**CHAPTER ONE** -**GENERAL INTRODUCTION**

Projects have a major role to play in the economic development of a country. Since the introduction of planning in our economy, we have been investing large amount of money in projects related to industry, minerals, power, transportation, irrigation, education etc. with a view to improve the socio-economic conditions of the people. These projects are designed with the aim of efficient management, earning adequate return to provide for future development with their own resources. But experience shows that there are several shortcomings in the ultimate success of achieving the objectives of the proposed project.

* 1. **the project concept and definition**

Project planning and analysis has a long history in financial and business analysis. Project planning has always been used as a means of checking the profitability of a particular investment by private firms. Recent experiences show that project analysis has attracted the attention of development economists. Projects are now assessed from the economy’s viewpoint instead of only from the firm’s perspective. The selection criteria have also included economic criteria on top of financial criteria.

Project starts from scratch with a definite mission, generates activities involving a variety of human and non-human resources, all directed towards fulfillment of the mission and stops once the mission is fulfilled.

Perhaps the most difficult problem confronting administrators in developing countries is implementing development programs. Much of the failures can be traced to poor project preparation. Especially from development viewpoint, for most development activities careful preparation in advance of expenditure is, if not absolutely essential, at least the best available means to ensure efficient, economic use of capital funds and to increase the chances of implementation on schedule. Unless projects are not carefully prepared in substantial details, inefficient or even wasteful expenditure is almost sure to result – a tragic loss in nation’s capital.

The term project has a wider meaning. A project is accomplished by performing a set of activities. For example, construction of a house is a project. The construction of a house consists of many activities like digging of foundation pits, construction of foundation, construction of walls, construction of roof, fixing of doors and windows, fixing of sanitary fitting, wiring etc. Another aspect of project is the non-routine nature of activities. Each project is unique in the sense that the activities of a project are unique and non-routine. A project consumes resources. The resources required for completing a project are men, material, money and time.

Thus, we can define a project as an organized program of pre-determined group of activities that are non-routine in nature and that must be completed using the available resources within the given time limit.

Let us now consider some definitions of ‘project’. Newman et.al define that “a project typically has a distinct mission that it is designed to achieve and a clear termination point the achievement of the mission”. Gillinger defines “project” as the whole complex of activities involved in using resources to gain benefits. According to the encyclopedia of management, “project is an organized unit dedicated to the attainment of goal, the successful completion of a development project on time, within budget, in conformance with predetermined program specification.” A project is a temporary Endeavour undertaken to create a unique product or service.

There are many definitions of a project and many different types of projects. The simplest way to understand a project is to identify the following common characteristics:

1. it has a specific starting and finishing time,
2. it has usually geographical and sometimes organizational boundary,
3. it has clearly defined set of objectives,
4. it entails the investment of scarce resources in the expectation of future benefit, and
5. it may be planned, financed and implemented as a unit

A project is defined as a specific, finite activity that produces an observable and measurable result under certain preset requirements.

It is an attempt to implement desired change to an environment in a controlled way. By using projects we can plan and do our activities, for example: build a garage, run a marketing campaign, develop a website, organize a party, go on vacation, graduate a university with honors, or whatever else we may wish to do.

A Project is a temporary, unique and progressive attempt or endeavor made to produce some kind of a tangible or intangible result (a unique product, service, benefit, competitive advantage, etc.). It usually includes a series of interrelated tasks that are planned for execution over a fixed period of time and within certain requirements and limitations such as cost, quality, performance, others.

Project management institute, USA defined a project as **“a combination of human and non-human resources pooled together in a temporary organisation to achieve a specific purpose”.** The purpose and the set of activities which can achieve that purpose distinguish one project from another.”

Project, in general, involves the creation of new and additional fixed production capacity. It requires the commitment of scarce resources to a specific line of action which prevents the use to other areas.

### 1.2 Features of a Project

**1. Objectives:**

A project has a fixed set of objectives. Once the objectives have been achieved, the project ceases to exist.

**Life Span:**

A project cannot continue endlessly. It has to come to an end. What represents the end would normally be spell out in the set of objectives.

**3. Single entity:**

A project is one entity and is normally entrusted to one responsibility centre while the participants in the project are many.

**4. Team-work:**

A project calls for team-work. The team again is constituted of members belonging to different disciplines, organisations and even countries.

**5. Life-cycle:**

A project has a life cycle reflected by growth, maturity and decay. It has naturally a learning component.

**6. Uniqueness:**

No two projects are exactly similar even if die plants are exactly identical or are merely duplicated. The location, the infrastructure, the agencies and the people make each project unique. It requires the doing of something different, something that was not done previously. Even in what are often called “routine” projects such as home construction, the variables such as terrain, access, zoning laws, labour market, public services and local utilities make each project different. A project is a one-time, once-off activity, never to be repeated exactly the same way again.

**7. Change:**

A project sees many changes throughout its life while some of these changes may not have any major impact; then- can be some changes which will change the entire character of course of the project.

**8. . Unity in diversity:**

A project is a complex set of thousands of varieties. The varieties are in terms of technology, equipment and materials, machinery and people, work culture and ethics. But they remain inter-related and unless this is so, they either do not belong to the project or will never allow the project to be completed.

**9.. High level of sub-contracting:**

A high percentage of the work in a project is done through contractors. The more the complexity of the project, the more will be the extent of contracting. Normally around 80% of the work in a project is done through sub-contractors.

**10. Risk and uncertainty:**

Every project has risk and uncertainty associated with it. The degree of risk and uncertainty will depend on how a project has passed through its various life-cycle phases. An ill-defined project will have extremely high degree of risk and uncertainly Risk and uncertainty are not part and parcel of only R and h projects—there simply cannot be a project without any risk and uncertainty

**1.3 The linkage between Project and Planning/ programs**

It is necessary to distinguish between projects and programs because there is sometimes a tendency to use them interchangeably. While a project refers to an investment activity where resources are used to create capital assets, which produce benefits over time and has a beginning and an end with specific objectives, a program is an ongoing development effort or plan which may not necessarily be time bounded. The basic **difference between project and program** is that a **project** is short-term and designed to deliver a specified output within time, cost and quality parameters; and a **program** is a long-term managed portfolio of multiple **projects** designed to produce outcomes.

Examples could be a road development program, a health improvement program, a nutritional improvement program, a rural electrification program, etc. A development plan is a general statement of economic policy. National development plans are further disaggregated into a set of sectoral plans.

A development plan or a program is therefore a wider concept than a project. It may include one or several projects at various times whose specific objectives are linked to the achievement of higher level of common objectives. For instance, a health program may include a water project as well as a construction of health centers both aimed at improving the health of a given community, which previously lacked easy access to these essential facilities. Projects, which are not linked with others to form a program, are sometimes referred to as “stand alone” projects.

Projects in such context are the concrete manifestations of the development plans in a specific place and time. One can think of projects as subunits and bricks of programs, which constitute the national plan (usually the direction is from plans to projects). We have to note that projects could be either public or private. It is the smallest operational element prepared and implemented as a separate entity in a national plan or program.

From the above discussion it can be seen that the major difference between a project and a program is not so much in objectives stated but lies more in scope, the details and accuracy. A project is designed with a high degree of precision and details as regards its objectives, features, calculation of returns and implementation plan. A program by contrast is general, lacks details and precision and aims at a broader goal often related to a sectoral policy of a country or departmental policy of an organization.

Perhaps the distinction between projects and programs would be clear if we see the basic characteristics of projects. Projects in general need to be **SMART**.

**S – Specific**

A project needs to be specific in its objective. A project is designed to meet a specific objective as opposed to a program, which is broad. A project has also specific activities. Projects have well defined sequence of investment and production activities and a specific group of benefits. A project is also designed to benefit a specific group of people.

**M - Measurable**

Projects are designed in such a way that investment and production activities and benefits expected should be identified and if possible be valued (expressed in monetary terms) in financial, economic and if possible social terms. Though it is sometimes difficult to value especially secondary costs and benefits of a project, attempt should be made to measure them. Measure costs and benefits must lend themselves for valuation and general projects are thought to be measurable.

**A – Area bounded**

As projects have specific and identifiable group of beneficiaries, so also have to have boundaries. In designing a project, its area of operation must clearly be identified and delineated. Though some secondary costs and benefits may go beyond the boundary, its major area of operation must be identified. Hence projects are said to be area bounded.

**R – Real**

Planning of a project and its analysis must be made based on real information. Planner must make sure whether the project fits with real social, economic, political, technical, etc. situations. This requires detail analysis of different aspects of a project.

**T – Time bounded**

A project has a clear starting and ending point. The overall life of the project must be determined. Moreover, investment and production activities have their own time sequence. Every cost and benefit streams must be identified, quantified and valued and be presented year-by-year.

* **Project Parameters**

During a project's life, management focuses on three basic parameters: quality, cost, and time.

* Traditionally, it is said that a successfully managed project is the one that is completed at the specified level of quality, on or before the deadline, and within the budget.
* In the contemporary period, there are added parameters used for measuring success of project implementation.
* For instance, client (or customer) satisfaction, among others, is newly added parameter that partially indicates success in implementation as well as possibilities for future replication (or sustainability).
* In general, each of the parameters is specified in detail during the planning phase of the project.
* These specifications then form the basis for controlling the project during the implementation phase.

**Project Management**

* Project management is:
	+ an organized venture for managing projects.
	+ “…the application of ***knowledge***, ***skills***, ***tools*** and ***techniques*** to project activities in order to meet stakeholders needs and expectations from a project.” – (PMI, 1996):PMBOK
	+ “The process by which projects are ***defined***, ***planned***, ***monitored***, ***controlled*** and ***delivered*** so that agreed benefits are realized,” – (APM, 2006): PMBOK
	+ “Project management is the ***skills***, ***tools*** and ***management processes*** required to undertake a project successfully”.
* Project management comprises:
	+ A set of Skills. Specialist skills and experience are required to reduce the level of risk within a project and thereby enhance its likelihood of success.
	+ A Suit of Tools. Various types of tools are used by project managers to improve their chances of success. Examples include registers, planning software, modelling software, audit checklist and review forms.
	+ A Series of Processes. Various management *techniques* and *processes* are required to *monitor* and *control* time, cost, quality and scope of projects.

Examples include time management, quality management, change management, risk management, etc.

* Every person, every organization and every nation is concerned with project management.
	+ An individual builds a house. It is a project to him.
	+ An organization sets up new factory. It is a project for the organization.
	+ The government of a country builds high ways, dams, thermal power plants, hydropower plants, airports, etc. These are all projects that a country undertakes.
* **Project Management Derivers: What Causes PM?**
1. The expansion of knowledge (knowledge explosion)
2. The increasing demand for new products (services)
3. The increase in world wide market
4. Increased competition
5. The belief that “better living through technology”
6. Expanding size of projects – some projects may be expanding too much thus requiring project management.
* **Typical Project Problems**
1. Scope may not be clearly defined when commitment is made to a client.
2. There may not be enough resources allocated (people, money, materials, time, space, etc).
3. Conflict of interest between or among stakeholders (ops vs. engineers, sales vs.technical support, line vs. staff).
4. Commitment to unrealistic dates – the PM may be too optimistic about the completion date of the project.
5. There may be unclear roles and responsibilities.
6. Things may go wrong for some natural reasons.
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* **Functions of the Project Managers**
* Project managers perform the following major functions:
	1. Plan work (scope, budget, schedule),
	2. Obtain and manage resources,
	3. Resolve conflicts and problems,
	4. Motivate people
	5. Communicate to the team, to the organization, and to the clients,
	6. Set priorities,
	7. Make decisions,
	8. Control technical quality, budget, and schedule
	9. Integrate multiple skills

##  Project Analysis

All countries, but particularly the developing countries, are faced with the basic economic problem of allocating resources such as labor at all levels of skill, management and administrative capacity, capital, land and administrative and other natural resources and foreign exchange, to many different uses such as current production of consumer goods and public services or investment on infrastructure, industry, agriculture, education and other sectors. These different uses of resources, however, are not the final aim of the allocative process; rather they are the means by which an economy can marshal its resources in the pursuit of more fundamental objectives such as the removal of poverty, the promotion of growth and the reduction of inequality in income. Pursuit of one objective (better income distribution) however, may involve a sacrifice in other objective (rapids growth).

A choice therefore has to be made among competing uses of resources based on the extent to which they help the country achieve its fundamental objectives. If a country consistently chooses allocations of resources that achieve most in terms of these objectives, it ensures that its limited resources are put to their best possible use.

Project analysis is a method of presenting this choice between competing uses of resources in a convenient and comprehensible fashion. In essence, project analysis assesses the benefits and costs of a project and reduces them to a common denominator.