



**INTERAMERICAN
DEVELOPMENT BANK
(IDB)**



**LATIN AMERICAN AND CARIBBEAN
INSTITUTE FOR ECONOMIC AND
SOCIAL PLANNING (ILPES)**

COLOMBIAN NATIONAL PLANNING DEPARTMENT (DNP)

**NATIONAL INVESTMENT
PROJECTS BANK**

PROJECT ATN/JF-3342-CO

**VOLUME I
CONCEPTUAL DESIGN**

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NATIONAL INVESTMENT PROJECTS BANK
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INTRODUCTION

The enactment of the New Budget Law (Law 38 of 1989) marked the start of a long and gradual process designed to enhance the efficiency of public investment management in Colombia. A fundamental component of this process is the National Investment Projects Bank (the BPIN), governed by Decree No. 841 of 1990.

For the development and setting up of the Projects Bank, the National Government has signed a technical assistance agreement (ATN/JF-3342-CO) with the Inter-American Development Bank (IDB), whereby the latter will supply up to the equivalent of 130 million yen out of the Japan Special Fund.

The Colombian Government, through its National Planning Department (DNP), has also signed an agreement with Instituto Latinoamericano de Planificación Económica y Social, ILPES, whereby the latter undertakes to act as executing agency for the project.

In March, 1990, an initial report on the project was presented by DNP and ILPES.^{1/} This report consisted of a diagnostic study of the situation at both national and territorial government levels in the areas of project appraisal and systematized public investment information management.

In June 1990, based on the results of the diagnostic study, a preliminary version of the conceptual design and software design of the National Investment Projects Bank (the BPIN)^{2/} was submitted. This document was widely distributed throughout the Colombian public sector, with a view to eliciting suggestions for streamlining the proposed design. Then, after the comments had been received and the necessary corrections made to the document,

^{1/} Primer Informe de Avance Proyecto ATN/JF-3342-CO. Banco de Proyectos de Inversión de Colombia. Diagnóstico del Presupuesto de Inversión y Catastro de la Información sobre Proyectos a Nivel Sectorial y Regional. Bogotá, March 1990.

^{2/} Banco de Proyectos de Inversión Nacional. Diseño Conceptual y Diseño Lógico (draft for discussion), Bogotá, June 21, 1990.

it was used as a basis for Volume I of the BPIN Operation and Methodologies Manual.^{3/} This manual was distributed to all the agencies in Colombia's public sector and served as a basis for preparation of the 1992 National Budget.

At the same time, work was continuing on preparation of the BPIN's physical design, recently completed with a list of specifications of the equipment to be purchased through the project. The development of the BPIN's applications program is continuing on the basis of this physical design. A first module, for the project recording program, has been completed and installed at DNP and in other institutions at central and territorial government levels.

The present document, which represents the second progress report on project ATN/JF-3342-CO, presents the complete design of the National Investment Projects Bank. For greater ease of reading, it has been divided into three volumes: conceptual design, logical design, and physical design of the system.

Volume I, covering the BPIN's conceptual design, is intended for those persons who do not possess a general knowledge of the structure and characteristics of projects banks. It also serves to ensure that all institutions and individuals involved in the BPIN's development have the same understanding of the bank's characteristics and potential. It also includes proposals for the training program and the installation strategy.

Volume II relates to the system's software design. It gives details of the interinstitutional flows associated with the BPIN's operation, the procedures and files for recording and monitoring projects, and the rules for standardizing data on projects recorded in the system.

Volume III contains the system's physical design. It includes technical aspects relative to computer operations, database design, screen standards, program structure, and equipment specifications.

^{3/} Manual de Operación y Metodologías, Tomo I, Operación del Banco de Proyectos de Inversión Nacional, Vigencias Presupuestales de 1991-1992, National Planning Department, Operation and Systems Division, Bogotá, September 1990.

In presenting the present document, ILPES is meeting its commitment to deliver the second substantive report on the project to the National Planning Department. However, it should be stressed that the content of these three volumes is the result of a joint effort by DNP technicians from its Operation and Systems Division and consultants and experts from ILPES. ILPES wishes to express its appreciation for the valuable and unremitting support received from the Colombian counterparts during this first phase of the project.

Chapter 1: GENERAL CHARACTERISTICS

1.1 Background

The growth rate of a given country or region depends, among other things, on the investment rate. However, an increase in investment serves no purpose if the projects supported are bad ones, i.e. that their contribution to growth or social welfare does not justify their cost. Therefore, in a context of limited resources, it is essential to find methods and instruments that will support the selection of good projects and ensure the efficient use of the resources allocated to them. One such instrument, developed over the past decade and proving to be very useful, is the Projects Bank.

Projects Banks originally consisted of a set of procedures and methodologies for organizing and standardizing public investment project information managed by different institutions. Subsequently, as data processing became more common, and given the large volume of information to be managed, the system was computerized.

1.2 Objectives

Projects Banks are public investment information systems whose main objective is to ensure that such information is managed as efficiently as possible.

This general objective may, in the BPIN's case, be broken down into the following short- (specific), medium- and long-term objectives:

Specific or short-term:

- (a) Provide any public sector agency with information on proposed or ongoing investment projects.
- (b) Monitor and supervise public investment projects.
- (c) Support investment decisions, principally at the level of sectoral and territorial government authorities with less management capacity and lower levels of development.

- (d) Foster an integrated approach to investment projects and operating projects.

General or medium and long-term

- (a) Serve as an instrument for the allocation of public investment resources.
- (b) Serve as a support tool for the decentralization process.
- (c) Foster an integrated approach to the planning and resource allocation processes.
- (d) Facilitate measurement of the potential and actual demand for investment resources at the different levels and in the different sectors.
- (e) Coordinate the investment budgets of the sectoral institutions with investment by the territorial institutions.
- (f) Foster an integrated approach to the micro- and macroeconomic aspects of public investment management.

1.3 Structure and Components

To achieve the above objectives, Projects Banks are structured around the project cycle.^{4/} This cycle may be divided into stages (preinvestment, investment, operation), and these in turn into phases (idea, profile, prefeasibility, feasibility, design, implementation, start-up and full operation), as shown in Figure 1.

^{4/} For a detailed description of the project cycle within this context, see: (a) Ministry of Economic Development of Belize. Manual para la Evaluación y Supervisión de Proyectos. ILPES, January 1989; (b) UN, DTCD, Banco Integrado de Proyectos del Sector Público (BIP), Santiago, Chile.

The World Bank uses the stages of Identification, Preparation, Implementation and Ex-post Evaluation (see Investing in Development, W.C. Baum and S.M. Tolbert, Washington, 1985).

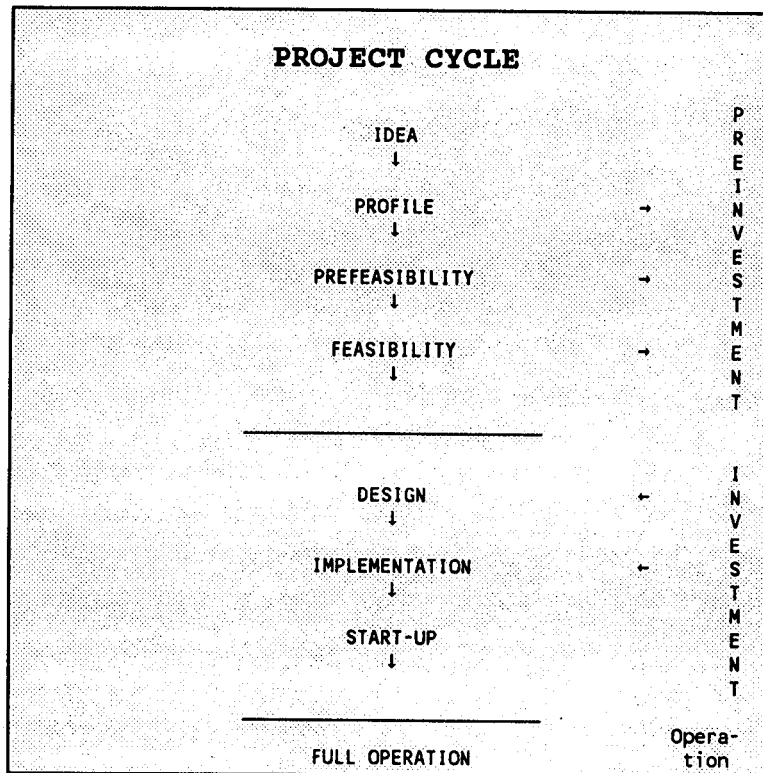


Figure 1: Project Cycle

As the project progresses through its cycle, the Projects Bank records in systematized form all data relevant to the taking of decisions. For this purpose, files are created to gather the data generated at the preinvestment and investment stages.

However, the successful operation of a Projects Bank demands much more than files and computers. Several additional components are needed if the above objectives are to be achieved.

Article 31 of the New Organic Budget Law (NEOP) states that the Annual Operating Investment Plan (POAI) may not include projects not recorded in the Projects Bank (the BPIN). In its Article 32, it defines the BPIN as "a set of activities selected as viable, already appraised from the social, technical and economic standpoints and recorded and systematized at DNP."

This simple-looking definition in fact implies that the Projects Bank needs several additional components that are basic requirements for a system of this type. In the first place, the term "set of activities selected as viable" implies the existence of tools, criteria, rules and procedures to decide which activities

can be deemed "viable." This in turn requires the existence of an institution responsible for generating such tools, criteria, rules and procedures.

Article 32 then states that such activities must have been "already appraised from the social, technical and economic standpoint." This means that there must be procedures for the technical formulation of the projects and methodologies for their social and economic appraisal. Such methodologies are obviously not self-sufficient, since they require the presence at all levels of staff trained in their application.

Article 32 ends by stating that such activities must be "recorded and systematized at DNP." This calls for an information system capable not only of "recording and systematizing" information, but also of guaranteeing that such information actually reaches DNP in the first place. The information system consequently needs to cover all institutions at the central and territorial government levels that are participating in the process of investing National Budget resources.

Thus, in a single phrase, the New Budget Law highlights all of the BPIN's components, namely:

- Institutional component.
- Procedures component.
- Methodological component.
- Training component.
- Systems and data processing component.

Following is a brief description of each component.

- (a) Institutional component: This refers to the institutional structure into which the BPIN is to fit. It will be necessary to identify which institutions will be responsible for management of the system, which ones will be direct users, and which ones indirect users.

Indirect users will be those institutions which, without having direct access to the databases, will supply information to those databases on forms supplied by the system or use information from the BPIN in the form of listings or reports. Direct users will be those institutions with direct access to the system's databases. Lastly, the institutions managing the BPIN will be those that establish the system's procedures, specify the methodologies and parameters to be used, and develop training programs related to the BPIN. This

function was assigned by Law 38 of 1989 to DNP and to FONADE (Article 32).

- (b) Procedures component: This refers to the design of the information flows that will ensure that the data recorded at the BPIN are duly updated and cover the entire field of public investment in Colombia. This design must specify who is to send information, what information, to whom, and how regularly or on what dates.
- (c) Methodological component: This refers to the development of methodologies guaranteeing the generation, quality and homogeneousness of the information recorded by the BPIN. Such methodologies must consequently be established for the identification, formulation, evaluation and monitoring of projects for the entire range of public sector investment projects.
- (d) Systems component: This comprises computers, databases, operating programs and manuals, all factors contributing to ease management of the large volume of information recorded and process by the Projects Bank. The aim of this component is to relieve the planning agencies of the tedious work of managing information, enabling them instead to have easy access to this information for use in carrying out their assigned tasks.
- (e) Training component: Probably the most important component of a Projects Bank. This is because the entire running of the system depends on operators who will generate, record, process and interpret the information, using the methodologies and systems described above. Training should therefore cover preinvestment, project management, and data processing.

Chapter 2: INSTITUTIONAL COVERAGE

Given that the BPIN's objective is to support improved allocation and utilization of public investment resources, its coverage will include all institutions receiving financing or cofinancing from the National Budget. The role of each of those institutions will depend on its function and the level of territorial government concerned.

The different levels of territorial government are the national, regional, departmental, and municipal levels. In addition, the functions of the institutions may be classified under general headings of government decisionmaking, planning, financing and implementation functions. Where the BPIN is concerned, the decisionmaking function will rest with all institutions or individuals having authority to decide on the implementation, postponement or rejection of a project. Institutions exercising the implementation function will be the ones responsible for managing project execution. The planning function will be handled by those bodies that assist the decisionmaking institutions in making investment decisions. Financing functions will be assigned to those institutions with the capability to finance or cofinance projects. A single institution may naturally perform more than one function (for example, a municipality plans, decides and implements).

There is no question that the institutions responsible for project implementation will differ with regard to the number and capabilities of the branches they have at the different territorial levels. Despite this, and based on the distinctions mentioned above, indirect users of the Projects Bank will be institutions or persons responsible for decisionmaking or implementation in the area of public investment, as well as those municipal planning offices that do not have sufficient technical capacity to be direct users. Institutions or individuals performing the decisionmaking function will receive listings and reports generated by the system. The implementing institutions will furnish information to the BPIN, particularly in relation to projects in progress of implementation.

Direct users will be the agencies responsible for planning, including municipalities, departments, the CORPES, ministries and government departments.

Administration of the system will be the responsibility of DNP, handled through two divisions set up within the Public Investment Unit to operate and regulate the BPIN's activities. The Operation and Systems Division is in charge of ensuring the satisfactory operation of the Projects Bank and of generating reports and listings required by the indirect users at the national level. It also organizes and manages the Bank's training component. The Methodologies Division will develop and update project appraisal methodologies, to be included in the BPIN's annual Operation and Methodologies Manual.

Chapter 3: NATURE AND FLOW OF INFORMATION MANAGED BY THE PROJECTS BANK

As already mentioned, the Projects Bank accumulates the information generated during the life of a project, except during the operational phase. However, not all information generated has to be recorded. All that needs to be recorded is what will be relevant for the taking of decisions affecting the passage of a project from one phase to the next, and for the proper monitoring of each phase.

In general terms, this information comprises:

- (a) At the preinvestment stage: Project identification, location, sectoral classification, principal characteristics, related institutions, estimated costs and time periods, proposed financing, and indicators of socioeconomic return. This information becomes more precise, detailed and reliable as the project passes from one preinvestment phase to the next. When the level of reliability attained is consistent with the size and characteristics of the particular project, it is time to pass on to the investment stage (without it being necessary to complete all of the preinvestment phases). All projects must have at least the profile phase completed before a start is made on the implementation stage.
- (b) At the investment stage: Programming of project implementation, including goals and time periods, financing allocated by source, expenditure incurred and results achieved. With this information it is possible to check that the funds invested are duly contributing to the efficient achievement of the project goals. There is also the opportunity to make use of accumulated experience in order to improve cost estimates and time periods for new projects, which results in more reliable appraisals and more realistic programming, avoiding the repetition of errors.

Although detailed specification of the procedures for gathering this information is one of the tasks yet to be performed, it is still possible to describe the information flows in general terms.

In the first place, it should be noted that there will be both sectoral and territorial flows of information. In the sectoral area, ministries and government departments will manage the information generated in any one of their dependent institutions on both proposed and ongoing investment projects. Each agency must send the DNP specific information on fixed dates or at regular intervals. In addition, institutions at the national level may consult the BPIN at DNP to obtain information on the investment projects of territorial government agencies.

At the territorial government level, the municipality, as recipient of the community's concerns, records and appraises project ideas at the profile stage. This information, as well as that on the physical and financial monitoring of projects whose implementation is managed by the municipality, is sent periodically to the departmental level. In turn, the municipality may obtain information from the department on investment projects promoted by institutions at the departmental, regional or national level that will impact on the municipality.

At the departmental level, the Departmental Planning Offices (OPDs) will be responsible for reviewing and recording information from the municipalities on projects of departmental character and interest, and on the physical and financial monitoring of projects whose implementation is managed at that level. This information will be sent periodically to the CORPES. Likewise, an OPD may obtain information from a CORPES on projects with departmental impact promoted by regional or national agencies.

At the regional level, the CORPES will be responsible for reviewing and recording information from the departments on projects of regional character and interest, and on the physical and financial monitoring of projects whose implementation is managed by the CORPES or some other regional agency. Part of this information will be sent periodically to DNP to be recorded at the BPIN. Likewise, the CORPES may obtain information from the BPIN at DNP on projects with regional impact promoted by national agencies.

Chapter 4: METHODOLOGICAL ASPECTS

The quality of the information managed by the Projects Bank and supplied by it to the different institutions will basically depend on the quality of the information recorded with it. Therefore, to ensure that the information flowing into the BPIN is reliable and complete, it is necessary to develop methodologies to guide and facilitate project formulation and appraisal.

The objective of the methodologies will be to facilitate estimates, at the profile level, of the costs and, if feasible, the benefits of the projects, and the selection of those meeting certain minimum conditions. There will be one general and several specific methodologies, the general one providing the general framework for the development of the others.

The starting point for formulation of the general methodology was the diagnostic study of average capacities in the areas of project identification, preparation and appraisal demonstrated by the civil servants who will be using the methodology. The study revealed that these capacities are very inadequate, owing to the low standards prevailing in the public investment projects area before creation of the BPIN.

Based on this diagnostic study, it was concluded that the general methodology should be simple, free of complexities and easy to operate, so that it could be effectively used by civil servants involved in the project formulation and appraisal process and in the process of public investment programming and budgeting.

With this objective, the general methodology will be constructed in seven modules, each one oriented toward a specific objective. The first two, institutional framework and project cycle, will present basic information for application of the methodology. The remaining five modules, project identification, project preparation, project appraisal, project financing, and project sustainability and viability, will consist of formats designed to guide the civil servant using them through each step of project preparation and appraisal.

The general methodology will also include annexes designed to handle aspects not explicitly addressed in the preceding modules. These annexes will cover such topics as fundamentals of microeconomics for project appraisal, financial tables and equivalencies, shadow price ratios, bibliography on the different topics, etc.

The general methodology is structured to take account of the average level of training of the Colombian civil servants responsible for project preparation and appraisal, and also to serve as a basis for the various training courses offered at the sectoral and territorial government levels.

Based on the model of the general methodology, specific methodologies of two types will be prepared: cost/efficiency (C/E) and cost benefit (C/B). These methodologies will correspond to the following sectors:^{5/}

- (a) Education (infrastructure and training projects) (C/E)
- (b) Health (infrastructure and training projects) (C/E)
- (c) Justice (C/E)
- (d) Water supply and drainage (rural and urban) (C/E)
- (e) Neighborhood roads (C/B)
- (f) Roads (H.D.M.) (C/B)
- (g) Telephones (C/E)
- (h) Electricity (transmission, subtransmission and losses)
- (i) Agriculture (C/B)

Each of the above methodologies will indicate the range of projects to which it applies, the steps involved in project identification and formulation, procedures for generating and analyzing alternatives, the method for computing costs and benefits, and the principal indicators to be calculated.

^{5/} As of the date of publication of this document, the general methodology and specific methodologies 1, 2 and 3 are already available for infrastructure projects, and those relating to training projects are in process of preparation. The next three will be available by the end of June 1991, and the last three early in the second semester of that year. The end of 1991 should see completion of the methodologies for municipal infrastructure projects such as slaughterhouses, market places, parks, garbage collection, mass transit terminals and urban roads.

Various sectoral institutions and offices of DNP will assist with preparation of the methodologies, for two reasons: to make available their technical knowledge of the sector, and to ensure that the participants get used to handling the methodologies.

In addition, surveys will be conducted for some of the methodologies with a view to obtaining parameters providing a reliable foundation for the computation of costs and benefits. Using those parameters, a representative project sample will receive detailed appraisal. The indicators obtained from this appraisal will serve as a reference for the appraisal of similar projects using the simplified methodology.

These methodologies will be broadly disseminated and validated in the BPIN's courses and workshops. They must therefore be sufficiently versatile to be able to be adapted to the users' different needs.

They will be continually upgraded as the process of installation and validation progresses, and the training component will play a vital role in this connection.

Chapter 5: COMPUTER ARCHITECTURE

In terms of computer architecture, the Projects Banks may be set up as centralized or client/server systems. In light of the National Government's ongoing process of decentralization, and given the fact that a client/server system involves greater possibilities for growth, less complex equipment, and lower investment and operating costs, this type of architecture has been selected for the BPIN.

Under this system, each institution belonging to the BPIN will have its own database to record the projects for which it is responsible. All the databases can exchange information using diskettes or communication lines. Those institutions where installation of a computer is not feasible or justifiable will have access to the BPIN through the government agency to which they are attached.

Computers are needed for database management. Thus their size will basically depend on the volume of information to be recorded. Consequently, in light of the expected information flows, the higher the territorial level concerned, the larger the computer capacity that will be required. However, equipment sizes should be standardized as far as possible, to facilitate exchanges of information, program writing, and training activities.

Database management will require programs for the inputting of information, the obtaining of listings and reports, and exchanges of information among databases. Such programs will need to be written in high-level and widely-used languages, so that direct-user institutions can add on programs for managing all additional information they may wish to record. Moreover, to minimize training requirements, they must be easy to use. Lastly, they must be able to ensure data integrity in the case of damage, whether accidental or deliberate.

As the system is being developed, technical reference manuals and user manuals will also need to be prepared. The former will help the specialized personnel to know the structure of the databases and programs and hence to maintain existing applications and develop new ones. The latter are intended to serve as a training tool for the system operators, and, subsequently, for purposes of consultation.

Chapter 6: TRAINING PROGRAM

As already explained, Projects Banks are public investment information systems designed to make investment planning and management more efficient. However, as with any information system, the quality of the results they produce cannot be any better than that of the data fed into them. The entire operation depends on the civil servants who generate, record, process and interpret these data, using specific methodologies and systems.

Consequently, one of the most important components in developing a Projects Bank is training, because only thorough and properly directed training can guarantee that data on current or proposed public sector projects and studies will be input into the system in a timely and reliable manner.

An examination of the situation in Colombia shows that there are at least three obstacles to the effectiveness of the system:

- (a) inappropriate strategies, methodologies and procedures for taking social/regional needs and priorities into account in the institutional definition of projects;
- (b) inappropriate mechanisms hindering the efficient, uninterrupted, timely and coordinated channeling of public investments;
- (c) a lack of human resources with sufficient training to identify, formulate and appraise development projects.

Consequently, these three factors must be taken into account in the design of the training system. Moreover, the training program must be developed in such a way that its efficient operation and continuity are ensured.

Training can be provided more efficiently and have a greater impact if institutional mechanisms and teaching methods are used that facilitate the large-scale replication of training events at the different levels. It is also important to ensure that training is ongoing, because the rapid turnover of civil servants means that the mechanisms used must be able to facilitate the continuity and institutionalization of the training process.

To this end, the following bodies should be encouraged to participate actively, since they can provide systematic training, technical assistance and support activities with far-reaching effects: the universities, agencies responsible for training at national level (such as ESAP and SENA), the Technical Units of the CORPES, the Departmental Planning Bureaus, and the technical units of national agencies responsible for programs at the different territorial levels.

The existence within DNP of a team responsible for operating the Projects Bank guarantees continuity of the training. The team can provide seminars to cater to various requirements and train staff from various institutions, both in specific aspects of investment projects and in the regulatory, procedural and operational aspects of the system.

6.1 Training Topics and Coverage

Training must include all topics related to the operation of Projects Banks. Because the latter are concerned with data on projects that are either at the preinvestment stage or in process of execution, the main subjects will be as follows:

- (a) project identification, preparation and appraisal (i.e. at the preinvestment stage);
- (b) operation of the Projects Bank, including use and basic maintenance of hardware and software;
- (c) physical and financial supervision and monitoring of projects and studies (i.e. in project management).

In the short term, and as the system is implemented, training will emphasize the first two topics.

In each of these areas there must be personnel with basic, intermediate and advanced training. Training objectives and coverage for the various levels will be as follows:

- (a) Basic training: This must be offered to the largest possible number of civil servants involved in public investment, and will provide them with basic tools for participating efficiently in preinvestment, investment management and the operation of the Projects Bank, thus resulting in the development of an efficient operating capacity.

- (b) Intermediate training: The objective will be to provide a large group of civil servants with sufficient knowledge of one of the above areas to enable them to act as resource persons in their various institutions. They must be capable of solving minor problems relating to the application of methodologies or the operation of the system. The intention at this level is to produce a multiplier effect.
- (c) Advanced training: The objective in this case is to train a select group of professionals to deal thoroughly with any problem relating to the issues enumerated above. The existence of such personnel will ensure that the capacity exists at the national level for continuing to develop the Projects Bank.

This combination of different topics and levels suggests the particular design to be adopted for the special training and technical assistance strategy that will enable agents in the various institutions to operate at the following levels, in accordance with the objectives of the system: (a) as "project processors," supplying data to the Projects Banks and operating them; (b) as "training and technical assistance agents" for gradually increasing institutional capacity and training new project agents in the proper operation of Projects Banks.

This strategy would provide for a varied range of training events with the following basic features and content.

6.2 Training Events

6.2.1 **Training of Trainers Workshop Courses**

OBJECTIVE:

This activity will exert a multiplier effect, thus strengthening the basic level. It will enable agents to undertake the following three types of activity: replication of training courses, initiation of technical assistance, and processing of investment projects in their own institutions.

COVERAGE:

Workshops are intended for representatives of those sectoral and territorial institutions that have the greatest capacity for producing a multiplier effect, both by reason of their potential for training and technical assistance and because of the territorial scope of the projects they execute or promote. In order to participate in workshop courses, both the institutions and the individuals concerned must commit themselves to producing this sort of multiplier effect.

DURATION, LOCATION AND CAPACITY:

Each workshop course will last two weeks and will be full-time and residential in order to facilitate instruction. The short-term program (first year) will provide for six instructor training workshops, each with 36 participants. There will be a balance between regional and sectoral events, and the locations will be selected in due course on this basis.

BASIC CONTENT:

Basically, each workshop course will consist of the following four modules:

- (a) the BPIN and the National Projects Bank Network;
- (b) an informational module on project identification, preparation and appraisal, and the incorporation of projects into the public investment process;
- (c) training and technical assistance methodologies;
- (d) strategies, commitments and programs for training and technical assistance replication.

The objectives and basic content of such events makes it essential that the approach adopted be one of active participation, also incorporating special adult education techniques.

6.2.2 Replication courses

OBJECTIVE:

These are basic-level sessions in which individuals who have participated in the training of trainers workshop courses pass on the training they have received. Participants will be trained in the identification, formulation and appraisal (at profile level) of basic projects, and in the application of Projects Bank procedures.

COVERAGE:

The training should be attended by representatives of all the various types of sectoral and territorial institutions whose involvement in public investment takes the form of implementation of fairly simple projects at national, regional, departmental and municipal levels.

DURATION, LOCATION AND CAPACITY:

These will be one-week full-time courses (i.e. 40 hours), and the average attendance at each is expected to be from 20 to 30 participants. They will be held throughout the country (i.e. within the areas covered by the participating institutions), and will be scheduled in accordance with the workshop courses preceding them.

BASIC CONTENT:

Essentially, the following two modules will be presented:

- (a) procedural and operational aspects of investment Projects Banks;
- (b) an informational module on project identification, preparation and appraisal.

6.2.3 Application workshops

OBJECTIVE:

These workshops have the following two objectives: implementing and validating the application of project appraisal methodologies, with emphasis on special (sectoral) methodologies, and training the staff of individual organizations to provide advice on application of these methodologies.

COVERAGE:

The workshops are designed both for individuals who have already participated in various types of sessions (training of trainers, replication courses, and intermediate training) and for groups from particular institutions, in response to their specific requirements.

DURATION, LOCATION AND CAPACITY:

Each workshop will last for one week, the location depending on whether the participants are from centralized or decentralized bodies. There will be an average of 24 participants per workshop (8 groups of projects with 3 participants to each).

BASIC CONTENT:

Workshops should consist of at least the following four modules:

- (a) operation of the BPIN, and project recording procedures;
- (b) a theoretical and practical module concerned with methodologies;
- (c) a special workshop module for appraising projects submitted by the participants themselves;
- (d) technical assistance.

6.2.4 Intermediate training

OBJECTIVE:

This training is intended for public-sector professionals who are to participate in preparing and appraising more complex or larger-scale projects than those studied at the basic level.

COVERAGE:

The courses or seminars are designed for professionals who have responsibility for the preparation and appraisal of investment projects within their own institutions.

DURATION, LOCATION AND CAPACITY:

The duration will depend on the training already received by participants, and on their availability.^{6/} Similarly, the locations will depend on the territorial jurisdiction of the bodies participating, but it is anticipated that training will be provided in Bogotá for a number of sectoral agencies operating at the national level.

BASIC CONTENT:

Courses will strike a balance between theory and practical work (in project groups), covering the following five main topics:

- (a) investment project identification and preparation;
- (b) basic microeconomics;
- (c) the economic and financial analysis of projects;
- (d) social aspects of project appraisal;
- (e) workshop on specific projects.

^{6/} Ranging from one week of full-time participation to two months on a part-time basis.

6.2.5 **Advanced training**

OBJECTIVE:

A critical mass of professionals specializing in the investment project cycle will be trained, to provide support for the system's future development and strengthen its capabilities in terms of preparation and appraisal of complex projects.

COVERAGE:

These specialized courses will be provided by arrangement with national and regional universities, and the participants will be officials assigned from agencies that are required to undertake large-scale investment projects.

DURATION, LOCATION AND CAPACITY:

The duration of this specialized training will range from 6 months (full-time) to 18 months (part-time). Courses geared to agencies at national level will be held in Bogotá, and those geared to territorial or decentralized agencies will take place in the regional universities participating in the arrangement. The number of participants in each group is expected to range from 20 to 40.

CONTENT:

The specialized training program offers the same subjects as the intermediate level, examining them in greater detail and depth and adding others, so as to cover the entire investment project cycle, as follows:

- (a) investment project identification and preparation;
- (b) basic microeconomics;
- (c) the economic and financial analysis of projects;
- (d) social aspects of project appraisal;
- (e) project financing and financial management;
- (f) execution, control and management;

- (g) operations and maintenance;
- (h) sustainability, monitoring and evaluation;
- (i) individual and group workshops on specific projects of institutional interest.

6.2.6 Basic training in operating the Projects Bank

OBJECTIVE:

All civil servants directly involved in operating the Projects Bank will be provided with the practical skills necessary for using the system efficiently.

COVERAGE:

Civil servants at the central, regional, departmental and municipal levels who are directly responsible for operating the Projects Bank.

DURATION, LOCATION AND CAPACITY:

This training can be taken in the following two ways:

- (a) in special two- or three-day courses, in whatever location the availability of the teams makes feasible; the maximum number of participants will be determined by the availability of computers, but may not exceed 10 or 12, because of the eminently practical nature of the training;
- (b) in the form of modules serving as components of the other training programs or events; in general, it will be ensured that all Projects Bank training events include a module demonstrating the operation of the system.

CONTENT:

Basically, the course will train operators for the system, and will therefore include basic instruction in the use of PCs, together with information on the BPIN programs. Classes will mainly consist of the simulated use of the system under the supervision of an instructor. They may be supplemented by a self-teaching program.

6.2.7 Intermediate training for technical assistance with operation of the Projects Bank

OBJECTIVE:

A group of civil servants will be provided with sufficient skills in the use of PCs and BPIN programs to act as resource persons in their various institutions.

COVERAGE:

One or two persons from each department or region, and from each central government institution employing the system.

DURATION:

Training will last one week and consist of practical work supervised by the experts developing the system. Consequently, there will be a maximum of 10 participants per group, and the training will take place in DNP's Operation and Systems Division.

CONTENT:

The fundamental topic in these courses will be the use and operation of the Projects Bank. The various issues must be examined in sufficient depth to enable participants to train others in the use and operation of the system and to solve moderately complicated problems affecting the hardware or software.

6.2.8 Advanced training in operation of the Projects Bank

OBJECTIVE:

Systems engineers will be equipped with special skills enabling them to further develop and upgrade the Projects Bank.

COVERAGE:

The participants will be a select group of public sector professionals specializing in information systems.

DURATION, LOCATION AND CAPACITY:

The project experts will provide their Colombian counterparts with practical training throughout the period during which the system is developed.

CONTENT:

In addition to general topics relating to hardware and software, details will be examined of programming techniques, the use of the computer language selected for the Projects Bank, and the structure of the system's programs and databases.

6.2.9 Training in project management

These events will form part of the medium-term training strategy, and therefore their design, planning and execution will be defined later, to take account of such requirements and shortcomings as may be identified in the short term.

Nevertheless, as already stated, in the short-term this component will form part of advanced training programs.

Chapter 7: RELATIONSHIPS WITH OTHER SYSTEMS

The Projects Bank cannot be an isolated system, because projects recorded in the BPIN often include components that relate them to other public sector information systems. For example, the financial execution of all projects financed by the National Budget is monitored through the Ministry of Finance's budget monitoring system. The Credit Monitoring System of DNP's External and Internal Credit Division oversees the application of external and internal credit resources in investment projects. Similarly, DNP's International Technical Cooperation Division has a system for recording and monitoring international technical cooperation activities, which frequently involve development projects or are a source of new projects.

Consequently, the physical design of the BPIN must take account of facilities for exchanging data with these or other systems. In particular, it must allow for the exchanges of information identified below.

First, it must be possible for the BPIN to obtain from the Ministry of Finance's system all the information necessary to enable the physical and financial monitoring module to generate reports on the institutions' responsiveness in managing central government funds and applying them to projects. Similarly, the BPIN must be able to receive from the External and Domestic Credit Division's monitoring system the necessary information on loan funds used to finance a given project. It must also be able to supply data to that system on the monitoring of projects financed from particular sources, together with listings of projects that are candidates for inclusion in credit programs.

In addition, the BPIN must be able to exchange information with the technical cooperation project monitoring system. It will supply that system with information on the progress of projects that receive support under technical cooperation programs. Similarly, it will provide the International Technical Cooperation Division with listings of studies and projects that may call for technical cooperation.

Finally, the feasibility and possible advantages of integrating the BPIN into the COLDAPAC data exchange network should be studied. This could facilitate the exchange of data among the BPIN's various integrated databases and reduce connection costs.

Chapter 8: INSTALLATION STRATEGY

8.1 Background

Several activities have been undertaken during development of the BPIN that will improve the process of planning the various tasks necessary for the prompt introduction of a satisfactory system. Special mention should be made of the standards referred to in Diagnóstico del Presupuesto de Inversión y Catastro de la Información sobre Proyectos a Nivel Sectorial y Regional ("Diagnostic Study of the Investment Budget and Register of Information on Sectoral and Regional Projects")^{7/} and Capacidad de las Secciones Administrativas del País para Asumir las Responsabilidades del Banco (Primer Informe de Avance) ("Capacity of the Country's Administrative Units to Assume Responsibility for Operating the Bank (First Progress Report)".^{8/}

The first of these documents shows that there is still a long way to go, since most of the institutions surveyed do not possess information systems and methodologies for identifying, appraising and monitoring investment projects. The second shows that the path will also be a difficult one, because of the large number of institutions at territorial level and the institutional weaknesses of most of them.

Because of the considerable complexity of Colombia's public sector and the large number of small municipalities, the project cannot deal directly with all the institutions involved in public investment. It will therefore be necessary to devise a priority-based strategy for gradually and selectively installing the BPIN.

^{7/} First Progress Report: Project ATN/JF-3342-CO.

^{8/} Document issued by DNP's Regional Development Unit, October 1989.

8.2 Proposed Strategy

The installation strategy is based on the following three considerations: (a) the multiplier effect; (b) the demonstration effect; and (c) permanent support. Its design will also need to take account of aspects relating to the various territories and sectors, systems, training, procedures and methodologies.

The first point about the strategy is that it must have a **multiplier effect**, so that the program's coverage can be maximized within a short period. To achieve this, the various technical units of DNP and the CORPES must play a fundamental role. The Projects Bank team will be responsible for the necessary methodological and systems developments, but their implementation, together with training in their use, will inevitably require the cooperation of these units, which will train and support personnel from other agencies in the introduction and operation of the system and in the dissemination of its use within each sectoral institution as well as to other territorial levels. For example, the CORPES will support the departments, and in their turn the departments will support the municipalities.

Similarly, an important role will be played by those institutions at central level that work directly with the municipalities. This will be the case with the DRI (Integrated Rural Development) Plan and FINDETER (Territorial Development Fund), which are direct participants in the BPIN team, and with other agencies and programs such as DAINCO (Administrative Department for Intendencias and Comisariás) and the PNR (National Rehabilitation Plan).^{9/} Through these agencies and programs it will be possible to make direct contact with a large number of municipalities. This is very important, because many departmental planning bureaus do not have sufficient capacity to serve all the municipalities in their Departments properly, particularly in cases where there is a large number of municipalities. (Five of the Departments contain over 50 municipalities each.)

^{9/} It is strongly recommended that use be made of the experience of agencies such as SIP (Popular Integration Secretariat) and the PNR with respect to services for municipalities, particularly those that are weakest institutionally, and that community participation in investment allocation be encouraged.

Consequently, the structure proposed for establishing the Projects Bank and supporting its operations is as presented in Figure 2 below:

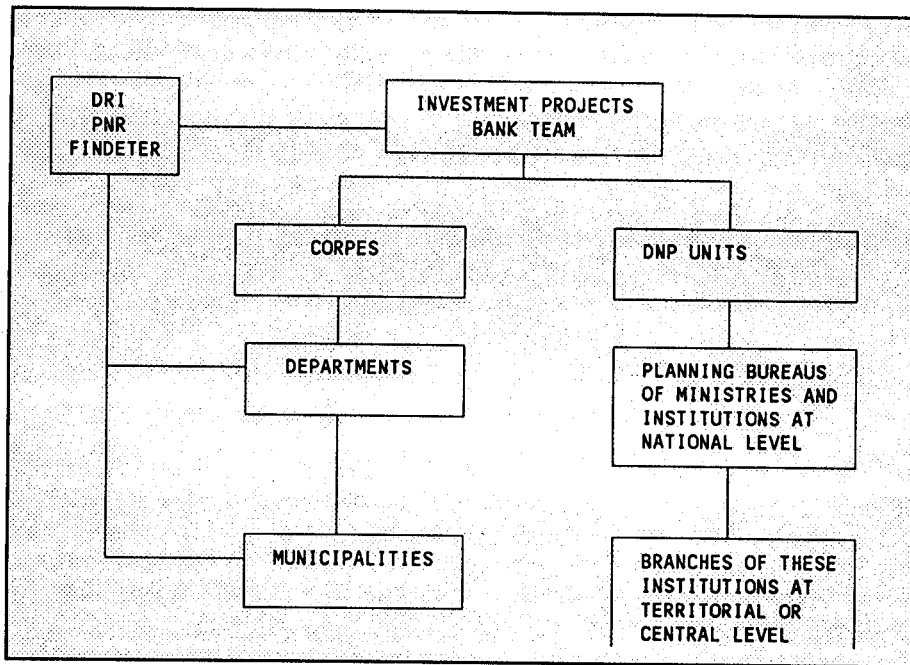


Figure 2: Institutional Structure

The proposed structure does not imply that the Projects Bank team would cooperate exclusively with DRI, FINDETER, the CORPES and the DNP Technical Units, because in many cases it would have to support DNP units in activities at the central level, the CORPES in their work with Departments, and the Departments in their work with municipalities.

The second basic aspect of the proposed strategy is its **demonstration effect**, the purpose of which is to facilitate the adoption of the BPIN by the various participating institutions. To achieve this, it will be necessary to introduce a pilot version of the BPIN into at least one sectoral institution and one territorial institution as soon as possible. In this way, the operation of the system and its resulting benefits can be demonstrated to other institutions at the national and territorial levels.

In the selection of national and territorial institutions to participate in the pilot project, the following points should be taken into consideration:

- They should have the necessary institutional and technical capacity and be either medium-sized or small, so that results can be obtained more quickly.
- They should be involved with a considerable number of projects (which should be dissimilar in nature, if possible), so that the pilot project can properly demonstrate the advantages of the system.

In principle, the institutions selected should include at least one gobernación departamental (the bureau of internal affairs of an individual department) and a ministry or other body at national level; however, it must always be kept in mind that the project should support the decentralization process, particularly as applied to municipalities.

For implementing these pilot plans, ad hoc teams should be formed to work exclusively on introducing the BPIN into the selected institutions, so that it can be brought into operation promptly and completely with the full participation of the municipalities.

The final component of the strategy is to establish a **permanent support and technical assistance** program for institutions in the system, thus facilitating the application of prompt solutions to any problems and difficulties. As a result, delays and disappointments will be avoided and the quality of the data received will be improved. Support must be provided intensively while the system is being introduced, and can be gradually reduced once it is operational.

Ideally, once the system has been installed in an institution, a specialist well versed in its operation should work with the staff for two or three days. Subsequently, and for a limited time, the specialist can solve the institution's problems by telephone or by means of visits, after which all queries should be directed to DNP. It would therefore be necessary for one member of the BPIN team to be mainly responsible for providing solutions by telephone to those operating problems encountered by participating institutions.

The strategy has been defined in general terms, but must be adapted to the particular characteristics of each component of the project (training, methodologies, procedures and systems). Nevertheless, before the strategies to be applied to individual components are examined in detail, the aims of the project in each of these various areas should be clearly defined.

As regards computerization, it must certainly not be expected that, by the end of the project, all the institutions participating in the public investment process will be equipped with computerized information systems. However, it is to be hoped that all (or at least most) will be using standardized procedures for recording information on projects at the preinvestment stage and for monitoring the physical and financial progress of those in process of execution. Similarly, by the end of the project most institutions involved in public investment should have at least one employee with basic training in BPIN procedures.

As regards the procedures component, providing coverage for all national and territorial institutions involved in public investment will require the preparation of a document containing details and examples of the system's procedures for all participating institutions, whatever the sources of financing proposed for the project. The document must also include details of the files used in the information system, with simple and practical instructions on their use. It will be distributed to all institutions receiving financing or cofinancing from the National Budget.

As regards computerized systems, it is also impossible and impractical to expect that all institutions involved in public investment will be provided with computer hardware. Many municipalities are without the necessary infrastructure for installing computers; in many cases, for example, there is no suitable electric power supply.

Consequently, the project will be able to install computerized systems only in the national-level institutions that are involved in the public investment process. To achieve this objective, the active participation of DNP units is essential. In each of these, one person has been appointed to take the main responsibility for all matters relating to the Projects Bank. At territorial level, it will be necessary to cover gobernaciones, intendencias and comisarias, as well as certain municipalities.

Both the distribution of the manual containing details of the system's procedures and files and the installation of the computer systems must be coordinated with the training program. To this end, the systems should be progressively installed in a series of geographical areas or specific sectors so that this process parallels the progress of the training courses. In this way, employees returning to their offices after training can immediately begin to apply everything they have learned.

Finally, application of this strategy depends heavily on a clear definition of the spheres of action of the various participating or beneficiary institutions. The structure for implementing the procedures for achieving the multiplier effect must be defined, and it must also be decided which institutions are to participate in the pilot project and which will support others in solving their problems. Only in this way will it be possible to determine clearly the scope of the coverage to be provided by the project and to identify any areas left uncovered.

In addition, in order to strengthen institutional coordination and support for development of the BPIN, one or more meetings with the CORPES and DNP units should be organized, to provide an opportunity for explaining and discussing the features of the system, its benefits, and the requirements for achieving the proposed objectives.

Chapter 9: ANTICIPATED BENEFITS

Developing and implementing the BPIN will certainly be a long and expensive process. The direct cost of the project is over US\$2 million, and it will take two years to develop and implement, although bringing the system into full operation could take three or four more years and call for a larger capital investment. Nevertheless, the potential benefits fully justify the cost and the time and effort required from all the institutions involved. The following are the main benefits anticipated:

- (a) The development of project appraisal methodologies and the training in their application of many civil servants in the centralized and decentralized agencies will ensure that projects wholly or partially financed by the National Budget will produce a positive socioeconomic rate of return. If the average rate of return on resources invested in projects costing less than US\$500 million is increased by only 1%, the country will gain about US\$3 million per year.
- (b) The availability of updated information on projects proposed by institutions at national and territorial level will substantially improve interinstitutional coordination. It will thus be possible to avoid the simultaneous execution of alternative projects and ensure that mutually complementary projects are properly coordinated.
- (c) The ongoing physical and financial monitoring of project implementation will facilitate the timely adoption of measures for ensuring that each project achieves its aims. Similarly, the information will make it possible to adopt measures for preventing resources from becoming blocked in institutions with inadequate project implementation capacity, and thus to achieve considerable savings on financial costs.
- (d) The fact that the BPIN contains a group of well-formulated and efficiently appraised projects will facilitate the negotiation of international loans for cofinancing projects in the centralized and decentralized sectors.

- (e) The BPIN will provide institutions at the national level with immediate information on the needs of the regions, departments and municipalities. Similarly, it will provide municipalities, departments and regions with timely information on projects to be implemented in their various geographical areas by national institutions, so that they can express their opinions. The Projects Bank will therefore be an important instrument providing support for the decentralization process.