Planning for Project Implementation

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PREFACE AND ACKNOWLEDGEMENTS

This Manual was prepared by the Project Development Resource Team (PDRT of PAMCO).

The authors of this Manual are indebted to many who have published materials in the past on Project Management Planning and Implementation. Many multigraphs, multiliths, bulletins, circulars and books were reviewed during the months while the PDRT were preparing materials used in training courses with persons responsible for formulating and implementing projects in a sizeable number of Jamaica government agencies, statutory bodies, and ministries.

Many of the Project Management tools that others have found useful and subsequently put in written form, were used as the course materials for training here in Jamaica. But, the PDRT team soon determined that these materials are most readily learned in training situations when they were used on actual projects in which the trainee become involved. This Manual shows how the tools are applied on real Jamaican projects. The PDRT found this "action-training" approach to be a very effective teaching and training model. The participants quickly learn, own and adapt the tools and techniques because of their obvious relevance and applicability, and at the same time projects are actually moved forward during the training period. Thus, both trainees and actual projects benefit from the action-training approach. Based on the training experience of two years, the team strongly recommends this approach in other countries where project management training is attempted. From the trainees viewpoint, it is an exciting, but demanding approach to training and it is quickly accepted because it helps to speed up the actual development project implementation process. This is the crux of the development effort in developing countries.

Much of the training materials used by PDRT to construct this Manual came from four primary sources. These publications are highly recommended to anyone interested in developing and using training materials on project management.

United Nations, The Initiation and Implementation of Industrial Projects in Developing Countries, A Systematic Approach, U.N., New York, 1975.

J. Bainbridge and S. Sapirie, Health Project Management, A Manual of Procedures For Formulating and Implementing Health Projects, World Health Organization, Geneva, 1974.

Peter Delp, et.al., Systems Tools for Project Planning, PASITAM, Indiana University, Bloomington, Indiana, 1977.

D. Cleland and W. King, Systems Analysis and Project Management, Second Edition, McGraw-Hill, New York, 1975.

The PDRT team is indebted to other who gave assistance previous to and during the preparation of this manual. Foremost among these persons were the Project staff from all over Jamaica who attended PDRT training courses and assisted the PDRT in applying the management tools to the management problems facing them in planning and implementing the Projects. These officers produced

the actual and illustrative working documents that can be applied to other projects. There are also the many officials within the Ministry of Agriculture, particularly those in the Production Unit, who have supported and assisted in this training effort. In addition, the Programme Officers of USAID and the Director of Projects Division (now PAMCO), Ministry of Finance, have encouraged the team to prepare and formalize these and other training materials so they can be used by other resource persons who are given the responsibility of training project management personnel in various segments of the government and in the private sector. Last, but by no means least, is the Secretarial Staff of PAMCO who worked diligently through many drafts to put the material in publishable form. Without the assistance and encouragement of all the persons mentioned above, the publication of this material would not have been possible.

We sincerely hope that the material will be useful to all Project Managers. The Project Implementation Planning Steps introduced here, have broad applicability and can be used and adapted by officials on projects that are faced with the complex problems that surround project management.

PAMCO
June, 1979.

FOREWORD

Introduction

One of the greatest challenges of this decade will be the effective management of increasingly scarce national resources to meet development objectives. As discrete sets of activities utilizing limited resources to achieve specified objectives within a definite time frame, projects are basic building blocks for the development programmes of nations and lending agencies. If projects are to be realistically designed and successfully implemented, there must be a national capability and commitment to manage and control financial, physical and human resources so their contributions are channelled toward the aims of their parent organizations and societies. A critical test of national maturity is the capability to plan for and effectively manage the use of resources through projects.

The Project Planning and Management Series presents practical approaches tools and techniques for the formulation and implementation of sound projects. The series consists of a set of manuals on planning, planning for implementation and management along with associated modules explaining specific tools and techniques relevant to various functions of project development. The series can be used as a reference and guide for persons with responsibilities on "live" projects. It is also of interest as a text for persons studying project planning and management. All concepts, approaches, tools and techniques presented have practical relevance to projects and many have broader management applications as well.

The Project Planning and Management Series is based upon experience gained through the extensive use of action-training for project development. The objectives of the project were to (1) increase the flow of development projects, while (2) increasing Jamaican capabilities in planning and managing projects. The "action-training" approach was introduced and tested through the activities of the PDRT which was instituted by the project.

Action-Training

Action-training is carried out within the organizational setting of the participants and uses "live" projects so that the workshops are strongly oriented to operational problem-solving within the context of actual forces and resources of the situations in which projects must succeed. Action-training is a practical response to the pressures of a developing society where scarce management skills do not permit the release of persons from organizational responsibilities to attend long traditional training courses.

The PDRT action-training programme brings teams and persons assigned to live projects and with actual responsibilities into workshops, seminars and consultations and gives them the specific knowledge, guidance and skills required to perform their assignments. In this way, projects are developed and moved forward while project personnel are being trained in relevant aspects of planning, analysis and management of both immediate and future benefit for the individual and the organization.

Action-training on projects utilizes the immediate application of approaches, tools and techniques on "live" projects to ensure that:

(1) the sponsoring organization and the nation benefit through observable project progress;

(2) the training is operational and relevant within the real organizational context;

(3) the participants have understood the concepts, tools and techniques well enough to apply them in actual situations; and

(4) the participants benefit by mastering new skills and are rewarded by promoting project progress.

Action-training is best instituted where it supports rational and co-ordinated systems of project development, i.e., planning, implementation, monitoring and decision-making. Different groups of persons have responsibility for the various aspects of a project throughout its life. Some persons identify projects, others plan and prepare feasibility studies; others appraise; others select; others negotiate loans; others manage contracts and consultants; others manage; others monitor and so on.

Action-training is used to give persons and teams the specific knowledge and skills necessary to understand their responsibilities within the total project system and to be able to perform their roles effectively. It focusses specifically on what persons need to know to do their jobs and reinforces their understanding by testing the application of new skills on live projects.

An action-training workshop generally follows a simple formula for each topic and technique introduced. An introductory presentation is followed by a simple exercise to illustrate the concept and demonstrate its application. This is then followed by a work period during which participants work on actual assignments on live projects in consultation with the PDRT. The application to live projects reinforces the learning, permits an in-depth exploration of its applicability, tests relevance for this situation, and permits adaptation to fit the actual context, assignment, and experience of the participants. The live projects are not simulations, but actual undertakings of the respective organizations of the participants and represent assignments which are integrated into their normal duties. It is usually necessary to follow a workshop with site and field consultation to see that assignments are completed and that the tools are being used for project development and problem-solving.

PDRT carries out action-training in several ways:

(1) Project Workshops conducted over several weeks, which result in the completion of a specific stage of project documentation or development; such as a completed Project Profile, Implementation Plan or Management Information System.

(2) Consultation Workshops lasting several days over a period of time, which help a project team solve specific problems in project deisgn, analysis, implementation, management, monitoring, or evaluation.

(3) Seminars lasting one day, which introduce specific or general concepts and techniques to persons with particular administrative or technical responsibilities involving these skills.

Use of the Series

The Project Planning and Management Series is structured as a support to action-training. Different persons perform different functions and roles with respect to projects and therefore require different skills. Some persons must be able to perform sophisticated financial and economic analysis, while others may need only elementary knowledge of how to construct a cash flow. Some must focus on the clarity of objectives while others must be able to prepare definitive market and technical plans. Some need to be able to analyze while others must formulate. Some must be project managers, while others are executives. Some must manage contracts and consultants, while others monitor project performances, and so on. This requires that some basic concepts and skills be taught to most project personnel and that specialized skills relevant to specific responsibilities and roles must be taught to the different teams and groups. For this reason, the series is divided into distinct manuals and modules so that the appropriate concepts, tools and techniques can be selected for direct relevance to the specific functions of participants or the specific project problems being addressed by the action-training.

As a project is moved through its life from identification and conception, through planning and approval to implementation and termination, different approaches, knowledge and tools are relevant. The Project Planning and Management Series can be used because of its flexible structure to give the appropriate knowledge and skills to persons with different roles and responsibilities in the project life, e.g., planning, analysis, management, monitoring, contracting, control, and so on. The following examples illustrate some applications of action-training by PDRT using the series.

1. A Project Profile Workshop - conducted over three weeks for project teams with responsibility for the first identification planning document on a project idea. This workshop is conducted using Manual P -- Project Planning with an assortment of modules, including:

   1 - Project Objectives; 2 - Logical Framework; 5 - Project Organization; 7 - Project Scheduling--Bar Charts; 13 - Project Technical Analysis; 17 - Project Costs and Benefits; and so on.

2. A Planning for Implementation Workshop - conducted over three or more weeks for project teams with responsibility for preparing

action or implementation plans for projects having been approved or authorized. This workshop is conducted using Manual I -- Planning for Implementation, with an assortment of modules, including:

3 - Work Breakdown Structure; 4 - Activity Description Sheets; 6 - Linear Responsibility Charts; 9 - Project Scheduling--Network Analysis; 10 - Milestones Description Charts; 11 - Planning and Budgeting; 35 - Introduction to Contracts; 38 - Project Files; and so on.

3. Project Seminars - introducing specific concepts, project-relevant skills and project systems as illustrated in Modules 12 -- Role of PAMCO; 31 - Decision-making System for Projects; 44 - Introduction to Lending Agencies; 36 - Project Documents for Planning and Implementation; and so on.

The Project Planning and Management Series is designed to complement the lectures, exercises, project work and consultations of PDRT workshops. IT IS NOT INTENDED TO BE USED AS SELF-INSTRUCTIONAL MATERIAL. It is designed for use in conjunction with the guidance of an experienced multi-disciplinary training and consultation team. An important characteristic of action-training, typical of adult education, is that it draws upon the knowledge and experience of the participants as well as the PDRT as an integral component of the workshop. The material in the series is, therefore, basic, operational and brief. It is expanded and reinforced during project work and workshop interaction.

The ultimate justification of this series is similar to that of the action-training introduced through the National Planning Project. If it contributes to promoting better project formulation, successful implementation and generally helps to move projects forward, it is justified. However, the importance of the series goes beyond this if it ensures that Jamaica increases her indigeneous capability and capacity for formulating and managing development projects as part of the thrust toward increased self-reliance and independence.

The present series is part of a process of materials development and action-training which has been initiated by the National Planning Project. There are gaps and inadequacies which will be identified. The series is not intended to be static. It should be expanded, revised, adapted and tested through an evolution of action-training and application to projects so that its relevance is maintained through constant upgrading and revision. The series is only the beginning of a process of developing practical approaches, tools and techniques to ensure effective management of our resources in the challenges of development facing us in the immediate and distant future.

ACKNOWLEDGEMENTS

The Project Planning and Managment Series is a product of the Government of Jamaica/USAID National Planning Project (1976/1980). It was developed by the Project Development Resource Team (PDRT) for use in its "action-training" programme and presents practical approaches and tools for project planning and management. PDRT action-training brings teams and persons assigned to live projects into workshops, seminars and consultations, to acquire the specific knowledge and skills needed to perform their particular responsibilities with respect to "live" projects. During action-training, participants complete work on the "live" projects of their sponsoring organizations under the guidance of the Resource Team. In this way, projects are developed and moved forward while officers are being trained in job-relevant aspects of planning, analysis and mangement.

The publication of a series of this scope is a long and difficult process. All present PDRT members, listed as contributing authors, have worked together in writing, revising and publishing the series. The significant contributions of specific members deserve special mention. Dr. Merlyn Kettering, as long-term project advisor, guided the action-training programme and designed and developed the series. Dr. Bruce Brooks was responsible for final versions of many modules. Mrs. Marjorie Humphreys assumed primary responsibility for editing and production, and deserves much credit for organizing and clarifying the materials. Mr. Lascelles Dixon has headed the PDRT since 1979 and also deserves credit for the cover designs and for improving many of the art illustrations.

The series is the result of extensive experience in project action-training by the PDRT since 1976. Many persons in Jamaica, United States Department of Agriculture (USDA) and USAID have given support to the project and encouragement to this publication. In particular, Mr. Morris Solomon of the Development Project Management Center (DPMC) of USDA was responsible for the original project design and for supplying publications and giving encouragement and advice throughout the project. The many participants of the workshops and seminars have also contributed significantly to the form and content of the series.

Finally, credit is due to the total staff of PAMCO who have given support, constructive criticism and encouragement to the development of this series.

The publication of this series is only a beginning of the development of relevant and practical planning, analysis and management materials. There are gaps; there are areas needing improvement and revision. The series is intended to be used and to be useful. Use in action-training and practical application to project development will result in revision, expansion and adaptation. All comments on the usefulness, accuracy, and relevance of the materials are welcome. The efforts of all preparing and publishing the Project Planning and Management Series are justified if it helps to develop our national capabilities to design and carry out realistic and successful development projects.

Marcel Knight
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September, 1980

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Published by:

The Project Analysis & Monitoring Co. Ltd. (PAMCO)
Inter-Continental Hotel, 4th Floor
Kingston, Jamaica, W.I.

Project Planning and Management Series.

MANUAL – I Planning for Project Implementation
MANUAL – P Project Planning
MANUAL – M Project Management
MANUAL – PF Pioneer Farm Implementation Planning

MODULES

1. Defining Project Objectives (Objective Trees)
2. The Logical Framework
3. Work Breakdown Structure
4. Activity Description Sheets
5. Project Organisation
6. Linear Responsibility Charts
7. Project Scheduling – Bar Charts
8. Bar Charting for Project Control/Scheduling
9. Project Scheduling – Network Analysis
10. Milestones Description Charts
11. Resource Pannning & Budgeting
12. The Role of PAMCO
13. Project Technology Analysis
14. Demand Analysis
15. Market Strategy Analysis
16. Project Area Analysis
17. Project Costs & Benefits
18. Project Profile
19. Financial Analysis
20. Cash Flow Analysis
21. Discounting
22. Net Present Worth Analysis
23. Cost-Benefit Analysis
24. Benefit-Cost Ratio Analysis
25. Internal Rate of Return
26. Social Analysis of a Project
27. Economic Analysis of Projects (including Border Pricing)
28. Financial Statements & Ratios
29. Project Selection & Ratios Analysis
30. Brainstorming
31. Decision-making System for Projects
32. Project Institutional Environmental Analysis
33. Ecological Analysis for Projects
34. Introduction to Contracts, Jamaican Contract Documents & Tendering Procedures
35. Selection & Use of Consultants
36. Project Documents for Planning & Implementation
37. Report Writing for Projects
38. Project Files
39. Formats for Pre-Feasibility & Feasibility Studies
40. Motivation of Employees and Personnel Evaluation
41. Design of a Project Management Control System
42. Evaluating & Forecasting Project Progress & Performance
43. Project Termination
44. Introduction to Lending Agencies
45. Organising and Conducting Conference meetings
46. Withdrawal of and Accounting for Loan Funds in the Financing of Projects

I INTRODUCTION

1.1 *Purpose of this Manual*

The purpose of this manual is to help project managers to carry out projects successfully. "Successful" means that projects are implemented in such a way that project objectives are reasonably achieved within the time and resource constraints prescribed by the project plans. It is assumed that project implementation phase follows the appropriate identification, planning and approval of a project. A project should reach an advanced state of "maturity" before resources are committed for its implementation, but the extent to which this is not the case does not affect the implementation planning steps introduced here. However, pushing "immature projects" into early execution makes the exercise of implementation planning ever more imperative, and more difficult.

1.2 *Focus of this Manual*

This focus of the manual is upon the managerial procedures to be followed for implementation planning, rather than on technical project activities or technical planning. It is difficult to give general guidelines on technical planning for projects as these vary so much between types of projects. The purely technical activities are very important and must be performed with high quality; but the management aspects of projects are often neglected and can be improved to ensure a higher degree of success in project performance. All project managers must perform much the same kinds of managerial activities regardless of the nature of their projects.

Planning for project implementation follows basically the same steps for many different types of projects. Fundamentally, project managers are responsible for managing the same resources - money, people, supplies, materials and facilities. Although projects differ in countless ways, certain generalizations in project management apply to all projects. Every project requires *money;* every project takes *time* and organized *human effort;* every project makes use of some *facilities, supplies* and *materials*. The job of the project manager is to make the money, the time, the human resources and the physical resources at his disposal achieve the project objectives.[1]

Thus, for all kinds of projects, the categories of *time, money, human resources* and *physical resources* must be managed. The assumption of this manual is that some management approaches, principles, tools and methods basically apply to all projects in some degree. Project management is not a haphazard, ad hoc occupation that varies from project to project at random. It is possible to methodically *plan for project implementation.* A Five Step Approach to Planning for Project Implementation is introduced to Project Managers and Administrators who are aiming for success. Each step described the management tools and techniques which can be applied to real projects.[2]

The approach and tools introduced in this manual are specifically for project managers, but all persons contributing to projects, from senior administrators, to technical staff, to project team members, can benefit from familiarity with these implementation planning steps and the tools and techniques associated with them. The application of this approach can form the foundation for more successful execution of projects.

II. UNDERSTANDING PROJECTS AND THE PROJECT CYCLE

2.1 *Definition of Development Projects*

A project is a "combination of human and non-human resources pulled together in a 'temporary' organization to achieve a specified purpose."[3] Projects are best distinguished from programmes in terms of time and objectives. Programmes tend to be open-ended in nature, while projects have specific objectives and specific end points. There is, however, a great deal of ambiguity in the uses of these administrative terms.

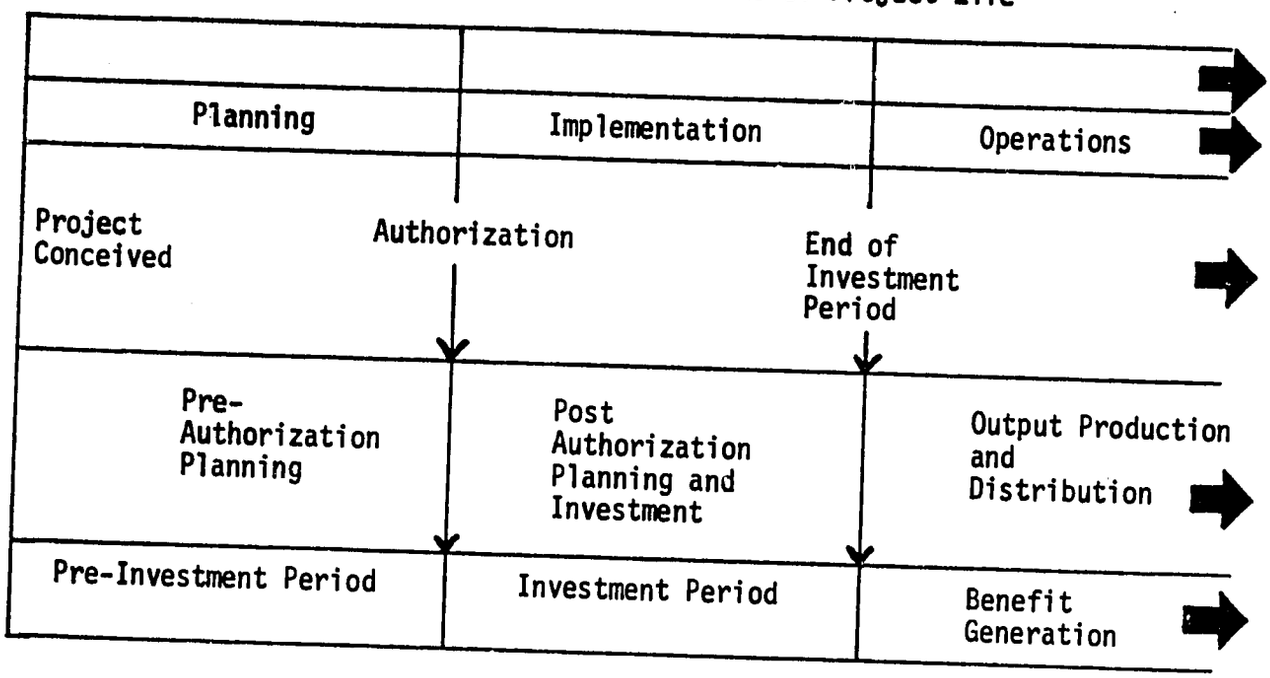
Development projects may be defined as investments to develop new capabilities to produce additional goods and services. Within a specified time and with specified inputs, projects are expected to produce a particular set of outputs to meet identifiable development needs, e.g. to satisfy the demands for particular products or services, to exploit for productive purposes locally available natural and human resources, to produce goods and services for export, or to create social and capital infrastructures that allow productive activities to be performed more effectively or efficiently.[4]

By their very nature, development projects are risky ventures. They involve a great deal of uncertainty. They are unique. They are investments of scarce financial, human and physical resources. They have controversial objectives. They are change-oriented. They involve processes which have not been tested in the project setting before. Thus, there is a need for a special approach to project management which promotes problem-solving, resource mobilization and co-ordination, organizational collaboration and integration, and effective monitoring to ensure early management decisions in relation to deviations from plans. Effective planning and management can reduce some of the risks and uncertainties, but certainly not all.[5] Project implementation calls for a great deal of *creativity as well as sound management.*

2.2 *Project Life Cycle*

Projects go through three distinct periods as they mature: (1) Planning, (2) Implementation, and (3) Operations as illustrated in Figure 1.[6]

FIGURE 1: Major Periods of Project Life[6]



(1) *"Planning"* deals with all those pre-authorization activities which attempt to identify the project idea and formulate this idea into a set of technical and organizational plans which can achieve the objectives intended within the specified time period.

(2) *"Implementation"* deals with the "investment period" of the project when the physical and human structures are put in place for the productive processes of the project which are to follow.

(3) *"Project Operations"* deals with the period of actual output generation and distribution, where the benefits of the project are realized.[7]

A different form of financing is required for each project phase. For example, the project idea should be conceptualized in appropriate format and should be carefully analyzed before its selection for further development and formulation. Also, before there is heavy commitment of resources for implementation, it requires a pre-investment financing and substantive authorization.

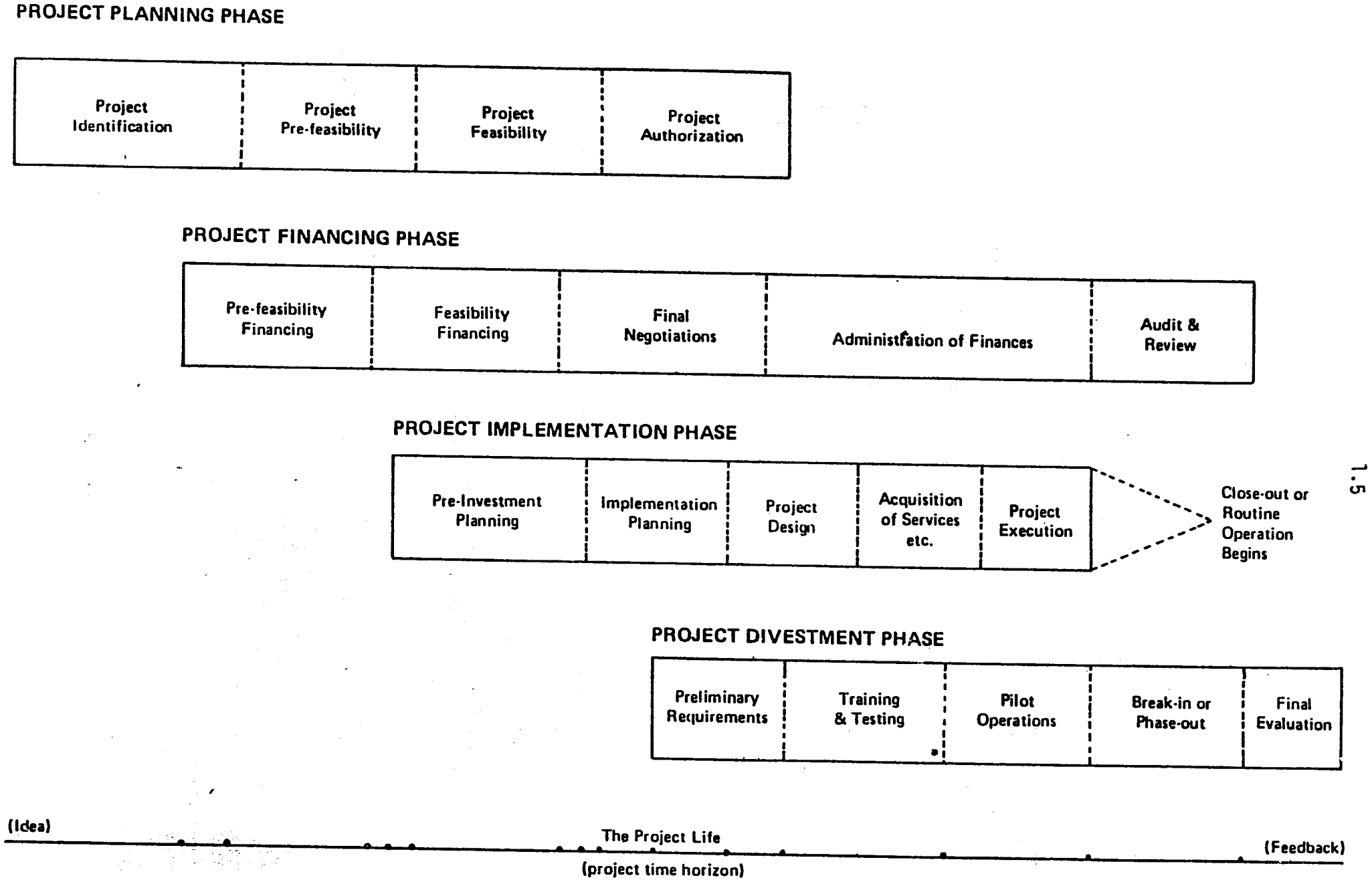


Figure 2: PHASES AND STAGES IN THE LIFE OF DEVELOPMENT PROJECTS

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"Project Administration" deals with the moving of a project through all the phases of Planning and Implementation up to the point at which it is transferred to ongoing or routine management. During the planning and implementation periods of a project, four distinct phases of activity can be identified as composing the Administration period of Project Life Cycle -- Project Planning Phase, Project Financing Phase, Project Implementation Phase and Project Termination Phase.

Figure 2 is a diagram of the major project phases and the distinct stages of each phase. The phases are generally sequential, but overlap to some extent. For example, the stages of the Planning Phase should be *nearly* complete before the stages of the Implementation Phase begin. A project is expected to have passed through the distinct stages of identification and selection, formulation and appraisal, and approval before resources are committed for the implementation of the project.

Each of these phases must be co-ordinated throughout the normal project life cycle. This is the task of the Project Administrators. Under each of the phases and its component stages, a number of activities and analyses are conducted with varying degrees of depth and precision. The findings of one stage (or phase) are then used to form the foundation requirements of subsequent stages (or phases) until the project has evolved through its life from conceptualization to operations or termination. The activities interlock closely throughout the project cycle and the success of projects at any stage of development is dependent upon the completeness and accuracy of work done in earlier stages.

In the Jamaican Project Planning System,* a project idea must be first documented in a Project Profile, which is sent for consideration by the Pre-Selection Committee. This initial planning stage facilitates sound project formulation in the subsequent planning stages and viable designs for implementation Phase. Projects should move systematically through the planning stages of the project cycle to maturity. Haste to "get something on the ground" frequently results in delays and discouraging mistakes in implementation which could have been avoided if there had been thorough and methodical planning.

* See Module 31 *Decision-making System for Projects*, for a discussion of the Government of Jamaica Planning System for External Loan Financed government projects.

Because projects often have high visibility, there is a tendency to force them into construction and implementation stages before feasibility studies or project documentation is completed. Unfortunately, such haste often results in inappropriate physical and organizational structures which can result in excessive project costs, time overruns, high levels of conflict and disagreement, frustrations and disapointment. Project execution or the commitment of project resources should be delayed until planning for project implementation has been properly completed.

Projects are usually accompanied by high expectations. Projects may be seen, by analogy, to be the "examination results" of a government. Project announcements are often much publicized so that, as expectations for performance are aroused, project performance is closely observed by all interested persons and groups. It is essential to adopt procedures of project planning which ensure the highest possibilities of project success, especially in light of the general conditions of uncertainty and risk which surround development projects.

When project managers are assigned to projects, they should investigate the extent to which projects have matured through the phases and stages of the project cycle, particularly those preceding the commitment of resources. In Figure 3 the aspects of Planning and Analysis which precede implementation are illustrated.

Correct identification of the stage of development of a project is the first important step in being able to "manage" a project.

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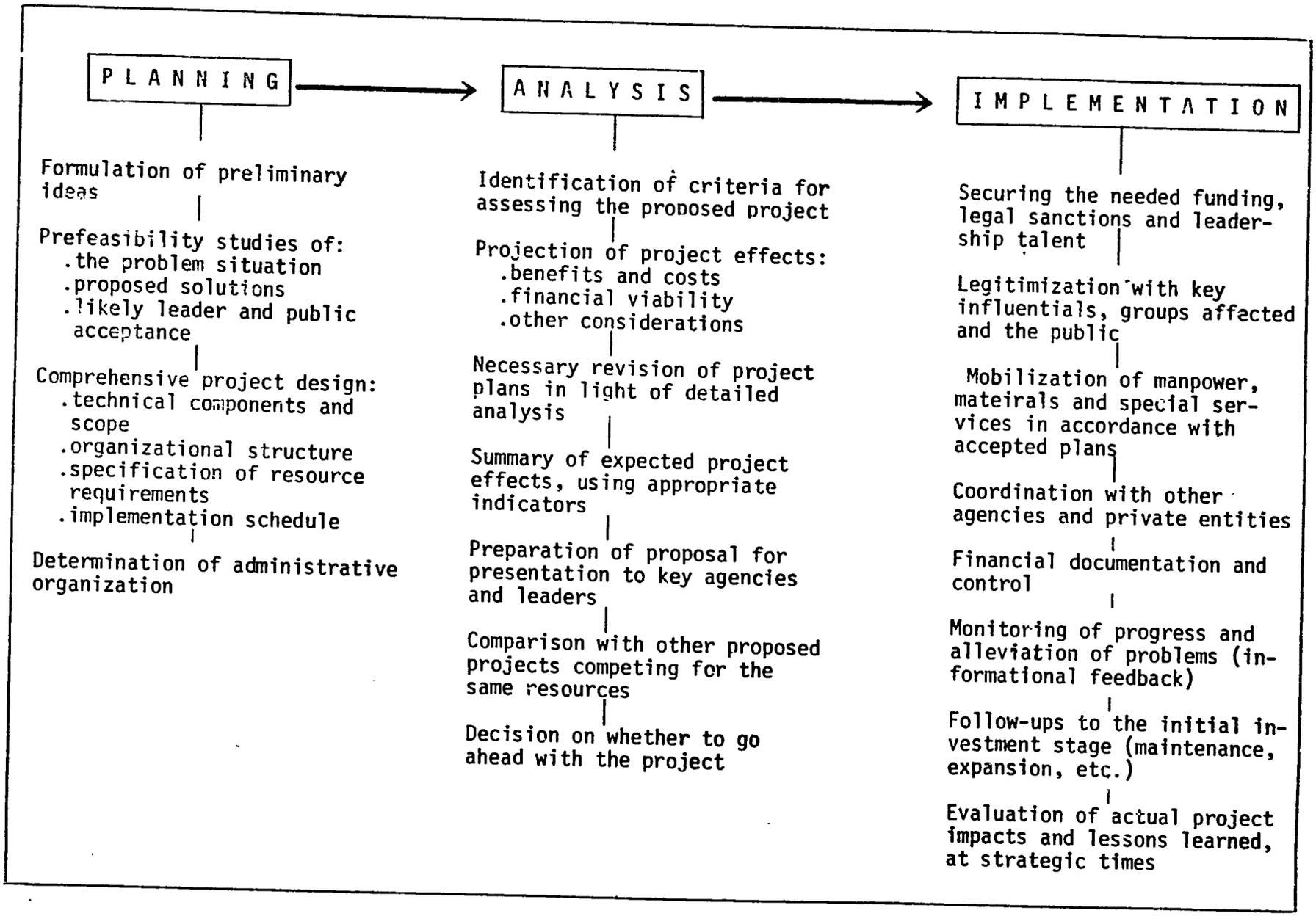
FIGURE 3: COMPONENTS OF THE PROJECT CYCLE [8]



III. THE IMPORTANCE OF PLANNING FOR IMPLEMENTATION

3.1 *The Meaning of Implementation*

Policies are official statements of purposes to be pursued on behalf of an organization or society to bring about the desired changes or to achieve intended states of being. *Planning* is the attempt to guide and control the future course of events through prescribed activities to bring about these desired changes. *Implementation* is the process of *actual effort to the fulfilment of* plans and policies through concrete actions and measures. Implementation is the necessary consequence of policies and plans, if they are to be realised.

This manual focusses upon *planning for project implementation.* This is the design stage at the beginning of the Implementation Phase. It follows all pre-investment planning, appraisal, and authorization. It is assumed that the project has reached an appropriate stage of maturity before it is authorized for implementation. The degree of maturity may vary from project to project, depending on the amount of study and appraisal preceding its approval. There must be clear indications of the degree of formulation a project has received as well as evidence of its authorization from appropriate authorities *before* it is chosen for implementation. When implementation is initiated, *all* former project documents form the basis for Planning for Project Implementation. Development projects have peculiar characteristics such as, uniqueness, resource and time constraints, uncertainties, need for co-ordination, etc. Careful project implementation planning will reduce confusion, delays, conflicts, unrealistic expectations, and inefficiency.

3.2 *Feasibility Studies are Inadequate for Implementation*

Many troubles in the implementation of development projects do not come from the policies or the nature of changes to be introduced, but from lack of adequate planning. Faulty information and unrealistic assumptions in plans often cause implementation difficulties. Plans that are not well formulated hamper project execution. Even with extensive "pre-authorization planning", it is necessary to devote intensive effort to "Planning for Project Implementation". It is necessary to update project data, fill in gaps in project information, incorporate authorized changes into project plans and to overcome any deficiencies in pre-authorization studies.

It is common to find feasibility studies being used as project implementation plans. This is not a sound practice. Feasibility studies are not designed as action plans. They are studies of the technical worthiness of projects.* Planners frequently do not have working knowledge of the implementation processes or area. Although these studies include schedules and budgets,they are often based upon broad assumptions that must be re-examined and details must be updated when a project is finally approved and financed.

The fact that feasibility studies are used to judge alternative projects also biases the nature and the presentation of the project data. Project studies may camouflage difficulties (which must later be faced by project managers) in an effort to improve the probability of project acceptance. In addition, there may be significant changes from the time of the initial studies and data collection until approval, which can have a significant impact on priorities, costs, personnel, resources, schedules, technology and project demand.

3.3 *Planning for Project Implementation*

Planning for implementation establishes the foundation and controls for successful implementation of a project. Most simply, project implementation means laying out the managerial and technical framework necessary for the actual work on a project. It involves the tasks of establishing managerial control before project execution is begun and is the first step in the actual implementation of a project.

Planning for implementation provides the opportunity to orient the implementation team to the scope and nature of the project and give them intimate knowledge for control over all project details. In most cases the project implementators have not been involved in the earlier stages of project planning. Planning for project implementation is a critical stage in the commitment of project resources. Neither feasibility studies nor earlier project documentation are adequate.

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* See Module 39 - *Formats for Pre-Feasibility & Feasibility Studies*

IV. THE NATURE OF SOUND PROJECT MANAGEMENT

4.1 *Organizational Characteristics Affecting Project Management*

Apart from its technical and economic merits, the success of a project depends largely on how effective its organizational structure is. Without efficient and appropriate organizational structures, a sound and viable project may end in failure. The form of organization and management selected for a project will depend largely upon the nature and scope of the project activities and the setting in which the project is to operate.[9]

First, one must make a distinction between the "project organization" and the "parent organization" responsible for the project. *Project organization* refers specifically to those temporary structures put in place to carry out the project. The project organization consists of those persons who are entrusted with day-to-day management, making decisions which affect execution, internal and external co-ordination, and general project supervision. The parent organization is an existing organization such as a Ministry or an Agency which is responsible for and houses the project. This is the organization which normally through a board or committee has general responsibilities to decide on policies, approve budgets, appoint management, and specify limits to the powers and responsibility of the management on specific projects.

A major difference between project management and traditional management lies in the organizational structures used for implementation, i.e. the actual carrying out of intended activities. Traditional organizations are structured into departments or units having distinct and specific functions in relation to the overall objectives of the total organization. Departments are organized into lines of vertical authority and responsibility and operate according to prescribed procedures and regulations.

In contrast, projects are a temporary form of organization put together for specific tasks and usually imposed upon the traditional structures and operations of the organization. Project organizations are devised to achieve specific sets of limited objectives within a defined time limit and with prescribed resource constraints. They are then disbanded. Project organizations may take various forms, from complete submersion in the existing structures, to a matrix situation where a project office is established and draws from resources across the organization, to the establishment of a

completely new organizational unit or entity to accomplish the project.*

4.2 *Matrix Management for Projects*

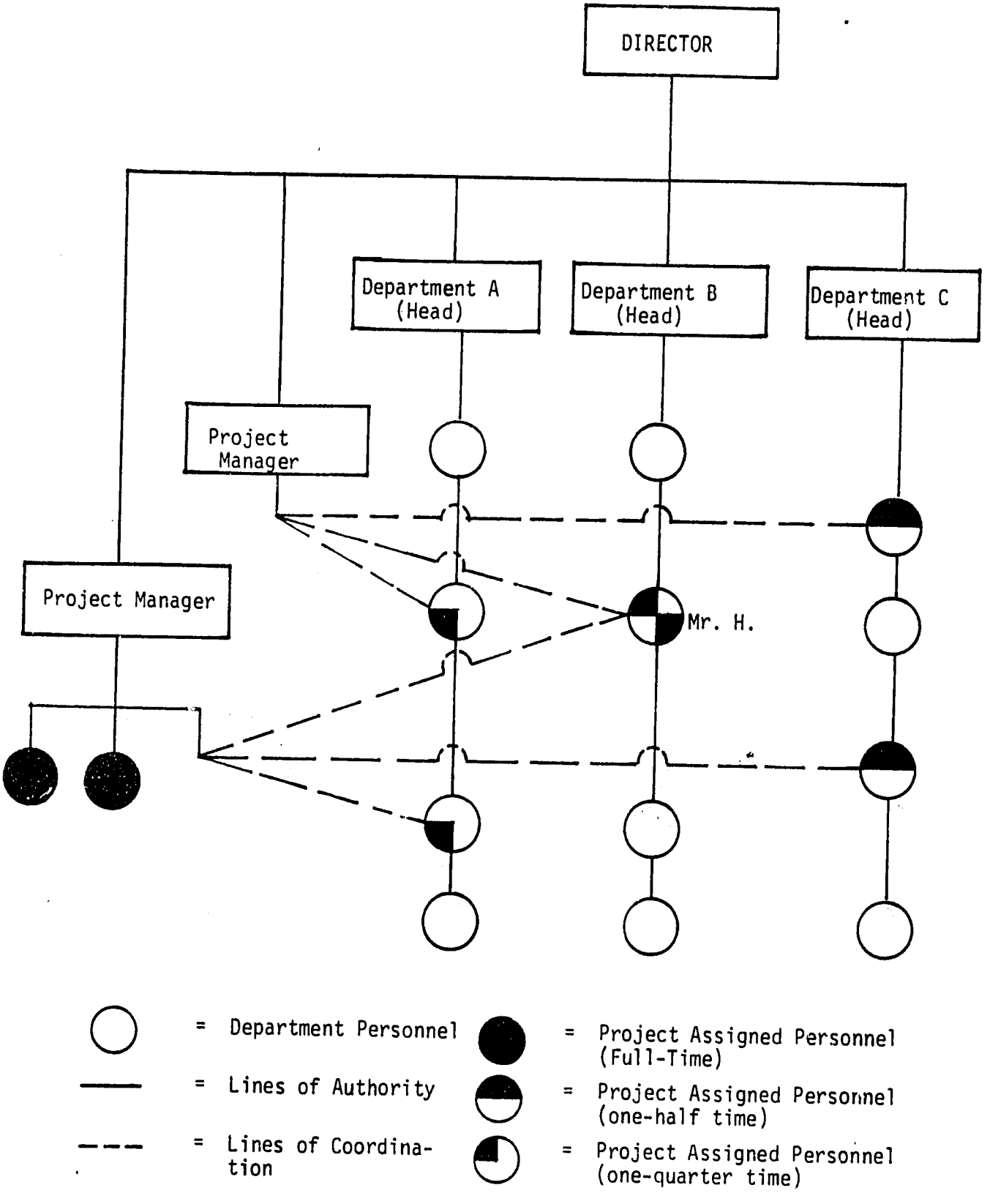
In this case, we shall be most concerned about the "matrix" management for projects.

Matrix Management is basically that situation in which there is a core project team, consisting of a project manager (full-time or part-time) and some project staff. However, most of the project personnel who will have specific roles on the project, remain under the authority of their respective departmental heads (See Figure 4). In the Matrix Management situation, the project manager may have direct authority over only a few or a small proportion of the total staff required for the project. The manager has only integrative or co-ordinative authority over the rest of the staff. Matrix projects are temporary and are imposed cross-departmentally throughout the traditional functional areas of an organization. At the project level, there must be co-ordination and integration of functions, personnel and resources from organizationally separate units. But the project manager does not have authority over most of the people required to do the job. Because of their inter-departmental nature, matrix projects require the creation and clarification of formal and informal lines of communication, co-ordination, authority and responsibility which will complement those of the permanent structures of the organization. Organizational structures must be adapted to the special needs of both the project and the parent organization.

An example of how confusion and conflict can develop in Matrix Management can be illustrated in Figure 4. Project Managers X and Y both are to utilize the services of Mr. H. on their projects. Mr. H. remains in his functional department and under the direction of his Department Head. If either of the Project Managers has need for Mr. H. at the same time as the Department Head, Mr. H. will invariably take the assignment of the Department Head. This may cause the project work to fall benind. In addition, Mr. H. is likely to be overloaded with expectations from two projects while maintaining a normal workload in the department. The Project Managers do not have the administrative authority to command the persons still under the direction

*See Module 5 - *Project Organization*, for a discussion of alternative project structures, advantages and disadvantages of each, and criteria for determining appropriate project organization.

FIGURE 4: PROJECT MATRIX MANAGEMENT ORGANISATIONAL STRUCTURES



of departments to do the work, and the Department Head finds that the routine work suffers as people are drawn off to do project work. In the case of conflicts over time, schedules, and/or work responsibilities, persons like Mr. H. would still be primarily accountable to the Department Head. But the work of both projects and the Department tend to be adversely affected when too many projects are undertaken and systems become overloaded.

Matrix project management must operate within a complex of vertical, diagonal, and horizontal relations which can create a great deal of confusion. As a consequence, projects are often characterized by a lack of clarity regarding who does what, who controls whom, and who is responsible for what and whom. Because of this complexity, projects should not be launched without serious planning for the co-ordination necessary to ensure successful implementation. *The project organization should be carefully defined in relation to the needs and characteristics of both the project and the sponsoring entity.*

4.3 *Project Authority vs Responsibility*

There is a traditional management principle that says "Responsibility" must equal "Authority" (R = A). This means if a person is *responsible* to do a job, that person must have the *authority* necessary to do the job. For the project manager, this is not the case. In the project matrix organisational situation, "Authority is less than Responsibility" for the project manager (A < R) or, stated differently, "Responsibility is greater than Authority" (R > A). Thorough planning of project implementation is necessary to anticipate inevitable conflicts, such as, competition over personnel and other resources. *Agreements, procedures and systems for resolving the subsequent organizational conflicts and for reinforcing the authorities of project management must be established.*

Projects represent a strong contrast to the usual hierarchical relationships which generally dominate organizations. Successful project implementation requires the integration of resources from across the organization. This can create confusion and conflict in the absence of appropriate plans and systems for project management. The confusion increases, significantly, when the organization undertakes a large number of projects. Severe strains are put on the organizational personnel and resources. The result is often disastrous for both the organization and the projects. First, the ongoing, routine work of departments suffers because of the assignment of personnel from "normal" work to project work. Second, the work of projects suffers because project managers do not have the authority to command that the temporarily assigned personnel work on the projects, especially if there is any

conflict between routine and project work. What then happens is a reduction in the productivity of both the project and the organization. When routine organizational work is not done, projects usually suffer because they do not receive adequate organizational support for their implementation or to ensure the successful impact of their outputs. Routine organizational productivity suffers when project implementation is delayed, for example when project resources are shifted on a crisis basis to do project work to the neglect of their normal duties.

Projects present increased demands on all units to perform project-specific functions in addition to routine activities. Without clear project implementation plans, the confusion can get out of control. This situation is further exaggerated when project personnel from outside the parent organization are assigned to projects. Frequently the co-ordination is not confined to a single organization, but involves several agencies and Ministries.

Multi-project commitments can overload an organization and lead to a downward spiral of failure and disappointment which further multiples the confusion created in the organization and which can reduce productivity significantly. Because projects present a drain upon existing organizational resources, *there must be a realistic approach to the number and scope of projects that any single organization can undertake.*

4.4 *Differences between Departments and Projects*

The need for a well-planned foundation to manage projects can be illustrated by the major differences between departments and projects.

(1) Projects are temporary and unique.

(2) Projects cut across departments, functional areas, and even organizations.

(3) Projects must be completed within a total budget, rather than strive to be effective within a calendar budget.

(4) Project work is not routine,but varies throughout the life of the project.

(5) Co-ordination of personnel and resources that are not necessarily under the authority of the project manager means that the responsibility of the manager is greater than the authority.

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(5) Co-ordination of personnel and resources that are not necessarily under the authority of the project manager means that the responsibility of the manager is greater than the authority.

A comparison of the characteristics of departments and projects in Figure 5 illustrates the extent to which the management of projects is significantly different from the management of a department. The unique characteristics of projects is the basis for distinguishing between traditional organizational management and project management. In particular the information foundation for project management is more precise and demanding, as explained in the next chapter.

FIGURE 5 COMPARISON OF PROJECTS AND DEPARTMENTS[10]

Project	Department
1. Specific life cycle: conception, design, fabrication, assembly or construction. test, initial utilization.	1. Continuous life from year to year.
2. Definite start and completion points, with calendar dates.	2. No specific characteristics tied to calendar dates, other than fiscal year budgets.
3. Subject to abrupt termination if goals cannot be achieved; always terminated when project is complete.	3. Continued existence of the function usually assured, even in major re-organization.
4. Often unique, not done before.	4. Usually performing well-known function and tasks only slightly different from previous efforts
5. Total effort must be completed within fixed budget and schedule.	5. Maximum work is performed within annual budget ceiling.
6. Prediction of ultimate time and cost is difficult.	6. Prediction of annual expenditures is relatively simple.
7. Involves many skills and disciplines located in many organizations which may change from one life-cycle phase to the next.	7. Involves one or a few closely related skills and disciplines within one well-defined and stable organization.
8. Rate and type of expenditures constantly changing.	8. Relatively constant rate and type of expenditure.
9. Basically dynamic in nature.	9. Basically steady-state in nature.

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V. AN INFORMATION FOUNDATION FOR PROJECT MANAGEMENT

5.1 *Project Management Information Types*

Good project management is built upon sound management judgement and decisions. Good decisions require good information. Planning for project implementation ensures that:

(a) a sound information foundation for project management is constructed; and

(b) information flows to facilitate management and decision-making are established.

Several types of information are needed to build a sound foundation for a project. If systems are created to provide an adequate information flow, the actual work of project implementation becomes more manageable.

The types of information needed for project management are described in the following paragraphs and include:[11]

(1) project scope information;

(2) project work and action plans information;

(3) project organization information;

(4) project financing information;

(5) project resource planning and budgeting information;

(6) contracting, work authorization and resource control information;

(7) project "Product" information;

(8) project control information; and

(9) environmental information.

(1) *Project Scope Information*

The intermediate and final objectives of a project must be stated clear and defined distinctly so that it is possible:

(a) to know what a project is to do; and

(b) to test if and when it has been done.

Planning for project implementation establishes the procedural basis fo overcoming and avoiding some of the management and organizational difficultie inevitably faced by project managers. Implementation plans anticipate the necessary co-ordination of all project components, including those not directly under the authority and control of the project management. Plans introduce discipline and control into relations which may tend to be very ambiguous, unnatural and therefore, conflict-generating. They facilitate project operations and enhances the overall performance.

(2) *Project work and action plans information*

The objectives of a project and its output are achieved by performing distinct tasks and activities which form the work breakdown of the project. These activities should be planned on a project master schedule which shows the relationships between activities and the major milestones of project achievement.

(3) *Project organization information*

A systematic way of showing how all organizations are related to the various work elements of a project makes it easier to co-ordinate these organizations and organizational units. This is important so that every proje team member or contributor gains a full understanding of the total scope of the project and of his/her specific responsibility in relation to other persons on the project. In matrix management situations, organizational re ponsibilities, authorities, and relationships must be carefully defined fo effective project implementation.

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(4) *Project Financing information*

A financial plan must be developed to identify and co-ordinate the various sources of funds and to indicate how each category of funds is to be used as well as the means of payment. Documents necessary to obtain the release of funds and to control their movement and disbursement must be standardized and consistently used.

(5) *Resource Planning and Budgeting Information*

Plans are needed to show the flow of all resources, equipment, manpower and materials which have been identified for the project. This plan is to ensure that these resources are available and accessible to the project when needed.[4]

(6) *Contracting, work authorization and resource control information*

Work orders and contracts are standardized formats that authorize expenditure of funds, labour, materials and other resources required to accomplish specific tasks. These are necessary to avoid confusion about responsibility and authorization.[5]

(7) *Project Product Information*

Every output expected from the project should be clearly identified with specifications for measuring project performance with respect to each product.

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[4] See Module 11 - *Resource Planning & Budgeting*

[5] See Module 34 - *Introduction to Contracts, Jamaican Contract Documents & Tendering Procedures and App.1,2,3,4*

(8) *Project Control Information*

The basic reason for control information is to have data to compare performance on the project against expectations or plans. This requires a formalized and standardized flow of information on a regular and periodic basis to all decision-makers on the project. The information flow should be organized in such a manner that there is not a barrage of irrelevant or unnecessary information. Only relevant project information should be channelled to appropriate decision-makers. Proper use of control information can avoid confusion regarding areas of authority as well as providing a basis for better management decisions.*

(9) *Project Environment Information*

This refers to all available information external to the project which has an impact on project performance. This category of information is least capable of being standardized and defined. It refers to information about the institutions which exist in the project environment, such as other Ministries, markets, suppliers and so on.+

The geophysical environment will affect and will be affected by projects, such as soils, water and air.o Ecological environments of projects increasingly receive a great deal of attention. For example, projects using large amounts of well waters affect the salination levels of the water tables in St. Catherine, and the salinated waters may affect the project machinery or outputs.

Both institutional and geophysical environments are critical to project planning and performance. The information gathered with respect to the various types of project environment can be put into perspective to judge the impacts and implications for projects if all the previous informational requirements are met.

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* See Module 41 - *Design of a Project Management Control System*

\+ See Module 33 - *Ecological Analysis for Projects*

o See Module 32 - *Project Institutional Environment Analysis*

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5.2 *A Project Management Information System*

All relevant information should be constructed and integrated during planning for project implementation. The information generated and documented at the beginning of the project is to be used during the project as a means of gaining and maintaining project control. A project management information system will be used for monitoring and must be upgraded throughout the project.* Information is useful when used.

Information requirements at the different levels of project management are not the same. Needs for information are related to functions, and the management information system should be designed to give information which is necessary for carrying out those functions. *In this manual we shall be dealing primarily with that information required at the level of the project manager (See Figure 6).*

Three levels are identified - the activity level, the project level and the executive level. At the activity level, control must be exercised by activity managers to see that the outputs of activities are produced within specified guidelines. At the project level, the project manager is responsible to see that the project does not deviate significantly from its overall objectives.

There needs to be a coherent information system so that information is generated, collected, analysed and communicated between these project levels for effective decision-making. It is necessary to have appropriate information to analyze deviations from the performances being monitored, and controlled at all three levels. Information must flow both upward (e.g. summary of performance) and downward (e.g. decisions and corrective actions). The information system must promote two-way communication throughout the project organization.

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* See Module 41 - *Design of a Project Management Control System*

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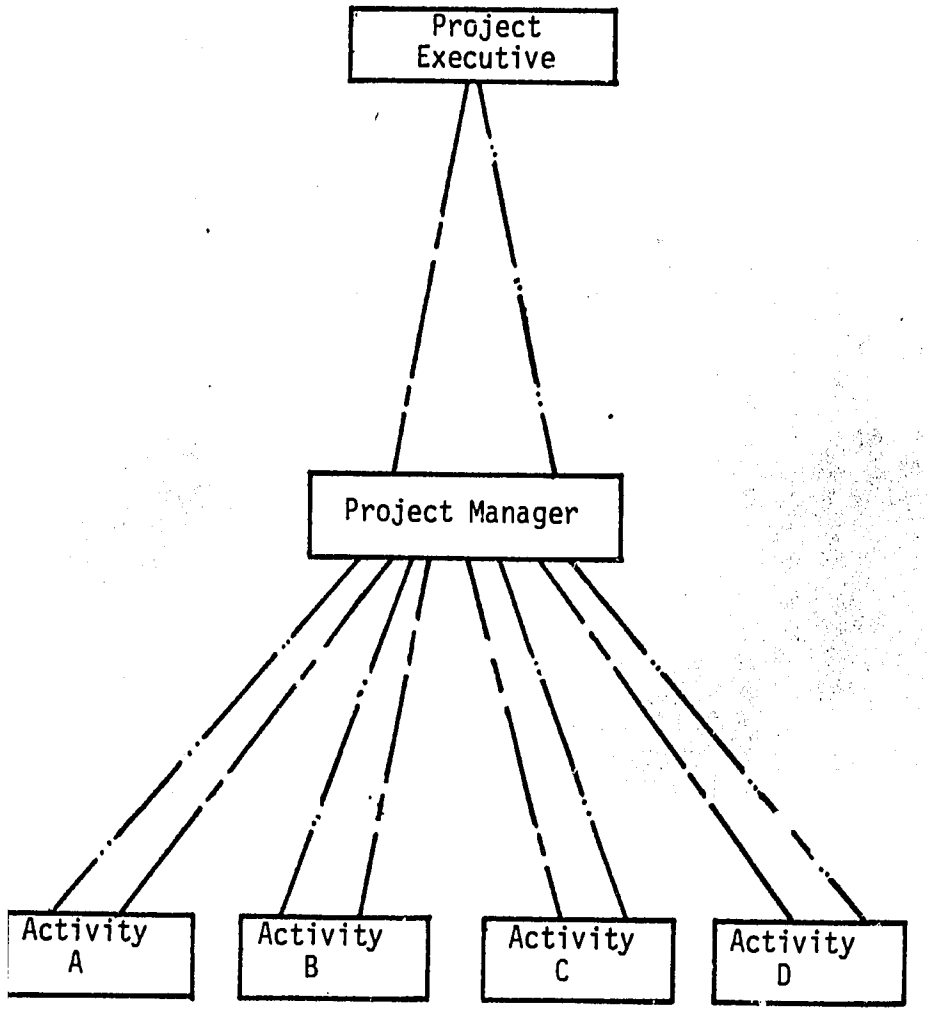
FIGURE 6: PROJECT INFORMATION PYRAMID



Executive Level Information

Summaries of project financial and physical progress. (e.g., monthly and quarterly reports)

Project Management Information

periodic monitoring and *measuri* in *summary* form of performance on activities to detect significant *deviations* from plans. (e.g., weekly and bi-weekly reports).

Activity Level Information

continuous and *detailed data* about direct use and control of resources and outputs.

——··—— = Financial Information Links

—— - —— = Physical Information Links

A brief description of the management functions at the three levels shown in Figure 6 illustrates the different information needs. At the *executive level,* management deals with policy making and strategic planning which involve establishing objectives and determining levels of resources to be allocated. At the *project manager's level,* management involves control and allocation of project resources along with monitoring measures of performance. Information needs are periodic, e.g. fortnightly and are summaries of the data from the operational levels of the project activities. At the *activity level,* management requires constant information inputs to carry out direct monitoring and control of the resources used on each activity.

Information at the activity level permits comparison to the plans, contracts and procedures established and summaries of performance are forwarded to the manager. The more extensive information on the activity level, as condensed for the manager, is used as an analytic base for the information to be transmitted to the executive levels for project administration.

At all three levels, the project management information system is designed to give pre-determined key data for monitoring and analysis which can summarize project performance at the degree of detail necessary for that level.

At any level, the major functions for controlling the project are to:

(a) establish performance standards;

(b) collect and analyse operational data;

(c) detect deviations from standards;

(d) provide a basis for determining the implications and significance of deviations; and

(e) provide a basis for judging impacts of corrective action.

Project information systems facilitate control through collection and analysis of actual data against planned performance indicators for the major project activities. The purpose is to highlight problem areas that affect the overall performance of the project.

5.3 *Two Types of Project Control*

There are two general ways that project managers can use an information system: one is *Positive Control* and the other is *Control by Exception.*[12]

Positive Control refers to the complete involvement of the project management in the daily workings of a project. This approach is very decisive and requires more managerial energy because of the need for continuous observation and interaction. It also requires that the manager have some knowledge of the technical operations of a project (or be assisted by someone with such knowledge). Unfortunately, it often leads to a confusion of the role of management versus the role of technical or professional staff. However, certain types of projects are benefited by this approach, such as particularly risky ventures or those in which the technology is particularly unique and new.

Control by Exception is more common and requires a structured management information system. Only periodic monitoring is required rather than continuous involvement in all management and technical details. Technical standards and performance are established and the management becomes involved only when performance exceeds the limits of standards established - both for better or worse. When necessary, management becomes involved by investigation and takes appropriate corrective action. The information systems promoted by this manual are applicable for either approach, but are most applicable in the case of Management by Exception.

VI. PLANNING FOR PROJECT IMPLEMENTATION

6.1 *Information Blocks for Implementation*

Planning for implementation simply means laying out the managerial and technical framework necessary for actual implementation of a project. This requires that information foundations and systems be established for project management as outlined above. Project management information "blocks", if properly developed and linked, can be used by project administrators and managers to help carry out projects successfully.

6.2 *The Five Implementation Planning Steps - An Introduction*

The "Five Steps of Planning for Project Implementation" permits a sound methodical approach for project administration.[13] As seen in Figure 7, the Five Steps of Implementation Planning are:

(1) Project Activation

(2) Specifying and Scheduling the Project Work

(3) Clarifying Project Organization

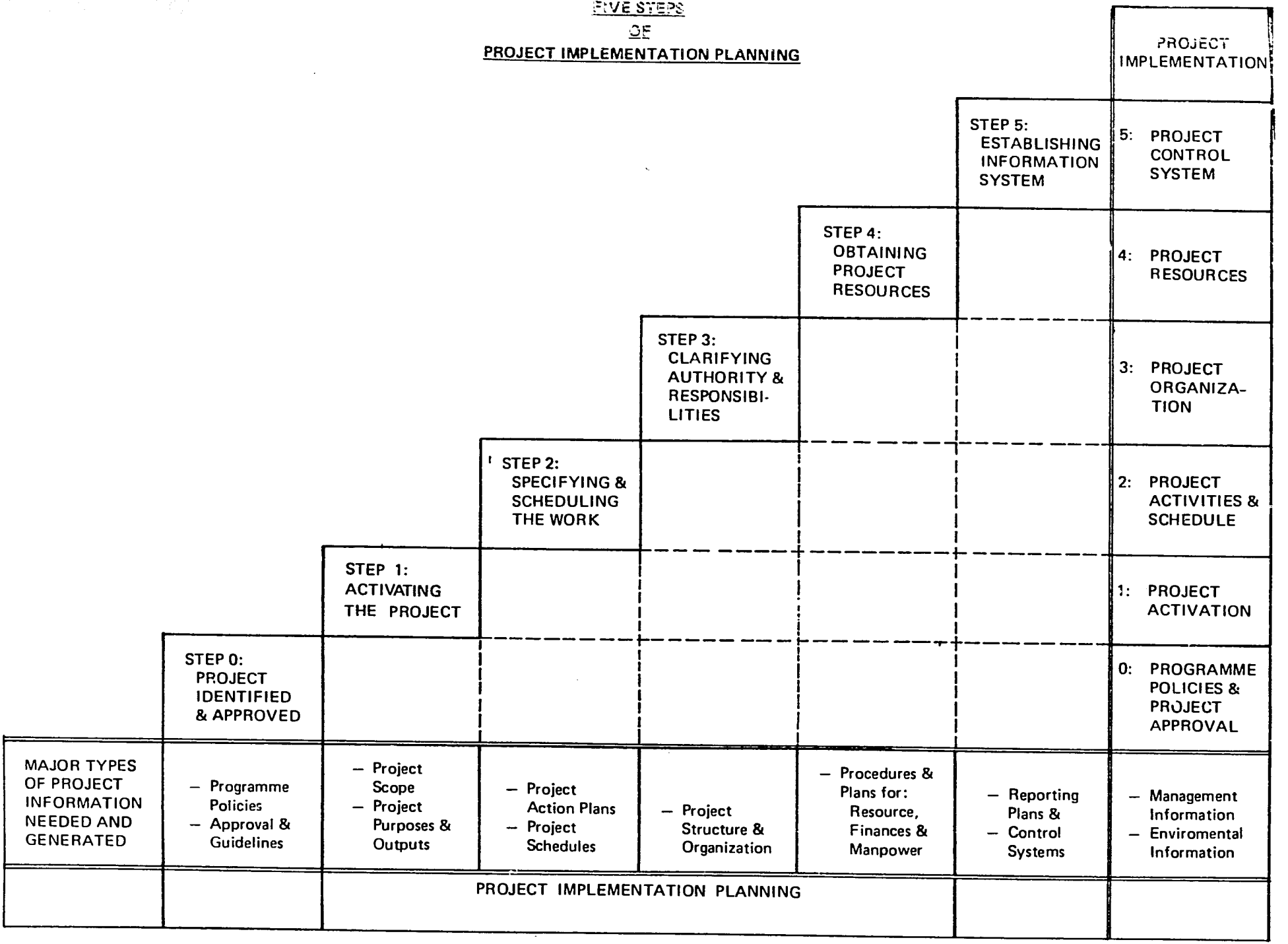
(4) Obtaining Project Resources

(5) Establishing a Project Information and Control System

Each step constructs the "information blocks" referenced on the bottom bar of the diagram below each step. The Five Steps form a sequence of planned activities which build upon each other to form a basis for actual project execution. By following the five steps of implementation planning, project managers can avoid many later problems and delays when project execution work actually begins, because the foundation for successful project management is formed.

1.21

FIVE STEPS OF PROJECT IMPLEMENTATION PLANNING



6.3 *Building a Sound Project Foundation*

One feature of this approach is the rigor and logic of the sequence in which project implementation planning is carried out. The planning steps are deliberately sequential because the information generated within one step is used in subsequent steps. Products of Step One are necessary in Steps Two, Three and Four; and products of Step Two are necessary in Steps Three, Four and Five, and so on.

As an example in Figure 8, foundation documents, such as the Project Plan (0-C) are required to carry out the Activities of Step One. Among the activities of Step One is the writing of a Project Charter (Sub-step 1.4). The Project Charter (I-F) as a product of Step One becomes a foundation block for activities of subsequent steps, such as Specification of Work Activities (Sub-step 2.2), the product of which is a Work Breakdown Structure (2-B). The Project Charter (I-F) is also a foundation for activities such as obtaining Manpower Agreement, in Steps Three and Four. These can be seen in Figures 10 - 14 which illustrate the foundations, activities and products of each implementation planning step.

This sequential logic can be demonstrated throughout the Five Steps of Planning for Project Implementation. Each step is composed of distinct activities which cannot be performed without inputs of certain basic project information, e.g. the Project Study. Those inputs are the *"foundation blocks"* required for that step. Each step also has distinct *"products"* which are the documents constructed by carrying out the activities and decisions of that step, e.g. a work plan. Sequentially, the products of one step become the foundation blocks for subsequent steps. As shown in Figure 8, the implementation planning steps logically construct the foundation for sound project management direction, execution and control.

The alpha-numerical code introduced in Figure 8 is used consistently in the following text. Every *"information block"* which is a *"product"* of the implementation planning steps is given an identifying number, e.g. *I-B* or *2-G*. These identifying numbers are carried forward as these products become the *foundation* blocks for subsequent steps. For example, Manpower Plans (2-G) become part of the foundation for Step Three and again for Step Four. These identifying codes are used in Figures 10-14 to illustrate the "Foundations" and "Products". In the flow charts for each of the Five Implementation Planning Steps, activities/decisions are represented by a numerical code, i.e. 1.3 or 2.4 to represent management actions which result in the products - foundations.

Figure 8 BUILDING A PROJECT FOUNDATION

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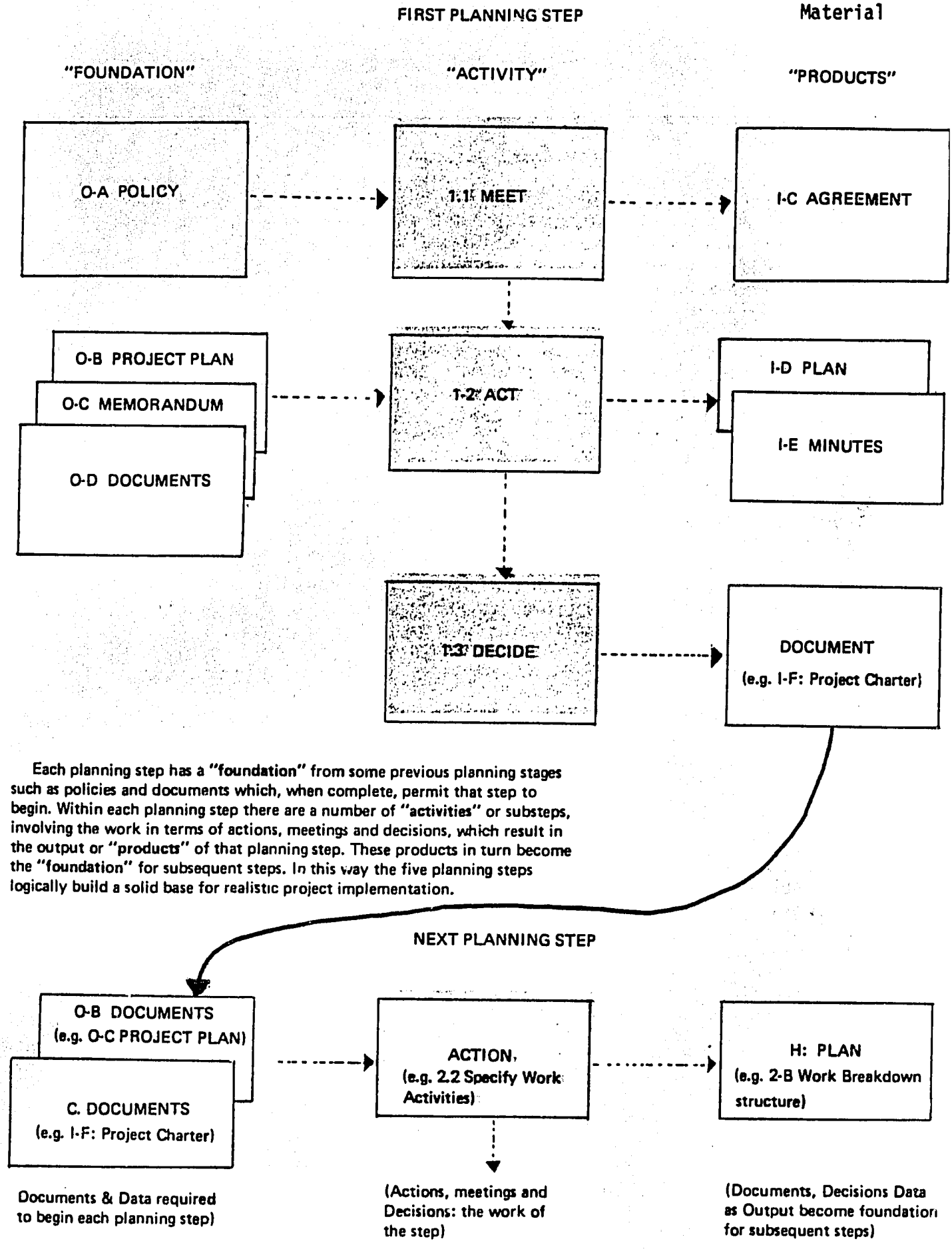

Each planning step has a "foundation" from some previous planning stages such as policies and documents which, when complete, permit that step to begin. Within each planning step there are a number of "activities" or substeps, involving the work in terms of actions, meetings and decisions, which result in the output or "products" of that planning step. These products in turn become the "foundation" for subsequent steps. In this way the five planning steps logically build a solid base for realistic project implementation.

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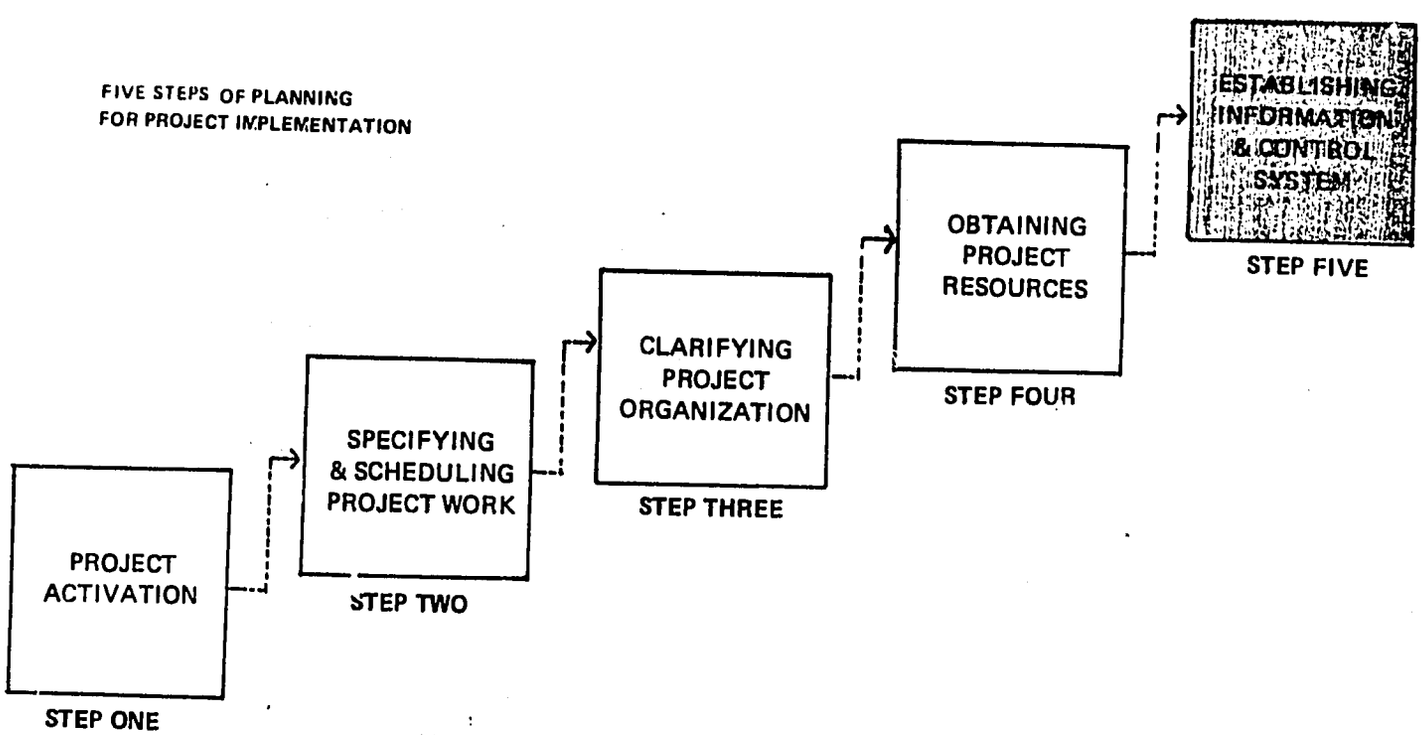
6.4 *Planning Steps are Sequential and Interdependent*

Steps Two through Five can all be started following the completion of Step One. However, the sequence is maintained in that none of the steps can be completed until previous steps are completed. Thus, although Step Three can be started simultaneously with Step Two, it cannot be completed until Step Two is completed. This is because every step is built upon the products of previous steps. Some of the activities of any steps are directly dependent upon documentation completed in the immediately preceding step. The stepwise sequence of the Planning Steps can also be visualized as in Figure 9. Although several steps may be initiated simultaneously (e.g. 2 and 3) they must be completed in the strict step sequence.

Within each of the planning steps there are sub-steps, e.g. 1.1 to 1.6 (see Figure 10) which define the activities and decisions necessary for the completion of a particular planning step. The sub-steps introduced in this manual are *illustrative*. They may or may not apply to a specific project being prepared for implementation. It is the job of the project administrators and manager to become familiar with the logic and content of the implementation planning steps and adapt the approach to fit their particular projects. (See Figure 15 for an example of application to a real project.)



It may be possible to delete some of the sub-steps for some projects or it may be necessary to expand the sub-steps beyond those illustrated here. The important thing is to understand the sequential relations between the implementation planning steps, and the content and sequence of sub-steps, with ea of the implementation planning steps. If any of the steps are neglected, a project is likely to be stalled, delayed or to experience malperformance until the omitted step or "block" is completed. Delays during actual project implementation can be very expensive, cause major project restructuring, and lead to a great deal of frustration, disappointment, loss of momentum and incentive which sabotages motivation and performance on the project.

6.5 *The Five Steps Method is Strict but not Rigid*

The Five Steps Method is a model which helps in understanding the requirements of project management. It has also met the test of a practical application for project implementation. Although it adheres closely to reality, practical and creative adjustment to the situations encountered on actual projects will always be necessary. Strict adherence to this step-sequence is not possible or even desirable in real situations. The logic is valid, but the model must be adapted to reality once it is understood. Management planning will go on throughout the project. Every modification of an existing plan provides an opportunity for a better approximation of the actual situation. There will be necessary review and reintegration of these planning steps and products, as the project progresses.

Regardless of the actual sequence which is followed, it must be emphasized that *none of the implementation planning steps should be neglected or overlooked,* or else the foundation for successful project implementation is incomplete, inadequate and unnecessarily doubtful.[14]

6.6 *The Need for good Project Files*

It should be clear from the discussion in paragraph 6.3 that "product", or "information blocks", actually refer to detailed documents required for project implementation. As each document is produced, a Project File is created which can become an important tool for project management. *A good Project File is essential for controlling, directing and managing a project.**

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* See Module 38 - *Project Files*

6.7 *Project Documentation*

Project documentation need not be bulky and difficult. It should be complete.* The extent of documentation depends on the nature of the project and the needs of project management. Whatever management information is needed, the project executives should ensure that the experience of other projects is taken into account. Each project is entirely unique and new in some aspects, yet in other aspects it involves standard activities. Some management information can be taken from *standardized documentation forms*. Examples of standardized information are procurement procedures, drawdown procedures and standardized contracting. In other cases, however, *unique documentation* must be tailored and created for the specific project needs, for example manpower agreements and the project charter. Whatever is needed, it is important to create a project file very early and to keep it updated with original and standardized documents relevant to the project.

Documentation is also important because projects are often legal entities of some form. From the signing of loan agreements, there is a legal contractual basis upon which project management must operate. The project files ensure that the relevant records are maintained for the formal legal requirements of the project and can be referenced as necessary. Significant project documents record legally binding agreements which become the basis for project operations and which bind project management in a complex of agreements which must be formally honoured.

From the perspective of management, *documentation is strength*. It is a protection against unwarranted accusations. It is a lever to ensure compliance when organizational authority is weak. Furthermore, documentation forms a firm foundation to alert project management to problems which might be encountered. It provides a base for dealing with both the technical and managerial problems as they arise.

With good documentation and good implementation planning, operational problems on projects become more manageable. For example, deviations from plans and agreements can be interpreted in terms of implications for time, resources and other activities. Priorities can be established as the implications are interpreted by management. Documentation produced by thorough, rigorous, and logical implementation planning affords a much better chance of attaining the goals and objectives of development projects.

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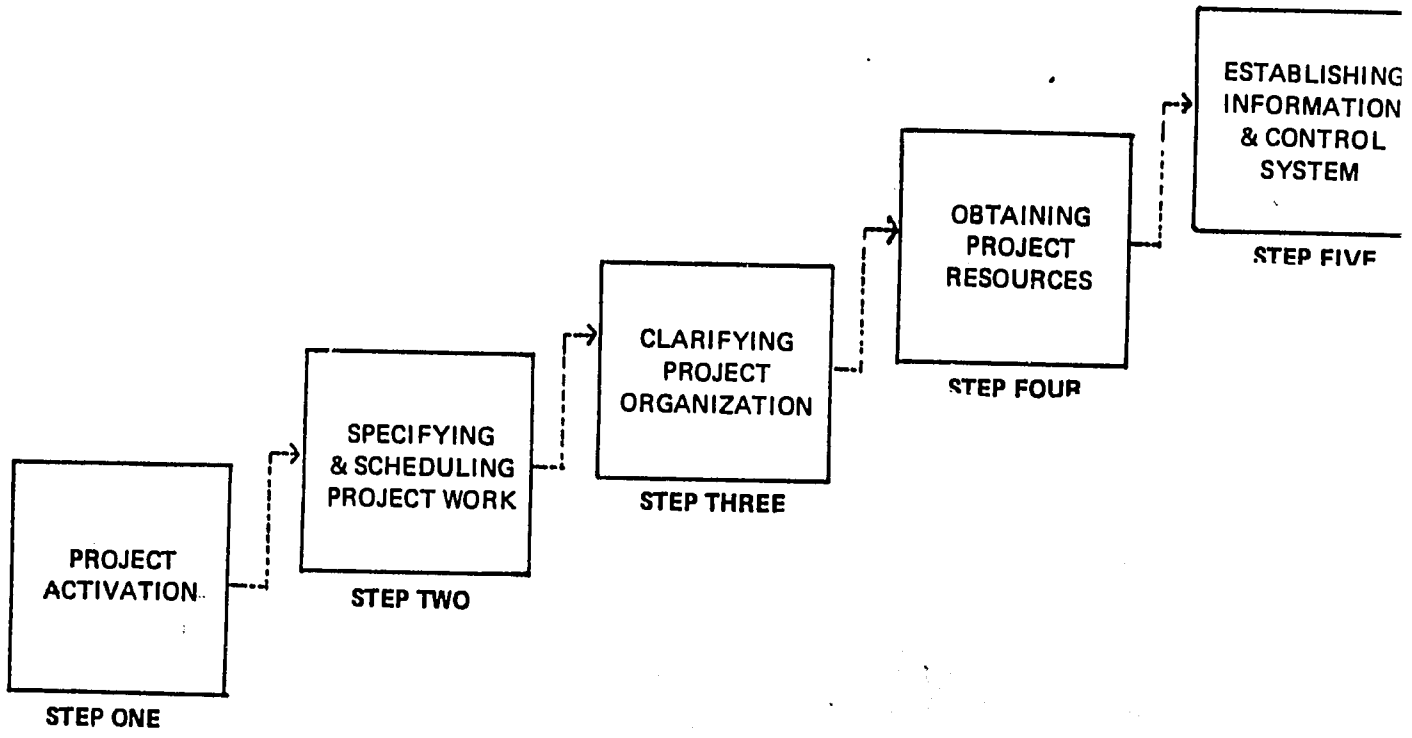
* See Module 36 - *Project Documents for Planning * Implementation*

VII STEP ONE: ACTIVATING THE PROJECT.[15]



7.1 *Purpose and Importance of Step One*

Project activation involves obtaining approval of all the associated organizations and departments regarding the nature and scope of the project, the respective project strategies, and tentative project inputs, such as personnel and finances. The project manager and a "nucleus" of persons who will be responsible for implementation planning activities must be assigned. It also involves clarification of all contractual agreements, including any pre-project activities which may be required as a result of project loan negotiations, e.g., conducting base surveys or the fulfilment of conditions precedent, such as assignment of a project implementation team, acquiring a project site, establishing a company, etc.

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Project Activation, as the first step of project implementation planning, is often confused with the actual beginning of project execution. That is, once there has been approval for implementation of the project, there is frequently pressure to begin "execution" activities, such as building, construction, or renovation immediately. Project administrators should guard against permitting pressures to force them into actual project execution before a foundation for implementing the project has been put in place.

Resistance to any development project should be expected because, as an instrument of change, it will alter existing patterns of power, productivity and influence. Any proposal for change comes in conflict with some vested interests. This will affect project implementation. If there is resistance, some formof participatory planning may need to be instituted, or it may be necessary to initiate some educational programmes to prepare the way for the project. Projects must be shaped for viability within their immediate environments. Examining the institutional forces both those favouring the project and those resisting the project, and devising strategies for dealing with this force field is an important aspect of Step One.*

Groups which support the project for specific vested interests can be a danger as well as an asset to the project outcome. Each may seek to impose their limited perceptions or desires upon the project. For this reason, a clearly defined implementation approach, in terms of the Project Strategy and the Project Charter, should be part of Project Activation. Some groups may wish to block or divert a project while others wish to use it for their own ends. Studying and understanding the project environment is a necessary part of the job of project management.

Overcoming the doubts, fears and ambitions of various groups may lead to modifications of the project plan which can help ensure successful implementation. However, projects must not be too vulnerable to social pressures. Dealing with interest groups requires considerable skill in interpersonal relations.

The legal life of a project is generally created by authorization and the signing of any loan or grant agreements associated with it. *Loan agreements are contractual documents.* They contain formal terms of reference for project outputs, inputs and conditions. *Conditions Precedent* to the disbursement of funds, for example, may be created as part of the terms of a loan agreement and become binding on the project management.

*See Module 28 - *Financial Statements & Ratios*
and Module 32 - *Project Institutional Environmental Analysis*

The initiation of Step One is generally the responsibility of the parent organization of the project because a Project Manager has generally not yet been assigned. This means that a Co-ordinating Committee or a Board of Directors representing the sponsoring entity may be responsible to administer the activities of Step One. A Project Co-ordinator may be appointed. (Perhaps this is a stipulation in the loan agreement.)

Regardless of who takes the responsibility for this step, it is critical that the project manager, when appointed, reviews the accomplishments. This cannot be stressed too strongly. *The manager's first task on assuming responsibility for the project, is to ensure that all the decisions and activities of Project Activation are completed and well documented.* If some of the sub-steps of Project Activation are neglected, serious delays, conflict and even changes in the project may result. For example, if there is not a clear definition of the Approval Processes for a project, i.e. a definition of who, at what level, can make what types of decisions, confusion, high levels of conflict, problems and delays are likely to occur.

7.2 *Foundation Activities and Products of Step One*

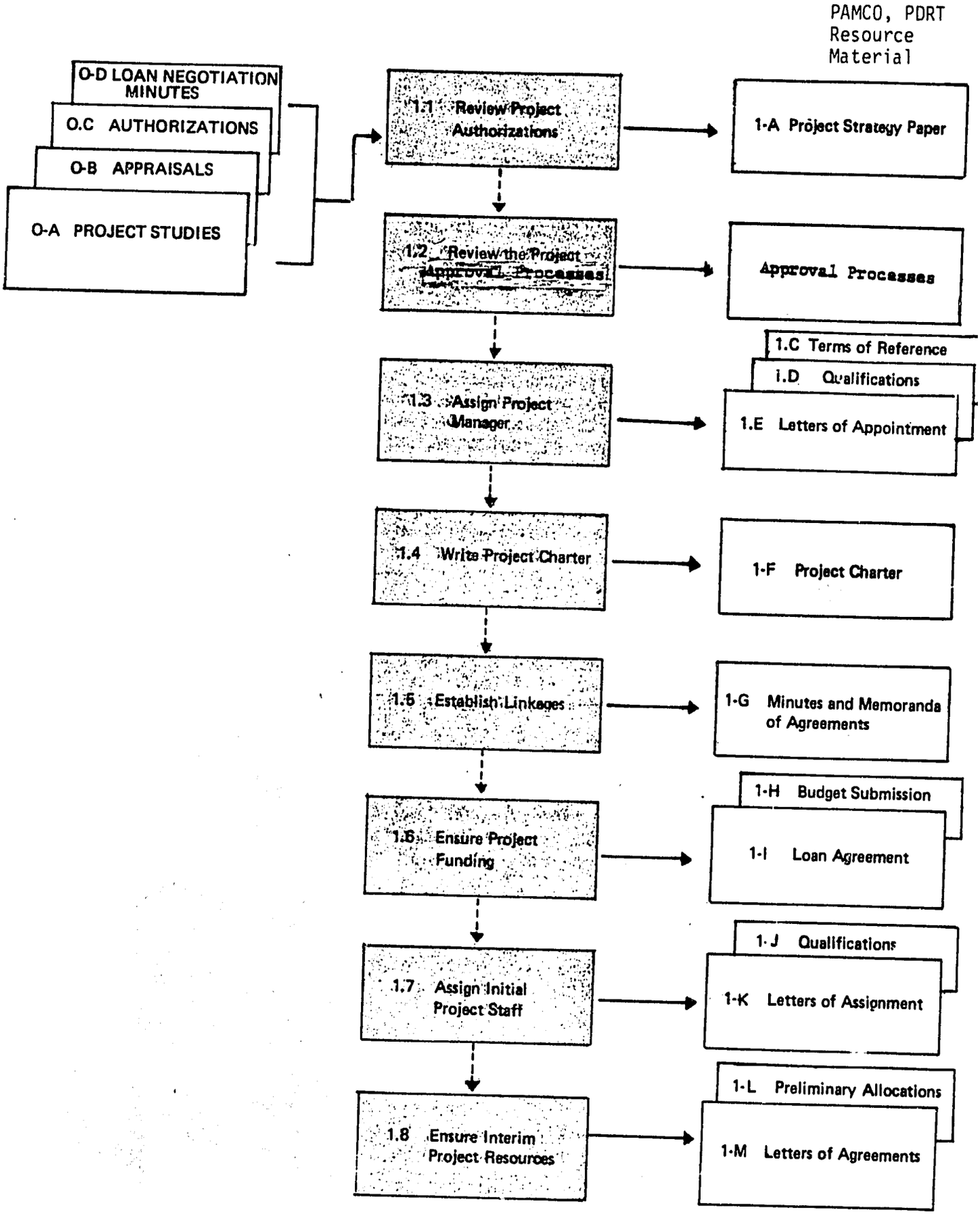
The *foundation documents* for Step One consist of *all previous project documentation,* from the Project Profile and an Issues Paper to the Loan Agreements and Cabinet Authorization. These are illustrated in Figure 10.

Upon this foundation, the activities and decisions of Project Activation are carried out to produce the products indicating the completion of this implementation planning step. The *products* include a Project Strategy Paper, Approval Processes, Agreements, Project Charter and assignment of a Project Team nucleus. These products become, in turn, the foundation for subsequent Steps Two through Five.

The important point is not to overlook any of these sub-steps and to ensure that all the important considerations from the Project Strategy to the Interim Budget have been examined. Each of the sub-steps is explained in subsequent explanations.

Figure 10

STEP ONE: PROJECT ACTIVATION



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7.3 *The Sub-steps of Project Activation*

Sub-step I.1 *Review of Project Authorization* (see Figure 10)

All project documentation must be reviewed at the start of Project Activation. The review of the history of the project is important to alert project administrators to issues which might affect project implementation. It is also important to see that project documentation is complete and in proper form.* This is particularly true of documents related to project authorization, such as Cabinet Approval, Ministry Appraisal and Approval Loan Agreements, etc. Any necessary decisions or activities during the authorization processes, which give guidelines for implementation, should be noted for immediate attention and action. As examples, the scope of the project may be altered by certain recommendations, technical questions may be noted which will require additional study, organizations and structural issues may be noted, recommendations for solutions may need to be reported to higher level officials for approval.+

It is necessary to identify specifically all legal, technical and political guidelines, directives and agreements to ensure the completion of all references and legal documents necessary to begin implementation of the project. The "authorization" includes:

(a) agreement in principle to the project and its proposed strategies;

(b) agreements on the sources and approximate levels of funding;

(c) agreement on definite authorization to establish a project;

(d) agreement regarding project staffing and sources;

(e) agreement on the administration of the project.

The identification of who makes and who verifies the above decisions must be considered simultaneously with this sub-step. Decisions will be made at different levels depending on the nature of the decisions and their consequences. This should be clarified so as to avoid later conflicts. Major revision may require review and approval from the higher levels of government, but often a lower point of review and approval can be identified.

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* See Module 31 - *Decision-making System for Projects*, for an introduction to pre-investment documentation for projects.

\+ See Module 36 - *Project Documents for Planning & Implementation*

A major product of this sub-step is a *Project Strategy Paper (I-A)* which summarizes the guidelines for project implementation planning, e.g. all the legal conditions required for the project, all the terms and conditions of the loan agreements such as conditions precedent to disbursement, and all guidelines from the technical advisors and the political directorate. These must be identified early to be incorporated into implementation processes and the project management must be certain that all requirements and conditions of the project can be fulfilled, such as pre-implementation and implementation requirements.

Sub-step I.2 *Planning the Approval Process* (See Figure 10)

Implementation plans must receive administrative approval. Particular aspects may require revision and approval (as noted in guidelines outlined in Sub-step I.1). It is important that the processes for approving the implementation plans and changes be determined at the start of the project.

The *Approval Process* (1-B) clearly identifies who reviews and approves the various aspects of the implementation plans and processes as they are established. Supplementary briefing requirements for the different levels of decision-makers, who is responsible for such briefings and at what times these are to be expected, are also identified. A list of decision levels and approval requirements can be put in a decision flow chart to summarize the organization, management and decision-making points for the project at this early stage. The flow chart will illustrate which decisions will be made at the level of the project manager, which will require the approval of a Director or a Co-ordinating Committee and which have to be taken to the Ministry officials or even the political directorate. *The Approval Process clarifies the responsibilities of all relevant bodies in relation to the ratification of project implementation plans.*

Sub-step I.3 *Assignment of Project Manager.* (See Figure 10)

It is recommended that the project manager be appointed as early as possible. Experience shows that, generally, if implementors are not involved in the implementation planning of a project, their commitment to and understanding of a project is significantly reduced.

The assignment of a manager assumes that the functions (1-C) and qualifications (1-D) of the project manager have been defined. (See Illustrations 1 and 2) The functions of the manager should be described in a concise document which outlines:

(a) those tasks for which the project manager is likely to be directly responsible;

(b) the various departments, ministries, groups and committees with which the manager must deal and the various responsibilities and functions in relation to these;

(c) the administrative responsibilities of the project manager, to whom he reports and on what basis; and

(d) the individual in each of the relevant agencies with whom he will have to negotiate in the role of project manager.

The project manager will be assigned by a *Letter of Appointment* (1-E). A briefing should be conducted by the appropriate project administrators to familiarize the project manager with the project proposal, explain the rationale behind the project, highlight any recommended revisions or guidelines, and identify any anticipated difficulties in the implementation process.

If it is not possible to identify and appoint a project manager at such an early stage, tentative project staff will proceed with the implementation planning -- but certain steps must be retraced when the manager is appointed. Therefore, early appointment is to the advantage of the manager, the project, and the sponsoring organization.

Sub-step I.4 *Writing the Project Charter* (See Figure 10)

The *Project Charter* (1-F) is a succinct statement defining the goals, the responsibilities, the authorities and the principal factors bearing upon the implementation of the project. It should be a short document. If it is too detailed, it will look too much like a contract. If it is too long, very few people will take the time to read and to understand it.

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All relevant persons must have the same understanding of the project. The Project Charter is useful for focussing attention on the project, forging consensus regarding expectations of a project and serving as a foundation for developing project authorities and responsibilities. The project charter can be used to orient new staff or potential staff as well as to brief interested persons and agencies outside the project.

The Project Charter must be carefully developed as it represents the written consensus of the project authorities. The process of composing the charter draws together all responsible officials. The signing of this written document ensures that active support has been given and can be referenced in the future. During project execution it can be used to confirm commitments which may, over time, fall into neglect or become confused.

There is no established format for a Project Charter; it just needs to be an adequate statement of what the project is to achieve and what authority and power has been given to get the project done.[16]

Sub-step I.5 *Establishing Initial Project Linkages* (See Figure 10)

Few projects operate entirely within the structures of one department or unit, or even within the structures of one organization. Early in the project it is necessary to determine the nature of certain project linkages or interfaces which must be established. Some linkages may already be reflected in the Approval Process (Sub-step I.2). All linkages of the project environment must be defined and written commitments of all units and organizations obtained.* The manner in which other organizations and departments relate to the project can range from providing inputs to general support. The responsibilities will be later specified in Steps Three and Four.

Project linkages can be established through orientation meetings, followed by letters/memoranda to outline areas of agreement (1-G). The Project Charter is especially useful at these meetings. The following sets of groups/organizations might be included:

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* See Module 32 - *Project Institutional Environmental Analysis*

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(a) those representing sources of funds;

(b) those representing sources of personnel;

(c) those representing sources of services;

(d) those representing sources of support, e.g. facilities or equipment or transportation;

(e) contractors or contract administrators;

(f) project administrators or evaluators; and

(g) project beneficiaries.

Establishing agreements on project linkage develops the strength of the project by ensuring that there is a good understanding of the project, that it is supported as proposed, that the technical aspects are reviewed by appropriate persons and that general obstacles and uncertainties in support can be identified early. In general, the firm establishment of linkages affords the project management the first step in managing critical relationships with superiors, supporting organizations and units, with sponsors and donors, with users, with (potential) project staff, and with sources of outside support. Early indications of support for the project can be of great value for creating an environment favourable to project success.

These meetings should be documented regarding the agenda covered, agreement on the project charter, and *the nature of the relationship expected from each group to the project.*

Sub-step 1.6 *Assuring Project Funding* (See Figure 10)

Project Finances should be confirmed at this stage of the project. All necessary decisions and steps regarding project funding must be taken and all necessary actions and conditions to fulfil funding agreements must be communicated to appropriate bodies.

Aggrements are generally negotiated for foreign financing both for grants and for loans. A *Loan Agreement* (I-1) is a contractual arrangement which specifies the terms of reference, conditions, and schedules for the disbursement of the loan. Conditions precedent to disbursement are established and strict adherence to procedures is mandatory for

the contract to be valid. Summarizing documents which highlight the major points of these agreements will be useful for the relevant project staff.

There must also be a review of local funding, which often includes government funding from the budget of the parent organization. A review will verify that the project funding has been incorporated in the calendar budgets and budget estimates for the appropriate years (1-H). In the case of loans, capital monies and other finances from local sources, a check must be made as to whether these monies are firmly committed to the project's use at this time and conditions stipulated for these funding sources.

Sub-step I.7 *Assigning Initial Project Team* (See Figure 10)

Ideally the project manager should be involved with the selection and recruitment of project staff. Often, it may be necessary to delay acquiring project staff until the completion of the activities of Step Three: Project Organization, when full job descriptions and manpower agreements have been completed. If the project team members or potential team members can be identified and recruited at this time, it is better for the project and may help avoid delays later. It will also ensure that the project team is well oriented to the project and that individuals have influence at the earliest possible stages on those implementation activities for which they will be taking responsibility.

If a team cannot be recruited at this time, a "core" team must be identified to proceed with the responsibilities of project implementation planning. These persons may be only temporary, but should represent the disciplines required on the project. A strategy frequently used is to assign persons temporarily at this point and confirm them as project personnel when procedures permit and as project implementation plans are finalized. This core team should be experienced and knowledgeable (or should have access to such experience and expertise) to make the implementation plans as realistic as possible. The primary task of this team is to complete the implementation planning, particularly those activities in Steps Two, Three and Four. The composition of this team is vital to successful project execution. Letters of Assignment (1-K) confirm membership on the team.

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Sub-step I.8 *Ensuring Interim Project Resources* (See Figure 10)

It is necessary to ensure that certain resources are available for the implementation planning team to do its work. Even before official implementation begins it is necessary to have certain supplies, e.g. paper; staff support, e.g. secretaries; facilities, e.g. planning office; and finances, e.g. travel and staff salaries, and equipment. A list of interim project needs should be compiled, sources should be identified where possible, and arrangements made for procurement of all requisite interim project resources (1-M). An interim budget and office space are particularly important. The interim project team will not be able to function efficiently without these interim resources.

ILLUSTRATION I [17]

CHECKLIST OF PROJECT MANAGER'S FUNCTIONS

GENERAL

(1) Planning/controlling the project to ensure that objectives are achieved with minimum consumption of resources.

(2) Initiating project activities.

(3) Recosnizing potential future problems in time to ensure that preventive measures can be taken.

(4) Monitoring project activities and project progress

SPECIFIC

(1) Establishing criteria, guidelines, and formats for project plans.

(2) Approving detailed schedules and budgets prepared by activity managers and other project staff.

(3) Proposing and/or selecting activity managers and other project staff.

(4) Directing the execution of specific project activities.

(5) Promoting the project among ministry department heads,professional groups, and other relevant people.

(6) Facilitating communication within the project team.

(7) Keeping informed about the progress of the project by collecting and recording project control information.

(8) Analysing causes and effects of deviations from the project plan.

(9) Adapting and modifying project schedules in response to problems as they arise.

(10) Communicating with various departments as to changes in schedule, job assignments, etc.

(11) Motivating staff to perform effectively.

ILLUSTRATION 2 [18]

CHECKLIST OF PROJECT MANAGER'S QUALIFICATIONS

(1) Knowledge of the political and organizational "environment" surrounding the project.

(2) Knowledge of the relationships (actual and potential) between project activities, on the one hand, and project objectives, operational targets and problem-reduction objectives, on the other hand.

(3) Experience in the subject matter of the project (in the development of curricula, operating procedures, etc.).

(4) Experience in the practice of management:

- effectiveness in planning and organizing work;
- effectiveness in getting activities started;
- effectiveness in ensuring that work schedules are followed;
- effectiveness in maintaining quality;
- effectiveness in cost control.

(5) Good relations with relevant ministry divisions and institutions (in order to negotiate for resources).

(6) Ability to communicate effectively.

(7) Ability to tolerate ambiguity and uncertainty.

(8) Adaptability to changes in the "environment" of the project.

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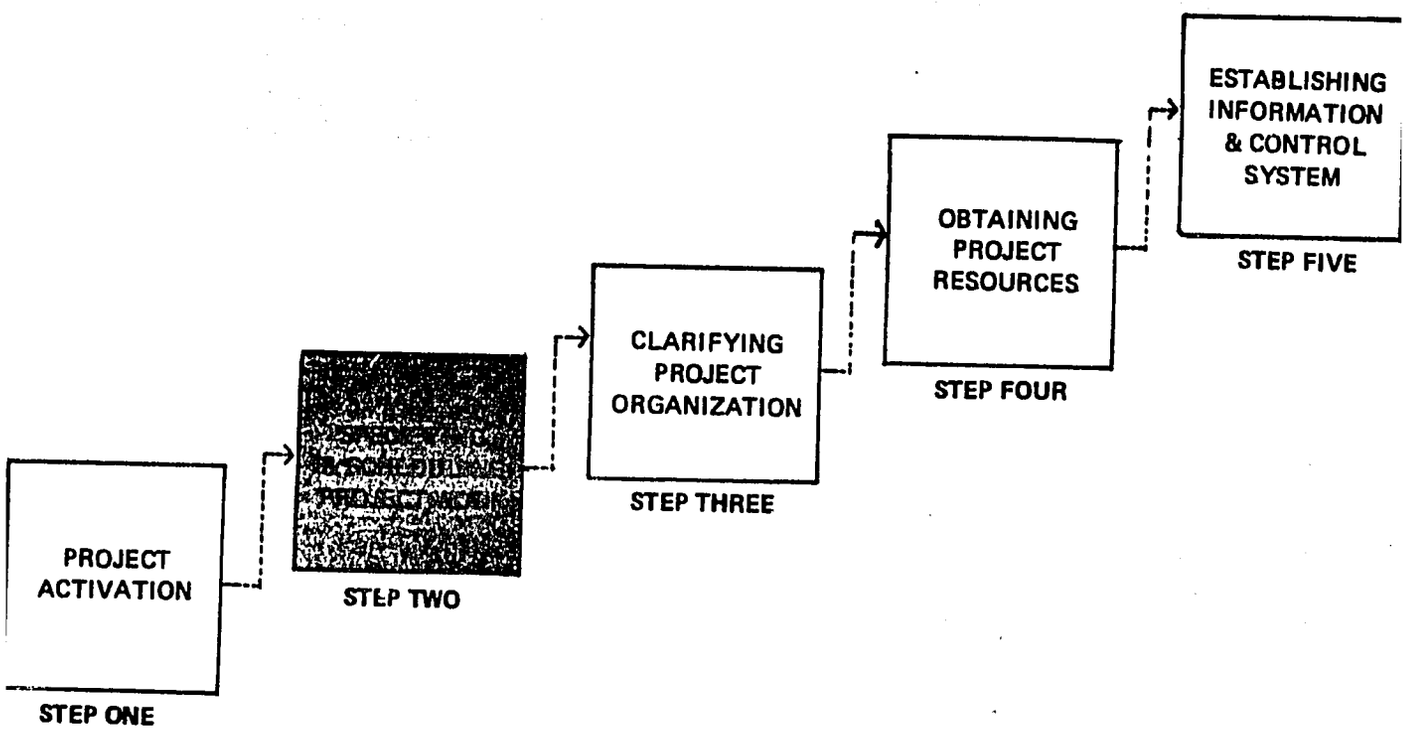
VIII. STEP TWO: SPECIFYING AND SCHEDULING WORK [19]



8.1 *Purpose and Importance of Step Two*

The purpose of this step is to produce work plans describing all activities necessary to carry out the project and a schedule which specifies in detail when, where and how each activity is to be done,who is to manage them and what resources are required. A project Master Schedule will be created alon g with Financial Plans, Manpower Plans and Resource Plans.

Most pre-authorization project plans, such as Feasibility Studies, have project schedules. It is necessary to completely reconstruct these schedules. Assumptions must be re-examined. Data must be updated. Work must be made project specific and more detailed. The tentative schedules in previous plans are only first approximations to a realistic project schedule.

Project work specification and scheduling basically involves:

(a) defining the products of the project with detail on output specifications;

(b) preparing a detailed list of project activities;

(c) determining detailed resource requirements for the activities; and

(d) preparing a detailed master schedule.

Activities have precedence and dependence relationships which characterize the *work logic* of a project. Durations of the activities compiled and calculated into total project time, add *time logic* to the schedule. Finally, resource logic must be added by adjusting the project schedules to actual resource constraints (timing and quantities). Too many schedules combine work and time logic without a consideration of realistically calculated resource logic, resulting in overly optimistic expectations for project completion.

Too many projects are started without careful and detailed work definitions and schedules. Project personnel are often assigned with the simplistic assumption that they can and will define their work as the project proceeds. Many project problems can be traced directly to deficiencies in work specifications and scheduling. Careful attention must be given to making clear, comprehensive and complete work assignments.

Project work or new areas of expenditure arise which were not anticipated. Project managers are often surprised by what seem to be new requirements as a project proceeds into implementation. In fact many of these could have been anticipated but were simply overlooked because there was not adequate attention to detailed work specification and scheduling. It is common to overlook even relatively important items when sufficient thought has not been given to work specification and scheduling. The advantage of detailed schedules is that implications of oversights are clearly evident. Then plans can be adjusted in sufficient time to notify the decision-makers if abnormal project modifications are necessary.

Nothing more clearly proves the competence (or the incompetence) of project managers than their manner of work specification, scheduling and assignment. Good management requires the ability to make clear, relevant, accurate and comprehensive assignments of work and to be able to follow up on the activities to ensure performance. If contracts are involved for specific aspects of the project, the ability for work specification becomes even more important. Nothing creates more of an impression of incompetence than an inability to specify work and schedules and to monitor performances. It is not unusual for persons working at the activity level to know what is needed or to be aware of ill-defined tasks which they have been assigned, but to have no authority or responsibility for changes. The project manager and the total project team must pay close attention to the accuracy and detail of Work Specification and Scheduling.

There is a tendency to be over-optimistic in planning. Implementation scheduling based on experience and expertise should avoid unrealistically tight schedules. They should likewise avoid schedules that are too easy. The challenge is to make the plans and schedules that get the work done as quickly as possible yet realistic enough not to undermine a sense of enthusiasm, co-operation and accomplishment.

8.2 *Foundation Activities and Products of Step Two* (Figure 11)

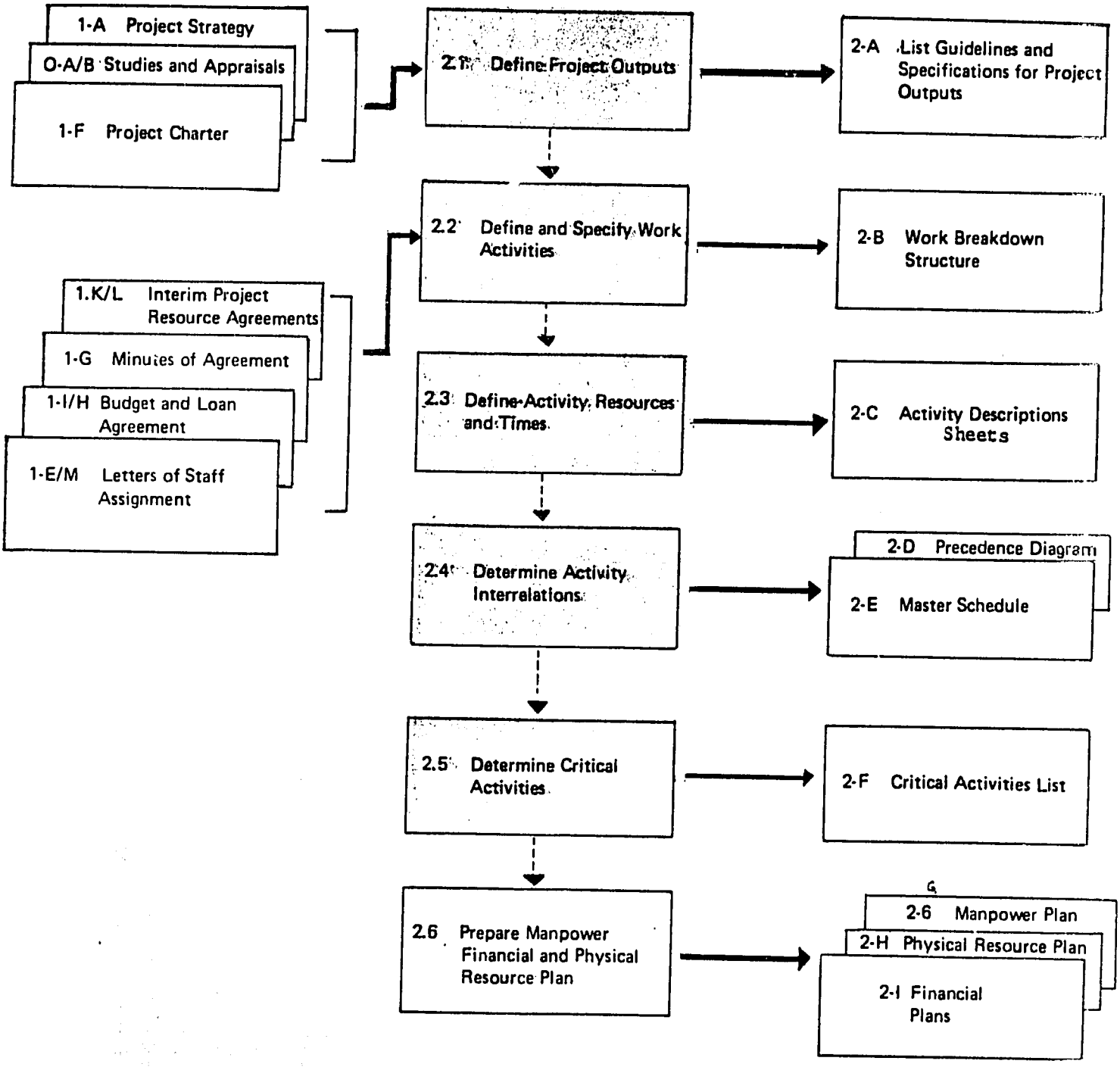
The *foundation blocks* for this step include all the Pre-Investment Studies, Appraisals, Authorizations, Loan and Funding Agreements, Project Charter, Project Strategy Paper, Planning Approval Process and tentative financing agreements. Most of these foundation documents *were products of Step One.*

The *products* of this step include a list of Project Outputs, Work Breakdown Structure, Master Schedule, File of Activity Descriptions, and tentative Manpower, Financial and Physical Resource Plans. These will form the foundation for Steps Three, Four and Five.

It must be noted again that although certain sub-steps within Steps Three, Four and Five can be started simultaneously with Step 2, these steps cannot be completed until Step 2 is completed. However, it will be necessary constantly to update the schedules and plans which are constructed in this step as there is an interdependency between this and subsequent steps.

Figure 11

STEP TWO: SPECIFYING AND SCHEDULING PROJECT WORK



The time required for this step is dependent upon the staff available and the amount of time they can devote to this effort, but this is such an important step that it should not be slighted. The degree of detail and refinement is dependent upon the time and the expertise of the staff, but even the best plans will require later upgrading, so a balance must be maintained between doing too little and doing too much at this stage.

8.3 *SUB-STEPS OF STEP TWO*

Sub-step 2.1 *Define project Outputs* (Figure 11)

The general hierarchy of objectives for the project have been specified in the pre-authorization project plans and have been clarified in the Project Charter. It is not necessary to specify these in terms of project outputs and targets. To achieve the purpose of the project, it is necessary to produce a number of distinct project outputs which may include both *final outputs*, and *intermediary outputs*. This can be illustrated by referring to the example of a training project, in which the training materials would be an intermediate output to achieve the final outputs of a staff of trained instructors capable of carrying out an ongoing training programme.

It is also useful to list any *specifications* which must be met by the project outputs (2-A). These may include:

1. *functional specifications*, which describe or specify the functions that are to be achieved with the output;
2. *design specifications*, which describe particular physical characteristics of the output;
3. *performance specifications*, which describe the performance standards that must be met by the outputs; and
4. *test specifications*, which specify the methods for evaluating the performance standards that must be met by the outputs. [28]

Sub-step 2.2 *Construct Work Breakdown Structure* (Figure 11)

A Work Breakdown Structure (2-B) identifies the work which is necessary to achieve the various intermediary and final outputs of a project.*

*See Module 3 - *Work Breakdown Structure*

This is an essential and extremely useful management tool for practically any type of project. The process of creating a logical breakdown of the work, beginning with the overall requirements of the project and continuing the breakdown to the level where particular activities are assigned to the persons who will be responsible for them, is important and necessary. (See Illustration 3 for an example of a Work Breakdown Structure.)

The Work Breakdown Structure has importance for all levels of project personnel. As the project is put into implementation, they must all have a clear understanding of the work breakdown and an interest in upgrading it, especially in their assigned components. Once it has been put together, the Work Breakdown Structure becomes the basis for scheduling, monitoring and controlling the project. It must be updated as new information and experience is available.

Sub-step 2.3 *Define Activities, Resources and Times* (See Figure 11)

After describing the project activities in sufficient detail through the Work Breakdown Structure it is necessary to prepare an *Activity Description Sheet* (2-C) for each Activity.* (See Illustrations 4 and 5 for models of an Activity Description Sheet.)

A specific format should be worked out for the activity sheets. (See Illustrations 4-5. It should include a definition of the work that comprises that activity, the activity manager, the persons required to work on the activity, estimates of the time required, and a list of the required resources along with probable sources, etc. Costs should be assigned to personnel, material, transportation, equipment, etc. as a basis for the Cash Flow of the project.

Additional information, such as the distinct outputs of each activity and any specifications which help to define any requirements to achieving the objectives of the activity, should also be included. These can be important as indicators and milestones establishing the project information control system described in Step Five.

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* See Module 3 - *Work Breakdown Structure*, for Activity Sheets.

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Sub-step 2.4 *Determine activity interrelationships* (See Figure 11)

This step results in the creation of *Precedence Diagrams* (2-D) and the *Project Master Schedule* (2-E). Its purpose is to show the logical work relationships between the project activities and to integrate time and resources into that schedule. For simple projects it may be possible to use a Gantt Chart directly.* For more complex projects with many activities, it is useful also to construct a PERT chart or a PDM chart which graphically shows the sequencing of the project activities.+ (See Illustration 6 for an example of a PDM chart.)

To construct the schedules, the planners must have some familiarity with the nature of the project work, or must seek such information through the selective use of the advice of specialists (who are familiar with the technical and managerial aspects of the specific activities).

Creation of the master schedule will require some judgement on the part of project management with regard to the number of activities to be included. Too many will make the schedule too detailed for that level of project management and too few will make it meaningless. It must be decided how many activities, and subsequently how many events or occurrences, must be monitored to ensure that the project plans are actually being carried out.

We must emphasize again that these tools must be used. Bar charts, for example, must be constantly revised throughout project implementation.° The Master Schedule must be revised when the true position with regard to personnel or human resources has been finalised in Steps Three and Four and will be revised, perhaps quarterly, throughout the Project.

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*See Module 7 - *Project Scheduling - Bar Charts*

+See Module 9 - *Project Scheduling - Network Analysis*

°See Module 8 - *Bar Charting for Project Control/Scheduling*

Sub-step 2.5 *Determine Critical Activities* (See Figure 11)

When the project schedules are completed, it is then possible to determine the *Critical Activities List* (2-F), A critical activity is one that potentially has a significant effect on the project cost, project schedules and/or project performance. For example, activities on the Critical Path can be identified on the precedence diagrams.* High cost activities or activities that have significant implications for project performance can also be identified and highlighted for managerial attention.

The highlighting of critical activities is very important, as otherwise management can easily become too "busy" running around concerned about minor or largely routine matters. To be sure that management is focussing on what is most important, the List of Critical Activities should be reviewed and revised constantly throughout the project. These will certainly change over time. Experience and discipline will make it easier to identify what must be monitored to avoid a crisis.

Sub-step 2.6 *Preparation of Manpower, Financial and Physical Resource Plans* (See Figure 11)

From the Work Breakdown Structure, the Master Schedule and the List of Critical Activities, it is possible to build the *Project Budget* (2-I), *Manpower and Resource Plans* (2-G & H) "from the bottom up". The bottom-up budget, for example, is based upon the actual project work requirements rather than by fiat or upon monies available. Comparing project needs with available funds will identify gaps. When significant, it may be necessary to get more funds or to modify the project.

Resource plans are built by transforming the Project Master Schedule into a Gantt Chart. Activities are identified over time periods and the requisite inputs for those activities are then matched to the corresponding time periods.+ (See Illustration 7)

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*See Module 9 - *Project Scheduling - Network Analysis*

+See Module 11 - *Resource Planning & Budgeting*

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The matching of project resource demands to the Master Schedule provides the opportunity to test the reality of the plans with respect to resources actually available. It also provides the exact information necessary for completing the manpower agreements and contracts of Step Three and the Procurement and Contract Processes of Step Four. At this point, however, the concern is to examine the required flow of all resources over time on the plans to see if these are *realistic*. This adds *resource* logic to the *work* logic and the *time* logic which were already incorporated into the Master Schedule.

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ILLUSTRATION 3 [21]

MODEL OF A WORK BREAKDOWN STRUCTURE FOR A PIONEER FARM

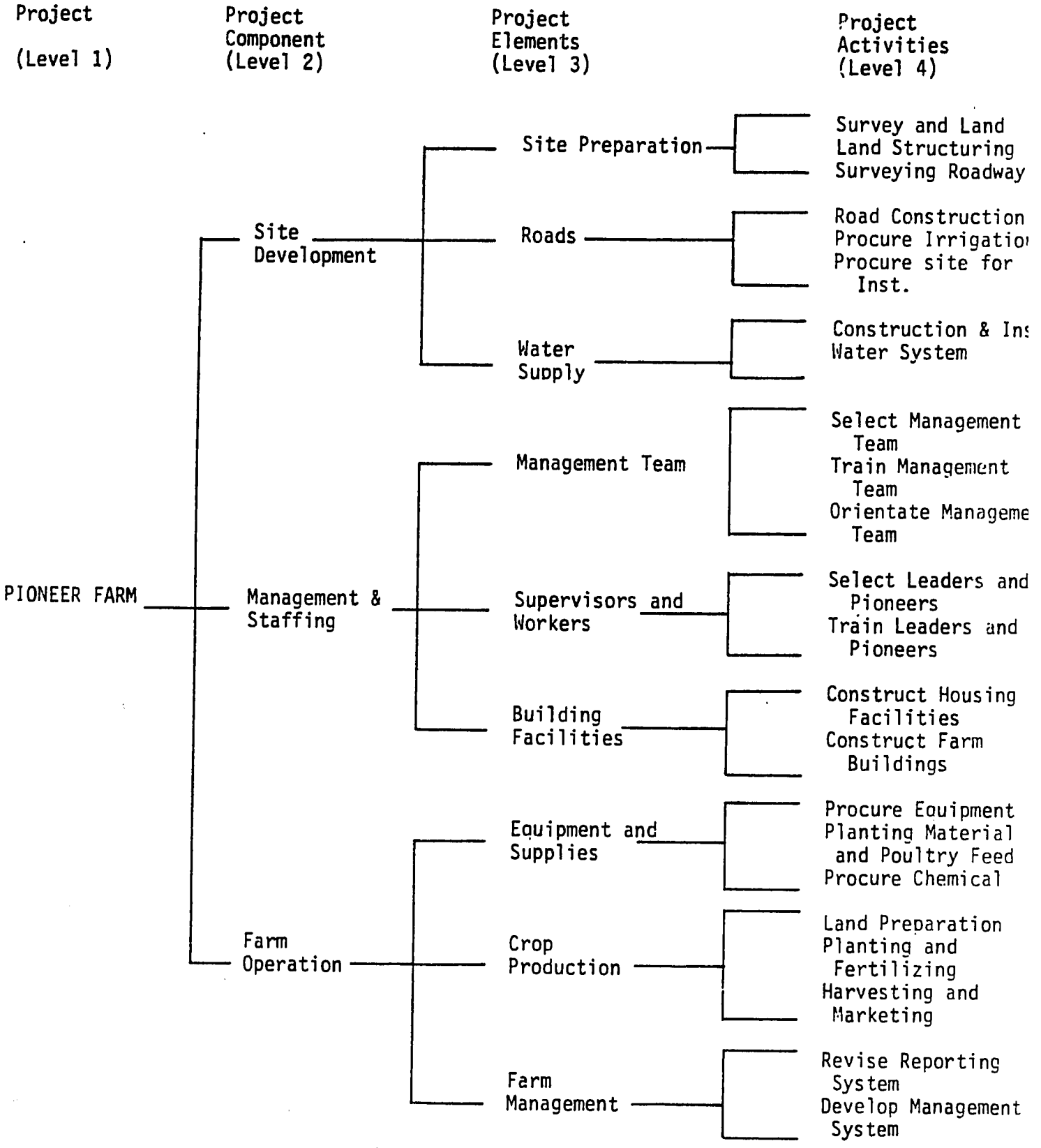

ILLUSTRATION 4[22]

ACTIVITY DESCRIPTION SHEET

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Activity: Prepare Farm Production Layout Plan

Responsible: Farm Manager

Support: Technical Officers as required from Engineering and Research & Development Divisions.
Divisional Extension Officer

Work Statement:
Prepare a detailed scale layout of the farm area production plan including fields and bounddaries, paths, storage areas, buildings and user, and infrastructure.

Information or inputs required:

1. Farm Production Plan
2. Farm Physical Plan
3. Infrastructure and Equipment Specifications

Resources:

Item	Amount	Source
1. Farm Manager	2 weeks	Engineering Department
2. Draftsman	1 week	Engineering Department
3. Paper	$100 (est.)	" "
4. Travel four trips Kingston to Project	$100 (est.)	Production Extension

Costs: Total $300

Output:

1. Detailed farm layout on 1-50 scale
2. List of equipment items required
3. Infrastructure (e.g. roads, paths) and utilities specifications (water and electricity)

Duration: 2 weeks

Schedule: Start ..... Finish ....
Actual Start..... Finish .....

Comments on performance:

Plan must be approved by the Parish Manager and Regional Director.

Examples of these plans are available from the Production Extension Unit.

ILLUSTRATION 3: ACTIVITY DESCRIPTION SHEET

Activity: To construct 2 miles of farm road to link farm settlement to existing Parish Council Road

Activity Manager: Works Overseer

Duration: 4 months

Start Date Planned	Actual	Completion Date Planned	Actual

INPUTS

DESCRIPTION OF RESOURCES	QUANTITY	UNIT PRICE	TOTAL COST	SOURCE(S) OF RESOURCES
Bulldozer	2	$20/hr/bulldozer	$ 2,800	Private Contractor
Grader	1	$16/hr	$ 1,280	Private Contractor
Time Keeper	2	$8/day/keeper	1,360	
Roller	1	$15/hr	1,800	Private Contractor
Marl	4000 yd^3	$5/$yd^3$	$20,000	Private Quarry
Labourer	200 man-days	$7.30/day	1,460	Surrounding Areas
			$38,700	

PRODUCT (Output) - Scribed, Graded and Rolled 2 miles of farm road

SPECIFICATION (Output) - 16 ft. width road with 6 ins. depth marl

HOW TO PERFORM ACTIVITY (1) - Excavating earth and stone; cut 16ft. width road to grade, marl and roll.

(2) - Work to go to tender after approval of Regional Director

Authorization

..... _____ ..... _____

Project Manager Date Works Manager Date

Prepared By:

Site Manager Date 20/10/79

ILLUSTRATION

AN EXAMPLE OF PDM NETWORK SCHEDULING FOR BUILDING A SMALL MANUFACTURING PLANT

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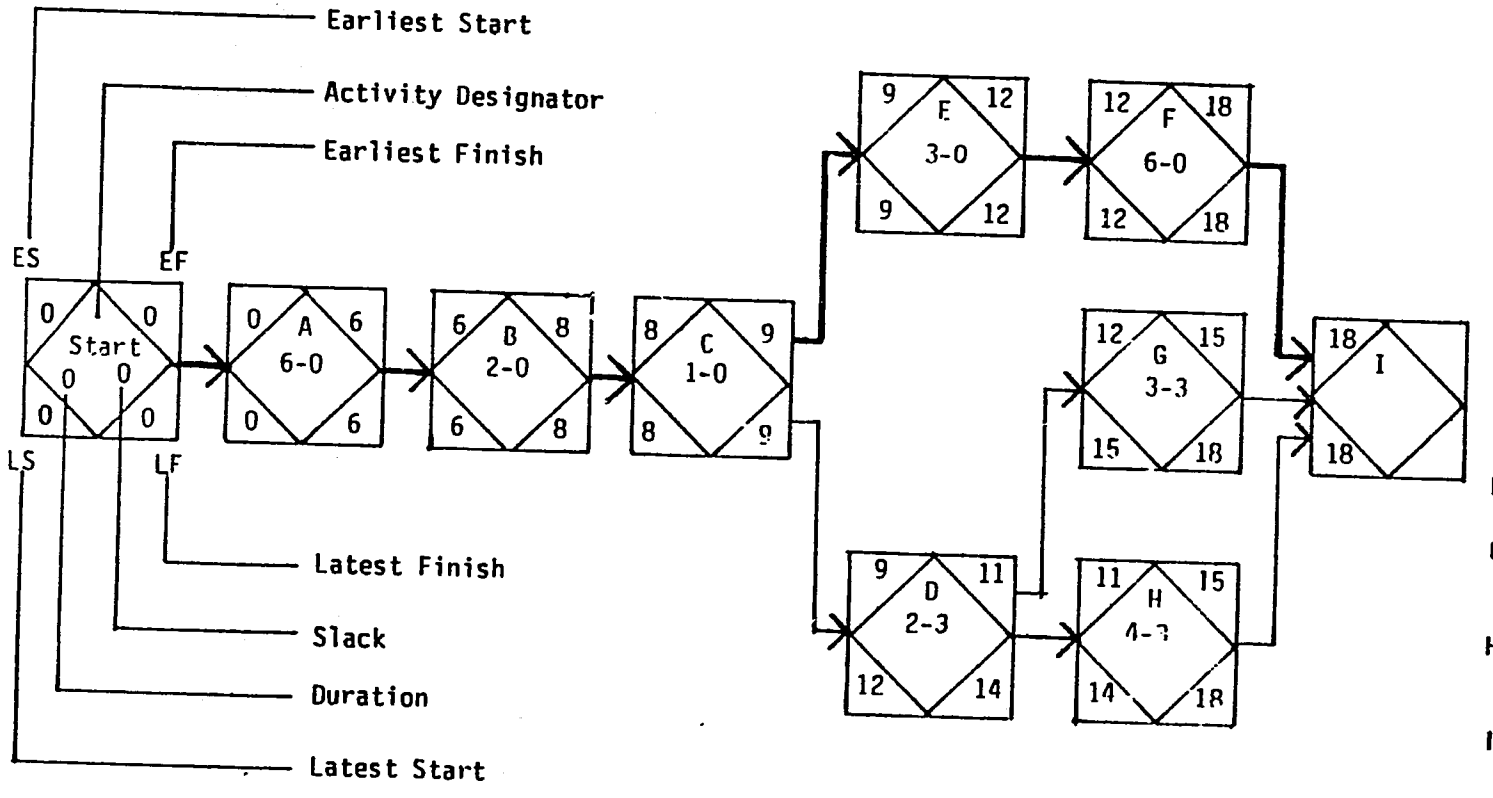

Activities List		Weeks
A.	Develop Plans	6
B.	Acquire Funds	2
C.	Clear Legal Issues	1
D.	Acquire Site	2
E.	Hire Contractor	3
F.	Develop Site	6
G.	Order Building Materials	3
H.	Order Plant Machinery and Equipment	4
I.	Begin Construction	

CRITICAL PATH

1-58

ILLUSTRATION 7: RESOURCE PLAN AND BUDGET [25]

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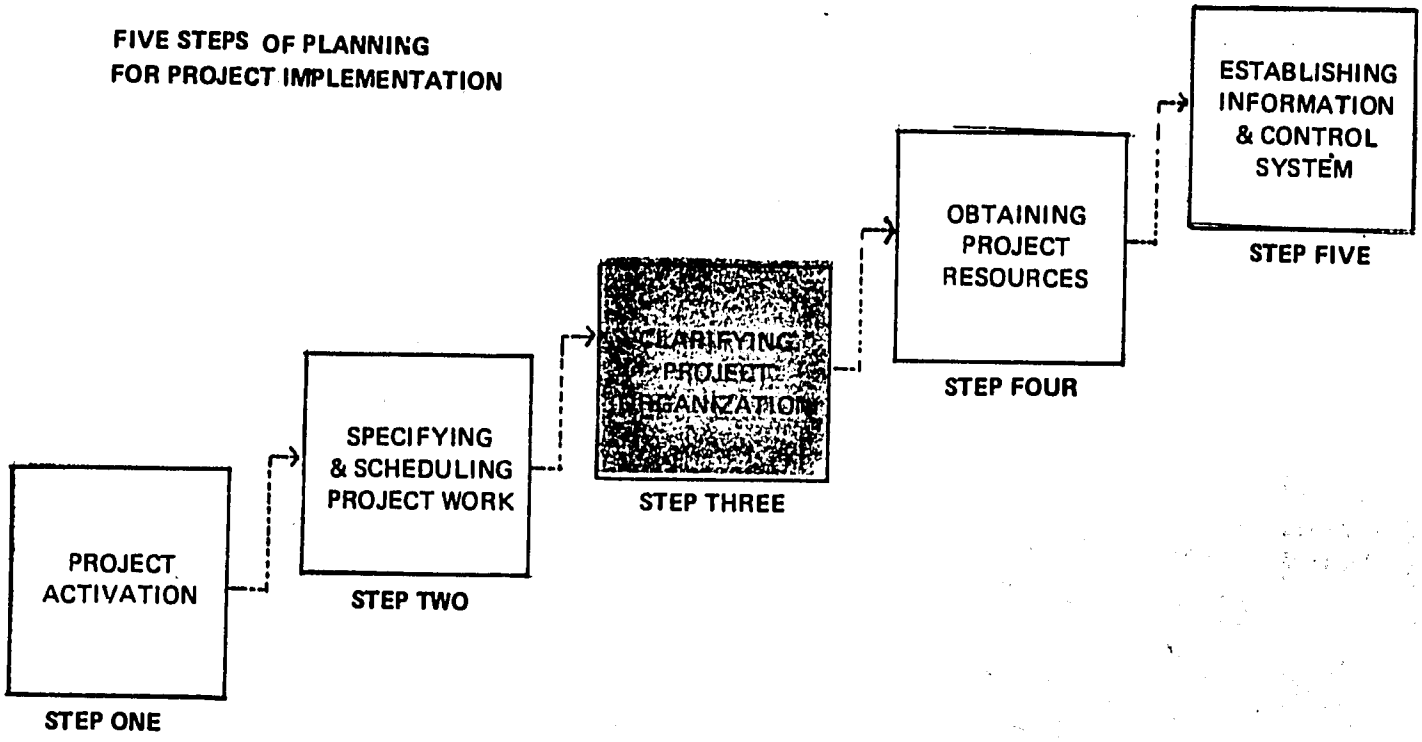
Project Component: PREPARE 5 ACRES OF LAND AND ESTABLISH IN VEGETABLES

GANTT CHART

		- weeks -							
		1	2	3	4	5	6	7	TOTAL
A TASKS	Clear Land	////////							
	Plough Land		////////	////////	////////				
	Harrow Land			////////	////////	////////			
	Sow Seeds and Plant Seedlings					////////	////////	///////	
RESOURCE REQUIREMENT AND COSTS	MANPOWER REQUIREMENT								
	1) Field Supervisor (mandays)	2	2	2	2	4	4	4	20md
	5) Labourers "	4	-	-	-	25	25	25	75md
	2) Tractor Drivers "	-	4	8	8	8	5	5	38md
	MANPOWER COST								
	Field Supervisor @ $20/md $	40	40	40	40	80	80	80	$400
	Labourers @ $8/md $	32	-	-	-	200	200	200	$632
	Tractor Drivers @ $12/md $	-	48	96	96	60	60	60	$546
	TOTAL MANPOWER COST $	72	88	136	136	376	340	340	$1488
	MATERIALS								
	a) Herbicides: 2 litres @ $60/litre $	120	-	-	-	-	-	-	$120
	b) Fertilizers: 2½ tons @$260/ton $				217	217	217		$651
	c) Fuel: $		20	40	40	40	20	20	$180
	OTHER COSTS								
	Travelling Expenses $	50	50	50	50	50	50	50	$350
	Long Distance Telephone calls $	-	-	-	-	-	-	-	
	Other $	10	10	10	10	10	10	10	$ 70
	TOTAL MATERIAL & OTHER COSTS $	180	80	100	317	317	317	80	$1391
	TOTAL MANPOWER & MATERIAL COSTS $	252	168	236	453	693	657	420	$3229

IX. STEP THREE PROJECT ORGANIZATION [26]



9.1 *Purpose and Importance of Step Three*

Apart from its technical and economic merits, the success of a project depends largely on the effectiveness of the organization responsible for its execution. Without efficient organization, a sound and viable project may end in failure. [27]

Many difficulties encountered in project implementation result from a lack of *mutual understanding* of the roles of the various persons contributing to a project. Another cause of failure can be seen in the lack of communication of roles and responsibilities between all levels of staff, even when carefully defined. Consequently there is frequent misunderstanding about what is expected between different levels of project staff. Depending on the situation and the personalities involved this may result in personnel either doing what they think the superior wants done, or doing nothing. The consequences are that project performance falls below expectations.

The purpose of this step is to clarify project authority, responsibilities and relationships. This step is very important. Each project is a unique temporary form of organization for which there is not clear precedent. The project manager does not generally have clear authority over all the project staff and has to depend on resources and authorities spread throughout the functional departments of the organization. Administrative processes, distinct lines of authority and delineated areas of responsibility must be created to make the project work.

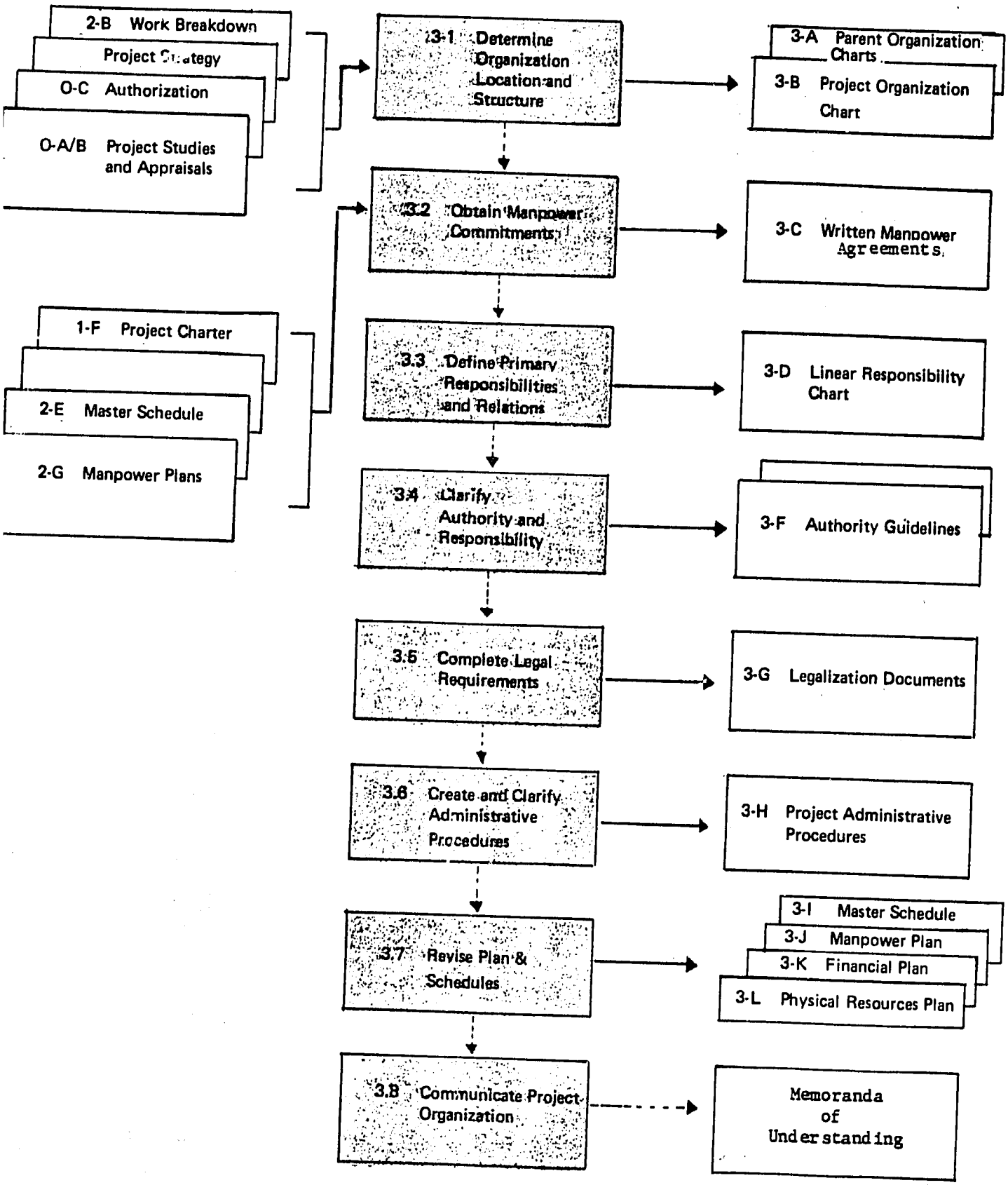
A clear organizational plan for the project will help to avoid confusion, duplication and overlapping of effort by some project staff or agencies. Difficulties such as neglected areas of responsibility, conflicts regarding personnel, resources and responsibilities, lack of effective co-ordination of personnel and communication, and a general sense of conflict and competition, (all resulting in low project morale and ill feelings), can be partially avoided by the active involvement of all relevant organizational units in the process of clarifying authority, responsibilities and relationships as outlined in Step Three.

9.2 *Foundations, Activities and Products of Step Three*

This step involves deciding on the basic form and structure of project organization, determining the location of the project, preparing the basic functions and responsibilities for all key positions, matching the organization to the Work Breakdown Structure and creating the necessary procedural mechanisms regarding authority over personnel. These will be constructed during further clarification of the project organization. (See Figure 12)

Figure 12

STEP THREE: CLARIFYING PROJECT ORGANIZATION



The basic *foundations* for this step include the Project Studies, Project Authorizations, Project Charter, Minutes of Agreements with linked units and organizations, Work Breakdown Structure, Manpower Plans and Master Schedule. Although some substeps of this step can begin on the foundation of Step One, it is necessary to have the products of Step Two, such as the Schedules and Activity Descriptions, to complete Step Three.

The *products* of this step include the Organizational Chart, Linear Responsibility Charts, Manpower Agreements, Revised Schedules and Manpower Plans. Requisite legalization of the project organization should be finalised (or plans prepared for its finalisation) during this step.

9.3 SUB-STEPS OF STEP THREE

Sub-Step 3.1 *Determine Organization, Location and Structure* (See Figure 12)

The first step in clarifying the project organization is to determine the organizational location of the project, i.e. within some Ministry or Agency or under a co-ordinating committee with organizational linkages to some agencies. This has generally been established in the Project Study. It is necessary to review earlier decisions to be certain that the organizationa location is consistent with the project authorization and all loan agreements. This requires knowledge of the relevant *Organization Charts* (3-A) and structures of the parent and sponsoring organizations. (See Illustration 8)

Project organizational structures of substantial size can be represented in a chart form. This is an arrangement of boxes, each of which represents an organizational position, with lines indicating lines of authority, relationship and responsibility.* (See Illustration 9) *A Project Organizational Chart* (3-B) is the major product of this sub-step and shows the formal lines of authority for the project. It is, however, only a first step in clarification of organizational authority, relations and responsibilities.

Because most projects have persons on temporary and/or part-time assignments, all aspects of project organization must be carefully defined and documented. It is also useful to prepare a brief *Statement of the Functions and Responsibilities* (3-E) for each of the project positions.

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* See Module 5 - *Project Organization*

However, since the authority of most project managers does not equal the responsibilities, it is necessary to complement the Project Organizational Chart with documents defining the project organization, as described in Step 3.2.

Sub-step 3.2 *Obtain Manpower Commitments* (See Figure 12)

Sub-step 3.2 involves reaching agreement on

(a) how units and agencies will co-operate with the project by supplying manpower for specific activities and functions; and

(b) who will supervise these persons on project work.

The project schedule, activity descriptions and manpower charts provide the basis for identifying the types, sources and durations of all manpower needs. Negotiations regarding manpower commitments must be documented with *Manpower Agreements* or *Contracts* (3-C).

The negotiation process will require tact and skill to achieve the objectives of securing manpower for the project, but the project management must be honest and direct regarding necessary manpower commitments and supervision authority. Questions of full-time versus part-time staffing, times of availability, scheduling and supervision should be clarified at this point. If deferred until a later date, perhaps after a conflict has arisen, the possibility of reaching an amicable and mutually satisfactory agreement is already minimised.

Most projects cannot have a full complement of full-time personnel because many agencies lack adequate staff for project implementation. Therefore, the task of clarifying the part-time and temporary human resources available to the project is very important. The agreements must be very clear for the sake of the project because personnel tend to give priority to their routine work and deference to assignments from departmental supervisors. A positive attitude toward the project and the commitment of the personnel should be encouraged to ensure that the written agreements will be honoured.

The written Manpower Agreement should attempt to specify, to the greatest extent possible, the following terms:

(a) the quantities and qualities of personnel agreed upon and if possible the persons;

(b) the specific nature of the work to be done;

(c) the time periods involved;

(d) agreements upon payments, if appropriate;

(e) agreements as to what will happen if deviations occur; and

(f) agreements as to the supervision and evaluation of the work.

It may be necessary to prepare formal or legal documents to record these commitments. Copies of the Manpower Agreements and Contracts should be made available to the project, to the supplying organization, to the project-assigned personnel and to other persons who may be responsible for supervising work with those people.

In addition, Manpower Agreements might include some indication of non-monetary incentives and rewards for work on the project. The commitment of the functional units or agencies to the project can be seen in the nature of incentives that can be negotiated for project personnel. The terms of the agreements are important because assignments to the project can be threatening. Projects end while departmental work is ongoing. People fear that their permanent positions will be jeopardised before the project assignment is finished, that someone else may be assigned to their positions, or that others may take advantage of promotions for which they would otherwise be eligible. Another problem is that controversies may arise where projects overlap with routine organizational functions. Organization jealousies, conflicts and insecurities may be heightened for temporary project personnel. Manpower Agreements should take into consideration the concerns of prospective project personnel as well as those of the project management.

Sub-step 3.3 *Define Primary Responsibilities and Relationships* (Figure 12)

When Manpower Agreements have been reached, a *Linear Responsibility Chart* (3-D) can be constructed to formalise the relationships and

responsibilities for all persons in relation to activities on the project.* A draft of a Linear Responsibility Chart should be drawn up by the manager after the negotiations for manpower in Sub-step 3.2, as responsibilities can now be confirmed, based upon the Manpower Agreements. Since the Manpower Agreements are written records, there should be mutual clarity of the understandings. The Linear Responsibility Chart can reflect these agreements and become a co-ordination tool for the information of all relevant persons and units related to the project. The chart will include administrative persons and liaison persons from sponsoring agencies as well as direct project personnel, so that the whole complex of organizational relationships is reflected (See Illustration 10).

Sub-step 3.4 *Clarification of Authority and Responsibilities* (See Fig.12)

In addition to the Linear Responsibility Chart, which only partially clarifies the project organization, a full set of *Responsibility Guidelines* (3-F) for all sponsoring agencies and officials should be constructed. A clear set of Responsibility Guidelines can be developed from the Linear Responsibility Chart for all contributing groups and persons. (See Illustrations 11a, b, c, & d.)

Some of the questions which the total set of guidelines for the project must address are:

(a) who has the authority to change project schedules?

(b) who has the authority to substitute project resources?

(c) who can terminate the project or any project activity?

(d) who has approval and authority over contingency funds?

(e) who must approve changes in project objectives?

(f) who is responsible for obtaining resources?

(g) what reports are required and who is responsible for them?

(h) what authority do persons or officials have to relate directly to project personnel?

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* See Module 6 - *Linear Responsibility Charts*

In general, this means that there should be a written set of guidelines clearly defining the responsibilities and authority of key project personnel and liaison persons or groups, including:

i) senior chartering agency or Ministry officials;

ii) project co-ordinating committee officials;

iii) project manager;

iv) key activity managers;

v) liaison personnel for all linked agencies or groups; and

vi) liaison personnel for all sponsoring agencies.

In addition to guidelines of responsibility and authority, it is necessary to complete *Job Descriptions* (3-E) and, where potential persons have been specifically identified, begin to construct the Job Profiles.* It is recommended that job descriptions and job profiles be constructed to complement the Manpower Agreements reached with the various units above. These should be communicated directly to project personnel with the concurrence of their regular supervisors or directors. (See Illustrations 12a & b)

Sub-step 3.5 *Completion of Legal Requirements* (See Figure 12)

Many projects must be given a legal status, e.g. as a pre-cooperative or as a legal entity, and if not, the legal liabilities of the parent organizations must be determined. In order to facilitate project implementation and tasks such as the procurement of certain supplies or the drawdown of certain types of funds, the legal status of the project implementing agency must be finalised (3-G). Specific attention must be paid to this matter so that project managers or administrators do not become personally liable for project affairs or so that the sponsoring organization is not held unduly responsible for project legal affairs.

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* See Module 40 - *Motivation of Employees and Personnel Evaluation* and App. 1, 2, 3, 4, 5, 6

See also Pioneer Farms Implementation Planning Manual, App.3 - Job Description and Job Profile

Sub-step 3.6 *Clarify and Create Administrative Procedures* (See Figure 12)

In general, projects operate within the bureaucratic rules, regulations and traditions of their parent organization(s). This means that the manager must be quite familiar with the personnel procedures of these organizations in relation to his project staff. A brief *Procedures Manual* (3-H) summarizing the key points related to the project should be developed for reference by the project mananagement throughout the project. This summary of relevant administrative procedures will help the management and the staff avoid entanglements as difficulties arise. It could include contact people in the associated functional sections so that finer points can be discussed with more knowledgeable persons.

Sometimes, it is necessary to create some administrative procedures specific to the project. Lines of reporting and supervision within the project can be clarified at critical points. Points for grievances, reporting of technical problems, periodic performance evaluations and so on, may be required for the project and should be clearly stated and communicated to project staff in the briefing period when they join the project. The need for specifying such administrative procedures is, of course, dependent upon the judgement of the project management.

Project performance depends to a great extent upon the leadership and management styles and capabilities of the manager and the management staff.* But it is necessary to supplement styles with formal structure - both for the sake of the record and for the sake of consistency in staffing and administrative matters. Because administrative procedures depend on staffing relationships with other organizations, the agreements established in previous substeps form a basis for determining these administrative regulations.

*See Manual M - Chapter 10 *Project Management Styles*

As staffing changes throughout the life of the project, e.g. from project planning to project build-up to project execution to project break-in to project phase-out, the administrative needs may change as well as the staffing. Management should always maintain a flexibility in their administration practices so that, as the project advances, these change to maintain relevance to match the project needs.

In summary, projects do not have a total autonomy in terms of their organizational policies and procedures. They must operate within the bureaucratic structures which already exist in the parent organization(s). However, it will be necessary to clarify how these affect the project. It may be necessary to negotiate the modification of certain policies and regulations for the sake of the project, so that they do not unduly hamper project performance. And it may be necessary to construct minimal bureaucratic guidelines for the operations of the project. These should be kept to the minimum necessary for operation so as to maintain the maximum flexibility for projects. The administrative structures required may vary throughout the development of the project as it goes from project build-up to project phase-out.

Sub-step 3.7 *Revision of Plans and Schedules* (See Figure 12)

It is necessary to make revisions in the initial Project Master Schedule (3-I) and the Manpower, Financial and Resource Plans (3-J,K,L) as a result of the detailed organization plans created in this sub-step, especially arising from the results of the negotiations for project personnel. Such revision is an important step in project management and will be repeated periodically throughout the life of the project.

Sub-step 3.8 *Communicate Project Organization* (See Figure 12)

How one goes about communicating the results of plans and agreements depends upon the nature of the project and the types of relationships which are developed. However, it is good to be selectively formal so that Letters and Memoranda (3-M) are kept in the Project File. It must be strongly emphasized that formal communications create a basis for later project management decisions. Oral agreements are insufficient. *All negotiations should be followed by written communications to all relevant units and agencies*

including the following formal documents:

a) written manpower and resource agreements;

b) an organizational chart of the project organization;

c) a description of the authority and responsibility of major units contributing to the project;

d) linear responsibility charts; and

e) the project schedules, as appropriate.

ILLUSTRATION 8: ORGANIZATION CHART (PARENT ORGANIZATION)

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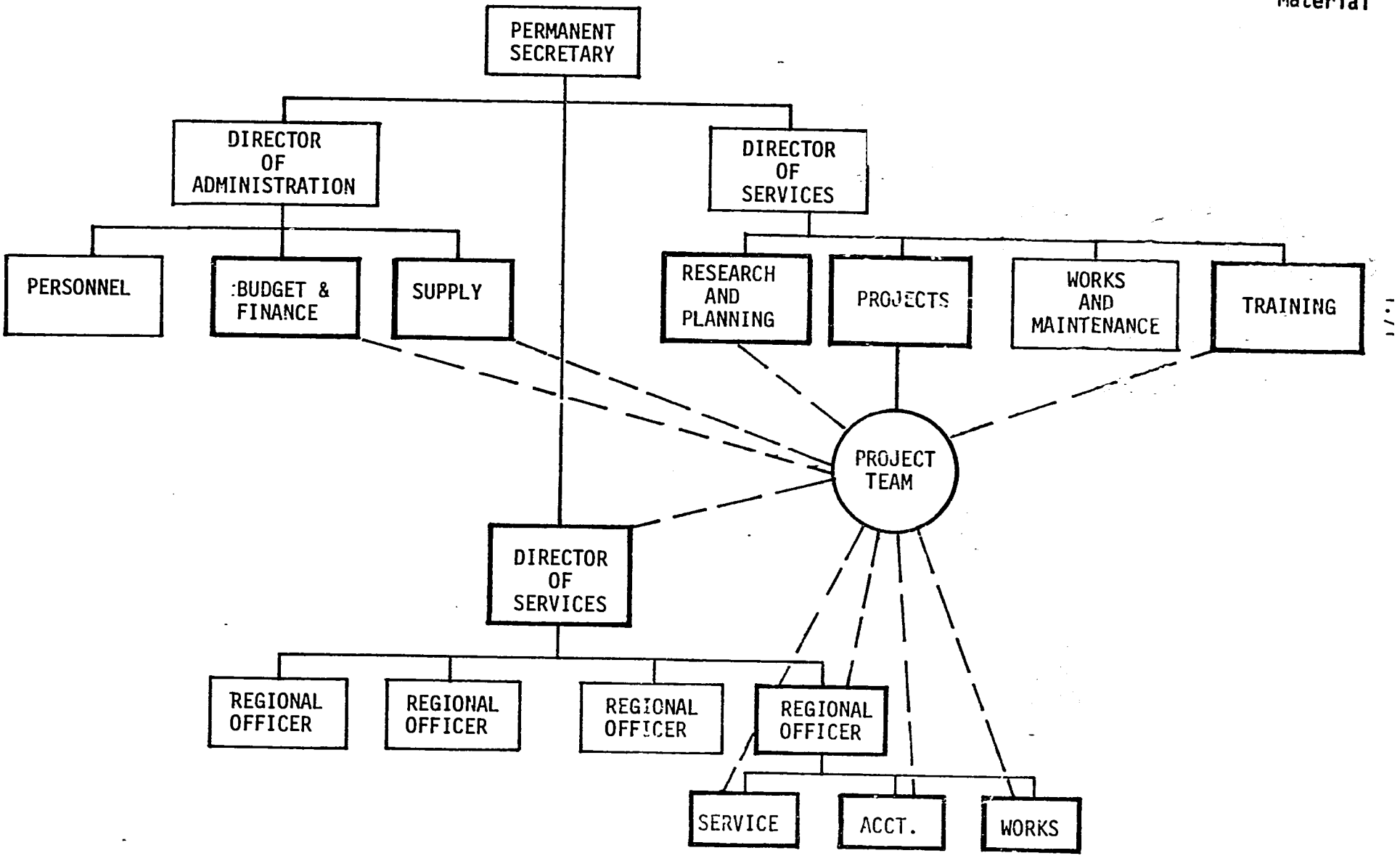
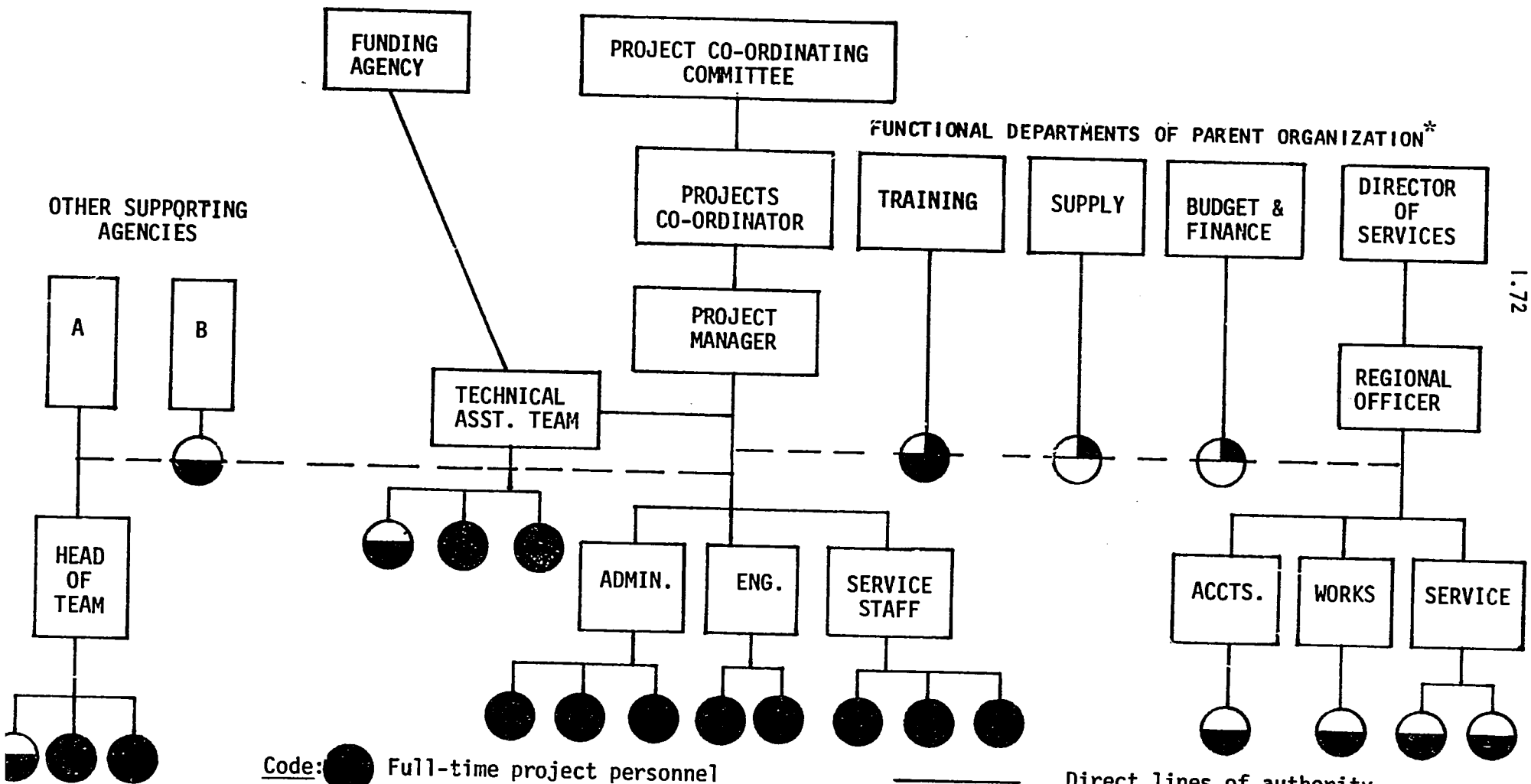


ILLUSTRATION 9: PROJECT ORGANIZATION CHART (Full-time and Part-time Personnel)



* See Illustration 8 for Parent Organization

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ILLUSTRATION 10

LINEAR RESPONSIBILITY CHART:
TRAINING COMMUNITY WORKERS [30]

Project Acitivity	Division Officer	Parish Officer	Depart-ment Head	Min. of Local Govt.	Min. of Finance	Director of Train-ing centre	Public Train-ing Inst.	Project Consul-tant	Tutors
6.1 Design registration system	C	R	A	I					
6.2 Initiate and monitor registration and recruitment		R	S	I					
6.3 Design payment scheme		C	S		R				
7.1 Prepare procedure manual		L	A			S		R	
7.2 Design supervision and support procedures	C	C	A			S	R	L	
7.3 Develop curriculum	C	I	A			S	R	C	
7.4 Train tutors			I				S	R	
7.5 Conduct 1st course						A	C	S	R
7.6 Evaluate 1st course	C		A			S	R	C	C

R. Does the work (project staff)
S. Supervises (activity manager)
L. Advises, review, or otherwise supports (liaison person)

A. Must approve
C. Must be consulted
I. Must inform

ILLUSTRATION IIa [31]

CHECKLIST OF AUTHORITY/RESPONSIBILITY OF THE COORDINATING COMMITTEE

GENERAL

(1) Deciding on and ordering the start of the project.

(2) Evaluating the project and deciding on all matters concerning the limits of the project.

(3) Deciding on the termination of the project.

SPECIFIC

(1) Approving the project objectives.

(2) Approving the project organization (manpower, responsibilities, budget)

(3) Approving major milestones of the project schedule.

(4) Selecting the project manager.

(5) Scheduling periodic meetings to review project progress.

(6) Deciding on alterations to:

- (a) the project objectives;
- (b) the strategy/service design;
- (c) policies;
- (d) the project budget;
- (e) the project organization.

ILLUSTRATION 11b [32]

CHECKLIST OF AUTHORITY/RESPONSIBILITY OF SENIOR CHARTERING AGENCY OFFICIAL

(1) Reviewing the project proposal and deciding upon steps to be taken.

(2) Reviewing the detailed project schedule, budget, and organization, and approving the proposed steps to be taken.

(3) Arranging for a coordinating committee for the project (if necessary) and deciding on its authority/responsibility.

(4) Participating as a member of the project coordinating committee.

(5) Appointing the project manager and assigning his authority/responsibility.

(6) Scheduling periodic project review meetings in collaboration with the project manager.

(7) Deciding upon major revisions to the project schedule, budget, and organization.

(8) Providing guidance to the project manager on all questions regarding resource inputs for the project.

(9) Negotiating manpower agreements in collaboration with the project manager.

(10) Communicating with other ministries.

(11) Deciding on the termination of the project.

ILLUSTRATION 11c [33]

FIGURE 6: CHECKLIST OF AUTHORITY/RESPONSIBILITY OF LIAISON PERSONS

(1) Assisting the project manager in obtaining resources.

(2) Cooperating with activity managers and the project manager in breaking down clusters of activities into detailed activities.

(3) Assisting in preparing activity descriptions.

(4) Taking part in selected detailed design sessions and formal meetings.

(5) Obtaining the opinions and advice of persons affected by the project activities and by the solutions proposed.

(6) Communicating with relevant individuals as to project objectives and activities.

(7) Assisting the project manager and activity managers in preparing proposals for alterations.

(8) Giving opinions and advice on such proposals and suggesting alternative solutions.

ILLUSTRATION 11d [34]

RESPONSIBILITIES OF EXTERNAL SOURCES

(1) Negotiating manpower and resource agreements with the project manager for externa resources.

(2) Supplying the resources agreed upon in manpower and resource agreements at the times specified.

(3) Cooperating with the project manager on all questions regarding changes in the external resource inputs for the project.

ILLUSTRATION 12a [35]

CHECKLIST OF AUTHORITY/RESPONSIBILITY OF PROJECT MANAGER

(1) Adding, changing, and/or deleting activities in the project schedule.

(2) Substituting resource inputs when necessary.

(3) Scheduling meetings with the project team.

(4) Communicting with relevant organizational units and professional bodies as necessary and when authorized.

(5) Determining causes and effects of actual and expected deviations from the current project proposal.

(6) Selecting project staff (when feasible and authorized).

(7) Developing proposals (with project team members) for actions and alterations to the project plan that are essential for achieving the project objectives.

(8) Deciding on such actions that fall within the limits of his authority (see 10 below).
For problems outside these limits, submitting suggestions for corrective action to the senior Chartering Agency official and/or the coordinating committee.

(9) Monitoring important project activities to ensure that target dates are met.

(10) Normally the following will be <u>outside</u> the scope of a project manager's authority:

(a) Changing the project objectives.

(b) Making major changes in the strategy/service design that have policy implications.

(c) Reallocating national or external funds beyond a specified level. (Since in most governmental agencies reallocation of funds is a difficult problem, it is customary to establish a contingency fund of approximately 10% that the project manager is authorized to reallocate.)

(d) Except as authorized, engaging in official communication with (specific levels of specific) agencies outside the Ministry of Health.

(e) Recruiting additional staff beyond those specified in the proposal.

ILLUSTRATION 12b [36]

JOB DESCRIPTION

Proposed for Discussion

Name of Post: Farm Manager

Description of Post:

The Farm Manager works under the general direction of the Parish Manager of a designated representative and is responsible for the management of an individual project or several adjacent small projects within the cooperative organization promoted by the Production Unit of the Ministry of Agriculture. These units are known as Pioneer Farm Cooperatives.

Duties and Responsibilities:

1. To assume primary responsibility for farm management, including planning, directing, coordinating, controlling and monitoring all aspects of project operations.

2. To participate in the interviewing and selection of the Pioneers.

3. To attend the initial (one month) orientation of the Pioneers for the farm.

4. To plan and organize, with the Cooperative Officer, the development of the Pioneer Farm into a Cooperative by:

   (a) organizing the Pioneers into appropriate governing and operating committees such as the Farm Management Committee, Marketing and Work Committees, etc.;

   (b) developing and assisting with the Cooperative Education Plan;

   (c) developing guidelines for operations and functions of all Committees;

   (d) monitoring the functioning of Committees and the pre-cooperatives;

   (e) acting as an Advisor to all Committees as to and for their functioning; and

   (f) meeting regularly with all Committees, at least monthly with the Farm Management Committee, and attending other meetings as appropriate or as requested.

5. To ensure that a system of Farm Records is established and maintained and to submit to the Parish Manager's Office reports and records on all investments and returns made by and on behalf of the government on the farm.

6. To assist the Pioneers in the updating of the Farm Plan.

7. To ensure the implementation of proper cultural and husbandry practices on the farm under the guidance of the Farm Management Committe and the Parish Farm Planning Team.

8. To plan, organize and execute the technical training of the Pioneers with the assistance of the Parish Training Commitèee.

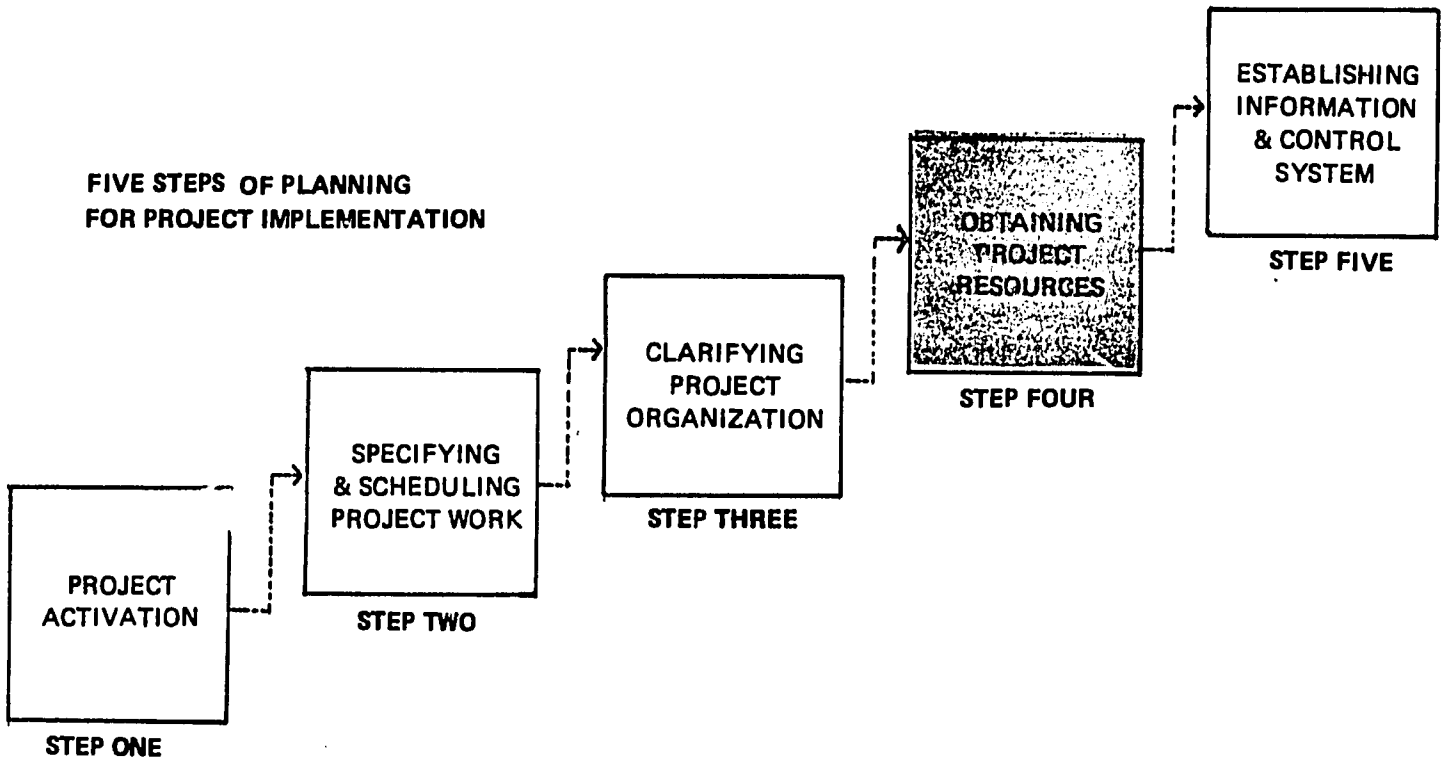
9. To identify other training needs and assist the Pioneers in planning and organizing such training.

10. To attend courses, seminars and conferences relevant to functions and development of Farm Managers and Pioneers Farms, as approved by the Production Unit and the Parish Manager, such as the Farm Managers' courses and proposed meetings of Farm Managers at the National level on a quarterly basis.

11. To ensure that official regulations of Pioneer Farms are enforced.

12. To submit monthly reports to the Parish Manager on the performance and activities of individual projects under his or her supervision.

X. STEP FOUR: OBTAINING PROJECT RESOURCES [37]



10.1 *Progress and Importance of Step Four*

The purpose of Step Four is to provide the necessary guidance to ensure that the kind and quantity of project resources required are available at the places and times they are needed. These fall into three basic categories which are set out below:

i) the necessary project funds to be allocated and made available for project expenditures;

ii) full-time and part-time project personnel at appropriate places and times; and

iii) project supplies, equipment, materials and facilities to be procured and in place as needed.

Final estimates of all project resource requirements have been established in the preceding steps. For example, specifications of all the resources have been detailed in Activity Descriptions (2-C) and the Resource Plans (3-J,K, & L). Specific responsibilities for the activities and resources have been clarified with the project organization documents defined in Step Three.

Administrative units in the sponsoring agencies will probably be responsible for various details of procurement and will perform much of the work involved. The project manager, however,should be thoroughly familiar with the procedures and documentation required to ensure that resources will be available on time. The responsibilities of the project manager will obviously include:

(a) advance planning with relevant administrative units to see that realistic timetables are worked out and necessary administrative steps are known, and taken, to obtain the resources;

(b) monitoring the performance in regard to procurement in relation to the planned timetable to see that the administrative steps are accomplished on time; and

(c) advising or taking corrective action or proposing appropriate actions to the administrative units for adjusting the project or the schedules as needed.

Obtaining resources is a process which continues throughout the life of the project, but the procedures must be planned and put in place before the implementation can begin.

Obtaining funds is perhaps the best example of resource co-ordinating problems encountered on projects. Some project monies must be available at the beginning of the project, especially for certain capital items. Other project monies may come later, from government or organizational budgets which are based upon a calendar budget year, or as reimbursements for actual expenditures. Still other project monies may be loans for the beginning of project operation or may be needed only at the end of implementation. Project finances can be quite confusing. The routine budget may be handled through normal organizational procedures, while capital and loan funds may require quite different processes. This is no more difficult than obtaining other resources, including key supplies (and non-critical supplies which become critical when they are not present on time).

Experience shows that failure to obtain resources on time is one of the most common causes of delay in implementation and can cause havoc with regard to overall project schedules, especially where staffing agreements of temporary personnel must be co-ordinated with plans for equipment, facilities or supplies. Thorough knowledge of the finance, personnel and supplies procurement processes and procedures cannot be neglected. It makes the difference between good and poor project management in many instances. It is, of course, critical to know what documentation formats are necessary to procure any resources and all requirements associated with these processes.*

10.2 *Foundations and Products of Step Four*

The *foundations* of Step Four are extensively dependent upon the work of previous steps. Tentative agreements regarding the supply of basic project inputs were established through the use of the Project Charter and the establishment of linkages with primary organizations in Step One. From Step Two, the detailed Master Schedule and the Manpower, Finance and Physical Resource Plans provide the specifications and the times for all that must be procured through the processes established in Step Four. From Step Three, the commitments of the organizations for manpower are finalised and the plans revised so that the procurement processes can be initiated with certainty. (See Figure 13)

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* See Module 46 - *Withdrawal of and Accounting for Loan Funds in the Financing of Projects*

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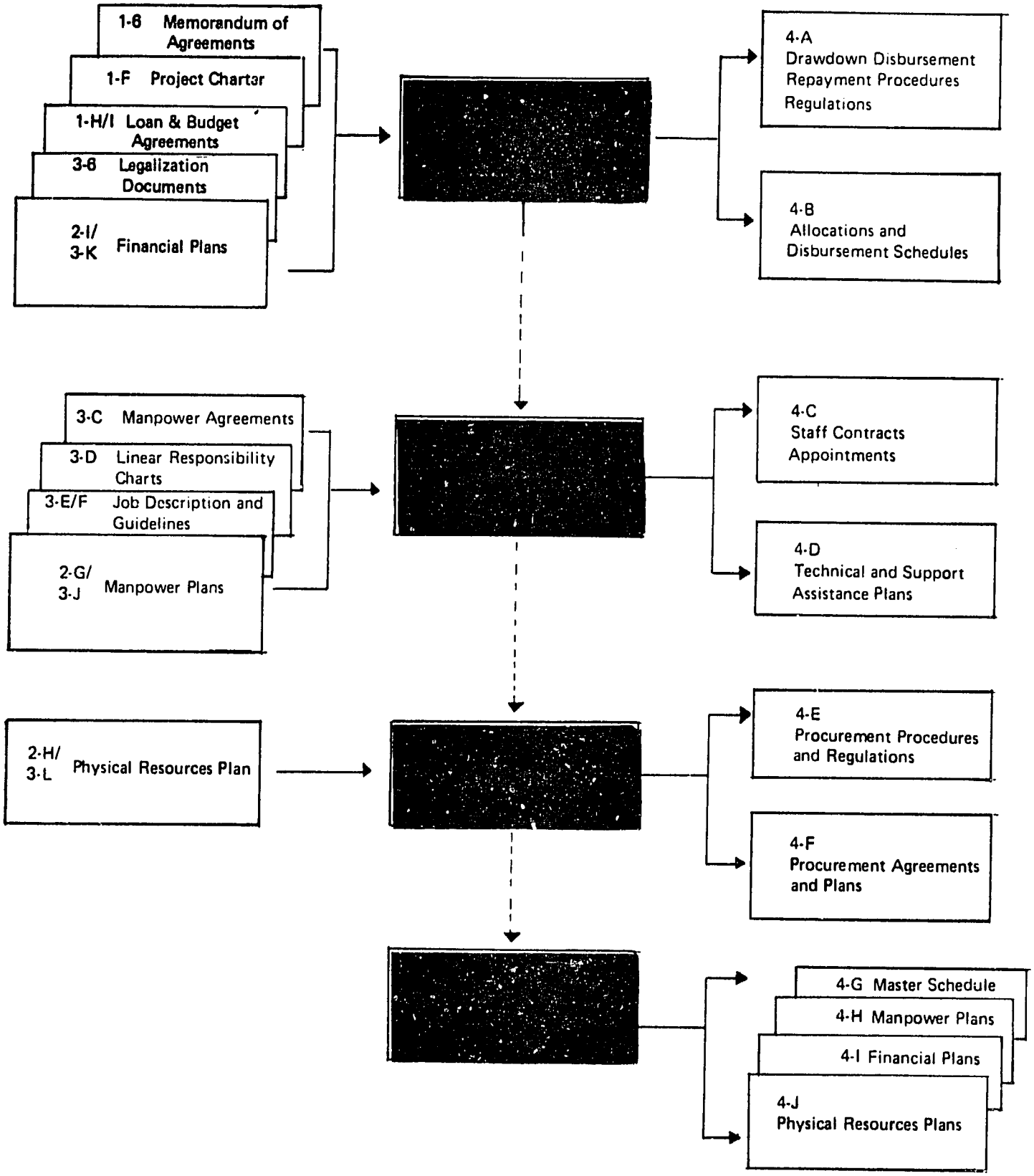
Figure 13
STEP FOUR: OBTAINING PROJECT RESOURCES



The *products* of Step Four are not the project resources themselves, but the assurances that the processes for securing the resources are set in motion. The manager must know all the processes, must establish schedules for procurement, and must initiate all requisite documentation; in short, that the systems for securing the project resources are in place at the conclusion of Step Four. For convenience in this model, we have classified the project resources into three basic categories as shown in Figure 13 .

(a) project funds;

(b) project personnel; and

(c) project supplies, materials, equipment and facilities or the project physical resources.

10.3 *Sub-steps of Step Four*

Sub-step 4.1 *Obtaining Project Funds* (See Figure 13)

A very visible test of project management is whether funds are available as *needed* and are used as *intended*. The varying sources of funds must be managed for the good of the project and in line with its changing needs. But strict guidelines must be maintained and the conveniences and regulations of the funding agencies must be respected. This requires a great deal of expertise.

It is easy to find examples of financial problems on projects. The financial picture and cash flows within the government for the sponsoring Ministry or Agency may change during a fiscal year, necessitating adjustments in various allocations. Agreements may not be honoured. Another example is in the case of multiple funding sources, where the applications of certain funds are restricted to certain types of expenditures. Deviations from the agreements may break the contractual relationship and raise problems during audits. In addition, the rates of inflation may affect a project and put the original budget estimates out of line. Implementation planning must build an information and data base and decision-making processes to anticipate the financial problems which will be encountered.

The budgets established on the basis of the schedules of Step Two must be synchronized with the project allocations. In this step, the agreements are finalised and documented. It may, of course, be possible to get increments to the project budget and this should be pursued as early as possible,

DO NOT DUPLICATE WITHOUT PERMISSION

if it is necessary.

It is useful to understand certain basic budgetary categories. A project manager should be able to identify the relatively *fixed costs* of the project and the relative *discretionary costs* (those over which one can exercise some discretion and thereby adjust costs, such as travel, communication services, etc., which can be reduced without seriously interfering with project accomplishments). There are also capital costs and recurring costs, direct costs and indirect costs, contingency costs and so on.

In obtaining funds, the project manager should prepare for obvious contingencies and common problems by taking the following steps for each of the important budget submissions to all sponsoring agencies, local and international:

(a) *select a good liaison person* in the relevant administrative units. This will provide needed information for remedial action, i.e. when it can be taken, how much time is involved, the necessary documentation, when funds are likely to be available and, very important, how to manage and shift funds between project categories for the benefit of the total project. The manager must understand the operations and constraints of the co-operating units and must keep them briefed on his operations and constraints;

(b) *prepare a schedule of the administrative steps* and be familiar with the documentation required for making funds and other resources available;

(c) *prepare contingency plans*, if funds are not available when needed; and

(d) *monitor the performance* against the schedule to ensure that the administrative steps are followed and the funds are obtained according to the schedule.

All the procedures and processes for acquiring the project resources (funds, persons and supplies/equipment) take time. This is illustrated

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* See Module 17 - *Project Costs and Benefits*

in the Gantt Charts of Illustrations 13, 14 and 15. Chart 13 illustrates the administrative steps required to obtain project funds through the normal budget procedures. Chart 14 illustrates a schedule for recruiting staff. Chart 15 is a schedule for procuring supplies.

Sub-step 4.2 *Obtaining Project Staff* (See Figure 13)

"Project staff" includes all persons (full-time and part-time personnel) who will be contributing to the project. These persons and their agencies have been identified in Steps One, Two and, especially, Three. The same strategies outlined above for project funds should be followed to ensure that the staff will be obtained.

Often it is necessary to coordinate with schedules of other departments or projects to allow time for recruitment and/or to create new posts or positions. Coordination is very important. All necessary administrative steps should be identified along with the relative times for obtaining key project personnel. This will facilitate making contingency plans as required. Monitoring and reviewing the arrangements and progress on staff procurement will be constantly necessary. It is important that all actions noted above be taken in time. *These processes are often over-simplified in project plans by both the government and the technical assistance agencies.*

Personnel schedules must be coordinated with the relevant physical resources that must be in place for effective use of the personnel. Plenty of informal influence must be used to ensure that all the administrative requirements are met and that the project continues to be understood and favourably supported, so that personnel will be released or recruited and committed to the project as needed.

Sub-step 4.3 *Obtaining Supplies, Equipment and Materials* (See Figure 13)

The processes of obtaining supplies, equipment, facilities and materials is essentially the same as that for staff and funds discussed above. Appropriate liaison persons must be identified, timetables worked out, progress monitored, influence exerted, contingency plans made as necessary, and so on. It must be emphasized that the project manager is usually working *with* the liaison persons; they are not "working for" him (in the traditional sense of organizational lines of authority). The cooperation of these persons in the relevant units is often based on their

support and understanding of the project. If they are involved positively they will be more committed to giving maximum assistance to the project with supplies,facilities, etc. from that commitment.

In all the above processes of obtaining the financial, human and physical project resources, it may be useful to construct detailed Linear Responsibility Charts to outline all groups and agencies and their major inputs and responsibilities in the procurement processes.

ILLUSTRATION 13

ADMINISTRATIVE STEPS IN OBTAINING FUNDS

Activity	Schedule / Responsibility
1. Issue policy guidelines to Ministries, including budget ceilings	Chief Budget Bureau
2. Prepare supplementary instructions. Issue guidelines to Units, Institutions, Provinces	Permanent Secretary, Ministry
3. Review guidelines, prepare and submit budget proposal	Parish Officer Project Manager
4. Review Provincial budget rpoposals Submit to relevant Ministries	Parish Officer, Finance Officer
5. Review Ministry proposals, submit to Budget Bureau	Ministry Budget Review Committee
6. Review/approve budget proposals	Representative for Budget Bureau
7. Review/approve budget proposals	Parliament
8. Establish allotments for Ministries	Ministry of Finance Representative for Ministry
9. Adjust Ministry spending ceilings. Inform Ministries	Min.of Finance Representative for Ministry
10. Submit request to spend against the allotment	Project Officer Parish Officer
11. Approve allotment request	Ministry Controller Ministry of Finance

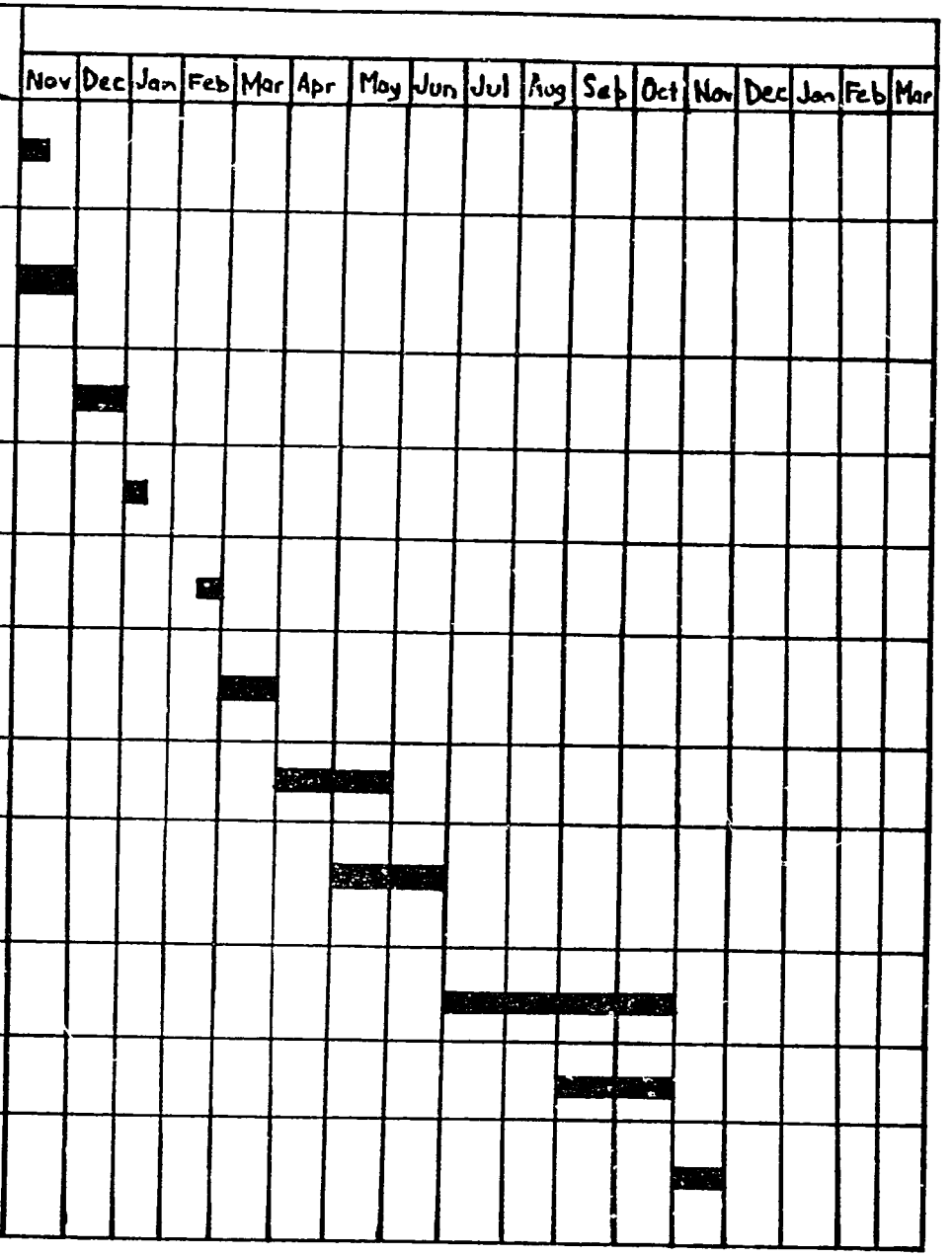


ILLUSTRATION 14 39

SCHEDULE FOR RECRLITMENT OF STAFF

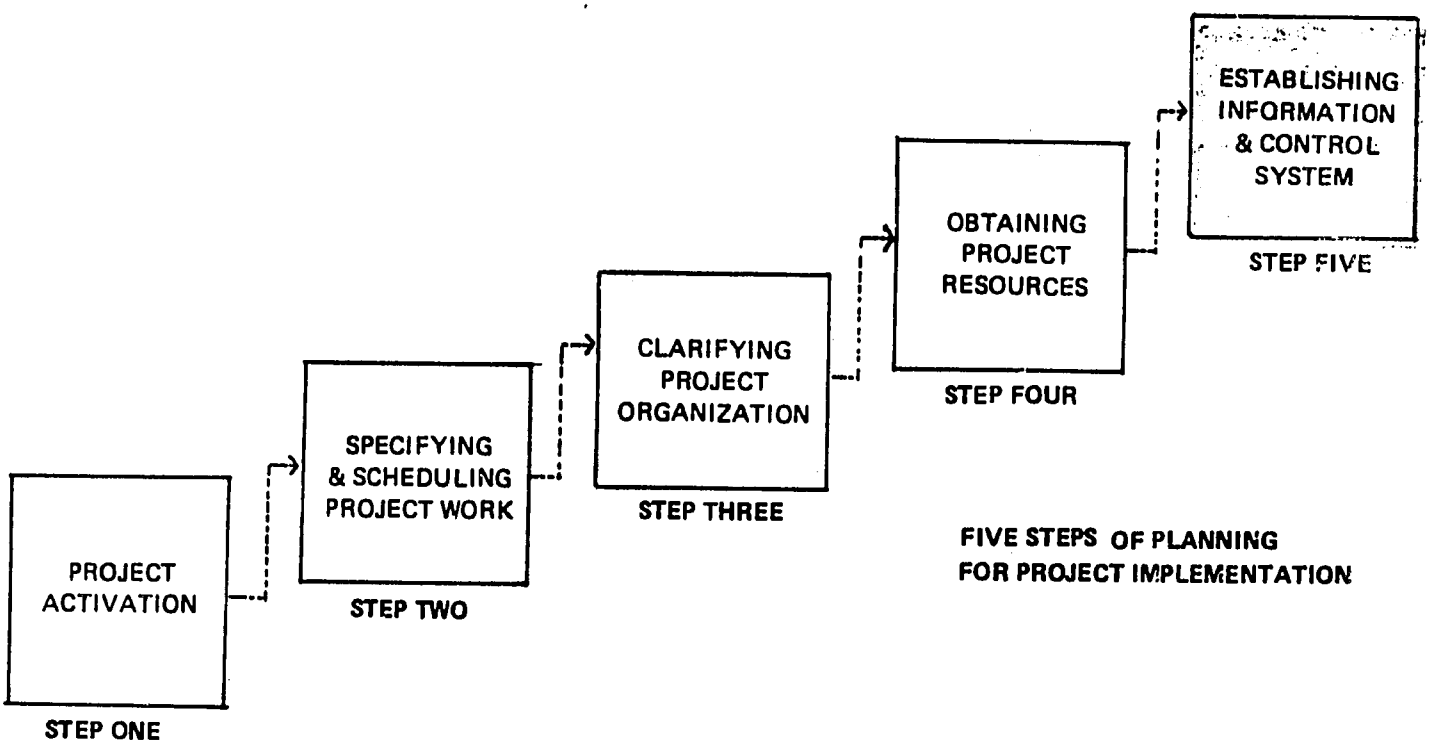
ACTIVITY	Months / Responsibility	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN
1. Prepare Post Description	(Project Manager)										
2. Review/approve Post Description	Ministry Personnel Officer										
3. Ccnfirm Funds Available	Controller										
4. Approve Post	Civil Service Commission										
5. Post Vacancy Notice	Ministry Personnel Officer Project Manager										
6. Prepare for ard Convene Selection Committee	Permanent Secretary										
7. Complete Medical Clearance	Personnel Officer										
8. Determine Date of Availability	Personnel Officer										
9. Prepare and Send Offer of Appointment	Personnel Officer										
10. Give Notice to Currert Employer	Candidate										
11. Brief Staff Member	Project Manager										

ILLUSTRATION 15 40

SCHEDULE FOR OBTAINING PROJECT SUPLIES AND EQUIPMENT

Activity	Months / Responsib'ty	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB
1. Formulate requirements, send to Ministry Stores Officer	Project Manager														
2. Establish general specifications, estimate costs, prepare purchase authorization	Ministry Stores Officer														
3. Approve allotment request	Ministry Finance Representative														
4. Prepare purchase orders	Ministry Stores Officer														
5. Send Supplies	Commercial Firms														
6. Receive and store supplies	Project Manager Project Officer														

XI STEP FIVE: ESTABLISHING THE PROJECT INFORMATION AND CONTROL SYSTEM [41]



11.1 *What is Project Control?*

Project Control is the managerial function that keeps the project within tolerable limits on its targets. Control assumes that there is a plan. Ambiguous and approximate pre-authorization plans are not enough for good project control. Basic plans to be controlled have been constructed in the first four steps of planning for project implementation, such as manpower and resource plans and agreements. The plans that have been established to this point are naturally not "eternal", but they are a foundation for initiating project control. They must be revised constantly throughout the project, dependent upon the experiences and the problems encountered.

One expects deviations from plans. In fact, *the value of a plan is not to enforce conformity, but to provide signals about the significance of deviations*. Project implementation plans provide a basis for measuring and

evaluating the real performance of a project and give administrators and decision-makers a basis for making contingency decisions and plans when significant deviations do occur. The purpose of control is to ensure that deviations do not fall outside tolerable limits, especially regarding the resources and the outputs of the projects and to take corrective action if they do. This requires that the project manager (a) be aware of deviations, (b) establish limits for judging if deviations are excessive, and (c) establish processes for taking appropriate corrective actions if necessary.

Essentially project control involves the following activities:

(i) selecting control indicators and milestones that reflect actual performances on the project;

(ii) gathering and analysing information on project performances in comparison to plans, indicators and milestones; and

(iii) establishing the processes and procedures for taking corrective actions if excessive deviations from the plan do occur.[42]

11.2 *What can Project Management Control?*

It is important to identify what is controllable and what is not controllable on a project. To some extent the distinctions depend a great deal on the nature and authorities of the project management team and the range of control tools and techniques which are considered. What may be relatively controllable in one project and its environment, may be less controllable or not controllable at all in another. The extent to which a project manager has control over each of the elements of a project is the measure of the manager's control over the project.

The chief elements of a project which must be controlled include:

(a) organization of the project personnel, which the management must be in a position to control;

(b) assignment of functions and responsibilities, an essential project management function;

(c) accountability for time and schedules to maintain limits on the duration of the project;

(d) financial performance in terms of allocations and expenditures;

(e) project assets, such as facilities, machinery, equipment and any capital type items at the project's disposal to ensure proper utilization, maintenance, repair, security, etc.;

(f) critical organizational interfaces and key transactions so that they function on behalf of the project and not some sub-group or super-group of the project;

(g) correspondence to see that it is maintained, monitored and properly adapted to project needs and performance; and

(h) project data base, including the environmental data specifically related to the project as well as that created by the project. [43]

11.3 *Who is Responsible for Project Control?*

There is always the queston of who is responsible for control on a project. At least three levels of control can be identified and should be exercised on every project (See Figure 6). These are as follows:

(a) at the level of project activities: control must be exercised by those persons directly assigned activity responsibility to see that the products (output) of the activities are produced, though the project manager may monitor or supervise control at this level;

(b) at the level of the project output and objectives: the project manager is responsible to see that project objectives are achieved within the time and resource constraints, and he in turn is supervised or monitored by a Director or Co-ordinator of Project Committee; and

(c) at the level of the project purpose and impact: the coordinating committee or project policy leadership must control the higher-level objectives of the project to monitor deviations from the original project intentions.

There is no simple answer to the question of who is in control of a project or who is responsible for control of a project. In addition to the project manager, there may be a steering committee, a department head, a financial controller, and others who exercise some degree of control. There needs to be a coherent control system to coordinate the work of these persons so that the information is generated, collected, analysed and transformed into appropriate decisions to benefit the project.

The Linear Responsibility Chart of a project shows the different points of control depending on which activity is being controlled. The project manager is responsible, however, to see that all control points are identified, that systems are established for information processing and project decision-making, and that control is exercised. The manager must ensure that information on deviations from plans are passed on to appropriate points for corrective decisions and actions and that these are carried out promptly.

11.4 *The Importance of Project Information Trends Analysis*

Project information is not particularly useful if it is collected on an ad hoc basis or if it is generated only once and cannot be used to compare performance over time. Information must be continuous and comparative to be useful for managerial decision-making. Information must be collected over time so that both *deviations* and *trends* are indicated. The analysis of project information to show trends is very important as it permits more accurate decisions regarding the significance of deviations, the impact of corrective actions and the urgency and priority of decision areas. A single point of information can show a trouble spot, but *corrective decision-making requires trends analysis* of deviations, the general setting and the impacts of changes upon the total project situation.

Systems for continuous collection of information on the project must be established early in the project. For some types of project information, especially those measuring impact, it is necessary to establish *base line data* before a project is initiated.[44] The construction of base line data, especially with regard to basic project inputs and outputs, means that the original boundaries of the project are carefully planned and defined. This permits the measurement of changes in the key indicators of performance over the life of the project.

Step Five can be initiated simultaneously with previous steps, after Step One, but cannot be completed until Steps 2, 3 and 4 are finished. From these stages, it is possible to know specific information which need to be

constructed regarding time, expenditures, work performance, resource utilization, and so on. As the plans of Steps Two through Four are prepared and revised, they become the *management base lines* against which actual project experiences are compared as information is generated and analysed.

In some ways these plans can be compared to "blueprints" according to which the project will be "constructed". The concept of blueprints is however too mechanical and rigid for the management of development projects. Guidelines are established, but are less firm that those of a blueprint which is given toa contractor for fulfilment. The tolerance on development projects is not as strict nor are the internal relationships of project components so definite. Development project plans must be more flexible and must be constantly monitored for relevance and correction to match the situation of the project.

Trends Analysis measures performance against the base lines and forecasts the implications for the rest of the project. When necessary, major policy changes or modifications in the original designs must be made in the light of project performance. On too many projects the project information system is seen as a means of ensuring that action conforms to plans. This is too simplistic and unrealistic. There must be comparison between performance and plans. The information system is the link which makes certain that problems can be anticipated and corrective decision made by project managment.

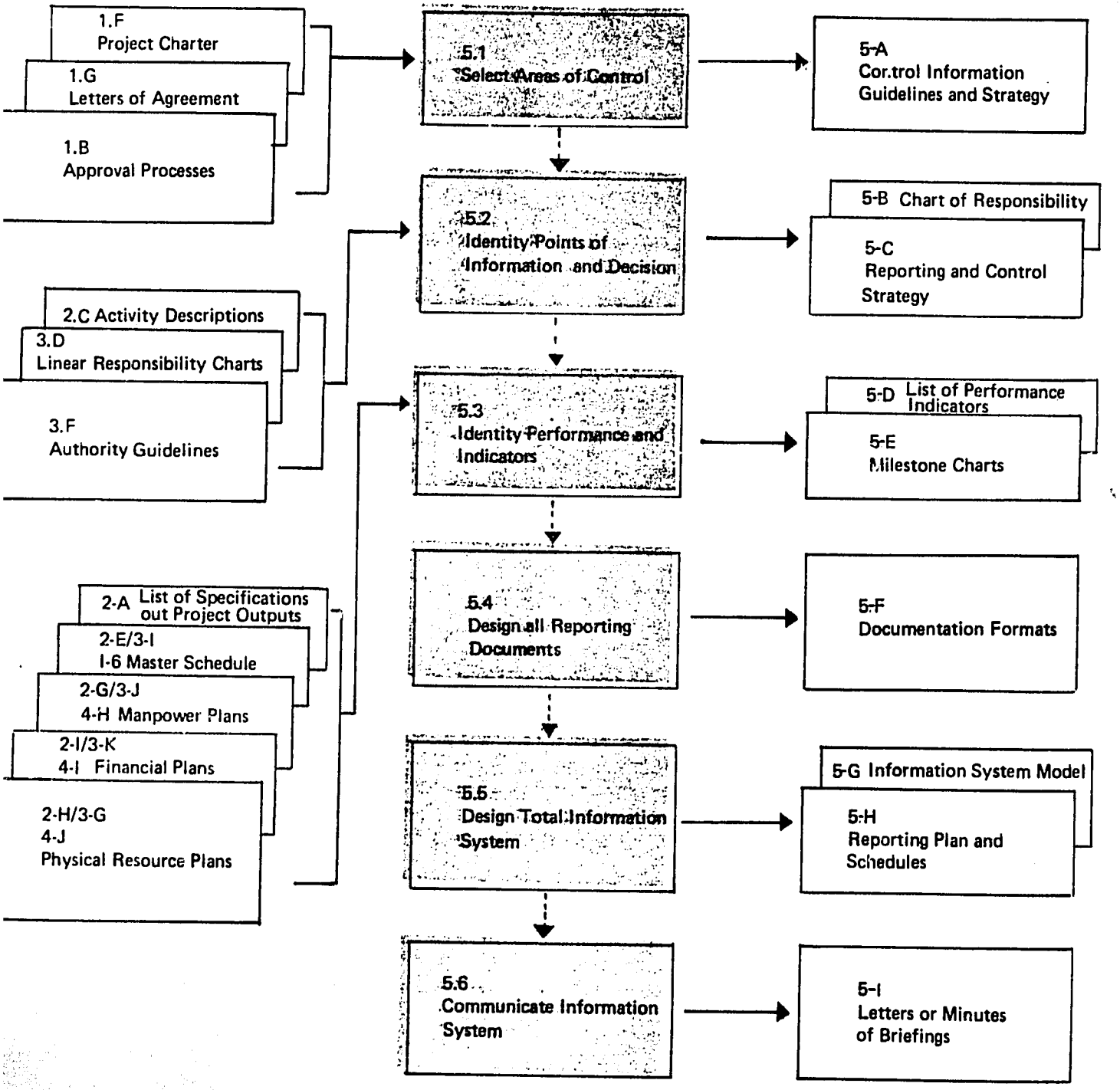
11.5 *The Purpose of Step Five*

The Purpose of Step Five is to design information system which will be used for project control and which will facilitate management decision-making. An information and control system should serve at least three levels of management as discussed above -- activity managers, project management, and the executive or project sponsoring or coordinating body. At each of these three levels there must be information with respect to time, costs, and performance. The purpose of the information is to make possible corrective decisions such as rescheduling, rebudgeting, reassigning staff, modifications of the project strategies.

Project Control focusses mainly on the immediate and short-term project and activity objectives to ensure that project inputs are adequate and available when needed, that project outputs are on target, that operational purposes are being achieved, and that problems are resolved. Control is a continuous process of analysis and monitoring which should be based on information systematically collected and gathered at all levels and from all components of the project.

PAMCO, PDRT
Resource
Material

Figure 14
STEP FIVE: ESTABLISH INFORMATION AND CONTROL SYSTEM



Project Control is sometimes confused with evaluation. *Project evaluation* refers to the measurement of the impact of the project, i.e. the longer term achievements, effects and impacts of the project and its outputs. *Project control* is concerned with comparing the shorter-run inputs, outputs and purposes of the project in terms of actual performance with the expected performance. Control is concerned with the more immediate aspects of the project; evaluation is concerned with longer-term goals and objectives, such as the impact upon the target groups and the environment.

11.6 *Foundation and Products of Step Five*

Certain aspects of the *foundation* of Step Five begin at the point of Project Activation, such as selecting areas of control. But the most important aspects of Step Five are dependent upon the products of Steps Two, Three and Four. The plans and schedules of Step Two provide a basis for the control and information system; the organization is constructed in Step Three, so sources of information can be identified; and many of the administrative processes which must be monitored through the information system are finalised in Step Four. The foundation blocks of Step Five are illustrated in Figure 14.

The *products* of Step Five are those decisions, information blocks, and documents which form the *total information system.* These include the progress indicators, the reporting instruments, the reporting system, a project information strategy and documentation formats for the project.

11.7 *Sub-steps of Step Five*

Sub-step 5.1 *Select Areas for Control* (See Figure 14)

The basic control areas are *time, cost* and *performance.* These can be monitored in three areas to reveal project progress -- resource inputs, activity level outputs, and project achievements.

The expectations for each of these levels can be taken from the project schedules and plans and the activity descriptions. These are time, cost and performance indicators which can be integrated at each level so it is possible to assess whether inputs are available, decisions are made, costs are monitored and outputs are appropriate and up to specifications. The project can be monitored to ascertain whether it is within reasonable limits of control. To be practical, the number of indicators in any one area and at

any one level should be minimal enough for realistic monitoring, but be extensive enough to give a good indication of the progress of the project.* *Information Needs and Guidelines* (5-A) should be well defined.

Sub-step 5.2 *Identify Points of Information and Decision* (See Figure 14)

When control needs have been identified in the three basic control areas , an *Information Strategy* must be established. This begins by identifying the *sources* (5-B) for information collection.

In some cases, the channels and sources of mechanisms for supplying the information may already exist, such as that related to agency budget data or those regarding expenditures or payment on loans, and so on. In other cases it may be necessary to establish new sources or mechanisms for the information, such as from activity managers or a project review committee with responsibility for monitoring activity and progress at key points. Finally, it may be necessary to seek some existing but external assistance in project information generation and processing. For example, certain base line data may be necessary throgh a Department of Statistics along with a new source of information for measuring the impact of the project over time in light of the goals of the project plan.

Sub-step 5.3 *Identifying Performance and Progress Indicators* (See Figure 14)

When the areas of control and the sources of information have been identified and the mechanisms established, performance indicators must be developed for the establishment of an information base which will permit analysis to facilitate corrective decision-making.+ Actual performances are compared to planned performances to identify deviations. Corrective management decisions should be made in accordance with decision strategies designed for the project from all levels of the project. Management analysis requires ongoing monitoring and forecasts of trends so that decisions can be made in time to avoid the disastrous consequences of significant deviations. The types of

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* See Module 41 - *Design of a Project Management Control System*

+See Module 42 - *Evaluating and Forecasting Project Progress & Performar* ;
& Module 8 - *Bar Charting for Project Control and Scheduling*

performance indicators (5-D) which may be identified include:

(a) administrative and external decision-making performances;

(b) procurement procedures, documentation and performances;

(c) completion of specific activities and tasks;

(d) impact of the project in terms of higher-level objectives;

(e) impact of changes in environmental characteristics; and

(f) adequacy and appropriateness of project inputs and resources.

A list of Key Indicators should be compiled. When indicators are selected, it is usually necessary to identify both their quantitative and qualitative characteristics. (See Sub-step 2.1 regarding specifications for project outputs, and *The List of Indicators a Milestone Chart* (5-E) can be integrated with the Master Schedule to facilitate monitoring (See Illustration 16).

Sub-step 5.4 *Design All Reporting Documents* (See Figure 14)

There should be standardization in the presentation of the project control and monitoring information. *Activity Logs* (Illustration 17) may be used according to prescribed formats. *Activity Follow-up Reports* (Illustration 18) and *Resource Follow-up Reports* (Illustration 19) are also useful. Overall milestones and key events charted on a project Master Schedule are also useful at higher levels of project management. At the executive level, the progress of project outputs is of major interest. Graphs can be designed and information formats developed to support these summary graphs.*

For all project levels, information requirements should be identified and official communications should be used to direct the use of proper documentation to present the information. This is the foundation for the total

*See Module 42 - *Evaluating & Forecasting Project Progress & Performance*

information system.*

Sub-step 5.5 *Design the Total Information System* (Figure 14)

The foundation is now laid for the information system necessary for controlling the project. The information needs have been identified, the sources of information and the required reporting formats. A Linear Responsibility Chart (Illustration 20) can be constructed showing (a) who must make reports, (b) who must receive reports, (c) who must approve reports, and (d) who must be consulted or informed. This will illustrate responsibilities for the information system at all levels of the project. The main purpose of this sub-step is to be sure that the information that is collected is placed in the hands of the persons responsible for the decisions related to those pieces of information. Not all information needs to be sent to everyone. There will be a great deal of information generated at the operational levels of the project and it will be condensed, interpreted and complemented as it channels upward to the higher levels of project administration. The test of the total information system is its capability to inform and keep informed decision-makers at all project levels so they can take corrective action as significant deviations occur. The system should be reviewed for effectiveness and revised as appropriate throughout the project. Persons must know how to use the system and if possible, those who are to do the reporting and/or analysis should be involved in designing parts of the system so that they understand how the reports will be used. The control system is intended to be a positive factor rather than a negative and judgemental device to be used against project personnel in accordance with stricter concepts of accountability and conformity.

Sub-step 5.6 *Communicate and Test Information System* (See Figure 14)

The information system will integrate the information from all units contributing to the project. When the system has been designed and put in place, care should be taken to ensure that all persons and units having responsibility are informed of their responsibilities, especially with respect to the information system which is the foundation to project control. They may be required to submit the following documents with respect to their specific activities:

*Module 41 - *Design of a Project Management Control System*

(a) an activity schedule;

(b) periodic reports on expenditures and progress;

(c) periodic updates of initial schedules and plans;

(d) plans for on-the-spot reviews by project management.

The specific information expected and the format for that information should be communicated and the information system tested early in the project to ensure that there is a useful flow of relevant information to decision-makers at all levels.

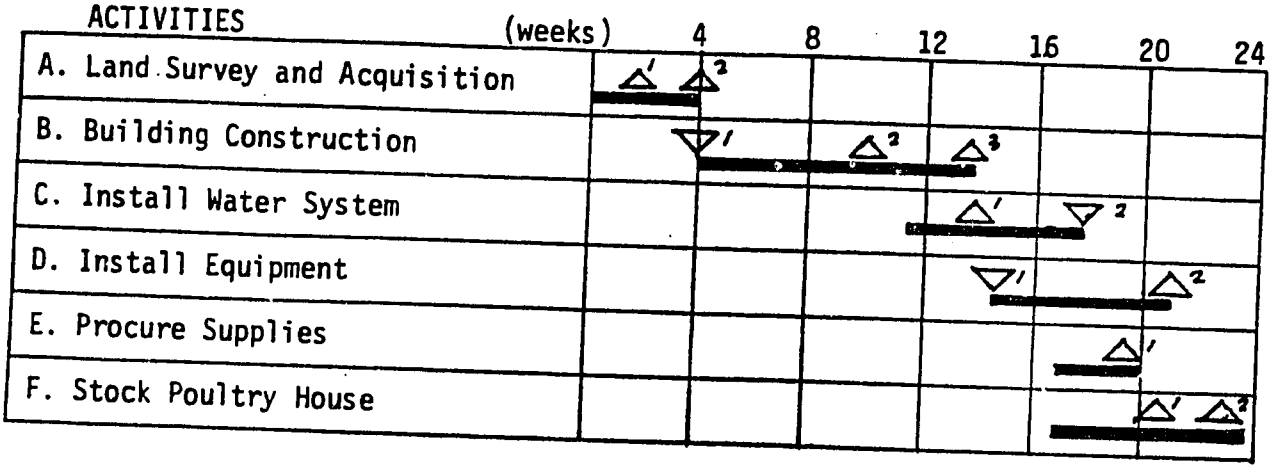
It is necessary not only to know that the information is gathered, but that it is analysed, summarised and used for decision-making. Persons responsible for various functions must be aware of expectations regarding information summaries and formats. A Linear Responsibility Chart will usefully show the sets of responsibilities with respect to the Information System. One such chart is shown in Illustration 20.

The system should be modified throughout the project so that it contributes to sound project management. The manager will be responsible to see that the information system is working to provide accurate and timely information to assist decision-making. Too much emphasis on precision may delay the flow of information and too little emphasis on accuracy with an emphasis on speed may result in inadequate information. A balance that is appropriate to the project must be found and tested and kept in place throughout the project. All persons involved should know how the system works and their contribution to it.

PAMCO, PDRT
Resource
Material

ILLUSTRATION 16: BAR CHART AND LIST OF MILESTONES[45]

SIMPLIFIED BAR CHART FOR POULTRY PROJECT



LIST OF MILESTONES

		Planned date (end of week)	Actual date
A - 1	Land Survey Completed	2	
A - 2	Land Transfer Completed	4	
B - 1	Building Plans Approved/with Permit	4	
B - 2	Foundation and Exterior Completed	10	
B - 3	Building Interior Completed and Inspected	14	
C - 1	Exterior Water Systems Installed	13	
C - 2	Interior Water Systems Installed	18	
D - 1	Equipment moved to Site	17	
D - 2	Equipment Installed and Tested	21	
E - 1	Supplies Inventory Completed	20	
F - 1	Delivery of First Set of Poultry	21	
F - 2	Poultry Stock Inventory Completed	24	

ILLUSTRATION 17 [46]

ACTIVITY LOG

(REVERSE SIDE OF ACTIVITY DESCRIPTION SHEET)

Date	PROBLEMS (deviations from schedule, expected results, resources, etc.)	Initials
15 May	Test of registration system in district A to be delayed until District Administrator returns from travel	
7 June	Some traditional officers express reluctance at attending course. First course not filled. Stipends to be offered in addition to kits.	
10 Aug	Procedures manual requiring more time for completion than scheduled	
1 May	First course delayed one month	
1 May	Interest of community volunteers exceeds first course capacity - second course scheduled immediately after comletion of the first	

ILLUSTRATION 18: ACTIVITY FOLLOW-UP (TECHNICAL ADVISORY COMMITTEE)[47]

Activity Number	Activity Name	Activity Manager	Starting Date		Completion Date		OK ✓ In danger ✗											
			Planned	Actual	Planned	Actual	J	F	M	A	M	J	J	A	S	O	N	D	J
2.1	Prepare description of functions, procedures	Parish Manager	1 Jan	1 Jan	15 Jan	10 Jan	✓												
2.2	Prepare budget	Parish Manager	1 Jan	1 Jan	15 Jan	15 Jan	✓												
2.3	Establish Regional Secretariat	Regional Director	1 Jan	1 Jan	15 Jan	1 Feb		✓											
2.4	Review and approve 2.1, 2.2, & 2,3 (by *P.S.)	*Permanent Secretary	15 Jan	15 Jan	30 Jan	1 Feb	✓	✓											
2.5	Selection of meeting site	Regional Director	1 Feb	1 Feb	1 Feb	1 Feb		✓											
2.6	Document functions and procedures	Parish Manager	1 Feb	15 Jan	1 Mar	15 Feb	✓	✓											
2.7	Do promotion to establish membership	**P.I.O.	1 Feb	1 Feb	1 Mar			✗											
2.8	Finalize membership	*P.S.	1 Mar	1 Apr	7 Mar				✗										
2.9	Distribute membership list and procedures	Regional Director	7 Mar		15 Mar				✗										
2.10	Prepare first meeting agenda and materials	Regional Director	7 Mar	15 Mar	21 Mar	28 Mar			✓										
2.11	Hold inaugural meeting (1 April)	Permanent Secretary	1 Apr		1 Apr														
2.12	Prepare and distribute minutes	Parish Manager	2 Apr		7 Apr														
2.13	Disseminate public information	**Public Information Officer	3 Apr		10 Apr														

ILLUSTRATION 19: RESOURCE FOLLOW-UP SHEET

Type of Resource	Source	Unit Cost		Quantity		Total Cost		Actual Expenditure, by Period				Action Required
		P	A	P	A	P	A	1st Q.	2nd Q.	3rd Q.	4th Q.	J F M A M J J A S O N D
Survey and Land Sample Kits	Supplies Stores	500	950	12	10	6,000	9,500	2,000	3,000	2,000	2,500	X X ✓ X ✓
Farm Equipment	Maint'nce Dept.	250	350	6	5	1,500	1,750	800	950			X ✓
Pesticides and Fertilizers	Supplies					7,000	9,000	1,500	2,000	2,500	3,000	X X
Petrol for Vehicles	Public Works	3.4	3.3	2T	3T	6,800	9,900	2,800	3,000	2,500	1,600	X X X X ✓ X X
Spare Parts Maintenance	Public Works	700/ veh.	1,200/ veh.	6	5	4,200	6,000	1,000	1,400	2,000	1,600	X ✓

CODE: P = Planned
A = Actual

X = Action Required
✓ = Action Taken

ILLUSTRATION 20

DISTRIBUTION LIST FOR CONTROL DOCUMENTS

Report (Frequency)	Project Staff	Activity Managers	Project Manager	P.S.	Steering Cttee.	Ministry	PAMCO	Cooperative Dev. Commission	Other (Specify)
Activity Log (recorded continuously, submitted monthly)		Orig.	Info.						
Activity Follow-up (updated monthly)		Orig.	Info.						
Resource Input Follow-up (updated monthly)	Info.	Info.	Orig.	Info.	Info.				Budget Stores Personnel
Activity Network (updated monthly)	Info.	Info.	Orig.	Info.	Info.				
Status Summary (written monthly, submitted prior to review meetings	Info.	Info.	Orig.	Info.	Info.	Info.	Info.	Info.	
Change Order (as occurring)	Action	Action	Orig.	Info.	Info.				Budget Stores Personnel

Action = for action
Info. = for information
Orig. = originator of report

XII. SUMMARY

12.1 *The Five Steps of Implementation Planning*

Good project management is built upon sound management information. Controlling the project means monitoring and measuring project performance against a plan so that deviations can be identified and corrective actions taken when a need for management intervention is indicated. This is called Management by Exception and must be based upon a sound Project Implementation Plan. The Project Implementation Plan should ensure that an adequate information foundation for management is constructed and that information flows are systematic to facilitate appropriate decision-making.

Project management requires different types of information including:

(a) the scope and nature of the project;

(b) project work and action plans;

(c) project organization;

(d) project financing;

(e) project resource planning and budgeting;

(f) contracting, work authorization and resource control;

(g) project "product" or outputs specifications;

(h) project control information; and

(i) geophysical and environment information.

The Five Steps of Planning for Project Implementation represent a methodical approach to developing the necessary management information and systems required for successful projects. The Five Steps are:

Step One:	Project Activation
Step Two:	Specifying and Scheduling Project Work
Step Three:	Clarifying Project Organization
Step Four:	Obtaining Project Resources
Step Five:	Establishing the Project Information and Control Systems

With the completion of Step Five, the implementation planning for the project is completed. It will have to be periodically updated, relative to actual performance. If any sub-steps of the approach have been neglected, it decreases the chances of project success and increases the probabilities of confusion, delays, mistakes and conflicts.

Each of the sub-steps has resulted in "foundation blocks" which provide the information and system required to carry out the project successfully. The completion of the steps does not guarantee project success, but it does make the project "manageable". When problems are encountered, the necessary data and structures will be available to tackle them. Because development projects are risky and unique, problems and unexpected delays will be encountered.

The management foundation, put in place by the Five Steps, places a project under management control. By routinizing and documenting basic project functions in advance, the manager is left with more time and energy to deal with the inevitable crises which must be faced.

12.2 *Use of the Five Steps Model*

The Five Steps of Implementation Planning adhere closely to reality, because they have been developed from experience and tested on live projects. This model makes it easier for project staff and administrators to understand the requirements of project management. However strict adherence to the steps of the sequence is not recommended and the approach must be adapted to suit the specific situations of the real projects to which it is being applied.

The sub-steps of each step illustrate the types of activities and decisions to be carried out at each stage, but are only guidelines. When applied to a real project, there must be slight adaption of the sub-steps. This is particularly true of Step One, Project Activation, because projects are initiated in such different ways. Some of these differences are shown in Figure 15, "Step One, Project Activation for Pioneer Farms". The following Table compares the products required in Step One for activating a Pioneer Farm to the sub-steps of the model.+

Figure 15: Step One, Comparing the Model to work on a "Real" Project

Sub-steps of Model	Products for Pioneer Farm
1.1 Project Authorization	Formal Request to Ministry Land Appraisal Reports Memoranda and Minutes of Agreement
1.2- Approval Processes	(Approval Processes already established by Ministry)
1.3 Assign Project Manager	Job Description and Terms of Reference Letter of Appointment and Contract
1.4 Write Project Charter	Memoranda and Minutes of Agreement Land Titles
1.5 Establish Linkages	Memoranda and Minutes of Agreement
1.6 Assure Project Funding	Preliminary Budget Allocation
1.7 Assign Initial Project Staff	Letters of Appointment
1.8 Ensure Interim Project Resources	Preliminary Budget Allocation Letters of Appointment (Manager) Letters of Appointment (Staff)

This illustrates the application of the Model to a real project and the extent to which the model is adaptable to fit actual project situations.

12.3 *Project Files*

Planning for Project implementation ensures that all the necessary information for the beginning of a project is available, prepared and integrated. These must be recorded in Project Files so that all pertinent information is available to the project management.* *Project Files* are an orderly collection of all documents collected and generated during the life of a project. Information must be constantly updated. Project Files are not a static set of documents created only at the beginning of the project. Files are dynamic and growing instruments in the hands of good project managers.

Project files are important for a number of reasons, such as:

(a) to facilitate sound management decisions based upon the information collected from project conceptualization to present, and which is constantly collected, analyzed and updated;

(b) to facilitate a change in project management (the manager or any of the project staff) so that personnel can be properly briefed and can have access to necessary information to bring about smooth changes in personnel;

(c) to have a record of vital information in the case of conflicts or litigation;

(d) to provide an informational base for similar projects which may be undertaken in the future;

(e) to facilitate project auditing throughout the project; and

(f) to facilitate project evaluations both internally and externally of project impact.

The general categories of the Project File should be based upon the needs of the project and the potential uses of the files. In general, it may include the following categories:

* See Module 38 - *Project Files*

(i) general project information (including historical documents);

(ii) Management and Organization;

(iii) Technical Matters;

(iv) Financial Matters;

(v) Work Plans and Schedules;

(vi) Work Authorizations (including contracts);

(vii) Reporting and Evaluations;

viii) Communications (internal to project);

(ix) Communications (External);

(x) Administrative; and

(xi) Minutes.

12.4 *Summary of the Steps*

The total set of products produced by the Five Steps of Planning for Project Implementation, shown in Figure 16, is a summary of steps, their sub-steps and all the information outputs. The various forms of documentation along with their respective project tools and techniques are *instruments for project management*. They must be used. The extent to which any of the tools or documents are relevant to any project must be decided by the project manager. Too many documents can be a burden which halts rather than helps project progress. Too few tools and documents can create gaps and deficiencies which make management's job much more difficult, even unmanageable, and lead to ad hoc management approaches. As an analogy, some mechanical jobs require only a screwdriver and a pair of pliers and to carry more than that to the job would be a waste of energy; and some mechanics can do more repair work with those two simple instruments than a poor mechanic could do with a whole box full of high-level tools. This is the way to view the tools, techniques and documents introduced in this manual and the associated modules.

For each project, it will be necessary to judge what is relevant. It can only be emphasized that none of the considerations raised in the Five Steps should be overlooked. In the haste to "begin" the project, the *real beginning* of the project, planning for implementation, may be overlooked. The management foundations must be put in place. A good foundation for a project ensures a higher probability that the project will stand the trials of implementation.

FIGURE

THE PRODUCTS OF THE FIVE STEPS OF PLANNING FOR IMPLEMENTATION

STEP	PRODUCTS
Step One:	
Project Activation	1-A Project Strategy Paper
	1-B Approval Processes for Project
	1-C Terms of Reference (Manager)
	1-D Qualifications of Manager
	1-E Letter of Appointment (Manager)
	1-F Project Charter
	1-G Minutes and Memorandum of Agreement with Supporting Organizations
	1-H Budget Submissions
	1-I Loan Agreement
	1-K Qualifications of Project Core Team
	1-L Letters of Assignment (Core Team)
	1-M Preliminary Project Allocations.
	1-N Letters of Agreement for Interim Project Resources
Step Two:	
Specifying and Scheduling the Work	2-A List, Guidelines, Specifications for Project Outputs
	2-B Work Breakdown Structure
	2-C Activity Description Sheets
	2-D Precedence Diagrams
	2-E Master Schedule
	2-F Critical Activities List
	2-G Manpower Plan
	2-H Physical Resources Plan
	2-I Financial Plans

Step Three:

Clarifying Project Organization

- 3-A Parent Organization Charts
- 3-B Project Organization Charts
- 3-C Written Manpower Agreements
- 3-D Linear Responsibility Charts
- 3-E Job Descriptions (Project Team)
- 3-F Authority/Responsibility Guidelines
- 3-G Legalization Documents
- 3-H Project Administrative Procedures
- 3-I Revision of 2-E
- 3-J Revision of 2-G
- 3-K Revision of 2-H
- 3-L Revision of 2-I
- 3-M Letters to Communicate Project Organization

Step Four:

Obtaining Project Resources

- 4-A Drawdown, Disbursement and Repayment Procedures
- 4-B Allocations and Disbursement Schedules
- 4-C Staff Contracts & Appointments
- 4-D Technical Assistance Plans
- 4-E Procurement Procedures & Regulations
- 4-F Procurement Agreements & Plans
- 4-G Revision of 3-I
- 4-H Revision of 3-J
- 4-I Revision of 3-K
- 4-J Revision of 3-L

PAMCO, PDRT
Resource
Material

Step Five:

Establish Information and Control System

- 5-A Control/Information Guidelines and Strategy
- 5-B Chart of Responsibilities
- 5-C Reporting and Control Strategy Design
- 5-D List of Performance Indicators
- 5-E Milestone Charts
- 5-F Documentation Formats
- 5-G Information System Model Approval
- 5-H Reporting Plans and Schedules
- 5-I Letters or Minutes & Briefings on Information/Control System

FOOTNOTES

1. John Rubel, "An Outline of Implementation Considerations: Some notes that should be useful to Trainers in Project Implementation", Development Project Management Centre, USDA, Washington, D.C. n.d., Module 30.

2. The conceptulization of this Five-step Method of Planning for Project Implementation is based on the approach to Project implementation introduced in:

   J. Bainbridge and S. Sapirie, *Health Project Management*: A Manual of Procedures for Formulating and Implementing Health Projects, W.H.O. Geneva, 1974.

3. David I. Cleland and William R. King, *Systems Analysis and Project Management*: Mc Graw-Hill Books Company, New York, 1968. page 184.

4. For a survey of literature defining project, see Creshkoff who identifies 5 basic common components of definition for a project:

   (a) a project is a discrete activity;

   (b) a project has specific objectives;

   (c) a project is a coherent organized actions;

   (d) a project has a definite spatial and temporal location;

   (e) a project has a scheduled beginning and ending.

   See: A.J. Creshkoff, *The Planning and Management of Projects in Developing Regions* (draft, limited circulation) chapter 1 Graduate School of Public and International Affairs, University of Pittsburgh, Pittsburgh, Pa., 1976.

5. Albert Hirschman refers to projects as "privileged particles in the development process" (page 1) and calls project implementation "a long voyage of discovery in the most varied domain from technology to politics." (page 35)

   See: A. Hirschman, *Development Projects Observed*. The Brookings Institute, Washington, D.C., 1967.

6. D.P.M.C., *Elements of Project Management*, D.P.M.C./USDA, Washington, D.C., 1976, D.P. 6 - 11.

7. *Ibid.*, (This is a revision of Figures 3 and 4 on pages 6 and 11, respectively.)

8. I.T.O., *Agricultural Capital Projects Analysis: Participant Manual*, I.T.O./USDA, Washington, D.C., 1976. p. co - 9.

9. F.A.O., *General Guidelines to the Analysis of Agricultural Production Projects*, No. 14 of Agricultural Planning Studies, F.A.O. of the United Nations, Rome, 1971. p. 21.

10. This figure, not an exhaustive comparison, is taken from Russell D. Archibald, *Managing High-Technology Programme and Projects*. John Wiley & Sons, Incorporated, New York, 1976. pp. 25 - 26.

11. This section is a partially edited excerpt from UNIDO, *The Initiation and Implementation of Industrial Projects in Developing Countries* A Systematic Approach (ID/146), United Nations, New York, 1975. p.18.

12. For a more complete discussion of Positive Control and Control by Exception, See USAID, *Training Guide for USAID Project Operating Support System*, USAID, Washington, D.C., 1979. pp. 5 - 12.

13. The conceptualization of this approach is taken from J. Bainbridge and S. Sapirie, *op. cit.* The steps and sub-steps illustrated here correspond to, but are adaptations of the steps 10 through 14 presented in this manual for health planning.

14. As an illustration of the application of this approach to an actual set of projects, see PDRT *Pioneer Farm Implementation Planning: A Procedures Manual for Administrators of Pioneer Farm Projects*, PAMCO, Kingston, Jamaica, W.I., 1979.

15. The conceptual background for Step One is provided by Step Ten (Initiating the Project Work) in J. Bainbridge and S. Sapirie, *op. cit.*, pp. 181 - 191.

16. For discussion of a Project Charter, see John Rubel, *op. cit.*, Module 1.0.

17. Illustration 1 is adapted from J. Bainbridge and S. Sapirie, *op. cit.*, p. 188.

18. Illustration 2 is adapted from J. Bainbridge and S. Sapirie, *op. cit.*, p. 189.

19. The conceptual background for Step Tow is provided by Step Eleven (Specifying and Scheduling the Work) in J. Bainbridge and S. Sapirie, *op. cit.*, pp. 193 - 205.

20. John Rubel, *op. cit.*, Module 3.2, pp. 12 - 13.

21. PDRT, *Manual PF - Pioneer Farm Implementation Planning*, Appendix 5, *op. cit.*, p. 5.2.

22. *Ibid.*, p. 5.3.

23. PDRT., *Module 4: Activity Description Sheets*, *op. cit.*, pp. 4.4-4.5.

24. PDRT, *Manual PF- Pioneer Farm Implementation Planning*, Appendix 6, *op. cit.*, pp. 6.2 - 6.4.

25. PDRT, *Module 11: Resource Planning and Budgeting*, *op. cit.*, pp. 11.5-11.6.

26. The conceptual background for Step Three is provided by Step Twelve (Clarifying Project Authority, Responsibility and Relationships) in J. Bainbridge and S. Sapirie, *op. cit.*, pp. 207-224.

27. F.A.O., *op. cit.*, p. 21.

28. This illustration is adapted from J. Bainbridge and S. Sapirie, *op. cit.*, p. 175.

29. This illustration is adapted from J. Bainbridge and S. Sapirie, *op. cit.*, p. 214.

30. *Ibid.*, p. 224 (adapted).

31. *Ibid.*, p. 219.

32. *Ibid.*, p. 215.

33. *Ibid.*, p. 220.

34. *Ibid.*, p. 220.

35. *Ibid.*, p. 216.

36. PDRT, *Manual PF* - Appendix 3, *op. cit.*, pp. 3.4-3.5.

37. The conceptual background for Step Four is provided by Step Thirteen (Obtaining Project Resources) in J. Bainbridge and S. Sapirie, *op. cit.*, pp. 225 - 234.

38. *Ibid.*, p. 232.

39. *Ibid.*, p. 233.

40. *Ibid.*, p. 234.

41. The conceptual background for Step Five is provided by Step Fourteen (Establishing the Control System) in J. Bainbridge and S. Sapirie, *op. cit.*, 235 - 252.

42. Mimeograph copy "Module 1: Control". n.d., author unknown.

43. For a discussion of what can and must be controlled on projects, see John Rubel, *op. cit.*, Module 9, pp. 43-45.

44. *Ibid.*, Module 10, pp. 49-53.

45. PDRT, *Manual PF* - Appendix 7, *op. cit.*, pp. 7.4-7.6.

46. This is adapted from J. Bainbridge and S. Sapirie, *op. cit.*, p. 248.

47. *Ibid.*, p. 249

48. *Ibid.*, p. 250.

49. *Ibid.*, p. 251.

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