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A Study into how Project Management Techniques are
utilised in Social Projects

(A Comparison between Canadian and Kenyan Projects)

by

Joseph Kipruto Arap Ngeno, B.Ed (Hons) 1978

A thesis submitted to
the faculty of Graduate Studies and Research
in partial fulfilment of
the requirements for the degree of

Master of Management Studies

School of Business

Carleton University
Ottawa, Ontario

August 22nd 1993

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organization. Several benefits accrue from good planning.

Benefits and Drawbacks

Anticipating rather than reacting to future problems is the principal objective of planning. The impact of future risks and contingencies is greatly reduced if they are budgeted for in advance Boughey (1985). Planning also increases the certainty of the overall project performance with respect to the constraints of time, budget and specifications. It ensures that projects with a high probability of success are implemented, including the identification of resources necessary for such a task.

Planning enables organisations to identify resources early. This makes it easier to ascertain their quality, quantity and cost more accurately than would otherwise be the case. Planning also minimises the chances that a project will expand unexpectedly during the implementation stages and thereby reduce the expenses associated with such expansion. Adequate planning reduces inefficiencies and expensive delays. There are, however, some drawbacks to effective planning.

For one, planning takes time and resources. Given the modest resources available to many organisations and institutions, many of them do not feel that it is an exercise worth doing. It is also true, however, that even in cases where the resources are available the planning process is not always conducted because of attitudes towards it. Attitudes towards planning in general have an influence in the way in which plans are prepared and implemented Tenah (1985). If people have negative attitudes towards planning then the planning process will be ineffective. Furthermore such people will be unwilling to commit themselves to such plans or schedules even

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A STUDY INTO HOW PROJECT MANAGEMENT TECHNIQUES
ARE UTILISED IN SOCIAL PROJECTS
(A COMPARISON BETWEEN KENYAN AND CANADIAN PROJECTS)

Submitted by
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in partial fulfilment of the requirements
for the degree of Master of Management Studies

Thesis Co-Supervisor

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ABSTRACT

In recent years projects have performed well below their expectations. Schedule overruns have been the rule rather than the exception. Some have failed to take off, others have become sink holes for money, while many more have taken years and never seem to be near completion. As a result there is need for more effective designing, planning controlling of projects. Research shows that in order to accomplish this objective many organisations are increasingly adopting project management techniques and tools. And while these tools were developed and, were until recently, confined to defence industries and large construction companies, research further shows that their use is spreading over many other organisations and projects.

This research examines how these techniques are utilised in Kenyan and Canadian social development projects executed by Non Profit Making Organisations(NPMOs). The study also compares the utilisation of these techniques between the two countries.

The results show that planning and evaluation techniques are widely used. Scheduling techniques on the other hand are not as widely used even though many of these projects could benefit from using them. Funding agencies have played a very important role in the spread of project management techniques in NPMOs. The major difference between the two countries is the intensity and quality in which these methods are used.

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1. INTRODUCTION:

Project management has been developed to enable managers to run projects more effectively. Fangel (1988) states that although projects have been with us from time immemorial, it is only recently that project management has been recognised as a distinct area of study of its own, with distinct methodology and structure susceptible to practise and research. In previous years project management was viewed simply as a collection of tools and techniques. Of these techniques only network analysis was widely known and even that was not widely used. Kelly (1987) adds that the understanding of project management by many people involves the implementation phase and is only limited to tools. However, as projects become more complex, the implementation phase becomes just one part of a very large task which starts off as a concept and must be carried out all the way to a new and functioning entity. The various activities necessary to translate this concept into a functioning entity is what is referred to as project management.

Methods of project management have been investigated by researchers in many scientific disciplines such as operations management, economics, accounting, finance and engineering. Over the years, as a result of these studies, project management has developed and matured into a fully fledged scientific discipline and has become a profession Dean (1989). It has emerged as a specialised area of management to meet the needs of organisations to accomplish specific objectives and goals under conditions of complexity and risk taking. The project management approach is characterised by newly developed methods and techniques that are

continually advancing and evolving as a result of ongoing research. It is a widely held view (Sharad 1986, Goodman 1988, Khan 1991 and others) that if these tools, techniques and strategies are effectively applied, they will contribute to the achievement of an identifiable goal. It is these new tools and processes which have made project management particularly attractive to many organisations.

Project management provides an organization with tools that improve the organization's ability to plan, organize, implement and control its activities and the way in which it uses its resources. In the past the use of these of tools was limited to national defence industries and very large construction companies. In recent years, however, non military government sectors, private industry, public agencies and voluntary organisations have all used project management to increase both the productivity and quality of their projects. This expansion across all the sectors of the economy, in a relatively short period of time, together with its ever increasing demand by many organisations testify to the effectiveness and efficiency of project management methods. Furthermore a number of factors indicate that project management will be of critical importance in the future.

Increasingly projects are growing more and more complex involving multiple resources, organisations, and pay-offs (Keizer, 1990). In particular, technology oriented projects are presenting new and diverse management problems, economic opportunities and risks, both in newly formed and established organisations. In addition, these projects are, more often than not, constrained by conflicting objectives of owners, finances, project executives, national and local regulations, ecological and societal

environments. Project costs and time overruns, economic volatility and competition result in difficult management problems in many organisations. Finally, the survival and growth of many of these organisations depend on their ability to plan, organize, direct, schedule and control their projects. These factors will ensure there will be an increasing need for project management for some time to come.

Project management tools and techniques have been subject to several studies. Most of these studies have examined projects executed by the government and the private sector. Even then these studies have concentrated mainly on technical projects. A literature search revealed that no study of projects by Non profit making organisations (NPMOs) has been done. Although project management theory does not make any distinction with regard to planning and implementation of social and technical projects nevertheless it is still important to examine the extent to which these tools and techniques are utilised in social projects. The prime objective of this study is therefore to examine how project management techniques are utilised in social projects executed by NPMOs in Canada and Kenya. A secondary objective is to compare the utilisation of these techniques between the two countries.

Given the fact that project management is a relatively new discipline, most of the terminologies are not yet standardised. It is therefore necessary to define and explain some of the key terminologies which appear in this study and the context in which they used. These definitions are offered in the following page.

Operative Definitions

a) Project Management

Project management is the planning, organising and controlling of resources to achieve specified goals in a finite time. It is generally agreed that modern project management started with the Manhattan Project to build the atom bomb (Mantell 1984).

b) A project

A project is a term which of late has come to mean several things. For the purposes of this study, a project is defined as any activity that cannot be performed in the usual line of production and is capable of being broken down into identifiable work-packages which use resources and time. These work-packages can further be broken down into tasks. Because of their complexity and size, these undertakings have to be executed separately, thereby necessitating their being organised as projects and the appointment of a project manager to run them. Projects may be concerned with development of new products or processes, infra-structure or other development projects in developed or developing countries.

c) Social and technical projects

Projects can be grouped into two broad groups. These are technical and non technical (social) projects. A social project is used in this study to refer to a project which has a very low construction component and where most of the tasks are purely administrative. These include, among others, sports, festivals, shows, conferences, jamborees, and fund raising. A technical project on the other hand refers to a project

which involves considerable amount of construction and/or purchase and installation of heavy machinery.

d) A programme

A programme, a term that is sometimes used interchangeably with a project, is defined as a group of projects that are managed in a coordinated way to gain benefits that cannot be possible were the projects to be managed independently. Programme management is the coordinated support, planning, prioritization and monitoring of projects to meet the changing business needs.

e) Project Manager

A Project manager is someone who is responsible for seeing that the project is not only brought in on time, within budget and according to specifications, but at the same time ensures that it meets the broader objectives of the organization.

Project management can be visualised in three ways. These are: project management in the public sector, the private sector and project management consultancy. In whatever dimension or level one views project management, the features are always similar. The project manager is the main focus of the project. He/She is the person charged with the overall responsibility of seeing that the project is executed efficiently. The project manager is always responsible to the owner/government for money, to the designer for the specifications and the contractor for completion of the project on time. It is this organization that will require careful planning and scheduling if the project is to be successful.

Non Profit Making Organization(NPMO)

A Non profit making organization (NPMO) is an organization that exists to meet the goals of the public at large or a subset of the public that supports it. It is an organization which does not have as one of its primary goals the production of profits for a set of owners. Such organisations include churches, universities, charitable agencies, co-operatives, community groups, foundations, advocacy groups, civic clubs etc.

The non profit making sector is made up almost entirely of organizations providing services rather than goods. Knalft B.E., (1991) in a study of NPMOs in the U.S.A found that there are over 3 million such organisations in U.S.A. alone, engaged in virtually every type of societal activity imaginable. They vary dramatically in size and purview from tiny local groups staffed by a handful of volunteers to huge multinational enterprises with hundreds of employees and yearly budgets in millions of dollars. Knalft concluded that the field covered by NPMOs defies neat boundaries.

2. LITERATURE REVIEW

In order to attain the objectives of the study, it is necessary to review comprehensively the current theory and practise of project management methods and tools. For this reason a model, as shown in appendix 'A', which takes into account project management techniques and procedures in each phase of the project life cycle has been chosen as an analytical framework. Because part of the study was carried out in a developing country and as a basis for comparison, it is also necessary to examine the applicability of the whole concept of project management in the third world.

2.1 PROJECT LIFE CYCLE:

There is a general agreement in the literature that a project passes through certain distinct phases from conception to completion as shown in appendix 'A'. These phases are:

- a) project planning,
- b) selection and activation,
- c) implementation
- d) and sometimes evaluation.

For a comprehensive understanding of how this cycle works each phase will be reviewed individually. The unifying force for all these phases is the authority and power relationships which are vested in the policy and decision makers in all levels of the project life cycle.

2.1.1 Project planning:

The principal tasks associated with planning are: project identification, formulation, feasibility study and appraisal. Before focusing on these individual aspects of planning it is important to examine its overall benefits and drawbacks and problems.

The Need for Planning

Planning is premised on the belief that a desired goal in the future will not occur on its own volition but that something must be done to bring it about. Tenah (1985) argues that if one believes that the natural course of events will produce the desired state then there would be less incentive to plan. Thus planning always contains a pessimistic and an optimistic attitude component. The pessimism lies in the fact that unless something is done a desired future state is not likely to materialize. The optimism lies in the belief that something can be done to increase the chances that the desired state will occur.

Experience has also shown that project planners in many countries never have infinite resources in their command. This scarcity of resources is an important consideration in the planning process. An efficient allocation and use of the limited resources can only be achieved if their utilisation is carefully planned.

Planning also reduces the chances of incurring time and cost overruns. It is a widely held view in the literature (Khan 1991, Ku-Busahit 1990, Tenah 1988 and others.) that project failures in many countries are to a large extent due to inadequate or poor planning. Poorly planned projects end up unfinished or experiencing huge cost overruns and thereby contribute to the depletion of the scarce resources of a country or

organization. Several benefits accrue from good planning.

Benefits and Drawbacks

Anticipating rather than reacting to future problems is the principal objective of planning. The impact of future risks and contingencies is greatly reduced if they are budgeted for in advance Boughey (1985). Planning also increases the certainty of the overall project performance with respect to the constraints of time, budget and specifications. It ensures that projects with a high probability of success are implemented, including the identification of resources necessary for such a task.

Planning enables organisations to identify resources early. This makes it easier to ascertain their quality, quantity and cost more accurately than would otherwise be the case. Planning also minimises the chances that a project will expand unexpectedly during the implementation stages and thereby reduce the expenses associated with such expansion. Adequate planning reduces inefficiencies and expensive delays. There are, however, some drawbacks to effective planning.

For one, planning takes time and resources. Given the modest resources available to many organisations and institutions, many of them do not feel that it is an exercise worth doing. It is also true, however, that even in cases where the resources are available the planning process is not always conducted because of attitudes towards it. Attitudes towards planning in general have an influence in the way in which plans are prepared and implemented Tenah (1985). If people have negative attitudes towards planning then the planning process will be ineffective. Furthermore such people will be unwilling to commit themselves to such plans or schedules even

though they are meticulously prepared. It was the conclusion of Tenah (1985) that effective planning is only possible if those concerned have positive attitudes towards it.

Common problems in planning:

The major problem facing planners is the lack of accurate information in the initial stages. Not only is available information scanty, but that the degree of confidence that can be placed on the available information to remain unchanged for the duration of the project is very minimal. This absence of complete information will mean that many plans will be inaccurate and must be continually updated. (Dingle, 1991) argues that some form of risk management must be instituted and contingencies budgeted for in order to take care of any eventualities which may be encountered in the later stages.

It has also been found that it is common for plans to be misinterpreted. This is mainly true of multinational projects. Hofstede (1991) in a study of cultural influences in project management found that the cultural diversity and incompatibility of the various organisations and individuals who are involved in multinational projects are an impediment to the interpretation and application of concepts relating to the project. This is even true in cases where individuals within the various organisations speak one language. It is therefore daunting in cases where, backgrounds, languages, and other cultural values of the organisations involved are different. Minimising these impediments is the critical task facing the project manager.

Experience shows that many development projects are reactive. A pressing

need must be satisfied urgently. This urgency will cause the project to be implemented without much attention paid to the probability of success. Planning time is not given its due consideration. It must be realised that, time utilised in planning is time well spent. Plans hurriedly prepared and implemented frequently lead to disaster. Beale, (1991) proposes that an organization should spend between 15-20% of its budget on planning.

Many problems are also created during the preparation of the plans themselves. It has been observed that in a number of cases the planning process is not always as comprehensive as it should be. Great emphasis is often placed on efficiency to the detriment of effectiveness. This situation has led to efficiently executed projects ending up as "white elephants". They are so described because of their inability to meet the expectations or the needs of the beneficiaries for which they were intended. (Paul, 1983) further notes that some planners assume, without any justification, that they know the needs of the beneficiaries best. As a result beneficiaries are not consulted during the process of project execution. It is no wonder therefore that a project executed in such a manner may end up being a complete failure despite its having incurred insignificant or no time or cost overruns. Current project management practice requires that beneficiaries be involved in all the various decision making stages relating to the project. According to (Smith, 1989) many Non Governmental organisations (NGO's) have adopted this approach.

It can be concluded from the above arguments that the benefits of planning far outweigh its disadvantages. It should be observed, however, that planning should not

be so locked or so rigid that the project cannot absorb or take advantage of new information as it progresses. Planning must provide feedback points for new information and flexibility to assimilate and act on it. The individual aspects of planning are outlined below.

2.1.1.1 Project Identification:

This is the process of getting project ideas from different sources. Project ideas arise from the basic requirements of a country, or the demand for customised goods in case of private sector, and the need to satisfy them. Project ideas can also come from the community, government (project) planners, private sector, leaders, politicians, donors to organisations that sponsor projects, NGO's and other International organisations. These ideas are as diverse as the needs of the population . They can however be grouped into two broad groups; reactive and affirmative. Affirmative ideas are those which seek to exploit the opportunities provided by the environment, whereas reactive ideas are those which try to answer specific problems. (Khan, 1991) argues that active participation of the population or community, not only in the generation of project ideas, but in the entire process of project execution is paramount to the success of a project. It ensures that the various diverse needs of the population will be covered as widely as possible.

Another advantage of the community participation is that the chances of selecting the best ideas increase if there are many ideas from which to select. Different parts of several ideas can be combined to arrive at a more viable project idea. Active participation also increases the commitment of the participants to the

project in the later stages. For a variety of reasons not all ideas that are generated will end up as projects or even go to the next stage, which is formulation.

2.1.1.2 Project Formulation:

This is the process of turning the project ideas into formal statements from which further decisions can be made. At this stage the critical factors which enable the project to be selected and finally implemented are examined in greater detail. The principal objective of formulation is to put into writing and in some systematic manner all the requirements which are necessary if the project is to be executed successfully. Pinto (1988) further notes that at this stage efforts are also made find answers to questions such as:

- i) What is the problem?
- ii) Will the development of the project solve the problem?
- iii) What are the specific goals of the project?
- iv) Are there enough resources to create the project?

Competing ideas are evaluated in the light of the projects already existing or under construction and within the restrictions of available resources. Various ideas are also ranked in terms of priority. Ideas that are found to be unsustainable are dropped. When viable ideas have been selected, a formal project statement is then prepared.

A project statement should contain specific requirements of the project with respect to finances, level of technology, the necessary personnel and an indication that the project is socially desirable. It must also set out clearly the project scope and objectives and must include a statement of how these objectives will be evaluated. The

project's ability to attract funding is also examined. From this statement a preliminary design is prepared. The design process is aimed at turning the ideas contained in the formulation statement into a plan which will be used in the feasibility study. The specific details in the design will therefore be dictated by the requirements of the feasibility study. Certain donor agencies will require that feasibility studies of projects which will receive their funding be prepared in certain specified formats. Whatever the case, the design should detail the project objectives and the different activities which must be accomplished before the project is completed. It should also contain specifications and blue-prints to enable a successful feasibility study to be conducted. The total expected cost and duration should be indicated. A fairly detailed management strategy which will be used to attain the project objectives should also be developed at this stage. This design is then passed on for use in the feasibility study.

2.1.1.3 Feasibility study and Appraisal:

This is the process of determining if the project as defined and with the available resources can be implemented successfully. It sets out to examine if the resources outlined in the design will be available in the required quantity and quality and also on time in the context of the actual project environment. During this stage, measurement tools which will be used to evaluate the project are developed and refined. According to McNeil (1986) the development of measurement tools is dependant upon a number of factors which include sophistication of the owner; the size, complexity and urgency of the project; and financial institutions or government agencies. The evaluation procedures are discussed exhaustively in the evaluation

section of this chapter. The feasibility stage acts as an interface between project planning and implementation. It questions all the assumptions in the preceding stages. When this exercise is completed an appraisal process begins.

Appraisal

The appraisal process involves evaluating and studying the results of the feasibility report. It includes making a more concrete assessment of the project's viability and its ability to meet its objectives in the light of the information which has been obtained. Modifications are made in the initial design in the light of new information as is appropriate. Bulbridge (1989) states that it is absolutely vital to complete the design process as much as possible before implementation starts. He continues to argue that if the design work runs into the implementation phase, it will cause confusion and delays at a time when the rate of expenditure in the project rate is high. It is also important that each design change be subjected to critical and independent examination to ensure that, irrespective of the problems that such a change may avoid, it does not of itself bring other problems. The modified design becomes the basis upon which the final specifications and details will be based. This design is used in the selection and activation which is the next phase. It should be stated here that in some cases a project will have to be selected before a final design is made.

2.1.2 SELECTION AND ACTIVATION

2.1.2.1 SELECTION

Project selection, which is often referred to as project approval, applies in

situations where more than one project is being considered. This is true both in large organisations and also in national governments where several departments are engaged in project planning so that there are several choices facing the authorities. The selection process involves comparing and reviewing the various appraisal reports for the competing projects. Project selection is more often than not determined by the objectives and policies which stem from the political process Goodman (1988). Experience has shown that political and environmental considerations often out-weigh professional considerations. Projects which are thought to be politically desirable may be selected over competing projects which have greater merit on other criteria. Other problems which may be encountered in this stage include corrupt practises, organisational rivalry, lack of co-operation, interference, inadequate leadership and direction. Insufficient specifications may also lead to a poor project selection. The result is that wrong projects are selected and eventually implemented leading to huge overruns and possibly dismal failures. When a project has been selected for implementation, most of the subsequent stages are routine where standard operating procedures apply. The next stage is activation.

2.1.2.2. ACTIVATION

Activation encompasses all those activities involved with coordination and allocation of resources to make the project operational. This includes making arrangements to formalise the funding process and preparation of loan documents where necessary. The tendering procedures and processes are also set in motion. Detailed and definite plans are drawn up from the preliminary design. Project

personnel are also selected and an organization to run the project is set up including the appointment of a project manager if one is not already in place.

There is, however, a problem in appointing the project manager after the planning and selection has been completed. The new individual may not appreciate the underlying assumptions which went into the preceding stages and his/her efficiency will be reduced considerably. Modern project management practice and theory require that a project manager should, as far possible, be involved in all the stages of the particular project he/she will manage. If this is not feasible, then proper methods and channels must be instituted to appraise the chosen individual with what has gone on before if he/she is expected to perform his/her duties effectively. Burbridge (1989) stresses that it is particularly important to appoint a project manager at the earliest opportunity because it him/her who will provide continuity and ensure that the momentum of the project is not lost.

The approved project organization must also be appropriate to the size and the complexity of the project. If the project is large and complex then, the pure project form of organization will be essential. If it is a medium sized project with a low degree of complexity then a matrix type will probably suffice. The functional structure is useful only for very small projects. Whatever organization is chosen, duties and responsibilities of all the project staff and the various organisations that are involved must be clearly spelt out (Khan et.al 1991). The project relies heavily on coordination and every one doing what is expected of them and any misunderstanding can cause costly delays which may affect the overall execution to the project. Inappropriate

project structures, therefore, where roles, authorities and responsibilities are ambiguous, can lead to a project failure.

Arrangements for procurement of materials and equipment are also made at this stage. A proper plan for mobilising resources including identification of suppliers and sources is established. The logistics of procurement with respect to adequacy and the institutions to deliver, control and produce the necessary resources is also explored in a greater detail. When the project has been activated it is passed on for implementation. In this phase, the project manager becomes the main focus. He/she starts his/her duties by ensuring that a master schedule necessary for project execution is in place.

As is readily apparent, projects start with ideas or concepts and go through a long process of refinement and concretisation until they are finally realised. As they progress through the various phases the level of detail and concretisation increases.

2.2.3 Implementation:

This phase is normally mistaken for the project itself because it is the visible part of the project, where the actual construction begins. It is, however, but a phase in the project life cycle just like any other. The major tasks to be accomplished are planning and scheduling, control and supervision, completion and termination.

2.2.3.1 Scheduling:

Scheduling, next to planning, is the most important stage in project life cycle. It involves identifying and establishing the inter-relationships and sequencing of all the major tasks necessary to accomplish the project. Beck (1986) adds that a schedule is,

in essence, the recognition of realistic time and resource restraints which will, in some way, influence the execution of the project. A schedule is often described as a road map without which project implementation can lead to disastrous results (Tulpin, 1984).

Cori (1985) has developed a very elaborate model which takes into account all separate tasks which are associated with scheduling and the sequence in which they are to be performed. The scheduling process involves a number of sequential steps. The first step is to define the scope of the project. Secondly, the project objectives are specified in quantifiable terms. In addition the deliverable end-items are determined. Methods and techniques for measuring the deliverable end-items so determined are then developed. A construction project, for example, will be measured by the specifications set out in the initial design. A social project, on the other hand, may be measured by the targets set up in the initial stages. The establishment of measurable objectives is necessary for evaluating the deliverable end-items with a standard. The next step is to schedule the activities themselves. A work break down structure is first prepared. This is done by breaking down the project into work packages. These work packages are then sub-divided into tasks and the tasks into sub-tasks. The sub-tasks are further sub-divided into activities. An activity is therefore the smallest part into which a project can be segmented. This segmentation is, however, dependent upon the complexity of the project; not all projects will have all the four sub units.

All the activities which are to be performed are then listed to ensure that none are left out. The logical relationships between them are also identified. Complex

activities within a list are referred to as fragnets and should be scheduled separately.

Once this has been done, the critical path together with the critical activities are determined. Time, cost and resources are then allocated to each activity. The start and finish dates of all the activities are established. The slack time possessed by each activity is determined and quantified. The schedule so obtained is then reconciled with the available time and resources. The whole schedule is reviewed and the necessary adjustments made. Finally reporting stages together with the project milestones are determined and set.

Several tools and techniques have been developed for scheduling projects. These include WBS, Gantt Charts, Pert C.P.M. and full wall scheduling. The level or the extent of scheduling is dependent upon the complexity and the size of the project.

Project complexity

Campbell(1988) has outlined several attributes by which the complexity of a project can be judged. These attributes include the number of the desired outcomes. Second, the existence of some efficiency criterion by which the pathways to desired outcomes are to be evaluated. The third attribute is the uncertainty and the probabilistic linkages to the pathways and finally the constraints which are present in the pathways leading to the desired outcomes. The level of complexity of a project is therefore determined by the number and the degree in which it incorporates the above attributes. The size of a project is measured by the number of people involved, the cost and the duration (Bu-Bushait, 1989).

Importance of a schedule

The most important use of a schedule is in controlling and monitoring of the project. The schedule identifies certain significant and commitment dates with respect to either the attainment of specific objectives or completion of each major area of the project. It enables a project manager to monitor the project status at the different stages by comparing actual verses planned accomplishments. It sets the standards and indicators by which performance is to be measured. Efficient allocation of resources and the rate at which these resources are to be utilised is made possible by the use of a schedule. The schedule may also indicate the exact time and duration when they will be required. This minimises the costs normally attributed to idle resources. By defining the responsibilities and work of everyone involved in the project, the schedule increases the commitment of the project staff to the project objectives. Clearer definition of project objectives also reduces uncertainty. McNeil (1986) sums up the importance of a schedule by noting that it is the backbone of project implementation. Prentis, (1989) observes, however, that due to their dynamic nature and several other factors projects do not always progress in accordance with the schedule.

Limitations of a schedule

Making a schedule work is the most difficult task facing the project manager. Schedules are by their nature always incomplete. They have to be constantly up dated. As the project progresses, new and more accurate information regarding duration and resources is obtained. In the light of the new information received some activities may be added or eliminated from the schedule. It may also mean making substantial changes in the original plans and specifications. McNeil (1986) argues that regardless

of the preparation effort, even the best schedules require updating and modification to accommodate new information and scope changes. Project schedules should therefore accommodate the adjustments while remaining manageable tools.

Because of the limited nature of information available in the beginning, complete resource loading may not be possible in the initial stages; only critical resources should be identified and allocated and as the situation becomes clearer, complete allocation is done. It is therefore essential to review a schedule regularly and to ascertain that proper arrangements have been made for network up-dating. The frequency of up-dating is dependent upon the intensity and number of changes that have occurred. Fluctuation in prices of materials and increases in wages can also throw off a well prepared schedule. Changes in exchange rates and currency devaluation, in situations where international contractors are involved, can also increase costs considerably. Contingencies such as these must therefore be planned for as much as possible. In addition to fluctuation of prices, availability of resources is not always guaranteed. Plans for utilising acceptable substitutes should be prepared in advance. Communication problems and personnel changes also affect the smooth running of schedule. Finally the overall usefulness of a schedule is determined by the timeliness of creation, credibility of information, and its adaptability to change.

2.2.3.2. Supervision and Control

Control

When the actual construction processes are set in motion supervision and control become very crucial. Control is the process of verifying and

ascertaining that everything occurs according to the principles and plans which have been adopted (Riis, 1991). The control process contains two components: i) the measurement of what has actually happened against what was expected to happen, what the results of effects will be; and ii) if negative the implementation of measures to prevent undesirable impacts and if positive, the implementation of steps to ensure its continuity. Control therefore is not simply the comparison of actual versus planned accomplishments but must also include some overt action to ensure that deviations are corrected as early as possible and appropriate measures are further instituted to prevent their occurrence in the future. It should be noted, however, that deviations between performance and plan are not always the fault of the project implementors. A lack of conformity to plan can result from an inappropriate plan. Project managers must therefore be aware of this fact. Uncritical project control has in the past led to subordinates being penalised for superior's planning failures rather than their own performance failure.

At this stage efficient channels of communication and information systems through which information can be conveyed are established. The control process also includes the project manager's responsibility in preparation and approval of schedules, reports, estimates and other records concerned with the project. These documents and reports are used to monitor the project performance as it progresses and for appraising senior management responsible for the project about its status. They will also form the basis of post-project evaluation. Riis (1991) further argues that reports, while being timely for effective decision making, should be minimised. Numerous reports can be confusing and uneconomical. Comparison

between planned and actual performance, using variance control analysis and other similar tools, is the mainstay of project management functions at this stage.

It is also part of the project manager's duties to make decisions on a wide range of questions dealing with the project including the interpretation of legal and contract documents. This requirement places the project manager in a quasi-judicial role. The decisions that are made by the project manager in technical matters are, however, subject of the approval by the designers who are ultimately responsible for the project. Since these people are rarely on the site they have to rely heavily on the reports from the project manager. The organization structure must, therefore, provide efficient methods of passing information and feedback. Feedback gives the management an opportunity to change or alter the pace of the execution in the light of the immediate experience which has been gained. In order to benefit from the information obtained from the feedback process, methods of follow-up must be instituted to verify whether the recommendations are in fact effected in the manner in which they are prescribed.

Supervision

The coordination of the different organisations and activities involved in the project is also an integral part of the project supervision process. This is sometimes cited as the basic reason for the existence of the project manager. Supervision in project management does not follow the traditional method of hierarchy of authority. It is more a process of coordination, confined to seeing that each team does its work to acceptable standards, within the budgetary limitations and in the required time. It

includes making sure that everyone involved in the project understands how the project schedule operates. They should know exactly what is expected of them and how such expectation will be measured. Targets and standards are also established for each group. Direct physical supervision by the project manager on any task is not always possible. The different tasks which a project entails may be beyond the competence of the project manager and are led by people who are specialists in those areas (Hamburger, 1985).

Another important function at this stage is overseeing the smooth procurement and management of materials and equipment. The project manager must ensure that the stock levels are efficiently controlled so that in the end excess consumable resources are kept to the minimum. As the project comes to a close final reports are prepared. If there has been any deviation from the original plans justification for the corrective measures that were taken must be made.

2.2.3.3 Completion and Termination:

This is the last stage of the implementation phase and is concerned with the planning for the phasing out and preparation for the hand over of the project. It involves orderly dismantling of the project organization and transferring the remaining resources, both human and physical, to other organisations.

Completion

The costs of a project can be increased considerably if proper procedures are not followed in the reallocation of the remaining resources and equipment. A divestment plan for both human and physical resources must therefore prepared

(Frame, 1988). The proper utilisation of durable physical resources requires an appropriate maintenance plan. Failure or deficiency in this respect may result in rapid depreciation and deterioration of surplus resources and assets. Physical resources can vary from expensive plant and equipment and heavy machinery to small tools. Such heavy machinery as tractors and trucks can be relocated to other projects or organisations. Other resources can be disposed of as is appropriate. With regard to buildings constructed specifically for the project, decisions must be made in advance as to how they will be utilized after the completion. If they are to be transferred from the site, then dismountable structures should be used because they are easy to relocate. Efforts must be made to ensure that the remaining consumable resources at the completion of the project are kept to the minimum. Relocating such resources may be more costly than acquiring them.

Reassigning the project staff is a very delicate task. It must be handled with great care. This applies mainly to those members who are recruited directly by the project manager, and not by the various contractors or the organisations who are involved in the project. The number of people to be reassigned depends, to a large extent, on how the project is organised. If a functional or matrix organization is used then few members of the project staff will be affected as the majority will simply return to the parent organization. If the pure project form is used then a relatively large number of people will be affected. In either case, long before the project ends, the project manager should ensure that plans for reallocating the project staff are set in place (Slevin, 1984).

The project manager should, during the period of recruitment, be aware of the needs and aspirations of the people he is recruiting. Since the estimate of the duration of the project is known, arrangements for reassignment should be done in advance. Project staff should be made aware of the duration of the project and their opinions sought as to what their future plans are. Some individuals may make their own arrangements. In cases where the project exceeds the time for which it was estimated, it is the project manager's responsibility to ensure that corresponding extensions for the project staff are sought from their respective employers. Some members of the staff may be assigned to assist the new administration running the project to ensure a smooth handover and maintenance until the new administration is fully conversant with the projects operations. The extent to which the project manager is successful in redeploying staff, will have profound effect on their attitudes towards similar projects in future. Given that people are the most important resource, this exercise should be given the due consideration that it deserves.

Practice has shown, however, that reassignment of staff may not always be within the ability of the project manager (Pinto, 1988). Finding suitable jobs is not only difficult but sometimes impossible. Persons working with the project may not be readily transferable to other projects because the skills required may be different. Another limitation to this transfer is that projects are by nature unique one-time events and their continuity is never guaranteed. Some of the project staff may change their initial plans during the execution of the project, making it difficult for the project manager to make alternative arrangements for them. In the final analysis therefore this

reassignment process may be reduced to recommending the affected individuals, where possible, to other prospective employers.

Termination

The newly completed project can be merged into an on-going organization or handed over to a new administration set up specifically for this purpose. If the project is to be handed over to an on-going concern, proper procedures must be followed to see that the new project is integrated successfully. If a new organization is set up it is advisable that a skeleton project staff must remain with the new administration until they are fully conversant with operation of the project. Periodic follow up in each case is, however, essential to ensure the sustainability of the project. Handover is a complex process since the recipients and the project staff may not have the necessary experience to ensure all the eventualities are covered. The project manager must ensure that the project conforms to specifications outlined in the initial plan and where possible a test run must be conducted Sparrow (1988). This is necessary in order to ensure that the owner or beneficiaries receive a project that is operational and conforms to his/their requirements. Projects for which poor hand-over preparation have been done cannot be sustained for very long. It should also be noted that at this stage there will be little enthusiasm among the project staff as the project will have lost most of its steam. In the case of turn-key operations, termination of contracts and preparation of final accounts are executed. Arrangements for follow up and maintenance are also made. Finally the project manager must prepare a completion report which encompasses all the strengths and weaknesses encountered during the

implementation of the project, including any overruns or underruns which have been incurred, and their causes thereof.

It is often argued that because many social projects have no useful life after completion, procedures which have been explained above apply only to technical projects. This argument however overlooks the fact that orderly termination of social projects is as essential as it is in technical projects for a number of reasons.

For one, there are always equipment, materials and other resources which remain at the end of every project. Decisions must therefore be made on how these resources will be disposed of. Whereas the majority of the project staff may be volunteers, nevertheless an appreciation of their services must be shown. Some will require references to the effect that they have participated in the project, others may be given awards or some kind of overt recognition of their services. The way in which this exercise is conducted will have a profound effect on the organization's ability to attract volunteers in the next time round.

Finally the project will have to be evaluated and a skeleton staff must remain to perform this exercise. The project manager or coordinator must prepare a completion report just as in a technical project. This report will form a substantive part of the post project evaluation which is the next phase.

2.2.4 Evaluation;

Project evaluation begins right at the planning stage. In particular the feasibility report itself must include an evaluation plan which should explicitly identify the following, among other things; i) the data to be collected ii) the criteria and

techniques to be used in the post-project evaluation, iii) time schedule and budget for the evaluation process and iv) organization and staff requirements for the evaluation process.

Experience has shown that this phase of the project life cycle is often left out, despite its importance, because either people are dissatisfied with the project or are too pleased with it. In either case there is little or no motivation to carry out an evaluation. Furthermore, it is often erroneously thought that money is better spent in new projects than in reviewing old ones, despite the fact that the success of new ones depend on the lessons and pitfalls learned from the old. Plans, however, implacable in theory can only become successfully operational if they take into account experiences of actual practice. Nowhere is this more true than in project management (Slevin, 1985).

The major objective of evaluation is to provide useful and timely information to be incorporated into future projects in order to enhance their ability to succeed. The limited resources of a country demand that they be used efficiently and effectively if all the development goals are to be achieved. A waste in one project will mean non-performance of another. Economic use of resources is therefore, not only, essential but paramount for the development of any nation. While this may seem obvious in theory, practice has shown that pressures in short-term performance shift the allocation of resources from evaluation to new, more active oriented areas. This tragedy is the cause of many project failures.

Evaluation can be conducted effectively if standards, criteria, and indicators of

success are established at the beginning. The evaluation process also includes the appointment or selection of a project evaluation team.

Project Evaluation Team:

According to Goodman, (1988) it is universally recognised that the nature of the evaluation process requires the input of more than one individual. It must necessarily comprise a multidisciplinary team with enough resources, time and autonomy from the project implementing group.

Opinions, however, differ on the composition of such a team. Some organisations and agencies prefer an in-house team while others rely on external experts and consultants. Still others prefer mixed groups composed of internal and external personnel. Each method has its own merits and demerits.

It is argued that external evaluators bring different frameworks and thus less structures, to the evaluation exercise, hopefully guaranteeing greater objectivity. They however lack understanding, perspective and access to background information. Internal teams on the other hand enjoy familiarity and access at the expense of objectivity. It is therefore necessary to find a compromise between the two opposing views. One way of doing this is to consider the characteristics of the evaluation team. Factors which determine the optimum mix of an evaluation team have been identified as administrative confidence, objectivity, understanding of the project and autonomy.

It is the current project management practice that whatever method is adopted, the evaluation team must be involved in the planning phase. Pinto, (1989) adds that the evaluation mentality must be evident in the planning process itself. In particular,

the project evaluator should be involved in the early planning stages, or more realistically, a member of the project evaluation team must be drawn from people involved in the beginning.

The two forms of evaluation are post-project evaluation and post- evaluation. Post project evaluation is aimed at determining the efficiency of the project, whereas post evaluation measures effectiveness.

2.2.4.1 Post-project Evaluation

A project is said to be efficiently executed if it is brought in on time, cost and according to specifications. It is therefore the objective of post-project evaluation to examine the extent to which the project performed with respect to these constraints. A post-project evaluation is not a single report prepared after completion alone, but is made up of periodic reports prepared by the project manager during the various stages of the project implementation. It deals with the comparison of the actual cost incurred by the project and the estimated or the budgeted cost. It examines and explains critically the causes of any overruns, with the aim of avoiding them in future projects (Beck 1986).

Post-project evaluation should be seen as an on-going process. Different forms of evaluation are applied at each phase of the project. In the planning stages the feasibility study together with the appraisal evaluate the project's viability to attain its objectives and justifies the commitment of funds to such a project. In the implementation phase the various reports provide feedback which is vital to efficient project execution. The final post-project evaluation itself helps to define and record all

lessons learned from the completed projects so that the performance of future projects is improved.

The major drawback to this form of evaluation is that

its usefulness is limited to the economic and technical aspects of the project. It does not consider the social, political and environmental factors which are, in most cases, more important. Pinto, (1989) argues that this method of evaluation is rather simplistic. He goes further to say that 'successful' projects have been known to perform well below their capacity whereas projects which were considered "failures" have, over time come to be viewed as successful. In addition Baker, Fisher and Murphy, (1983) after sampling over 650 project managers, observed that project "success" is something more complex than simply meeting the cost, schedule and performance specifications. They went on to say that client satisfaction with the final result had a great deal to do with the perceived success or failure of the project. They concluded that in the long run what really matters is whether the parties associated with, and affected by the project are satisfied. Good schedule and cost performance means very little in the face of a poor performing end product.

It can therefore be concluded from the above observations that an effective evaluation process must include an examination of the project's ability to meet the needs of the beneficiaries. Determining the effectiveness of a project, which is a difficult exercise, is the concern of post evaluation.

2.2.4.2 Post Evaluation

A post evaluation report encompasses all the project's wider objectives. It

includes a study of the resources available and used for the project, alternatives, opportunities and constraints at each decision point. It contains an overall analysis of the project with regard to its outputs and inputs including a statement on the extent to which articulated objectives are valid and to what extent were they achieved. It follows therefore that an effective post -evaluation is not meant to produce results destined for archives but active information to be incorporated into future plans Goodman (1988).

Several tools have been developed for this purpose. Among these are; social cost-benefit analysis, use of control groups for comparative analysis, logical framework analysis, sampling of various data collection procedures including, interviews, field surveys and questionnaires. It should be emphasised that the use of any of these techniques must be decided at the beginning of the project. It is also important to emphasize that the evaluation process be conducted by an independent team so that a more objective view of the performance of the project team in contributing to success of the project is evaluated.

Post evaluation, while specific in the treatment of the project, should be such that its findings can be generalised to other projects. Since this evaluation is generally performed after the project has been in operation for a length of time, it is of little use to the project itself. Its value is to projects of a similar type in the future. It is essential in the preparation of this evaluation to include the active participation of the beneficiaries. While it is important to give time to the project to enable the evaluation to be conducted in an in-depth manner, this procedure should not be delayed

unnecessarily to the extent that its recommendations will have little direct influence on similar subsequent projects. Lengthy delays will also make it difficult to determine the relative importance of the project because other projects within the parent organization or diverse maturation factors interfere with the objective evaluation.

Limitations

There are several limitations and drawbacks to the evaluation process. The major hindrance is the frequent lack of political will on the part of the policy makers and planners to commit to the concept of project evaluation. As a result, limited resources and money, if any at all, are allocated for the evaluation phase. Another problem may be that records and essential information regarding some critical phases of the project, are not always available. This is more likely to be so if formal procedures regarding the project implementation are not followed. Lack of qualified personnel and tools, especially in the developing countries, limits the usefulness of the result of such a venture. The fact that recommendations made by many evaluators are sometimes not used also discourages them from performing similar exercises productively in the future. These obstacles reduce accuracy and validity of the information contained the post-project evaluation report.

In the case of post-evaluation the project must be in operation for a considerable period of time before its results can be evaluated. This time lapse increases the chances that other factors will interfere with evaluation.

The tools and indicators used in measuring the effectiveness of a project are still in their infancy. There is no general agreement either in the literature or practice

as to what constitutes the correct indicators or tools. The diversity of these measures means that the evaluation results of different projects cannot be standardised.

Furthermore these contentious indicators and standards are in most cases not indicated in the initial planning stages. In such a situation there will be nothing with which to compare the results. If the instruments are developed after the fact, then their objectivity and effectiveness will be greatly compromised. It is important therefore, not only, to set measurable objectives in the initial stages, limited as they are, but also to develop the methods by which these objectives will be measured.

The multiple nature of the project objectives and outcomes also make it difficult to determine the effectiveness of a project. Some end-objectives may be more effective than others, whereas the overall project may be inefficient. The emphasis on the criteria for measurements also changes as the project progresses. In the initial stages, meeting the schedule is more important to cost and quality. As the project progresses further costs become more important, followed by schedule and quality. In the final stages quality becomes the most important criterion (Churchill, 1988). This shifting emphasis has implications on the way in which the project is executed and evaluated.

The usefulness of the evaluation process is further hampered by the nature of projects themselves. Projects are unique one time undertakings executed by individuals with different characteristics with unique criteria by which success is to be judged. The environment under which they are implemented also varies. Similarity among projects may therefore be more apparent than real. Thus external validity of the

lessons learned from such projects may be of limited value.

In spite of these shortcomings, evaluation exercises are not only essential but extremely important if efficiency and effectiveness of project execution is to be achieved. The results of both stages of evaluation must be passed to the policy makers for refinement of policy.

2.2.5. REFINEMENT OF POLICY:

As has been stated elsewhere, evaluation reports are not an end in themselves but a means to an end. All the experiences gained in all the phases of the project must find their way into the policy formulation stage which occupies the central position in the entire life cycle. The information so obtained will form a database from which future projects policies are formulated Sharad (1986). It is the duty of the policy makers to determine the policy implications of the evaluation and other project reports which they receive. It is a common complaint from evaluators that despite their selfless efforts, their recommendations and findings are sometimes distorted or totally ignored for political reasons. This negative feedback may have disastrous consequences on similar exercises in the future.

On the other hand, policy makers have been known to complain about the way in which the reports are prepared and presented. They argue that evaluators are mainly concerned with justifying the methodologies used rather than in providing information in a useful manner. Another complaint is that reports tend to highlight the negative aspects of the project to the detriment of the positive side. A balance must therefore be struck between the needs of the evaluators and the needs of the policy makers. To

ignore evaluation reports for any reason whatsoever is to court disaster. D.C Ferns (1991) sums up the situation with the observation that the planning of future projects should only be allowed if proper assessment and appraisal of the evaluation reports of past projects have been done and the their experiences incorporated accordingly . This is the only way of avoiding huge overruns or projects which will later become sink-holes for resources.

2.2.6 PROJECT MANAGEMENT IN DEVELOPING COUNTRIES

The situation in each developing country is such that an incredible number of development programs must be implemented and effectively managed if the standard of living of their citizens is to be improved. Project management is therefore increasingly being seen as the tool by which this objective can be attained C.Stukenburk (1987) observes that project management has great potential for revitalising the sluggish and ineffective management practices often encountered in the third world. In the light of this observation, it is necessary to the examine the implications, if any, of applying this project management in developing countries. Several benefits accrue by using project management techniques.

Merits

Project management structure provides a focus point to which resources, personnel and money can be directed which is otherwise not possible in a large functional organization Butler (1985). This is a very important consideration in a developing country where scarcity of resources is a common occurrence. The few resources which are available are scattered in all the sectors of the economy. The

productivity and efficiency of these resources can be increased considerably if they are concentrated in one point. Expensive equipment and skilled manpower must be combined in the most efficient manner if the desired results are to be achieved. Project management provides tools and techniques which make this possible.

The project management structure also places responsibility and accountability on one individual; the project manager who organises and directs the whole project. This has favourable implications in the way in which information is received, processed and transmitted to the respective destinations Butler (1991). The existence of multidimensional channels of communication allows for feedback to flow through the entire organization smoothly and faster. This efficient flow of information enables the project manager to make timely adjustments and modifications which are essential for a successful project execution.

The structure also emphasises teamwork and motivational leadership. There is an intensive and extensive interaction among members which creates an opportunity for active participation in the decision making process. This increases the chances of faster and better quality decisions. It also increases the commitment of members of the project staff to those decisions. Decisions are made faster if bureaucrats in a functional organization or government departments are not involved. As a result the chances of costly delays normally associated with lengthy procedures are reduced. Resolution of conflicts by mutual adjustments increases the motivation of the project staff to achieve the results in faster and efficient manner. In projects where foreign experts are involved, project management can also facilitate transfer of technology (Cleland,

1991).

Large projects are by nature very complex undertakings which require resources that no single organization can provide. Various contractors, suppliers, vendors and sub contractors are involved. In addition, more often than not, the project staff is comprised of experts with different skills and cultural background. Meeting the needs of these groups and coordinating their activities , which are sometimes conflicting, can only be possible if there is one common point for all. Such undertakings, therefore, can only be run as projects.

The different tools which have been developed in the field of project management makes it possible for the project to be run more efficiently than would otherwise be the case. The planning process ensures that only those projects which have a high probability of success are implemented. The determination of the deliverable end items in the project planning phase is an assurance that some result must be achieved at some finite time. This is not possible in a functional organization where the project may be merged or hidden among other activities within the organization. When a project is run separately its visibility is increased and together with it the demand for results to be obtained faster and more cheaply. This visibility further increases the pressure on the individuals concerned to produce quality results in the shortest time possible. In particular, the probability of completing the project on time and within budget is increased. This in turn reduces the possibility of projects continuing endlessly without any sign of completion.

The evaluation process, which is a tool of project management, if effectively

conducted, provides useful information which can be incorporated into future projects. With the recent availability of affordable personal computers and development of user-friendly software some of the scheduling tools which were previously available only in main frame computers are now within reach of many developing countries. These tools enable a project manager to make modifications in schedule, cost and performance, in any part of the project, at any given time, while at the same time monitoring the impact on the overall project.

Difficulties and Drawbacks in the adoption of Project Management. The attractiveness of a management tool is sometimes negated by the social and political environment which the particular tool requires. This is the dilemma facing many developing countries with respect to use of project management techniques. The basic conditions necessary for adoption of project management practices in these countries are sometimes lacking or inadequate.

One of the principal factors which hinders development in general and the adoption of project management practices in developing countries is the political instability which characterises many of its members. According to Muller, (1988) there are three forms of political instability. These are: longevity, legitimacy and armed conflict. Longevity refers to the ability of national governments to serve the full length of their constitutional lives. The higher the frequency of changes the more unstable the government. Legitimacy is based upon the degree to which a country's political system is democratic versus authoritarian and the extent to which its citizens enjoy various political and human rights. It is argued that authoritarian regimes do not

confer basic rights to their citizens and are inherently unstable in the long run even though they are, by definition, now stable. On the extreme end of the spectrum is political instability characterised by armed conflict. This situation arises when differences existing in a particular society can no longer be resolved by peaceful means.

Countries with unstable regimes cannot exercise significant fiscal and monetary restraints for fear that such restraints will worsen the already unstable situation. This means that projects which require some considerable sacrifice on the part of the population will have to be abandoned even though such projects may be beneficial to the community in the long run. Political instability increases considerably the constraints of the project environment. In countries with armed conflicts, security considerations far outweigh the technical and economic merits of a project. Political instability is also a breeding ground for other maladies in a society.

From a sociological viewpoint, the situation in the third world leaves a lot to be desired. The extent of corruption and bribery, while not uncommon in the developed world, is pervasive in developing countries. This can be attributed to the poverty and the lack of response of many governments to the needs of their people. The absence of an administrative machinery to deal with these maladies increases their occurrence (Stunkenburg 1988). This has serious implications on the equitable award of contracts, monitoring of project status and the overall project execution. Equitable awarding of contracts is further hampered by the fact that there are few qualified contractors. The limited number of competing bids increases the probability of

awarding contracts to inefficient firms. Under these conditions poor project performance and delays are to be expected with serious consequences on the efficiency of implementation.

The absence of established management practices and the lack of managerial infrastructure is also another setback. Korton, (1985) argues that many western management practices were developed to improve organisational settings that were already well developed. Their unqualified transfer to less institutionalised environments, therefore, can be counter productive. Organisational structures in the third world are, to a large extent, relatively new. And while many of these countries have made great strides in manpower training, there is still an acute shortage of skilled and semi-skilled manpower in certain specialised areas of management. In particular trained project managers are rare. Government bureaucratic delays and other formalities, which are sometimes unnecessary, have adverse effects on overseas recruitment of specialised personnel. The fact that projects are not continuous makes it difficult to recruit and retain qualified personnel who may prefer to work in environments which offer better long term career prospects.

Another major hindrance is the underdeveloped social and technical infrastructure. Materials and equipments which are necessary to accomplish the project are in short supply both in quantity and in the required level of technological sophistication. Although it can be argued that some technical equipment, such as computers and some heavy machinery are within the reach of many developing countries, this is true only in theory but rarely in practice. More pressing social

demands push the need for this equipment way down in the priority list. Furthermore, since most of them do not manufacture such equipment, they must import them.

Importing these items has other unfavourable implications. Imports will always require foreign exchange which is a scarce commodity in many countries. Qualified local personnel required to operate and maintain this imported machinery may not be readily available. Considerable time must therefore be devoted to training people with serious implications on cost and efficiency. In some cases it may be necessary to employ expatriates for a long period of time to perform these tasks. All these considerations will inevitably have adverse effects on the overall project execution.

The lack or shortage of materials in many developing countries is to some degree contradictory. Many of these countries have immense resources and development potential. But these resources are underdeveloped and are therefore of little value in the development process.

Funding is another source of constraint to projects. Many development projects in the third world are funded by the government. As a result, political influence is never too far away. Political leaders and other government bureaucrats will always seek to control the project. These political constraints may be major impediments to successful project execution.

From the foregoing it is reasonable to conclude the adoption of project management in developing countries can only succeed if it is modified. In particular, it must receive strong government and political support. Governments must be made to be or make themselves accountable to the population and legitimise their stay in

power. Project management techniques should also be modified to take into account the social, cultural and political environment in which they are applied. In the initial stages project management techniques should be applied in situations where success is feasible. A successful utilisation of project management techniques in a project will reinforce the governments commitment and efficacy of the public towards project management. Failure, on the other hand, will only serve to increase the stereotype by which tools and technology from the developed world are viewed in developing world.

3.0 PROBLEM STATEMENT

As noted in the introduction and the literature review, there is a general agreement that many projects in recent years have performed well below their expectation. Huge overruns have become the rule rather the exception. There is therefore an urgent need for more effective design, planning and control of projects if these financial disasters are to be avoided. One way of managing projects more efficiently is by using project management techniques. The aim of this study therefore is to examine the extent to which project management techniques are utilised in social projects. Because research in this field is still in its infancy, the study is exploratory in nature.

3.1 OBJECTIVES

Based on the literature review five objectives were identified. These are:-

1. To find out which project management techniques are used in social projects and the extent to which they are utilised.
2. To examine the relationship between project characteristics and project management techniques used.
3. To examine some causes of project overruns.
4. To compare the utilisation of these techniques between developed and developing countries.
5. To develop hypotheses which can be tested in future research

In order to achieve the objectives mentioned above several objectives were developed.

3.2 HYPOTHESES

The study has three hypotheses. It is hypothesised that:

- a) If a project is complex, measured by the degree of uncertainty and the constraints in the resources available and by the level of precision required by the specifications, then it is most likely that project management techniques will be used.
- b) If a project is large in size, measured by the cost, duration and the number of people involved, then it is most likely that
project management techniques will be used.
- c) If the project is organised in matrix or project form then project management techniques will be used.

4. RESEARCH METHODOLOGY

4.0 Purpose of Research

The purpose of this research is twofold: to examine the utilisation of project management techniques in social projects; and secondly to compare the utilisation of these techniques between Kenyan and Canadian projects.

4.1. Sampling Procedures.

The sample population therefore consists of social projects in Kenya and Canada. The sampling frame is comprised of social projects executed by NPMOs in the two countries.

Initially it was expected that social projects executed by large international NGOs such as Care, Red Cross, Hunger Foundation, Oxfam etc., would be examined pairwise. However when the operations of these organisations were scrutinised it was found that this was not possible. Whereas their activities can be classified as projects, not all could be considered as social projects in the context in which the term is defined in the study. Furthermore the Canadian organisations in this category did not execute many of their projects locally. Most of their projects were executed overseas and the organisations concerned were not directly involved but simply arranged for funding. In Kenya it was also found that some international NGOs were run as branches of their parent organisations in developed countries. This meant that their management practices were of necessity similar to those of their headquarters. It was therefore necessary to modify the sampling frame slightly to include only organisations which were exclusively Kenyan or Canadian.

There was not enough time to classify the NPMOs into specialised categories. However, the sample used consists of NPMOs provided they are community based and are not:

- a) Universities or Colleges
- b) Research institutes or foundations
- c) Exclusive private clubs with no open membership

For reasons of accessibility, convenience and ease of getting information, a convenience sample of forty social projects was chosen. This is made up of twenty projects in Kenya and a similar number in Canada. Significant problems were encountered in finding appropriate projects with the required size, complexity and variety necessary to attain the objectives of the study. The exploratory nature of the study was such that a wide variety of projects had to be examined. There are not very many such projects, especially in Kenya.

This problem was further aggravated by the restriction imposed on the NPMOs in the sample. Whereas NPMOs are engaged in executing many social projects at any given time, careful examination revealed that many of these projects did not have appropriate information. The information was available only in large and complex projects which are by their nature very expensive undertakings. Given the modest resources of many NPMOs, especially in Kenya, not many of them executed such projects.

In order to overcome this difficulty it was necessary to contact a considerable number of organisations. Several directories were examined as no single directory had

organisations with all the necessary projects in the required quantity and quality. In Canada most community based organisations are listed in the corporate list of Community organisations by the Ottawa-Carleton Municipality. A similar list was also obtained for Toronto.

A similar procedure was followed in Kenya. The Ministry of Community Development and Social Services was contacted for a list of NPMOs involved in social work. The ideal situation would have been to examine similar projects executed by similar organisations in both countries for a one to one comparison. Attaining this objective was, however, not always possible. Nevertheless attempts were made to pair the samples either by project or by organization.

4.2. Pretest

The questionnaire which was developed from the literature review was pretested in three social projects executed by NPMOs. The purpose of the pretest was to detect any ambiguities in the wording and presentation of the questions. Another objective was familiarize the author with current project management terminologies used in the field.

The draft questionnaire was also given to a practising project manager to ensure that the domain of project management field under study was covered. Defects and other shortcomings which were detected in the draft questionnaire were rectified. This modified final version of the questionnaire was used in the two sets of interviews. The three pretest subjects were excluded from the sample selected for the final interviews.

4.3. Data Collection

Data were collected by personal interviews using a structured questionnaire with some open ended questions. This method was chosen because it afforded the author an opportunity to explain any discrepancies in the terminologies used and to examine the documents relating to the project in question. This was necessary because project management is still a relatively new field and terminologies are not yet standardised. The method also provide an opportunity for the respondents to obtain clarification immediately and to provided more detailed answers to questions. The interviews were taped and transcribed at later stage. Interviews were conducted in Kenya in summer and in Canada during the winter. In most organisations project managers or coordinators were interviewed and in cases where they were not available, suitable substitutes or people who were involved with the project were accepted.

4.4 Data Analysis

Data have been analyzed using both qualitative and quantitative techniques. Due to the nature of the responses, the quantitative methods which have been used are non-parametric statistical techniques such as comparisons of the mode and median. For the dichotomous responses, the binomial distribution was used for comparative analysis. The Kolmogorov-Smirnov test was used to compare the responses on the likert scale in an attempt to determine if the two independent samples was drawn from the same population. For a specific variable the same test was carried out between Kenyan and Canadian responses. In this way the predominant concern of the respondents could be determined.

5. RESULTS AND DISCUSSION

40 social projects executed by NPMOs were studied. Project coordinators and project managers were interviewed personally with the aid of a structured questionnaire with open ended questions. In cases where the project manager or the coordinator was not available, persons who were intimately involved with the project were interviewed.

The data collected has been categorised into four parts a) Demographic information b) Project specifics c) Efficiency of project execution d) Utilisation of project management techniques and e) Utilisation of a schedule.

5.1 DEMOGRAPHIC INFORMATION

5.1.1 STAFFING:

One common feature of NPMOs is the relatively small number of fulltime staff who manage their operations. They rely heavily on a volunteer work force. The table below shows the mean number of employees and volunteers in the organisations which were studied.

TABLE 1

**THE MEAN NUMBER OF EMPLOYEES AND
VOLUNTEERS FOR EACH ORGANISATIONS**

COUNTRY	FULLTIME EMPLOYEES	VOLUNTEERS
	MEAN	MEAN
KENYA	11.2	13.3
CANADA	5.5	8.1
BOTH	9.2	12.2

KENYA N = 20

CANADA N = 20

BOTH N = 40

The mean number of fulltime employees for all the forty organisations is 9.2. The mean for volunteers is 12.2 which is slightly higher than the fulltime employees. The volunteers shown in the table refers only to the executive committee which manages the operations of the organisations and are, as a rule, not paid for their services. In rare occasions some may receive an honorarium which is not considered as a payment of services rendered.

The table shows that Kenyan organisations have nearly double the number of paid employees as their Canadian counterparts. This could be explained by the fact

that labour is readily available in Kenya at reasonable wage rates. In Canada, however, the wages are quite high and this limits the number of employees an organization can afford to hire and hence the significant difference.

The mean size of the executive committee is also higher for Kenyan organization than the Canadian ones. This could mean that Canadian organisations are either understaffed or the Kenya organisations are overstaffed. Further scrutiny of the information collected, however, revealed that the committee structure in Kenya generally provides for a higher number of officers than in Canada. The difference in committee size may therefore, be due to structure rather to under or over- staffing. The major duties of the fulltime paid staff are is to run the administrative headquarters of these organisations and to keep their affairs continuous in between projects. When a project is about to be implemented, a huge volunteer workforce is recruited. There is, however, rarely any corresponding increase in the number of fulltime paid staff. When the project is completed the organization reverts back to its original workforce.

5.1.2. NATURE OF PROJECTS

The range of activities of NPMOs which were studied were so varied that it was not possible to group them into convenient categories. Judging the activities of these organisations by their names can be quite misleading. The name of an organization could suggest a particular range of activities but when it is examined critically, the range of activities it performs is wide and varied, and bear, in some cases, no relationship with the name of the organization. Their mission statements,

where they exist, are also stated in very broad and general terms. This allows them flexibility in terms of their operations.

Nearly all their activities or operations, however, can be classified as projects. They always have a definite end, beginning, including a specified budget. They also have specific objectives to meet. Of the forty NPMOs which were examined only two had on going continuous activities. The rest were involved in several projects of one kind or another. Most of these projects were running concurrently. Another finding of the study in this area was that projects executed by these organisations are not mutually exclusive. Several organisations can execute similar projects. For example, the organization of conferences is not specific to any NPMO.

5.1.3 FUNDING

Since NPMOs do not generate their own funds, they have to out- source the necessary funds to run their projects. Six principal sources from which these organisations receive their funding were identified. It was not, however, possible to get the dollar or the shilling value of the amount which each organisations received from a particular source. The information which was readily available showed the amounts received from the different sources expressed as a percentage. Table 2 shows the percentage of funding received by these organisations from each source.

5.1.3.1 Donations from Individuals

The table shows that 16 organisations received their funding from individual donations. The amount received is rarely more than one quarter of their total funding. This shows that whereas benevolent donors may be active in funding NPMOs, their

total contribution is fairly small.

5.1.3.2 Government Subsidy

A total of 22 organisations from both countries received their funding from government sources. This is more than half of all the organisations examined. In addition more than 10 organisations, which is a quarter of all the organisations in the study received more than half of their funding from this source.

The table further shows that, only two Kenyan organisations received more than half of their funding from the government as compared to 8 in Canada. A total of sixteen organisations from Canada, which is over three quarters of the sample, were funded to some degree by the government. In Kenya the corresponding figure is 6, which is just a little over one quarter of the sample.

TABLE 2

THE PERCENTAGE OF FUNDING FROM VARIOUS
SOURCES GROUPED INTO FOUR INTERVALS

SOURCE/INTER. VAL		0-24.9%	25-49.9%	50-74.9%	75 - 100%	TOTALS
	COUNTRY	FREQ	FREQ	FREQ	FREQ	
DONATIONS	KENYA	6	1	-	-	7
	CANADA	9	-	-	-	9
	BOTH	15	1	-	-	16
GOVERNMENT SUBSIDY	KENYA	4	-	1	1	6
	CANADA	3	4	3	5	16
	BOTH	7	5	4	6	22
CONTRIBUTION FROM MEMBERS	KENYA	4	2	3	5	14
	CANADA	5	1	-	1	7
	BOTH	12	3		6	21
CORPORATIONS	KENYA	1	1		-	2
	CANADA	3	1	-	-	4
	BOTH	5	-	1	-	6
FUND RAISING	KENYA	4		2	7	13
	CANADA	6	5	2	3	16
	BOTH	10	6	3	10	29
NGOs/FUNDING AGENCIES	KENYA	5	2	3	2	12
	CANADA	2	1	2	8	14
	BOTH	10	3	3	10	26

KENYA N = 20

BOTH N = 40

STATUS

1 =SIG (@99%

2 =SIG (@95%

3 =SIG (@90%

CANADA N = 20

This difference can be explained by the fact that the Kenya government rarely has enough funds to run its own affairs or projects and still be left with considerable funds to spare. The government itself survives mainly on external borrowing and deficit budgeting.

In Canada the situation is a little different. Government funding, especially for community projects is quite extensive. The financial outlays of the Canadian government also far outstrip those of Kenya. There is a move, however, towards reduced government spending by the Canadian government. As more and more tight fiscal policies are instituted by the government it is expected that Canadian organisations may also experience reduced funding from this source.

5.1.3.3 Contribution from Members

A total of 21 organisations received funding from this source which makes it a fairly popular source of funds. The number of organisations in Kenya is, however, double those of Canada. Also the number of those receiving more than half from this source is 5 times that of Canada. This shows that about one quarter of the Kenyan organisations in the sample rely on their own membership, for more than three quarters of their funding. One interesting factor is that one would expect that there should be more membership contributions in Canada than in Kenya because of the big differences in per capita income of both countries.

This can be explained by the fact that individual donors within each source in Kenya are limited. In Canada, there are several funding agencies and individual organisations have a wide variety of source from which to select. There are also

generally more avenues for financing projects in Canada than in Kenya.

5.1.3.4 Corporations

Funding from corporations for both countries is negligible. Only 6 organisations from both countries received funding from this source. Not only is the absolute number of organisations small, but also the percentage of contribution received was minimal. It would appear that the kinds of projects these organizations execute are not popular with private corporations. Those which received funding from this source were sporting events with high visibility and hence offered advertising and other product promotions opportunities. As an attempt to remedy this situations incentives have been given to corporations which assist NPMOs. Canada corporations and individuals can claim tax deductions from their contribution to charitable organisations.

5.1.3.5 Fund raising Projects

Fund raising, with 29 of organisations is the most popular source of funding. 9 Kenyan organisations receive more than three quarters of the funding from this source compared to 5 in Canada. This difference can again be explained by the fact that there are limited sources of funds in Kenya. In Canada, however, fund raising is just one of the sources. The fund raising methods used in Kenya differs in some respects to those of Canada. Public meetings called specifically to raise funds are rare. The most commonly used method in Canada is to organize some event and in the process use the event to raise money. In Kenya, however, it is a standard practice to organize a general public meeting specifically to collect funds with no other activity.

12 organisations in Kenya received more than three quarters of their funding from either contributions from members or fund raising. Fund raising involves members of other NPMOs and the general public at large. This means therefore that when members were not contributing for projects in their own organisations they were contributing to projects in other organisations. It can therefore be inferred from these results that most NPMOs in Kenya get their funding from the same source.

5.1.3.6 Non Governmental Organisations/Funding Agencies

Only two organisations in Kenya receive more than seventy five percent of its funding from NGOs. The comparable figure for Canada is eight. The number receiving more than half for Kenya is 5 while in Canada the figure is 10. This disparity in funding can be accounted for in part by the fact that many NPMOs in Kenya look to NGOs as the only major source of funds outside their own contributions. In addition the number of NGOs is also limited and as such they are forced to spread their funding over the numerous applicants. This will reduce significantly the amount which will be received by each successful applicant.

On the other hand, in Canada there are more funding agencies than in Kenya, they are therefore able to fund substantially any organisations which they choose to assist. It could also be due to pre-planning on the part of Canadian organisations. It was beyond the scope of this paper to speculate and examine the criteria used in funding.

5.2 PROJECT SPECIFICS

5.2.1 SIZE.

Three criteria for measurement of size were used. These were the number of people involved in the project, duration and the cost. Major difficulties were encountered during the study in using these measures. It was found that they could be very unreliable and sometimes misleading in determining the size of a social project.

5.2.1.1 The Number of People Involved

Using the number of people involved in a project as a measure of size can be unreliable for a number of reasons.

Two similar projects with comparatively the same tasks can vary greatly on the number of volunteers they can recruit. It was observed during the study that recruitment was not always related to the tasks with the project. There was, as it were, always room for one more. The larger the workforce the more satisfied the organization. As a result there is no attempt to limit the recruitment. It is also difficult to turn away a volunteer for lack of work for fear that he/she may not turn up next time round. Something will therefore be found for him/her. Thus the task/person ratio is not the same for all projects.

An annual festival or event could have about twice the number of volunteers in one year and half the number in the next; and yet the volume of work may not, in any way, differ significantly. Recruiting of the volunteers is sometimes the responsibility of the different sub committees. As a result many project coordinators

did not know the exact numbers of the people involved. In addition this volunteer workforce has a high rate of fluctuation during the duration of the project. Records concerning these fluctuations and recruiting are in many cases not kept.

To get a better estimate of the number of people involved it would be necessary to interview more than one person from the organization. This was not possible because of the limited time of the study.

5.2.1.2 Duration

While the duration of a project is usually a good indicator of size, when it comes to social projects this again can be misleading. In many social projects, project duration is first set and the activities are spread over this duration. It is the normal practice of technical projects for tasks to determine the time, but in many social projects this order is reversed.

In addition some organisations have adopted certain pre set time frames for particular projects and have programmed themselves to complete their tasks within those time frames. If a project has a pre set time of one year, for example, there is a low level of activity for most part of the year and only an increased and very high level of activity towards the end.

Reference to a specific example can also show how duration can be an ineffective measure. In the study it was found that a particular project involving 350 organisers, 90,000 participants from over 400 organisations and drawing over one million spectators took one year to plan. A similar project involving 200 organisers, 9,000 participants took four years to plan. From this example, it can be seen that the

time taken to organize 9,000 participants is more than the time taken to organize one thousand times that number.

5.2.1.3 Cost

The total overall cost of a social project is also very difficult to determine since most of the work is done voluntarily. In many cases materials, equipment, and other supplies are also donated free of charge. These donations are not reflected in the budget. The budgets of social projects contain only those items which cannot be obtained except by spending money. In many cases volunteers may spend their own money which is never reflected in the project budget. This is mainly true of fundraising projects where the principal objective is to spend a little money as they possibly can.

From these observations, it is clear that getting accurate figures for each measure is, to a large extent, not possible. The situation was true in both countries. Because of the difficulty in getting this information, it is not possible to compare the sizes of these projects between the two countries.

5.2.2 TYPE OF ORGANISATIONAL STRUCTURE USED:

The organisational structures which were used to execute project were also investigated. Five methods of project organisational structures were identified from the literature. These were; project, matrix, functional, and task force. A summary of responses to the question relating to type of organizational structure used are shown in the table 7 below.

TABLE 3

**TYPE OF ORGANISATIONAL STRUCTURE USED TO
EXECUTE THE PROJECT**

METHOD	COUNTRY		TOTAL
	CANADA	KENYA	
PROJECT	2	1	3
MATRIX	1	3	4
TASK	17	14	31
FUNCTIONAL	0	0	0
OTHER	0	2	2
TOTAL	20	20	40

KENYA N = 20

CANADA N = 20

BOTH N = 40

The results shows that similar methods are widely used in both countries. There is however a difference in the frequency in which these structures are used.

5.2.2.1 Pure Project

The number of organisations from both countries using the project structure does not differ significantly. However on the overall only about one quarter of organisations use this method. Since these activities are by definition projects, it would be reasonable to expect that most of them would be executed using this form.

This may be explained in part by the nature of social projects themselves. Hierarchical structures are clearly detested in many social projects. There is a general notion of egalitarianism. Attempts are made to make all members feel equally

important. In fact, in cases where project managers are appointed, it is a preferred practise to refer to them as project coordinators. These project coordinators generally have less powers than those associated with project managers in technical projects. This limitation of powers is partly due to the large volunteer workforce which is used.

5.2.2.2 Functional Structure

The functional structure entails executing a project as a part of the normal operations of the organization and using the existing staff. In both countries no project was found where the functional structure was used. This could be due to the fact that NPMOs have a very small full time paid staff. Given the magnitude of some projects, this small full time workforce is clearly unable to execute them successfully. It would therefore appear that this structure is not suited to social projects executed by NPMOs.

5.2.2.3 Matrix

The relatively few number of organisations using this structure, are similar to those of the functional structure. In Kenya, 3 projects were executed using this structure. The comparable figure for Canada is 1. This slight difference can be explained by the fact Kenyan organisations had a relatively bigger workforce than those in Canada.

5.2.2.4 Task Force

This structure is most widely used in both countries. Under this system, there is one steering committee with sub committees appointed for the different tasks. Each subcommittee is responsible for its own budget and schedule. In some cases a project

coordinator is also appointed, otherwise the chairman of the steering committee acts as the overall coordinator of the project. He/She coordinates the activities of the project in between meetings of the steering committee.

This structure is popular because it fosters the egalitarian nature of these NPMOs. It is an attempt to escape from hierarchical structures which are detested by these organisations.

5.2.2.5 Other

Another method, different from those which were earlier identified, was found in Kenya. This structure, which was almost identical to the task force, was used in two projects. The only difference is that instead of having separate sub committees there was only one committee with specified duties assigned to specific individuals.

4.2.3 PROJECT COMPLEXITY

One of the hypotheses of the study was that project management techniques are more likely to be used in complex projects. Simple projects on the other hand may not require very sophisticated tools. It was therefore necessary to measure the complexity of the project under study. Three criteria for measuring complexity of projects were identified. These were the a) degree of uncertainty to the pathways and b) the level of constraints present in the pathways to the desired outcomes; c) the degree to which the specifications had to be met. The Kolmonorov-Smirnov test was used to determine if there was any significant difference between the two countries in their assessment of these variables.

5.2.3.1 Certainty

To measure the certainty of a project four factors which were considered crucial to the success of the project used. These were, time, funds, equipment and qualified personnel. Respondents were asked to rate the degree of certainty/uncertainty of each factor on a likert scale of 1 to 5, with one being most certain and 5 not certain. The results are summarised in table 4.

TABLE 4
RESULTS OF MEASUREMENT OF CERTAINTY ON A
LIKERT SCALE OF 1 TO 5
WITH 1 MOST CERTAIN AND 5 NOT CERTAIN

VARIABLE		COUNTRY		BOTH	K - S CONST	STATUS
		KENYA	CANADA			
TIME	MODE	4	1	1	0.45	1
	MEDIAN	3	1	2		
FUNDS	MODE	5	3	4	0.2	
	MEDIAN	4	4	4		
EQUIPMEN T	MODE	5	1	5	0.5	1
	MEDIAN	4	2	4		
PERSONNE L	MODE	3	2	2	0.4	2
	MEDIAN	5	3	3		

STATUS

KENYA N = 40
CANADA N = 40
BOTH N = 40

1 = SIG (α 99%)
2 = SIG (α 95%)
3 = SIG (α 90%)

Time

The test showed that there is a significant difference in the way in which the availability of time is perceived in the two countries. In Kenya, project organisers were more uncertain of the availability of time than their Canadian counterparts. This result is rather unexpected. The level of economic development in Kenya is such that the number of projects being implemented are far less than those in Canada. It could even be argued that time should not be a problem in Africa in general and in Kenya in particular.

This unexpected observation, however, could be due to the nature and stability of social, economic and political events in the country. In Kenya, the general environment itself is uncertain and as such people are not sure of what the future holds. When events are varying very fast, it is difficult to plan or make any definite future commitments. People are engaged in and plan for short term activities.

In Canada on the other hand, because the situation is comparatively stable, people are able to make future commitments with a high degree of confidence. Abrupt changes are not common. This stability is conducive to effective project planning.

Funds

There was no significant difference in the rating of funds. This item was however rated highly in both countries. It would be expected however that funds should be more certain Canada than in Kenya. The results show that this is not the case. This could be due to the recession during the period when the study was conducted.

In fact several project coordinators in Canada stated that in the past they had not been experiencing serious financial problems but since then, the situation has changed. They were however hopeful that their financial positions would improve again when the recession ends.

The case for Kenya is different. The economic situation has taken a turn for the worse. The inflation rate has more than trebled since the time of the study and there is no end in sight to inflation, if anything the future is even more bleak. Different results may therefore be obtained if the study is conducted at a different time.

Equipment

The availability of some things which are taken for granted in technical projects can constitute major hurdles in social projects. This is true of equipment. In technical projects equipment refers to heavy machinery, trucks and tools. And whereas some social projects require this equipment, it is not always essential. The equipment used in social project refer mainly to audio-visual and office equipment. Projects such as conferences, shows, exhibitions, performing arts, training and festivals rely heavily on audio-visual equipment. Audio-visual equipment includes movie and slide projectors, microphones, public address systems, overhead projectors, televisions, videos, recorders, screens etc. Office equipment on the other hand include computers, typewriters, word processors, phones, fax machines, copiers, printers etc. All social projects, whatever their nature, must use some combination of this equipment.

The availability of equipment referred to, presented no problems in Canada. In Kenya however the situation is slightly different. Project coordinators were not always

certain of the availability of the necessary equipment. Financial constraints limit the ability of many NPMOs in Kenya to own this equipment. Considerable difficulties are also encountered in renting them because there are few companies which specialise in providing them.

There is also the issue of serviceability and the age or model of the equipment. It is possible to find that available equipment is not only out of date but also unserviceable. In Canada on the other hand, not only is the equipment readily available but is also in the current state of the art. There are also several companies specialising in leasing and renting such equipment.

Qualified Personnel

And while it is true that a large number of tasks in a social project can be performed by unskilled amateurs, it would be wrong to assume that qualified personnel are not required. Each social project has within it some tasks which require certain specialised skills and expertise. Furthermore all projects require experienced planners, evaluators and financial experts.

The way in which a project prepares its financial estimates, for example, will influence greatly its ability to attract funding. Funding agencies are more likely to place more confidence on financial estimates prepared by qualified professionals than those presented by amateurs. This increases the chances that such project will be funded. In addition, some sophisticated scheduling tools require considerable skills and experience. A project can also benefit greatly from the services of an information analyst or designer.

Qualified personnel also play another important role in a project. Because many projects rely on donations of different kinds, experienced professionals within the workforce are able to make the necessary connections to obtain the required resources far better than the unskilled amateurs. This shows that the success of a project is to a large extent depended on the quality of its manpower.

In Canada many projects did not experience problems with availability of qualified personnel. It was also found that for some reason, professionals in Canada seem to find some satisfaction working for charitable organisations. In any case if a project was unable to recruit professionals as volunteers, they could always obtain their services if money was available.

In Kenya on the other hand, while there was no shortage of unskilled manpower, considerable problems were encountered with regard to skilled personnel. It was found that many organisations had difficulties in recruiting professionals. One possible explanation is the attitude towards voluntary work on the part of Kenyan professionals. Because of adverse economic conditions, many professionals are of the view that their interests are better served in paid employment than in voluntary work. Another possible explanation is the relatively small size of this group within the population at large. Although great strides have been made in the field of manpower training in Kenya, there is still an acute shortage of certain specified skills, project management being one of them.

5.2.3.2 Constraints

Constraint is used here to mean whether a particular resource was available in

the required quantity. It was established in the literature review that the planning process is, to a large degree, resource constrained. Thus, whereas a resource may be available, its quantity can either be limited or unlimited. It was therefore necessary to measure the constraints to the variables which have been discussed above. The results are summarised in table 5.

TABLE 5

RESULTS OF THE LEVEL OF CONSTRAINTS
ON A LIKERT TYPE SCALE OF
1 TO 5 WITH 1 UNLIMITED AND 5 LIMITED

VARIABLE		COUNTRY		BOTH	K-S CONST	STATU S
		KENYA	CANAD A			
TIME	MODE	5	5	5	0.05	
	MEDIA N	5	5	5		
FUNDS	MODE	5	5	5	0.25	
	MEDIA N	5	5	5		
EQUIPME NT	MODE	4	2	3	0.45	1
	MEDIA N	4	1	3		
PERSONN EL	MODE	2	1	1	0.35	3
	MEDIA N	4	3	3		

KENYA N = 20
CANADA N = 20
BOTH N = 40

STATUS

1 = SIG (α 99%
2 = SIG (α 95%
3 = SIG (α 90%

Time

The test showed that no significant difference on the level of constraint on time. Both countries were unanimous in their agreement that time was always a very limited resource.

Funds

There is again no significant difference in the level of constraint on funds. Both countries concurred unanimously in their assessment of the level of constraint on this resource. They both rated it as very important with mode of 5 and a median of 5. This again shows that whereas funds may be available there is never enough.

Equipment

Canadian projects did not experience serious constraints on equipment. Kenya projects other hand were not as fortunate. It was the observation of many project coordinators in Kenya that available equipment was always in short supply. In some projects like the organization of conferences, the venues where they are held are supposed to provide the required equipment. However this was not always the case in Kenya. In addition there is limited number of companies dealing with this equipment. It took a fair amount of effort on the part of the coordinators to obtain the necessary equipment in the required quality and quantity. Even then they were not always successful. In Canada if such equipment were not provided in the venue, they were readily available in the market. This can be attributed to level of development between the two countries. Canada being a developed country does not experience

shortages in equipment. Developing countries in general and Kenya in particular are doubly disadvantaged with regard to the need for equipment. In technical projects equipment such as heavy machinery and trucks are in short supply. The same is also true of social projects.

Qualified Personnel

There is a significant difference between the two countries with regard to constraints on this resource. Canadian projects do not experience any significant constraints compared to Kenyan projects. As it was observed earlier, Kenya experiences shortages with regard to trained personnel in general and project managers in particular. It is therefore reasonable to expect that the availability of this resource should be very limited. Even if a particular project is able to attract qualified manpower, it is never in a position to attract enough. In Canadian projects however, as was stated earlier, if qualified personnel are not within the volunteer force, they can be hired from the outside. In Kenya this is not always the case. Even in situations where funds were obtainable, which is rare, qualified personnel are not readily available. Kenya still relies, to some extent, on expatriates in many areas of management.

Other

In addition to the factors above, respondents gave some other factors which increased the constraints of a project. In Canada a number of organisations were of the opinion that environmental standards which they are required to meet greatly increased their constraints. In a few cases, some of them had committed themselves to environmental standards which were higher than those set by the government. This

was not a major constraint in Kenya because environmental standards and awareness are much lower. Other factors which were cited included security and political considerations. Certain phases of a training programme in Kenya had to be postponed on several occasions for security reasons. These security considerations also made it difficult to recruit the necessary personnel.

4.2.3.3 Specifications

Measuring the degree to which the specifications or targets of a project were to be met presented some difficulties during the study. As was stated earlier, determining quantifiable specifications of social project requires considerable skill. Specifications are generally drawn from the project objectives which are expressed in quantifiable terms. During the study it was found some projects did not express their objectives in this manner and as a result project specifications could not be pinned down. Nevertheless, respondents were asked to state the degree to which they expected their objectives or the targets to be achieved irrespective of how they were stated. The results are summarised in the table six.

TABLE 6
**THE DEGREE TO WHICH THE SPECIFICATIONS
HAD TO BE MET**

INTERVAL /COUNTRY	100%	90 -99%	80- 89.99%	70 - 79.9%	less than 70%	Mean %	total
Canada	18	2	-	-	-	99.4	20
Kenya	16	3	1	-	-	97.8	20
Both	34	5	1	-	-	98.9	40

CANADA N = 20

KENYA N = 20

BOTH N = 40

The mean for Kenya is 97.8 and 99.4 for Canada. The mean for both countries of 98.7 which is quite high. This result is to be expected because, it is not reasonable to expect a volunteer to contribute his/her time for a project whose expected end quality is very low. It is also an indication of how the volunteers value the amount of time they contribute to the project. Volunteers do not want to be seen as wasting time or contributing to mediocre projects.

Thus if projects are to attract volunteers they must be such that the end product is of high quality. This is the payment that volunteers expect in return for their time. It should be noted, however, that there is a difference between expectation and reality. These high and lofty ideals are not always achieved.

5.2.3.4. Other

During the study it was found that another factor which determines complexity, and which in many cases is the most important, is the number of outcomes in a particular project. The greater the number of outcomes the more complex it becomes. This is as result of the fact that there is increased coordination when the number of outcomes is large. In all the 5 projects in which network scheduling techniques were used the number of outcomes was considerably large.

5.3 EFFICIENCY:

A project is said to be efficiently executed if it experiences no overruns. Overruns can be experienced with respect to time and budget or cost. The importance of each factor was considered separately.

5.3.1 Cost Overrun

The overall cost of many social projects is difficult to determine. Nevertheless an indication as to whether they experience overruns can still be ascertained. These overruns arise from budgets which they develop for those items which must be bought. All projects which were studied experienced time overrun. Four factors which were expected to cause such overruns were identified. These were; a) fluctuation in prices, b) defective cost estimates, c) delays in implementation, and d) increase in labour costs. Respondents were asked to rate the importance of each factor on a likert scale. Table eight summarises the results.

TABLE 7

**CAUSES OF COST OVERRUN MEASURED
ON A LIKERT SCALE OF
1 TO 5 WITH 1 LEAST IMPORTANT AND 5 MOST IMPORTANT**

VARIABLE		COUNTRY		BOTH	K - S CONST	STAT US
		KENYA	CANAD A			
FLUCTUAT- ION	MODE	3&4	1	1	0.45	1
	MEDIA N	4	1	1		
ESTIMATES	MODE	4	3	4	0.35	3
	MEDIA N	5	4	4		
DELAY	MODE	3	2	2	0.4	2
	MEDIA N	4	1	3		
LABOUR	MODE	2	1	1	0.25	
	MEDIA N	1	1	1		

STATUS

KENYA N = 20
CANADA N = 20
BOTH N = 40

1 = SIG (α 99%)
2 = SIG (α 95%)
3 = SIG (α 90%)

5.3.1.1 Fluctuation in Prices

The results shows that there is a significant difference in the fluctuation in prices between the two countries. In Canada this factor is considered as the least important, whereas in Kenya it is rated very highly.

This can be explained by the differences in the inflation rates between the two countries. The rate of inflation in Canada is much lower than it is in Kenya. The higher the rate of inflation the more unstable will be prices and vice versa. If the inflation rate is low, the prices tend to be more stable.

The very low rating of this factor in Canada could also be due to the fact social projects in general have a relatively shorter duration. Thus they do not experience fluctuation of prices normally experienced by projects which take long periods to complete.

5.3.1.2 Cost Estimates:

This factor is considered important in both countries, with a median and mode of 4 and 3 for Canada, and 5 and 4 in Kenya. The significant difference can be attributed to the method in which the budgeting process is conducted in Canada.

Canadian organisations prepare their budget with extreme thoroughness. All Canadian organizations which were examined had very well developed budgeting systems. Their price estimates are rarely outside the actual prices. In fact cost overruns, if any, could be in the estimates of the units themselves or in some specific details left out but very rarely on prices.

This is due to the fact that in Canada information on prices is easily available and the means of communication is very efficient. Information regarding sources, suppliers of various items and supplies can be easily obtained. The Canadian government also provides a price index which shows the expected rate of inflation on a yearly basis. This greatly increases the accuracy of such estimates. The budgeting process in a Canadian organization tends to be left to individuals who are experienced or have considerable skills in budgeting.

In Kenya, however, the situation is different. Not only are prices generally unavailable, but the few which can be obtained change so fast, that in some cases it is even difficult to provide a guiding figure. There are also no government price indices or forecasts of the expected rate of inflation. Many organisations also do not have qualified personnel either in the fulltime paid staff or their general membership who can prepare good estimates.

Some Canadian organisations have developed ingenious methods of guarding against defective estimates. In addition to budgeting for contingencies, the uncertainty of funds is also incorporated in the planning process. This is done by designing the budget in a special manner. The budget is designed in such a way that should enough funds be obtained, certain elements of the project can be added and if the reverse is true, some parts of it can be pulled out without greatly affecting the overall project.

5.3.13. DELAYS

Delays during project execution, as a reason for cost overrun, was prevalent in both countries. These delays arose mainly from failure of individuals to perform

specified tasks assigned them. This meant that these tasks had to be reassigned to other people, normally with dire consequences on cost and time. This problem was more acute in Kenya than in Canada.

A major factor which contributes to delays is the use of volunteer workforce. A volunteer may accept to perform a specified task and then change his/her mind later. Because these volunteers are not paid it is difficult to enforce any discipline on them. Unlike paid employees, there is a limit to which they can be pushed. Delays are also often due to an unrealistic breakdown of projects tasks. Tendering and award of contracts was cited by several respondents as another cause of delay.

The problem of delays is further aggravated in Kenya by the poor means of communication. Transport, telephones, and the infrastructure in general are inefficient.

5.3.1.4. LABOUR COSTS

This factor was not considered important in either country and there was no significant difference between them. This can be explained by the fact that both countries relied heavily on a volunteer workforce which was not paid. The relatively short duration in which many of these projects were executed also means that they are complete long before any significant economic changes set in.

In Kenya, however, because of the high inflation rate, it would be reasonable to expect that there would also be a corresponding increase in labour costs. This, however, is not the case. Experience shows that inflation tends to affect commodity prices more than wages. The rate of change in labour costs, as a result of inflation, is very slow and sometimes completely non-existent.

5.3.1.5. Other

It was also found that cost overruns could be caused by certain uncontrollable factors. Projects which encompass some outdoor events, like tree planting, are subject to vagaries of nature which can be quite catastrophic. Weather predictions are never exact. Or even if these conditions were to be predicted with some certainty the project time is fixed well in advance when weather information is unavailable. Postponing or rescheduling these events is sometimes impossible.

5.3.2 TIME OVERRUN:

Many social projects have a definite date at which they must begin and cannot be postponed. Time is set from the date in which the event must take place and allocated backwards. In such cases time overrun will be measured by the increase in the amount rather than by the difference between the actual completion and the estimated date. This overrun is indicated by the frequency of the meetings held or the need to recruit more people than was originally anticipated. Longer hours put in by the organisers than was otherwise expected is also an indication of time overrun. All projects which were studied experienced time overruns. Three factors which appeared to influence time overrun were identified. These were a) defective time estimates b) problems associated with finance and c) poor definition of project scope. The results are shown in the table below.

TABLE 8

**CAUSES OF TIME OVERRUN MEASURED
ON A LIKERT SCALE OF
1 TO 5 WITH 1 LEAST IMPORTANT AND 5 MOST IMPORTANT**

VARIABLE		COUNTRY		BOTH	K -S CONST	STATU S
		KENYA	CANAD A			
FINANCE	MODE	5	2	3	0.45	1
	MEDIA N	4	3	4		
ESTIMATES	MODE	4	4	4	0.15	
	MEDIA N	4	3	4		
PROJECT SCOPE	MODE	4&5	3	1	0.4	2
	MEDIA N	4	2	2		

KENYA N = 20	STATUS 1 = SIG @99% 2 = SIG @95% 3 = SIG @90%	CANADA N = 20
BOTH N = 40		

5.3.2.1 Time Estimates

Deficient time estimates refer to situations where a particular piece of task takes longer than was originally expected. The duration of a project can be increased considerably if time estimates are defective. It is interesting to note that in many of the projects which were examined, time estimates were always short of the actual

times. Only rarely was a particular task completed in less than the estimated time. This could be a reflection of the conservative attitude on the part of the project planners or the nature of project themselves.

While costs can be estimated with a very high degree of accuracy, time estimates on the other hand are difficult to determine. Despite the sophistication and tools which have been developed, it is still something which can only be attempted with a limited degree of accuracy. This is due to uncertainties associated with imperfect humans and the conditions under which they work. This is mainly true in social projects where there are a number of distractions. The motivation to work varies from volunteer to volunteer. It is difficult to set and enforce time limits within which a specified task must be performed. Since volunteers are not paid they cannot be threatened with dismissal. There is always some leeway with adverse consequences on time.

For these reasons, many activities may take a longer time than was originally expected. In projects involving registration of participants, for example, it was the overwhelming response of many project coordinators that the time allocated to this exercise was always extended. Respondents were in complete agreement with the fact that time was very difficult to estimate and manage.

5.3.2.2 Finance

Both countries considered lack of finance to be an important factor contributing to time overrun. The significant difference between the two countries can be attributed to the limited sources funding available to projects in Kenya.

It was earlier shown that NPMOs in Kenya have very limited sources of funding unlike their Canadian counter parts. Their major sources of funding were contribution from members and fund raising projects which in effect are one and the same source. Although the amounts received from each source was shown only percentages it is reasonable to assume that the relative amount in figures may not be quite as high given the differences in income per capita between the two countries. It may, therefore, be necessary for an organization to conduct more than one public fund raising before a project is completed. This will increase the project time significantly.

5.3.2.4 Project Scope:

Planning deficiencies with respect to scope definition can increase the project time during the execution. If the project scope is not exhaustively considered and outlined in the planning phase, there is always the chance that it may increase during the implementation phase. The extra work to be performed will require extra time and money.

The significant difference in the results can be explained by the thoroughness in which the planning process is conducted in Canada. The funding procedures, the need to evaluate, and the better experienced personnel all contribute to a more comprehensive planning. In Kenya it was found the task segmentation was not always detailed enough. In some projects whole work packages were omitted. It was also found that it was a common practice in Kenya to include certain tasks in the project which were not specified in the initial planning.

It should be noted, however, that extra work is not always due to deficiencies

in the planning stage but are a consequence of the implementation process itself. New information which could not have been foreseen in the beginning come in to light. If the project environment is also unstable, details of the various tasks are difficult to determine with any degree of confidence. Under such conditions details are known only at the last minute. As one project coordinator put it 'we plan as we go along'.

5.3.2.5 Other Factors

There are also several other factors which can increase the project time in addition to those which have discussed. Most of these factors are project specific. Disagreements over the interpretations of project objectives and or specifications can cause considerable delays during project implementation. The lack of suitably qualified personnel and appropriate equipment can also cause delay some tasks in the project. Bureaucratic obstacles including official procedures and approval, where they are applicable can be time consuming.

The extent to which a project is scheduled can reduce or increase project time. It was found that many projects did not have comprehensive schedules. It was therefore possible to omit or repeat certain tasks. Many project coordinators realised this when it is too late. Furthermore, in many cases, the critical tasks were intuitively determined with the inevitable consequence of incurring time overrun.

5.4 UTILISATION OF PROJECT MANAGEMENT TECHNIQUES:

This is the main section of this chapter. Questions in this section dealt with the extent to which project management methods were used. For a more comprehensive analysis this section is divided into several sub-sections. Each sub section deals with a

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MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS
STANDARD REFERENCE MATERIAL 1010a
(ANSI and ISO TEST CHART No. 2)

particular phase of the project and the methods and tools which were used in that phase. Significant differences, where they are observed between the two countries are also indicated and discussed.

5.4.1 Planning:

Several factors which must be considered in the planning process were explored in this study. Among these are; determination of project objectives, project scope definition, identification of resistance, and determination of measures for evaluation. A series of sequential yes/no questions were used to determine the extend to which the respondents considered the factors mentioned above. A complete analysis of all the yes/no responses are shown in appendix 'C'.

5.4.1.1. Type of Project

The first question in this section was aimed at finding out whether the project referred to was affirmative or reactive. As stated in the literature review, affirmative projects are those which seek to exploit the opportunities offered by the environment.

Reactive projects, on the other hand, are those which are executed to address a specific problem or need which requires an urgent and immediate attention. Because of this urgency there is little time for effective planning.

In all the 40 projects in the sample, only one project was reactive. All the others were affirmative. This shows that the organizations involved had, at least theoretically, enough time to plan thereby increasing considerably the project's chances of success. The binomial test showed that there is no significant difference between the two countries.

5.4.1.2 Scope Definition

All respondents were again unanimous in their positive responses to questions relating to both the determination of project scope and objectives. It was, however, found that not all organisations expressed their objectives in quantifiable or measurable terms.

The test showed that there is significant difference between the two countries in the development of evaluation or measuring devices. This may be due to the fact that the objectives of social or non technical projects are difficult to quantify. Furthermore many organisations have soft definitions of what constitutes a project success. A direct cost- benefit analysis in a social project is not always possible. Even in cases where these objectives have been pinned down, there is still little agreement as to how they will be measured. The decision whether or not to evaluate a project also determines the extent to which the tools or measurable objectives will be developed. And since many projects in Kenya were not evaluated, it was therefore not necessary to express the objectives in quantifiable terms.

5.4.1.3. Resistance

It is part of project planning to identify possible areas of resistance and to develop strategies to handle such situations. The results show that only two projects from the whole sample anticipated some form of resistance. Both of these projects were in Kenya. One of the projects expected and experienced resistance for purely political reasons. This resistance was not directed towards the project itself but rather arose from political differences between the officials of the organization on the one

hand and government officials and politicians on the other.

The reason for resistance to the other project was economic. It was felt that the economic situation of the country was such that it could not afford to execute the project in question.

Both projects were, however, able to overcome this resistance. This was due to the fact they were able to generate enough popularity in the public, to the extent that those in favour greatly outnumbered those against.

This result further shows that most social projects do not as a rule experience resistance, on the contrary they seem to receive much support from the population as is evident by the large volunteer force which they attract.

This can be explained by two factors. The first relates to the volunteer workforce. Many of these projects rely almost exclusively on a volunteer workforce. They cannot, therefore, afford to engage in controversial projects which may alienate members of the public and consequently reduce their ability to recruit a sizeable volunteer workforce.

The other factor is funding. Since funds have to be out-sourced and in some cases with steep competition, the project chosen should be such that it is easily acceptable to funders. For this reason only those projects which have a high likelihood of attracting funds are selected. This vetting process ensures that controversial projects are to a large extent eliminated in the planning stages.

5.4.1.4 Evaluation

In order to conduct a successful evaluation it is necessary to develop effective

tools. Responses to questions relating to the development of specific tools and devices to be used in evaluating or measuring the stated objectives are summarised in the table 9.

From the table only three organisations in Kenya developed measuring devices. The comparable figure for Canada was 14. Two organisations developed these instruments at the end of the project. This significant difference in the development of measuring devices is due largely to the fact that the whole concept of evaluation in Kenya is not as developed as it is in Canada. Developing evaluation tools requires considerable skill and experience. This is lacking in many organisations in Kenya. In Canada, 4 organisations hired specialists to develop these instruments for them. One organization had the whole process of evaluation performed by outside professionals. A shortage of funds further inhibits the development of instruments and evaluation in general in Kenya. It is erroneously thought that funds are better spent in new projects than evaluating old ones. This reasoning does not consider the fact that the success of new projects, is to a great extent, dependent on the lessons learned from the old.

TABLE 9

**SUMMARY OF RESULTS TO QUESTIONS
CONCERNING DEVELOPMENT OF
MEASURING INSTRUMENTS AND EVALUATION**

COUNTRY	DID YOU DEVELOP MEASURING DEVICES?			NO	DID YOU EVALUATE?	
	YES				YES	NO
	AT THE BEGINNING	AT THE END	TOTAL YES			
KENYA	3	-	3	17	13	7
CANADA	12	2	14	6	20	-
BOTH	15	2	15	23	33	7
T			4.5		2.8	
Status			**		**	

STATUS

KENYA N=20

CANADA N = 20

BOTH N = 40

* SIG @95

** SIG @90

The table further shows that all projects in Canada were evaluated. In Kenya, 7 projects were never evaluated. Thus, in addition to not developing evaluation tools, the whole process of evaluation was completely left out. In fact the relatively high number of those which were evaluated is partly due to the way in which evaluation

was defined.

Project evaluation was broadly defined to include any procedure involving the use of tools developed before or after the project, preparation of reports or simply holding of a post project meeting to consider what went right, what went wrong and what could be improved. If a more strict definition had been used it is possible that more projects which were deemed to have been evaluated would not have been.

Furthermore two of the three organisations which developed tools in Kenya, did so because the donors insisted that it had to be done. In one of the projects, the funding agency specifically stated that certain methods had to be used in planning and scheduling the project. In addition, it also provided an evaluator of its own. This can be attributed to several factors.

Project management practices in Kenya in general and tool development in particular are still in their infancy. Project evaluation requires considerable skills and training. Skilled project evaluators are not readily available in the country in general and much less in NPMOs.

Funding agencies also play an important role in the process of evaluation. Many funding agencies insist that projects seeking their funding must show how they will be evaluated. It is a fairly standard practice that for a project to qualify for funding, a project proposal must be developed. In this document the objectives of the project must be clearly spelt out and methods by which those objectives will be evaluated must also be shown, otherwise it will not be considered for funding. A

sample of the project proposal is shown in appendix 'B'. In Canada many projects go thorough this process. In Kenya, because of the limited sources of funding, many projects do not pass through such comprehensive planning.

Another possible explanation is that project managers or coordinators in Canada have easier access to useful management information in general and project management information in particular than their counterparts in Kenya. There are many seminars, workshops and conferences on various management disciplines taking place at any given time. These fori provide the participants with opportunities to exchange ideas, get new information and insight into more efficient methods of management. In addition they also receive invaluable assistance from the municipal, social agencies and other organisations involved in similar projects through their own networking. These opportunities are generally lacking in Kenya. Networking of Kenyan NPMOs is also not as developed or organised as it is in Canada.

Poor project performance is also another cause for failure to evaluate. If the project final results are not pleasing, or fall far below the expectation, members will have no incentive whatsoever to evaluate the project. One particular project in Kenya performed so badly that the organising committee simply vanished and a new one had to be appointed. It should be mentioned that this was due in part to poor planning and an unrealistic target which was set initially. This observation can also be described as a vicious cycle. If a project is not evaluated then pitfalls which lead to its failure will be carried forward to new projects the next time round. This will, inevitably lead to poor project results and hence to non-evaluation.

5.4.1.5 Methods of Evaluation

The devices used in evaluation varied from project to project. They included self report questionnaires, post project interviews and compilation of reports. In projects where the task force method of organization was used, it was generally common for the project coordinators to have each sub-committee produce a report. This request was made at a post mortem meeting called to assess the success of the project. The project coordinator compiled a final report made up of these individual reports. These reports were, not only, used for evaluation but also formed a valuable data base for planing new projects of a similar nature.

5.4.2 IMPLEMENTATION

5.4.2.1. Scheduling

The simplest form of a schedule is a list of all the activities which are necessary to accomplish a project. The details which can be incorporated into a schedule vary considerably from project to project and from organization to organization. Respondents were asked a series of sequential questions aimed at determining the extent to which they scheduled their activities. The binomial distribution was used to test for significant difference between the two countries. As was stated earlier a complete analysis of the responses to all yes/no questions is shown in appendix 'C'. A summary of the responses relating to scheduling are shown in table 10.

TABLE 10

**SUMMARY OF RESPONSES TO QUESTIONS
INDICATING THE EXTENT TO WHICH
THE PROJECT WAS SCHEDULED:**

ACTIVITY	COUNTRY				BOTH		T	status
	KENYA		CANADA		YES	NO		
Did you:	YES	N O	YES	NO				
a) prepare a work breakdown structure	20	-	20	-	40	-	0	
b) list the tasks	16	4	20	-	34	6	2.0	
c) allocate cost to each task	11	9	19	1	30	10	2.6	**
d) allocate time to each task	15	5	17	3	25	15	2.3	**
e) set beginning and end dates for each task	18	2	20	-	35	5	1.4	
f) determine the critical activities	1	19	4	16	5	35	1.7	

Status

KENYA N = 20
CANADA N = 20
BOTH N = 40

* sig (@95%
** sig (@90%

The results show that all organisations prepared the work breakdown structure and listed all the tasks. In Kenya fewer organisations than in Canada allocated cost and time to each activity. If this is not done then the project estimates will be very inaccurate. The deficiencies in the estimation process in Kenya has already been discussed.

The results further show that only 5 organisations, 4 in Canada and 1 in Kenya, determined the critical activities and the relationship between the different tasks using project management network techniques. These were the also the organisations which used precedence network techniques. Without use of precedence network it is difficult to determine the critical activities and the relationship between the tasks.

Respondents who did not use these techniques, stated that they determined the relationships among the tasks intuitively.

5.4.2.2 Specific Project Management tools used:

Four specific project management tools were identified in the literature. These tools were WBS, Gantt Chart, CPM/PERT and full wall scheduling. An attempt was also made to link the age of the organization and the use of a particular tool. The results are summarised in table eleven.

TABLE 11

**THE AGE OF THE ORGANIZATION AND THE
SCHEDULING TECHNIQUE USED**

INTERVAL IN YEARS	COUNTRY	SCHEDULING TOLL USED			
		WBS	GANTT	CPM/PERT	FULL WALL SCHEDULING
AGE		FREQ	FREQ	FREQ	FREQ
0 - 9.9	KENYA	6	1		-
	CANADA	7	5	1	-
	BOTH	13	6		-
10 -19.9	KENYA	3	1	-	-
	CANADA	4	1	1	-
	BOTH	7	2	1	-
20- 29.9	KENYA	3	2	-	-
	CANADA	3	2	1	-
	BOTH	6	4	1	-
30-39.9	KENYA	2	1	-	-
	CANADA	5	2	-	-
	BOTH	4	3		-
40-49.9	KENYA	5	4	1	-
	CANADA	1	1	1	-
	BOTH	9	5	1	-
OVER 50	KENYA	1		-	-
	CANADA	3	1	1	-
	BOTH	4	-	-	-
TOTALS	KENYA	20	8	1	-
	CANADA	20	12	4	-
	BOTH	40	20	5	-

KENYA N = 20

CANADA N = 20

BOTH N = 40

The Work Breakdown Structure

It was found that the work breakdown structure, in many varying forms, was used by all organisations in both countries. It should be noted however, that while all the organisations used this tool they did not designate it as the work breakdown structure, but when it was explained to them they accepted. This shows that project management terms are not yet standardised.

The Gantt Chart

Twenty organisations used the Gantt chart. There are however more organisations in Canada using it than in Kenya. The Gantt chart is normally developed after preparing the work breakdown structure. The Gantt chart is therefore an improvement over the work breakdown structure. It shows the sequence in which the tasks are to be performed and also compares the actual work performed versus schedule estimate. Its major limitation, however, is that it does not show the relationship between the tasks and the critical activities. This requires more advanced tools.

It was found the use of particular tools, depended mainly on the knowledge and the experience of the individual responsible for scheduling and not on the project or the number of activities the project entails. Thus, for organisations which had contracted specialists to schedule their projects more advanced techniques were used. If the project coordinator had also been exposed to these tools the chances were that he/she would use them. The limited number of training avenues available to project

coordinators in Kenya, which were explained earlier may help to explain the observed difference in the use of this particular tool.

Network Diagrams (C.P.M & P.E.R.T)

The use of networks techniques is not as widespread as would be expected. The number of activities in the projects which were studied was such that they could benefit greatly by using this tool. This however does not seem to be the case. The results show that only 5 organisations, 1 in Kenya and 4 in Canada, which is one eighth of the total sample used network techniques. It was found that those organisations which used these precedence diagrams also used the other two tools. This could be explained in part by the fact these tools have only recently become available for use by small organisations with the development of a simpler version of the network methods. It was also erroneously thought, until recently that these tools were only applicable to technical projects. Their usefulness in scheduling social projects is only now beginning to be recognised. It was found that organisations who have used these tools had very positive evaluations regarding their effectiveness. It is expected that as more and more organisations use them, they will come to be accepted as indispensable just as the work breakdown structure. The relationship between the age of the organization and the tools used are shown in figure 1.

FIGURE 1**THE AGE OF THE ORGANIZATION AND TOOLS USED**

Age interval in years

LEGEND

WBS

GANTT

CPM/PERT

The figure illustrates the relationship between the age of the organization and the tools used. It should be expected that the older the organization the more sophisticated the tools used. The results show however that this is not the case. It appears that there is no relationship between age and the tools used. Some young organisations use more sophisticated tools than older ones. Furthermore those using the network techniques are evenly spread through all the age groups.

5.4.2.3 MONITORING AND CONTROL

All respondents were unanimous in their positive responses to questions concerning assigning specific responsibilities to specific individuals. The main reason for assigning responsibilities to particular individuals is to avoid confusion. In addition milestones were also used as project control measures. Meetings also formed one of the most important methods of controlling and monitoring a social project. It was found that the frequency of meetings increased towards the end of the project. Many respondents felt the size of the sub committees should be relatively small. Ideally they should consist of between six to eight members in order to make them more effective and easy to convene. Minutes taken during these meetings formed part of the project records by which the schedule was monitored. Where the task force method was used, the steering committee supervised the work of the other sub committees and the overall project execution. The various sub-committees were responsible for monitoring and controlling their own schedule.

There was a general agreement that minutes were taken selectively. Each committee meeting used the minutes of the previous meeting to assess the progress of

the work. The minutes of the current meeting would be used in the subsequent meetings for the same reason. Each time a meeting was held the schedule had to be reviewed. In between meetings the project coordinator or the chairman of the steering committee had the responsibility of coordinating all the project activities. In some organisations a special person was appointed to act as a liaison between the organising committee and each of the sub committees. He/She attends all the meetings of the sub committees to keep them informed.

Contingency planning also plays an important role in project control. Many of the respondents were of the opinion that whereas, some contingencies may not be needed or used in the end, nevertheless their existence relieves a lot of anxiety on the part of the projects staff. There was no evidence that variance analysis, earned value, trending and other specific project management control tools were used.

5.5 UTILISATION OF A SCHEDULE

5.5.1 Frequency and Reasons for Modification.

The extend to which the schedule was used was also investigated. All respondents agreed that they modified their schedules. The frequency of modification is shown in the table 12.

TABLE 12**NUMBER OF MODIFICATIONS TO SCHEDULE**

INTERVAL	COUNTRY		BOTH	K - S CONST	STATUS
	KENYA	CANADA			
0 - 4.9	3	8	11		
5 - 9.9	1	2	6		
10 - 14.9	-	3	4		
15 - 19.9	1	0	2		
OVER 20	15	7	8		
TOTAL	20	20	40		
STATUS				3.5	2

STATUS

KENYA N = 20

1 = SIG @99%

CANADA N = 20

2 = SIG @95%

BOTH N = 40

3 = SIG @90%

The Kolmonorov-Smirnov test showed that there is a significant difference in the number of modifications. Kenyan projects had more schedule modifications than the Canadian projects. This could be due to factors which cause the modification of a schedule. A schedule can be modified in several ways. More activities can be added or removed. Completion dates and milestones can be revised. Responsibilities already

assigned can be reassigned to other individuals. Reasons given for modifying a schedule varied from project to project. Respondents were asked to rate 5 major causes of modification using a likert scale. Table 13 the reasons for the modification of the schedule.

TABLE 13

**CAUSES OF MODIFICATION OF THE SCHEDULE
MEASURED ON LIKERT SCALE OF 1 TO 5 WITH 1
MOST IMPORTANT AND 5 LEAST IMPORTANT**

CRITERION	COUNTRY		CANAD A	BOTH	K - S CONST	STATUS
		KENYA				
EVENTS VARY VERY FAST	MODE	2	5	2	0.4	2
	MEDIAN	2	4	3		
DEFECTIVE ESTIMATES	MODE	3	2	2	0.35	3
	MEDIAN	2	4	2		
INSUFFIC- IENT DETAILS	MODE	2	4	2	0.45	1
	MEDIAN	2	4	3		
PROJECTS WITHIN	MODE	5	5	5	0.1	
	MEDIAN	4	5	5		
COMMUNIC ATION PROBLEMS	MODE	4	3	3	0.4	2
	MEDIAN	3	2	3		

STATUS

KENYA N = 20

CANADA N = 20

BOTH N = 40

1 = SIG @ 99%

2 = SIG @ 95%

3 = SIG @ 90%

5.5.1.1 Defective estimates:

Both countries considered defective estimates an important factor contributing to schedule modification. As was discussed earlier, defective estimates can cause

modifications to a schedule with respect to cost and time. In study it was also found that they can also cause significant alterations to the schedule with respect to other variables. A defective estimate involving the number of participants, for example, may mean a change of venue with serious implications on the schedule.

If certain tasks were inadvertently omitted, new people will have to be found to perform them and if they are not available, then a re-ordering of the already assigned responsibilities will be necessary. In addition, new milestones will have to be established and the start and finish dates for various tasks will also be revised.

Defective estimates arise when there is a general lack of information during the planning stages of a project. As the project progress new information become available and the schedule is modified and updated as time goes. This situation was more prevalent in Kenya than in Canada. It was observed earlier that the estimating process in Kenya was not as effective as in Kenya. Furthermore information systems and technology in Kenya is also in its infancy. Because of this scantiness of information, planing is not as effective as it would otherwise be.

5.5.1.2 Events Vary Very Fast:

When events outside the project vary very fast certain activities within the schedule are referred to as having been overtaken by events. Projects have been known to be abandoned because the pace of execution was very slow. The need for such services offered by such a project were obsolete before they were provided. The faster the pace of events outside the project the more frequent will the modification to the schedule to keep up with events. The schedule must be modified to conform with the

altered situation. This situation generally occurs when a project is executed in an unstable environment.

Unforeseen events and last minute changes could also be included in this category. It was found that it is very common for events to change very rapidly towards the end of the project. These changes, which occur suddenly, can sometimes cause panic and confusion. Rules and regulations which are instituted during the project execution could also impose certain modifications to the schedule.

This state of affairs was more prevalent in Kenya than in Canada. When the general project environment is unstable then confidence which can be placed on the available information to remain unchanged for duration of the project is very limited. When these events change, certain in-built assumptions within the schedule are also modified.

5.5.1.2 Details not Enough:

This refers to the amount of details in a schedule. If a schedule does not have enough details in the beginning, for any reason at all, then it will be necessary to modify it to accommodate this new information if and when it becomes available. During the study it was found that certain schedules were very sketchy. They specified only tasks to be performed while leaving out some other essential information. As a result considerable delays are encountered when specific tasks had to be performed. Furthermore quality decisions could be made with the scant information which was available. This also resulted in considerable additions to the project activities and hence a considerable increase in project overruns.

The results show that there is a significant difference between the two countries. This could be explained by insufficient experience and skills in the schedule preparation, lack of information in the planning stage and the uncertain project environment in Kenya.

The unavailability of scheduling tools and equipment can also contribute to insufficient details in the schedule. This is especially true in cases where the critical activities are not determined. If the relationship among the various projects activities are intuitively determined and not incorporated in the schedule then there is always the chance that costly errors will be made.

5.5.1.4 Projects Within the Organization

There is also a general agreement in both countries that projects within the organization do not interfere with the project. This could be as a result of these organization coordinating their activities efficiently. It could also be due to the project which was chosen for the study. In order to attain the objectives of the study it was necessary to select a very large project. It is possible that the project selected may have interfered with other small projects in the organization.

5.5.1.5 Communication Problems

This refers to inter-personal communications during the project execution. As was stated earlier, the smooth running of a project relies on smooth and effective communication system. As the project progresses new and more detailed information becomes available and this must be passed on the project staff. Serious difficulties will be experienced if there is a breakdown in communication such that this information

can be relayed to and fro. Either certain tasks may not be performed in the desired quality or they may be not be performed at all. Consequently this will have adverse effects on the schedule. It was the feeling of many respondents that any changes, additions and new decisions should be communicated to the staff in a timely and accurate fashion. This will limit delays and hence reduce the occurrence of overruns normally associated with such delays.

The difference between the two countries can be attributed to the differences in the state of the means of communication between them. In Kenya, telephones are few and inefficient. Faxes are rare. In addition, the means of transport both private and public, is to a large extent insufficient. Thus if a project involves participants from different geographic locations, which is normally the case, serious communication difficulties are experienced.

The significant number of volunteers involved can also create communication problems. Many volunteers may not be very proficient in the task at hand. There is therefore some chance of training on the job. Misunderstanding are bound to arise when people are suddenly brought together and are expected to work towards a common goal. It takes time to develop synergy and to establish effective communication channels. It was also found that the design of information systems to extract the necessary information was not effective.

5.5.1.6 Other Factors

Other factors which contributed to schedule modifications were project specific.

In projects where participants were to be registered, it was found that in nearly every case registration time had to be extended for one reason or another. This in turn affected all the other activities in the schedule. In some cases, late registration also contributed considerably to project cost overruns. Delays was also another reason given for schedule modification.

5.5.2 SCHEDULE ASSESSMENT:

Five factors were identified in the literature for use in assessing the usefulness of a schedule. These factors were management and allocation of time, control of expenditure, monitoring and supervision, allocation of manpower and equipment, and evaluation. Table 14 shows a summary of the results.

TABLE 14

**THE USEFULNESS OF A SCHEDULE MEASURED ON
LIKERT SCALE OF 1 TO 5 WITH 1
EXTREMELY USEFUL AND 5 NOT USEFUL**

CRITERION		COUNTRY		BOTH	K - S CONST	STATUS
		KENYA	CANAD A			
TIME	MODE	1	1	1	0.1	
	MEDIAN	1	1	1		
EXPEND- ITURE	MODE	2	2	1	0.2	
	MEDIAN	1	1	1		
CONTROL	MODE	1	1	1	0.2	
	MEDIAN	1	1	1		
ALLOCA- TION	MODE	4	2	1	0.4	2
	MEDIAN	2	1	2		
EVALUA- TION	MODE	4	1	1	0.5	1
	MEDIAN	3	1	2		

STATUS

KENYA N = 20

CANADA N = 20

BOTH N = 40

1 = SIG (@ 99%)

2 = SIG (@ 95%)

3 = SIG (@ 90%)

5.5.2.1 Time, Control of Expenditure, and Supervision:

The respondents in both countries rated very highly the usefulness of a

schedule with respect to three variables namely; managing time, controlling expenditure and monitoring and supervision. This strong agreement establishes the fact the a schedule is a very important project management tool. It also confirms the principle hypothesis of the study, that successful project execution is determined, to a great extent, by the degree to which it is scheduled.

5.5.2.2. Allocation of resources and equipment:

In technical projects a schedule is very useful in the allocation of resources and equipment. In social projects however the need for equipment and resources is normally at the very end and most of the project time is devoted to planning. In this case the only resource which can be allocated is manpower. This however is a very important and valuable resource.

Because a schedule shows all the activities which a project entails and which must be performed, it enables a project manager to allocate them more efficiently. All respondents, as the results show, were also in agreement on their positive assessment of the usefulness of schedule in this regard.

5.5.2.3. Evaluation:

There is also a significant difference in the use of a schedule for evaluation purposes. Canadian organisations consider it extremely useful while Kenya organisations do not rate it quite as high. This is due to fact many projects in Kenya are not evaluated. The reasons for non evaluation have already been stated.

6. CONCLUSIONS:

This chapter summarises the findings of this study. It is divided into three

parts. i) The first summarises the findings relating to the utilisation of project management methods in social projects ii) The second section summarises the findings related to differences and similarities in the use of these techniques in the two countries iii) the third part outlines some limitations and benefits of the study and suggests areas of future research.

6.1 Utilisation of Project Management Techniques

6.1.1 Overview

A principal finding of the study is the concurrence between theory and practise. Most of the project management methods and procedures which were outlined in the literature were found during the research. All the projects which were examined utilised project management methods and techniques to a considerable degree, although some did not designate them as such. In addition, the problems and difficulties, which had earlier been identified, and which are faced by many projects, were also confirmed in the study. Even more interesting is the fact that the sources of most of the information in the literature drew from experiences gained in technical rather than in social projects. It seems reasonable to conclude therefore, that there is no significant difference between social and technical projects with respect to planning and implementation. And furthermore many of techniques which were developed for technical projects are also applicable to social projects.

The results further show that the activities of many NPMOs can be classified as projects. They have specific objectives to meet and are executed under various constraints. Furthermore these activities can further be classified as complex projects.

This is evident by their high rating of the variables which were used to measure complexity together with the high standard of specifications or targets which they were expected to meet or achieve. It can be concluded that by their very nature, therefore, it is difficult, if not impossible, to execute these undertakings successfully without using some form of project management techniques or methods. This conclusion is consistent with the results which were discussed earlier and are summarised below under appropriate headings.

6.1.2 Planning and Evaluation techniques

Planning and evaluation techniques, in particular, are most widely used project management methods in social projects. In nearly all cases they were considered pre-requisite to any successful project execution. This is shown by the positive responses to questions relating to planning and the project proposals which were developed. The information required in a project proposal as shown in appendix 'C' is a good indication of the seriousness and thoroughness in which the planning process is conducted. The results further show that all projects in Canada and more than half those in Kenya were evaluated. This is a clear indication, that the concept of evaluation was incorporated in the planning process.

In order to evaluate a project, it is first necessary to set standards and measures which will be used in such an exercise. This is normally a very difficult procedure even for technical project with quantifiable objectives and must therefore be daunting in social projects where the objectives are in many cases qualitative. That, many of these organizations were able to pin down the objectives is a further testimony to the

great value which they attach to the evaluation process. Some organisations considered the evaluation process so important that they actually hired the services of project management professionals to develop tools and to evaluate their projects.

Project planning also involves environmental scan. All organisations were unanimous in the positive responses to questions aimed at determining the environmental potential of the project. These results show that there is genuine and concerted effort on the part of NPMOs to avoid project failures or overruns as much as possible. It seems reasonable to conclude that there is a widespread perception among them that, one way in which these overruns can be avoided is by using project management methods.

All respondents were of the view that time and money were the major constraints to planning. It was their unanimous recommendation therefore ample time should be allocated to planning and that planning should start as early as possible to avoid a last minute rush. Many were also of the opinion that with experiences gained from the project they would avoid similar mistakes in the future. While there is some merit in this observation, it overlooks, however, the fact that projects are unique undertakings where new and unique problems are always being encountered.

6.1.3 Scheduling Tools

Many specific project management scheduling tools are not as widely used as would otherwise be expected. The work breakdown structure, in many varying forms, was used in all projects which were examined. The extensive use of work breakdown structure is due to the fact that, not only, does it enable the organization to estimate

the project time and cost more accurately but it also provides it with a more compressive picture of the project as a whole. The Gantt Chart was also widely used.

A very small number of the projects used network diagrams such as C.P.M and P.E.R.T. This is in spite of the fact that many of them would have benefited greatly by using them. This could be due to the fact that these tools have only recently become available. Previously their use was only limited to large construction companies using main frame computers. It is expected however that with the development of project management software which can run on personal computers their use will spread much faster.

5.1.4 The Schedule

All the respondents unanimously agreed that they prepared a schedule. In addition they also rated the usefulness of a schedule highly. The level of detail and sophistication of the schedule, however, differed from project to project and from organization to organization. They ranged from detailed comprehensive schedules covering several pages or booklets to sketches of one or two pages. These disparities obviously depended upon the tools which were used. In projects where the network diagrams were used, detailed schedules were also prepared and the relationship between the activities was determined. In projects where this was not the case the relationships among the activities were determined intuitively, needless to say that the critical path and the critical activities were never identified. It is only network diagrams which make this possible.

Another interesting observation is that some project coordinators did not

commit themselves to the schedule even though good schedules had been prepared. They were of the view that schedules limited their flexibility and were difficult to follow.

5.1.5 Control and Supervision

Milestones and meetings were the major methods used to control and supervise the project. In addition specific responsibilities were assigned to particular individuals. Contacts person were also identified within the interested parties. It is interesting to note that while some project coordinators professed that they have never heard of project management techniques, they were nevertheless using them techniques with great skill and expertise though not designating them as such.

In some projects, the minutes taken during their meetings constituted a very effective schedule. In each meeting the minutes of the previous meeting were updated and hence the schedule. This procedure proved to be a very effective method of controlling the project. It was found that control tools such as variance analysis, value earned analysis, line of balance were very rarely used.

A clear majority of the respondents stressed the importance of interpersonal communications. They were of the view that the smooth execution of the projects relies heavily on frequent communications between committees, within committees and also with external parties. Panic and confusion seems to emerge towards the end of the project. It was the opinion that the opinion of a number of respondents that this situation could avoided by appointing particular individuals to specified positions within the project. It was also necessary to have a back up person to take care of any

eventuality.

Several factors have contributed to the spread of these tools and techniques among social projects.

6.1.6 Factors contributing to adoption of project management methods

The most important factor which has influenced the use of project management methods in social projects, especially with regard to planning and evaluation, is funding. As the project proposal outline shown in appendix 'C' indicates, funding agencies specifically state that certain project management methods must be used. Since these agencies fund projects without expecting any form of repayment they are in position to demand that their money be used in specific ways which will ensure project success. Furthermore, because NPMOs require the money and have few resources of their own, they are left with no option but to use the techniques.

Networking of among many NPMOs has also contributed to spread of these techniques. It was found that there were several affiliations of NPMOs, especially in Canada. This enabled the organisations concerned to exchange views and ideas and to benefit from one another. Training, seminars and conferences on management in general and project management in particular have also played a key role in propagating the adoption of project management techniques in many projects.

Another factor which has increased the efficacy of project management techniques in social projects is the effectiveness of the tools themselves. During the study it was found that organisations which had used the tools found them to be

extremely effective. As projects executed using these methods are completed successfully, other organisations are bound to adopt the same methods. Scheduling tools such as the network diagrams offer certain unique advantages as compared to other tools. Using these tools a project manager can among other things determine: i) the dependency relationship among activities, ii) the slack possessed by each activity, iii) the critical activities and finally iv) the critical path. It is these unique advantages offered the network techniques, which will make them extremely important and indispensable in the future. It is therefore reasonable to conclude that as more and more people become aware of the effectiveness of these tools, their spread and use will increase tremendously. And as projects become more complex and increase in size more sophisticated planning and scheduling tools will of necessity be required.

The volunteer workforce is also another factor which has contributed to the use of project management methods. Many volunteers consider the sense of satisfaction from a successful accomplishment of a venture as their payment. As a result they pay a lot of attention to planning and evaluation of such a venture. In addition, members of the project team who have been exposed to project management methods insist that such methods be used as a condition for contributing their services.

6.2 Differences

The major difference between the two countries is in the depth, intensity and quality in which project management techniques are utilised. As is to be expected, project management methods are more widely used in Canadian projects than in Kenya. In addition Kenya projects experience far more problems than do their

Canadian counter parts. A number of other factors also limit and/or restrict the utilisation of these methods.

6.2.1 Awareness of project management methods

Project management is a relatively new field in the area of management and was started and developed in North America. It is therefore only natural that its being widely used in Canada is due ,in part, to its having been in the continent. From the results it would appear that there is an uneven development of project management in Kenya. The results show that while certain concepts, like evaluation and some specific scheduling tools, like network diagrams are scarcely known, nevertheless basic tools and methods, for example project planning and work breakdown structure are widely known and used. Development of some of the tools in Kenya is also in the initial stages. Tools can only be developed if the concepts are known and have been put into practise. Attitudes towards planning in general, and project paling in particular are needs to be changed. Project management methods and techniques are viewed with suspicion my some managers. Many are of the view that these measures have been developed to increase supervision over them rather than to assist them cope with their management problems. This state of affairs is indicative of a long period of education and training which is required. People must be made aware of the inadequacies of the past system and the advantages offered by the new.

6.2.2 Funding

As was stated earlier, funding agencies have, to a large extent contributed and influenced the way in project management methods have been adopted. The results

show these agencies are very few in Kenya and their funding is very limited. As a result many Kenyan organisations do not benefit from the project management advice and training given by these agencies. This was evident with respect to project evaluation. In Kenya the role of government funding to NPMOs is so negligible that it is almost non-existent. Management advice and information from the government to these organisations is also minimal. This is almost the opposite in Canada. Social community projects in Canada are extensively funded by the government. In addition to funding, the government, just like private funding agencies also provides NPMOs with project management advice and training.

6.2.3 Personnel and Training:

It is not uncommon to find several professionals with impressive qualifications among the volunteers in Canadian projects. The situation in Kenya is quite different. The shortage of trained project managers in the Kenya as a whole limits the chances that NPMOs can recruit professional volunteers in their projects. As a result they do not benefit from expertise and experience of such experts within their membership. If they require some expert knowledge or advice at some stage in the project execution, they are compelled to pay for such services. The meagre resources at their disposal is such that they can rarely resort to this eventuality.

Training opportunities are also very limited. Management seminars, conferences, and workshops and scarce are far between. It was the feeling of many respondents in Kenya that project management methods could spread faster if training opportunities were increased. Such training sessions could be tailored to specific areas

of management. They could for example address a speciality such as networking, acquisition and use personal computers in project management. They could be general in scope and cover wide areas and can last for several months.

Training sessions have the advantage of providing a forum for addressing specific problems facing the participants. They are also valuable in bringing currently assigned project managers up to speed. The major drawback, however is that they lack depth in their treatment of the subject matter. There is always the danger that information obtained in such a brief overview of project management may not be retained for as considerable period of time by the participants. There is thus the need to consider long term intensive training programs.

6.2.4 Other Problems

Certain obstacles which are peculiar to developing countries, such as inflation, instability, and uncertainty also hinders the adoption of project management methods in Kenya. More specifically the underdeveloped state of infrastructure such roads, electricity and communication increases the constraints and complexity of projects immeasurably. Poor communication increases delays and reduces efficiency. The lack of electricity on the other hand limits the equipment which can be used and hence the tools.

It was also the opinion of many project coordinators in Kenya that politics adversely influence their projects. And while the political situation in Kenya has recently changed dramatically and is now more open, democratic traditions are still relatively new. This affects the way in which decisions are made and implemented.

The limited availability of the necessary equipment in the country as whole means that projects are hard pressed to procure this equipment. In Canada many social projects rely on individual volunteers to get the necessary equipment if they cannot do so themselves. In Kenya this was not always the case. Few volunteers neither had the necessary equipment nor even access to any.

6.3 Suggestions for more effective use Project Management

Techniques

As the results show planning and evaluation techniques are most widely used. Scheduling techniques on the other hand are not effectively utilised. During that the study it was noted that current training programs and project management literature which are readily available do not stress the importance of scheduling in project management. Emphasis is placed on planning and evaluation to expense of scheduling. As a result scheduling tools as not as widely used as they should.

It is therefore recommended that training programs should incorporate the use of scheduling techniques as well. Many of the projects which were studied could benefit greatly if they used these techniques. It is also necessary to dispel some misconceived notions about network scheduling techniques. It was found that many project coordinators are of the view that network techniques are inherently complicated and furthermore would require the use of computers. This perception is indeed wrong.

In order to achieve this objective successfully many practitioners and researchers in the field of project management have recommended that a central

agency charged with coordinating the planning and management of projects both public and private should be created. The functions of such an agency should include devising methods and procedures by which project management methods and information can be passed to project managers and coordinators. It should also organize conferences, seminars and other training programs. It is the view of the author that as the awareness scheduling tools spreads they will come to be accepted just as planning and evaluation techniques have been.

6.4 Limitations, Benefits and Suggestions for Future Research

6.4.1 Limitations

The study has several limitations normally associated with exploratory studies of this kind. The first limitation relates to the measures which have been used. All the measures have been drawn and developed from the literature. Some of them have never been tested before. Research in the field of project management is still in its infancy, it is hoped that as it evolves better and more reliable measures will be developed.

The other limitation pertains to the sampling procedure which has been adopted. A comprehensive sampling frame of all NPMOs involved in social development projects does not exist. A convenience sampling method was therefore chosen. Since the samples are non-random, the bias of author cannot altogether be eliminated.

Finally the study has a limitation with regard to its external validity. Only one developing country and one developed country have been chosen for study. This

means that the results cannot be generalised over developed or developing countries.

6.4.2 Benefits

This research is significant in that it is the first research of its kind to examine how project management techniques are utilised in social projects. Previous studies had concentrated on technical projects. By comparing the utilisation of these techniques, it enables NPMOs in the two countries involved to find out how similar organisations involved in similar projects manage and run their activities and the extent to which they are successful. This is of great significance to NPMOS in Kenya which is a developing country and may not have been exposed to some the techniques.

By providing useful information regarding the effectiveness and the extent to which these organisations use project management tools and techniques, this study has contributed to the growing literature and research in the field of project management. The study has also identified future areas of research.

6.4.3. Future Research:

This study has been confined to the study of social projects in Kenya and Canada. Future research could examine technical projects in the same countries. The study also covered only social projects executed by NPMOs, it left out the government, private sector and other institutions. Governments, for example, are engaged in executing many social projects. It will be important therefore to examine these projects either in one country or between developed and developing countries or between any two or more countries with the same level of economic development. It would also be beneficial to classify social projects and examine longitudinally.

This study found that utilisation of tools vary from project to project. Some projects rely heavily on planning tools while others and require sophisticated scheduling techniques. A study which will concentrate on one phase of the project execution is therefore necessary. In addition, there is also a need to investigate the relationship between the application of project management techniques and project characteristics. A comparison of social and technical projects as executed in developing countries and in the developed countries is another area which needs further study.

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APPENDIX 'A'

Integrated project planning and management cycle: the four phases.

* From 'Project Planning and Management', Edited by Goodman L.J. and Love R.N., Pergamon Press, 1980, page 8.

APPENDIX 'B'

TEN STEPS TO A COMPREHENSIVE FUNDING PROPOSAL

1. Identify the specific project or services for which the organization is seeking financial support through this funding submission.
2. Be sure to include a table of contents that indicates the services and sub-sections of the proposal with page references
3. Spend whatever time is necessary to write an interesting and easily readable summary sheet
4. Prepare an introduction that conveys the creditability of the organization in a compelling manner.
5. Describe the identified need(s) this particular proposal will address
6. State the short term and long term objectives to be achieved by the proposed project.
7. Describe the programs/services to be delivered in order to achieve the objectives.
8. Build in an evaluation component that will demonstrate the degree to which the method of service delivery is achieving the objectives
9. Describe the organisation's system of financial management that discussed the methods of financial accounting, control and reporting. Be sure to outline a plan for fund raising that extends beyond the grant period being currently pursued. (If possible attach a copy of audited financial statement for fiscal year at the end of the funding proposal.)
10. Provide a budget that focusses on the specific project or services for which funds are being sought, and indicate clearly the total amount of money being requested.

* From Ministry of Community and Social Services, Ontario, un-published briefing documents for project coordinators.

APPENDIX 'C'

RESULTS OF BINOMIAL TEST FOR 'YES' OR 'NO' RESPONSES

	Question	Kenya		Canada		t	stat us
		Yes	No	Yes	No		
1	Did you identify the interested parties	20	0	20	0	0	
2	Did you identify possible areas of resistance	18	2	19	1	.2	
3	Were relevant strategies developed to handle these situations	16	4	18	2	.7	
4	Was a contact person or body identified within each interested party	13	7	16	4	1.7	
5	Were the deliverable tangible end-items/objectives spelt out	17	3	20	-	1.6	
6	Were the project scope and boundaries defined?	18	2	20	-	1.3	
7	Did the end-items or the deliverables have quantifiable or measurable objectives?	18	2	17	3	1.8	
8	Were appropriate measuring devices for these objectives developed?	3	17	14	6	4.2	**
9	Were these objectives evaluated?	13	7	20	0	2.9	**
10	Did you prepare a work breakdown structure?	20	0	20	0	0	
11	Did you list all the activities?	16	4	20	0	2.0	
12	Did you allocate time to each activity	15	5	20	0	2.3	*
13	Did you allocate cost to each activity?	11	9	19	1	2.6	**

14	Did you set start and end dates?	8	12	17	3	1.4	
15	Did you determine the critical activities?	1	19	4	16	1.7	
16	Did you determine the reporting stages?	20	-	20	-	0	
17	Were the contingencies budgeted for?	14	6	19	1	2.1	*
18	Did you formally assign responsibility for specified duties to specific individuals?	20	-	20	-	0	
19	Did you set milestones	20	-	20	-	0	
20	Were minutes taken and records kept?	20	-	20	-	0	

KENYA N = 20
 CANADA N = 20
 TOTAL N = 40

STATUS
 * SIG @95%
 ** SIG @90%

APPENDIX 'D'
QUESTIONNAIRE

Name of organization

Address

Date

SECTION A

1. Which of the following best describes your activities?

- a. Environmental**
- b. Health**
- c. Relief/disaster management**
- d. Education**
- e. Nutrition**
- f. Housing**
- g. Other specify**

2. When was your organization started?

3. How many employees do you have?

4. How many volunteers do you have?

5. With how many organisations are you affiliated?

**6. Please indicate the percentage of your funding from any of the these sources
(mark as appropriate)**

- a. donations from individuals**
- b. government subsidy**
- c. contribution from members**
- d. fund-raising projects**
- e. Non- Governmental organisations**
- f. Corporations**
- g. Other specify**

**SECTION B PROJECT PERFORMANCE (Reference to your most recently
completed project will be essential in answering the following questions)**

7. What is the name of your most recent project?

8. What type of project was it?

- a. Environmental**
- b. Health**
- c. Relief/disaster management**
- d. Education**
- e. Nutrition**
- f. Housing**

g. Other specify

9. How many people were involved?

10. Was a project manager appointed?

11. Which type of organisational method was used in the execution of the project?

a. Departmental

b. Pure project

c. Matrix

d. Task Force

e. Other specify

12. To what degree of precision were the specifications or targets to be achieved?

a) 100%

b) 90 - 100%

c) 80 -90%

d) 70 -80%

e) 50 - 70%

13. Did the project have a specific time duration?(yes/No)

(If 'yes',go to 14 , if 'no', go to 18)

14. How did you arrive at this time estimate ?

15. What was the project's expected completion time?

16. What was the actual completion time?

17. (a) Was there any time overrun (Yes/No)

(b) if yes, please indicate which of the following best describes the reasons for time overrun?(tick one)

	least important	very important
i. Problems associated with lack of finance		1 2 3 4 5
ii. project scope		1 2 3 4 5
iii. deficiencies in initial estimates	1 2 3 4 5	
iv. other specify		1 2 3 4 5

18. Did the project have an estimated completion cost?(yes/No)

(If yes go to '19', if 'no' go to '23')

19. How did you arrive at this estimate?

20. What was the estimated completion cost?

21. What was the actual completion cost?

22. (a) Was there any cost overrun(yes/No)

(b) If yes, what were the reasons for cost overruns?

	least important	very important
i. Fluctuation in prices of material		1 2 3 4 5
ii. deficiencies in initial estimates	1 2 3 4 5	
iii. delays in implementation	1 2 3 4 5	
iv. increase in labour costs		1 2 3 4 5
v. other specify		1 2 3 4 5

23. How was the project conceived/identified?

24. Did you identify the interested parties?

a) users of results

b) possible contributors

c) people who may have to authorize the project etc.,

25. Did you identify possible areas of resistance/cooperation with interested parties?

26. Were relevant strategies developed to handle these situations?

27. Was a contact person or body identified within the interested parties?

28. Were the project scope and boundaries defined and set?

29. Were the deliverable tangible end-items/objectives spelt out?

30. Did the end-items or deliverables have quantifiable or measurable objectives?

31. Were appropriate measuring devices for these objectives developed?

32. Were these objectives evaluated at the end of the project?

33. Were the necessary resources/equipment identified in advance?

34. How certain were you of the availability of the following?

	most certain			not certain	
a. time	1	2	3	4	5
b. funds	1	2	3	4	5
c. materials and equipment	1	2	3	4	5
d. personnel	1	2	3	4	5
e. other specify	1	2	3	4	5

35. What was your level of constraint in the following items?

	unlimited			limited	
a. time	1	2	3	4	5
b. funds	1	2	3	4	5
c. materials and equipment	1	2	3	4	5
d. personnel	1	2	3	4	5

e. other specify 1 2 3 4 5

36. How did you schedule the project?

a. not scheduled

b. scheduled

(If your answer is 'a' go to 37, if it is 'b' go to 47).

SECTION C (NATURE OF PROJECT)

37. Are your objectives formally stated and defined?

38. Did the project have identifiable work packages?

39. Did each work package have identifiable tasks or activities?

40. Is it possible to list all the activities in each work package?

41. Is it possible to allocate time to each activity?

42. Is it possible to allocate cost for each activity?

43. Did these activities follow a particular sequence?

44. Did the activities have a dependency relationship?

45. Are all the activities within the control of the organization?

46. Why have you not prepared a schedule?

	Most important			least important	
a. too tedious and time consuming	1	2	3	4	5
b. events are uncertain and unpredictable	1	2	3	4	5
c. too rigid and difficult to follow	1	2	3	4	5
d. not aware of scheduling techniques	1	2	3	4	5
e. other specify	1	2	3	4	5

(STOP)

SECTION C

(THE EXTEND OF SCHEDULING)

47. Did you prepare work breakdown structure?
48. Did you list all your activities in each work package?
49. Did you allocate cost to each activity?
50. Did you allocate time to each activity?
51. Did each activity have a start and finish date?
52. Did you sequence the various activities time wise?
53. Did you determine the dependency relationships(precedence and concurrence) among the activities?
54. Did you determine the critical activities?
55. Did you draw any bar graphs or charts?
56. Did you set any milestones?
57. Did you reconcile schedule estimates with available resources?
58. Did you formally assign responsibility for specified duties to particular individuals?.
59. Were contingencies planned and budgeted for in case the project was thrown out of schedule?
60. Did you determine the reporting stages?
61. Were minutes taken and records kept.
62. Who is responsible for scheduling in your organization?
63. Did you establish procedures for feedback to allow for timely updating.
64. Did you prepare a master schedule?

SECTION D

(SPECIFIC TOOLS USED AND THEIR ASSESSMENT)

65. Do you use any project management scheduling tools(Yes/No)?

(if yes 'go' to 67 if 'no' go to 66)

66. What scheduling techniques or tools do you use?

67. Which of the following scheduling techniques did you use?

- a. Gantt Chart
- b. Critical Path Method (C.P.M.)
- c. Project Evaluation and Review Technique (P.E.R.T)
- d. Full Wall scheduling
- e. Work Breakdown Structure (W.B.S)
- f. Others specify

(SCHEDULE ASSESSMENT)

68. Do what extend did you follow or use your schedule?

- a. with modification
- b. without any modification

(If 'a' go to 69, if 'b' go to 72)

69. How many times did you modify your schedule?

- a. 0 to 5
- b. 5 to 10
- c. 10 to 15
- d. 15 to 20

e. over 20

71. Which of the following describes the reason for modification?

- | | very
important | least
important | |
|---|-------------------|--------------------|--------------------------|
| 1 2 3 4 5 | | | a. Events vary very fast |
| b. deficiencies in initial estimates | 1 2 3 4 5 | | |
| c. It did not have sufficient detail | 1 2 3 4 5 | | |
| d. other projects within the organization interfered with it. | 1 2 3 4 5 | | |
| e. communications problems | 1 2 3 4 5 | | |
| f. Others specify | 1 2 3 4 5 | | |

72. Which of the following sums up your overall rating of a schedule in managing the following?

useful	useful	extremely	not	
				a. managing and allocation of time
				1 2 3 4 5
				b. in controlling expenditure.
				1 2 3 4 5
				c. Monitoring and supervision
				1 2 3 4 5
				d. Allocation of resources (manpower, equipment and materials)
				1 2 3 4 5
				e. in evaluating the work in progress
				1 2 3 4 5
				f. other specify

END OF INTERVIEW

Thank you very much for agreeing to participate in this interview.

APPENDIX 'E'
LIST OF PROJECTS

A. Paired Projects

1. Sports (3)
2. Fund raising (4)
3. Jamboree (1)
4. Festivals (2)
5. Conferences (2)
6. Shows (2)
7. Performing arts (1)
8. Field day (2)

Total of paired projects 34

B. Non Paired projects

1. Link project (Canada)
2. Training program (Kenya)
3. Recreation (Canada)
4. symposium (Kenya)
5. car race (Kenya)
6. contest (Canada)

Total un paired projects 6

Total sample 40.

END

'20-07-94

FIN