary shares/common shares and preference shares.

PROJECT FINANCING

Capital (Equity Financing):

- ordinary shares represent contribution made by the owners of business the equity shareholders, who enjoy the rewards and bear the risk of ownership. Equity shares being risk capital carries no fixed rate of dividend.
- Dividends on ordinary shares with full voting rights, however, depend on the profitable operation of the company
- Preference shares represent the contributions made by preference shareholders and the divided paid on it is generally fixed.
- Preference shares usually carry a dividend at least partly independent from profit, without, or with only limited, voting rights. Preference shares can be convertible to common shares,

PROJECT FINANCING

Loan (debt) financing

- Where relatively inexpensive long- or medium-term credit is available, there is a growing tendency to finance projects through such loans.
- In many countries it is relatively easy for a sound project to get loans from financial institutions
- the financial analysis will identify such sources and the extent to which loan capital can be secured, (with the interest rate)
- ***Short-term loans***. Short-term loans from commercial banks and local financial institutions are available against pledging, of inventories.

PROJECT FINANCING

Loan (debt) financing

- The limits to which inventories are financed by commercial banks are fixed by the banks, and depend on banking practices in the country, the nature of the project and inventories, and the credit rating of the enterprise and its management
- **Long term loans** . Long term loans (5 to 10 years) are provided by financial institutions and commercial banks.
- Terms loans represent secured borrowing, which are very important source (major source) for financing new project as well as expansion, modernizing and renovation schemes of exiting firms.
- An important source of finance is also available at government-to-government level. This can be a *bilateral credit or tied credit*, which may be related to the purchase of machinery and equipment from particular country or sources.

PROJECT FINANCING

Debenture capital:

- Akin to promissory notes they are an instrument to raise fund (debt financing).
- Debentures are instruments for raising long-term debt capital.. These are of two broad types
- Non-convertible debentures: These are straight debt instruments and typically carry a fixed rate of interest with a maturity period of 5 to 9 years.
- Convertible debenture as the name implies are debentures, which are convertible, wholly or partially into equity shares at the option of its holders. The conversion period and price are announced in advance.

PROJECT FINANCING

Suppliers credit (credit financing):

- Imported machinery and spares can often be financed on deferred credit term.
- Machinery suppliers in industrialized countries are generally willing to sell machinery on deferred-payment terms with payments spread over 6 to 10 years, and sometimes even longer.
- Deferred payment terms are available against bank guarantees; this enables such machinery suppliers to obtain refinancing facilities from financial institutions in their own countries.

PROJECT FINANCING

Leasing

- Instead of borrowing financial means it is sometimes possible to lease plant equipment or even complete production units, in other words, productive assets are borrowed.
- Leasing, as the borrowing of productive assets is called, requires usually a down payment and the payment of an annual rent, the leasing fee.
- These assets are, however, contained in the balance sheet of the lessor and not in the balance sheet of the borrowing firm, the lessee.

Incentive source:

- The government and its agencies may provide financial support as incentive to certain types of promoters or for setting up industrial units in certain location.
- These incentives to certain areas may take the form of seed capital assistance (provided at a nominal rate of interest to enable the promoter to meet his contribution to the project) or capital subsidy (to attract industries to certain location) or tax exemption (particularly form sales tax) for a certain period.

PROJECT FINANCING

Cost of capital

- Capital for financing of investments may be obtained from private and institutional resources (banks, insurance companies, funds etc.).
- To obtain finance, an investor must therefore pay a charge-the cost of capital or of finance-for the funds lent.
- This charge comprises an interest rate, usually expressed as a percentage per annum, as well as certain fixed charges (commitment fee, charge on capital not drawn, commissions etc.).
- Interest is usually computed for the outstanding balance of the corresponding liabilities of a firm, for example, interest payable on a bank loan, dividends payable on equity capital (such as preference shares) and interest payable on a current liabilities.
- For the investor the cost of capital is determined by the conditions that can be obtained for the project on the capital market.
- For the amount stemming from own funds (savings) investors should charge their opportunity cost of capital, that is, the interest they would obtain if they invested in another feasible venture.

PROJECT FINANCING

Cost of capital

- The cost of equity capital for the project or firm is basically determined by the minimum accumulated return, expressed as the NPV of the future income of the shareholders, and the minimum annual rate of return, expressed as the rate of return on equity capital.
- The acceptable minimum rates depend on the opportunity cost of capital, the expected business risks, and the valuation of any gains or benefits obtained in addition to the payment of dividends.
- The purpose of the concept of equity is to give the management of the firm more flexibility with regard to the best use of the annual net profits in the interest of the shareholders or owners and the firm.
- The debt service (interest and amortization) is fixed and legally binding for the firm, and has to be paid even when the generation of cash is insufficient in certain years,
- whereas payment of dividends is in general linked to a sufficiently high profit and cash generation.
- The determination of the right (optimal) capital mix is therefore essential when a financing strategy is designed for an investment project.

PROJECT FINANCING

Public policy and regulations on financing

- all investments are under the prevailing regulations on financing and taxation of income from capital investment
- Funds can be mobilized either from national sources (individual or institutional), or through foreign participation.
- When a developing country has a reasonably well developed capital market, equity funds can be raised through public issues of shares. Such share issues are usually underwritten by banks and other financial institutions.
- In considering foreign equity participation, a basic policy question may arise regarding the extent (if any) of foreign influence after such participation.
- In a number of developing countries, foreign equity participation requires governmental approval. In some countries, such approval is often not granted, particularly to non-priority sectors of investment.
- where foreign equity participation is considered, the first need is to assess the policy implications and the reaction of government authorities. Thereafter, the implications of foreign equity participation on the project should be evaluated.

PROJECT FINANCING

Financing institutions

- Most developing countries have established development financing institutions, usually called industrial finance corporations or industrial development banks.
- In most developing countries, there is more than one institution available to finance projects. Most countries have established financial institutions at the state and national levels.
- Some of the national institutions provide foreign currency loans which are financed by international institutions, such as the World Bank and its affiliates.
  - Development bank of Ethiopia

PROJECT FINANCING

Foreign Financial Institutions

1. World Bank: It is also the International Bank for Reconstruction and Development. World Bank funds to the less developed member countries for building infrastructure. Schools, irrigation dams, power plants, roads, water supply and sewerage, etc. are the specific projects, which have been aided by the World Bank.
2. International Monetary Fund (IMF) This is a part of the United Nations. It complements the World Bank's efforts to promote economic growth.
3. International Finance Corporation (IFC) It is a subsidiary of the World Bank and provides funds specifically for the private sector.
4. International Development Association (IDA) This is also a subsidiary of the World Bank. It provides soft loans to under-developed countries.
5. United Nations Development Programme (UNDP) and United Nations Industrial Development Organization (UNIDO) These two institutions of the United Nations provide funds to industrial projects throughout the world.
6. Asian Development Bank (ADB) This is the development bank for the Asian continent. This institution finances infrastructure projects and also new industrial units

THANK YOU!!!

WISH YOU ALL THE BEST!!!