ASIAN DEVELOPMENT BANK

TA 7055-IND: Capacity Development of National Capital Region Planning Board (NCRPB) – Package 1 (Components A and C)

PROJECT APPRAISAL MANUAL

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Acronyms

ADB	:	Asian Development Bank
CBA	:	Cost Benefit Analysis
DPR	:	Detailed Project Report
DS	:	Debt Service
DSCR	:	Debt Service Coverage Ratio
EA	:	Environmental Assessment/ Appraisal
ERR	:	Economic Rate of Return
FI		Financial Intermediary
GDP	:	Gross Domestic Product
IRR	:	Internal Rate of Return
ISR	:	Initial Screening Report
MIS	:	Management Information System
NCR	:	National Capital Region
NCRPB	:	National Capital Region Planning Board
NGO	:	Non-Government Organization
PAP	:	Project Affected Person
PDF	:	Project Development Fund
PSMG	:	Project Sanctioning and Monitoring Group
SOE	:	Statement of Expense
TE	:	Total Expenditure
TR	:	Total Revenue
ULB	:	Urban Local Body

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1 INTRODUCTION

1.1 Background

1. Many governments are facing increasing demands by their local community to improve the quality of infrastructure (e.g. roads, water, and sewerage etc.). Water pipes are cracked and leaking; and pumps need to be replaced. Wastewater treatment plants must be upgraded to provide higher levels of treatment. Many factors have contributed to this situation including lack of resources, years of neglect, and stricter regulations. Regardless of cause, these problems are real and urban local bodies must decide what to do next.

2. Traditional sources of funds for government infrastructure projects may be limited. To ensure that maximum benefit is achieved, funds that are available must be spent on effective (efficient) local government projects. One way to increase this effectiveness is to strengthen the investment project development skills of people working in NCRPB. Consequently, this note aims to:

- Improve the government financial analysis, project identification and preparation skills of people work in local self governments.

- Make available information techniques, examples, and experiences which have been gained in project identification, preparation and project proposal submission to various funding sources over the past decade.

3. Financial Intermediaries (FI) like NCRPB play an important role in building infrastructure and bridging financing gaps by driving reforms. In order to efficaciously mainstream the dual functions of planning and financing and to maximize efficiency in outputs, this project appraisal manual is developed to assist NCRPB and its partners in developing effective and efficient projects which would optimize their operations. Based on diagnostic study, it is felt that while systems and processes are largely in place, certain improvements will facilitate NCRPB in matching international best practice standards.

4. The objective of this manual is to offer guidance to NCRPB and its partner institutions with respect to project appraisals. In this regard, this manual has been written with a view to meet the needs of a wide range of users, including desk officers of the NCRPB, civil servants in the National Capital Region (NCR) and consultants engaged in the preparation or evaluation of investment projects. This manual also ensures a uniform conceptual framework, and appraisal language to be followed among practitioners at NCRPB.

1.2 Limitations

5. While the project appraisal guidelines presented are intended to be both practical and rooted from international experience and evaluation research, there are obvious limitations. Cost benefit analysis (CBA) is an applied science and not an exact discipline. Project appraisal analysis is largely based on approximations, working

hypotheses and shortcuts because of lack of data or constraints on the resources of evaluators.

1.3 Sequence of Manual

6. Even though more emphasis is given on financial appraisal, this manual also suggests broad framework for social safeguards, institutional improvements, and technical and economic appraisals. The above combination will ensure NCRPB in developing successful and viable projects.

7. This manual addresses not only the entire project life cycle, but also the processes and procedures involved at every step. This manual follows the structure outlined below:

- Existing Processes – mentions the present processes followed in NCRPB and is the level expected in future;
- Sub Project Cycle and the Role of NCRPB – provides definition of sub project cycle and expected role of NCRPB;
- Sub project development – process of preparation of Detailed Project Reports (DPR) and standard framework and structure;
- Sub project appraisal and development –standard and acceptable appraisal techniques for sub projects; and,
- Sub project implementation and monitoring – requisites of sub project implementation and disbursement conditions.

8. In addition to Volume I, a companion Volume II is attached which provides additional details with respect to project documentation and case studies. For the practitioner who wishes to go into the subject matter more thoroughly “The Project Appraisal Guide Practitioner’s Guide” produced by Duke University and USAID’s REFORM Project is attached.

2 EXISTING PROCESSES

This chapter on existing process aims at…

- Explaining the method for developing projects at NCRPB.
- Includes information on the appointment of appraisal agencies and reports.
- Defines the subproject cycle.

By the end of this chapter, you should be able to…

- Understand how a subproject can be identified.
- Understand the current process for developing a project pipeline at NCRPB.

2.1 Introduction

9. The objective of this is to trace the existing functions of NCRPB and provide guidance for improving the same as per best practice standards. The current NCRPB project development process map is presented in Figure 1.

2.2 Description of Existing processes

10. NCRPB finances project both within the NCR as well as counter magnet areas[1]. The processes described below cover the project within NCR, where project proposals are routed through NCR Planning Cells. In the case of counter magnet areas, the projects are to be identified and approved by the Project Sanctioning committee at the town level based on development plans for the counter magnet towns.

11. A development fund for the counter magnet town to finance project would be created wherein NCRPB will provide loan funds with matching contribution from state governments/implementing agencies in the counter magnet town. Appraisal for these projects needs to follow similar processes described in the manual. However, sanctioning processes are different.

2.2.1 Preliminary Scrutiny of DPRs

12. NCRPB receives Development Project Reports (DPR) from its clients, and scrutinizes these reports to ensure compliance with the Regional Plan 2021. Confirming consonance, it is then sent for appraisal to the appropriate appraisal agencies.

2.2.2 Appointment of Appraisal Agencies

13. On receiving the DPRs, NCRPB issues Terms of Reference (TOR) and one institution gets selected to appraise the DPRs. The decision to forward a DPR for appraisal to a particular appraisal agency is taken in-house as per the field of expertise, work already allotted and previous performances alongside other parameters such as whether this project is similar (or linked) to those already appraised by a particular

[1] As per sub-section (f) of section 8 of NCRPB Act, 1985, counter magnet areas are to be selected in consultation with the concerned state government having regards to their location, population and potential for further growth. As per Regional Plan 2001, Counter Magnet Areas to Delhi should be located sufficiently away from the NCR and should have its known established roots and inherent potentials to function as a viable independent growth foci.

appraisal agency. These institutions conduct the appraisal and send their recommendations to NCRPB. In the process, they consult with the borrowers for any clarifications.

2.2.3 Appraisal Reports[2]

14. **Loan Sanction and Documentation**. Loan applications are also submitted along with the DPR. However, as per current practice, loan applications for lending are received only after appraisal and recommendation by the national institutions is completed. Loan documentation is concluded upon approval of the loan by the Project Sanctioning and Monitoring Group (PSMG).

15. **Disbursements**. Advance payments are made throughout the project period. The first advance is made immediately after the loan agreements and security documents are signed. The next advance is made based on projection made in the DPR, and only after obtaining the 'Utilization Certificate" for the previous installment. To be clear, the "Utilization Certificate" is not only for the previous installment, but also the corresponding state share of the Board's installment (which is 1/3rd of the loan).

16. Every tranche is treated as a separate loan, but no separate approvals are needed or taken from PSMG at each tranche. One time loan, partial approval, is taken at the PSMG level which includes the total of all installments. Separate agreements are however, entered for each tranche for which no PSMG involvement is required. . PSMG is approached only in case of change in the scope of work or major deviations at the time of implementation. NCRPB monitors the progress of the projects by visiting respective sites before release of subsequent installments.[3]

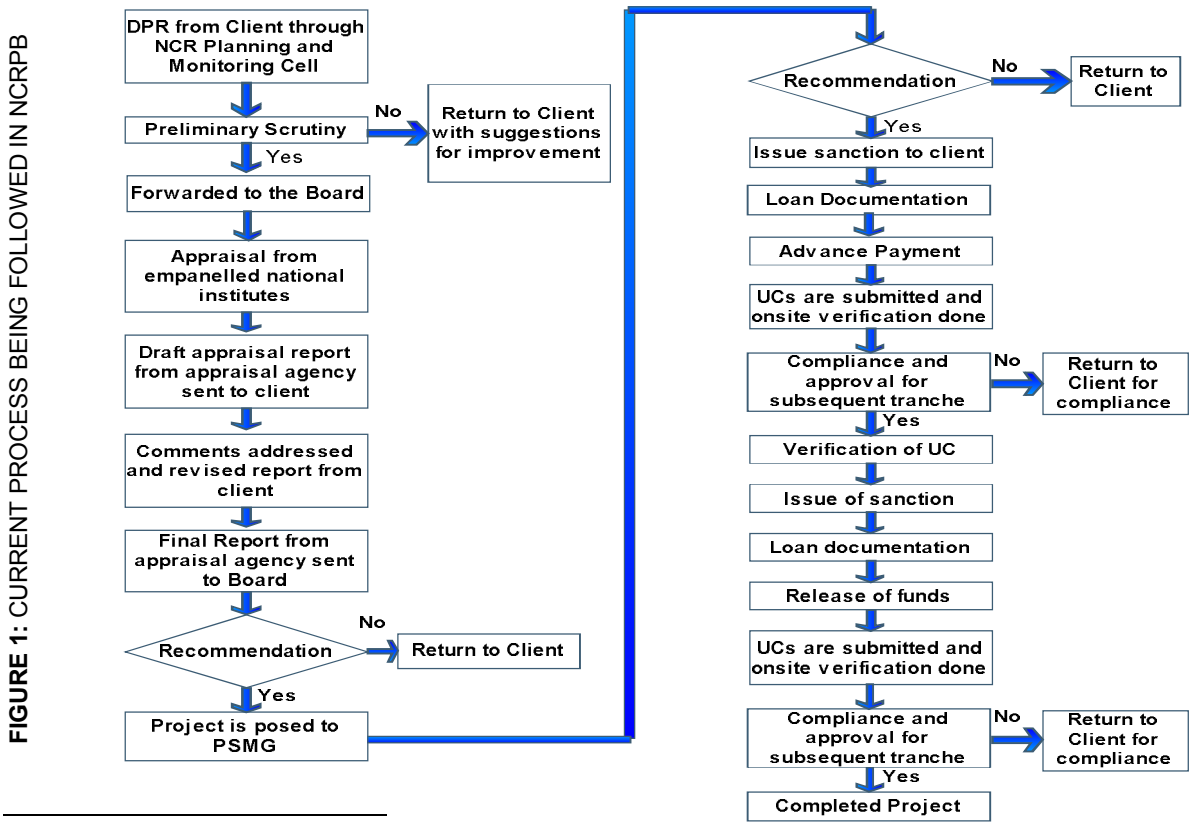


FIGURE 1: CURRENT PROCESS BEING FOLLOWED IN NCRPB

[2] The cost of appraisal and TPIM should be made an integral part of the project cost and project development fund.

[3] Total number of loan installments is determined by the projects cash flows and borrower requirements.

17. **Completion of projects**. NCRPB obtains project completion certificate from the implementing agencies once the project ends and then verifies the reported completion on-site (broad components-wise).

2.3 Expectations

18. It is expected that NCRPB will grow into a greater role as a Financial Intermediary, (e.g., promoting more self-sustaining projects, independent of guarantees from the State). In response to achieving greater financial flexibility, NCRPB has been accepting alternative securities against its loan products. To achieve this standard, the current project development processes have to be more streamlined and more efficient in developing a pipeline of bankable projects. Further, it has to be kept in mind that the interest of the Board's loans must stay competitive and needs to be decided if the Board is ever to be a more prominent NCR infrastructure organization. The cornerstone of effective project pipeline development is an effective proper appraisal analysis.

3 SUB PROJECT CYCLE AND ROLE OF NCRPB

This chapter on subproject cycle aims at…

- Explaining the identifying the entire project cycle spectrum; and,
- Defining the role of NCRPB with respect to project development.

By the end of this chapter, you should be able to…

- Understand the five (5) primary project cycle sequences.
- Understand NCRPB's proposed role.

3.1 Project and Project Cycle

19. A project can be defined as an operation comprising a series of works, activities, or services intended to accomplish an indivisible task of a precise economic or technical nature; one which has well defined goals. The appraisal needs to focus on the whole project as a self-sufficient unit of analysis.

20. A Subproject Cycle[4] represents the basic processes of developing subprojects and as a rule of thumb has five phases as demonstrated in Figure 2. Details of each phase are discussed in the following sections.

3.2 Role of NCRPB

21. NCRPB's strength is its legal mandate to prepare regional and functional plans for constituent states. If it leads to the level of tenderable project reports at different stages, it would facilitate financing and implementation of desired projects. An exclusive fund called Project Development Fund (PDF) is therefore proposed.

22. The Project Development Fund will lead to the development of a pipeline of bankable projects, which can be financed by NCRPB. The details of the same are discussed in the Chapter 4 of this manual. Even if NCRPB plans to raise resources through multilateral agencies or from capital markets, the success of such investments lies in the timely execution and successful implementation of the subprojects.

23. As a financial intermediary, NCRPB should involve with implementing agencies in identifying sub-projects, conceptualizing project proposals, marketing projects with concerned authorities, and appointing consultants for preparing DPR. This way NCRPB ensures to play a prominent role in:

- Identification of consultants;
- Approval of DPRs;
- Final sub-project approval;
- Implementation and quality checks; and,
- Handing over of assets and completion certificates.

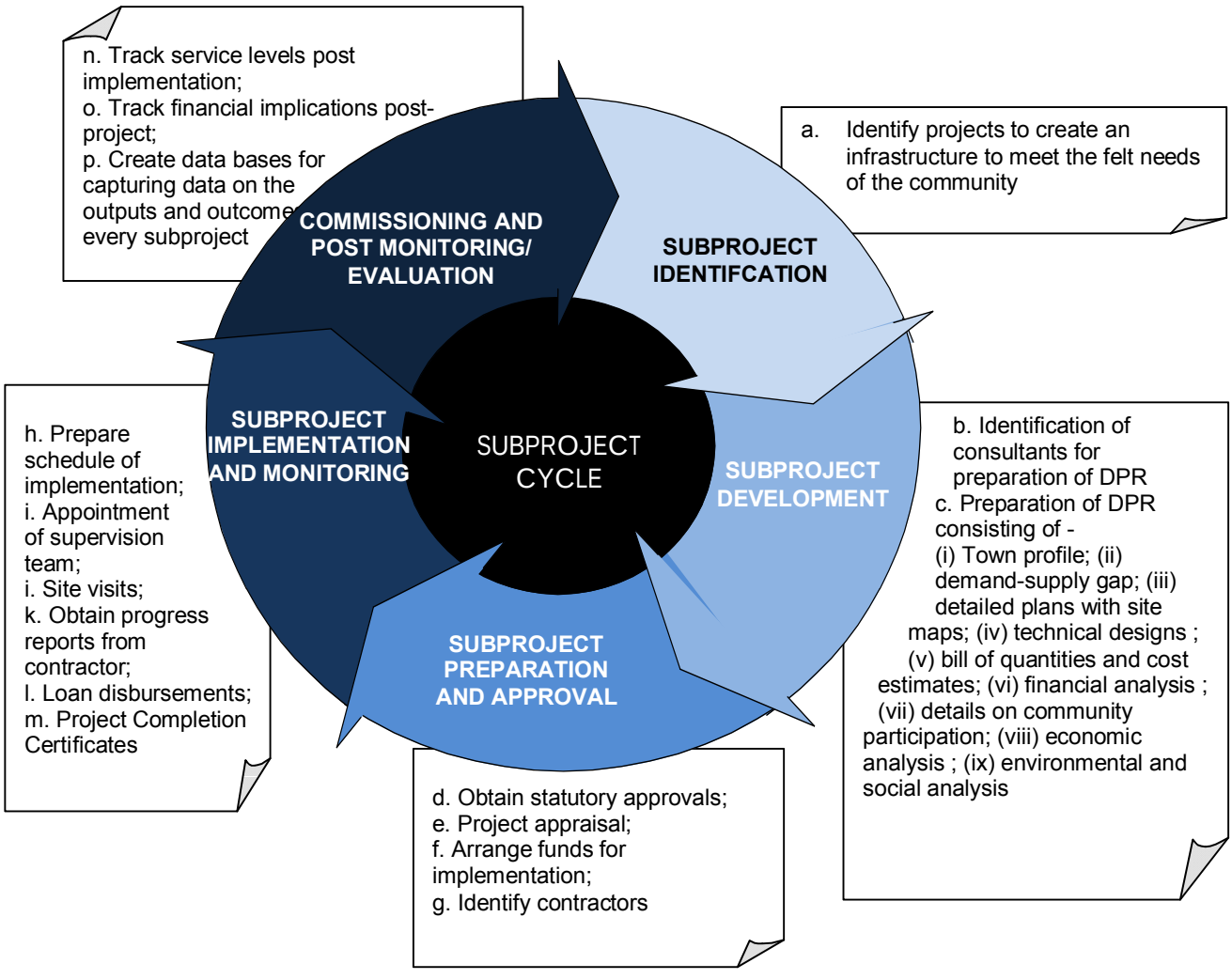
[4] The main project is assumed as the project to be developed by funding agencies for NCRPB. Therefore all projects taken up by NCRPB for lending is termed as 'Sub-projects'.

24. A comprehensive process involved from concept to commissioning as part of sub project cycle is presented in the following section.

3.3 Necessity of Exclusive fund

25. NCRPB has been so far depending on sub-projects posed to them for funding. A pro-active role on marketing or developing sub-projects has been lacking. To address this issue and enable NCRPB to generate projects finally resulting in continuous flow of projects for lending, it is suggested to have an in-house fund, viz., a 'Project Development Fund'. This fund should be exclusively used for developing subprojects, and for providing technical assistance for various departments / local bodies for developing projects, which shall invariably be within the Regional Plan, 2021. The recommended PDF would have various sources of funds and a definite use, as mentioned in the table below.

FIGURE 2: SUB PROJECT CYCLE



3.4 Recommendation for setting up of a PDF

26. It is recommended that NCRPB should set up a Project Development Fund, to provide technical assistance for development of projects.

3.4.1 Source of Funds

27. NCRPB may look at the following sources of fund:

i. A portion of the grants currently available with NCRPB

ii. A financial package along with lending from multi-laterals

iii. Budgetary support from the Government

iv. Revolving fund based on a percentage of internal accruals earned by NCRPB

3.4.2 Use of Funds

i. Technical Assistance to develop conceptual plans / master plans / CDPs / DPRs

ii. Technical Assistance to appoint engineers to monitor projects

28. NCRPB will utilize this fund to develop projects based on needs of the local communities. Service gaps shall be addressed through this fund, by involving consultations with stakeholders and respective departments. Sub-project integration with local and regional plans will ensure a balanced sustainable growth of the region. NCRPB is already providing some assistance for preparation of SRP.

29. Due to limited compliance of Regional Plan recommendations by the States, this fund could be effectively used to bridge this gap. In this context, NCRPB can provide financial assistance to select consultants to prepare sub-regional plans, CDPs and Master Plans. This will result in

- Capturing holistic view of the city and its demands;
- Identifying viable city level infrastructure projects;
- Developing a multi-year investment plan for the local bodies; and
- Conducting financial assessment of participating cities.

30. Based on multi-year investment plans, DPRs[5] can be prepared for selected projects in a phased manner. A model Terms of Reference (TOR) for CDP is presented in Annex 1. The PDF may also be used to support project development in PPP models. See Figure 3: NCRPB Project Appraisal Process Map.[6]

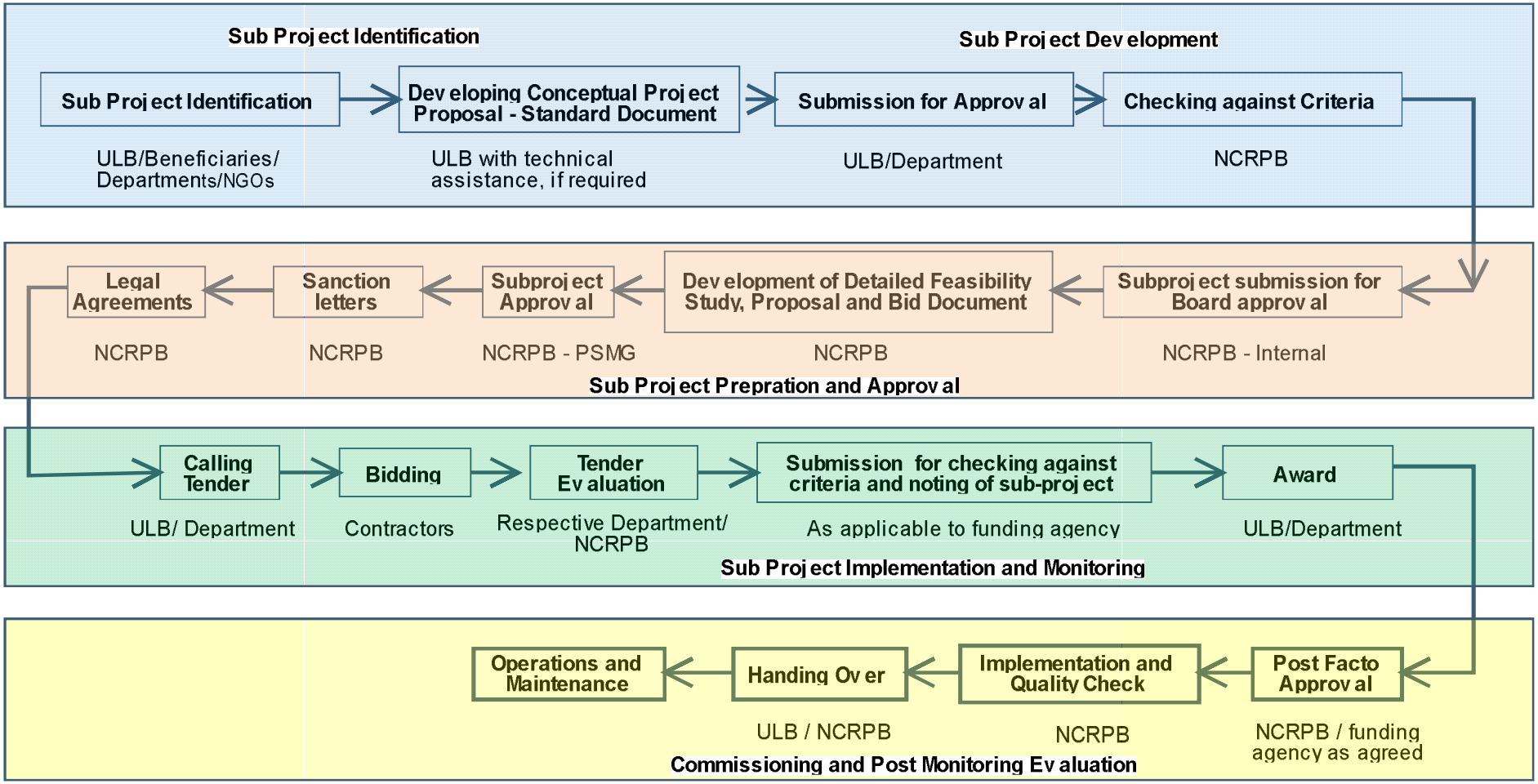
[5] DPR is a tenderable document prepared for individual projects. DPR is dealt in detail in Chapter Sub-project preparation

[6] Figure 3 describes a process for projects posed to NCRPB by state and ULBs. The project DPRs are expected to be ready with all accompanying approvals and clearances, prior to submitting them to respective NCR Planning and Monitoring Cells of the Board. The NCR Planning and Monitoring Cells do the preliminary screening and approval checks. If not satisfied, they return the projects back to the various implementing agencies to undertake the necessary compliances. Once satisfied, the cells forward the project reports to the board for consideration. The Board does the preliminary checks and then forwards the projects to one of the empanelled Appraisal agencies for necessary appraisal works.

31. While handling such funds, it is recommended that Standard Operating Procedures (SOP) are followed within the organization. Key processes that should be followed within NCRPB are presented in Annex 2.

32. With sub-projects identified, the means of proceeding with its development and implementation are discussed in the following chapter.

FIGURE 3: NCRPB PROJECT APPRAISAL PROCESS MAP



4 SUBPROJECT DEVELOPMENT

This chapter on subproject development aims at…

- Explaining the contents of a detailed project report; and,
- Explaining the requirements of financial and economic analysis.

By the end of this chapter, you should be able to…

- Understand all the technical requirements for development project reports;
- Understand how to analyze municipal creditworthiness; and,
- Understand the basics of financial and economic (cost benefit analysis).

4.1 Introduction

33. The objective of identifying subprojects is to put infrastructure in place to benefit the local community. In order to do that, the concept needs to be developed into an implementable design, which will be the basis for actual creation of the asset. Sub-project development denotes that ideas conceived with respect to infrastructure provision will be converted into a report that contains detailed analysis of the subproject with respect to technical, economic, financial, environmental, social, and institutional aspects. The report containing these aspects of the proposed subproject is called Detailed Project Report (DPR). NCRPB shall take up sub-project development only if it is in compliance with Regional Plan 2021.

4.2 Project Concept and Identification

34. This is the first phase of the project cycle and is concerned with the identification of potential projects. The purpose is to establish the basic desirability of a project and identify the high priority projects. The type of projects that would qualify for being placed in this category will largely depend upon the level of development of the economy.

35. The identification process implies undertaking two fundamental sets of activities. First the gaps in the economy should be identified and second, the sector priorities should be identified. These activities are truly dynamic in nature and keep evolving over time. Both these tasks are routinely performed during the planning process at the state, regional or district level.

36. A thorough analysis of the gaps in development and the potential growth is undertaken at the time of plan formulation and during periodic reviews. This also enables a continuous assessment of the progress and the shortfalls and provides valuable feedback to policymakers.

4.2.1 Problems in Project Identification

37. The following set of problems is often encountered in the process of project identification.

- **Resource surveys and project identification:** The lack of finances and the scarcity of skilled manpower have acted as a major deterrent in carrying out detailed resource inventories that are needed for identifying projects. There has been a tendency to move ahead with investments in

certain sectors perceived as lead sectors (i.e. various industries), rather than spending resources on surveys that would identify higher return areas that are perhaps not obvious. For example, the rate of return on road repair have tended to be much greater than the rate of return for new roads, but road rehabilitation projects usually do not get due priority.

- **Lack of skills to produce project alternatives:** While capital scarcity is one of the main constraints, the project of project scarcity is equally serious. There may be lack of skills at the state government and ULB level to produce project alternatives.

4.2.2 Sources of Project Identification

38. A project may be identified in a variety of ways including: (i) conceived by existing departments or ministries in the government; (ii) emerge out of the process of formulation of plans at state, regional, and district levels, (iii) identified by the people's representatives; (iv) proposed as a demand from interest groups or other beneficiaries; and, (v) a product of dialogue between the state, central government, donors and international agencies.

4.3 Process of Development

39. The subproject development involves three activities, viz., (i) Identification of Consultants; (ii) Preparation of DPR; and (iii) DPR approval. If NCRPB intends to develop its own Project Development Fund (PDF), it is recommended to follow the procedures provided in this manual and documented in the annex(ures) to this manual.

4.3.1 Detailed Project Report (DPR)

40. NCRPB has been receiving DPRs from its borrowers. However the scrutiny at the level of NCRPB happens only to the extent of compliance with the Regional Plan 2021. This section deals with the contents that should be made available in the DPR. This section deals with only the components and contents of a DPR, and the appraisal of the DPR by NCRPB officials is given in Chapter 6 of the manual.

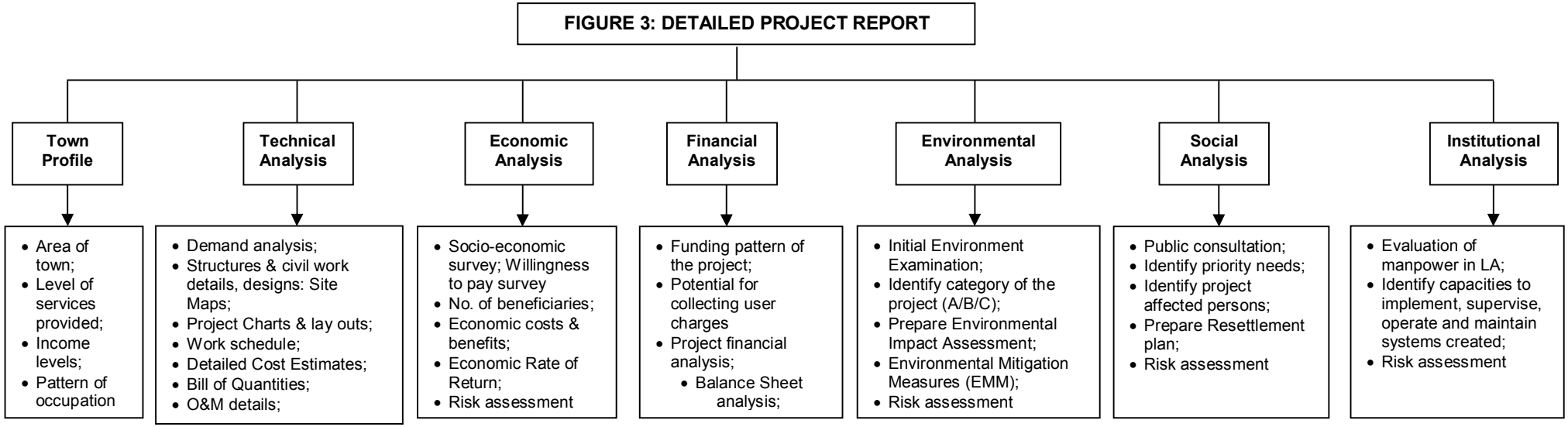
41. DPR provided shall have a detailed analysis of each of the components. The report shall provide various alternative approaches to a subproject and identify an optimum, feasible solution. A detailed write-up on the contents of a DPR is given as follows. DPR for the subproject should be prepared for the prospective population and implementation may be made in a phased integrated manner.

4.3.2 Contents of a Detailed Project Report[7]

42. This section serves managers and engineers in identifying and understanding project finance and management costs. There is no single recipe that fits all projects with respect to project financial analysis. The technical analysis in DPR would need to contain the following:

43. **Quantitative requirements (demand) analysis** should clearly quantify existing and required service levels. The difference between existing service levels and actual requirements indicates a gap that becomes the basis, and provides justification for developing a subproject. This is generally termed as demand-supply gap. This can further be identified and justified through consultations with the community and other stakeholders.

[7] The process of identifying consultants and guidance towards developing terms of reference are given in Annex 2, Appendix 4.



44. The demand should not only relate to the present level of population alone, but should consider the population growth in future as well depending on the life of the asset to be created. For example, the life of a water supply asset could be in the range of 25-30 years. Therefore, the project should be designed for an ultimate population of the next 30 years, for which it needs to be projected using various techniques.

45. **Least cost analysis.** This has a direct impact on cost of the subproject, thus, having an impact on the finances of the implementing / responsible agencies. The subproject report should mention the various technological options available, and identify the best/optimal option suited for a subproject at least cost and reasons for the same. The technology adopted must also be verified with compliance of norms stipulated by various statutory authorities like the Pollution Control Board, etc. It is preferable to adopt a proven technology applied elsewhere.

46. NCRBP and Asian Development Bank (ADB) require that the necessary measures are taken to ensure that the proceeds of any loan made, guaranteed or participated in pay due attention to considerations of economy and efficiency. As such, project designs and selection should adopt the least cost design.

47. **Structures and civil works.** These relate to actual technical designs and site development. Under this stage, the DPR should bring out the type of designs which should be followed during implementation. The designs decide the life of the asset. The future growth (demographic, physical) must be considered while designing a subproject. The subproject report while preparing designs must come out with the kind of materials that are required for construction, quantity of such materials required, cost estimates of these, etc. This is called bill of quantities (BoQ).

48. **Subproject charts and layouts.** Once the principal dimensions of the subproject are fixed, then the subproject charts and layouts are analyzed. The detailed land layout and the structural design and also the design for civil structure are considered while determining the withstanding capacity of the designed structure as compared to the load on these structures. Once these technical parameters are found to be satisfactory the subproject is cleared as technically viable.

49. **Work schedule.** The consultants involved in preparation of DPR should provide a reasonable work schedule for executing the work by the contractor. This work schedule will also form part of the bid document, and will also form a basis, amongst other parameters, for the contractors to quote.

50. **Implementation plan.** It is suggested that consultants come out with an implementation plan which will be followed by the contractors during execution. If the appraisal and design have been properly executed and negotiations to finalize the conditions for financing successfully completed, the formal approval of the project is sought from the competent authority. The formal approval will require the acceptance of funding proposals and agreement on contract documents, including tenders and other contracts requiring the commitment of resources.

51. The next stage in the project's life cycle is its actual implementation. The project implementation phase covers both the completion of construction activities and the subsequent operations and is generally divided into three different time periods. First is the investment period when the major project investments take place. The second is the development period when the production capacity generally builds up. The final phase is that of full operations. Implementation is a dynamic process in which everyone involved with the project has to respond to new problems or changing circumstances that may affect the project's outcome.

52. The process of implantation requires a coordinated plan that considers the allocation of resources to make the project operational. The project manager must bring together a project team including professionals and technicians. This team will in turn, have to coordinate with the various consultants, contractors, suppliers and other interested agencies involved in putting the project in place.

53. Responsibility and authority for executing the project must be clearly assigned. This will include the granting of authority to make decisions in areas related to personnel, legal and financial matters, organization and administration. Proper planning and development of an implementation plan is essential to ensure that undue delays do not occur and that proper administrative procedures are designed for the smooth coordination of the activities required for the implementation of the project.

54. A system of monitoring and supervision has to be evolved for completing this phase successfully and on time. This task is very important because all projects face some implementation problems. The problems may arise either because of some flaw or shortcoming in the planning of the project or simply because of changes in the economic and political environment.

55. The monitoring takes place at various levels. The first and the foremost level is the monitoring by the project manager and his team. This is done on a daily basis. There is also periodic monitoring by the higher management levels in the department or the implementing agency and also by the concerned ministries in the government. Different sets of criteria have to be evolved for monitoring by the different levels of supervisors within the organization and outside.

56. **Financial Management Assessment –** As a development institution, the NCRPB and ADB are interested in enhancing the capacity of borrowing institutions (sub-borrowers). A sound assessment of financial management will help the sub-borrower in analyzing and subsequently improving its financial management capacity. As such, a financial management assessment should be undertaken using the criteria specified in the Annex in Volume II.

4.4 Appraising Projects

57. The agenda for appraising projects is structured in several primary steps, including the following:

1. Project identification;
2. Definition of objectives;
3. Feasibility and option analysis;
4. Financial analysis;
5. Socio-economic costs and benefits;
6. Other evaluation criteria; and,
7. Sensitivity and risk analysis.

The following sections provide a brief explanation of the relevant steps in undertaking a simple benefit-cost analysis (CBA).

4.5 Information Requirements

58. Key data requirements to carry out economic analysis are identified below.

i. Detailed Subproject Report - normally the need for the subproject, the technical design, alternative designs or alternative technology, etc., are important sources of data;

ii. Financial information of the subproject - financial data on the subproject including means of finance, proposed cost recovery arrangements, O&M expenses, etc., are required and these would be available as part of the DPR itself;

iii. The other important data requirement is the socio economic survey of the subproject area. This will provide the basis for arriving at economic benefits and economic losses incurred by the community due to the non availability of the subproject facilities; and

iv. The economic statistics of the subproject area - normally information on demography, main occupation, inflation, commodity prices, etc., are important sources and can be obtained from government publications.

59. Project information and reporting requirements can be expressed in the following matrix. It is recommended that project developers review the matrix and its accompanying data information requirements in developing and analyzing more efficient projects.

Analytical Issues	Information Requirements
Macroeconomic Context	• Current importance of town/community • Contribution to state Gross State Domestic Product • Are there state or national capital region policies that may positively/adversely impact economic activity? Importance of ULB?
Sector Context	• Constraint(s) on community in achieving economic growth? • Comparison to other surrounding ULBs? Per capita water consumption? KMs of Road?
Justification	• Why is the project necessary? • Why is public intervention necessary? • Are there legal/other reasons for project development?
Demand Analysis	• Current water/other consumption • Piped versus non-piped water • Current versus estimated future population; Water coverage area?
Project Rationale	• What is the rationale for project development? For instance, filling demand supply gap resulting from inefficiency (UFW); lack of water production capacity; lack or water piping capacity; and/or need to rehabilitate pipes; need to increase capacity /coverage.
Project Alternatives	• What are possible project alternatives/options?

4.6 Project Identification

60. The project must be a clearly defined (specific) unit of analysis. In other words, the project's inputs and outputs should be identified, quantified and valued. For deciding on whether a project is a 'go' or 'no go' the analysts generally use a net present value means of analysis.

61. The net present value (NPV) of a project is the present value of the benefits minus the present value of the costs. Discounting the time stream of cost(s) and benefit(s) that occur throughout the project's lifetime to current values will allow the user to derive the net present value. Time discounting is the technique that is used to convert the future costs and benefits to their present value and make them comparable.

62. Two conditions must be satisfied if a project is to be judged acceptable:

- The NPV of the project should be positive. In other words, the present value of the benefits should be greater than the costs. Or, at a minimum the NPV should at least be zero. And,
- The NPV of a project must be higher than, or at least as high as, the NPV of mutually exclusive project alternatives.

4.7 Definition of Objectives

63. The objectives of the project should clearly state the key socio-economic objectives that this project intends to influence. Project objectives should include socio-

economic variables and not just physical indicators. A frequent error with respect to the definition of objectives include vague statements like the 'project will promote economic development or social-welfare'. In very broad terms, any investment project has an impact on the social welfare of residents in the concerned region.

64. Social welfare is a multi-dimensional concept with components linked to income (i.e., consumption, investment, and employment) and other components, which are less strongly linked to income (i.e., equity, health, education). These values may be fully reflected by prices to buy the project outputs (i.e. water tariff, garbage collection tariff). However, in many cases, prices fail to play this role particularly in public sector projects. In some cases, social benefits and costs, if it is possible to measure them in money terms, may differ from private values. Therefore, the key question is: do the overall welfare gains arising from the project exceed the costs?

65. However, it may be difficult to determine and forecast all of the impacts of a particular project. As a result, it may be wise for local self governments to focus on a small number of key data, including: the financial and economic rate of return of the project,[8] and some simple indicators of environment and employment impact or of additional criteria. In general, a project that has a high economic rate of return is socially efficient, creating social benefits greater than social costs.

4.8 Feasibility and Option Analysis

66. Local self governments should also provide evidence that the project that they have selected is the best option among other feasible projects. This should be documented by detailed supporting documents and studies. A typical feasibility report may contain information about the economic and institutional environment, forecasted demand, available technology, production plan (including the utilization of an infrastructure), personnel requirements, scale of the project, location, physical inputs, timing and implementation, phasing of the project (expansion), financial planning, and environmental aspects.

4.9 Financial Analysis

67. As mentioned earlier, this section deals with what to form part of the DPR and the project appraisal analysis. The DPR should also contain a financial analysis of the subproject and the financial impact of the proposed subproject in the balance sheet of the ULB/concerned departments/boards. The following aspects should form part of the financial analysis of the DPR.

68. **Operation and maintenance (O&M).** The DPR should give an implementable O&M plan for the asset created, so that ULB will continue operating and maintaining the system as planned as and when the asset is taken over from the contractor. The cost of maintaining the system shall also be mentioned in the DPR with a break-up and justification.

4.9.1 Identifying and Analyzing Costs

69. Every item specified in the design must be given a rate. Normally the schedule of rates published by the government is used as the rate of materials. In case, the

[8] The internal rate of return is the discount rate at which a stream of costs and benefits has a net present value of zero. When values are estimated at actual prices, it is known as the financial rate of return (FRR). If values are estimated using appropriate accounting prices it is called economic rate of return (ERR).

schedule of rate is not available, current market rates will be given. The product of bill of quantities and the rates are called the cost estimates. The itemized cost estimate is called the detailed cost estimate. Once the types of analysis mentioned above are conducted and completed, the subproject is said to have completed its technical analysis. Table 1 below provides a matrix snapshot of the various project cost components that should be reviewed in undertaking detailed project analysis.

Table 1: Example of Project Cost Structure

Capital and Operational Costs	Contingent Costs	Environmental and Social Costs
Upfront (Capital Investment) Costs	**Contingent Costs**	**Environmental Costs**
▪ Public Education and Outreach ▪ Land Acquisition ▪ Permitting ▪ Building Construction/Modification	▪ Remediation Costs (Undiscovered/Future Releases) ▪ Liability Costs including: o Property Damage o Personal Injury o Other	▪ Environmental Degradation ▪ Use or Waste of Upstream Resources ▪ Downstream Impacts
Operating Costs		**Social Costs**
▪ Operations and Maintenance ▪ Capital Maintenance Costs ▪ Debt Service ▪ Other Unexpected Costs		▪ Effects on Property Values ▪ Community Image ▪ Aesthetic Impacts ▪ Quality of Life
Bank End Costs		
▪ Site Closure ▪ Building/Equipment Decommissioning ▪ Post Closure Care ▪ Retirement/Health Benefits for Employees		

4.9.2 Upfront, Operating, and Back-end Costs

70. This section focuses on three major types of costs that should be relatively easy to determine, including:

- **Upfront (Capital Investment) Costs –** These costs comprise the initial investments and expenses necessary to implement an infrastructure investment program.
- **Operating Costs –** These costs include the expenses of managing the infrastructure program. And,
- **Back-end (Close-out) Costs** – These costs include expenditures to properly wrap-up operations and take proper care of facilities at the end of their useful lives.

71. These three cost categories effectively cover the project lifecycle of municipal infrastructure activities. Integrating these three cost components should provide municipal financial and project engineers with an accurate and useful expenditure

accounting for management and reporting. For example, Table 1 above lists the full spectrum of costs associated with municipal solid waste management in specific, but is applicable to any potential investment project. Managers and project engineers are asked to accumulate and analyze the following costs (presented in Table 2, below):

Table 2: Project Finance Cost Data

Cost Category	Methodology
Capital Investment (Upfront Costs)	▪ Identify up-front construction costs / other capital spending ▪ Depreciate up-front outlays
Operating Costs	▪ Identifying operating (recurrent) costs including (wages and salary etc.,) ▪ Building and Maintenance ▪ Rent and Leases ▪ Contract Services ▪ Other
Back-End (Closure) Costs	▪ Estimate Back-End Closure Costs ▪ Removing Pollutants ▪ Include Oversight and Support Outlays ▪ Amortize Closure Cost Outlays
Remediation Costs	▪ Estimate Capital Investment Costs ▪ Estimate Any Ongoing Remediation Expenses
Environmental Costs	▪ Describe Environmental Externalities ▪ Estimate Potential Environmental Costs and Clean-up
Social Costs	▪ Describe Social Externalities ▪ Monetize Contingent Liabilities

Source: Michael Schaeffer 2000 *Municipal Budgeting Toolkit.* Prepared for World Bank, Washington, DC

72. **Arriving at means of finance[9] for a subproject.** Since subprojects will be funded through NCRPB, the means of finance may be fixed according to the criteria specified by NCRPB. The current sub-loan and grant mix for borrowing agencies by NCRPB is given as follows:

Table 3: NCRPB Current Means of Finance

Loan – Up to 75% of the Project Cost (*) Equity from borrowers – 25% of Project Cost (*) – Based on the viability of the project, the loan component could come down, by recommending additional grants to be provided by the respective State Governments. The additional counterparty contribution (margin) may come from additional resources provided by the State Government or their implementing agency.

73. Depending on the viability of sub-projects, NCRPB may act as a catalyst in obtaining additional grants for the sub-projects. NCRPB has so far been lending up to 75% of the project cost to sub-projects. NCRPB may continue to finance this current level or may decide to vary its financing scheme based on individual projects.

74. In any project consideration, there is a need to identify potential project revenues needed to finance the project. In some cases, grants, user fees, or even the general

[9] Means of finance refers to sources of funds for the project by way of loans, grants, equity, etc.

fund of the local self government may be used to provide revenues to pay for project develop. In any case, all sources of project revenue should be clearly identified over a multi-year period.

75. One example of potential project revenues regards water and waste water treatment facilities. Governments (or their corporate enterprises) are responsible for providing water and waste water treatment services. Various studies have shown that water tariffs are low relative to their production costs. Analyzing how the water tariff can be restructured to ensure that water production and investment costs are recovered would be a significant step forward.

4.9.3 User Charges and Tariffs

76. The consultants after an interaction with the community, Council and other stake holders may propose possibilities of fixing user charges in order to generate revenue for the subproject that will help in repayment of the sub-loan.[10] These interactions/surveys are called willingness to pay (WTP) surveys. In addition to WTP survey(s), a socio-economic survey has to be conducted, which will identify community's ability to pay.

77. The outcome of these surveys should form part of the report as a basis for fixing user charges. If there is a possibility of generating revenues from the subproject, the consultants will work out a cash flow stating the extent to which the user charges will cover the cost of the subproject.

4.9.4 Balance Sheet Analysis

78. Even if the subproject is able to generate revenue, it is advisable to do a balance sheet analysis of the borrowing agency, for two reasons: (i) user charges may not cover the revenue expenditure of the subproject fully (like the O&M cost, debt service obligation of the subproject), and (ii) collection of user charges depends on the efficiency of the ULB to collect. It is, therefore, advisable to have a back up of the balance sheet surplus for debt repayments. Hence, the DPR should have an in-depth analysis of the balance sheet of the borrower.

79. Secondly, there are projects, where project recourse financing is not possible. In such cases, the DPR shall contain a detailed financial analysis of the borrower and spell out their borrowing capacity.

4.9.5 Analyzing Municipal Creditworthiness

80. An analysis of financial data of the ULB for the past five years will be undertaken by the consultant. While doing this, the consultant will look into growth of revenue income, revenue expenditure, and growth in ULB's own revenues, composition of income and expenditure which will be useful in arriving at the sustainability of finances of the borrowers by analyzing the trends of growth in these financial parameters. (See Annex: Criteria for Financial Assessment of Borrowers).

81. **Projected financials.** A projection of the finances of the ULB based on the past trend should be calculated for getting an idea about the financial strength/weakness of the ULB for repayment of sub loans to be taken from NCRPB. Projected revenues and expenditures and the balance between the two helps in knowing the financial viability of the borrower and the financial feasibility of the subproject.

[10] Fixing and raising user charges are politically drive decisions and may be difficult to achieve. Hence, in analyzing the project, analysts should stress test the projects with far reduced user fees.

82. With these viability checks, the subproject is said to be financially feasible. There are cases when the subproject is not financially feasible. However, since the infrastructure projects are socio-economic and are based on needs of citizens, they have to be carried out. In such cases, even though they are financially not viable, they could be economically viable. The DPR shall contain a detailed Economic analysis which is briefed as follows.

83. Several steps with respect to the financial analysis should be undertaken, including:

1. The future of the project should be forecast for a period appropriate to its economically useful life and long enough to understand its likely medium and long-term impact.
2. For infrastructure projects, a reasonable time horizon is between ten (10) and twenty (20) years.
3. For productive investment, a reasonable time horizon is about ten (10) years.
4. For the final year, one has to estimate the residual value (e.g. remaining assets such as building and machinery).
5. The project data must contain information about physical inputs and outputs on an annual basis. Project inputs include personnel costs, energy, and any other physical item or investment good supplied on a year-by-year basis.
6. Prices must be provided for each item. The best practice is to consider current prices[11] and forecast their different trends.
7. Financial planning analysis should show that the project does not risk running out of money, the timing of the inflow and outflow of funds, the sources of financing (including all revenues and cash transfers) must match disbursements on an annual basis.
8. Finally, the local government investment planner should show the best estimate of the internal financial rate of return (FRR)[12] or the project or of its financial net present value.[13]

4.9.6 Internal Rate of Return

84. The internal rate of return (IRR) is the rate of discount that results in a zero NPV for the project. The IRR on a project should be at least equal to the opportunity cost of capital, or to the cost to the government of borrowing funds from the private sector to finance the project. The IRR is useful for comparing the profitability of a project with other alternative projects in the same sector.

85. For productive investments (e.g. industrial plants) financial rates of return are usually above ten (10%) in real terms. For infrastructure projects, financial rates of return are usually lower and perhaps negative because of the tariff structure of these sectors. Table 5 provides a snapshot of average time horizon and average internal rates

[11] Current prices are also defined as nominal prices, as actually observed year-by-year.

[12] The investment project analyst should select an appropriate discount rate for undertaking this type of analysis. The discount rate is defined as the rate at which the future values are discounted to the present. The discount rate is usually considered to be roughly equal to the opportunity cost of capital

[13] The net present value of a project is defined as the difference between the present values of a projects future cash inflow and outflows. This means that all annual cash flows should be discounted to the start time at a pre-determined discount rate.

of return of over four (400) hundred projects. The financial internal rate of return and the project evaluation time horizon are provided merely as illustrative examples and should not be considered as project benchmarks.

Table 4 Infrastructure Time Horizon and Financial Internal Rate of Return

Sector / Project	Time Horizon	Financial Internal Rate of Return
Energy	24.7	7.0
Water and Environment	29.1	-0.1
Transport	26.6	6.5
Industry	8.8	19.0
Other Services	14.2	4.2
Average	20.1	11.5

Source: EC Regional Policy "Guide to Cost Benefit Analysis of Major Projects" 2006 Edition

4.10 Socio-Economic Benefits and Costs

86. While the previous steps are important, they are just preliminary to the assessment of social benefits and costs. In calculating the benefits of public projects, the proper valuation to use is the price that consumers are willing to pay of the output.[14] This section briefly presents some of the considerations for measuring economic project benefits and costs. After choosing the best among project alternatives and verifying the financial viability of the selected option, the next step is to test the economic viability of that option.

87. It is strongly encourage that project sponsors, ULBs and interested parties review Volume III of NCRPB's project appraisal analysis toolkit for further details with respect to project appraisal and cost benefit analysis. Volume III is "USAID/India Reform Project Compendium with Practitioner's Guide: The Project Appraisal Practitioner's Guide." This practitioner's manual is currently being used by ADB, GoI – IAS officers and Indian State Governments to assist them with their project appraisal and analysis capacity.

88. The initial step in testing the economic viability of a project is to identify, quantify and value the economic costs and benefits. Cost benefit analysis (CBA) results may be expressed in a variety of ways including internal rate of return, net present value and benefit-cost ratio. While this section does not provide strict guidelines about the preparation and evaluation of projects, it may help government officials in discussing ways of reducing project costs and of improving the socio-economic benefits of projects.[15]

89. Economic analysis is a tool which helps in measuring the magnitude of externalities[16] such as impacts on environment, social benefits and fiscal impacts on

[14] In cost benefit analysis the proper valuation of a benefit is defined as the producer's price plus taxes minus subsidies.

[15] This section obtains much of its material from the EC Regional Policy, "Guide to Cost-Benefit Analysis of Major Projects" 1997 Edition and "Benefit-Cost Analysis Guide" Treasury Board of Canada, Secretariat (1998).

[16] Any social or other costs that spill over from the project towards other subjects (with or without direct) compensation should be accounted for in a cost benefit analysis. Examples of external costs and externalities include:

- Additional net costs for implementing agencies to connect a new water/sewerage plant to exist infrastructure;

various stakeholders associated with the subproject. In other words, this is an analysis by which the impacts on the society can be measured in terms of factors like increase in property rates in that locality, migration of people from other places due to better living conditions, cost savings and other similar factors. Sometimes valuing all external costs and benefits may be difficult, even though identifying them may be rather simple. However, it is a worthwhile undertaking to list the non-quantifiable externalities in order to give local government infrastructure investment decision-makers a more complete picture for making decisions as expressed in the economic rate of return.

4.10.1 Measuring Economic Benefits[17]

90. Many project benefits, particularly with respect to infrastructure, may be beneficial to persons or communities that are not directly affiliated by the project. For example, if a road is built, the advantage in terms of reduction of risk and accidents is considered to be a positive benefit. The savings that truckers or farmers may obtain in bringing their merchandise to stores or crops to market can also be measured and valued as a positive externality. These benefits may accrue not only to the direct users of the product but also to third parties for whom they were not intended. Examples of other potential benefits include:

- **Water supply projects** have often been justified on the basis of expected public and private health benefits, which are likely to occur with the project due to the overall improvement in the quality of the drinking water. Such benefits are likely to occur provided the adverse health impacts of an increased volume of wastewater can be eliminated or minimized. However, it is often difficult to estimate the health benefits in monetary terms.
- In practice, health benefits are often not valued but treated as non-quantifiable benefits. However, if the health benefits are likely to be significant, the Economic Internal Rate of Return (EIRR) should then be supplemented with a qualitative assessment of the importance of these health benefits.
- **Time Cost Saving Benefit:** An important benefit from a piped water supply and provision of public taps is that it brings the sources of water very near to the consumer households and businesses. Timed save with and without projects situations can be estimated. However, it may be difficult to value that time saved in monetary terms. As an approximation, the value of time saved could be calculated on the basis of the local minimum wage rate.

91. In general, once the benefits, including external effects, have been identified and quantified they should be valued.

4.10.2 Opportunity and Sunk Costs

92. In evaluating costs, the correct approach may be less clear. For example, an energy intensive project that depends upon the regular supply of electricity under a regime of regulated tariffs. The regulated cost of energy however, does not reflect the 'true' cost of electricity. So, how should the cost of energy be integrated into the

- an industrial factory has to be shut down while a new water facility is being built, the foregone wages of those furloughed employees would also have to be included in the cost calculation.
- The environmental cost of a new highway or road may be approximated by the potential lost of value of properties near the highway because of increased noise and emissions.

[17] Socio economic benefits can also be measured in terms of the present level of service and the gap between the standards and levels fixed in the Regional Plan 2021 and government.

analysis? The more efficient calculation would consider the opportunity cost of that input. The opportunity cost is the economic value of an input in the best alternative use (or, the true value of any resource foregone).

93. The opportunity cost of the resource must be counted in the benefit cost calculation even if explicit cash transactions are not involved. For example, if an individual could sell his/her computer for Rs3,000 but instead that individual uses the computer on a project, the opportunity cost of the computer (to be counted against the project) is Rs3,000 even though there is no cash transaction involved.

94. A cost is 'sunk' if it is irretrievably made or committed. A sunk cost however, is not to be counted in a prospective benefit cost analysis because it cannot be affected by the investment decision. For example, if the individual from the example above paid $Rs3,000 for the computer, but its market value at the time of the analysis is Rs1,000, then Rs1,000 is the opportunity cost if that person decides to use the computer for project development rather than sell it. The remaining Rs2000 is a sunk cost that is not relevant to the cost benefit analysis.

4.10.3 Economic Costs - The following items should be excluded:

i. Taxes and duties – From the social point of view, direct and indirect taxes and other social transfers are mandatory and must paid. As a result, taxes do not directly correlate to the use of resources and should not be included in project costs. For purposes of this analysis, any direct or indirect taxes including Value Added Tax (VAT) is not included into the cost of the investment.

ii. Sunk costs – These are the costs which are already committed or irretrievably made. It does not have any prospective benefit cost analysis.

iii. Interest payment, principal payment and interest during construction period – these are financial costs and hence are not included as part of economic costs.

95. The identified economic benefits should be classified into quantifiable and non quantifiable items. The quantifiable economic benefits should be quantified using a well defined bench mark. Mostly proxy prices are used for quantification. The socio economic survey should be designed in such a way that the economic benefits which are identified are linked with the measurable losses or income due to the subproject.

4.10.4 External Costs (Externalities)

96. Any social or other costs that spill over from the project towards other subjects (with or without direct) compensation should be accounted for in a cost benefit analysis. Examples of external costs and externalities include:

- Additional net costs for local government authorities to connect a new water/sewerage plant to exist infrastructure;
- An increase in sewerage costs;
- If an industrial factory has to be shut down while a new water facility is being built, the foregone wages of those furloughed employees would also have to be included in the cost calculation.
- The environmental cost of a new highway or road may be approximated by the potential loss of value of properties near the highway because of increased noise and emissions.

97. Sometimes valuing all external costs and benefits may be difficult, even though identifying them may be rather simple. However, it is a worthwhile undertaking to list the

non-quantifiable externalities in order to give local government infrastructure investment decision-makers a more complete picture for making decisions as expressed in the economic rate of return.

4.10.5 Discounting

98. All future social costs and benefits occurring in different years should be discounted at a base-year by using a uniform social discount rate. Many countries have their own social discount rate that they have established for public sector projects. Typically, social discount rates vary between three (3%) and ten (10%) percent. The consideration of the social discount rate is necessary only for the calculation of the net present value of the project and not for the calculation of the internal rate of return. In the case of Cost Benefit Analysis in India, the social discount rate is the coupon associated with the government securities rate (G-Sec).

99. The choice of a discount rate is important because it has a strong (albeit hidden) influence on the direction of the potential project. A low discount rate is feasible for the following:

- An active investment program, because capital seems inexpensive;
- Outright purchase of assets;
- Projects whose benefits may be long-term.

A high discount rate is favorable for the following:

- A cautious capital investment program, because capital seems expensive.
- Leasing and other kinds of deferred-payment options.
- Short-term, flexible planning. And,
- Labor-intensive rather than capital-intensive solutions.

100. Because there is some uncertainty about the correct value of the discount rate, project managers should include it as a project risk variable and using it as a variable for 'stress testing' (scenario testing) project feasibility. This makes it less important to fix on a precise value of the discount rate and places more emphasis on identifying the likely range of values of the discount rate and on interpreting results of the financial simulation.

101. The discount rate in economic analysis represents the next best alternative project in the economy. That is, the rate of return which would have been earned by investing and alternative project in the economy (economic opportunity cost). Because it is difficult, in practice, to estimate precisely what the value should be for each country, 12 percent is used for all member countries as the minimum rate of return for projects under ADB's manuals and guidelines.

4.10.6 Economic Rate of Return

102. After gathering this information, and making adjustments for price distortions and externalities, one has to calculate the Economic Internal Rate of Return (EIRR) or the Economic Net Present Value (ENPV). Why is the calculation of EIRR and ENPV important? EIRR and ENPV are calculated in order to provide a decision rule telling us whether an investment is worthwhile and whether one investment is better than another.

103. It has been standard practice for many multilateral development banks such as ADB, to use EIRR criterion. The project is considered economically viable if its EIRR exceeds the economic opportunity cost of capital (EOCC) in the country concerned that

is the rate of return which would have earned by investing into alternative projects in the economy. Because it is difficult, in practice, to estimate precisely what this value should be for each country, 12 percent is used for all member countries as the minimum rate of return for all member countries as the minimum rate for projects for which an EIRR can be calculated, and the rate at which to choose least cost options.

104. Table 6 below provides a sample from over 400 major projects completed in the European Union and their combined economic internal rates of return. These economic rates of return should not be viewed as benchmarks, but merely as illustrative of the kinds of returns that might be generated.

Table 5 Infrastructure Projects and Economic Internal Rate of Return

Sector / Project	Economic Internal Rate of Return
Energy	12.9
Water and Environment	15.8
Transport	17.1
Industry	18.4
Other Services	16.3
Average	16.8

Source: EC Regional Policy "Guide to Cost Benefit Analysis of Major Projects" 2006 Edition

105. The minimum rate of return of/around 12 percent could be interpreted as economically viable taking into account benefits and costs. A general decision rule may include the following:

- Accept all independent projects (any infrastructure investment projects) and subprojects with and EIRR of at least 12 percent;
- Review and reassess any independent projects and subprojects (non-infrastructure) with and EIRR between 10-12 percent for which additional unvalued benefits can be demonstrated, and where these benefits are expected to exceed unvalued costs; And,
- First reassess and generally reject projects and subprojects with and EIRR below 10 percent.

4.10.7 Sensitivity Analysis

106. In benefit cost analysis, the outcome is typically influence by several uncertain factors. It is important to know how "sensitive" the outcome is to changes in those uncertain factors. Undertaking sensitivity analysis is crucial because it helps the project designs and decision makers determine whether it is worthwhile spending money to obtain more precise data and whether more can be done to reduce or limit any uncertainties. Sensitivity analysis is a limited tool. It treats variables one at a time, holding all else constant. What determines sensitivity? The effective sensitivity of the outcome to a particular variable is determined by several factors, including:

- The responsiveness of net present value (NPV) to changes in a variable;
- The magnitude of the variable's range of plausible values,
- The volatility of the value of the variable. In other words, the probability that the value of the variable will move within a range of plausible values. And,
- The degree to which the range of the volatility of the values of the variable can be controlled.

107. Sensitivity analysis involves changing the value of one or more selected variables and calculating the resulting change in the NPV or IRR. Changes in variables can be assessed on at a time to identify key variables. Sensitivity analysis should be applied to project items that are numerically large or for which there this considerable uncertainty (i.e. cost overrun, delay in construction execution). The results of the sensitivity analysis must be presented together with recommendations on what actions are needed to take to remedy adverse impacts.

108. Any independent variable for which a one (1%) percent change results in a one (1%) or more change in the project analysis is a critical variable and needs to be estimated as reliably as possible.

109. The Asian Development Bank recommends the following sensitivity stress tests be undertaken when evaluating the project to determine if it may/may not continue to be viable: increase cost of capital by 20%; increase O&M costs by 20%; reduce the number of target beneficiaries by 20%; reduce the benefit level by 20%; and, delay the implementation of the project by 1 year.

4.10.8 Benefit Cost Analysis and Business Cash Flows

110. What is the difference between CBA and other business cash flow analysis? The greatest difference between benefit-cost cash flows and business cash flows is:

- The financial benefit cost analysis is concerned with the project entity (only), whereas the economic benefit cost analysis is concerned with the entire economy.
- In business cash flows analysis, discounting is approximated by the weighted average cost of capital (WACC), whereas in economic benefit-cost analysis, discounting is down at the (economic) opportunity cost of capital.
- In financial analysis, some inputs may not have a financial cost and are therefore not shown in the analysis (e.g. if water at the intake is available to the water utility for free). However, these inputs would be shown in the economic benefit cost analysis if the input has a scarcity value (e.g., if raw water is diverted from another alternative use such as irrigation or hydropower).
- Business cash flows may include accrued values, depreciation and other similar allowances. Benefit cost analysis does not use accruals, depreciation allowances or other non-cash items.
- In benefit cost analysis, each cost and benefit is fully recognized at the time that it occurs (not accrued beforehand), timing is dealt through discounting the cash flow, and changes in the values of assets are dealt with by including residual asset values in the investment horizon.
- In benefit-cost analysis, accounts receivable and payable are not recognized until the cash is actually received or paid. Working capital is not a cost, although the change in working capital during a particular period is either a cost[18] or a benefit.[19] Production costs are recognized fully at the time they occur. Changes in inventory may signal either costs or benefits, but the actual measurement of these is through production costs and sales. In brief, benefit-cost cash flows are very simple tables with everything recognized when it occurs.

[18] It is a cost if working capital decreases.
[19] It is a benefit if working capital increases.

4.10.9 Integrated Project Appraisal

111. There are several key principals with respect to reviewing and appraising local government infrastructure investment projects. The role of project appraisal is:

- To identify, select, develop and formulate good infrastructure investment projects.
- To stop bad projects.
- To prevent good projects from being discarded (or destroyed).
- To determine if components of projects are consistent with objectives. And,
- To assess the sources and magnitudes of the risks and to reduce them.

112. The central tool of the analysis is the (pro forma) cash flow, net financial and economic benefits statements. These contain projections of the annual inflows and outflows over the life of the project. The primary goal of project appraisal is to determine if the project will be financially sustainable. In the case of a private sector project, in order for equity holders or any other financial stakeholders to be willing to undertake the project, the net present value of the project's predicted stream of annual net cash flows (NPV) should be positive. Other measures of financial performance include the debt service coverage ratio and the internal rate of return.

4.10.10 Structure of Economic Analysis Report

i. Introduction - a general discussion about the genesis of the subproject, the city positioning in the region are discussed;

ii. Demographic scenario - the population over a time series, its composition in terms of gender, children, literacy, are discussed;

iii. Economic background - the existing key economic activities of the beneficiary population is discussed. The linkage of the subproject with the economic activity is highlighted. Contribution of various economic activities to the GDP is highlighted;

iv. Components of the subproject - The various components[20] of the subproject along with cost estimates are discussed. Description of the components and purpose of the components are discussed;

v. Objectives of the subproject - The macro level objectives are discussed and the principle on which the subproject is implemented along with expected results of the various components and the subproject as a whole is discussed;

vi. Evaluation parameters - the economic benefits of the subproject are identified and the methodology for ascertaining the benchmarks is discussed;

vii. Without subproject and with subproject effects - the impact on the society without the subproject is discussed and improvements which the subproject will bring in are discussed;

viii. Selection of alternatives - this section will outline the various alternatives for achieving project objectives. Benefits and drawbacks of all alternatives are discussed, and the rationale for selection of best alternative is recorded;

[20] Components means different items of a project, for example, the various components of a Sewerage project are Distribution mains, Pumping mains, Collection system, and Treatment plant.

ix. Winners and losers – normally, infrastructure projects are likely to have position effect on some and negative effect on some. The negatively affected people are the losers and the people who benefit are called the winners. They should be identified and remedies planned under the subproject for losers should be discussed;

x. Subproject's fiscal impact - the subproject financial impact on the LA should be discussed and how it is addressed should also be recorded;

xi. Financial sustainability of the subproject - financial sustainability as a standalone subproject can be discussed and if only part cost recovery is possible, then positive externalities should be discussed;

xii. Environmental impact of the subproject - both positive and negative environmental impact of the subproject should be discussed; and

xiii. Economic viability - The economic cost and economic benefit should be clearly identified.

4.11 Environmental Assessment

113. A detailed environmental assessment should form part of the DPR. An environmental assessment shall be carried out, as applicable to the source of funding. If the project is funded out of government funds, the existing practice with respect to environment assessment should be followed. If it is funded out of multilaterals, the assessment as applicable to the donor agency shall apply. In the case of NCRPB, at present there are no specific guidelines as to environmental assessment. In light of the forthcoming loan from ADB, norms of ADB with respect to environmental assessment and its impacts are provided in Annex 3 to this manual.

114. Environmental appraisal (EA) of the subproject will be conducted by looking at whether the proposed subproject belongs to categories A, B or C of the environmental appraisal framework of the Asian Development Bank (ADB), or framework followed by the respective donor agencies. However, this EA is given in conformity with the guidelines issued by the ADB in their operations manual.

i. Category A includes such subprojects that have significant impacts.

ii. Category B includes subprojects that have moderate impact.

iii. Category C subprojects are such that, on the basis of screening, do not have any environmental impact.

4.12 Social Analysis

115. It is suggested that the subproject be identified through a process of stakeholder consultations; this process needs to be captured through the social analysis. Social analysis will also identify positive and negative impacts of the subproject on the community. Also taking a participatory approach to project identification is likely to avoid public protests against the subproject in the future, and builds in local ownership.

116. Consultations should primarily focus on Project Affected Persons (PAP). Although a subproject should ensure that there is no involuntary loss of lad/built-up structures, in case this is unavoidable, PAPs will need to be adequately compensated. Additionally, a resettlement framework has to be developed in such cases; the cost involved in such resettlements should be incorporated in the cost of the subproject. The entitlement for PAPs shall be in accordance with the guidelines issued by ADB or as accepted by ADB.

4.13 Institutional Analysis

117. The evaluation of institutional capacity available to undertake any subproject is a key factor which has to be assessed to ensure that the borrowing agency possesses the required competent staff, especially in the technical area for operations and maintenance of the subproject after the subproject is implemented. The overall manpower strength and the existing number also have to be taken into account to ensure that the overall human resources to manage the subproject are available. The availability of the required machinery, equipment and other fixed assets will of course be another requirement to be assessed.

118. The role which the competent staff could play in getting the subproject operations, supervision and maintenance underway would be vital. It is evident that the availability of other resources – financial, machinery, equipment and fixed assets will not serve any purpose unless competent staffs are available to manage and execute the operations.

119. Apart from the numbers of staff available judgment will also have to be made on managerial efficiency and effectiveness. The assessment of these criteria would be evident from the standard of data and information made available. For example, the capacity to prepare Action Plans and Annual Budgets methodically would establish the experience the institution has acquired in managing the activities effectively. Similarly, the experience acquired in managing similar subprojects earlier would confirm the capacity the borrowing agency possesses to undertake this subproject as well. The interviews to be held with the key personnel of the borrower should also establish their commitment to achieve the operational challenges earmarked.

120. To sum up, a subproject development phase indicates materializing concepts into implement able proposition by way of preparing a DPR is subproject development, leading to procurement of contractors for works, and approval of loans for sub-projects. The DPR contains a detailed analysis of various aspects of a subproject like, technical, economical, financial, environmental, social and institutional and also provides options, alternatives and suggestions for developing a feasible subproject.

5 SUBPROJECT APPRAISAL AND APPROVAL

This chapter on subproject appraisal and approval aims at…

- Explaining the nature of obtaining administrative and technical sanction(s); and,
- Explaining the subproject appraisal process.

By the end of this chapter, you should be able to…

- Understand all the technical requirements for obtaining project approval; and,
- Have an understanding as to how to move a project forward once approved.

5.1 Introduction

121. Once the DPR is complete in all respects, this has to be appraised by NCRPB. There are intervening steps from the time of completion of DPR and approval, which are as follows:

- Project to obtain Administrative and Technical Sanction;
- Receipt of loan application from the borrower;
- Preparation of Initial Screening Report (ICR);
- Sub project appraisal;
- Preparation of Appraisal Note and approval of subproject by the Board of NCRPB;
- Issue of Sanction letter by NCRPB to respective borrowers; and,
- The borrowers / implementing agencies will begin their tender processes upon loan approval from NCRPB. In the present situation (ie., without a multi-lateral funding) the current process could continue. However, when multilateral funding is taken up, there could be requirements where NCRPB will be facilitators of such procurements.

Each of the above steps are briefed in the forthcoming sections

5.2 Administrative and Technical Sanction

122. Any Government project has to have a formal administrative and technical approval. These are normally obtained by the implementing agencies themselves. The authority for such administrative and technical approval differs from state to state. NCRPB has to verify if the project has these approvals. If a loan is taken up for funding before these approvals, there are risks of project being dropped or not being taken up further. It is recommended that projects be funded only after these approvals.

5.2.1 Receipt of Loan Application

123. NCRPB shall accept a filled-up sub loan application from the borrower, after ensuring that the projects have the necessary approvals from the appropriate authorities. The loan application form shall be comprehensive, to provide any detail required for the appraisal. A detailed note on sub loan application in outlined in Annex 4. NCRPB has

the practice of obtaining sub loan application forms along with the DPR. This can be continued in the absence of NCRPB developing a project report. If NCRPB decides to develop DPRs with the proposed PDF, upon completion of the DPR, NCRPB will obtain sub loan application.

5.2.2 Initial Screening Report

124. A set of lending policies and procedures are provided as part of the Treasury Management Manual, for NCRPB to follow. An initial screening of the loan proposal would help in saving time in assuring conformity with the lending policies of NCRPB. A format of NCRPB is given in Annex 5. If a project does not satisfy the norms given in the Initial Screening Report (ISR), the project should be returned for compliance or shall not be taken up for further appraisal, as the contents of the ISR ensure safeguards to NCRPB for its loan.

5.2.3 Sub -Project Appraisal

125. The primary focus of preparation of this manual is to establish a comprehensive project appraisal systems and procedures. Currently, NCRPB does the project appraisals through the National Institutions (NI) who are the appraisal agencies appointed by them. These institutions are very strong in technical aspects of projects, and do not have inherent strengths in financial or economic aspects.

126. NCRPB should either outsource its project appraisal to firms who have all the strengths or develop their own inherent capacities in doing these appraisals. In order to guide the officials of NCRPB, a more detailed note is given in the section 6.2 of this manual, and a detailed analysis of each aspect of appraisal is in Annex 5 of this manual.

5.2.4 Loan Sanction

127. After the appraisals are complete, the loan is sanctioned by the Project Sanctioning and Monitoring Group (PSMG), as currently practiced by the Board. NCRPB has been developing appraisal notes, which are basic in nature and gives the required parameters. Anecdotal evidence suggests that the project appraisal note can be substantially improved by providing more detailed financial and economic analysis of the projects, more information with respect to the project fiduciary risk (including providing a fiduciary risk analysis) and risk mitigation strategy.[21] Succinctly stated, the project appraisal note provides the information about which project lending is made. The loan is sanctioned with certain parameters, which are detailed in section 6.3 of this chapter. NCRPB has a role to ensure that subprojects have obtained necessary approvals, which will assure them of the take-off of the sub-project.

5.2.5 Sanction Letter.

128. Once loan is approved by the PSMG, a loan sanction letter will be sent by NCRPB to the borrower. A model subloan sanction letter is illustrated in the Annexure to this manual. After sending the sanction letter, loan agreements will have to be entered into with the respective borrowers. A model sub loan agreement is available in the Treasury Management Manual.

[21] In this example, we provide that the definition of fiduciary risk should be expanded to include institutional, political risk, implementation and market risk. Please see “Risk Management Manual and Risk Framework”

5.3 Subproject Approval

129. Subproject appraisal can be defined as a comprehensive and systematic review of all aspects of a subproject. The appraisal of a subproject is done by a team comprising of an engineer, an economist, a finance specialist, an environmental specialist, a sociologist, and an expert in institutional analysis/organization development. Unfortunately explicit and clear cut formulas do not exist for appraising a subproject. Nevertheless, an objective appraisal highlights weak areas in the subproject. This helps in strengthening them adequately so as to ensure that the subproject is complete in all aspects and, therefore, it can be implemented.

130. Since subproject appraisal is an exercise for assessing the future based on certain assumptions, it is necessary to understand the environment in which the subproject has to sustain itself. Appraisal is carried out based on the assumptions made and the basis of such assumptions as stated in the DPR. The overall subproject analysis would help in estimating the rate of success of the subproject within the existing resources constraint and environmental conditions.

131. The subproject analysis is completed after making necessary revisions and modifications in the plans based on discussions, screening and examinations. Project appraisal depends on the quality of information provided by the ULBs/ Statutory Board / Departments. The subproject should be appraised considering the completion of the subproject within a time frame as any undue delay in implementation is bound to affect the cash flow projections. The appraisal should be done with a view to build a long term sustainability of the subproject.

132. The main criteria to be considered by a financial institution while appraising a subproject is that the sub-loan should be adequately secured with proper charge on the assets. However, the concept of a forced sale of assets to recover the sub loans is repugnant to the thinking of financial institutions as in case of infrastructure, recovering the mortgaged asset is practically not possible.

133. The real security is represented by the surplus which the subproject is estimated to yield and the appraisal has to ensure that such surplus will be available to service the sub loan obligations. Another very important aspect of subproject appraisal is rigorous assessment of the risk elements and exploring the avenues for protecting the subproject and the lenders against those risks. This is called risk mitigation (See “Risk Management and Risk Framework Manual”).

134. It must be noted that appraisal does not establish a categorical statement or assurance of the long range prospects of the subproject or ULBS/ Statutory Boards / Departments but only provides broad guidance to the financial institution to form its judgment regarding the future cash flows and prospects of a particular subproject and to work out terms and conditions for its assistance.

135. Financing infrastructure subprojects involves a large outlay of funds and an extended period of repayment. Since infrastructure subprojects require huge outlays, it is normally supported by grants from the government, external funding from multilateral agencies, etc. In situations where multilaterals are funding a subproject, a number of compliances need to be followed. These include environmental, social safeguards, community participation, institutional policies, financial management of the lender, etc.

136. The conditions which have been agreed to by the government and the multilateral agencies have to be complied with by the lending institution. Presently, NCRPB does not have a multilateral funding. Therefore, the appraisal shall ensure norms of the GoI or the

respective states with respect to procedures for environmental impacts, land acquisition, etc.

5.4 Subproject Approval

137. After completing their appraisals, a formal approval from the PSMG for the sub loan and grant of the subprojects for which applications are received is required. For this purpose, NCRPB has to prepare a detailed appraisal report which contains the information collected during appraisal. The appraisal report also acts as a data base for NCRPB and other related agencies to look into every subproject developed and created under their funds. In order to act as a data base the report will contain comprehensive information on the subproject.

138. The detailed appraisal reports should contain the following:

- **Overview.** To begin with, the basic details which an appraisal report should consist of is the town profile, the present level of supply of services, and objectives of the proposed subproject in terms of outputs and outcomes expected from it, in addition to the amount requested as loan.
- **Subproject information.** Relevant data pertaining to the subproject, like the demand-supply gap, technical feasibility, financial feasibility, environmental and social feasibility, institutional arrangements, etc. are detailed and the note provides information on the associated risks and mitigation measures. The basics are mentioned briefly as follows-

    i. Demand-supply gap: Information about the present level of services and the actual requirement of the community with respect to the service proposed under the subproject which is the demand. The gap should be clearly established in the report, which provides a justification to fund the subproject.

    ii. Technical feasibility: This section should give an overview of the technical arrangements proposed under the subproject. It also talks about the technical options that were looked into during preparation of the subproject, and the reason for choosing a particular alternative. This section should also indicate the intricate technical details like the sizes and diameters of pipes, etc.

    iii. Financial feasibility: This is the crucial information for the lender (NCRPB), which gives an overview of the finances of the ULBs, their capacity to generate revenues, their income and expenditure pattern, and projections based on the past trends of income and expenditure and also lists down the assumptions made for projections. It provides results on the viability of the subproject and also guides the Board to take a decision whether to fund the subproject or not. Project-specific information will also be given in this section like the subproject cost, means of finance, terms of sub loan, debt obligations in the subproject, etc. This section should mention DSCR, IRR of the subproject and the TE/TR and DS/TR of the previous year of the ULB. These ratios will be the basis for taking a decision by the Board of NCRPB.

    iv. Economic feasibility: This section should contain the ERR worked out for the subproject, and the factors considered for calculating the ERR should be furnished. If the IRR of the subproject is less than the cost of funds, the subproject can still be taken up if ERR is greater than at least 10%[22].

[22] ADB norms stipulate an ERR of 10% to 12%.

v. Environmental and social feasibilities: Adequate emphasis on this section shall be given if multilateral funding is used. In case NCRPB's own funds are used, the policies of Government of India or the respective state policies apply. More details are given in the Annex 3 of this manual.

vi. Institutional Feasibility: Information about the institutional arrangements existing for implementing and operating the subproject and suggestions for third party supervision if supervision capacities are not available in the ULB / implementing agency / Departments, shall be provided in this department. Any recommendation shall also be part of the conditions of the loan.

vii. Risks and uncertainties: NCRPB should list down the risks which can be foreseen in implementing the subproject and suggest remedial measures for overcoming such risks.

6 SUBPROJECT IMPLEMENTATION AND MONITORING

This chapter on subproject implementation and monitoring aims at…

- Explaining the process during the time period when the construction activities are taking place;
- Explaining the processes involved with effective project monitoring.
- **By the end of this chapter, you should be able to…**
- Understand work agreements, appointment of supervisory consultants, sub-loan and grant disbursements, and completion certificates.
- Understand effective project monitoring techniques.

6.1 Activities

139. The implementation phase refers to the time period when the construction activities and handing over activities are ongoing. During the implementation phase, there are lot of possibilities of gaps in communication and difficulties in coordination. In order to avoid such possibilities, a thorough understanding of the subproject is required for which meetings could be convened with the contractor, implementing agency and other stakeholders of the subproject. The following provides an outline of activities involved under implementation phase:

i. Work agreement(s) with contractor;
ii. Appointment of supervisory consultants;
iii. Site visits;
iv. Sub loan and grant disbursements; and
v. Completion certificates.

140. The above-mentioned tasks are explained in greater detail in the following paragraphs.

6.1.1 Work Agreement with Contractor

141. The works agreement is entered into between the implementing agency and the contractor. NCRPB shall ensure that agreement is entered, as it provides a basis for releasing their payments for mobilization. A copy of the work agreement shall be made available in the files of NCRPB.

6.1.2 Appointment of Supervisory Consultants

142. NCRPB can use the 'PDF' for appointing supervisory consultants, who will be mandated to ensure smooth flow of work and a speedy progress.

6.1.3 Site Visits

143. NCRPB is presently conducting site visits to ensure progress. This shall be continued, as this will help in identifying field issues, and NCRPB shall take it up to resolve through various departments. Periodical site visits also help to know more on the participation of the community which is required under these subprojects. Feedback from the community can also be obtained on the performance of the contractor, in terms

of co-ordination and co-operation given by him to the public, and how regular are they in completion of their jobs.

6.1.4 Sub Loan and Grant Disbursements

144. Presently, NCRPB disburses funds in three tranches, based on the projections of cash flow by the borrowers. However, this is required to be changed and disbursements should be based on progress of works. This system will enable NCRPB to have a check on the progress of works and will also ensure progress. More details on disbursements are given in section 7.3 of this chapter.

6.1.5 Completion Certificates

145. Once the project is completed, NCRPB shall obtain a certificate from the implementing agency for completion of the project.

6.2 Appointment of Supervision Consultants for Sub-project Monitoring

146. While the contractors have been identified, as proposed in the appraisal report, if a team of third party consultants are required, NCRPB shall verify if consultants have been appointed, and the scope of work of such consultants. If NCRPB decides to set up a PDF, it is better to engage consultants through this fund, as NCRPB could have a direct feedback on the progress of works.

147. The payments to contractors will be recommended by these consultants/supervisors by recording the actual work done by the contractor and the quality of the job. The broad scope of work of supervision consultants are given comprehensively in the TOR in annex 7 of the manual.

6.2.1 Appointment of Progress Review Committee

148. Even if a supervisor or a full-time supervision consultant is there, the implementing agency and the funding agency should periodically review the progress with the contractors and supervision consultants. The Review Committee should consist of the following members which will enable holistic view of the project, and the meeting will act as a tool to sort out issues in the field-

i. Representatives from NCRPB;
ii. Representative of the State;
iii. Head of the respective ULB / Statutory Board / Department;
iv. Project Engineer
v. Supervision consultants;

6.2.2 Submission of Progress Reports

149. The supervisor/supervision consultants shall submit progress reports on all subprojects supervised by them on a monthly basis which will be used by all concerned including ADB for review of subprojects. A model progress report is given in the Volume II Annexure.

6.2.3 Role of NCRPB in Sub-Project Implementation and Monitoring

150. NCRPB has to play a pro-active role in implementation and monitoring of subprojects both in terms of short-term and futuristic goals of NCRPB. The following may be the extent of involvement of NCRPB:

i. NCRPB has to have a copy of the works agreement between the contractor and the ULB.

ii. NCRPB has to ensure appointment of supervision consultants/supervision team inside the implementing agency. In case NCRPB, does not appoint, it must be ensured that the borrowers appoint a project supervision consultant. This could be put as a pre-disbursement condition. This means that NCRPB will release even the first installment only if this team is in place to monitor the works of the contractor.

iii. A member of the technical team of NCRPB will be a member of the progress Review Committee formed, so that it will be in constant touch with the progress of subproject and can assist the committee in resolving field issues.

iv. Maintain progress reports in their data base in order to keep track and a consistent follow-up.

v. NCRPB has to go for site visits to ensure smooth progress. It is also preferable to have NCRPB's engineer on site if it is a bigger and complex subproject.

vi. NCRPB will prudently manage the funds and ensure prompt payments to borrowers without delays

6.3 Disbursements

151. After sanction of loan, the focus is on disbursements of funds. However, in order to ensure that the funds are being utilized for the purpose it was intended and to safeguard repayments, certain pre-requisites are to be followed prior to first disbursement:

- The first would be to ensure that the works agreement has been entered into with the contractor.
- If this is not done, there is all probability that the works get dropped after the loan release.
- Therefore, first disbursement may be made after obtaining a copy of the works contract agreement from the borrower
- It has to be ensured if proper supervision of the works is taken care of.
- If there is inadequate supervision, NCRPB can insist on having a third party supervision, which they can also appoint from their PDF.
- A progress review committee shall be set up for reviewing the progress of works.

6.4 Disbursement Procedures

152. For the purpose of loan disbursements, the following procedure shall be adopted by NCRPB:

i. For disbursement of loan, a request letter shall be obtained from the respective borrower, for release of funds from grant and loan

ii. Funds can be released upfront to the extent of mobilization advance, if any in the agreement, initially, and from the next tranche onwards, funds will be disbursed based on the progress of the work.[23]

[23] Funds are not necessarily disbursed in three equal annual tranches. Funds are often released on the basis of the required progress in terms of physical expenditure. A criteria of introducing physical mile stones

iii. NCRPB shall release the loan funds only to the borrower and not to the contractor, at any point of time.

Contents of Statement of Expenditure (SOE)

- A copy of invoice produced by contractor – these are the invoice the contractor submits to the implementing agency for making payments.
- A copy of vouchers signed by contractors for receiving payments – these relate to the vouchers in which the contractors have signed upon receipt of payments from the implementing agency. In case implementing agency and the contractors are different, vouchers relating to the amount transferred from the borrower to the implementing agency shall also be obtained.
- Purpose for which payment is made – this is to ensure that the payments are made only for the subproject under progress and not relate to any other payment.
- Bill amount and the amount of deductions made on the bill – every bill amount will be having a deduction by way of binding on the agreement towards withholding on performance criteria, taxes and other duties, etc. These deductions will also form part of the SOE.
- Net expenditure – this is net amount paid to the contractor for that particular bill after all deductions
- A summary of the payments and the total amount paid to the contractor will be present in the format in order to check the total payments made out of the subproject and how much has been utilized.

iv. After the first release of funds, the borrower should submit a Statement of Expenditure (SOE) which will provide details on actual payments released to the contractor, based on which further funds will be released. A model form of SOE is presented in annexure 9. The statement of expenditure requires the following from the borrower:

153. The amount of loan will be restricted to the cost at which the subproject is completed. It is always preferable to hold at least 10% of loan till the subproject is complete and only then release the last tranche of loan. An amount over and above the subproject cost will be borne by the respective agencies, as per the terms of the loan. Before the last tranche is given, NCRPB shall ensure that the borrower's contribution has come into the subproject. Before every release of loan, an advanced receipt should be obtained from the borrower, procedurally. The following model format of advance receipt may be used.

ADVANCE STAMP RECEIPT

Received a sum of Rs.____ from National Capital Region Planning Board, vide Cheque no. dt. _____ towards Loan for _____ project in _____ Municipality/department/board

Date: Authorized Signatory

……..Name of the borrower

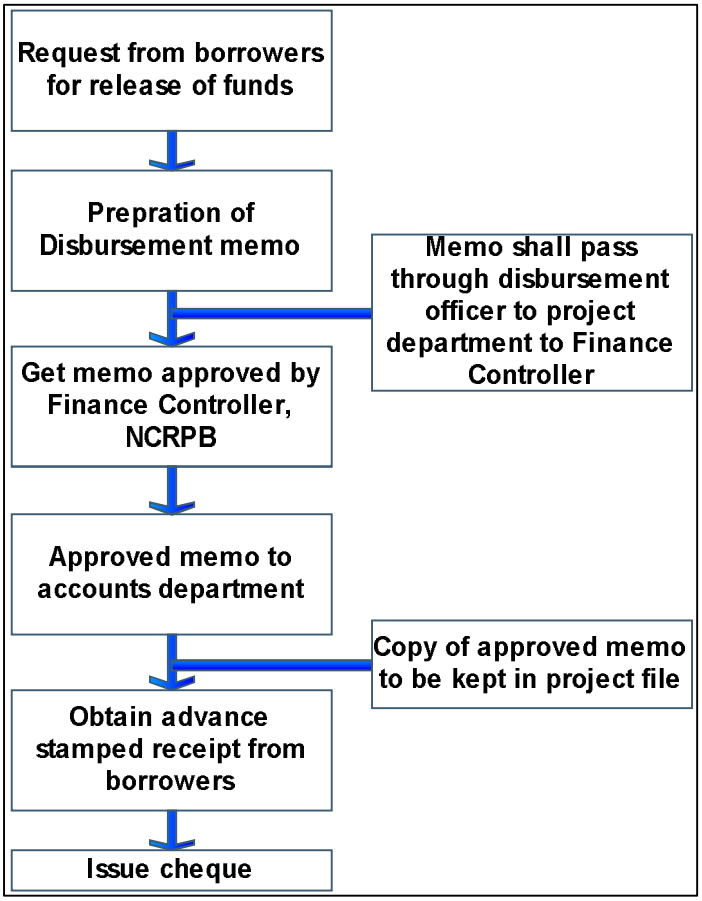
……..State Seal

along with the financial target can also be considered for ensuring some control on a project's timely completion.

6.5 Internal Office Procedure for Sub loan Disbursements

154. Since disbursements of funds entirely fall under the control of NCRPB, it is suggested to have internal procedures which enable a sustainable process of disbursements. This procedure is applicable for any release of loan including multilateral funding, if any. The process starts from requisition from the borrower for release of funds, and verification of documents by NCRPB and finally disbursements; an outline of the process is produced in Figure 5.

FIGURE 5: OUTLINE OF LOAN RELEASE PROCEDURE



155. NCRPB will be required to follow the following internal office procedures for loan disbursement

i. Request from local body for release of loan. It is not required for obtaining a request letter for the first release of mobilization advance. For subsequent releases, the release is justified if a request is raised by the borrowers.

ii. Verification with agreements / disbursement conditions. Upon receipt of request, the projects wing of NCRPB shall verify the conditions put forth in the Board note for disbursements and also verify with the loan agreement on the conditions to be satisfied before disbursement. Upon satisfaction of these criteria, the projects department will prepare a loan disbursement memo; a format of loan disbursement memo is given in annex 10 of this manual.

iii. Preparation of disbursement memo. A memo/format will be prepared by the projects division and sent to the accounting division, for release of loan. The format will contain the following:

   a. Name of the subproject;
   b. Amount of loan approved;
   c. Amount of grant approved;
   d. Amount of loan disbursed so far;
   e. Amount of grant disbursed so far;
   f. Details on progress of works;
   g. Details of site visits undertaken;

h. Details of security mechanism; and
i. Details of Statement of Expenditure submitted by the borrower

6.6 Management Information System

156. Funding subprojects is the main portfolio of NCRPB. Hence, it is important to maintain a proper database on the number of applications and number of loans sanctioned and their costs. This database will act as information for reviewing the performances of NCRPB at any point of time. The formats shall be filled in by the concerned staff of NCRPB by the last week of every month.

157. Suggested formats for various types of databases to be maintained by NCRPB staff are reproduced as part of the Systems analysis Report. However, annex-11 outlines a model format for arriving at a database of loan applications received during the year, loans sanctioned during the year (to be done on a monthly basis), loans fully disbursed and subprojects completed, loans partly disbursed and subprojects not taken off/fully completed, and loans sanctioned and subproject under progress, for an officer to always have a data base.

6.7 Procurement

158. Procurement of contractors is generally the purview of the implementing agencies. It has a very great impact on the progress of project, as projects kicks off only after the contractors are identified. Presently, NCRPB does not intervene in procurement aspects of a project. However, it is suggested that they follow up on procurement of projects with the implementing agencies and update status and resolve issues by facilitating. This could be a major step forward and also a new area of development for NCRPB; however, this could be attempted now, as when NCRPB approaches ADB for assistance, as a nodal agency, NCRPB would require being a facilitator of such procurement. For this purpose, NCRPB should be conversant with the processes of the participating states. To begin with, a mere participation with the borrowers during procurement would provide a better understanding of the State's processes. When multilaterals are approached, the norms applicable to the donor agency such as ADB or World Bank apply. NCRPB will have to follow such rules at that point of time. Since the State's / the norms of multilaterals apply, no separate procedures are given in this manual.

159. However, if NCRPB decides to participate in procurement, it is imperative that a technical person is exclusively appointed for the purpose.

6.8 Subproject Completion

160. At the end of the subproject, when all works as in the agreement are complete, trial runs or test checks are conducted in the presence of the supervision consultants and the ULB. When the test checks are successful, the implementing agency shall prepare a completion certificate duly acknowledging that the works are over in all respects and it will provide the same to the contractor.

161. The completion certificate given by the implementing agency has to be supplemented by a Utilization Certificate to be given to the funding agency stating the amount has been utilized for the subproject till completion (model format reproduced at end of this section). This is required because the subproject cost might undergo changes depending on the variances occurring during execution.

Since the funding agency has to know the exact cost up to completion of the subproject, this is very much required.

162. The asset is handed over formally vide a letter to ULB to operate and maintain the system. NCRPB (the funding agency) will also be intimated about handing over of subproject. Once the completed subproject is handed over to the concerned department, thereon, it becomes the responsibility of all stakeholders in the maintenance of asset and monitoring on the service levels. A pictorial representation of the subproject monitoring process is presented in figure 6.

163. In conclusion, subproject implementation and monitoring begins once the work is awarded to the contractor. Appointment of supervision consultants or a team within the implementing agency has to be constituted simultaneously when the award to contractor is done. This is to ensure timely progress and smooth running of works.

164. The appointed consultants will review the work and the quality of work and report to the Review Committee formed for the purpose of the subproject. The supervision consultants will recommend payments to the contractor based on the works completed. NCRPB will disburse funds only on appointment of supervision consultants.

FIGURE 6: SUB-PROJECT MONITORING PROCESS