

READING MATERIAL FOR
(Ag Econ 355 UNDERGRADUATE COURSE)
FUNDAMENTALS OF FARM BUSINESS
MANAGEMENT INCLUDING PROJECT
DEVELOPMENT APPRAISAL &
MONITORING

S K CHAUHAN
Compiler



DEPARTMENT OF AGRICULTURAL ECONOMICS,
EXTENSION EDUCATION & RURAL SOCIOLOGY
COLLEGE OF AGRICULTURE
CSK HP KRISHI VISHVA VIDYALAYA, PALAMPUR 176 062
FEBRUARY, 2014

ACKNOWLEDGEMENTS

As a part of course curriculum, the undergraduate students of B. Sc (Hon.) Agriculture, College of Agriculture CSK HP Agricultural University Palampur have to study Ag Econ 355 (Fundamentals of Farm Business Management including Project Development Appraisal and Monitoring) as one of the five essential courses of the discipline of Agricultural Economics during their 3rd year of 4 year B Sc (Hon) Agriculture degree programme. This course is of special significance in making them capable of learning agribusiness tools and techniques in addition to preparing and evaluating agribusiness projects. The teaching manual has been prepared keeping in view the course contents prescribed by 4th Dean Committee of ICAR.

During compiling teaching/reading material many books have been consulted the list of which has been provided in the manual. I sincerely acknowledge the financial support of the ICAR, GOI under CDA for developing teaching material in the form of manual. I do hope both students and teachers will find it as a helping hand and students in particular would find it most useful while preparing them for examination. The compiler thanks Dean COA, Palampur and Head Agricultural Economics for motivating him to undertake this work. Any and all errors & omissions are the sole responsibility of the compiler.

Palampur
February, 28, 2014

S K Chauhan

COURSE CONTENT

Theory

Agribusiness: Meaning, Definition, Structure of Agribusiness, (Input, Farm, Product Sectors) and importance of Agribusiness in the Indian Economy. Agricultural Policy. Management: Definition of Management. Management Functions, Planning, Meaning, Definition, Types of Plans. (Purpose or Mission, Goals or objectives, Strategies, Policies, Procedures, Rules, Programme, Budget), Characteristics of sound plan, Steps in planning, Organization, Staffing, Directing, Motivation, Ordering, Leading, Supervision, Communication, Control. Capital Management. Financial Management of Agribusiness: importance of Financial Statement, Balance Sheet, Profit and Loss Statement, Analysis of Financial Statement. Agro-based Industries: Importance and Need, Classification of Industries, Types of Agro-based Industries, Institutional Arrangement, Procedure and Constraints in Establishing Agro-based Industries. Marketing Management: Meaning, Definition and Marketing Mix. Project: Definition, Project cycle, Identification, Formulation, Appraisal, Monitoring and Evaluation. Project Appraisal and Evaluation Techniques, Sensitivity Analysis, Characteristics of Agricultural Projects.

Practical: Study of input markets: seed, fertilizers, pesticides. Study of output markets, grains, fruits, vegetable, flowers, retail trade commodity trading and value added products. Preparation and analysis of financial statements. Preparation of agricultural projects, feasibility reports and project appraisal techniques.

Reference Books

Sr. No.	Title of Book	Author(s)	Publisher
1	Agricultural Finance and Management	S. S Reddy; P. Raghu Ram	Oxford & IBH Publishing Co. New Delhi.
2	An Introduction to Agricultural Finance	U. K Pandey	Kalyani Publishers New Delhi
3	Agri Business Management:----- Problems and Prospects	Himanshu	Ritu publications Jaipur
4	A Text Book of Agri-Business Management	A. C Broadway A. A Broadway	Kalyani Publishers, Ludhiana/New Delhi
5	Management: Text and cases	R Satya Raju and A Parthasarathy	Prentice Hall of India Pvt. Ltd, New Delhi
6	Agribusiness Management	W. David Downey and John K Trocke	Mc Graw Hill Book Co. New Delhi/ New York
7	Introduction to Agricultural Economics and Agribusiness Management	J M Talathi, V. G Naik and V.N Jalgaonkar	Ane Books India, New Delhi
8	Elementary Economic Theory	K K Dewett and J. D Verma	S. Chand and Co. Ltd, New Delhi
9	Analysis of Agricultural Projects	J P Gittinger	World Bank Publication
10	Agricultural Marketing in India	S. S Acharya, N. L Aggarwal	Oxford & IBH Publishing Co., New Delhi.
11	Marketing Management	V S Ramaswamy and S Namakumari	Macmillan Publishers India ltd. New Delhi
12	Farm Management: An economic analysis	S P Dhondyal	Friends Publications

CONTENTS

	Title
UNIT 1	AGRIBUSINESS MANAGEMENT
UNIT 2	FORMS OF BUSINESS ORGANIZATION
UNIT 3	ROLE OF AGROINDUSTRIES IN AGRIBUSINESS DEVELOPMENT
UNIT 4	INDIA'S AGRICULTURAL POLICY
UNIT 5	CAPITAL MANAGEMENT
UNIT 6	FINANCIAL MANAGEMENT OF AGRIBUSINESS
UNIT 7	TOOLS OF FINANCIAL ANALYSIS
UNIT 8	MARKETING MANAGEMENT
UNIT 9	AGRICULTURAL PROJECT EVALUATION
UNIT 10	RESAERCH MATERIAL ON EVALUATION OF AGRIBUSINESS PROJECTS

UNIT 1

AGRIBUSINESS MANAGEMENT

This chapter has been covered under two separate heads, i.e Agribusiness and management. Let us discuss agribusiness first.

I AGRIBUSINESS

Background of Agribusiness

Agriculture in India is the most important sector of Indian Economy with its contribution of about 15% to the GDP (2009-2010). It also engages 52% of the workforce. Thus, an attempt to eradicate poverty and the social upliftment of the country cannot be envisaged/ ensured without strengthening the Indian agriculture. Agriculture also produces raw material to support various agro based industries and subsidiary industries including dairy, textile, food and pharmaceuticals. Agriculture activities are to be made more competitive with the input of modern technologies and value additions. It is in this context that agriculture has to be understood as an agribusiness activity. Agriculture business has become well accepted term worldwide.

Concept of Agribusiness

Agribusiness can be split into three economically interdependent sectors, that is, the input sector, the farm sector and the product sector as below:



- 1 The input sector provides supplies of inputs which include seed, fertilizer, chemicals, machinery, fuel and feed, etc to farmers for production of crops and raising livestock.
- 2 The farm sector produces crops and animal or livestock products.
- 3 The product sector processes and distributes the crops and livestock products to the final consumers.

So agribusiness is an important sector of economy wherein production and distribution of inputs to farmers, and production, marketing, processing & distribution of farm products to final consumers take place.

Origin and Definition of Agribusiness

The definition of agribusiness was first coined by John H Davis who was assistant secretary of agriculture in America. He described agribusiness as “All the activities concerned with agriculture”. These activities include farming, management, financing, processing, marketing, etc. In 1960s several ‘B’ SCHOOLS in US offered a specialized field of study in agribusiness management. Later in 1975 agribusiness management was introduced in the Agricultural universities, however, in India it is of recent origin.

John Davis and Ray Goldberg (1957) defined agribusiness as “The sum total of all operations involved in the manufacture and distribution of farm supplies, production operations on the farm and the storage, processing & distribution of farm commodities and items made from them.”

Agricultural economists defined agribusiness as “All business enterprises that buy from or sell to farmers. The transaction may involve a product, a commodity or a service and encompasses/ contains items such as (a) Productive goods/services (e.g. feed, seed, fertilizers, equipment, energy, machinery, etc, (b) Agricultural Commodities (e.g. food and fibre) and (c) Facilitative Services (e.g. credit insurance, marketing, storage, processing, transportation, packaging, distributions, etc).

Scope of Agribusiness

The agriculture industry is so diverse, yet so interdependent, it is particularly difficult to describe. It comprises large corporate houses/units and small single proprietorships. It includes the manufacturing, distribution, storage, wholesaling, retailing and marketing of varied products, commodities and services. Despite its functional diversity, the agribusiness industry comprises only **five basic organizational forms of business**: (1) Individual proprietorships, (2) Partnerships, (3) Joint Stock Companies (capitalistic form), (4) Co-operatives and (5) Public/State Enterprises

Importance of Agribusiness

In the last four decades of 20th century the very face of agriculture turned from traditional to commercial, which got spurt with the advent of green revolution in crop production, white revolution in livestock farming towards milk production and blue revolution in fisheries. Further extended as yellow revolution and lastly rainbow revolution (aims at availability and consumption of fruits & vegetables). Agriculture has now blossomed into mature industry which includes, i) Input supply system, ii) Agricultural production system and iii) Output marketing system. All integrated in one system called 'Agriculture'. Each system is dependent on other two for its development and growth. The farmers eagerly adopted the new technologies, brought spectacular changes in the recent period, manifesting large scale commercialization and diversification in crops and varieties, increase in area under cash crops, floriculture, horticulture and high tech agriculture etc. In response to new economic environment brought in by the process of liberalization, privatization and globalization (LPG), the Indian farmers in particular are not only serving the domestic market but have their access to the international market. All the agribusiness enterprises in India have good economic potential due to relatively favorable agro climatic conditions.

The agribusiness, mainly aims to capture market and maximize profit through value addition in fruits & vegetables, milk and honey. Therefore, the recently drafted National Agricultural Policy (NAP) has accorded priority for promoting agribusiness activities at different levels for capturing growth in agriculture.

Characteristics or Features of Agribusiness

Due to some distinctive features, agribusiness differs from some other kinds of businesses.

1 Diverse nature of business: There exist various kinds of business in the agribusiness sector i.e. of basic producers, wholesalers, brokers or CAs, processors, packagers, storage firms, transporters, financial institutions, retailers, food chains ,etc.

2 Existence around production areas: Agribusiness is established around several millions producers/ farmers that produce hundreds of different food and fibre products.

- 3 Dealing with farmers/ producers:** Most agribusinesses deal with farmers both directly and indirectly. No other industry is set up principally around the basic producer of the raw product.
- 4 Variety and size of agribusiness organization:** There is infinite variety in the size of agribusiness from one person and one family to giants/huge/tall organization. Most agribusiness tends to be small when compared to other businesses and industrial segments.
- 5 Scale and type of competition:** Agribusinesses are small and compete in a relatively free market (Perfect Competition) where there are many sellers and buyers as well. The size of agribusiness does not allow monopoly. Product differentiation is also difficult.
- 6 Conservativeness of agribusiness:** The workers (labourers) and producers have traditional philosophical touch, so they make agribusiness more of conservative type.
- 7 Decision making:** Agricultural operation decisions are taken by families i.e. husbands and wives are often heavily involved in decision- makings.
- 8 Community oriented business:** The agribusinesses tend to be community oriented in small towns and rural areas.
- 9 Seasonality:** The agribusinesses are highly seasonal in nature due to planting and harvesting seasons and interdependence of specific enterprise.
- 10 Vagaries of nature:** Agribusiness deals with vagaries of nature viz; drought, flood, insects, diseases etc. and everyone from producer, banker and manufactures is concerned with the weather.
- 11 Govt. programmes and policy:** Govt. programmes and policies have direct impact on agribusiness. Many agricultural products are directly influenced by govt. programmes and regulations.

Types of Agri-business Management/Specialization Areas of Agribusiness Management

I Basic areas

1. Production and operations management
2. Financial management & planning
3. Marketing and selling management
4. Personnel or human management

II Other areas

5. Material management
6. Purchase management
7. Wholesale & retail management
8. Office management
9. Farm management
10. Export and import management.

Objectives of Agribusiness

Sr. No.	Objectives	Meaning
1	Market standing	Position compared with competitors?
2	Growth and development	How much and how fast should growth be?
3	Profitability	What kinds and amounts of profit are feasible?
4	Employees relations and performance	What rewards and shares of income should go to employees and what is expected from them?
5	Investor relation and returns	What portion of earning should go to investors?
6	Public responsibility and relationships	What kind of business the company does in view of the citizen/public want to be?
7	Physical resources	What plant equipment, tools etc. are needed?
8	Products and innovation	What emphasis will be placed on new products and research?

Six Principles of Creating Good Working Climate for Agribusiness

1. Setting a good example
2. Conscientiousness (sense of right or wrong) seeking participation
3. Be- goals- and results- centered
4. Giving credit and blame as needed: Credit in public, blame in private.

- 5 Fairness, consistency and honesty
- 6 Inspiring confidence and giving encouragement.

II MANAGEMENT

The Concept of Management

Management has been dissected and described in many ways. Some describe management as a division of areas of responsibility such as production, marketing, finance and personnel (staff employed in institute). Others view management as coordinating and effectively utilizing available resources such as: i) Material ii) Machinery iii) Manpower iv) Money v) Methods, and vi) Markets. This approach often called the Six M concept. So Management is the process of achieving desired results with the use of available resources by performing the basic elements or functions of management as follow:

1. Planning
2. Organizing
3. Directing
4. Coordinating
5. Controlling
6. Communicating
7. Motivating

On the whole management is seen as the body of knowledge.

Other Functions of Management

Decision making: It is the process by which a course of action is consciously chosen from the available alternatives for the purpose of achieving the desired results.

Staffing: It is the process by which the managers select, train, promote and retire subordinates.

Definitions and Discussion of the Basic Elements/Functions of Management

Management function/elements	Definition	Acts as or plays the role in management	Involvement / process of function
1. Planning	It is the process by which a manager anticipates the future and discovers alternative course of actions open to him.	Plays the role of muscle and sinew in the body of management knowledge	Gathering facts and information that have a bearing on the situation. Analyzing the facts i.e. what the situation is and what problems are involved. Devising strategies/ for future development and forecasting change. Setting goal for achieving objectives. Developing alternative courses of action and selecting those that are most suitable. Developing a means of evaluating progress
2. Organizing	The process by which the structure and allocation of jobs are determined.	Acts as skeleton in the body of management knowledge	Setting up the structure Determining the job to be done Selecting, allocating and training personnel Establishing relationships within the organization and then staffing them
3. Directing	The process by which actual performance of subordinates is guided towards common goals.	Plays the role of heart in the body of management	Assessing duties and responsibilities. Establishing the results to be achieved. Delegating necessary authority/power. Creating the desire for success. Examining that the job is done and done properly
4. Controlling	The process that measures current performances and guides it towards some pre-determined goals.	Performs the role of nervous system in the body of management	Dissemination of meaningful information and knowledge to avoid mistakes and not to forget taking timely actions without losing temper. Reviewing of progress Remedial actions against warning signals.
5. Coordinating	It is the process of making an effort to ensure that all the gears are meshing smoothly so that the actions of a group of people are unified and synchronized (make agree in time).	Acts as brain in the body of management skills	Interpreting of programs, plans, policies, procedures and practices Provision for growth and development of employees. Keeping in touch with employees and keeping a

			<p>sense of perspective (mental view)</p> <p>Provision for the good climate for success.</p> <p>Provision for the free flow of information</p>
6. Communicating	The process by which ideas are transmitted to others for the purpose of achieving desired results.	Acts as backbone of management	<p>Vertical communication (superior boss to downwards)</p> <p>Horizontal communication (coordination of activities by managers of the same level)</p> <p>Formal communication --using proper procedures</p>
7. Motivating	It is the process by which the people associated are made aware of the programmes/ideas through incentives that produces action.	Acts as energy in the body of management	<p>Making regular visits and meetings</p> <p>Provision of incentives</p>

Objectives of Management

The primary objective of management is to run the enterprise smoothly and to maximize profit.

1. Proper utilization of resources
2. Improving performance
3. Mobilising best talent
4. Planning for future
5. Development of resources
6. To incorporate innovations
7. To integrate various interest groups
8. Stability in the society. New inventions replace old ones
9. Technology, social process and structure are fast changing, so these changes need to be incorporated
10. Various interest groups (shareholders, employees, government compete with each for larger share in output. So these need to be integrated)

Nature of Management

It is regarded as science and having tools and techniques which are scientific. It is also taken as profession which is based on proven, systematic body of knowledge and thus requires intellectual training. It should maintain experimental attitude towards information and thus requires a search for new ideas. Moreover, the nature of management is:

1. Multidisciplinary
2. Dynamic nature of principles
3. Relatives and not absolute principles
4. Science or art -- both
5. Management as profession
6. Universality of management

Importance of Management

In order to give sophisticated life to people and a wide choice of consumption goods the good management improves the standard of living. Management carries ethical (rules of conduct) and moral behavior. Management was important in old societies also. However, the emergence of large sized organization and the changing nature of society and its constituents have made managing the things an uphill task. Even classical management experts have recognized it long back. For example : Urwick stated that “ No ideology, no ism or political theory can win grater output with less efforts from a given complex of human and material resources, only sound management. And it is on such grater output that a higher standard of life, more leisure, and more amenities for all must necessarily be found”.

Managerial Economics

Managerial economics is the applied part of microeconomics that focuses on the topics that are of greatest interest and importance to managers like the demand, production, cost, pricing, market structure, and government regulation.

Management as a wheel with the manager as a hub (Discuss from diagram)

Manager- Manager is that person who carries the orders of management, provides the organization with leadership and who acts as a catalyst for change. Good managers are most effective in an environment that permits creative change.

Characteristics of Good Manager

1. Knowledge
2. Decision making power
3. Self – reliance
4. Self-assertion
5. Regard for other and social sensitivity
6. Emotional stability

Characteristics of a Good Management Policy

1. **Objectivity:** Should be related to the objective of the firm
2. **Easily understandable:** Should be stated in understandable words
3. **Yardsticks for action:** Must provide yard stick for future actions
4. **Changeability:** It should be reasonable and capable of being accomplished.

ADDITIONAL READING MATERIAL

Henry Fayol was one, who made the first most famous analysis of management itself. He is regarded as the real father of modern management of science. He was born in 1841 and graduated in 1860. He joined as a mining engineer in a French Mining Company and rose to the position of its Chief Managing Director because of its outstanding abilities in 1888 and remained on this position till 1918. Through his long practical experience as a successful industrialist, Fayol developed a general theory of management. In 1916, he published the book Administration Industrielle et Generale in French which was translated into English in 1929 under the title **General and Industrial Management**. Fayol's major contribution was:

- i) To identify and classify six business activities
- ii) To classify functions of management in to five elements (a) Planning (b) Organizing (c) Directing (d) Coordinating (e) Controlling
- iii) To develop universal fourteen principles of management
- iv) To emphasis managerial qualities.

PLANNING

Meaning and Definition

Concept: Planning is basically a decision-making process in which an organization and its individual members are to take different courses of action over a period of time. It also refers to policy formulation and the establishment of goals. Planning is also deciding in advance what to do, when to do, how to do and who will do a particular task. In fact, it is the blue print for future action and bridges the gap between the present and future. Perception, foresight and minimizing risk is vital for a good planner. Planning, therefore, includes (1) the purpose, (2) setting up objectives, (3) laying down policies, (4) preparing strategies (5) rules (6) procedures, (7) programmes (8) budgeting (9) forecasting and (10) decision-making.

Definitions of plan and planning

Plan

Any scheme of action prepared in advance to attain the set objectives is a plan and planning refer to the process of formulating a plans that kind of crops to grow and acreage under each, number and kind of livestock to be kept; implements and machinery to be maintained and so on.

Philip Kotler: Planning is deciding in the present what to do in future. It is the process whereby companies reconcile/adjust their resources with their objectives and opportunities.

Mc FARLAND: Planning is the process of selecting the best course of action for achieving the pre-determined objectives after making a careful evaluation of present conditions and future trends, e.g raising organic produce.

Types of plans: based on nature of planning

1 Financial and Non- Financial plans

Most plans cannot be translated into actions if there is no finance. In fact, planning loses all its significance if sufficient financial resources are not mobilized. Plans that require financial resources are called financial plans. Plans related to physical resources of an organization may be called non-financial plans

2 Formal and Informal plans

Mere thinking by managers refers to informal plans. When an informal plan is finalized and prepared for implementation, it is considered to be a formal plan.

3 Specific and Routine plans

Any plan made with a particular objective is known as a specific plan. Day-to day normal objectives require some type of regular plan known as a routine plan.

4 Strategic and Functional/Action plans

Strategic planning is the overall planning of the enterprises objectives determined by the management. A plan made in a functional area like production, purchase, and marketing is referred to as a functional plan.

5 Long range and Short range plans

The definition of short and long range planning depends upon the organizational structure, nature of business, the kind of industry etc. Generally, a short –term plan refers to a period covering six to twelve months. A long range plan usually involves time interval of between three and five years. But modern concept is to plan for a decade or 2 to 25 years.

6 Administrative and Operational plans

An administrative plan provides the base for operative plans and this type of planning is done by the top and middle level management and operational planning by the lower level management.

7 Standing and Single use plans

Standing plans are repetitive in nature and are used again and again whereas single use plans are specific in nature and are used only for a particular purpose.

Distinction between Standing Plans and Single Use Plans

Sr. No.	Standing plans	Single use plans
1	These plans are repetitive in nature and are used again and again.	These are specific in nature and are used only for a particular purpose.
2	Standing plans are: mission, objectives, policies, strategies, rules, procedures.	Single use plans are: Programmes, projects, budgets
3	These plans are meant to meet a recurring situation	These plans are meant to tackle a particular situation
4	Standing plans are meant to achieve unity and uniformity in action throughout the enterprise	These plans are meant to solve a specific purpose. It (these) ceases to exist after the purpose is achieved

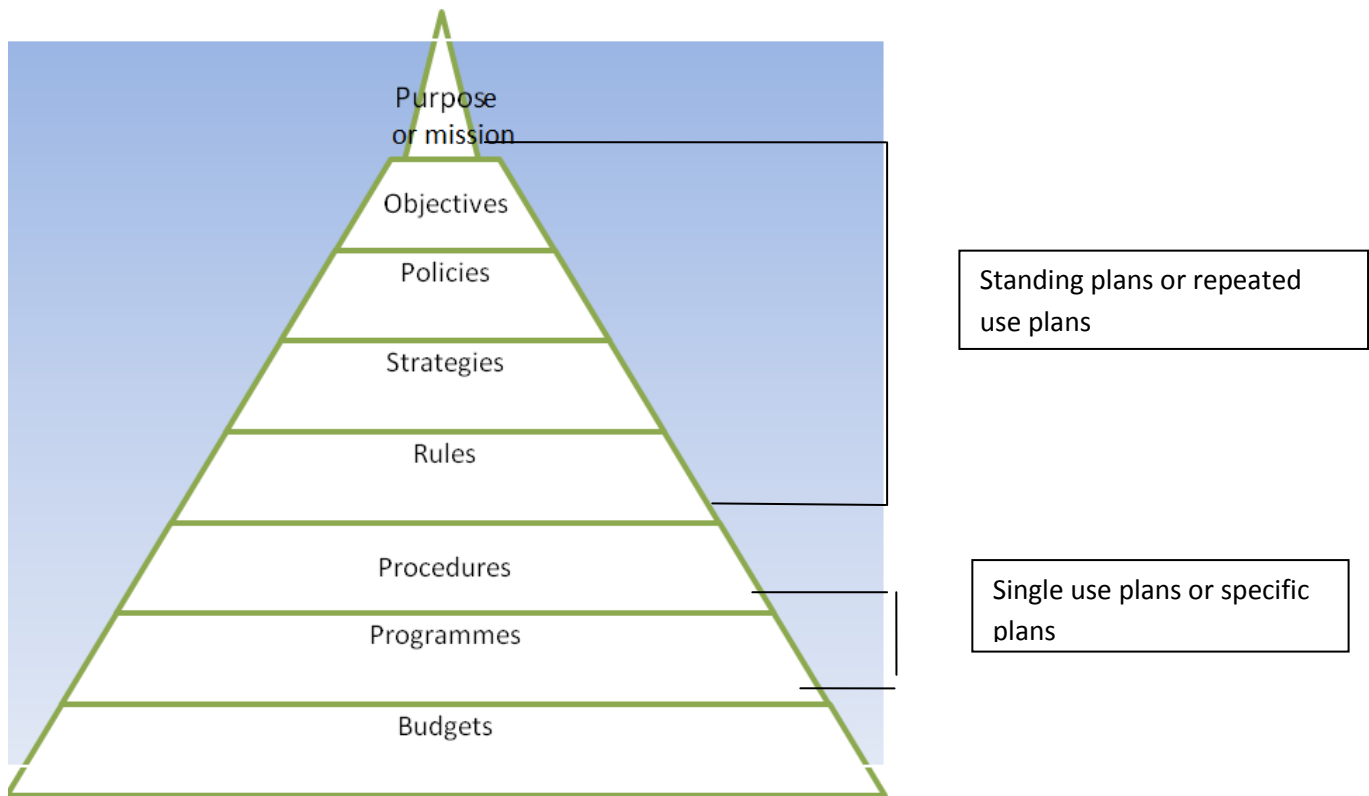
Six P's of Planning

1. Purpose- To increase the market share.
2. Philosophy- Quality & consumer satisfaction
3. Premise- Assessment of strengths & weaknesses to face the changing environment
4. Policies- Production, marketing, finance, accounting policies
5. Plans- Objectives & action plans.
6. Priorities- Prioritize the scarce resources

Hierarchy of plans (Arrangement/order of plans)

A plan encompasses a future course of action. All plans are also classified as:

1. Mission or purpose
2. Objectives or goals
3. Policies
4. Strategies
5. Rules
6. Procedures
7. Programmes
8. Budgets



1 Mission or purpose: The basic purpose of setting up of the business is called its mission. For instance, the purpose of a college or university is teaching and research. The purpose of a firm is production and distribution of goods and services.

2 Objectives or goals: These are the goals or the end results towards which all management activities are directed. Objective is the term commonly used to indicate the end point of a management programme. Objective should be specific and set for different period. Well defined goals or clear objectives are essential for the smooth progress and growth of any business organization.

3 Policies: Policies are guidelines to action. These are basic statements (in written form) serving as guides to the thinking and action of subordinates in repetitive situations. They provide broad guidelines. In other words, policy is a standing plan which is a guideline to decision- making, where a manager has certain discretion or it is a solution to recurring problems. When all the policies of a concerned are published in the form of a book or diary it is called policy manual. It is a written and definite statement of policy, readily available as a reference or guide for all managers.

4 Strategies: It is also regarded as necessary planning. So strategy is a comprehensive and integrated plan designed to assure that business objectives are accomplished.

5 Rules: A rule is a guide to action. It is in the nature of a decision made by the management regarding what is to be done and what is not to be done in a given situation. A rule is more

rigid. A rule may or may not be a part of a procedure. Rules will not have any scope for discretion, as they are specific and definite. Breach of the rules usually carries a penalty. “No credit facilities beyond 30 days”, “Smoking is strictly prohibited”, are examples of rules.

6 Procedures: A procedure guides in detail how work should be performed, thereby providing a definite way. Procedures provide the manner in which a particular work has to be done. They also provide a sequence of steps to be followed in the execution of a plan. So the chronological series of steps constitute a procedure. If a programme indicates what is to be done, a procedure indicates how it should be done. Procedures are basically guides to action and not guides to thinking. Policies can be executed through procedures.

7 Programmes: Programmes are sets of Objectives/ goals, policies, rules, procedures and other components required to carry out a course of action.

8 Budgets: A budget is the monetary/quantitative expression of physical plans and policies to be implemented in the future period of time. A budget is a basic plan or statement defining the anticipated cost of attaining an objective. It is an appraisal of the expenses expected against the income anticipated for a particular future period of time. A budget is considered as both a planning and a controlling device. It may be expressed in terms of time, materials, money, man-hours, etc. But usually money budgets are the common ones.

Steps in planning and their execution

1. Perception of opportunities or defining the problem
2. Establishing objectives
3. Establishing the planning premises*
4. Identification of alternatives
5. Evaluation of alternatives
6. Selection or choice of alternative plans
7. Formulation of supportive plans
8. Setting timings and sequence of operations
9. Participation and follow up

* Planning premises are planning assumptions- The expected environmental and internal conditions. So planning premises are external and internal. External include political, social, technological, competitors’ plans and actions, govt. policies, etc. Internal include organizations’ policies, resources of various types and ability of organization.

Characteristics of a sound plan

- 1 **Efficient use of resources:** The plan should provide for efficient use of resources such as labour, power and equipment.
- 2 **Adequate size of business:** The plan should provide for adequate size of business
- 3 **Avoiding heavy risks:** It should avoid excessive risks
- 4 **Flexibility:** It should provide flexibility and too much rigidity be avoided.
- 5 **Use of local wisdom:** Utilize the farmers’ knowledge, training and experience and take account of the farmers’ likes and dislikes.

- 6 **Marketing facilities:** Give consideration to efficient marketing facilities
- 7 **Modern technology:** Provision for the use of modern agricultural methods and practices.
- 8 **Market potential:** The plan should take account of price prospects
- 9 **Credit facilities:** Provision for obtaining, using and repaying the credit.
- 10 **Farm physical characteristics:** Take account of soil, climate and topography.
- 11 **Simplicity and reasonability:** A good plan must be simple and understandable. It should be reasonable and possible to perform.

ORGANIZATION

It is a structure involving large number of people engaging themselves in a multiplicity of tasks, a systematic and rational relationship with authority and responsibility between individuals and groups. It involves dividing the entire work into manageable units, departmentation, decentralization, delegation and span of control. Thus corporations, armies, schools, hospitals, churches, prisons etc. all are organizations. But tribes' ethnic and friendship groups and families are not organizations because they do not involve any significant amount of conscious planning or deliberate structuring.

Staffing

It is the process of human resources planning, that is, recruitment and selection of best candidates, training them effectively, inducting them, rewarding them and having regular and effective communication with them. It calls for comprehensive manpower planning. Staffing has become one of the very important functions of management, along with planning, organizing, directing and controlling. Staffing has become very significant as it involves a lot of investment in the recruitment, selection, training and placement of workers. So to make the whole exercise meaningful, the best available people are to be secured and their skills and abilities developed for the benefit of the organization.

Motivation

A worker is basically a human being. He is a person first and then a worker. Every manager has to understand that a worker cannot be considered a mechanical system. A worker has to be inspired and actuated to accomplish the objectives of an organization. An order issued may not work, but, an order accepted will be executed. To accept an order and to execute it with interest and vigour requires an element of motivating. Motivation is the process of creating a sense of responsibility and special interest in the work. It increases the desire to work; it is enthusiasm to work.

Definition of motivation given by Michael. J. Julies: Motivation is the process/ act of stimulating someone or oneself or the employees by providing incentives and encouragement to get the desired course of action. Good motivation results in speedy, efficient, successful, forward-moving management while poor motivation can result in a discouraging reversal.

Ordering: Order giving or ordering is one of the most important elements of direction. Ordering can be defined as a directive to subordinates as to what is to be done or not to be

done in the execution of work for achieving organizational objectives. The definition of ordering suggests the following implications:

i In order- giving process, a personal relationship in direct line of command from superior to subordinate is implied. This relationship is not reversible. Two managers of equal rank cannot have this relationship. Similarly, except for functional authority the relationship does not exist between a superior in one Department and a person of lower rank in another.

ii Another implication of an order is that it is enforceable. A superior can employ sanction against his subordinates who does not carry out an order or who does so in an inappropriate manner.

iii The order is given and enforced to achieve organizational objectives. As such, specific and clear order serves organizational purpose.

Leading: By leading we mean a dynamic man to man relationship between a manager and his subordinates. Leading consists of the process of utilizing techniques in issuing instructions and making sure that operations are carried on as originally planned. Leadership is the process of influencing and supporting others to work enthusiastically towards achieving objectives. **Leadership** is the ability to build up confidence and zeal among people and to create an urge in them to be led. To be successful leader, a manager must possess the qualities of foresight, drive, initiative, self confidence and personal integrity. Leadership is viewed from three points of view:

1. Democratic
2. Autocratic
3. Charismatic

Supervision: Supervision is an important element in the process of directing/ leading. It involves actual transformation of plans into action by observing the work of subordinates with authority. Supervisors provide day-to-day guidance and instructions to the operative workers. Supervisors are also known as first-line managers, or overseers, section head, etc. Supervisors have direct link with the actual workers.

UNIT 2

FORMS OF BUSINESS ORGANIZATION/ENTERPRISE

Meaning of Organization or Enterprise

Enterprise means to plan a business, to start it and run it. It means to bring the factors of production together, assign each its proper task and pay them remuneration when the work is done. It implies not only running of a business but also shouldering the loss, if any. As a factor of production, it is an alternative name for the entrepreneur. The person who undertakes all this work is called an organizer, or more commonly an entrepreneur. Organizing and risk-taking are the two main functions of the entrepreneur.

Difference between a Capitalist and an Entrepreneur

The capitalist is the owner of capital. He invests capital and receives interest on it. The business may earn a profit or run at a loss. The capitalist must get his interest. Thus he takes no risk. It is the entrepreneur alone who shoulders the risk. The whole loss, if any, falls on him just as a whole profit, if any, goes into his pocket. In theory the capitalist and the entrepreneur are two different persons. But, actually, they may be one and the same person. In real life, the entrepreneur usually invests in the business some of his own money. He is thus partly a capitalist too, and earns interest, besides his profit, if any. Hence a man may be both capitalist and an entrepreneur.

Forms of Business Organization

- 1 Individual enterprise or Individual/sole proprietorship or individual entrepreneur/ one man business
- 2 Partnership
- 3 Joint Stock Company (capitalistic form)
- 4 Co-operative enterprise
- 5 State enterprise or public enterprise

1. Individual enterprise/ one man business

The most common form of business, organization run by an individual or one man is called individual enterprise or one man business e.g. agriculture and retail business. He initiates, supplies the entire capital, organizes, supervises and directs all economic activities and takes the entire risk of a small business concern. He alone is responsible for the results i.e. gets profit or suffers losses. If necessary he can employ persons to assist him.

Merits of individual enterprise

- 1 Incentive for hard work
- 2 Superior output at low cost
- 3 Customer's satisfaction
- 4 Sympathetic treatment of the employees
- 5 Low overhead charges
- 6 Independence – The entrepreneur is his boss.

7 Easy dissolution

Demerits

- 1 Limited resources
- 2 No division of labour
- 3 Small income
- 4 Weak competitive capacity
- 5 Backward country

Conclusion

In spite of these handicaps, the individual enterprise is not likely to disappear. Entrepreneurs of ability do not like to enter into partnership or to take up a job in a public company. They prefer to run their business independently and feel satisfaction with whatever profits they make.

2 Partnership

It is the form of organization in which new business is run by two or more persons together. Their mutual relations, their rights, duties, the capital each is to contribute, the proportion in which profits and losses are to be shared are mentioned in the partner deed. The agreement also lays down the aims of the partnership as well as the manner in which it can be dissolved. The agreement may be verbal or in writing.

Types of Partnership

i) Limited liability partnership: It is the type of partnership in which one or more partners can get their liability concerning debts, limited to their capital or to a fixed proportion. But the liability of all partners cannot be so limited. The partners with limited liability cannot take active part in business and thus they are called dormant or sleeping partners.

ii) Unlimited liability partnership: The type of partnership in which each partner is responsible for the debts of the firms, not only to the extent of his share in the business but to the full extent of even his private resources. In other words, the liability is unlimited.

Merits of partnership

- i More capital
- ii Diverse talent
- iii Correct decision- less chances of error of judgment. Problem is examined more than one angle.
- iv Vigour and zeal- They work with great enthusiasm and vigour.
- v Prompt decisions
- vi Personal relationship – partnership can maintain personal relation with the employees and

customers

Demerits

- i Unlimited liability
- ii Less work and more waste
- iii Mutual dissensions (misunderstanding arise and work suffer)
- iv No permanence (to be dissolved in case of death/retirement)
- v Money locked up
- vi Inadequate funds to expand business on large scale

3. Joint stock- company

Joint stock co, organization was started first in Italy in 13th century and during 17th and 18th century in England. In India first Companies Act was passed in 1850, however a comprehensive bill was passed in 1956.

JSC is the form of organization in which an individual entrepreneur conceiving a scheme of business; secures the co-operation of at least six more persons (for the minimum no. of persons to form a company is seven.) They take steps for the formation of company through memorandum of association which include name of company, location, aim and objectives, the amount of share capital, and a declaration that the liability is limited.

Types of joint stock company

1. **Public limited company**:- The joint stock company may take the form of a public limited company when it has to submit certain statements and the balance sheet to the registrar of joint stock companies yearly. It can invite the public to buy shares by issuing a prospectus. There is no max limit to the number of shareholders, the minimum limit is seven. Business cannot be started unless the minimum capital laid down has been subscribed.
- 2 **Private limited company**: This type of company is free from the necessity of submitting certain returns to the registrar. But there are certain restrictions i.e. it cannot issue a prospectus to float shares. The maximum number of shareholders is limited to 50.

Joint-stock company and partnership compared

- i) A joint stock company is governed by The Companies Act, 1956 whereas partnership concern is governed by The Partnership Act, 1932.
- ii) The registration of a company is compulsory, however, the registration of a partnership is not compulsory.
- iii) The number of shareholders in a company is much larger than in a partnership.
- iv) The financial resources of a joint-stock company are much larger.
- v) The liability is limited in a joint-stock company.
- vi) The company is a legal entity.

- vii) The existence of a limited company has a legal sanction.
- viii) A company has a perpetual existence.
- ix) Personal relationship is of no importance in a company.

Merits of joint-stock organization/ company

- 1 Economies of large scale
- 2 Limited liability
- 3 Shares transferable
- 4 Economical administration (Members of BOD are not given salaries)
- 5 Democratic –General body of shareholders is supreme
- 6 Permanent existence
- 7 Thrift encouraged
- 8 Legal control
- 9 Risks spread out

Demerits

- 1 Incautious (Rash enterprises)
- 2 Shareholders indifferent- (Directors are all in all and often promote their own interest at the expense of company)
3. Democratic only in theory
- 4 Fraud and exploitation
5. Lacking adaptability- No quick taking decision
- 6 Lack of personal touch

Conclusion

Assessing/ comparing advantages and disadvantages, we can say that on the whole, a joint stock company is very desirable and beneficial. This form of business has been well tested (and must stay) and no country can progress without it. First class business can be run only in this form of business organization. This form of business organization has been recognized as a powerful and an efficient tool/engine of economic growth.

4 Co-operative enterprises

This is the form of organization in which the people voluntarily associate for the common cause under one umbrella and in this form of co-operation the workers are their own masters. The business is owned by them. They elect managers and foremen. They are their own employees. The profits, if any, are divided among them all as dividend

Principles of co-operation

1. Democratic and honorary management
2. Based on mutual help and self reliance, “ each for all and all for each”.
3. Not only for economic interest but education and moral advantages also.
4. Dealings are confined to members.
5. Honesty capitalized
6. Loans for productive purpose
7. Unlimited liability

Types of Cooperative Enterprise

Procedures' co-operatives (HP Milkfed, HP Woolfed)
Consumers' co-operatives
Central co-operative banks
State co-operative banks

Co-operative Organization and Joint- stock Company Compared

- 1 Members know each other intimately in co-operatives but in joint-stock company not supposed to have any contact with one another
- 2 Members of cooperative are of certain place belonging to same class of people but in joint-stock company they are scattered.
- 3 Management in both the cases is elected but it is more democratic in co-operatives than the joint-stock company.
- 4 In cooperatives, the liability is unlimited whereas in joint-stock company it is limited.
- 5 In cooperatives, the profit is shared in the form of dividend.

5 State enterprises

It is the form of organization in which the govt. or local body like municipality or a Zila parishad runs a business. This is generally done in the case of public utility services like cooking gas, electricity, water supply or bus service. The state enterprises in India are:

1 Central level

Post and Telegraph. BSNL, MTNL
The Indian Railways
National seeds corporation (NSC)
Bharat petroleum
Bharat heavy electrical ltd
The Hindustan machine tools
Fertilizer Corporation of India
The Reserve Bank of India
The State Bank of India
Life Insurance Corporation/GIC (AIC)
Nationalized Banks
Industrial Finance Corporation

2 State level

The State Financial Corporation
The state transport undertakings/Delhi metro
The state electricity board
The public health department

Himachal Pradesh Horticultural Produce Marketing Corporation (HPMC)

Advantages of state enterprise

- 1 Profits for public welfare
- 2 Pure supply
- 3 Ample funds
- 4 Best talent
- 5 Popular control
- 6 Consumer interests

Disadvantages

- 1 Evils of bureaucracy
- 2 No incentive
- 3 Extravagance and inefficiency
- 4 No initiative

Factors Influencing Selection of Choice of Business Organization

- 1 Organizing cost and managerial ability
- 2 Capital requirement
- 3 Equity capital and debt capital*
- 4 Sources of capital
- 5 Tax liabilities
- 6 Involvement of owners
- 7 Stability/ continuity/ transfer
- 8 Business secrets (How desirable it is to keep the business secret)
- 9 Liability and risk involvement
- 10 Type and place of business (objectives like supply of inputs or processing of outputs)

Factors Determining Size of Agribusiness Unit

- 1 Entrepreneurial skill
- 2 Managerial ability
- 3 Availability of finance
- 4 Availability of labour
- 5 Nature of business
- 6 Extent of market

UNIT 3

ROLE OF AGRO INDUSTRIES IN AGRIBUSINESS DEVELOPMENT

The Concept

The term agro-industry has acquired new significance in recent years in the wake of growing need of interdependence between **agriculture** and **industry** and the modernization of the former. In traditional agriculture system, various agricultural operations, storage facilities and marketing of produce were all arranged by the farmers themselves and very little was left as marketable surplus for outsiders/traders. However, the agribusiness and agro-industrial units play an important role in the modern commercial agricultural system. Planning Commission of India has included under agro-industries not only those industries which are concerned with the processing of agricultural products but also such industries which are involved in the production of farm input and farm implements. In other words, the concept of agro industries is confined only to those industries that are engaged in the processing of agricultural produce either for consumption (food crops, sugarcane, oilseeds, fruits and vegetables, etc) or for use of industry (cotton and other similar products) and to those industries which produce inputs for agriculture such as fertilizers and farm implements.

Definitions

- (a) **NCAER definition:** The National council of Applied Economic Research (NCAER) has defined agro- industries as those which use either agricultural raw materials or make things that farmers need for agricultural purposes.
- (b) **General definition:** The industries manufacturing input for agriculture or those processing agricultural output and those industries which are supported by agricultural goods are known as agro- industries.

Thus in the first instance, agro- industries provide the essential input and in the second phase, they function as an outlet for the agricultural produce.

Types of Agro- Industries

- 1 Processing industries
- 2 Supply industries

The processing industries, process agricultural produce for further use while supply industries are those which produce inputs for agriculture. These are further grouped into four categories

Processing Industries

- i) Agro produce processing units e.g rice mill
- ii) Agro produce manufacturing units e.g sugarcane factories

Supply Industries

- iii) Agro inputs manufacturing units e.g. fertilizer factories
- iv) Agro service centre e.g. repair and service centre for tractors, etc

Industrial estate and industrial area

Industrial estate(s): It is specific area zoned/earmarked for industrial activity in which infrastructure such as roads, power and other utility services are provided to facilitate the growth of industries and to minimize impacts on the socio economic aspects and environment. Industrial estates should maintain safe distances from residential areas (for example, 100 meters for small industries with minimal environmental hazard and at least 1 km for very polluting industries).

Industrial area(s): It is an area where there are commercial, manufacturing, factories and other such businesses. It is also a non residential area.

Role and Scope of Agro Industries

- 1 Play a vital role in economic development through the development of several processing industries like malt extracts, potato chips, juice manufacturers, perfumery and pharmaceutical industry
- 2 Means for equitable distribution on national income
- 3 Generate employment opportunities
- 4 Create both backward and forward linkages
- 5 Avoid wastage of perishable/ seasonal agriculture products by conversion into different processed products by way of value- addition
- 6 Increase the life of agriculture products
- 7 Help to increase export earning from export of processed agriculture products
- 8 Stimulate the growth of agriculture sector in particular
- 9 Increasing income of farming community in general

Future Potentials of Agro Based Industries

Now, the time is ripe for another revolution, as we need to look at agriculture from a global perspective. The states have to now look beyond the production aspects to provide a further boost to agriculture and related issues of marketing, processing, value addition in commodities like food grains, oil seeds, fruits, vegetables, floriculture, spices, medicinal plant produce, dairy products and meat products. The demand pattern of agricultural commodities for the domestic market is shifting as a result of increasing incomes, faster urbanization and changing eating habits, at the same time demand for quality production will play a major role in the coming time for our agriculture due to advancement in the field of bio-technology and introduction of Hi-tech cultivation practices.

The state Governments are extensively engaged in development of agricultural marketing and infrastructural facilities like construction of link roads , rural primary markets, rural godowns, Krishi Upaj Mandi Samities (KUMS), grower/producer/marketing cooperative societies and post harvest management, required for efficient marketing system and optimum utilization of surplus agricultural produce, so that farmers shall get remunerative prices for their produce

and are protected from the exploitations of middlemen where as the consumers should also be able to obtain the quality produce and its processed products at a reasonable prices. Other important works that are entrusted are training to marketing personnel, publicity and propaganda, monitoring and market research,

IMPORTANCE OF EMPLOYMENT IN AGRO- INDUSTRIES

Agro- based industries have been accorded a prominent position in National Employment Policy. This sector accounted for about 40 % of factory sector employment, 26 % of total output and 21% of value addition in the organization sector. Further, the sector has generated employment at low level of capital (Rs. 48000) per person. The sector has been identified as one of the most promising sector in terms of employment by the planning commission. During 10th plan sector wise employment generation was as follow:

Table: Sub sector wise employment in ago industries

Sr. No	Sector	Employment (million mandays)
1	Horticulture	1.20 million mandays
2	On- farm (agriculture) management	1.25 million mandays
3	Agri – clinics & seed production	0.15 million mandays
4	Mechanical agricultural inputs	0.10 million mandays
5	Others	0.15 million mandays
	Total Agro- Industry	2.75 million

Village Industry

Village industry means any industry located in rural areas of township, which produces any goods or renders, any services with or without use of power and in which the fixed capital investment per head of an artisan or worker does not exceed Rupees fifty thousand (Rs 50,000) in plant / machinery, land and building.

Broad classification of village Industries

- 1 Mineral based industry
- 2 Forest and agro industry
- 3 Food industry
- 4 Handmade paper and fibre industry
- 5 Rural engineering
- 6 Service industry

Reasons for Underdevelopment of Village Industry

- 1 Inability to supply the required quality of raw material in time
- 2 Inability to provide loans both short term and long term
- 3 No procurement policy from the artisan and no uniform pricing
- 4 No system of feedback information
- 5 No identification of potential demand
- 6 No efforts towards product development, packaging and designing, and
- 7 No systematic efforts to undertake training

Steps in Agro Processing Industry

- 1 Selection of product for processing
- 2 Project appraisal report
 - i) Total capital investment and source of capital

- ii) Returns on investment
- iii) Projected balance sheet for 5 years
- iv) Cash flow and funds flow
- v) Break-even analysis
- vi) Technology, machinery and raw material suppliers
- vii) Market survey
- 3 Basic infrastructure and resource endowments (provisions)
- 4 Selection of technologies and its processes
- 5 Manufactures of machinery and their suppliers
- 6 Production capacity
- 7 Vat no., PAN no., professional tax no. etc
- 8 Basic license and permissions required
 - (i) Provisional small scale industry
 - (ii) NOC Himachal Pradesh state Pollution control Board
 - (iii) Food product order (FPO)
 - (iv) Food safety certification (HACCP, KOSHER and GlobalGAP)
 - (v) ISO 14000 etc.
 - (vi) Other licenses – weights and measures, etc.
- 9 Marketing system and strategies
- 10 Quality standards and specification
- 11 Agribusiness policy for economic stability and sustainability

Table: Category wise area requirements, annual production limit for one term or part thereof reference clause 5 (2) and part I (B) of the second schedule of fruit product order, 1955

Category	Premises area requirement in square meters		Annual production permissible per calendar year
	For manufacturing	For storage office	
Home scale 'B'	25	25	Up to 10 MT
Cottage scale	60	60	Above 10 MT
Small scale 'A'	100	100	Above 5 MT but less than 100 MT with installed capacity not exceeding 1 MT per day
Small scale 'B'	150	150	Below 250 MT with installed not exceeding 2 MT/day
Large scale	300	300	Above 250 MT with installed capacity not exceeding 2 MT/day

Managerial or Management Problems and Constrains of Agro- Business or Agro- Industries

1. Shortage of materials and power
2. Lack of adequate finance
3. Outdated technology
4. Inadequate marketing facilities
5. Weak organization and management
6. Lack of trained personnel

7. Lack of research and development (R&D)
8. Lack of infrastructure facilities
9. Lack of modern machinery
10. Labour problem
11. Production problem (Agro based units are labour intensive to shift to modernization they are to plan about the technique and product planning)
12. Social environment for industry not very conducive (our farmers are illiterate, superstitious, conservative and unresponsive to new agriculture techniques)
13. Lack of awareness and easy access to low cost and appropriate technology

Measures taken by the Government or Institutional Arrangements to Solve the Problem of Agro- industries

1 Protective measure

- (i) A number of products have been reserved for exclusive production in the small sector.
- (ii) Restrictions have been imposed on certain products of the organized sector to enable the small-scale industries to compete successfully in the market. The GOI proposes to provide legislative protection to agro – industries.

2 Promotional measures

I Credit and Finance

Increasing sum of money has been earmarked under the successive five year plans for the development of the agro industries

II Marketing Assistance

Central and state Government departments extend price preference in the purchase of goods produced by small scale units. DGSD (Directorate General of Supplies & Disposal) give preferences to small scale units in making its purchases. Assistance is provided to agro industrial units in securing orders from government departments and defence agencies. The National Small Industries Corporation (NSIC) helps small firms in this matter.

III Allocation of raw material

Scarce and imported raw materials are provided at reasonable prices and on priority basis. Recently the Govt. has decided to open depots for buffer stock and bulk supplies of critical raw material for the agro industries. Quota allocations of scarce raw materials for example steel are secured for the agro sector on a preference basis. Imported components and equipments are allocated to agro industries on priority basis.

IV Technical Assistance

Technical assistance is provided to agro industries in the adoption and use of improved tools and methods of productions. In order to improve the quality of their products in respect of style and finish, assistance is provided in the design and development of the products. The technical assistance is provided by the National Small Industries Organization (NSIO) through its service institutes and extension centers.

V Industrial Estate

The government has developed industrial estates to provide industrial sheds to the agro industrial entrepreneurs at concessional rates.

Policies and Programmes to remove disabilities

Small enterprises are presently seriously handicapped in comparison with larger units by an inequitable allocation system for scarce material and imported components, lack of provision of credit and finance; low technical skill and managerial ability; and lack of marketing contracts. It is, therefore, essential to develop an overall approach to remove these disabilities so as to strengthen their competitive position.

i) **Credit and Finance:** The financial disability of agro enterprises is well known. Their internal resources are so small that they have no surplus to live on during the period of business strain. This leads to instability of their profits, which deters banks from giving unsecured loans. "Considering the vital role of small industries within the Indian industrial economy, the total amount of loans granted to agro industries form a very small part of the total loans to agro industry. Nevertheless there is still a need for a positive change in the outlook and approach of our financial institutions towards agro based enterprises. Their credit worthiness should not be judged in terms of the value of the assets but on terms of the ability of an enterprise to do the job and earn profit. This requires the evolution of a system of integrated credit whereby long-term loan capital and short-term credit are provided adequately, at a reasonable rate of interest. The state bank of India and the other public sector banks have evolved schemes to help the growth of small industries. The Reserve Bank of India evolved a Credit Guarantee Scheme for Agro Industries in 1960. The RBI Bank takes upon itself the role of a guarantee organization for the advances, which are left unpaid including interest overdue the recoverable charges. According to a study by the Reserve Bank, the agro industries entrepreneurs are basically honest, enterprising and with far greater personal stake in their enterprises than the large scale enterprises. Despite the vast increase in credit facilities for agro industries most artisans and craftsmen particularly those belonging to the poorer sections of the society and working in small towns and villages are unable to obtain their credit requirements.

ii) **Marketing Assistance:** Firms suffer from marketing difficulties, as their products are often unstandardized and of variable quality. Undoubtedly, the originality of design is their special quality but it leads to imperfection of the market, which tends to confer benefits to branded and advertised commodities. There is, therefore, a clear case for government intervention to eliminate these imperfections by improving information, and bringing producers and dealers into close contact with one another. In order to provide guarantee for sale, the government gives preference upto 15 per cent on some of the products sold by the small firms. The national small scale Industries Corporation assists agro firms in obtaining a greater share of government and defense purchase but does not assume marketing responsibility. Besides, it was able to secure purchase orders for agro industries from the Director- General of Supplies and Disposals.

iii) **Allocation of Raw Material:** The second international team studied the problem of availability of raw materials, imported component for production and selected imported equipment to the small enterprises and emphasized that the small scale industry has not shared proportionately in the growing supplies of scarce raw materials. In pursuance of this recommendation, the government started giving priority in raw material allocation to agro

sector. The Seventh Plan expressed its deep dissatisfaction in this regard in the following words: while various measures have been taken for supply of raw material to the small scale units through State Small Industries Development Corporation, import quota etc., in actual practice the sector gets more or less a 'redidurary' treatment in raw material distribution/ allocation.

iv) **Technical Assistance:** The development of agro based enterprises is hampered by the present low level of technology and shortage of trained and experienced supervisory personnel. Provision of technical service is, therefore, an important and justified form of aid to stimulate increased productive efficiency and encourage new product lines. There are at present two arrangements for providing technical advice and assistance to small firms. First, the Central Small- Scale Industries Organization, through its Service Institutes and Extension Centres, provides a staff of technically qualified people whose job is to give advice to agro entrepreneurs on the technical assistance is given by the common facility workshops, in undertaking difficult production operations on behalf of small firms as a cost, which at present generally excludes interest and depreciation on the machinery employed. It is further unfortunate that these production facilities are underutilized.

v) **Industrial Estate:** An Industrial estate is an attempt to provide, on a rental basis, good accommodation and other basic common facilities to group of small entrepreneurs who would otherwise find it difficult to secure these facilities at a reasonable price. However, India's experience proved to be a partial success. Major factors accounting for the poor output and employment performance of many estates included wrong location, unsuitability of sheds and space to the needy, low use of capacity in functioning firms and occupation of factory sheds by government agencies.

Despite the policy of encouragement adopted by the Government, in actual practice it has been observed that still several handicapped persists. Firstly, compared with large sector, the agro sector has to wait much longer for the clearance of applications. No wonder, the large sector is able to obtain more government support, secondly, many small industries, modern as well as traditional continue to feed the wants of the rich or elite sections in the society. This defeats the very purpose of state support and leads to misdirection of resources. Thus, the policies of state support should be specifically directed to the production of commodities needed by the lower strata of our society. Thirdly, some of the large enterprises are misusing the concession available in the category of small enterprises to their advantage. It has been pointed out by economists that because the agro sector is not required to obtain licences for investment, this escape route has been used for de facto free entry by several industries. Fourthly, there is a heavy concentration of agro enterprises in six states, viz. Maharashtra, Tamil Nadu, West Bengal, U.P. Punjab, and Gujrat. The states which have lagged behind are; Rajasthan, Madhya Pradesh and Orissa. For future policy, therefore, the emphasis in state support should shift to greater encouragement in other states. This alone will bring balanced regional development.

The seventh Plan reviewing the progress of agro industries clearly states: " The modern agro industries including power-looms have not dispersed widely; most of these are

concentrated in development states and within these states also, a few areas which are either large cities, developed urban concentrations or industrial complexes account for most of the activity”

Lastly, on the question of grant of financial assistance by commercial banks to small industries, the Ninth Plan concludes: “The agro sector has matured and is in a position to make a much greater contribution to the national economy as well as to meet the challenge of large industry, including multinationals. The SSI sector will be provided with necessary incentives and support including making available credit to facilitate its growth and development leading to increased contribution to output, exports, and employment generation.”

Agro/Food Processing Industry Vision: 2015

The vision 2015 targets formulated in 2005 by the government include increasing India's level of food processing from an abysmal 6 per cent in 2004 to 20 per cent by 2015, value addition from 20 per cent in 2004 to 35 per cent and share in global trade from 1.4 per cent to 3 per cent.

As the result of various initiatives introduced by the Government of India and the Ministry of Food Processing Industries (MoFPI) during the last five years, the food processing sector has made rapid strides and is well on its way to achieve the targets set for 2015. The level of processing has already gone upto 10 per cent from 8% in (2010-11) with consequent wastage of perishables coming down from Rs. 58,000 crore a year to less than Rs. 50,000 crores, the value addition has gone upto 26 per cent from 20 per cent earlier and entire sector's growth rate has gone upto 13 per cent from about 7 per cent before 2005.

To achieve the Vision 2015 targets, however, a lot more needs to be done during the next three years. The ministry has identified as many as 13 key areas where actions need to be taken. The Ministry's first priority is to ensure supply of trained manpower, at all levels technicians, managers and entrepreneurs since the massive investment targeted for the food processing sector cannot be achieved without the necessary human resources.

The ministry had announced plans to commission a study to ascertain/identify the requirements of industry for trained manpower at various levels. The ministry has also prepared a blueprint for training 10 lakh skilled workers and 5 lakh women entrepreneurs within the next 3 years. The Government of India has already introduced several fiscal incentives for the sector during the last 7 years. The MoFPI will continue to fight for the industry's cause and seek more fiscal incentives including tax holiday for all food processing units and further lowering of custom, excise and VAT on food products, raw materials, machinery and packaging used by the industry.

Table: Status of value added products (%)

Sr. No.	Commodities	India	Developed countries
1	Milk	35	60-70
2	Marine products	26	65-70
3	Buffalo meat	20	65-70
4	Poultry	06	65-70
5	Fruits & vegetables	2.2	65
6	Whole agricultural produce	Around 10	65

In India AGMARK certification is employed on 205 different primary and semi-processed products as per Agricultural Produce Grading and Marking Act, 1937 India has as many as 44 Geographical Indications (GI) under agricultural commodities and 4 food products.

Example of GI

- 1 Darjeeling Tea
2. Alphanso Mango
3. Basmati Rice

At Regional level GI

- 1.Pokkali Rice (Kerala)
2. Honey (Coorg, Karnataka)

China and Thailand are promoting our GI products with culturally associated brands

UNIT 4

AGRICULTURAL POLICY OF INDIA

Agriculture has been a way of life and continues to be the single most important livelihood of the masses. Agricultural policy focus in India across decades has been on self sufficiency and self reliance in foodgrains production. Considerable progress has been made on this front. Foodgrain production rose from 52 million tonnes in 1951-52 to 244.78 million tonnes in 2010-11. The share of agriculture in real GDP has fallen given its lower growth rate relative to industry and services. However, what is of concern is that growth in the agricultural sector has quite often fallen short of the Plan targets. During the period 1960-61 to 2010-11, foodgrains production grew at a compounded annual growth rate (CAGR) of around 2 per cent. In fact, the 9th and 10th Five Year Plans witnessed agricultural sectoral growth rate of 2.44 per cent and 2.30 per cent respectively compared to 4.72 per cent during 8th Five Year Plan. During the current 11th Five Year Plan, agriculture growth is estimated at 3.28 per cent against a target of 4 per cent. The approach paper to the 12th Five Year Plan emphasizes the need to “redouble our efforts to ensure that 4.00 per cent average growth” is achieved during the Plan if not more. Without incremental productivity gains and technology diffusion across regions, achieving this higher growth may not be feasible and has implications for the macroeconomic stability given the rising demand of the 1.2 billion people for food. Achieving minimum agricultural growth is a prerequisite for inclusive growth, reduction of poverty levels, development of the rural economy and enhancing of farm incomes. Agriculture including crop and animal husbandry, fisheries, forestry and agro processing provides the underpinning of our food and livelihood security. Agriculture provides significant support for economic growth and social transformation of the country. As one of the world’s largest agrarian economies, the agriculture sector including allied activities in India accounted for 14.7 per cent of the GDP (at constant 2004-05 prices) in 2010-11 compared to 18.9 per cent in 2004-05 and contributed approximately 10.2 per cent of total exports during 2008-09. Notwithstanding the fact that the share of this sector in the GDP has been declining over the years, its role remains critical as it provides employment to around 52 per cent of the workforce

The agricultural growth in India declined during the post reform period, particularly since the mid-1990s as may be noted from Table 1 given below. Appropriate policies are needed for achieving growth rate of at least 4% in agriculture and increase in income of farmers. To frame these policies, it is important to identify the policy issues and the needed reforms in agriculture. There is need to take action on both the demand side and the supply side to raise the overall growth in agriculture. It may be noted that more than 80% of India’s farmers belong to the categories of small and marginal farmer with an area of more than 40%. So the support system and policy changes have to be tuned in such a way that they improve productivity and income of the small and marginal farmers.

Table 1: India: Growth rates of agriculture (% p.a at constant prices)

Period	Crops sector including cereals, pulses, F & Veg,	Livestock sector	Fisheries sector	Whole agriculture sector	Total economy
1951-52 to 1967-68	3.00	1.02	4.68	2.54	3.69
1968-69 to 1980-81	3.00	3.26	3.08	2.44	3.52
1981-82 to 1990-91	2.97	4.78	5.74	3.52	5.40
1991-92 to 1996-97	3.09	4.00	7.05	3.66	5.69
1997-98 to 2001-02	2.25	3.52	2.62	2.50	5.52
2001-03 to 2006-07	1.88	3.56	3.40	2.29	7.64
2005-06 to 2006-07	4.12	4.57	3.76	4.35	9.17

Source: Planning commission

The needed policies are as follow:

(A) Demand side intervention

(1) Mismatch in cost - price (price policy): Not only has agricultural growth been low in the last decade, the prices received for agricultural product have also failed to keep pace with the cost or general price level as such profitability has declined. The GOI, follows a Minimum Support Price (MSP) Policy for 24 major crops, including cereals, pulses, oilseeds, sugarcane and tobacco. The CACP recommends levels at which MSP should be fixed based on several considerations such as: (i) cost of production, (ii) changes in input prices, (iii) input-output price parity, (iv) trends in market prices, (v) demand and supply, (vi) inter- crop price parity, (vii) effect on industrial cost structure, (viii) effect on cost of living, and (ix) effect on general price level, etc. Among these factors, **the cost of production** is the most important factor in determining minimum support price.

(2) Macro policies and agriculture: Several modeling exercises suggest that a 4% growth of agricultural will not be sustainable from the demand side unless aggregate GDP growth is much higher than 8%. The steps needed for this are:

(i) Introduction of **NREGA now MGNREGA**

(ii) **Expanding excess and improving quality of public sector schools and health facilities.**

(iii) **Improvement in rural connectivity through *Bharat Nirman*:** (*Bharat Nirman* is a time bound business plan for action in rural infrastructure over the four –years period (2005-2009). Under *Bharat Nirman* Programme, action was proposed in the areas of irrigation, rural roads,

rural housing, rural water supply, rural electrification and rural telecommunication connectivity)

(iv) **Irrigation & Water Management:** Water must be recognized as a scarce resource and every drop needs to be used efficiently but some existing policies followed by state governments contribute to the problem. Continued provision of free power by all states is leading to an increase in critical and overexploited areas of groundwater use (29% blocks of the country). Watershed management, rainwater harvesting and groundwater recharge can help augment water availability in rainfed areas. An estimated 80 million ha needing treatment and average expenditure of Rs 10,000 per ha require Rs 80,000 crore during 11th plan. All these programmes need to be converged or supplemented with employment guarantee programme.

(v) **Agricultural Research:** To sustain the growth in agricultural productivity in the long run, continuous technological progress is must. In the 11th five year plan attention has been focused on National Agricultural Research System (NARS) to strengthen its basic research component through the identification of strategic research pathways. The whole agricultural research system needs to be thoroughly revamped on the advice of high power committees chaired by Dr M S Swaminathan and Dr R A Mashelkar.

(B) Supply Side Strategy

(1) **Identification of constraints:** Identification of constraints and policy distortions in creating yield gaps in cereals, pulses and oilseeds and to increase them in low yield regions

(2) **Lack of knowledge:** The NCF has observed knowledge deficit for which farmers need effective links to universities and best practices through the revival of extension system which has collapsed in most states due to constraint on non-plan expenditure.

(3) **Soil testing and optimal nutrient requirements:** Soil testing is hardly practiced and farmers use imbalanced doses of nutrients with excessive use of nitrogenous fertilizers (subsidy oriented) which has negative effective on productivity.

(4) **Credit:** Lack of the credit at reasonable rate is a persistent problem and has reflection on the collapse of rural cooperative credit system and has led to excessive dependence on informal sources at exorbitant interest rates. This has pushed the farmers in excessive indebtedness.

(5) **Diversification:** Accelerated agriculture growth require diversification into horticultural and floriculture implying structured changes in the relation between agriculture and non agriculture. Diversification requires effective marketing linkages in terms of domestic consumption, agro-processing and export.

(6) **Contract farming:** Attracting corporate investors to establish linkages with farmers and markets and provision of necessary inputs, extension and other advice .Ex of SEZs presently 75 operational in India

(7) Risk Management Strategies/protection of farmers against risks: Failure of seed resulting low yields than expected, proving in fructuous bore wells be tackled by provision of crop insurance schemes. AIC has been directed to start a weather-based crop insurance scheme as an alternative to NAIS.

(8) Agro-climatic zone specific strategy: The state in consultation with centre should concentrate on framing and implementing those agricultural strategies which cater to the needs of different agro-climatic zones.

(9) Rural non farm sector: The ultimate solution for the reduction of land is to improve rural non farm sector and planned urbanization. At the economy level, the demographic pressures on land have been increasing significantly in India and urban areas have their own problems of demographic pressures. As a result, rural non farm sector becomes an escape route for agricultural workers. In order to increase wages in agriculture and to shift the workers to improve productive areas, rural diversification is required.

UNIT 5

CAPITAL MANAGEMENT

Capital: It is one of the factors of production other than land from the use of which an income is expected. Chapman defined capital as that wealth which yields an income or helps in the production of further wealth or helps in the earning of income.

Capital has also been defined as “produced means of production”. Karl Marx in Das Capital argued/defined capital as a crystallized form of labour. That it (capital) consisted merely of labour that had been employed in the past. Land and labour are primary or original factors of production. But capital is not a primary or original factor; it is a “produced” factor of production. Capital has been produced by man working with nature. Hence capital may also be termed as **man-made instrument of production**.

Characteristics of Capital

- 1 Capital is the result of labour
2. Capital is the result of saving
3. Capital is productive and helps in enhancing efficiency
4. Capital is prospective (leading to success) to anticipate future
5. Capital is temporary and thus involves the element of time
6. Capital is a mobile factor
7. Capital is a submissive factor

Functions of Capital

1. Supply of raw material
2. Supply of appliances (tools) and machinery
3. Provision of means of transport
4. Provision of subsistence
5. Provision of employment

Classification of Capital (Based on use)

Capital can be divided into two groups:

i) Fixed Capital: These are those durable use producer goods which are used in production again and again till they economically become unfit for use e.g. machinery, tools, railways, tractors, factories, etc.

ii) Working Capital: These are those single-use producer goods which are used at once in one production cycle e.g. seeds, manures, fuel, raw material for process, stored irrigation water, etc.

Capital based on source of acquisition

i) Equity capital: It is the capital obtained from own savings, gifts, etc.

ii) Debt capital: It is the capital obtained from borrowed funds.

Capital based on contribution

i) Issued capital: It refers to that part of authorized capital of a company which has been subscribed by investors through shares.

ii) Paid up capital: It is that part of the capital which is subscribed by the share holders.

Capital Formation/Capital accumulation

Capital formation means increasing the stock of real capital in a country like that of machines tools, factories, transport equipments, materials, electricity, etc. All these are used for the future production of goods.

Role / Importance of Capital

1. Timely performance of crucial, seasonal and time bound operations.
2. Uniform application of various inputs.
3. Drudgery of human labour and unhygienic operations could be overcome.
4. Upkeep of draft animals can be avoided and resources like land and labour can be used in some other options of production enterprise.
5. Reduces labour use
6. Large scale operations are possible.
7. Higher returns in addition from custom hiring
8. Social and psychological satisfaction
9. Quality of product can be improved, e.g. mechanical grading, mechanical shelling of maize
10. Scientific storage, transportation and processing.

Cost concepts and Cost principle

This is an important principle in deciding to make investments. This also helps upto what extent the investment should be made in an enterprise. There are two main costs.

- 1 **Fixed cost:** This cost is there whatever may be the level of production but it can be reduced on per unit basis if the scale of production is increased.
- 2 **Variable cost:** This cost varies with the level of production. This classification is for the short run but in the long-run the total cost become variable cost.
- 3 **Total cost=** sum of 1 &2

Discuss other 3 average cost & one MC here.

Cost Theory: The theoretical concepts of costs are in terms of: (a) short run cost & (b) Long run cost

Short run cost: In this the price is equal to marginal cost i.e. $MR = MC = P_x$

Long run cost: The price is equal to sum of prime (variable) cost, supplementary (fixed) cost and risk cost to cover unfavourable yields and unfavourable price possibilities.

Sunk costs or Retrospective costs: The costs that have been already been incurred.

Prospective costs: The costs to be incurred in the future are called prospective costs

So under the managerial decision making process, the present and future costs have to play their significant role. These principles are:

Compounding: It is the procedure to find the future value of a present sum.

Discounting: It is the procedure to find the present value of future sum.

Present worth overtime

$$PV/PW = \frac{R}{(1+r)^t} \longrightarrow \text{Returns obtained at future date}$$

If the present worth of future revenue is less than the investment it would be unwise to invest the money in that activity to get the future revenue at the end of a certain number of years.

Points to be considered while deciding the size of machine as capital (Management of Capital Equipment)

Since there is large variety of machines and equipment from which every farmer has to choose, within the framework of his organization, in order to reduce per-unit costs in the long run and achieve the highest returns per unit of time. Once it is decided to get the work done with the machine, the immediate management question is whether to own the machine or to get it on custom-hiring. Again if it is to be owned, what should be its size and whether it should be new or second hand? The key points to consider while deciding upon the size of a machine are:

- i) The difference in the initial cost
- ii) The annual use to be made of the machine.
- iii) The amount of additional labour saved by the machine.
- iv) The relative opportunity cost of capital and labour on the farm.
- v) Size and price of land

- vi) The number, quality and variety of farm equipment- buildings, livestock, fences, machinery, implements, etc.

- vii) Size of variable expenses – like number of labourers, etc. required to operate.
- viii) Personal factors such as size of family and standard of living
- ix) Climatic factors in relation to type of farming.

The appraisal of profitability of the machine should always be based on the opportunity cost. The returns on capital from buying the machine should be compared with the returns from alternative investments that can be made with the same capital.

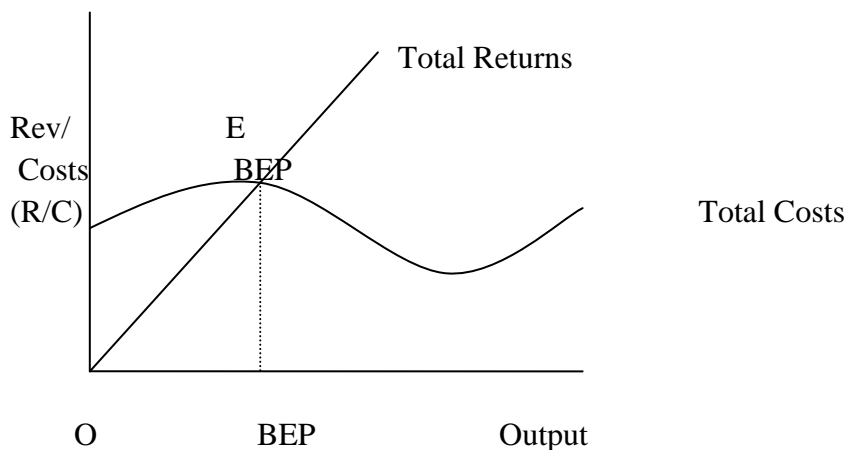
Break Even Analysis

In sensitivity analysis we ask what will happen to the project if scales decline or costs increase or something else happens. As a financial manager, you will also be interested in knowing how much should be produced and sold at a minimum to ensure that the project does not lose money. Such an exercise is called break even analysis and the minimum quantity at which loss is avoided is called the breakeven point. The break-even point may be defined in accounting terms or financial terms.

Break- even point for machinery

The break even analysis is basically concerned with the cost-volume profit relationship. BEA is made mathematically by applying the formulae to trace the break-even point, contribution and margin of safety. The important management decision, as to when to leave or abandon one practice and start another is answered by the break-even point. Break-even point refers to that volume of business, at which the farmer is indifferent between two alternatives i.e., he is neither better-off nor worse-off irrespective of the choice he makes. Break-even point is a crucial point, on the scale of decision.

The break-even level is given by the point where the fixed costs are covered and only beyond that, the farmer can make profits.



Advantages of BEA

1. Helps in finding out profit at different levels of production capacity utilization

2. Helps to know break-even point below which production may be stopped temporarily till the situations are adverse.
3. Determination of levels of sales to earn pre-determined profit.
4. To decide the optimum product mix to optimize profit if the organization is involved in different products.
5. To decide the capacity expansion of plants.

Limitations of Break-even Analysis

1. The assumptions that fixed costs remain fixed and variable costs vary in proportion to the volume of production do not hold good because of varying environmental conditions. So, various cost calculations have application in limited time horizon.
2. Break-even analysis does not take into account the impact of learning curve on the cost behaviour.
3. The assumption that all additional quantity can be sold at a predetermined price is not valid in the trade liberalized world where the business is to be carried out in external competitive force environment.
4. Any organization producing multiple products faces problem in applying this technique because the fixed and variable costs of each product line cannot be find out (ascertained)with high degree of precision (accuracy) which is important for decision making.

UNIT 6

FINANCIAL MANAGEMENT OF AGRIBUSINESS

Farm financial management mainly deals with the capital acquisition and capital use in the agribusiness. Capital acquisition and capital use are important in every phase of agribusiness/farm management. Hence, financial management and farm management are synonymous and interchanging.

Financial management is concerned with the efficient use of an important economic resources namely capital funds. Likewise it is concerned with estimation of financial needs, acquisition of funds from appropriate sources and allocation of funds among short term and long term assets for maximizing profits by achieving social responsibility and efficiency.

Capital is produced means of production. Karl Marx in his book 'Das Kapital' regarded capital as "crystallized form of labour". In the modern usage, money and capital are interchanged. But a clear distinction is sometimes made by the economists between money and capital. Money *per se* is not productive always. Capital is the money invested on physical items such as land, labour, fertilizers, etc.

Source of acquisition of capital

- i) Saving in the previous-years
- ii) Borrowings

In India, Credit (Non-equity capital) is a *sine-quo-non* in running the business. In the utilization of non-equity capital risk is an associated factor.

Leverage- The ratio of debt to equity is called leverage. The leverage will be higher on the farms using more and more of non- equity capital.

Financial Leverage: It is the ratio of amount of non- equity capital (D) to the amount of owner equity (E) in agribusiness.

$$FL = \frac{D}{E}$$

It is also known as debt-equity ratio or gearing ratio.

Farm Financial Management Decision

- 1 Decision regarding requisite capital

- 2 Decision regarding sources of capital and its optimum utilization
- 3 Decision regarding allocation of capital/ funds among alternatives
- 4 Decision regarding strategies to be adopted to counter risk and uncertainty :
 - i) Diversification ii) Flexibility iii) Insurance iv) Contractual arrangements
 - v) Production management vi) Back-up management
- 5 Decisions on the legal problems relating to farm organization and operation

1. Decisions regarding requisite capital: Under the situation of unlimited capital, a rational producer continues production till MCs get equated with MRs in the short run. The use of input be increased till the stage of $MC = MR$ is reached. Under capital constrained if a farmer manages to get funds from financial institutions even then he should increase the use till $MC = MR$ otherwise in an attempt to get higher returns by further increasing the use of inputs he may be operating in zone III where MRs start falling. This situation may disrupt his repayment plan and he may be stamped as defaulter.

2. Decision regarding sources of capital: There are two sources of finance viz, institutional and non institutional. Non institutional sources charge higher rate of interest. These days due to expansion of a wide net work of institutional agencies, farmers are to avail funds from such institutions and reduce their dependence on non institutional sources. Among institutional sources which is better that is to be decided on the basis of cost of credit borne in and timeliness of credit.

3. Decision regarding allocation of capital: The limited finance may be allocated in such enterprises that may bring revenue in the same year or he can give weightage to the idea of investing funds on the enterprises which may not produce results soon but gives returns to him in future. In the first case the decision be based on MR of capital = MC of capital. However, in second case the analysis of time value of money serve the basis, i.e compounding and discounting techniques be used..

4. Decision to counter risk and uncertainty: Agriculture is not free from risk and uncertainty. Therefore, by adopting following measures the farmers can reduce losses.

(i) Enterprise diversification: Select those enterprises with less/low variability in yield and prices.

(ii) Flexibility: If crop programme signals any changes, the farmer should prepare in adapting the needed changes.

(iii) Insurance: Every farmer should opt for the crop insurance as device in bad time.

(iv) Contractual arrangement: A forward marketing contract provides means for sellers and buyers to exchange a commodity for an agreed price.

(v) **Production management:** The farmer should select appropriate recommended package of practices to run his business on sound footing like timely sowing of a variety, recommended dose of fertilizer application and plant protection measures.

(vi) **Back up management:** If the farmer has to stay away from farming for some time, his absence will be surely felt in running his business by his children or spouse. Thus the farmer has to involve his wife and children also in the business to face the situation of vacuum created.

6. Decisions on the legal problems: Legal aspects regarding to acquisition, management and transfer of capital are considered here. For example the legal and other constraints associated in sharing of irrigation water from wells and canals, disputes over field bunds, etc be decided properly.

Characteristics of Farm Financial Decision

These (Financial decisions) are divided into two categories:

- 1 **Organizational Decisions-** Relate to plans for developing the agribusiness by acquiring durable assets like machinery, implements, lands, etc.
- 2 **Operational Decisions-** Involve factors like how much of land should be put under what crop, how much finance is required for raising crops and livestock and needed finance to be borrowed at lowest cost.

The important characteristics of decisions are:

- 1 **Frequency:** The decisions regarding crops to be grown, milch animals to be kept are taken mostly once in year whereas the amount to be spent on purchase of feed, labour etc are taken more frequently.
- 2 **Importance:** Risk averters prefer little investment. Risk takers would prefer decisions involving large amount of capital and time.
- 3 **Imminence:** Decision on the use of plant protection are of imminence nature
- 4 **Revocability:** Changing of decisions. For example decision taken on construction of new building cannot be changed easily.
- 5 **Number of alternative decisions available:** Some decisions have very little options and some have many. Devote sufficient time, e.g floriculture for export.

Steps in the Process of Farm Financial Management

- i) **Objective :** say to take perennial crop enterprise in the area
- ii) **Problem recognition :** No production no marketing problem but say only problem of large capital need
- iii) **Analysis:** Production and consumption based information gathering

- iv) **Decision-making:** Whether to opt for or not. Let him decide to go ahead
- v) **Action:** He is to implement the plan
- vi) **Accepting the consequences:** If succeeds he should feel happy if receives setback then should try to come out of this tangle.
- vii) **Evaluation:** continuous assessment of changes in agro, socio & economical environment around the farmer.

The degree of success achieved in farm financing management depends upon the following decisions relating to acquisition and use of capital

- i) Whether to borrow or not to borrow?
- ii) How much to borrow?
- iii) When to borrow?
- iv) From whom to borrow and at what cost?
- v) When and how best to repay the loans?
- vi) What to use for security?
- vii) What degree of risk should be involved?

Financial risks increase as borrowings increase

Farm Financial Management is important to:

- 1 Farmer-borrower
- 2 Lending agencies
- 3 Farm credit advisory service

UNIT 7

TOOLS OF FINANCIAL ANALYSIS

The farm financial manager has to assess the performance of his business to act suitably. Following tools of financial analysis are available in judging the performance.

- 1 Farm planning & budgeting
- 2 The balance sheet/Networth statement
- 3 Income statement or profit and loss statement
- 4 Cash flow statement / summary/budget or flow of funds statement
- 5 Break-even analysis

Plan: Any scheme of action prepared in advance to attain the set objectives is a plan and planning refers to the process of formulating a plan i.e kind of crops to grow and the acreage under each, number and kinds of livestock to be kept, implements and machinery to be maintained and so on.

Budgeting: The process of preparing a statement giving an estimate of all the farm receipts and expenses to be incurred for the agricultural year is called budgeting.

2 Balance Sheet or Net worth Statement

The balance sheet indicates an account of total assets and total liabilities of the farm business revealing the financial status of the business. More specifically it is a statement of the financial position of a farm business at a particular time, showing its assets, liabilities and equity. If the assets are more than liabilities it is called **net worth or equity** and its converse is known as net deficit. The typical balance sheet shows assets on the left hand side and liabilities and equity on the right side. Both sides are always in balance hence the name balance sheet. Net worth is placed on right side, along with liabilities, in order to indicate that like any other creditor the farmer has a claim against the farm business equal to the equity amount. Balance sheet can also be prepared to study the performance of a business over years by preparing the same number of balance sheets. If the net worth increases over the different periods, it indicates efficient performance of the business. To prepare a balance sheet the prime requisites are total assets and total liability of the farm.

Table: Balance sheet

Assets	Amount (Rs.)	Liabilities	Amount (Rs.)
1 Current Assets	17045	Current liabilities	3500
2 Intermediate or working assets	6987	Medium Term or Intermediate Liabilities	-
3 Long term or fixed assets	237900	Long Term Liabilities	-
Total Assets (1 to 3)	261932	Total Liabilities	3500
		Net worth or Equity= Assets - Liabilities = Rs 261932 - Rs 3500 = Rs 258432	

I. Assets: Assets are those items which are owned by the farmers and have values

- (i) **Current Assets:** The assets which are very liquid or short term nature and which can be converted into cash within a short time usually one year e.g. cash on hand, agricultural produce, livestock products, fruits & vegetable etc are called current assets.
- (ii) **Working Assets:** The assets which take 2 to 5 years to convert in the form of cash, e.g. machinery, equipment, livestock, tractors, etc are called working assets.
- (iii) **Fixed Assets:** The assets that are permanent or will be used continuously for several years are called long term or fixed assets. It takes longer time to convert into cash due to verification of records, legal transaction etc. e.g. land, farm buildings, etc.

II Liabilities: These refer to all things which are owed (due) to others by the farmers.

- (i) **Current Liabilities:** The loans/debts that must be paid in the short run or in very near future e.g. crop loan, other loans, cost of maintenance of cattle, etc are called current liabilities.
- (ii) **Intermediate Liabilities:** The loans which are due for the repayment within a period of 2 to five years, e.g. livestock loans, machinery loans, unsecured loans are called intermediate liabilities.
- (iii) **Long Term Liabilities:** The loans which are due for the repayment after five or more years e.g. tractor loan, orchard loan, land development loan, unsecured loans, etc are called long term liabilities.

Derivation of Test Ratios from the Balance Sheet

Sr. No.	Rato/indicators	Formula for computation	What it signifies/tells or rationale	Desirable value and indication
1	Current Ratio	$\frac{\text{Total current assets}}{\text{Total current liabilities}}$	This reflects liquidity within one year's time.	Ratio > 1 indicates a favorable run of the farm business
2	Intermediate or working Ratio	$\frac{\text{Total current assets} + \text{Total intermediate assets}}{\text{Total current liabilities} + \text{Total intermediate liabilities}}$	This reflects liquidity position of farm business over intermediate period of time ranging from 2 to 5 years.	Ratio > 1 indicates sound running of the farm business having adequate risk-bearing ability
3	Net Capital Ratio	$\frac{\text{Total assets}}{\text{Total liabilities}}$	This ratio measure the overall solvency position of the farmer-borrowers and indicates the long term liquidity position of the business	Ratio > 1 indicates that the funds of institutional agencies are safe
4	Current Liability Ratio	$\frac{\text{Current liabilities}}{\text{Owner's equity or Net worth..}}$	This ratio indicates the farmer's immediate financial obligations against the net worth	Ratio <1 indicates a healthy performance of the farm business and over the years should become smaller & smaller to reflect good performance.
5	Debt Equity Ratio or Leverage Ratio	$\frac{\text{Total liabilities}}{\text{Owner's equity or Net worth}}$	This ratio presents the capacity of the farmer to meet the long term commitments.	A consistently falling ratio indicates a very encouraging performance of farming & ability of the farmers to reduce dependence on borrowing.
6	Equity Value Ratio	$\frac{\text{Owner's equity}}{\text{Value of total assets}}$	It signifies the strength of farm business.	Improvement in the ratio over the years makes it clear that the financial strength of farm business is improving i.e. the risk capital is declining.

Precautions in Preparing the Balance Sheet of agribusiness farm/firm

1. Accuracy with regard to valuation of assets- Due to absence of proper records valuation of farm products like paddy, pulses, livestock & products should be valued based on prevailing market price. Land and other non-liquid assets be valued on prevailing sale value.
2. While valuing the durable assets, book value method (valuing at cost) be used. Book value be determined after giving an allowance for depreciation and improvements made on land.

Book value refers to the realistic value of an asset giving due allowance for depreciation and improvement. So book value is neither the market price nor purchase price, but value at cost.

Income Statement or Profit and Loss Statement

It is defined as a summary of receipts and gains minus expenses and losses during a specified period or over time. In income statement monetary values are assigned to input and output.

Advantages:

- (i) It indicates the trend in various costs items
- (ii) It tells about whether there has been any over expenditure on the farm.
- (iii) To know the success or failure of a business farm over time.

Income statement basically constitutes three items viz; expenses, receipts and net income

- I. **Receipts** – These refers to the returns obtained from the sale of crop produce and other supplementary products like milk, eggs, wages, gifts, etc. Gains in the form of appreciation in the value of assets are also included in the receipts. However, returns from the sale of capital assets such as livestock, machinery, farm building, etc are not included because returns are not really obtained during the period.
- II. **Expenses**- These refer to recording of operating/variable/working and fixed costs. Losses in the form of depreciation on the asset value fall under the expenditure item. However, the amount incurred on the purchase of capital assets is not included.

III. Net Income – It constitutes net cash income, net operating income and net farm income.

- (i) **Net Cash Income** - It gives the position of cash receipts minus operating expenses only during the period for which income statement is prepared.

Net Cash Income (NCI) = Cash Receipts (CR) – Operating Expenses (OE)

- (ii) **Net Operating Income** – It is arrived at by deducting operating expenses from the gross income. Fixed costs are not given any consideration. Operating expenses include crop loans.

Net Operating Income (NOI) = Gross Income (GI) – Operating Expenses (OE)

- (iii) **Net Farm Income** – Net farm income equals net operating income less fixed expenses/costs. Compared to net cash income and net operating income it is relatively a better measure of assessing the performance of a farm.

Net Farm Income = Net Operating Income (NOI) – Fixed Expenses (FE)

Net Farm Income = {Gross Income (GI) – Operating Expenses (OE)} – Fixed Expenses (FE)

Analysis/ Derivation of Financial Test Ratios from Income Statement

Sr. No.	Ratio/indicators	Formula for computation	What it signifies/tells or rationale	Desirable vale and indication
1	Operating Ratio	$\frac{\text{Total operating expenses}}{\text{Gross Income}}$	This tells about the magnitude of working expenditure incurred to derive a rupee of gross income.	This ratio should be < 1
2	Fixed Ratio	$\frac{\text{Total fixed expenses}}{\text{Gross Income}}$	This tells about the magnitude of fixed expenditure incurred to derive a rupee of gross income.	This ratio should be < 1
3	Gross Ratio Also known as input-output ratio.	$\frac{\text{Total expenses}}{\text{Gross Income}}$	This tells about the magnitude of total expenditure incurred to realize a rupee of gross income.	This ratio should be < 1
4	Capital turnover ratio	$\frac{\text{Gross Income}}{\text{Average capital invested}}$	This tells about the gross returns earned for each rupee of average capital invested over the year.	Should be as high as possible but > 1
5	Rate of return on investment	$\frac{\text{Net returns to capital}}{\text{Average capital invested}}$ Net return to capital = Net farm income + interest paid during the year – unpaid family wages	This gives the net returns earned for each rupee of average capital invested.	Should be as high as possible but > 1

First three ratios are called expenses-income ratios and fourth and fifth ratios are called income –investment ratios

Management Ratios

These ratios also measure the productivity of farm business. These are as follows:

1. Management return

MR = Net farm income – Wages for unpaid family labour – Interest on owned capital

2. Crop yields and Value: Comparison of average of unit under consideration with the average yields of the area.

3. Livestock Income

Livestock efficiency =
$$\frac{\text{Expenditure on feeds}}{\text{Livestock income}}$$

4. Gross income per man

Labour efficiency

5. Gross income per rupees investment. It is output-input ratio.

Cash Flow Statement or Cash Flow Summary or Cash Flow Budget or Flow of Funds Statement

Definition: Cash flow statement is a summary of cash inflows and cash outflows of an agri-business organization in a particular period, say a season or a year. It is usually prepared for the future, hence the name cash flow budget.

Merits

1. It helps to assess the time at which the funds are required for farming and allied enterprises.
2. It helps to identify the sources from which funds can be raised.
3. It helps to identify the purpose for which funds are needed.
4. It helps to identify the need of sale and purchase of capital assets.
5. It helps in working out the time and amount of repayment of loan, etc.

Break-even analysis

The quantity at which all costs allocated to a product are equal to all revenues from its sale is known as break-even point. At quantities smaller than the break-even point, there is a loss and at larger quantities there is a profit.

$$TR = TC$$

$$TR = Y \cdot P_y \text{ ----- (i)}$$

$$TR = TFC + TVC$$

$$TC = TFC + AVC \cdot Y \text{ ----- (ii)}$$

$$Y \cdot P_y = TFC + AVC \cdot Y$$

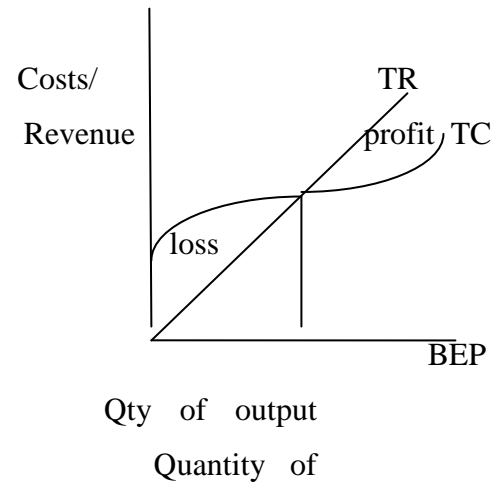
$$Y \cdot P_y - AVC \cdot Y = TFC$$

$$(P_y - AVC) Y = TFC$$

$Y^* = \frac{TFC}{P_y - AVC}$

Physical units

$\text{Therefore, } AVC = \frac{TVC}{Y}$
--



$$\text{BEP in monetary value} = \frac{TFC}{1 - AVC/P_y} = \text{Rs?}$$

Where TFC = Total fixed cost in Rs/ha of a crop

P_y = Price per unit (qt) of a crop in Rs

AVC = Average variable costs per unit (at) of a crop in Rs

The break even analysis facilitate in computation of certain measures like, margin of safety and percentage of margin of safety which helps in the decision making.

Margin of Safety (MOS): It indicates the difference between total output and output at BEP or total revenue obtained from the crop/enterprise and revenue at BEP. Total sales minus the sales at break-even point are known as the margin of safety. If the margin of safety is large (> 30%), it is a sign of soundness of the business since even with a substantial reduction in sales, profit shall be earned by the business.

MOS (in units) = Total output – Output at BEP

Or = TR – Revenue at BEP

%age of Margin of Safety = Output at BEP

$$\frac{\text{Total output} - \text{Monetary value of output at BEP}}{\text{Total revenue}} \times 100$$

MOS = TS - BES

Total sales – Sales at BEP

% of MOS = {BES/TS}*100

UNIT 8

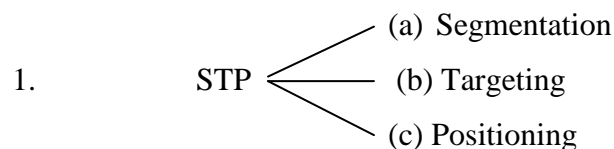
MARKETING MANAGEMENT

Meaning & Definition of Marketing: Marketing is an ancient art but its management is of relatively recent origin and in short period of time it has gained a great deal of importance and stature. **Marketing** has evolved first as a barter stage, money stage of the economy, the stage of industrial revolution and the stage of competition. In marketing, market does not mean the shopping zones or the places where goods are sold and bought. It means people or customers with purchasing power. Market also refers to demand. For example the market for cell phones in India in 2008 was projected at 300 million unit or 30 crore. Marketing is the process with multiple dimensions like (i) it is the process of exchange, (ii) means offering something and getting something in return, and (iii) it involves a buyer and a seller i.e. it is a transaction between two parties as per agreed upon conditions and their satisfaction. So marketing is a total system of interacting business activities designed to plan, promote and distribute need-satisfying products and services to existing and potential consumers.

Management is the process of achieving desired results with the available resources by planning, organizing, directing, coordinating, controlling, communicating and motivating.

Marketing Strategy

Marketing strategy is the complete and unbeatable plan designed specifically for achieving the marketing objectives. **STP** and **Marketing Mix** constitute the marketing strategy of the given product.



(a) Segmentation - It is the process by which an attempt is made to understand the heterogeneous market by examining it from different angles and grasping the commonalities as well as difference contained therein, and then divide the whole market into segments, each homogeneous within itself, sharing certain common characteristics.

(b) Targeting – This means picking up of the appropriate market segment say high income group.

(c) **Positioning** – This means to decide to offer what? (Say the high quality synthetic fabrics as its product offering). This means to view the position of proposed product in the minds of customers and what image it proposes to build for its offer.

2. Marketing Mix

Definition: It is the process of designing and integrating various elements of marketing in such a way as to ensure the achievement of enterprise objectives. **According to Philip Kotler-** Marketing mix is the set of controllable variables that the firm can use to influence the buyers response.

In short, marketing mix involves decisions regarding products to be made available, the price to be charged for the same and the incentives to be provided to the consumers in the markets where products would be made available for sale.

Keeping in mind the interest of the consumer in totality and the goals of the organization in terms of profit, quantity produced, cost, quality control within the prescribed budget the question arises as to how the firm makes such a total offer to consumers. Thus the firm chooses the, (i) product, (ii) performs distribution function, (iii) carries out promotional measures, and lastly the firm uses the, (iv) pricing mechanism. These four activities are popularly known as **Four P's**. These four elements constitute the marketing mix of the firm.

This (marketing mix) concept was first coined/invented by James Culliton an American marketing expert. This concept was popularized by Niel. H. Borden. Jerome McCarthy an American Professor of marketing who described the marketing mix in terms of **Four P's** classifying the variables under four heads, each beginning with letter P i.e Product, Place, Promotion and Price. The marketing mix has many sub-elements.

Besides, the marketing mix variables, the manager of marketing mix has to function in another set of variables called **environment variables** which are:

1. **Customer Variables:** No. of customers, their location and purchasing power, habits of purchase, brand awareness and brand loyalty, life style and needs.
2. **Competition variables:** Nature and intensity of competition, number of competitors and their size, capacity and territory of operation, strength and weakness of competitors, costs, logistics or channels.
3. **Trade variables:** Types of intermediaries, their number and strength, services provided.
4. **Environmental variables:** Govt. regulation on products, prices, distribution, control on trade practices, economic condition of the country, culture and traditions, law and politics, attitude of the public and media.

The marketing mix variables are considered as **controllable variables** of marketing where the choice of the manager is free. But the environmental variables are non controllable and are external to the firm. Thus marketing manager has no choice in them. The marketing process is the interaction of the **marketing mix variables** and the **environmental variables**.

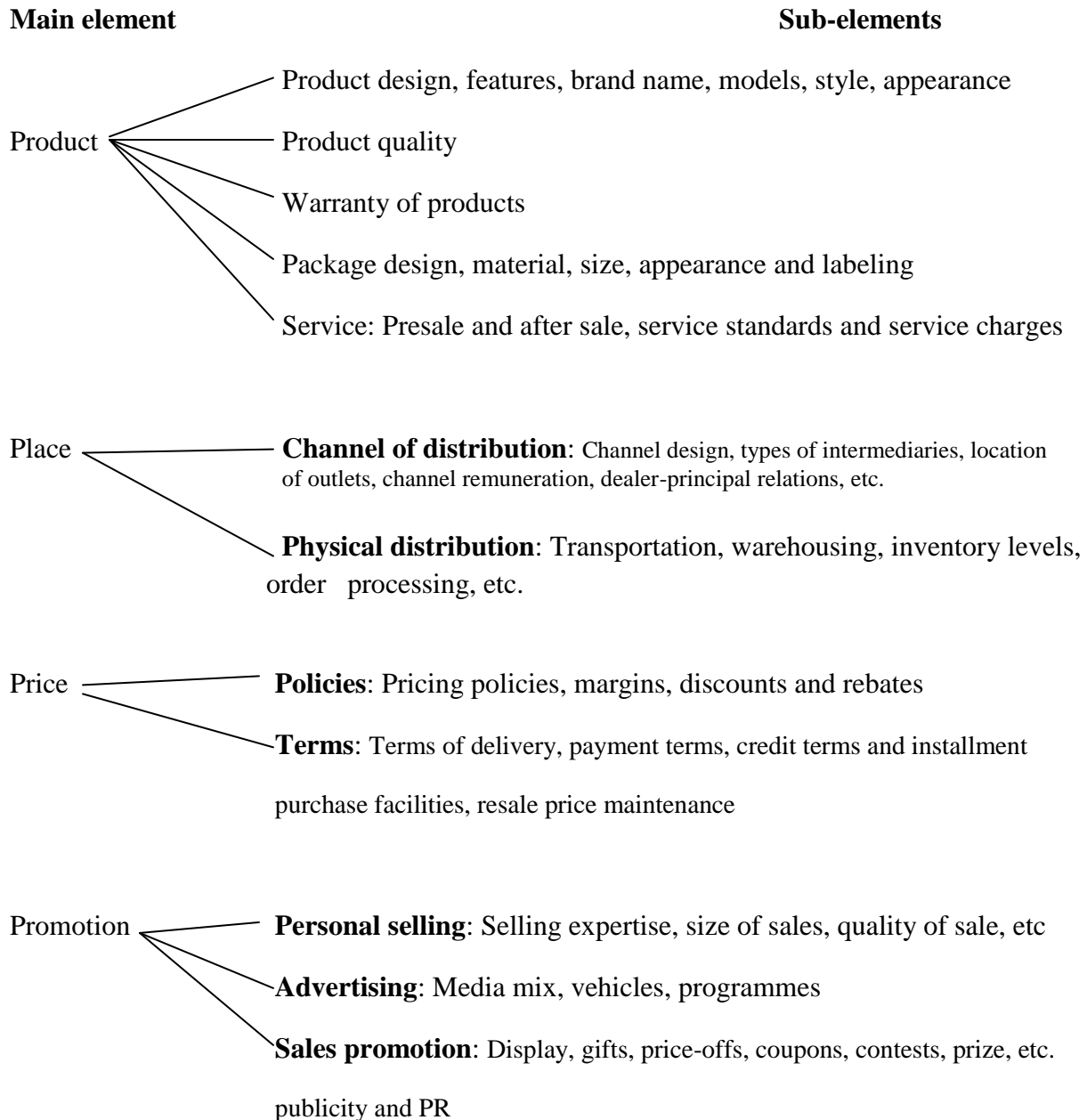


Fig 1: Main elements and sub- elements of Marketing mix

For explaining Product, Place, Price, and Promotion elements please read page 18-19 of Marketing Aptitude Book by Arihant Publication.

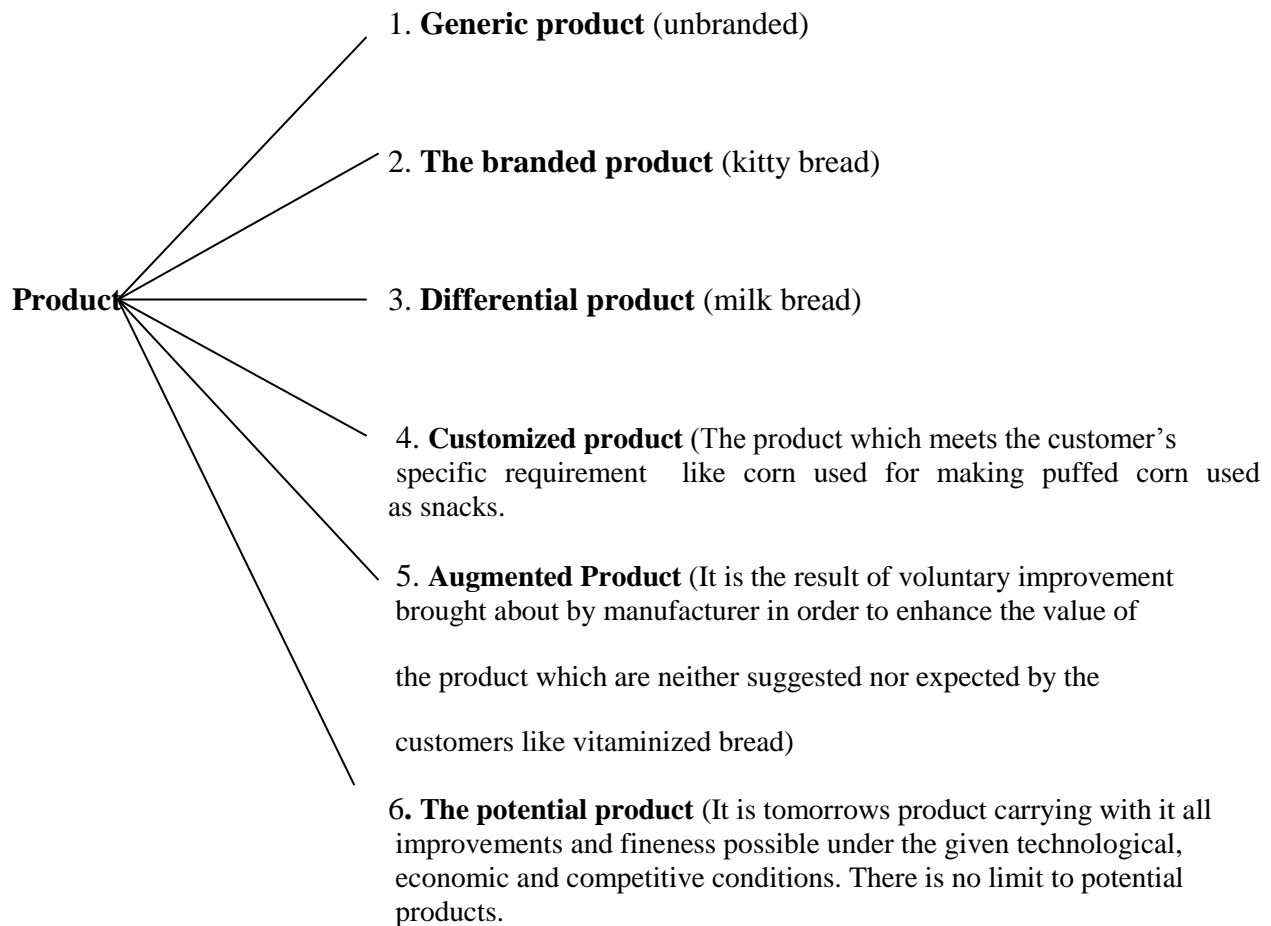


Fig 2: More about product element of marketing mix

Product Life Cycle (PLC)

By product life cycle we mean certain distinct stages through which a product passes during its life is called product life cycle (PLC). These stages are depicted and described as follow:

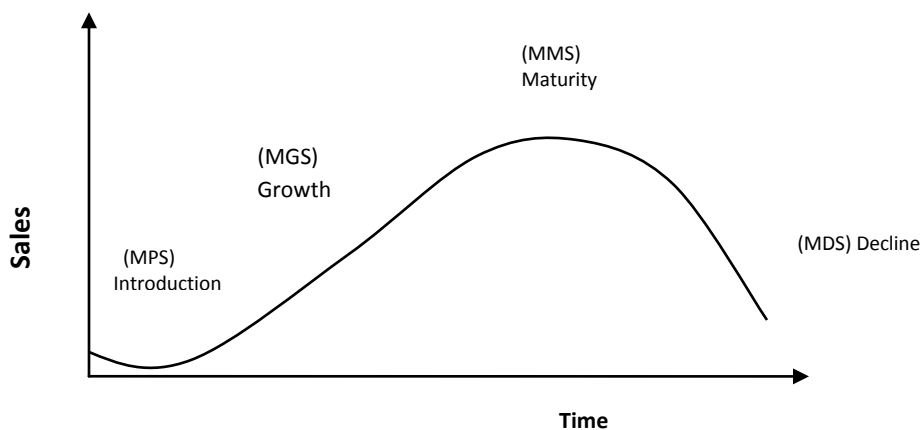


Fig 3: Stages in product life cycle

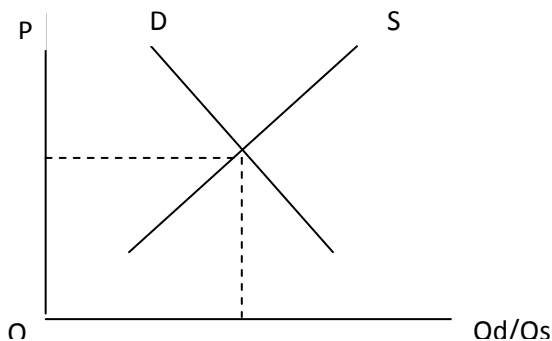
Stages in product life cycle

1. Market Pioneering(Introduction) Stage (MPS)
2. Market Growth Stage (MGS)
3. Market Maturity Stage (MMS)
4. Market Decline Stage (MDS)

Table: Salient features in product life cycle

Sr. No.	Stage	Market demand	Competition/sales	Profit	Price
1	Market Pioneering (Introduction) Stage (MPS)	No ready market. So demand to be created	Low level	Remote possibility	Skimming and penetrating prices
2	Market Growth Stage (MGS)	Demand for product increases and market size grows	Sales increase at reasonable level	Profit increase	Competition prices are adopted
3	Market Maturity Stage (MMS)	Demand reaches at saturation point	Sales reaches highest at level	Less profit	Price competition becomes intense. Product differentiation is adopted. Relatively low prices
4	Market Declining State (MDS)	Demand shrink	Sales begins to fall/diminish	Profit also diminish	Facing competition based on price becomes difficult. Low price prevails but does not favour.

Pricing: It is the interaction of demand and supply which is called the exchange value of product. The ratio when expressed in monetary terms is called price.



TYPES OF PRICING

I COST BASED PRICING

- (i) **Mark-up pricing:** This refers to pricing method in which the selling prices of the product are fixed by adding a margin to the cost price. Higher value goods have higher mark-up prices and vice versa. This method of pricing relies on the assumption that demand cannot be known accurately but cost are known.
- (ii) **Absorption cost prices or full cost pricing:** It rests on the estimated unit cost of the product at nominal levels of production and sales. It is worked on the variable and fixed cost involved in producing, selling and administrating the product. In the total cost, required margin is added and the total becomes the selling price of the product. This is called full cost pricing.
- (iii) **The rate of return pricing:** It is similar to the absorption cost pricing but is different from it in some respect, that is, to all costs, pricing mark-up which is arbitrarily decided, is added. But here, the rate of return pricing method uses a rational approach to arrive at the mark-up. The rate of return on the investment of the firm is met in the process. $V_c + f_c + \text{say } 12\% \text{ rate of return}$.
- (iv) **Marginal cost pricing:** This method aims at maximising the contribution towards fixed costs. Since the marginal cost include all the direct variable costs of the product. So while fixing the price in the cost i.e.in MC a proportion of the fixed cost is also realized.
- (v) **The Break – Even concept:** The idea of the break even concept is essential for correctly understanding most of the cost based methods of pricing. In any business, costs, volume, prices and profits are interrelated. Many business firms use the break – even concept in their pricing method. They use the concept not only for price fixation but also for determining the level of production or levels of utilization of the production capacity that is required for achieving the desired level of profit. It is a tool for making volume –cost-profit analysis.

II DEMAND/ MARKET BASED PRICING

- (i) **What the “traffic can bear” pricing:** This points out, to what extent the seller takes maximum price which the consumers are willing to pay for the product under the given circumstances. This is adopted mostly by retailers and earns good profit in short run but not after in long run as chances of error are there.
- (ii) **Skimming pricing:** This refers to aiming at charging higher price(s) and higher profit(s) in the early stages of market of products. It is like skimming which means higher price in the beginning then selling at the lower prices later.
- (iii) **Penetration pricing:** This method seeks to achieve greater market penetration through relatively low prices. It is quite favourable for new products under certain circumstances. This will keep competitors out for some time.

III COMPETITION ORIENTED PRICING

- (i) **Premium pricing:** Means pricing above the level adopted by competitors.
- (ii) **Discount pricing:** Means pricing below the level adopted by competitors.
- (iii) **Parity pricing:** This means matching competitors pricing.

IV OTHER BASIS PRICING

- (i) **Tender pricing:** It is a special type of competition oriented method (a competitive bidding). The demand lies in costs consisting (may not one) and miss a chance of better return.
- (ii) **Differentiated pricing:** This means charging different prices for some product in different zones. It may be customer based or volume based, however, the later is more common
- (iii) **Affordable based pricing:** These are the pricing of basic need materials meeting the need of all sections. The price is set independent of the cost involved and goods are distributed through PDS. It is a social welfare pricing.

UNIT 9

AGRICULTURAL PROJECTS EVALUATION

Agricultural Project

An agricultural project is defined as an investment activity in agricultural and allied activities where financial resources are utilized to create the capital assets with an anticipation of benefits over time. In other words it is an activity where money is spent to realize the expected returns and requires planning, financing and implementation as a unit. It also refers to specific activity, with specific starting point and specific end point to achieve a specific objective. The agricultural project may include projects such as irrigation, dairy, poultry, piggery, rural credit, social forestry, land reclamation/leveling, rural development projects, etc.

Terms & Concepts

Backward Linkage or induced linkage: This refers to relationship between an agricultural farm and suppliers of its inputs. A change in the output of a farm will get transmitted backward to the supplier of its input by changing in demand for inputs.

Forward linkage or stemming linkage: This refers to the relationship between an agricultural farm and other agro industries or farm which employs its output as an input. A change in output or price will get transmitted forward to user of its product.

Gestation period: It is a period required for the investment in a project to produce a visible return.

Tangible cost/benefits: Costs or benefits which either can be quantified or at least can be priced.

Intangible cost/benefits: Costs or benefits which either can't be quantified or at least cant be priced.

Secondary benefits: These are of two types. One is forward linkage (stemming linkage) and other is backward linkages (induced linkage). New values would arise consequent to the increased production of crops and livestock from the new proposed project i.e. irrigation project. The direct benefit is the increase in the output of crops and livestock, and smaller increase in the farmers costs. The increased output will facilitate increased activities in marketing, transportation, processing and add to the profits of the persons involved in these activities. This is forward linkage. The extra profits accrued to the input suppliers as a result of project implementation reflect the backward linkage.

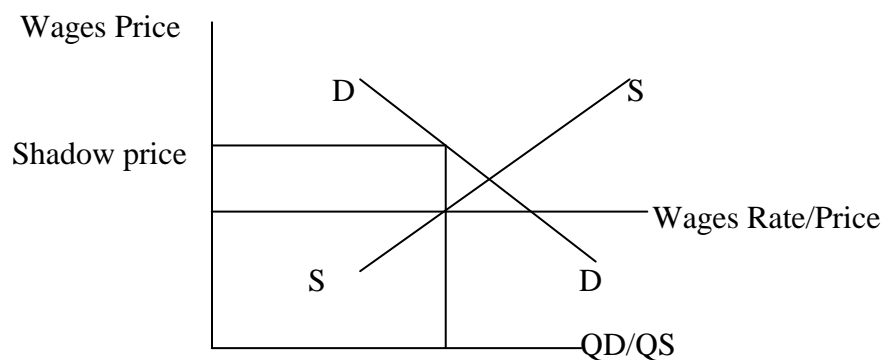
Opportunity cost: It is also known as alternative cost. It is the value of enterprise or factor of production in its next best alternative foregone. Assuming that the land is put to production of crop or housing units then rent that is obtained from housing units would become the opportunity cost for the land, if the land is engaged for production of crop. This cost is valuable tool for a manager to determine whether or not to invest in additional fixed assets or inventory. An investment is said to be worthwhile if it promises to earn more than its opportunity cost.

Social cost: The sum of money which is just adequate when paid as compensation to restore their original utility level of all who lose because of the production of output. The social cost has been the opportunity cost to society (i.e. to all individuals to the society) rather than just one firm or individual.

Tangible asset: The term used for physical asset such as plant and machinery, which are distinguished from intangible assets.

Intangible asset: The term used for those assets which are of non physical nature like personal skill.

Shadow Price: It is defined as a price which would prevail in the economy if it were in perfect equilibrium under conditions of perfect competition or it is an opportunity cost of an activity or project to a society, computed where the actual price is not known or if known does not reflect the real sacrifice made.



Types of Agricultural projects

1. Water Resource Development Projects
2. Agricultural Credit Projects
3. Agricultural Development Projects
4. Agro-industries Commercial Development Projects

1. Water Resource Development Projects: These projects are aimed at bringing about overall agricultural development by bringing water to the project area, providing drainage and reclaiming soil salinity, for example: irrigation projects, ground water projects, project for land reclamation, drainage projects, salinity prevention and flood control.

2. Agricultural Credit Projects: These are also called “on lending projects”. The projects in which credit is provided to the farmers for farm investment in increasing agricultural production, raising their standard of living and the economy as a whole are called agricultural credit projects. These projects need to be defined in terms of farm investment and investment on agro-industries

and ancillary industries, such as investment programmes on livestock, machinery, etc. All the financial institutions i.e. commercial banks, co-operatives and regional rural banks acts as the “credit houses” in the implementation of some agricultural projects.

3. Agricultural Development Projects: The projects aiming at improving upon the farm economy of individuals and regional development as a whole are known as agricultural development projects. Here, diversified cropping systems approach as well as farming systems approach is followed for bringing about the development of agriculture e.g. protected cultivation project.

4. Agro-industries Commercial Development Projects: Projects concerned with processing services to farming like supply of equipment/machinery, storage, market development, development of cooperative farms etc are cited under this category.

Characteristics of Agricultural Projects

1. **Time Frame:** It is an activity with a specific starting and ending points to accomplish (achieve) the stated objectives.
2. **Time Sequence:** It has a well defined time sequence of investment and production activities together with the benefits.
3. **Operational area and clientele:** The projects normally have a specific geographic location or area of concentration and specific clientele group in the region.
4. **Administrative structure:** A project will have a partially or wholly independent administrative structure and set of accounts funded through a specifically defined financial package.
5. **Externality:** Most agricultural projects are characterized by the existence of externalities defined as an uncompensated spill over or side effects which possess two properties:
 - (i) **Interdependency:** One persons behavior creates a cost or benefit to the other persons, and
 - (ii) **Lack of compensation:** The one who creates benefits is not completely rewarded for it, nor is the one who creates cost made to pay for it. An externality is revealed in terms of divergence between the private cost and the social costs of a project.
6. **Risk and Uncertainty:** The products of most of the agricultural projects are characterized as collective goods also called as the public goods, possess intangible benefits and are subject to greater risk and uncertainty.

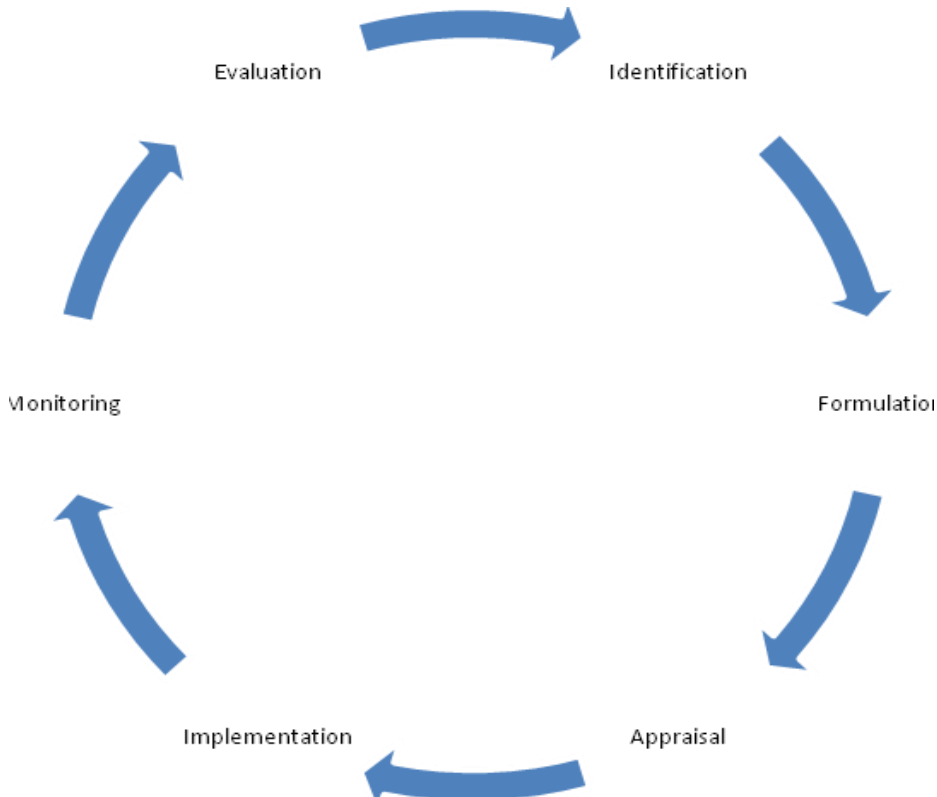
PROJECT CYCLE

Definition of project cycle: A natural sequence in which the projects are planned and carried out is called as the project cycle.

Phases in Project Cycle

The important phases in project cycle are:

1. Conception or Identification
2. Formulation or Preparation
3. Appraisal or Analysis
4. Implementation
5. Monitoring
6. Evaluation



- 1. Identification:** The technical specialists together with local leaders can identify the potential projects for an area. In fact, the technical specialists may identify areas where new investments may be profitable and can incorporate the suggestions of local leaders.

2. **Preparation/formulation:** The project can be prepared by a special team for the purpose with sufficient time and resources or by a consultant agency. The following points are considered while formulating the projects. The location and the site of project must be based on technical analysis and technical feasibility. The location of project depends upon physical resources, market conditions, marketing facilities, alternative investment prospects, administrative experience, farmers, objectives, technical skill, innovations, demand for products, etc. Due consideration is to be given to all the following aspects of formulation:
 - (i) technical aspects, (ii) institutional/ managerial aspects, (iii) organizational aspects, (iv) social and commercial aspects, (v) financial aspects, and (vi) economic aspects
3. **Appraisal or Analysis:** A careful review or appraisal of proposed project is must so as to determine its soundness before implementation. In fact the *ex-ante* appraisal or feasibility study is to be done to get enough information before advanced planning is made. Appraisal provides an opportunity to re-examine the project proposal before huge investments are made. The appraisal team may even suggest for some additional information to be collected or project may be rejected, if serious flaw exists.
4. **Implementation:** The most important part of project cycle is implementation. Two aspects should be kept in mind before implementing any project. Firstly a better and more realistic project can be easily carried out and expected benefits are also realized. Secondly, project implementation must be flexible.
5. **Monitoring:** It is the timely collection and analysis of data on the progress of a project, with the objective of identifying constraints which impede successful implementation. This is highly desirable, particularly when projects fail, to be completed as per time schedule or in the process of attaining the set goals. It is imperative to get the feedback on the problems faced so that effective measures can be taken up to improve the deficiencies, which hamper the speedy implementation. Monitoring has to be done continuously to remove/offset various shortcomings that are faced from time to time with regard to various aspects of implementation.
6. **Evaluation:** An *ex-post* evaluation is essential for completed projects while at the same time concurrent to those of on-going. In fact, it provides systematic information pertaining to success or failure of a project. The concurrent evaluation is essential to know the weaknesses of on-going projects so that these may be corrected for greater success. However, the overall impact of a project can be assessed once it is over.

ASPECTS OF PROJECT FORMULATION/ PREPARATION

1. Technical Aspects
2. Institutional/ Managerial and Administrative Aspects
3. Organizational Aspects
4. Social and Commercial Aspects

5. Financial Aspects

6. Economic Aspects

1. **Technical Aspects:** The technical appraisal of proposed project should be done by the competent technical staff and it should not be done in hurry. For instance the technical appraisal of proposed minor irrigation project should contain aspects such as the rate of recharge of underground water, the number of wells to be sunk in the area including existing wells, spacing/location of new wells, depth up to which wells are to be sunk, deep/shallow wells required, suitability of underground water for irrigation purpose, the cropping pattern, season-wise discharge of water from the well, etc. The technical analysis may also determine the potential yield in the project area, the coefficient of production, etc along with the marketing and storage facilities required for the successful operation of the project and the processing system needed.
2. **Institutional/ Managerial and Administrative:** To avoid opposition, the local institutions may also be duly involved right from planning to implementation levels. All concerned agencies/institutions should have an opportunity to comment upon the proposed project and their views may be fully incorporated. Ample provisions for managers and supervisors for getting latest information about the progress of project, special monitoring staff and training arrangements needed may also be looked into. The managerial ability of existing staff may be assessed before making huge investments.
3. **Organizational Aspects:** Organizations refers to the process of putting the priorities in an orderly form. Prepare the organizational hierarchy of the implementing agency. The availability of staff at various cadres, demarcation of authority and linking of authority and responsibility, etc, are expected to be dealt with, under this aspect.
4. **Social and Commercial Aspects:** A proposed rural development project, besides employment and income generation also considers the provisions made for improved rural health services, better domestic water supplies, increased educational opportunities especially for rural women and children, etc. Moreover the project sites may be chosen in such a way that it should have notable scenic value and/or preserving the unique wildlife habitats. The backward and forward linkages of proposed project such as the supply and demand relationships pertaining to output, the credit requirements for marketing input and output, timely as well as quality supplies of modern inputs to adopt new technology/cropping patterns, an efficient marketing channel for supply of inputs and the procurements of equipment and supplies should also be examined. Besides, the supplies may be made not only in time but at fair price and with proper specifications.
5. **Financial Aspects:** The financial aspects deal primarily with sources of raising financial assistance and terms and conditions of obtaining finance from the credit agencies. The implementing agency should be in a position to estimate financial requirements and anticipated returns through farm planning and budgeting. Once the incremental income is arrived at, the repayment capacity duly giving considerations/margins for risk and uncertainty can be worked out.

6. **Economic Aspects:** The economic analysis is directed towards determining whether the project is likely to contribute significantly to the development of economy as a whole. The point of merit is to whom the project is going to benefit i.e. to one section of society or the entire area of the project. The indirect effect like, the income distribution, needs to be assessed. Under income distribution, the purpose is to know whether income inequalities are going to be narrowed down or widening up as a result of proposed projects. Overall it is expected from the project to bring largest contribution to the national economy.

Distinction between Economic and Financial Analysis

Sr. No.	Economic Analysis	Financial Analysis
1.	Economic analysis is complimentary to financial analysis.	Financial analysis is complimentary to economic analysis
2.	Economic aspects/analysis deals with society.	The financial aspect/analysis deals with individuals owners/participants of projects.
3.	Interest on capital is not deducted from the gross return analysis because it is a part of the total return to the capital available to society as a whole.	Interest paid to external supplier of money is deducted to derive the benefits streams available to the owners of the projects.
4.	In economic analysis taxes and subsidies are treated transfer payments. In fact, the income generated by a project includes taxes which project bear in the production and also sales taxes which buyer pay while purchasing the products or outputs. These taxes which form part of the total project benefit, are transferred to the government that acts on behalf of society as a whole, therefore, are not treated as costs. But a government subsidy to the project is a cost to the society. Therefore it is an expenditure of resources	Such adjustments are not necessary in the financial analysis.
5.	In economic analysis taxes and subsidies are adjusted to reflect more accurately the social and economic values. These adjusted prices are called “shadow prices” or accounting prices.	In financial analysis, taxes are usually treated as a cost and subsidies as a return. <u>In this analysis, market prices are normally used which takes into account taxes and subsidies.</u>

Criteria for Selection of Agricultural Projects

1. **Work Selection Criterion:** According to this criterion we are to examine the immediate needs of the project area. Efforts be made to directly or indirectly increasing prospects of agricultural production, income and employment

2. **Priority criterion:** According to this criterion it is examined that the project implemented falls under priority area or not
3. **Social criterion:** This criterion considers the direct employment prospects, ecological balances, externalities, pollution, etc.
4. **Financial criterion:** According to this criterion it is determined whether the required amount of capital is supplied or not for the implementation of the project. In case the execution is delayed, additional capital requirements are to be assessed.
5. **Supply criterion:** This is concerned with available resources, physical inputs, labor availability and other resources. Supply of skilled labourers and unskilled labourers and technical personnel are to be evaluated for the completion of the project on time.
6. **Implementation criterion:** According to this criterion the organizational capabilities and managerial abilities of technical personnel are judged.
7. **Project benefits criterion:** As per this, both tangible and intangible benefits must be correctly assessed and evaluated. In this process the benefits accrued / earned due to forward linkages and backward linkage need to be given specific weightage.

IDENTIFICATION OF PROJECT COSTS AND BENEFITS

In economic analysis of agricultural projects we compare costs and benefits and determine which among the alternative projects have an acceptable return. Thus, we not only identify the costs and benefit streams but these are also priced. The costs and benefits are identified and valued “with” the proposed project and it is compared with the situation “without” project to determine the net incremental benefit. This approach is entirely different to that of “before” and “after” approach where changes in production without project are not taken into account and leads to erroneous statement of benefits. In fact, there may be progress even without the project and it would be inappropriate to attribute all the progress to the projects, as if the normal development process had come to a halt. The cost and benefits of a proposed project can be categorized as follow:

- i. Tangible costs and benefits or Primary costs and benefits
- ii. Intangible costs and benefits of agril. projects or secondary costs and benefits

Identification of project costs

The various types of costs involved in the project are:

1. **Project costs:** These include the value of the resources used in maintaining and operating the projects.
2. **Associated Costs:** The cost that is incurred to produce immediate products and services of the projects for use and sale.

3. **Primary Costs or Direct costs:** These include costs incurred in construction, maintenance and operation of the projects.
4. **Secondary or Indirect costs:** Value of goods and services incurred in providing indirect benefits from the projects such as houses, schools, hospitals etc.
5. **Real cost and Nominal costs:** The costs worked out at current market prices are known as nominal costs, whereas if costs are deflated by the general price index, these are termed as real costs.
6. **Deflating:** It is the process of making allowances for the effect of changing price levels. A rise in price level means a reduction in the purchasing power of money.

Table Computation of real wage indices from wages and price index

Year	Current Wages (Rs) (CW)	Price Index (PI) No.	Real wages = (CW/PI)*100	Real Wage Index
2001	200	100	$200/100 \times 100 = 200$	100.00
2002	240	160	$240/160 \times 100 = 150$	75.00
2003	350	280	$280/350 \times 100 = 125$	62.50
2004	360	290	$290/360 \times 100 = 124$	62.00

7. **Social costs:** These are technological externalities (outside) and technological spillover accrued (added) to the society due to presence of projects i.e. pollution problems, health hazards, salinity conditions etc.
8. **Shadow prices:** It is defined as a price which would prevail in the economy if it were in perfect equilibrium under conditions of perfect competition.

In general the economic analysis determines remunerations to labour and other inputs either at market prices or at shadow prices provided that much amount of resource is transferred from its present use to the project. In economic analysis the market prices are adjusted to more accurately reflect the social or economic value. These adjusted prices are called the shadow or accounting prices.

Tangible (Physical) costs of Agricultural Projects

- (i) **Land:** The location of land and area required for a proposed project is not so difficult to identify but problem again exists in its valuation, as structure and pattern of land market is not so sound as for other goods and services. So opportunity cost be used (sale & purchase)
- (ii) **Labor:** Both skilled and unskilled labours are not difficult to identify but problem may be in valuing them i.e. it may require the use of shadow price. In fact, the

valuation of family labor in developing countries may involve complexities as their opportunity cost is zero.

- (iii) **Physical goods:** The items like fertilizer, pesticides, concrete for irrigation channel are not difficult to identify but technical problem occurs in planning and designing the quantity as well as their time of use. So the quantity and time of application be assessed properly.
- (iv) **Contingency Allowance:** The huge investment in a proposed project is usually made under certain assumptions such as no modification in the design no adverse phenomena such as floods, bad weather etc. Besides, in general, the project cost estimates also assume no relative changes in domestic or international prices. These assumptions may not hold true in real practice. Therefore, provisions of some allowances i.e. cost be made to meet out the situation leading losses due to flood, hailstorm, bad weather etc.
- (v) **Direct Transfer Payments:** The shift of goods and services from one entity in a society to another which do not reflect changes in national income is generally considered as the direct transfer payments. Taxes, subsidies, loans and debt services (the payment of interest + principal) are examples of direct transfer payments in an agricultural project. Under economic analysis the payment of taxes, should not be considered as a cost to the society but subsidy is. In economic analysis taxes remain a part of the overall benefit stream of the project. Subsidies are direct transfer payments which flow in opposite direction from taxes. A farmer, who purchases fertilizers and pesticides at subsidized rate, may reduce his total costs and can therefore, increase his net profit. However, cost of fertilizer in use of society's real resources remains the same. The raw material needed to produce the fertilizer reduces the national income available to the society and hence in economic analysis of agricultural projects the full cost of fertilizer should be considered.
- (vi) **Sunk Costs:** These are the costs incurred in the past upon which a proposed new investment is based. If the considerable amount has already been spent on a project, the future returns to future costs of completing the project would be quite reasonable.

Tangible Benefits of Agricultural Projects:

These benefits can arise either due to increased value of production or from reduced costs.

1. **Increased Production:** The most common benefit of an agricultural project is the increased physical yield e.g. an irrigation project provide assured water so that farmers get high crop yields through increased use of input (water). Thus the total production on a farm increases which might be consumed by the farm family. The returns to agricultural investment will be, however, underestimated if home consumed production is not considered.

2. **Quality Improvement:** The quality of product also improves due to the agricultural project for e.g. Intensive Cattle Development Program not only benefitted Indian farmers in terms of increased milk yield but also by improving breed of their animals.
3. **Change in time of sale:** The storage facilities available due to proposed projects i.e. cold storage for perishable commodities like milk plant, etc. may permit the beneficiaries to sell their product even in a lean period to fetch higher prices. Thus benefit from such project investments may arise due to the change in its 'temporal' value.
4. **Changes in product form:** The projects of agricultural processing industries expect benefits due to change in their form of agriculture produce e.g. paddy sold to rice miller who sell polished rice, oilseeds sold to oil miller, maize sold to cattle feed industries and fruits & vegetables to processing industries provide benefit due to changes in product form
5. **Cost reduction through mechanization or transport:** The "customs service project" in an area may reduce the cost of labor on the one hand and timely performance of agricultural operations during the peak period. The total production may not increase but benefits results due to trimming the cost. The better rural link roads or highways may reduce the transportation costs from producers to ultimate consumers.
6. **Losses avoided:** The benefits may arise due to avoidance of losses. In fact such benefit streams are not easy to identify. A project for drainage in flood affected area or lining of canal water to check the seepage are common examples.

INTANGIBLE COSTS AND BENEFITS OR SECONDARY COSTS AND BENEFITS

The secondary costs or benefits in project analysis act as vehicle to account for the value added which arise outside the project but results due to project investment. In shadow pricing every item is called either at its opportunity cost or at a value determined by the consumer's willingness to pay for that item.

There can also be "technological spillover or technological externalities". Adverse ecological effects and side effects of irrigation development are the common examples. In case the technological externalities are significant i.e.; identified and valued, these may be considered as a direct cost of the project or cost of avoiding them may be included as project costs.

Most common examples of **Intangible benefits** in agricultural projects may include: (1) creation of new job opportunities, (2) better health and reduced infant mortality as a result of more rural clinics, better nutrition, (3) reduce incidence of water-borne diseases due to improved rural water, (4) reduced salinization due to lining of canals to reduce seepage, (5) scenic value due to irrigation dam and afforestation projects, (6) better social life due to integrated rural development program, etc. Such intangible benefits are real and reflect true values but cannot be valued

monetarily. In fact, these benefits are important to be identified and may also be quantified whenever possible.

Intangible costs do exist in agricultural projects. These costs may be: (1) increasing ecological imbalances, (2) loss in scenic values, (3) increased pollution, (4) harmful effects on human health and incidence of disease problems due to excess use of fertilizers, insecticides and pesticides under HYVP, etc, again although valuation is impossible yet intangible costs may be carefully identified and if possible quantified.

Pricing of Project Costs and Benefits

It is essential to find out the appropriate market prices both for inputs and outputs so as to arrive at the cost and benefits streams. The various aspects to be considered while searching for appropriate market prices are as under.

1. Point of first sale and farm gate price

The market price for agricultural commodities in the project area may be determined on the basis of “point of first sale” i.e. the farm gate price which means whatever farmers receive due to sale of their farm produce. However, these commodities when processed and delivered in the market by paying marketing charges may give the increased value. Thus, the price of the commodities sold in nearby market may be considered as farm gate price representing the point of first sale. A new truck purchased to perform this task, may be entered as a cost incurred to realize the marketing benefit in the project. The procurement price/ support price announced by the Govt. of India is called as the “Farm Harvest Price”. The prices fixed by cooperative sugarcane union/co-op milk union, Govt. agencies/ marketing boards extra also serve as farm gate prices. Indeed, the farm gate price is the best price at which farm produce is to be valued.

2. Pricing of intermediate good

An intermediate good is primarily produced as an input to be used for producing another good. The imputed prices may be avoided for intermediate goods. In an irrigation project the value of agricultural produce is considered at its point of first sale, irrigation water being the intermediate good.

3. Some intricacies about market prices

Sometimes confusion arises in determining the value for land and labour. As net benefit from the project increases the family’s income or wage, in effect, also increase. Therefore, the incremental net benefit will reflect the increased return to family labour.

As seasonality exist in prices of agricultural commodities, a good starting point is the farm gate prices at the peak of harvest season i.e., lowest price in the cycle. The quality of a product has strong bearing on its price. In many agricultural projects the objectives is to raise both quality and total output. For instance the dairy farmer of ICDP and Anand Pattern milk union Ltd. would follow clean milk production and other standard of the fluid milk market to command a higher price or reduced time for delivery may hold down sucrose inversion in sugarcane or better

pruning would increase the average size of the oranges. In such cases the proper price is to select is the average price expected for the quality to be produced.

PROJECT EVALUATION TECHNIQUES

Predicting Future Prices

Determining future prices is a matter of judgment. To project future prices one should work out the trend in past market prices and the same trend can also be assumed for the near future. Moreover, due consideration may also be given to the inflationary trend, in case it exists.

(1) Compounding/ Future value of present money

The process by which the present cost/investments are made to grow with time to make it comparable with future returns is called compounding. The future value of present investment in the project is calculated by using the well known formula of compound interest.

$$A = P [1 + r]^t$$

(2) Discounting/ Present value of future money

The process of computing the future revenues/returns to make it comparable with the present is called discounting. Discounting is the inverse procedure of compounding

$$PV = \frac{R}{[1 + r]^t}$$

where, A is the future value of the present sum invested in the project

P is the principal amount invested in the project

r is the interest rate in percentage

t is the number of years or project life in years

PV is the present value/worth of future money

R is money value (Returns) in future

The rationale behind this process is that a sum to be received in future is some what less now, because of time distance assuming of positive interest rate. A present sum is compounded to know the future value and future sum is discounted to know the present value of future return.

Project Evaluation Techniques

A project under consideration can either accepted or rejected once project cost and benefits are identified, priced and valued. Following discounted/ undiscounted measures are applied to evaluate the agricultural project.

I Undiscounted Measures: These are the methods in which the data are used as these are some with some simple manipulations, without making explicit allowances for taking into consideration the time element involved rigorously.

- i Ranking by inspection .
- ii Proceeds per unit of outlay.
- iii Payback period (PBP)

II Discounted Measures: These are the methods which rigorously take into account the time element associated with the cost and return streams.

- i Net present worth (NPW)
- ii Benefit cost ratio (BCR)
- iii Internal rate of return (IRR)
- iv Profitability Index

There is no single best technique for estimating the project worth, some are better than other and some are especially deficient. In fact these financial and economic measures of project investment are only the tools of decision- making. Undiscounted measures like PBP, ranking by inspection, proceeds per unit of outlay, average annual proceeds per unit of outlay and average income on book value of the investment may also be used in assessing the project worth.

1 Undiscounted Measures

(i) Ranking by inspection

It is based on the size of costs and length of the cash-flow stream. Suppose if the two projects are with the same investment and the same net value of production, but with difference in the length of the period, then the project with longer duration is preferred to the one with shorter time period. This leads to bias in the choice obviously due to the absence of more elaborate and appropriate analysis.

(ii) Proceeds per rupee of outlay

This is worked out by dividing the total returns with the total amount of investment, and a given project is ranked based on the highest magnitude of the parameter.

(iii) Payback Period

It is the length of time period from the beginning of the project that equates the net value of incremental production streams to the initial capital investment i.e, The present value of total cash inflows from an investment equals (recovers) the total cash out flows. According to the criterion, the project that has the shortest payback period is preferred.

Steps in the computation of PBP

Step 1: Compute year wise total cost including initial investment.

Step 2: Workout net returns by subtracting total costs from gross benefits (Gross Returns – Total Cost)

Step 3: Compute cumulative net returns over the years and identify the year where cumulative net returns turns zero or become just positive.

Decision Rule: In case of multiple projects, project having the shortest PBP is preferred.

The major drawback with undiscounted measures is that for the same data of the project, we get different rankings; hence, choice process becomes useless. Rankings by these methods are inconsistent and incompatible.

II Discounted Measures

(i) Net present worth (NPW)

Sometimes it is referred to as Net Present Value (NPV) and is simply the present worth of cash flow stream. It represents the present worth of incremental net benefit i.e. the income stream generated by an investment. The net present worth (NPW) can be calculated in the following steps as per formula given:

NPW = Discounted benefits – Discounted costs

$$NPW = \sum_{t=1}^n \frac{B_t}{(1+r)^t} - \sum_{t=1}^n \frac{C_t}{(1+r)^t}$$

OR

$$NPW = \sum_{t=1}^n \frac{B_t - C_t}{(1+r)^t}$$

Where, NPW is the net present worth

B_t is the year wise benefits

C_t is the year wise costs

t is the number of years

r is the discount rate.

Steps in the computation of NPW

- i Choose an appropriate rate of discount (r). Generally prevailing commercial interest rate is taken as a discount factor.
- ii Compute the net benefits (NB_t) by subtracting the yearly total cost (C_t) from gross benefits (B_t) as follow: NB_t = B_t - C_t
- iii Work out the net present worth (NPW) of net benefits by deflating the net benefits. Find out the sum of yearly values.
- iv Accept the project whose NPW is higher.

Decision making rule

(a) If NPW > 0; accept investment, (b) If NPW < 0; reject investment, (c) If NPW = 0; be indifferent

- i For single project, the NPW should be positive
- ii For multiple projects rank the project in descending order according to the values of NPW and implement accordingly depending upon availability of funds.

(ii) Benefit Cost Ratio ((BCR))

The ratio derived by dividing the present value of benefits, by the present value of cost is known as benefit cost ratio (BCR). In fact, this ratio measures the return or benefit per units of cost or investment. While ranking the projects depending upon the B-C ratio, the most common procedure of selecting project is to choose the projects having B- C ratio of more than one. Finally, the given project is opted for implementation, among alternatives based on the highest B – C ratio. BCR is calculated as:

$$\sum_{t=1}^n \frac{B_t}{(1+r)^t} \quad \text{Discounted benefits}$$

BCR or B-C Ratio = =

$$\sum_{t=1}^n \frac{C_t}{(1+r)^t} \quad \text{Discounted costs}$$

where, B_t is the benefit in the t-th year

C_t is the cost in the t-th year

r is the interest discount rate.

t is the lifespan of the project years.

Decision criterion: (a) If $BCR > 1$; accept investment, (b) If $BCR < 1$; reject investment, (c) If $BCR = 1$; be indifferent

(iii) Internal Rate of Return (IRR)

It shows the marginal efficiency of capital or return generating capacity of investment. It (IRR) is the rate (R) at which the Net Present Worth (NPW) is equal to zero. In other words at this rate the present value of returns on investment and the present value of cost incurred are equal with the result that the net present worth become zero. Such a rate of interest (R) can be calculated by trial and error method by using discount rates.

$$\text{If } \sum_{t=1}^n \frac{B_t}{(1+R)^t} > \sum_{t=1}^n \frac{C_t}{(1+R)^t} \text{ Try higher value of } R$$

$$\text{If } \sum_{t=1}^n \frac{B_t}{(1+R)^t} < \sum_{t=1}^n \frac{C_t}{(1+R)^t} \text{ Try lower value of } R$$

Try to locate the value of R where benefits equal to PV/PW of total costs.

$$\sum_{t=1}^n \frac{B_t}{(1+r)^t} = \sum_{t=1}^n \frac{C_t}{(1+r)^t} \text{ such that}$$

$$\sum_{t=1}^n \frac{B_t}{(1+r)^t} - \sum_{t=1}^n \frac{C_t}{(1+r)^t} = 0$$

However, this is a laborious task. There is alternative method to estimate the IRR which involve the following **steps:**

Steps in the computation of IRR

Step 1: Find out R_1 (lower discount rate) at which NPW is just positive.

Step 2: Locate R_2 (higher discount rate) at which NPW is just negative.

Step 3: Calculate IRR as follow:

[Internal Rate of Return] = [Lower Discount Rate] + [Difference between the two discount rates]
 [Net present worth of the cash flow at the lower discount rate/Absolute difference between net present worth's of the cash flow at the two discount rates]

$$IRR = R_1 + (R_2 - R_1) \left[\frac{NPWR_1}{NPWR_1 - (NPWR_2)} \right]$$

Decision: (a) If $IRR > \text{Required Rate of Return (RRR)}$; then accept the investment (b) If $IRR < \text{Required Rate of Return (RRR)}$; then reject the investment, (c) If $IRR = \text{Required Rate of Return (RRR)}$; then be indifferent

If for all investments $IRRs > RRRs$; select the highest one ranking their preferences

iv Profitability Index (PI): It is defined as the ratio of net present worth/value of the cash flows to the initial capital investment/expenditure (C_0). Here an attempt is made to relate the NPW of the cash flows of the project to the total capital requirement (C_r) for a project through "Profitability Index". Assuming that all the capital expenditure/investment is incurred in year zero, the profitability index (PI) is worked as follow.

$$PI = NPW / C_0 = 1 / C_0 \sum_{t=1}^n \frac{NB_t}{(1+r)^t}$$

Table Estimation of Profitability Index (Say original amount of investment in a project is Rs 60,000)

Year	Net Benefits (NB _t)= B _t - C _t	DF 12%	NPW = [B _t - C _t /(1+r) ^t] (Rs)
1	14,500	0.8929	12,947
2	14,900	0.7972	11,878
3	16,600	0.7118	11,816
4	18,700	0.6355	11,884
5	19,000	0.5674	10,781
6	20,000	0.5066	10,132
			NPW = $\sum [B_t - C_t / (1+r)^t]$ = 69,438

Therefore, $PI = NPW / C_0 = \text{Net Present Worth} / \text{Original amount invested}$

$$= \text{Rs } 69,438 / \text{Rs } 60,000 = 1.1573$$

Appropriate Selection of Choice Indicator

As regards discounted measures, the problems lies with the choice of an appropriate discount rate. Ranking of acceptable alternative projects is not possible with NPW because it is an absolute measure, but not relative. A small but highly attractive project may have a small NPW than a large but less acceptable project. Similarly B-C ratio is mostly used to evaluate social project but not private projects (Gittinger).

In general IRR method is preferred for the following obvious seasons.

Merits of IRR

- 1 It is an unambiguous (having only one meaning) estimate
- 2 It is consistent with intuition
- 3 Its estimate is unique and it accounts for all cash flows associated with projects and time value of money
- 4 It has got wider applicability

Limitation of IRR

- 1 A precise IRR is obtained with narrow difference in the two discount rates assumed.
- 2 Complications are involved in the computation of IRR.

Sensitivity Analysis

The economic evaluation of agricultural projects assumes that both cash inflow and cash out flows are known with certainty. However, in real world these assumptions may not hold true and project profitability may be, thus questioned. Therefore, the economic analysis of agricultural projects is to be done under changing circumstances **which is termed as sensitivity analysis**. The economic analysis of agricultural projects carried out under the changing circumstances (i.e. for costs, returns, yields, etc.) is called sensitivity analysis. Since the project appraisal techniques stated earlier like NPW, BCR, IRR, etc give estimates under the assumption that the data used remain unchanged over a length of time. But in reality this is not a valid assumption because our estimates of cost and returns go awry (distorted) over time due to changes in prices of agricultural inputs / output. Under these conditions our estimates of economic analysis will be misleading.

The sensitivity analysis of the project appraisal includes the following points:

- 1 Consideration of the length of the period over the existing one.
- 2 Changes (increasing or decreasing) in the prices of goods and services by certain proportions of the project say by 10%, 20%, 30 %, 40%, 50% etc.

- 3 Changes (increasing or decreasing) in the levels of costs say by 10%, 20%, 30%, 40 % etc.
- 4 Changes (increasing or decreasing) in the yield level of crops and livestock, and
- 5 Delay in the implementation i.e. varying gestation period.

Techniques of Sensitivity Analysis

- 1 Straight forward method
- 2 Switching value
- 3 Probability approach
- 4 Certainty equivalent approach

Switching value- A variation in sensitivity analysis is called the switching value.

UNIT 10

RESEARCH MATERIAL ON EVALUATION OF AGRI-BUSINESS PROJECTS

More and more agricultural graduates are inclined towards setting up their own business venture in the light of the 'feel-good-factor' and the sustained bullish trend in the national economy. Fortunately, many government schemes and other funding agencies (like banks) are providing funds for good proposals. A well prepared agri-business project should have a proper balance among technical, financial and social dimensions. It requires critical inputs from the experts from these fields. An inter-disciplinary team work can design/frame agri-business proposals that not only satisfy the funding agency but also provide a decent source of income for agricultural graduates. This is precisely what agricultural graduates require in the 'real world' of rising competition.

An agri-business enterprise today operates in multi-dimensional scenario including government policies and procedures, pricing and supply of raw material; 'state-of-art', pricing and quality of technology and equipment; cost of availability of finance; and demand-supply parameters for the product/services. Each of these dimensions comprises dynamic elements. For example the policy issues and the basics of economic system are decided by the government; normally these issues remain constants for a reasonable period of time. On the other hand, the availability and pricing of raw materials and other products, and services required as input by the agribusiness projects are subject to a frequent change as a result of govt. policy, level of technology, and international and national policy. The nature of linkages among various factors affecting agribusiness is given here. The very nature of linkages is both pro active and reactive and the intensity of dynamism with the dimension and scenario as a whole, are rather complex and not subject to high level of accuracy in prediction. It is in this world of uncertainty and risk that agribusiness projects are formulated, evaluated, selected and implemented.

Types of project proposals: A profit motivated agribusiness comprising several interlinked activities could itself be termed as a project. But there are several types of capital expenditure projects which agri-business enterprises can undertake. These projects could broadly be classified as:

- 1 New projects
- 2 Expansion
- 3 Modernization
- 4 Diversification, and other

Each of these project types would essentially involve a multiplicity of activities starting from establishment of the specific objective and following it up with activities which may include acquisition of land, raising of funds, and commissioning of the project.

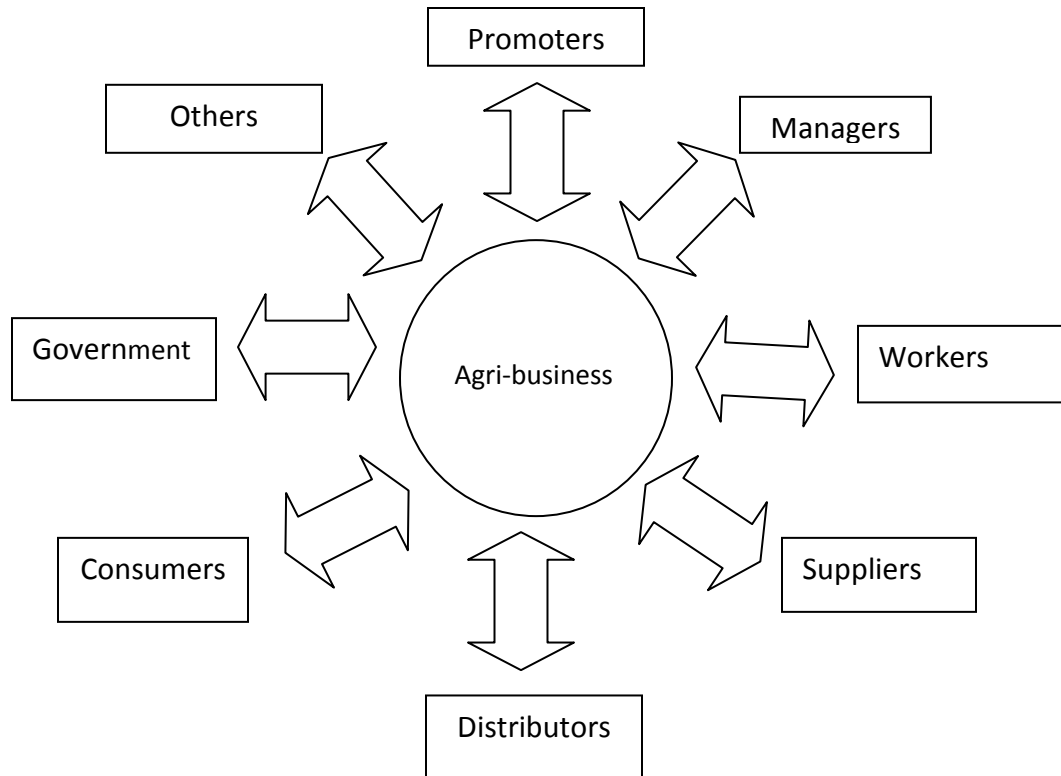


Fig: Nature of linkages among various stake holders of agri business projects

ELEMENTS OF AGRIBUSINESS PROJECTS

In view of the multi-dimensionality of the economic scenario of the fact that a project proposal touches almost every dimension in this scenario, it is imperative that a project is evaluated on a multiplicity of criteria. These parameters can broadly be classified as technical, financial, economical, social and environmental. Following are the project elements which need to be considered during preparation and evaluation of agri-business project

Rationale

A project may have several subsidiary objectives in addition to make profit. One should look at the broad rationale of the project proposal to ensure that the project is appropriate and justified.

Technology

The level of technology in terms of its 'state- of –art' or' obsolescence, adaptability to the local conditions maintenance, sophistication in management and control are the elements which have a significant effect on the quality and quantity of the output envisaged in the project. It is, thus, necessary to have a clear understanding about the technology which is to be utilized in the

project. The technology element is linked to every other element in the project proposal and these linkages also need to be looked into as an essential step in assessing the technology.

Plant and machinery

The source of plant and machinery and the specification for the same can often make or break a project. It is, therefore, important to evaluate the plant and machinery which is to be installed at the project. The reputation of the supplier and references to place where similar plant and machinery are installed is a good starting point.

Raw materials

The availability, quality criticality and quality compatibility of the raw material with the technology as well as the plant and machinery are important factors to be clearly understood, especially in hi-tech areas. This element is also intimately linked to many other elements in a project and can force necessary changes in them to ensure the viability of the project.

Market for the products (or services)

Market for the product with an understanding of demand-supply equilibrium and the production capacities of the existing firms are elements which warrant considerable attention. The size of the market, the share of the firm, the price and the elasticity of demand and supply are critical consideration in preparing and evaluating a project

Cost of the project

Since each project is profit motivated activity, it is important that the cost of the project is carefully assessed and evaluated. One important factor in this assessment is the level of accuracy in the cost estimate, which in addition to proper data collection and data collation also depends on the approach and the attitude of the individual which may sometime lead to a wrong decision on the issue of project selection and implementation.

Means of financing

Having established the cost of a project as justified and reasonable, it is necessary to evolve the means of financing the project in a manner which is acceptable within the framework of the financial system and sufficiently attractive/ or safe enough for the investor/lender to come forward and extend the necessary assistance.

Anticipated returns

Return from a project is the very essence of evaluating a project, especially as the prime motive for setting up a project is its profitability. The project returns are to be assessed in terms of cost of production, realizable selling price, financial charges, depreciation, taxes and a host of other financial and non-financial variables.

Government and other statutory approvals required

The project is put in the real world which is subject not only to procedural requirements but also to policy guidelines and stipulations. These requirements, guidelines, and stipulations could begin with very permission to establish a project and go across from import of capital goods/raw materials to raising of funds to safety to pollution control and several other economic statutes of a country governing several aspects of a project. The project preparation and evaluation must take all these into account not merely as an element of feasibility of setting up the project but as part of the plan extending over the economic life of the project.

Economic and national significance

Many projects have an economic and/ or national significance, especially those in the area of hi-tech, import substitute and export orientation. It is necessary to evaluate the economic and the national significance of a project to make them more relevant.

Social and environmental consideration

While setting up a project, issues not necessarily connected with the financial profitability of the project but to the environment and society as a whole have become important in more than one case. These issues relate to environmental pollution and safety as different segments of the society coming in contact with the activities of the project.

DIMENSIONS OF PROJECT PREPARATION AND EVALUATION

The project evaluation process essentially involves some important steps, viz. data collection, data collation and estimation of cost-benefit and profitability of the project and comparing it with required rate of returns to decide acceptance of the project. Data collection may be made both from secondary sources or published documents viz. company balance sheets, government publications, publication of independent research bodies or industry associations as well as from primary sources like the industry and market.

Once the data and information is collected the next step is to eliminate the irrelevant and retain only the significant information which can be utilized for making the projections about cost and profitability of the project. Once the basic data are collected and collated, an estimate may be prepared of the cost of project starting from the cost of the land, and building, and going through elements like plant and machinery, duties and taxes, cost of miscellaneous fixed assets, permanent working capital needs, estimated pre-operative expenses and contingencies to arrive at an estimate of total cost of the project.

Once the cost of the project is estimated, it is necessary to make certain assumptions as regards the schedule of implementation, capacity build-up of production, cost of raw material, other related costs, realizable selling price, etc to arrive at the returns and the profitability of the

project. A comparison of the 'estimated' and 'required' profitability will form the basis of selection for a project.

Technical, financial and economic are the three most common dimensions of project evaluation. While there are numerous elements of each capital project, technical evaluation aims to assess the technical feasibility of the project keeping in view the technology effects. In simple words, it aims to judge whether the entire business activity as envisaged in the project is possible at the proposed location and the desired level of output is achievable at the estimated cost.

Financial evaluation seeks to judge the commercial viability of the project. It aims to establish that over a reasonable period of time the project can provide service and repay the debt which was taken to finance it and earn sufficient profits to provide satisfactory returns to suppliers of funds. It focuses on the project specific financial costs and benefits arising to the project sponsoring organization.

Economic evaluation takes the broader view of the **society or economy at large**. It seeks to judge the economic viability of the project by focusing on the economic or social costs and benefits arising from the project to the society as a whole.

NET PRESENT VALUE AND FINANCIAL PROFITABILITY

Financial profitability signifies a relationship between financial costs and benefits. Thus, to determine the financial profitability of an agri-business project, we shall be required to relate the incremental expenses and revenues arising from the project to the sponsoring organization. Indeed, the relevant financial parameters could be combined in a variety of ways to assess the financial profitability of a project. These are payback period, accounting rate of returns, net present value (NPV), internal rate of returns and profitability index. The NPV can be fairly simple measures of financial profitability of a project.

NET PRESENT VALUE AND EVALUATION OF RISKY PROJECTS

The NPV is the difference between the initial investment and the present value of the expected stream of net cash flows (i.e. cash inflows minus cash outflows) from the projects. It is fairly simple to arrive at NPV and thereby judge the financial profitability of the project using the formula given below:

$$NPV = C_0 + \sum_{t=1}^n \frac{NCF}{(1+r)^t}$$

Where:

C_0 = initial investment (Cash out flow, usually takes minus sign)

NCF_t = Expected net cash flows in the 't' period (may take appropriate \pm sign)

r = discount rate

n= number of years

ANALYSIS OF RISK AND UNCERTAINTY

Risk signifies the possibility of adverse happening. An uncertain situation is different from a risky situation, while the outcomes are less than certain, but you may attach some probabilities to those outcomes. In an uncertain situation you are unable to attach any probabilities to the outcome. Thus, risk in the context of agri-business projects may be perceived as the variability or range of possible NPV. To deal with the situation of uncertainty, there has been the following decision criteria developed:

- Wald decision criterion, also called Maxmin,
- Savage decision also called as Minimax regret,
- Hurwicz Alpha decision criterion and
- Laplace decision criterion also called as Bayes decision criterion.

For the purpose of agri-business project decision making, the condition of uncertainty may be converted into risk by using subjective probabilities.

INTEGRATING RISK IN THE NPV CRITERION

There are various approaches which in order to integrate risk factor into the NPV criterion essentially concentrates on either of the following two aspects of NPV:

- Expected net cash flows over the life of the project, and
- The discount rate

Some of the approaches are:

- 1 Certainty equivalent approach
- 2 Probability distribution approach
- 3 Independence of cash flows
- 4 Dependence of cash flows
- 5 Risk adjusted discount rate approach
- 6 Market rate of returns on similar project
- 7 Capital assets pricing model (CAPM) approach

RISK ANALYSIS IN PRACTICE

There are the following methods of risk analysis in practice that do not use numerical measures of risk:

- Conservative estimates
- Project classification
- Shorter payback period
- Overall certainty index
- More than one estimate

- Sensitive analysis

INADEQUACY OF FINANCIAL EVALUATION

The investment appraisal techniques appear to be exact. However, it has to be appreciated that the true value of an investment proposal can only be approximated. The results arrived at are dependent on estimated factors and this has to be constantly borne in mind. The dependability of the results would, to a large extent, depend on the extent of objectivity and reliability of the inputs data. Incessant inflation also complicates the picture. In estimated cash flows, it is important to take account of anticipated inflation.

All agri-business projects have a social context. In developing economies, business activities are often viewed as means of achieving economic development with human face. If the prices and costs used in NPV analysis correctly reflect economic values, the NPV rule will lead to the maximization of the total economic welfare of society as a whole. To the extent that price and costs fail to reflect economic values, the conclusion will not follow. Therefore, the financial evaluation of a project usually fails to ensure maximum number. There are the following reasons that cause discrepancy between economic values, on the one hand and apparent prices and cost, on the other:

- 1 Market distortion
- 2 Externalities
- 3 Social goods
- 4 Taxes

ANALYSIS OF NON-FINANCIAL ASPECT

There are diverse non-financial considerations which are in certain situations more important than financial considerations. The environmental benefits and costs are important non-financial aspects of a project. If the project creates facilities which also become available to other people living in the project area, it would be a spill over benefit for the society. On the other hand, if the project is throwing out lot of smoke, it will result into deterioration in the health of the local inhabitants, and increase the cost of living by dirtying their belongings and houses.

ECONOMIC-SOCIAL EVALUATION

Economic-social evaluation of agri-business projects provides an answer to the problem of appraising project in a social context. Economic- social evaluation is a modification of the financial evaluation. While in financial evaluation, the focus is limited to financial benefits and costs directly accruing to the enterprise, in economic-social evaluation, benefits and costs accruing to the society as a whole are considered. Thus the concept of benefits and costs used in economic evaluation are broader than the one's used in financial evaluation. Social cost benefits analysis (SCBA) provides a framework of economic and social evaluation.

SOCIAL COST BENEFIT ANALYSIS

Social cost benefits analysis (SCBA) seeks to assess the utility of a project to society as a whole. The SCBA attempts to specify all the expected changes, viz. economic, social and environmental likely to arise as a result of implementation of the project. These can be represented as inputs and outputs of a project and a price can be put to each of these inputs and outputs. Since both inputs and outputs are spread over the economic life of the project, it is necessary to combine all costs and benefits streams that arise over the economic life of the project. Here time value of money and the need for an appropriate discount rate become relevant. A systematic application of SCBA would generally involve the following steps:

- 1 Measuring economic, social and environmental inputs and outputs of the project;
- 2 Putting social or accounting or shadow prices on inputs and outputs of the project;
- 3 Selecting appropriate social rate of interest; and
- 4 Computing social profitability of the project