(*Manual)*

THE NEOTIA UNIVERSITY

DIAMOND HARBOUR CAMPUS

PRACTICAL MANUAL

AGRICULTURAL FINANCE & COOPERATION

Course No. : CC- AGP-319 **Credit:** 3= (2 + 1)

Class : B.Sc. (Agriculture) **Semester:** III

Department of Agricultural Economics

School of Agriculture,

The Neotia University

Sarisha, Jhinga - 743368, D. H. Road

South 24 Parganas, West Bengal

Practical No.1: Basic Terms Related To Agricultural Finance & Co-operation

1. Advances: The amount of loan advanced / extended by an institution during a particular period, usually an agricultural year or a season.

2. Agricultural Finance: refers to financial assistance rendered by the commercial banks, Cooperatives or non-institutional agencies to the farmers for the development of agriculture and allied occupations, in cash/kind including the farm advisory service under intensive supervision OR Agricultural finance refers to sub-set of rural finance dedicated to financing agriculture-related activities, such as input supply, production, distribution, wholesaling, and marketing. It is an economic study of financing farm business. Agricultural finance includes agricultural credit, income, saving, investment and capital formation. It includes study of both lender and borrower.

3. Amortization: Gradual repayment or writing off of an original amount. This is a process of expiration of the costs of an intangible asset.

4. Annuity: An annuity is a stream of constant cash flow (payment or receipt) occurring at regular intervals of time. E.g.: premium payment of a life insurance policy.

5. Appraisal: Analysis of a proposed investment to determine its merit and acceptability in accordance with established decision criteria.

6. Assets: are those which are owned by the farmer.

7. Authorized capital: Refers to the amount, which the company is authorized by the Registrar of companies to raise, or the maximum amount, which a company can raise.

8. Bank Rate: Rate at which RBI discounts first class bills and other treasury bills. At present it is 4.25% or it is the rate at which, the RBI lends loans to its members and subsidiary banks/ institutions. Or as the standard rate at which it (the bank) is prepared to buy or rediscount bills of exchange / other commercial papers eligible for purchase. Or it is the rate of interest charged by the Reserve Bank of India (RBI) on financial accommodation extended to banks. The support is provided in the form of bills rediscounting facility and advances or refinance against specified assets (e.g. treasury bills and dated securities) or promissory notes.

9. Bank: is an institution that is keeping, lending and exchange etc., of money and providing agricultural finance to the farmers.

10. Bond: A bond is a security promising to pay a certain amount of rupees in interest depending upon the maturity period. Or a written obligation under seal or a certificate of indebtedness, a bond is evidenced by a debt issued by a Government, an agency of Government, or by a private corporation. A long-term debt instrument on which the issuer pays interest periodically, known as 'Coupon'. Bonds are secured by collateral in the form of immovable property. While generally, bonds have a definite maturity, 'perpetual bonds' are securities without any maturity. In the U. S., the term debentures refer to long-term debt instruments which are not secured by specific collateral, so as to distinguish them from bonds.

11. Borrower: is one who take a loan from the bank includes a member-government itself, a public agency or corporation, or a private body or corporation with the Government guarantee.

12. Borrowing: it is to acquire something, especially money, temporarily with the promise or intention of returning. Borrowing is an economic bargain with a pledge.

l3. Bear: A person who expects share prices in general to decline and who is likely to indulge in short sales.

l4. Bull: A person who expects share prices in general to move up and who is likely to take a long position in the stock market.

15. Capital: capital is produced means of production. All capital is necessarily wealth but all wealth is not necessarily capital. Ex: machinery, raw material, transport equipment, dams, etc. Money when used for the purchase of capital goods, then only it becomes capital.

16. Capital rationing: Limiting the capital budget is referred to as capital rationing.

17. Cash flows: Every project has a series of cash flows over a period of time. Cash flows are of two types, viz. cash outflows and cash inflows. The difference between the two is the net cash flow. Cash outflows occur in the business because of purchase of raw material, purchase of assets and repayment of loans. Cash inflows occur because of sale of produce, sale of assets and borrowing. One has to ensure that the net cash flows are positive in the business. A cash flows can be positive or negative. A positive cash flow is called a cash inflow and a

negative cash flow is called a cash outflow. Cash outflows refer to investment expenditure and cash inflows refers to income / returns received from project.

18. Collateral: Property pledged by a borrower to protect the interest of the lender.

19. Compound interest: is interest paid not only on the amount borrowed but, on the interest, earned in previous periods.

20. Credit: credit is the usually given to money borrowed for business purpose. The word "Credit" comes from the Latin word "Credo" meaning "I believe". Hence, credit is based upon confidence. When one borrows money, the loan is based upon confidence in the future solvency of the person and in his repaying the loan as per agreement. In this sense, credit means ability to command the capital of another in return for a promise to pay at some Specified time in the future.

21. Credit control: The various measures employed by the Reserve Bank of India (RBI) and the government to control the volume of credit in the banks.

22. Cost of Credit: consists of interest and shares of other charges to be borne by the borrowers at the time of taking loans.

23. Debenture: is a document showing the loan taken by the company. The debenture-holders do not take any risk Profit or no profit, they must get their interest or indicate an unsecured bond backed only by the general credit standing of the issuing agency. Debenture is a debt security issued by companies, having a certain maturity and bearing a stated coupon rate. Debentures may be unsecured or secured by assets such as land and building of the issuing company. Debenture holders have a prior claim on the earnings (coupon) and assets in the event of liquidation, as compared to preference and equity shareholders.

24. Debt: defined as an amount of money owed by a person, fi, or government to a lender. It is a state of obligation to something owed.

25. Down payment: Refers to the borrower's contribution to the proposed investment.

26. Equity: An ownership right or risk in an enterprise. Equity capital is the residual amount left after deducting total liability

27. Finance: as the system that includes the circulation of money, the granting of credit, the making of investment and the provision of banking facilities. We all know finance involves money, credit and things like stocks, bonds mortgages.

28. Grace period: Some investments do not yield immediate returns and have long gestation periods. In such cases there could be no recovery expected during the gestation period, if this is allowed in the repayment schedule, such a period is usually referred to as grace period.

29. Gestation period: is the time period between the investment and the time when project starts yielding returns. The period required for the investment in a project to produce visible returns. The length of the gestation period cannot be defined as it depends upon the nature of investment / business. E. g.: a coconut plantation has a gestation period of 7 years while mango orchard has 5 years.

30. Hypothecation: refers to the pledging of assets as security for funds borrowed. Bank lending for working capital involves a hypothecation of inventories and book debts. Under this arrangement, the current assets remain with the borrower, but in case of default, the bank may seek recovery of the loan by instituting a lawsuit to seize the hypothecated assets, which can later be sold.

31. Installment: Refers to the amount due by a particular date called the due date.

32.1nterest: An interest rate is a rate of return promised by the borrower to the lender. Reward for waiting. It is the income earned by the capitalist for parting of his capital. Interest is the amount or percentage which is paid or charged for the use of money. Interest is a charge made for the use of capital or payment for the use of money.

33.1nventory: Is a complete list of assets along with their values in a specified farm business at a point of time

34.1nvestment: There is some amount of money which has to be spent at the beginning of the project. Usually this is referred to as initial investment.

35. Issued capital: Refers to the amount, which is actually issued to the public for subscription.

36. Junk value: The value of the unspent assets remaining after the life of a project is referred to as junk value.

37. Leverage: Use of borrowed capital to increase the return to equity, sometimes called "gearing".

38. Lender: Is one who advance loan to the others.

39. Liabilities: Refer to all things which are owed to others by the farmer or a claim held by creditors against the assets of an enterprise (outstanding debts).

40. Liquidity: The readiness with which an asset can be converted into cash or the ease with an asset can be 'converted to cash or the ability of a business / the enterprise to meet its cash needs for current business operations.

41. Life of the project: Every project has a defined life period based on the life of the most crucial assets on which investment is made. The investment helps the project to generate the income for the length of time which is referred to as the life of the project. E.g.: a mango orchard has a life of 50 years while an irrigation pump set has a life of about 10 years. The life of a project is important to determine the benefits or costs of a project.

42. Loans: Loans are made by the bank at an interest rate which is adjusted periodically in relation to its cost of borrowing. Or it is the advance of a specified sum of money to a person or business (the borrower] by another person or business, or more particularly by a specialist financial institution (the lender), which makes its profits from the interest charged on loans. It is something lent especially a sum of money to be returned normally with interest.

43. Margin money: Borrower's contribution to the investment for the farm development.

44. Microfinance: Financial services (savings, credit, payment transfers, insurance) for the poor and low-income people.

45. Money: Medium of exchange. It is anything which is generally accepted in exchange for other things, and which can discharge all obligations, past and present.

46. Mutual Fund: An organization that mobilizes the surpluses of savers and invests the same in different securities. Thus, an individual who owns a share in a mutual fund has a proportionate claim on the portfolio of investment vehicles held by the fund.

47. Outstanding: The amount (principal plus interest), which remains to be recovered on a particular date the amount left with the borrowers for realization on a particular date. Amount outstanding = Amount borrowed - Amount repaid.

48. Over dues: The amount which was due on a particular date but has not been repaid by that date is called Overdue. It is also known as arrears, defaults or out-of-time repayments and the borrowers against whom over dues stands are known as defaulters or over dues are equal to the amount due for payment minus amounts actually repaid. A part of the outstanding becomes over dues, if not recovered within specified time period. Over dues = Amount due for repayment - Amount actually repaid

49. Paid-up-capital: Paid-up-capital is the amount, which the subscribers have actually paid to the company.

50. Principal: The amount of loan advanced or borrowed.

51. Principle of increasing risk: Principle of increasing risk states that decease in the percentage of equity on a farm increases the risk of loss.

52. Prime Lending Rate (PLR): The rate of interest charged by banks on working capital and short-term loans to their most credit-worthy borrowers. The prime rate serves as a benchmark for deciding on the interest rate to be charged to other borrowers. Accordingly, major banks and also financial institutions in India periodically announce their PLRs depending on their cost of funds and competitive lending rates. From October 1997, the Reserve Bank of India has decided to permit banks to announce separate Prime Term Lending Rates on term loans of three years and beyond. More recently, banks have been given the freedom to have different PLRs for different maturities

53. Project: It is an investment on developmental activities meant for providing the returns for specific clientele group for specific activity, specific objective and specific area development. It should facilitate analysis in planning, financing, implementation, monitoring, controlling and evaluation.

54. Recovery: The amount of loan which has already been recovered up to a point of time but not at a particular point of time is called recovery. It means that the total amount due up to a point of time only has been recovered and it does not mean that the entire loan has been recovered.

55. Refinance: The system of borrowing by a bank or other financial intermediary from an apex institution or the central bank of a country, on the strength of its loans or financial assets.

56. Repayment capacity: Refers to the amount available with an individual after meeting his farm and family needs and obligations to repay the loan under consideration.

57. Repayment period: This is the normal period during which the loan is scheduled to be recovered.

58. Repayment: It is the amount of loan, which is scheduled to be recovered at some specified time period.

59. Rescheduling of loans: Spreading repayments for one year over remaining installments. Here, the total repayment period is kept the same, and the amount of each installment due increases, the increment depends upon the amount of each installment and the number of installments that remains to be repaid.

60. Solvency: It refers to the ability of the borrower to pay all debts i.e. principal and interest in the long run.

STUDY QUESTIONS-

1. Co-operation
2. Promissory notes
3. Cash Reserve Ratio
4. Premium
5. Indemnity
6. Mortgage

Video link for further study-

https://www.youtube.com/watch?v=JXkrzpbPSU0

Practical No.2: Time value of money

It is also called time comparison principle, which deals with decision over time. Time decisions come in farm financial management in many ways. Time preferences for financial claims are quoted in market by means of interest rate. Interest rates are the exchange prices between present and future values of financial claims.

There are two types of investments. (1) investment on operating or working inputs viz., seed, fertilizers, plant protection chemicals, fuel, feeds, veterinary medicines, etc. and (2) investment on capital assets viz., land, farm buildings, machinery and equipment. Analysis of an investment involves not only the comparison of costs and returns associated with it, but also the timings of occurrence of costs and returns.

While some of this expenditure is non-recurring, others are recurring expenditure. Even all non-recurring expenditure may not be incurred in a particular month or a year, but rather spread over a number of months or years. Returns may be received in future over many years. To examine the profitability of these investments it requires the recognition of time value of money. Money has time value. A rupee today is more valuable than a rupee a year after. Money has time value for the following reasons.

1. Earning Power of Money: Whenever there are many opportunities for investment, then money possesses earning power. The earning power is represented by the opportunity cost of money (rate of interest).

2. Inflation: Purchasing power of money varies inversely with the price level. Thus the value of money changes with inflation and deflation. In an inflationary period a rupee today represents a greater real purchasing power than a rupee a year later or rupee earned a year from now is less valuable than a rupee earned today. .

3. Uncertainty: Investment deals with future and future is uncertain. Investment is concerned with the commitment of funds today with the expectation of receiving a stream of benefits in the future. The following methods are used in investment decisions.

1. Future value of a present investment/income / money- it is called compounding

2. Present value of a future investment/income / money- it is called discounting

Computational procedure

1. Future value of present money (compounding): A rupee today is worth more than a rupee in future. This is primarily due to its opportunity cost, i.e., interest. The procedure for determining the future value of present investment in the project is calculated by using the well-known formula of compound interest:

$FV_n = P_o (1+i)^n$

Where,

FV_n = Future value of present sum invested in n^{th} year,

P_0 = Principal amount invested in the project,

i = Interest rate in per cent, and

n = Number of years.

1. **Future value of an Annuity:** Annuity means a stream of payments or returns over time. The future value of annuity can be estimated using the following equation:

$FVA_n = P_0 [(1+i)^n – 1 / i]$

Where,

FVA_n = Future value of an annuity which has a duration of n periods,

P_o= Annual investment or constant periodic flow,

n = Time period or duration of the annuity (years) and

i = Interest rate

The term $[(1+i)^n – 1 / i]$ is referred to as the future value interest factor ($FVIF_{i,n}$) for an annuity

2. **Present value of future money (discounting**): The present value of future sum is the current value of investment to be received in the future. The procedure for determining the present value of future amount can be written

$PVn = P_n \times (1+i)^{-n}$

Where,

PV_n = Present worth of future money,

P_n = Principal invested at the n^{th} year or money value in future,

n= Number of years (discounting period), and

i = Rate of interest or discount rate.

2.1. Present value of an annuity: It is the sum of the Present value of all the inflows of the annuity. The present value of annuity or stream of constant annual payment is found out using the following formula:

$$PVA_n = P_n [(1+i)^n-1] \,/\, i (1+i)^n$$

Where,

PVA_n = Present value of an annuity which has a duration of 'n' periods,

P_n = Money value in future or constant periodic flow, n = Duration of the cash flow stream (years) and i = Interest (discount) rate, and $[(1+i)^n-1] \,/\, i (1+i)^n$ is referred as the present value interest factor (PVIFi, n) for an annuity

STUDY QUESTIONS:

1. Compute future value (5th and 10 th yrs) of present investment of Rs 15000 at 5% and 8% interest rate?
2. Compute present value of future returns (5^{th} and 10^{th} year) of Rs 15000 at 5% and 8% interest rate?
3. Suppose you want to buy a new car by paying Rs 12000 per month for 3 yrs , If the rate of interest on car finance is 1.5% per month. How much can you borrow?
4. What is the present value of Rs 7000 at the end of 5 years from a given investment, If the rate of interest is 6.5 % per annum?
5. Suppose you invest Rs 1000 for 3 yrs in a saving account that pays 10% per year. What is the future value of an investment?
6. Suppose you deposit Rs 5000 annually in a a bank for 5 yrs and your deposits earn a compound interest of 10%. What will be the future value of this annuity at the end of 5 yrs.?

7. Suppose you expect to receive Rs 1000 annually for 3 years at the discount rate of 10%. What is the present value of this stream of benefits (annuity)?
8. Determine the present value of individual cash flow streams using a discount rate of 12%

Year end	**Cash flows**	**Present value factor [PVIF $_{12\%,n}$]**	**Present value of individual cash stream**
(1)	(2)	(3)	(2) x (3) = (4)
1	1000		
2	2000		
3	3000		
4	4000		
5	5000		
6	6000		
7	7000		
8	8000		
Present Value Of Cash Flow Streams=			

Video link for further study-

https://www.youtube.com/watch?v=Yf-VmsLc40k

Practical No.3: Preparation of income statement

An income statement is also called as Profit and Loss Statement. It is defined as a summary of receipts and gains minus expenses and losses during a specified accounting period (usually a year). It is nothing but input and output expressed in value terms. Income statement is supplemented by showing where the funds come from and where the funds are used. It reveals the success or failure of a farm business over a period of time. Income statement basically constitutes three items, viz., receipts, expenses and net income.

This is entirely different from a balance sheet in the sense that in a balance sheet, we considered assets and liabilities and did not consider operational efficiency in terms of receipts and expenses. In income statement, the items included are receipts, expenses, gains and losses. It is prepared for the entire farm for one agricultural year. In income statement monetary values are assigned to inputs and output. It is also prepared over time. Primary function of Income statement is to know the returns and expenses involved in business during given period with resultant of net profit or net loss. Income statement is opening point of cash flow statement.

Receipts: They mean the returns obtained from the sale of crop produce and other supplementary products like milk and eggs, wages, gifts, etc. Gain in the form of appreciation in the value of assets is also included in the receipts. However, returns from the sale of capital assets, such as livestock, machinery, farm buildings, etc. are not included because such returns/income are not really obtained during the period.

Expenses: Operating and fixed costs are recorded here. Losses in the form of depreciation on the asset value fall under the expenditure item. However, the amounts incurred on the purchase of capital assets are not considered.

FINANCIAL MEASURES:

Net income = cash receipt -- cash expenses

Net income: it constitutes net cash income, net operating income and net farm income

Net cash income: it gives the position of cash receipts minus cash expenses only during the period for which income statement is prepared.

Net operating income = Gross income - operating expenses

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 farm income = Net operating income- Fixed cost. Compared to net cash income and income operating income, it is relatively better measure of assessing the performance of a farm. It is the return accrued to own capital and family labor employed.

Ratio Measures:

$$\text{Operating Ratio} = \frac{\text{Total operating expenses}}{\text{Gross income}}$$

$$\text{Fixed Ratio} = \frac{\text{Fixed expenses}}{\text{Gross Income}}$$

$$\text{Gross Ratio} = \frac{\text{Total expenses}}{\text{Gross income}}$$

$$\text{Rate of return on investment} = \frac{\text{Net farm income}}{\text{Total assets}}$$

$$\text{Rate of capital turn over} = \frac{\text{Gross income}}{\text{Total Assets}}$$

This measure shows how efficiently the farm has used its capital resources to generate output. A high turnover ratio means one should try to use the capital assets more fully or sell some of them.

Exercise

Work out Net cash income, net operating income and net farm income and the relevant ratio measures and comment on the financial soundness.

Income statement of Mr. Jana's farm for the period 2020-21	**Amount (Rs.)**
Particulars	
RECEIPTS	
Returns from the sale of crop output(Paddy+ Pulses)	52,000
i. Revenue from milk and milk products	5,000
ii. Revenue from poultry enterprise	12,000
iii. Revenue from supplementary enterprise(i+ii)	
Gifts	2,000
Gross cash income(A+B+C)	
Appreciation on the value of assets	3,000
Gross Income(D+E)	
EXPENSES	
Operating expenses or costs	
Hired Human labor	10,500
Bullock labor	900
Machine labor	1500
Seeds	1100
Feeds	5000
Manures and Fertilizers	3000
Plant protection measures	1550
Veterinary aids	500
Irrigation	250
Miscellaneous	2000
Interest on working capital	2100
Total operating expenses	
FIXED EXPENSES OR COSTS	
Depreciation	
Land revenue	
Interest on Fixed capital	
Rental value of owned land	
Total Fixed Costs	
Net cash income:	
Net operating income:	
Net farm Income	

Video link for further study-

https://www.youtube.com/watch?v=QbXtcKH1_b8

Practical No.4: Preparation of cash flow statement

This is also known as cash flow summary or cash flow budget or flow of funds statement. Earlier, we have discussed about the balance sheet and income statement. These two financial management tools have inherent weaknesses in presenting certain valuable information; hence another tool in the form of cash flow statement bridges these deficiencies. Cash flow statement is a summary of cash inflows and cash outflows of a 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. The merit of this particular statement is that, it helps to assess the time at which the funds are required for farming and other allied enterprises, sources from which these can be raised, the purpose for which the loan is required, the need of sale and purchase of capital assets, the time and quantum of repayment, etc. Now, let us see why a farmer borrows funds from a particular source or sources; why he resorts to transactions like selling of farm products and livestock products and selling and buying of capital assets. The answers to these questions are that the small and marginal farmers have poor resource base, and therefore, borrowings aid them in continuing the farm business. Large farmers too borrow for farm operations depending upon the need and time during which they cannot properly recycle the funds. Farmers resort to sale of farm assets like milch cattle, machinery, etc., because they might have worn out, for which replacements are to be made through purchases.

Cash flow statement is prepared at the beginning of the agricultural year and checked every quarterly. For convenience, quarterly checks are made. The statement prepared over the years serves the purpose of studying the pattern of expenditure and cash receipts and cash balance that have been raised. A close scrutiny of the statement throws light on the performance of the business.

The example provided in the following table can be summarized as follows: -

I. **Cash Receipts or Cash inflow**

1. Cash Balance: This is the surplus amount of previous year with the farmer which stood at Rs.3,000.

2. Total Operating Sales: These are the returns obtained from the sale of farm products and livestock products. Lesser amounts are discernible in the first and second quarters, while the returns to be obtained in the third and fourth quarter are on the higher side. The farmer is sure of getting returns from milk for about 250 days in a year, which is more or less uniform in the

first three quarters. The returns from crop production will be received in the third quarter for kharif and the returns from Rabi crops obtained in the last quarter. The total operating sales amount to Rs. 40,750 at the end of the year.

3. Total Capital Sales: The farmer is contemplating to sell the she-buffalo, which he possesses, in the second quarter and the amount to be received will be Rs 5,000.

4. Non-farm income: It is the income which will be added by the family members by their earnings elsewhere.

5. Borrowings: The farmer wishes to borrow an amount of Rs 7,500 for kharif crop operations.

6. Total: It is the summation of particulars of 1 to 5 rows, which presents the total cash receipts to be obtained in the year.

II. Cash Expenses:

1. Operating Expenses: These include the expenditure to be incurred on the kharif as well as Rabi crops and the dairy cattle.
2. Capital Investment: Since the farmer proposes to dispose the dairy cattle in second quarter, he wants to buy a new one in lactation in the third quarter.
3. Family living expenses: These include the expenditure towards food, shelter, medical, education and other items.
4. Payment of previous year's debts: Hand loan of Rs. 500 is due to be paid in the first quarter.
5. Payment of short term loans and installment on Investment loans: Since the farmer is proposing to take crop loan, the repayment of same false due in the third quarter. Along with the interests and installments, the amount due to be paid would be Rs. 7968
6. Total: It is the total expenditure to be incurred.

III. It is the sum of amount to be realized after deducting expenditure from cash receipts. Barring the second quarter, the farmer is expected to have a surplus in the remaining three quarters. The deficit of Rs 1650 in the second quarter can easily cleared off from the savings of previous quarters, i.e. 1st quarter. Overall, the net surplus will be Rs 12,332.

Exercise

Prepare the cash flow statement of a hypothetical farm as given below and discuss about net cash worth of the farm as given below and discussed about net cash worth of the farm

Sl. No.	Particulars	Ist Quarter	IInd Quarter	IIIrd Quarter	IVth Quarter	Total
I.	Cash receipts (in Rs.)					
1.	Cash Balance (brought forward for previous year)	3000				3000
2.	Total operating sales (Farm and livestock products)	1350	1400	30200	7800	40750
3.	Total capital sales (Milch cattle)		5000			5000
4.	Non-farm income (Family members working elsewhere)	2000	1500	2000	3200	8700
5.	Borrowings (ST, MT, LT, loans from bank)	7500				7500
	Total Cash available	13850	7900	32200	11000	64950
II.	Cash expenses (in Rs.)					

1.	Operating expenses	8500	6750	6200	5300	26750
2.	Capital investment (Purchase of milch animals)			6000		6000
3.	Family living expenses	2400	2800	3200	3000	11400
4.	Payment of previous year's debt	500				500
5.	Payment of ST loans and installments on investments on investment loans			7968		7968
	Total expenditure	11400	9550	23368	8300	52618
III.	End Cash balance (in Rs)					

Video link for further study-

https://www.youtube.com/watch?v=pISQMexnmew

Practical No.5: Estimation of credit need and determination of unit costs

In the post-green revolution era, the Indian agriculture has been undergoing a phenomenal change through adoption of improved and hybrid varieties of the existing crops, new crops, modern production practices and none crop enterprises mainly aimed at enhancing the farm incomes. This process of transformation requires use of substantial amounts of capital not only in the form of inputs like seeds, fertilizers, pesticides and labor but also on farm implements, machineries and creation of assets like irrigation, land development, plantations, farm building, livestock, etc.

Most of the capital requirements have to be met through borrowings. Credit, whether in the form of cash or kind, is a means of gaining control over assets otherwise not available to the cultivator with his own financial resources. The small and marginal farmers require credit for consumption besides production needs. Proper use of credit depends on the level of farm income as well as his commitments. The lending institutions, many a time, will not meet the entire credit requirements of the farmers due to their strict lending policies. The main lacuna appears to be in the assessment of credit worthiness of different categories of farmers in diversified regions. Thus, it is possible that, many a time, the institutional agencies may provide credit in excess of the demand and in other occasions there may be shortages. Both over-financing and under-financing result in mis-utilization and non-recovery of loans. The credit worthiness of farmers can be examined using the 3 R's of credit, viz., (1) Returns from proposed investment (2) Repayment capacity and (3) Risk bearing ability.

Returns from proposed investment: The returns criterion helps to assess whether the additional returns from the use of borrowed capital would cover the additional costs or not.

Scale of Finance: Scale of finance is the quantum of credit per unit of activity. For short term loans" the scale of finance for individual districts is worked out by the District Level Technical Committee based on the guidelines issued in crop loans manual. The district level committee will be convened under the Chairmanship of the Deputy Commissioner of the district with the other members being the representatives of the Departments of Agriculture, Co-operation. Horticulture, Sericulture, Coffee Board (for coffee), progressive farmers, Apex bank, Commercial Banks etc., They will discuss and decide the scale of finance for individual crops based on rainfall, method of cultivation, requirement of variable inputs, soil condition of the Agro-climate zone, etc. Each district level committee in turn will send the proposals to

the State Level Committee for which the Secretary to Government, Cooperation Department will be the Chairman and members will be drawn Sericulture, Coffee Board, Apex Bank, Commercial Bank. Grameena Bank, etc. This committee will discuss the variations in scale of finance of individual crops for different regions. Finally, the scale of finance based on the recommendations of various departments will be decided for concerned crops. The individual banks are allowed to finance above the scale recommended by State Level Committee to the extent of 10% depending on the credit worthiness of farmers, their repaying capacity and promptness in repayment of loan subject to the reasons to be recorded.

Unit Costs: Unit costs generally refer to term loans. It is the amount of term loan per unit of activity. This is decided by the Unit Cost Committee for which the DGM of NABARD will be the convener. This committee fixes the unit costs of different investments which are revised every six months. Sometimes NABARD will take up monitoring and evaluation studies to assess the credit requirements and suggest necessary revisions in the unit costs.

Normal Credit Statement: This statement is prepared by PACS in consultation with the borrower member. This statement gives particulars of crops grown and area proposed under each crop by the farmer. While preparing this statement, details or all lands proposed to be cultivated during the year are to be ascertained for each member. Each society maintains a register of lands of all members for ready reference and to avoid fictitious acreage being quoted. Normally one statement is prepared for whole year covering all the crops grown by the member farmers so as to avoid showing the same land under different crops during the same season. The PACS is required to submit its total requirement in triplicate to DCC Bank in two parts: one for weaker sections and one for other farmers.

This statement acts as a request application of PACS for credit and also acts as a loan application of individual member customers. The disbursal of crop loans by PACS to the members is made in two parts, viz., component A (Cash) and Component B (kind.)

In the returns criterion, the credit worthiness of the farmer for self-liquidating loans (crop loan) is assessed by using the gross returns. The difference between additional costs and additional returns is compared for indicating whether the farmer is credit worthy or not. A positive difference between additional returns and additional costs indicates that the farmer is credit worthy. For non-self-liquidating loans, the loan installment is compared with the net additional returns. If the net additional returns are positive, the farmer is credit worthy.

This will help to examine the capacity of the borrower to repay the loans. The repayment capacity is generally in the form of surplus amount left at the end of the year after accounting for various cost and fixed commitments. Thus, the second test tries to account not only for increased returns from the use of loans but also other financial commitments of the farmer such as family consumption, of the loans commitments, etc.

The repayment capacity criterion is similar to returns criterion except that it will consider the repayment of old debt, living expenses and other incidental commitments, which require immediate repayment to assess the credit worthiness of the farmers. If the farmer has positive difference between gross returns and working expenses, living expenses and repayment of old debt, then it reflects credit worthiness of the farmer.

Video link for further study-

https://www.youtube.com/watch?v=WSl3yFG8bZE&t=4s

Practical No. 6: Loan repayment plans

A timely repayment of loan is an important component for enhancing repaying capacity. Hence, it is necessary to prepare a properly desired plan to make loan payments as and when they are due. Repayment plans are normally prepared taking into consideration the incremental income from the proposed investment, duration of the loan, purpose of the loan and the loan amount.

For term loans, which are characterized by partially liquidating nature, the loan repayment plan is not as similar as that of short term loans. These loans are recovered through a given number of installments depending upon the nature of the asset and the amount advanced for the asset in question. Various repayment plans in vogue are listed and briefly explained here.

1) Straight-end payment plan or single repayment plan or lump-sum repayment plan;

2) Partial amortized loan repayment;

3) Amortized decreasing repayment plan

4) Amortized even repayment plan;

5) Variable repayment plan, and

6) Reserve repayment plan.

1. Straight-End Payment Plan or Single Repayment Plan or Lump-sum Repayment Plan: The entire loan amount is to be cleared off latter the expiry of loan period stipulated. More clearly in this method, the principal component is repaid by the farmer at a time in lump sum when the loan matures, while the interest amount is paid every year.

2. Partial amortized loan repayment or Balloon loan repayment Plan: The farmer is expected to settle the entire loan amount in quarterly; half-yearly or annual installments (principal + interest). It implies that repayment of loan will be done partially over the years. Usually, the installment amount will be decreasing as the years pass by except in the maturity year (final year) during which the investment generates sufficient revenue for liquidation. Or an amortized loan is one which is repaid in a series of payments/installments to cover both interest and principal amount. The partially amortized loan involves small principal payments

every year of the repayment term and remaining unpaid principal balance become due at the end as a lump sum or balloon payment.

Table.7. 1: Example: Loan amount - Rs10, 000

Year	Beginning amount (Rs.)	Principal Amount (Rs.)	Interest (Rs.)	Annual Instalment (Rs.)	Remaining Balance (Rs.)
(1)	(2)	(5)-(4)=(3)	(4)	(5)	(2)-(3)=(6)
1	10000	1000	1200	2200	9000
2	9000	1000	1080	2080	8000
3	8000	1000	960	1960	7000
4	7000	1000	840	1840	6000
5	6000	1000	720	1720	5000
6	5000	5000	600	5600	0.00
Total		10000	5400	15400	

Time period 6 years and Rate of interest - 12%

This is also known as balloon repayment plan, as the large final payment is made at the end of the loan period following a series of smaller partial payments.

Amortized loan repayment: It is an extended version of partial repayment plan. An "Amortization" means the repayment of the entire loan amount in a series of installments. Or the term "amortization loan" means "killing by degrees", i.e., the repayment of principal loan in a series of instalments.

3. Amortized Decreasing Repayment Plan: In this repayment plan, the principal component remains constant over the entire repayment period, while the interest part decreases continuously. With the principal amount remaining fixed and interest amount decreasing, the annual installment amount decreases over the years. The advance made for

the purchase of machinery is one of the suitable examples under this category, for the machinery does not demand much repairs in the initial years of loan payments enabling the farmer to repay large amounts of installments. The diagrammatic representation of the repayment schedule is shown in below figure. The arithmetic calculation of the plan is given in Table.

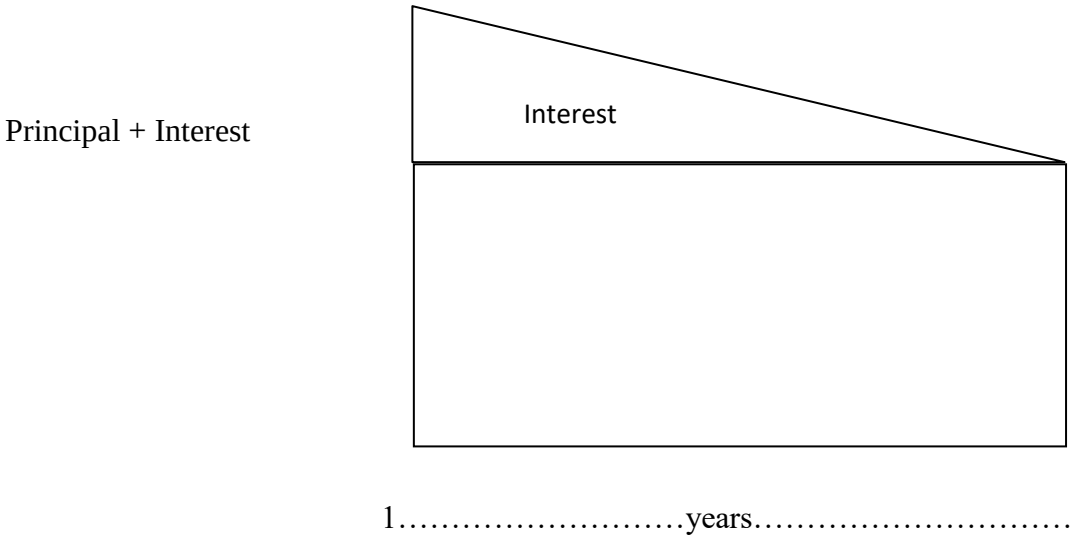
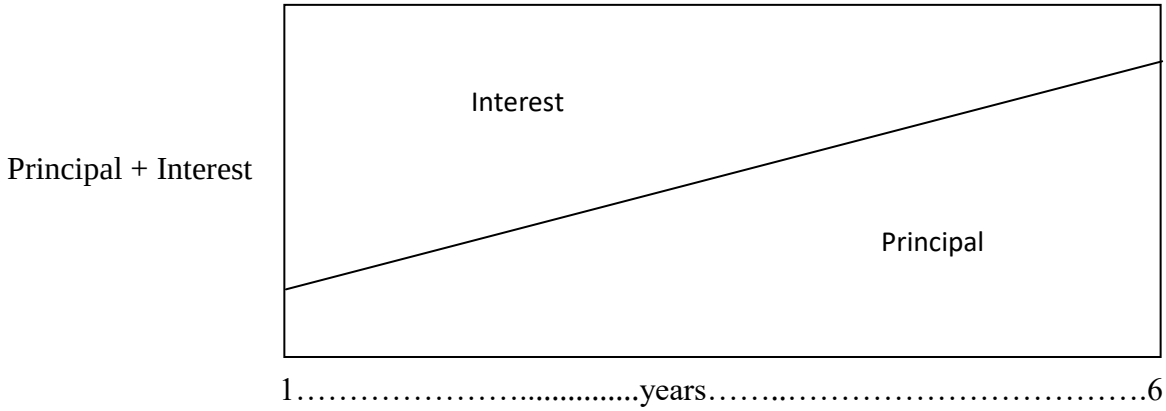


Table.7. 2: Example: Amortized decreasing repayment plan

Year	Beginning amount (Rs.)	Principal Amount (Rs.)	Interest (Rs.)	Annual Instalment (Rs.)	Remaining Balance (Rs.)
(1)	(2)	(5)-(4)=(3)	(4)	(5)	(2)-(3)=(6)
1	10000	1666.67	1200	2866.67	8333.33
2	8333.33	1666.67	999.99	2666.66	6666.66
3	6666.67	1666.67	799.99	2466.66	5000
4	5000.00	1666.67	600	2266.67	3333.33
5	3333.33	1666.67	399.99	2066.66	1666.66
6	1666.67	1666.67	199.99	1866.67	0.00

Total		10000	4199.96	14199.96	

4. Amortized Even Repayment Plan: This is called equated annual installment method. The annual installment over the entire loan period remains the same in this method. The principal portion of the installment increases continuously, while the interest part declines gradually. This method is mostly adopted for term loans like digging of wells, deepening of wells, construction of go downs, dairy, poultry. This is depicted in the below figure.



The annual installment is arrived at through the formula given below:

$$I = B\ i\ /1 - (1+i)^{-n}$$

Where,

I = Annual installment in Rs.

B = Principal amount borrowed in Rs.

n = Loan period in years

i = Annual interest rate in fraction

Example: Loan amount - Rs 10,000

Time period – 6 years

Rate of Interest – 12%

The annual installment is arrived at through the formula given below:

$$I = \frac{B \times i}{1-(1+i)^{-n}}$$

$= 10000 \text{ x } 0.12 / 1 - (1+0.12)^{-6}$

$= 10000 \text{ x } 0.243225 = \text{Rs. } 2432.25$

Table.7. 3: Procedure for working out the Amortized Even Loan Repayment Plan

Year	Beginning amount (Rs.)	Annual Instalment (Rs.)	Interest (Rs.)	Principal Amount (Rs.)	Remaining Balance (Rs.)
(1)	(2)	(3)	(4)	(3)-(4)=(5)	(2)-(5)=(6)
1	10000	2432.25	1200	1232.25	8767.75
2	8767.75	2432.25	1052.13	1380.12	7387.63
3	7387.63	2432.25	886.52	1545.73	5841.90
4	5841.90	2432.25	701.03	1731.22	4110.68
5	4110.68	2432.25	493.28	1938.97	2171.71
6	2171.71	2432.25	260.61	2171.64	0.07*
Total		14593.50	4593.57	9999.93	

5. Variable Repayment Plan: As the very name indicates, various levels of installments are paid by the borrower over the loan period. In times of good harvest, a higher installment is paid, while in periods of low yields, lesser amount is credited towards installment to lender. According to the convenience, the borrower effects the repayment. This method is not found with institutional borrowings.

6. Reserve Repayment Plan or Future Payments: This type of repayment is made by the borrowers in areas which are subject to high income variability of farms. The impending problem here is that the farmers are haunted by the fear that they may not be able to keep up their promise of repaying loans at scheduled time. To overcome such situations, the farmers make advance payments of the loan realized from the savings of the previous year. The firmer is not a looser in this transaction by any means since he is paid interest at the rate charged on the loans for the advance amount credited. This type of repayment is advantageous to the banker as the institutional agency need not worry regarding loan collection during the periods of crop failure. The farmer too gains here as he can keep up his integrity in credit transactions.

STUDY QUESTIONS:

1. A crop loan of Rs. 15,000 for sugarcane production is obtained from a co-operative society. The interest is 10 % and the loan has to be repaid in 15 months. Compute the installment amount to be repaid.

2. Prepare the repayment plan for a well digging loan of Rs. 50,000 which carries an interest of 14 % repayable in 10 annual installments.

3. Prepare the amortized decreasing repayment plan for a loan amount of Rs 10000 with 15 per cent annual interest rate to be repaid in 8 instalments.

4.For a loan amount of Rs 10,000 an interest rate of 15 per cent per annum, compute the amortized even repayment schedule/plan by annual instalments over a period of 5 years.

5. A farmer borrowed 11, 000 for purchasing of a power-tiller from the State Bank of India. He paid the bank Rs 11,715 a year later. What rate of interest did he pay?

6. A dairy farmer borrowed Rs. 10,000 from the State Bank of India at 7 per cent interest to purchase 5 cows. The amount is to be repaid over 10 years by regular annual payments. i). How much will be repaid?

ii). What will be annual payments?

iii). How much interest will be paid?

Video link for further study-

https://www.youtube.com/watch?v=dF4NnhmP9E0

Practical No. 7: Techno Economic parameters of project preparation

Project evaluation technique

Capital Budgeting (Investment Analysis): Capital budgeting is the method of evaluating investment expectations. An investment is defined as the commitment of resources (capital) to production activities which yield returns over a reasonably long period of time. Simple cost return analysis is sufficient to ascertain the profitability of enterprises where the capital spent yields returns within a short period of time (say a year). But in the case of investments requiring commitment of capital for longer periods of time, the cost - return analysis will not be a sufficient measure of profitability. Such investments need to be evaluated for their economic viability using appropriate criteria. This is essential as the substantial capital committed will have long term consequences and is difficult to reverse the investment decisions once made.

Steps in capital budgeting: Capital budgeting consists of an orderly sequence of steps or actions that provide information relevant to an investment choice. These steps are (a) Identification (b) Formulation (c) Appraisal (d) implementation (e) Monitoring and (f) Evaluation.

1. Identification refers to recognition of farmer's needs. It is searching for profitable investments and is an important and continuous function of management.

2. Formulation is the detailed preparation of a plan for the identified project, which includes (a) location of the project (b) Size and number of units (c) Value of investment (d) Technical aspects (e) Economic aspects. The detailed project planning is generally preceded by a feasibility study (in the case of macro projects).

3. Appraisal is the critical review of the project proposed to assess the appropriateness and soundness of the project. Broadly four types of appraisal may be conducted, viz., Technical appraisal, financial appraisal, Economic appraisal and organizational appraisal. The project is appraised using different criteria.

4. Implementation refers to translating the investment proposal into a concrete project. It refers to putting the plan into action. Though an administrative aspect, implementation is a

more crucial aspect as the anticipated costs, returns and time depend on effective implementation.

5. Monitoring is the process which is concerned with supervising and watching the project to see whether its implementation is as per plan. This helps to identify and diagnose the problems and to modify the project design, if necessary, for improving the performance of the project.

6. Evaluation: This is an analytical process for systematically and objectively pursuing the relevance, efficacy and effectiveness of the project activities in the light of the objectives set earlier. By evaluating the project, one can find its achievements and weaknesses so as to suggest ways of overcoming such weaknesses in future projects. The different types of evaluation are ex-ante evaluation, concurrent evaluation and ex-post/end evaluation.

In deciding the costs and benefits of an investment, the following principles need to be borne in mind.

1. Cash flow Principle: The costs and benefits associated with an investment are to be measured in term of cash flows the cash outflows that occur due to, out flows of cash from the project expenses and the cash inflows which are the inflows of cash into the project due to the benefits derived. The cash flows take place during the entire life of the project. The difference between cash inflows and cash outflows is termed as net cash flows.

2. Incremental Principle: The cash flows (both cash inflows and cash outflows) need to be measured and accounted at the incremental level. According to this principle, the changes in the cash flows of the farm that arise from the implementation of the project alone are relevant. Only the incremental cash flows need to be considered in the evaluation of the project.

3. Interest exclusion Principle: This principle envisages that the interest paid on the debt arising out of the project should be excluded from the economic analysis of the project. This is because of the fact that the discount rate Used will represent the interest rate.

The following steps are needed in the Preparation of project proposal:

l. Identify a potential project

2. Work out the details collect the data on economic and technical aspects of the project.

a. Technical data: information on investment, resources requirement and yields

b. Economic data: where to buy, how much to buy, the price at which to buy, where to sell, when to sell what price to sell, etc.

3. Compilation and analysis

4. Cash flow analysis for the project

5. Project evaluation: Test the projects for technical & financial feasibilities (SRR, PBP, NPV, BCR & IRR)

6. Project report writing

DISCOUNTED MEASURES: Discounted cash flow technique is employed as a tool in evaluating long-term projects in agriculture. Many studies conducted earlier successfully employed this technique to evaluate the long. Term investment in agriculture projects. Hence, for evaluating the investments and to find out the technical feasibility and economic viability of investments on agricultural, irrigation and plantation crops, a few measures of project evaluation (discounted cash flow techniques except Payback period) were used. These measures are advocated as tools or aid to evaluate and find out the worthiness of an investment, especially those of long term projects.

The measure used in the analysis were, Net Present Value (NPV), Benefit Cost Ratio (B: C ratio), Internal Rate of Returns (lRR) and Payback period (PBP) Cash flows are the yearly net benefits accrued from the project. If they are weighed by discount rate, they become discounted cash flows. These discounted cash flows are the best estimates to decide on the worth of the project. This approach will give the net present worth of the project. The present worth of the costs is subtracted from the present worth of the benefits in order to arrive at the net present worth of the project every year.

Measurement of the Cash Flow of the Project: From the annual stream of gross benefits of the project, the capital invested and the other input costs like labor, machinery, fertilizers, pesticides, management, etc., are deducted. From the residual, the return of capital, and return on capital or return to capital, i.e. investment made in the project (depreciation) and

compensation for the use of money (interest) are computed. This residual is called cash flow of the project. In financial analysis the cash flow is the net incremental benefits of the project. But, in accounting, the term implies the sum of cash flows of projects plus depreciation allowance. The concept of cash flow in the financial analysis includes, both return of capital and return to capital. We generally do not resort to deduction of depreciation, Le, allowance of return of capital or interest in the economic analysis, because our analytical technique automatically takes care of return of capital in determining the worth of the project. In economic analysis, income taxes, sales taxes, custom duties, etc., are only the transfer payments, but not payments used in the production process. Hence, from the gross returns these are not deducted. But in the financial analysis taxes are the costs which individuals must pay for the use of capital.

By far, financial analysis aims at the estimation of return to all resources employed in the project. Hence, borrowed capital is considered as benefits received, while, its interest is considered as cost and it is deducted from the gross returns. ln economic analysis, this consideration is ruled out because of the assumption, that all the resources employed in the project belong to someone or the other within the society. In the economic analysis, it is important that the price of some of the inputs must be the shadow prices. In financial analysis all prices are market prices and they must include taxes and subsidies. For clear distinction between cash inflows the economic analysis vis-a-vis financial analysis (Gittinger, 1976) may be referred.

NET PRESENT VALUE

The net present value is simply the present worth of net benefit of a project discounted at the opportunity cost of capital. This criterion ranks the investments for selecting the best alternatives. Generally, higher the net present worth better would be the preference. In computing net present worth, the difference between the present values of the cost were considered at a discount rate of 9.5 per cent as this is the present prevailing bank rate of interest on fixed capital. The general verbal and mathematical form of net present worth criterion is presented below.

This is simply the present worth of the cash flow stream. Sometimes, it is referred to as Net Present Value (NPV). The selection criterion of the project depends on positive value of NPW when discounted at the opportunity cost of the capital. This could be satisfactorily

done, provided there is a correct estimate of opportunity cost of capital. NPW is an absolute measure, but not relative.

NPV = [Present worth of benefits] - [Present worth of costs]

$$NPV = \sum_{r=1}^{n} \frac{(B_n - C_n)}{(1+d)^n}$$

Where,

B_n= Benefits in nth Year

C_n= Costs in nth year

n = Number of years

d = Discount rate

OR

$$NPV = \left[\sum_{I=1}^{n} Y_n(1+r)^{-n}\right] - I_0$$

Where,

Y_n = Net cash inflows m the nth year

I_0 = Initial investment

i = Number of years

r = Discount factor (%)

In order to select worthiness of the project, the net present value should be positive.

NPW of the project is estimated using the following equation,

$$NPV = \frac{Y_1}{(1+i)^{t1}} + \frac{Y_2}{(1+i)^{t2}} + \cdots + \frac{Y_n}{(1+i)^{tn}} - C$$

Where,

Y_1: Net cash flow in first year,

i= Discount rate (%),

t = Time period, and

C = Initial cost of the investment.

The decision criteria are:

If NPV > 0: Investment is profitable and project is said to be financially feasible/ worthwhile

If NPV < 0: Investment is not profitable and the project is not worthwhile/ infeasible

If NPV = 0: Indifferent case. The project may or may not be taken.

It possesses the additive property / aggregate of different projects. It concerns with the financial objective of maximization of wealth of stockholders. It considers all the cash flows in its entirety. It takes into account of time value of time. Ranking of the projects are not correctly done.

Study Questions:

1. Calculate the NPV for the following cash flow stream of a project:

(Assume that the cost of capital (discount rate) for the firm is 12%).

Net cash investment	**Year**	**Cash inflow**	**Discount rate@ 12%**	**Discounted value of cash flow (in Rs.)**
10,000	**0**	**----**	**-----**	
	1	**2,000**		
	2	**3,000**		
	3	**3,000**		
	4	**3,000**		
3,000	**5**	**3,000**		

	Total Present Value of the earning (cash inflow) =	

NPV = Present value of cash inflow – present value of cash outflow =

2. Calculate the NPV for the following cash flow stream of a project

(Assume that the cost of capital (discount rate) for the firm is 10 percent)

Net Cash investment	**Year**	**Cash flow (in Rs)**	**Discount factor@10%**	**Discounted value cash flow (in Rs)**
1200	**0**	**------**	**------**	
	1	**500**		
	2	**500**		
	3	**300**		
	4	**300**		
	Total Present Value of the Earnings (cash Inflow) =			

NPV = Present value inflow – Present value of cash outflow =

3. Project A required an investment of of Rs 400and was expected to have cash inflow of rs 110, rs 120, rs 130, rs 140 and rs 150 over it 5 years economic life. Project B involved an investment of rs 300 and was expected to have a cash inflow of rs 100 each its five years economic life. Which of the two projects will you select if cost of capital is (i). 10 percent and (ii). 12 percent?

Video link for further study-

https://www.youtube.com/watch?v=1tOrhhjVjH0

Practical no. 8: Project evaluation techniques-BCR & PBP

Benefit-Cost ratio (B-C RATIO): It is the ratio of discounted cash inflows and outflows which must be unity or more for an enterprise to be considered worthwhile. The minimum ratio required is 1:1. This 1:1 indicates the coverage of costs without any surplus benefits. But, usually, the ratio should be more than unity in order to provide some additional returns

$$B:C = \frac{\text{Discounted cash inflow}}{\text{Discounted cash outflow}} \quad OR \quad \frac{\text{Discounted net cash inflow}}{\text{Initial investment}}$$

$$B:C = \frac{\sum_{t=1}^{n} \frac{B_n}{(1+r)^n}}{\sum_{t=1}^{n} \frac{C_n}{(1+r)^n}} \quad OR \quad \sum_{i=1}^{n} \frac{Y_i}{(1+i)^n} \div I$$

over the costs for clear decision. Following formula depicts the estimation of B-C ratio can be stated both verbally and mathematically as:

Where,

Bn	=	Benefits in each year
Cn	=	Costs in each year
N	=	Number of years
r or i	=	Discount rate,
I	=	Initial investment
Yi	=	Net cash flow

Here, we compare the present worth of costs with present worth of benefits. Absolute value of the benefit-cost ratio will change based on the interest rate chosen While ranking the projects depending upon the B-C ratio, the most common procedure of selecting a project is, to choose the project, having B-C ratio of more than one, when discounted at opportunity cost of capital Finally, the given project is opted for implementation, among alternatives based on the highest B-C ratio. It ranks the projects correctly, but it could not aggregate all projects.

Table.9. 1: Estimation procedure of benefit-cost ratio (BCR) for 2 Projects (Hypothetical)

Ex: Estimation Procedure of benefit-cost ratio (BCR) for 2 Projects (Hypothetical)

	Sericulture (one ha)						Mango orchard (one ha)				
Yr	Costs (₹)	Returns (₹)	Net income (₹)	Discount factor at 12%	NPW (₹)	Year	Costs (₹)	Returns (₹)	Net income (₹)	Discount factor at 12%	NPW (₹)
1.	38900	-	0.8929	34733.81	-	End of 6th year	25000	-	0.507	12675.00	-
2.	9239	28475	0.7972	7365.33	22700.27	End of 7th year	4250	10260	0.452	1921.00	4637.52
3.	10575	32550	0.7118	7527.29	23169.09	End of 8th year	4792	12550	0.404	1935.97	5070.20
4.	11952	35610	0.6355	7595.50	22630.16	End of 9th year	5368	14530	0.361	1937.85	5245.33
5.	12858	39802	0.5674	7295.63	22583.65	End of 10th year	5975	16275	0.322	1923.95	5240.55
				64517.56	91083.17	End of 11th yr	6456	19396	0.287	1852.87	5566.55
						End of 12th yr	7187	21470	0.257	1847.06	5517.79
									24093.70	31278.04	

BCR= Present worth of gross return/present worth of cost=91083.18/64517.56=1.41

BCR= 31278.04/24093.70=1.30

UNDISCOUNTED MEASURES: The undiscounted measures are the naive methods of choosing among the alternative projects. The methods listed under these measures often mislead in ranking of the projects and hence, choices go wrong.

1. Simple Rate of Return: It is the average rate of return on the investment made in the project.

$$SRR = \frac{Y}{I} \times 100 \quad Or \quad = \frac{E - D}{I}$$

Where,

Y= Average annual cash flows.

E= annual net benefits or cash flow per annum I = initial Investment of the project

D= Annual average depreciation

The decision rule here is that all projects whose SR is more than the investor's required rate of return are acceptable. Though simple and easy to use, the biggest drawback of this criterion is that it ignores the time value of money.

2. <u>Payback period</u>: Payback period represents the length of time required for the stream of cash proceeds produced by the time required for the project to pay for itself. The payback period is calculated by successively deducting the initial investment from the net returns until the initial investment is fully recovered. Another simple method of ranking a project is the length of time required to get back the investment on the project or it is length of time required to cover its initial investment. It is length of time required for project to pay for itself. It ignores the cash flow after payback period has been crossed and it also ignores the time value of money.

<u>Ranking by inspection:</u> It is based on the size of costs and length of cash-flow stream. Suppose if the two projects are with the same movement anti the same net value of production, but with difference in the length of the period, then the project with longer durations preferred to the one with shorter time period. This leads to bias in the choice obvious1y due to the absence of more elaborate and appropriate analysis.

The payback period of the project is estimated by using the straight forward formula:

$$P = \frac{I}{E} \times 100 = \frac{\text{Initial investment}}{\text{Net cash flow or net return}}$$

Where,

P = Payback period of the project in years
I = Investment of the project in Rs. and
E = Annual net cash revenue in Rs.

The preference of a particular project is based on the shorter payback period. This is shown in table.

Ex: Estimation Procedure of payback period

Year	Cash flow (in ₹)	
	Project 'A'	Project 'B'
0	-20000	-20000
1	5000	4000
2	5000	4000
3	5000	4000
4	5000	4000
5	5000	4000
6	5000	4000

$$\text{Project 'A'} = \frac{₹\ 20000}{₹\ 5000} = 4 \text{ years}$$

$$\text{Project 'B'} = \frac{₹\ 20000}{₹\ 4000} = 5 \text{ years}$$

Decision rule:

If PBP < life period of project (n), then we accept the project,

If PBP > life period of project (n), then we reject the project.

It is inadequate to exercise the option among the alternatives, because it fails to consider very important points like, consistency of running, timing of the proceeds, returns after the payback period and whether the cash-flows would be positive or negative in future.

Proceeds per Rupee of Outlay: This is worked out by dividing the total proceeds with the total amount of investment, and a given project is ranked based on the highest magnitude of the parameter.

Average Annual Proceeds of Rupee Outlay: This is another simple choice criterion and in this procedure, total receipts are first divided by the project life span and the average proceeds obtained per year are divided by the initial investment on the project. Here too, ranking is given to the projects, based on the highest magnitude of the estimate.

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.

STUDY QUESTIONS:

1. Calculate the BCR of a project which is being considered by a firm that has a cost of capital of 12 per cent.

Net cash investment (₹)	Year	Cash flow (₹)	Discounted value of cash flow at 10% (factor)	Discounted value of cash flow (₹)
1,00,000	0	—	——	
	1	25,000		
	2	40,000		
	3	40,000		
	4	50,000		
		Total Present Value of a project(cash inflows)=		₹

$$\text{B:C Ratio} = \frac{\text{Discounted net cash inflow}}{\text{Initial investment}}$$

$$=$$

2. Compute the pay back period and give the ranking for the following projects:

Projects	Total capital expenditure (₹)	Annual gross income(₹)	Pay back period (years) Net investment÷ gross annual earnings	Rank
A	20000	5000		
B	30000	6000		
C	35000	5000		
D	45000	5000		
E	15000	5000		

Indicate which project is better based on the project ranking.

Video link for further study-

1. https://www.youtube.com/watch?v=idxkK05R0aI
2. https://www.youtube.com/watch?v=tG0iyzMAh_E

Practical No.9: Project Evaluation Technique – IRR

Internal rate of return: It is the discount rate at which the present values of the net cash flows are just equal to zero, i.e., NPW = zero. This represents the average earning capacity of an investments in the projects over its life period. This is generally determined by Trial and Error method. By this method, one discount rate is found which is too low and NPV with negative, and another discount rate is found which is too high with NPV of project is positive. The mathematical formula of IRR is.

$$IRR = \sum_{t=1}^{n} \frac{B_n - C_n}{(1+d)^n} = 0 \qquad \text{Or} \qquad NPV = \sum_{t=1}^{n} Yi\,(1+r)^{-n} - I$$

The internal rate of return is arrived at by interpolation technique by using different discount rates so as to see that the net present worth is equal to zero. The interpolation method the exact IRR is found out using the following equation.

$$IRR = \left[\text{Lower discount rate}\right] + \left[\text{Difference between higher and lower discount rate}\right] \times \left[\frac{\text{Present worth of the cash flow at lower discount rate}}{\text{Absolute difference between the present worth of cash flow at two discount rates}}\right]$$

In the computation of Internal Rate of Return (IRR), the time value of money is accounted. The method of working IRR provides the knowledge of actual rate of return from the' – different projects. Thus IRR is known as 'marginal efficiency' of capital or yield on the investment. The IRR must be found out by trial and error with some approximation. The procedure is elucidated for the projects of the sericulture and mango in the following tables.

The positive NPW value of the project indicates that IRR is still higher and next assumed arbitrary IRR value must be comparatively higher than the initial level. This process is continued until NPW becomes negative. In the working procedure, an arbitrary discount rate is assumed and it's corresponding.

Decision Rule: If IRR value>ruling rate of interest, then project is said to be feasible. If IRR value< ruling rate of interest, then project is said to be infeasible.

Ex: Estimation Procedure of IRR for sericulture (one hectare) (Hypothetical)

Year	Costs (₹)	Gross income (₹)	Net income (₹)	Discount factor (40%)	Net present worth (₹)	Discount factor (43%)	Net present worth (₹)
1	38900	-	-38900	0.7143	-27786.27	0.6993	-27202.77
2	9239	28475	19236	0.5102	9814.21	0.48902	9406.4
3	10575	32550	21975	0.3644	8007.69	0.3419	7513.25
4	11952	35610	23658	0.2603	6158.17	0.2391	5656.62
5	12858	39802	26944	0.1859	5008.89	0.1672	4505.04
			52913		1202.69		-121.46

Note: The entire lifespan of mango orchard should be considered for working out IRR. For want of data we considered here only for seven years for illustration purpose.

$$IRR = 40 + 3\frac{1202.69}{1202.69 + 121.46}$$

$= 40 + 3(0.9083)$

$= 40 + 2.7249$

$= 42.7249\%$

Ex: Estimation Procedure of IRR for Mango Orchard (one ha) (Hypothetical)

Year (₹)	Costs (₹)	Gross income (₹)	Net income (₹)	Discount factor(25%)	Net present worth (₹)	Discount factor(30%)	Netpresent worth(₹)
End of 6th yr	25000	-	-25000	0.262	-6.550	0.207	-5175.00
End of 7th yr	4250	10260	6010	0.21	1262.01	0.159	955.59
End of 8th yr	4792	12550	7758	0.168	1303.30	0.123	954.23
End of 9th yr	5368	14530	9162	0.134	1227.71	0.094	861.23
End of 10th yr	5975	16275	10300	0.107	1102.10	0.073	751.90
End of 11th yr	6456	19396	12940	0.086	1112.84	0.056	724.64
End of 12th yr	7187	21470	14283	0.069	985.53	0.043	614.17
		35453		**443.49**		**-313.24**	

$$IRR = 25 + 5 * \frac{443.49}{443.49 + 313.24}$$

$= 25 + 5(0.586)$

$= 25 + 2.93$

$= 27.93\ \%$

STUDY QUESTIONS:

1. The total amount to be invested in the project is to be taken to be Rs. 10,000. It is expected that the cash inflows (benefits) will be Rs. 2000 in the first year, Rs. 4000 in the second year and Rs 7000 in the third year. It is also assumed that 5 per cent is a minimum acceptable return. What is the net present value, benefit-cost ratio (B: C ratio) and internal rate of return (IRR)?

Video link for further study-

https://www.youtube.com/watch?v=C5o6U7zOebM&t=1738s

Practical No.10: Preparation of project proposal for dairying

Bank extends loan assistance to take up various types of dairy development activities through its general schemes. These schemes are aimed at helping the beneficiaries to take up activities and also to help increase milk Production in the country.

A farmer in South 24 pargana district of West Bengal State wants to start the dairy production unit before starting, he would like to know the technical and economic feasibility of the project. Farm with more than 5 animals can be considered for borrower having adequate technical and managerial resources to organize and run the farm.

l. Technical aspects:

1, Location of dairy farm (Area)

a. A Temperature-between 15-30° degrees are more suitable.

b. Rainfall-heavy RF areas are not desirable

c. Other facilities-areas should be compact blocks, animal breeding & milk collection centers, the financing Branch and availability of good grazing facilities, green & dry fodder and concentrate feed. Dairy units may be encouraged preferably only in rural areas and not in cities.

2. Land to construct the dairy shed and other structures;

3. Animals i. Breed: (a). Few buffaloes milch breeds are Murrah, Nili, Surti, Mehasana, Jaffarbadi etc.

(b) Few cows milch breeds Deoni, Ongole, HF(E), Jersey(E), Red Sindhi, etc., &

(c) Cross breed

(d) Milk production capacity

(e) Number of milking and Dry Days

(f) Estimation of milk production

- Assured water and electricity supply,

- Experienced staff and labor for farm management;
- Veterinary services for the dairy unit, and
- The following factors are, however, important in determining the income form dairy production unit:
- Capital investment. It varies with the type and cost of building materials, the location of farm and the rate of interest on capital investment.

7. Location. The nearness of the dairy farm to market and approach through pucca road.

8. Inputs. The quality and cost of calf well as of dairy feed.

9. Output. The price of animals depends on its age, number of lactations (number of calving), and milk yield and health condition under efficient management conditions.

10. Marketing. The market price of milk which the producer gets after paying the commission to the whole sale agents, height charges, etc.

11. Manpower: The wage rate of labor and other supervisory staff

II. Financial Aspect:

Sl. No	Cost of Animals	Amount (in Rs)
A	Cost of animals:	
B	She -Buffaloes:	
	I. Graded murrah/ surti/ Dharwad/ pandarpuri / Mehsani yielding	
	ii. Transportation of milch animals	
	iii. Buffaloes / cows yielding _____ litres/day	
	iv.	
C	Feed and fodder cost:	
	a.	
	b.	
	c.	

	d.	
D	Shed space for housing two/ three milch animals with calf Cow @ sq ft. And buffaloes @	
E	i. Thatched shed @Rs. _____ per sq. ft: For cow shed For buffalo shed ii. AC roof @ Rs. _____ / sft: For cow shed For buffalo shed Construction of store from Rs. _____ / sft i. Requirement of storage space ii. iii. **TOTAL**	

Total receipt includes income realized from sale of milk and its products, meat calf, etc.,

Net cash flow = Total receipt – Total expenses

Practical No.11: Preparation of project proposal for poultry activity

Bank extends loan assistance to take up various types of poultry development activities through its genera schemes. These schemes are aimed at helping the beneficiaries to take up economic activities and also to help increase egg, meat, and chick production in the country.

A farmer in South 24-pargana district of West Bengal State wants to start the broiler production unit before starting, he would like to know the technical and economic feasibility of the project. In assessing the economic and technical feasibility of a broiler project, the suitability or availability of the following may be looked into:

I. Technical aspects:

1. Location of farm (temperature-not exceeding 105° F (40° C).

i. Land to construct the poultry shed and other structures-direction of sheds distance between sheds, material for construction

ii. Area should be free from drafty winds and water logging conditions.

iii. Adequate fresh water and electricity supply,

iv. Nearness to all weather roads

v. Supply of one-day old chicks and feed;

vi. Nearness to sources of supply of chicks and poultry feed

vii. Experienced staff and labor for farm management;

viii. Veterinary services for the birds, and

ix. Ancillary facilities for shed construction, well digging and instillation of electrical and water fixture.

x. New poultry farms may be one Km away from the existing farms/ complexes.

2. The following factors are, however, important in determining the income form broiler production:

i. Capital investment: It varies with the type and cost of building materials, the location of farm and the rate of interest on capital investment.

ii. Manpower. The wage rate of labor and other supervisory staff.

iii. Inputs: The quality and cost of day-old chicks as well as of poultry feed. All inputs can be easily made available and a system of regular collection of eggs from the door steps of the dairy farmers and transporting them to marketing centers should either exist or can be organized.

ii. Output: The weight attained at marketable age of table birds, mortality rates under efficient management conditions.

iii. Marketing: The market price of table birds which the producer gets after paying the commission to the whole sale agents, freight charges, market fee, etc.

II. Financial Aspects:

Sl. No.	Particulars	Amount (in Rs)
A.	**Layer farming- _____ Layer unit (deep litter:)**	
i.	**Cost of brooder sheds**	
ii.	**Cost of _____ layers sheds**	
iii.	**Brooder / Grower equipment**	
iv.	**Layer equipment of _____ birds**	
v.	**Feed store _____ sft**	
vi.	**Point of lay**	
	A.	
	b.	
	c.	
	e.	
B.	**Broilers- _____ birds**	
i.	**Cost of shed _____ sq. ft.**	
ii.	**Cost of _____ DOC**	
iii.	**Equipment@**	
iv.	**Feed cost for _____ birds**	
v.	**Miscellaneous cost @ Rs_____**	
vi.	**Insurance @ Rs _____**	
	Total	

Total receipt includes income realized from sale of eggs, chicks/ broilers, etc.

Net cash inflows = Total receipt – Total expenses

Practical No. 12: Preparation of project proposal for fisheries.

Fishery development is an important activity allied to agriculture. There are two types of fishing-Inland and marine fishing.

I. Technical aspects: The Fish farming Development Agency render assistance to farmers in allotment of ponds, supply of seeds, extension services, supply of inputs, training and subsidy etc.

i. Digging/ developing new ponds/ renovating old ponds

ii. Weed clearance

iii. Fish grow healthy and vigorously in alkaline water.

iv. Inorganic and organic manures shall be applied 20days before stocking of fish per hectare. (Ammonium sulphate, SSP, FYM)

v. Cost of fish seed

vi. Supplementary feed in nature of til / groundnut/ mustard/ coconut cake and wheat bran shall be applied.

A. Yield: body weight of 700- 1000 mg in one year.

B. Harvesting needs: Net used in small water area & net and small boat used in large water area

C. Market: study market, transportation. Use of ice for transport and storage

D. Brackish water prawn / fish culture Production: monoculture-prawn: 300-600kg/ha/crop & polyculture-prawn: 500-750kg/ha/crop and 1200 to 1900 kg. fish

a. Investment: tank/pond, Pump set, weed clearance first time, liming first time, feed first time, organic manure and inorganic fertilizers first time and fishing operations

b. Current expenditure: chowkidar /watching, weed clearance, manures, fwd, maintenance of tank, transport/ ice etc.

c. Income: sale of fish

Financial aspect: Includes fish nets, boats/ vessels etc.

Sl. No	Particulars	Amounts (in Rs)
A.	Fish culture in low lying areas (size of pond -4 or 5 feet excavation):	
	i. Capital	
	ii. Operational cost	
B.	Fish culture in areas requiring (5 feet excavation):	
	a. Capital cost	
	b. Operational cost	
C.	Pig-cum-fish-culture	
	a. Capital cost	
	i. For excavation of pond	
	ii. Pig sty construction	
	b. Operational cost	
	i. For one crop of fish	
	ii. For rearing one lot of piglets for 6 months Pig sty. construction	
D.	Fish culture in water logged areas	
	a. Capital cost	
	b. Operational cost	
	Total	

Practical No. 13: Preparation of project proposal for agro-based industries

India is one of the leading producers of horticultural crops in the country. The industry policy identifies the agro industrial sector as the major thrust area. The India has made advances in agricultural production and how moving into high- tech agriculture.

Presently, there is low value addition in India in comparison to other country and significantly lower than China, Philippines and UK. The low value addition inhibits industry to achieve economic scale of agro processing resulting in higher per unit cost of production.

I. Technical aspects
1. Selection of site and building
    a. Location close to raw material production
2. Technology Know- how
    a. Indigenous
    b. Trail production result
3. Selection of machinery
    a. Machinery suitability of the process
4. Availability of raw material and seasonal
    a. Tie up with farmers
    b. Area development
    c. Continuous availability
5. Availability of power
6. Fuel & power
7. Background of promoter
8. Experience of consultant
9. Pollution norms
10. Market- domestic and export

I. Financial Aspects: Financial viability of the project will be evaluated by using NPV, PBP, BCR and IRR.

Sl. No	Particulars	Amount (in Rs)
A.	Cost Of building (land value)	
B.	Cost of machinery	
C.	Cost of fuel & power/ electricity bill	
D.	Cost of raw material	
	TOTAL EXPENSES	
	Total receipt include income realized from sale of finished products, etc, Net cash flows= Total receipt – Total expenses	

Video link for further study-

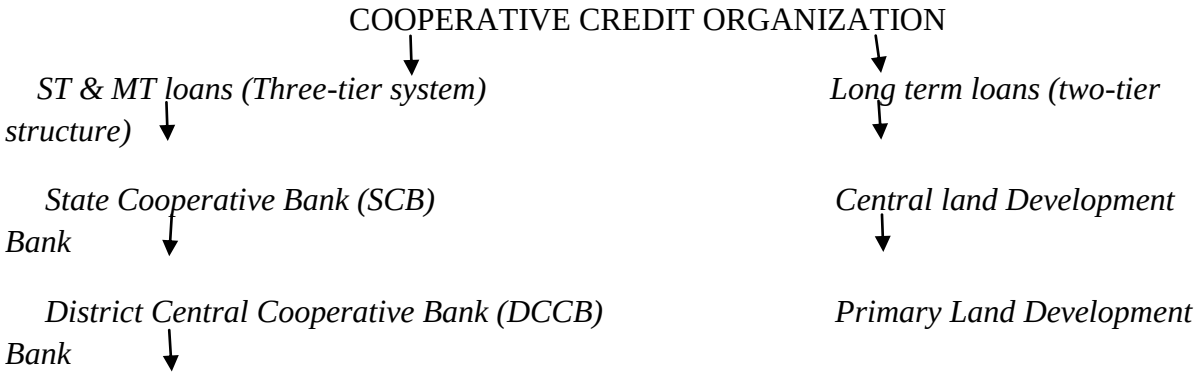
https://www.youtube.com/watch?v=AtIKeYT0jjo

Practical No. 14: Visit to and study of PACS

Soon after the Independence, GOI following the recommendations of All India Rural Credit Survey Committee (AIRCSC -1951) felt that cooperatives were the only alternative to promote agricultural credit and development of rural areas. Accordingly, cooperatives received substantial help in the provision of credit from the RBI as part of loan policy and large-scale assistance and encouragement from the Central and State Governments for their development. Many schemes of the government with components of subsidies and concessions to the weaker section were routed through the cooperatives. As a result, the cooperative institutions registered remarkable progress in the post-independence period.

Cooperative structure was delineated into two types, i.e., three-tier structure and two-tier structure. Both Cooperative credit societies and non-credit cooperative societies now have three-tier structure and two-tier structure in all the states except Bihar, Jammu and Kashmir, Maharashtra and Uttar Pradesh, where the structure is unitary.

The cooperative credit structure in the country is as follows:



Primary Agricultural Cooperative Credit Societies (PACS) : Consequent to the enactment of Cooperative Credit Societies Act of l904, PACS came into operation following the guidelines of the Raiffeisen model. The cooperative principles like limited liability, limited area of operation, honorary management, voluntary participation of villagers, etc. were framed for the smooth functioning of the societies. The societies are at the village level and directly meant for the farmers regarding provision of requisite short term and medium-term loans. Supply of agricultural inputs and other essential commodities is also taken up by these societies. In addition to these activities, PACS are also helping in formulating and implementing the agricultural development plans. They are also undertaking advisory and welfare functions for the members.

Functions: (l) They borrow adequate and timely funds from DCCB and help the members in financial matters; (2) They attract local savings in the form of share capital and deposits from the villagers thereby inculcating the habit of thrift; (3) They supervise the end use of credit; (4) They distribute fertilizers, insecticides, etc. to the needy farmers; (5) They provide machinery on hire basis to the farmers; (6) They associate with the programs and plans meant

for the socio-economic development of the village; (7) They also involve in marketing of farm produce on behalf of farmer borrowers; (8) They provide storage facilities and marketing finance; and (9) They supply certain consumer goods like rice, wheat, sugar, kerosene, cloth, etc. at fair prices.

FARMERS SERVICE COOPERATIVE SOCIETIES FSCS: FSCS are well organized registered cooperative bodies, based on the principles of cooperation and governed by cooperative bye-laws. Since the PACS are biased towards affluent sections of rural areas, the National Commission on Agriculture (NCA) strongly felt that separate Societies for meeting the special needs of the weaker sections in the rural areas are needed. Consequent to the recommendation of the NCA, FSCS were organized in the year 1971, on the lines of cooperatives to provide integrated credit service to the weaker sections of the rural areas, viz., small farmers, marginal farmers, agricultural laborers and rural artisans.

Functions: (l) to supply all types of loans to weaker sections, viz., crop loans, medium term loans and long-term loans; (2) to provide adequate supplies of requisite inputs and technical guidance for the development of agriculture and timely and regular basis; (3) to encourage dairy, poultry, fisheries, farm forestry and other subsidiary occupations in rural areas; (4) to make arrangements for bringing about improvements in agricultural markets; and (5) to mobilize deposits and small savings from weaker sections through incentives.

Area of operation: The societies have been launched in SFDA and MFAL districts. Each society has a jurisdiction of a block or a portion thereof. The membership of the societies is open to all those who are eligible to receive assistance under SFDA/MFAL programs. Others may be associate members but they will not have any voting rights. Sponsorship: FSCS are generally sponsored by lead bank of that district.

Capital structure: The various financial sources of the society are: share capital funds from various sources and loans. Share capital includes share capital contributed by members, lead bank and state government. Funds from different sources include the funds contributed by commercial banks, cooperative societies, subsidies from SFDA and MFAL and commissions accrued to the societies through the supply of essential inputs and interest on advances.

Management: The management of the FSCS rests with the Board of Directors, their number varying from 9 to 13. One full time Managing Director is deputed by the lead bank. Among the remaining Directors, five are elected from the members of the society of which three are from small and marginal categories and two from other farmers. The remaining Directors are representatives of financial institutions, Block Development Office, Department of Agriculture and Cooperative Societies.

STUDY QUESTIONS:

l) Progress of PACS in West Bengal , India during 2005 to 2018 (Collect the information on Number, Number of branches, Owned funds, deposits, Borrowings, Loans issued, loans outstanding).

2) Students should collect and discuss the working of above mentioned institution based on the topic outlines given below (during visit). (1) Nature and organizational set-up (2) objectives/ functions (3) Area of operation (4) Membership (5) Management of the society (6) Sources of fund (7) Types of loans given and target group (8) Mode of disbursement of loan (9) Leaning procedure security and documents (10) Appraisal of credit needs methods followed(11) Scale of finance for various activities (12) Fixation of repayment schedules and method of recovery (13) Any special repayment drive (14) Interest rate for various purposes and penal interest (15) Over-dues percentage, reasons, etc. (l6) audit classification (17) Loan supervision pre and post-sanction, measures for avoiding double financing (l8) Custom-hiring and other activities (19) Technical guidance nature (20) Marketing arrangements (21) Other activities, if any (22) Recent changes in lending norms/policies.

Practical No.15: Visit to and study of district central cooperative bank (DCCB)

These banks are in fact the link between SCB and PACS. They are basically meant to meet the credit requirements of PACS. They also undertake banking business such as accepting deposits from public, collecting bills, cheques, drafts, etc. and providing credit to the needy persons. The area of operation of the banks varies from the taluka to the district, but in most of the states their operations are confined to the taluka level. Membership is open to individuals and societies, working in its area of operation. Marketing societies, consumer societies, farming societies, urban banks and PACS are usually enrolled as members of the DCCB.

Functions: (1) They supervise and inspect the activities of PACS and help the credit societies run smoothly, (2) They maintain close and continuous contact and guide the primary societies and provide leadership to them; (3) They undertake non-credit activities like supply of seeds, fertilizers besides sugar, kerosene and other consumer goods; (4) They provide requisite funds to the societies under their control; and (5) They accept deposits from the member societies as well as from public.

STUDY QUESTIONS:

1. Write the progress of District Central Cooperative Banks (DCCBS) in nearby locality, West Bengal & India during 2000 to 2018 (Collect the information on Numbers, Number of branches, Owned funds, deposits, Borrowings, Loans issued, and loans outstanding).

2) Students should collect and discuss the working of above mentioned institutions based on the topic outlines given below (during visit).

1) Nature and organizational set-up (2) objectives/ functions (3) Area of operation (4) Membership (5) Management of the society (6) Sources of fund (7) Types of loans given and target group (8) Mode of disbursement of loan (9) Loaning procedure security and documents (10) Appraisal of credit needs = methods followed (11) Scale of finance for various activities (12) Fixation of repayment schedules and method of recovery (13) Any special repayment drive (14) Interest rate for various purposes and penal interest (15) Over-dues percentage, reasons, etc. (16) audit classification (17) Loan supervision = pre and post-sanction, measures for avoiding double financing (l8) Custom-hiring and other activities (19) Technical guidance nature (20) Marketing arrangements (21) Other activities, if any (22) Recent changes in lending norms /policies.

Practical No. 16: Visit to and study of commercial banks (CBS)

Commercial bank is an institutional financial agency for the provision of funds for agricultural operations, but the role played by them is very insignificant in this respect. They have not been taken interest in fulfilling the financial needs of cultivators. All India Rural Credit Survey Report has observed that commercial banks were responsible for the provision of about 1 per cent of the total borrowings of cultivators in 1951-52. The situation has not changed much since then. In 1959-60, the Rural Credit Follow up Survey have surveyed 9 districts. They found that it was only in one district that borrowing from commercial banks was reported. In remaining districts, no borrowings were made by cultivators from banks. This state of affair is really very disheartening.

In other countries the commercial banks are potential suppliers of institutional finance to agriculturists. They do not keep themselves so much aloof from this sector as it is the case in our country. As mentioned above, the proportion of agricultural advances to total advances made by these banks are on the decline year by year instead of being increased to boost agricultural production to avert the major crisis of the economy. On the other hand, the role of commercial banks in agricultural credit is negligible in India. The proportion in Japan is also not very high; but it is still seventeen times higher than that in India. In India it has further decreased to 0.2% in recent years.

Commercial banks have confined themselves largely to the provision of credit to plantations where risk is more predictable. Indirectly, they finance agriculture to a large extent, through indigenous bankers, moneylenders, traders, merchants etc. They finance various agro-industries of the country which also form part and parcel of the rural economy. In addition, they take part in financing the movement and marketing of agricultural produce, assist the land mortgage banks of the various States, and act as lenders to co-operative banks and co-operative marketing societies but not very significantly. As a matter of fact, commercial banks are interested in rural areas for the purpose of attracting deposits than for financing agriculture.

Why Commercial Banks Finance Agriculture?

As is known, credit requirements of the farmers are fulfilled by institutional as well as non-institutional agencies. But, it is said without any doubt that for decades, co-operatives had remained an exclusive source of institutional finance in the rural areas of the country. In 1950-51, they shared 3 percent of the total requirement of rural credit. Co-operative credit societies are the best agency to meet the needs of credit of the cultivators. Thus, die Rural Credit Survey Committee has observed that although co-operative credit has failed, yet there is no alternative to cooperative form of association in the village for the proper promotion of agricultural credit and development. In view of this, co-operatives received substantial loans as a policy from the Reserve Bank of India and massive assistance from the center and state Govts. in the form of subsidies and concessions. However, the main reasons why commercial banks finance agricultural sector is described as below.

1. Adoption of New Technology in Agriculture: Apart from increasing the growth rate of food grains production and achieving the motto of self-sufficiency, stress has been laid on the high yielding varieties of food grains. The programme which has been drawn for this purpose is termed as new technology. The main aspects of this strategy comprise of increased supply of fertilizer and pesticides, multiple cropping, more use of high yielding varieties of W is well as intensive utilization of irrigation facilities.

2. Rural Development: Upliftment and upgradation of rural areas is of utmost importance for the socio-economic development of the country. Therefore, the development of rural sector in general and agriculture in particular has accorded the attention of the planner's right from the advent of planning. There are still, 272 million people in the country who live in poverty. The fruits of economic development have yet not percolated to this section of society. Therefore, any development effort will rennin lopsided until and unless rural India prospers and die men having been in the shackles of poverty are emancipated.

3. Need for Credit: Credit is the key input in every development programme. This is particularly true for rural development because so long as sufficient credit is provided to the development programs of all the weaker Sections of the society, the goal of development cannot be achieved. In view of this in 1968, the Govt. imposed a scheme of social control. Moreover in July. I969 fourteen major commercial banks were nationalized and 6 more banks in April. 1980. Therefore, due to these reasons, commercial banks were asked to deploy their loanable resources in rural areas

4. Lending Policies: Reserve Bank of India in his guidelines directed the commercial banks to improve the quality of their lending. It is so as to facilitate the borrowers to move to a higher technological plane, to move away from, "security-oriented lending to purposive and productive lending. The basic approach of the banks in financing or weaker sections has been to formulate viable schemes in which poor can participate so that their income could go up. This approach is also being pursued under the Integrated Rural Development Programme.

What Commercial Banks do for Agricultural Finance?

1. Nature of Assistance Provided Indirect Financing: After the establishment of State Bank of India in 1955, commercial banks were expected to open branches in rural areas. The State Bank of India was given the special role to provide remittance facilities to co-operative and commercial banks. It was also providing credit facilities to co-operative marketing and processing societies. In this way, there was no direct financing of cultivators by the banks up to 1955. It was in sixties that when indirect financing by the hanks through existing rural institution was initiated. Commercial banks also started to finance agriculture indirectly. At present, commercial banks are financing cultivators through primary credit societies as well as they are directly advancing loans to the farmers.

2. Direct Financing: The social control policy being adopted in 1968, directed the commercial banks to finance the cultivators. The concept of priority sector was developed which was to be helped by the commercial banks. Since then, commercial banks have started to finance agriculture and allied activities. Direct financing includes short-term. medium term

and long-term loans. Short term loans are repayable within a period of one-year, medium term loans are repayable over a period of live years while the long-term loans are repayable over a period of ten years.

STUDY QUESTIONS:

1. Write the progress of Commercial Banks(CBs) in West Bengal & India during 2010 to 2018 (Collect the information on Numbers, Number of branches, Owned funds, deposits, Borrowings, Loans issued and loans outstanding).

2. Students should collect and discuss the working of above mentioned institutions based on the topic outline given below. (During visit)

1) Nature and organizational set-up (2) objectives/ functions (3) Am of operation (4) Membership (5) Management of the society (6) Sources of hind (7) Types of loans given and target group (8) Mode of disbursement of loan (9) Loaning procedure security and documents(10) Appraisal of credit needs methods followed (11) Scale of finance for various activities (12) Fixation of repayment schedules and method of recovery (13)Any special repayment drive (14) interest rate for various purposes and penal interest (15) Over-dues percentage, reasons" etc. (l6) audit classification (17) Loan supervision pre and post-sanction, measures for avoiding double financing (l8) Custom-hiring and other activities (19) Technical guidance -nature (20) Marketing arrangements (21) Other activities, if any (22) Recent changes in lending norms/policies.