

CONTENTS OF CAPACITY BUILDING PROGRAMME ON “PROJECT APPRAISAL, RISK ANALYSIS AND RISK MANGEMENT”

PROJECT APPRAISAL

- **Classification of costs, financial / economic costs, real and nominal costs, accounting concepts.**
- **Opportunity cost of public funds, different methods used to calculate discount rate, Inflation Index, Inflating, deflating, discounting, compounding, annuity, Weighted Average Cost of Capital (WACC). Real and nominal discount rates and discount factors.**
- **Different components of Pro-forma cash flow statements, preparation of Pro-forma Cash Flow Statements (from perspectives of owners, lenders, Government Budget & Economy).**
- **Different investment criteria, Net Present Value (NPV), Internal Rate of Return (IRR), Benefit Cost Ratio (BCR), Payback period, Cost Effective methods. Differences between financial and economic appraisal of projects. Participants to do case exercises.**
- **Effects of inflation on project viability – What is inflation? Effects of inflation on financing project investment, depreciation deductions and tax saving, interest expenses and tax deductions, Cost of Goods Sold [COGS], First In First Out [FIFO] and Last In First Out [LIFO], Loan repayments and the need to have Desired Cash Balance [DCB]. Participants to do case exercises on integration of inflation in project appraisal.**
- **Incremental / Scale analysis to determine optimum Scale / Size of a project. Graphical presentations of scale / size versus NPV, Incremental NPV (Δ NPV), IRR and Incremental / Marginal IRR (MIRR). Optimum time to invest / start a project or close a project. Participants to do case exercises on incremental analysis.**

RISK ANALYSIS

- **Endogenous / exogenous risks, systematic / unsystematic risks, Expected Value of a risk. Risk Premuim and how to calculate it.**
- **What is Sensitivity Analysis? Why and how is it done? How to identify sensitive**

and risk variables. Usefulness and limitation of sensitivity analysis. Participants to do case exercises on sensitivity analysis.

- **What is Scenario Analysis? How to work out worst case, best case and most expected case scenarios? Limitations of scenario analysis. Participants to do case exercises on scenario analysis by use of 'Scenario Manager' and 'Toggle' in Excel.**
- **What is Quantitative Risk Analysis? Why should we do it? Characteristics of different types of probability distributions, assignments of probability distributions to sensitive project variables. Selection of projects by risk averse, risk neutral and risk lover. Value of Information and cost of uncertainty. Usefulness and limitations of risk analysis in project appraisal.**
- **All steps to do Risk Analysis by use of Monte Carlo Simulation by use of Crystal Ball Decision Optimizer software. Defining assumptions and assigning probabilities, defining forecasts, selecting simulation numbers, use Monte Carlo simulation to obtain project return (NPV, IRR/ BC Ratio) distributions both, with and without correlations. Interpretation of project output results and variability. Participants to do complete risk analysis exercises.**

RISK MANAGEMENT

- **Various risk management options such as - reduce protection level or regulation level, obtain correct data about project variables, avoid high impact risks, various risk mitigation methods such as contingency planning, creating risk reserve, Insurance, risk management through contracts, risk sharing, risk pooling, risk transfers and risk spreading. Reduction in project return variability by assigning correlations among project variables.**
- **Risks in PPP- Projects, Risk-Return allocations in PPP projects between private and public sectors. Trade offs between higher / lower financial costs and lower / higher risks. Participants to do case exercises on Risk Management in Public Private Partnership - project.**
- **Case exercises on 'Quantitative Risk Management' for various options relating to risk spreading / pooling, product diversification, risk sharing with stakeholders including labour, indexing output prices to input costs, risk transfer / shifting through contracts.**