

**The Effects of State's Construction Procurement Policy
Implementation on the Outcome of Local Construction
Projects:
The Libyan Case**

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*To the Wonder-women of my world
to my:*

Mother, Wife & late Grandmother

Table of Contents

Chapter One:

1.0 Introduction.....	1
1.1 Realisation and definition of the research problem.....	2
1.1.1 Research problem similarity in previous literature.....	3
1.2 Research initial propositions.....	5
1.3 Research aims and objectives.....	6
1.3.1 General and specific objectives.....	6
1.4 Significance and need of the research.....	7
1.5 The conceptual framework of the research.....	8
1.6 Scope of the Study.....	9
1.6.1 Limitations of the study.....	9
1.7 Research Methodology.....	11
1.8 Organisation and Logical Sequence of the Study.....	11

Chapter Two

Research Element (One)

Understanding public policy and public policy making in the context of construction procurement

2.0 A system approach understanding the public policy making process in the context of construction procurement.....	16
2.1 The system concept.....	16
2.1.1 The framework of the system theory.....	17
2.1.2 System theory key concepts.....	18
2.1.3 Why a system approach is adopted?	20
2.1.4 A system model of analysing the public policy making process.....	21
2.1.4.1 The typology of policy analysis.....	21
2.1.4.2 Analysis for policy.....	22
2.1.4.3 Policy monitoring and evaluation.....	23
2.1.4.4 Analysis of policy.....	24
2.1.4.5 Assumptions about 'policy' and 'policy-making'.....	25

2.1.5 What is public policy?	28
2.1.6 The system of public policy process.....	29
2.1.7 The use of Soft System Methodology (SSM) in the development of a conceptual model understanding public policy in the context of construction procurement.....	32
2.2 A system model of the public policy making process in the context of construction procurement.....	37
2.2.1 Input sub-systems.....	39
2.2.2 Mediating variables sub-system.....	41
2.2.3 The political sub-system.....	42
2.2.4 Policy output sub-system.....	42
2.2.5 Policy Outcomes/Impacts Sub-system.....	43
2.2.6 Accelerators and decelerators sub-system.....	47
2.2.7 System Feedback.....	48
2.3 A conceptual understanding of public sector capacity in the assessment of procuring municipal construction projects.....	49
2.3.1 Defining the scope of the local public sector (Municipal).....	50
2.3.2 Defining capacity of the local public sector (Municipal).....	52
2.4 Public policy implementation.....	63
2.5 Summary.....	65

Chapter Three

Research Element (Two)

Public Sector Construction Procurement

3.0 Introduction.....	69
3.1 Definitions of the procurement term.....	70
3.2 The Development of procurement.....	74
3.3 Procurement decisions to be made by the Client.....	76
3.3.1 The client's requirements.....	78
3.3.2 Project characteristics.....	79
3.3.3 Project environment.....	79
3.3.4 Client's requirements constraints.....	81
3.3.5 Other factors constraining the client's requirements.....	82

3.3.6 Project specific risks.....	82
3.4 Procurement criteria.....	84
3.5 The influence of culture, trust and institution on procurement.....	86
3.6 The conceptualisation of procurement.....	89
3.7 Evolution of the procurement methods.....	90
3.8 Different procurement methods.....	91
3.9 Procurement as a policy instrument.....	96
3.10 Why is procurement important to public clients?	101
3.10.1 The role of the local public Client.....	101
3.11 Summary.....	105

Chapter Four

Research Element (Three)

Public Sector Construction Projects Outcome

4.0 Introduction.....	108
4.1 Towards a theoretical framework.....	109
4.1.1 Behaviour.....	111
4.1.2 Performance.....	113
4.1.2.1 Performance in public construction projects.....	116
4.2 B-P-O in construction project procurement.....	119
4.3 Public construction projects success.....	122
4.3.1 Success satisfaction relationship.....	123
4.4 Libyan public construction project outcome evaluation.....	124
4.5 Summary.....	125

Chapter Five

The Libyan Construction Environment

5.0 Introduction.....	129
5.1 General information.....	129
5.1.1 The political system in Libya.....	129
5.1.2 The Libyan politics and administration.....	133
5.1.3 The Libyan economy.....	134
5.2 The construction industry in Libya.....	141

5.2.1 The Libyan public client.....	144
5.2.2 Policies and strategies of the construction industry in Libya.....	146
5.2.3 Public sector and municipal construction procurement in Libya.....	149
5.2.3.1 Traditional tendering in Libya.....	149
5.2.3.2 Single source tendering systems.....	152
5.3 The procurement policy making process of municipal construction projects in Libya.....	153
5.3.1 Input sub-systems.....	156
5.3.2 Mediating variables sub-system.....	158
5.3.3 The political sub-system.....	159
5.3.4 Policy output sub-system.....	160
5.3.5 Policy outcomes/impacts sub-system.....	161
5.4 The Libyan Construction Culture, and its effect on State Construction Procurement Policy making.....	162
5.4 Summary.....	169

Chapter Six

Justification of Approaches and Methodologies of the Research

6.0 Introduction.....	172
6.1 Research methodology.....	172
6.2 Types of research methodology	173
6.2.1 Quantitative methods.....	173
6.2.2 Qualitative methods.....	174
6.3 Research design.....	175
6.4 Why choose the case study strategy in particular?	176
6.4.1 The case study approach: it's suitability and relevance.....	177
6.4.2 Case study selection criteria.....	182
6.4.3 Sources of evidence in the case studies.....	186
6.4.3.1 Documentation.....	186
6.4.3.2 Questionnaires and Interviews.....	196
6.4.3.3 Case study protocol.....	200
6.4.3.4 The helping hands.....	200
6.4.4 Case study operational plan.....	201

6.4.4.1 Review of documents.....	202
6.4.4.2 Questionnaires.....	203
6.4.4.3 Interviews.....	204
6.5 Summary.....	205

Chapter Seven

Intra-Case Analysis

7.0 Introduction.....	206
7.1 Intra-Case Study analysis strategy.....	206
7.1.1 The Propositions.....	207
7.2 Questionnaires' results.....	208
7.3 The Semi-structured Interviews.....	217
7.4 The case-study projects.....	218
7.5 <u>Project A</u>	219
7.5.1 Project participating parties.....	222
7.5.2 Contractual arrangements.....	223
7.5.3 The main work components of the project.....	224
7.5.4 Findings and analysis of Case Study A.....	225
7.5.4.1 Problems encountered in Project A.....	225
7.5.4.2 Categorised analysis of problems encountered in Project A.....	231
7.5.5 The semi-structured interview results and analysis.....	235
7.5.6 Summary and Conclusion of Case Study A.....	245
7.6 <u>Project B</u>	247
7.6.1 Project participating parties.....	251
7.6.2 Contractual arrangements.....	252
7.6.3 The main work components of the project.....	253
7.6.4 Findings and analysis of Case Study B.....	257
7.6.4.1 Problems encountered in Project B.....	257
7.6.4.2 Categorised analysis of problems encountered in Project B.....	260
7.6.5 The semi-structured interview results and analysis.....	266
7.6.6 Summary and Conclusion of Case Study B.....	275
7.7 <u>Project C</u>	278
7.7.1 Project participating parties.....	279

8.1.3.3.1.2 Problems related to contractual documents.....	323
8.1.3.3.2 Contractor's responsibility for site inspection.....	324
8.1.3.3.3 Method of measurement.....	325
8.1.3.3.4 Evaluation of change orders cost.....	326
8.1.3.3.5 Warranty and maintenance.....	327
8.1.3.3.6 Changes and modifications.....	328
8.1.3.3.7 Delay in disbursement of contractor's invoices.....	332
8.1.3.3.8 Unclear responsibilities and authorities of concerned parties.....	333
8.1.3.3.9 Lack of a spirit of confidence and co-operation.....	335
8.1.3.3.10 Poor capabilities of parties concerned.....	336
8.1.3.3.11 Lack of an effective communications system.....	340
8.1.3.3.12 Inaccuracy in contractor's project cost estimation.....	341
8.1.3.3.13 Long time interval between, bid submission and commencement of works.....	342
8.1.3.3.14 Unreasonable construction period.....	344
8.1.3.3.15 Lack of adequate funds.....	345
8.1.3.4 Problems encountered the hand-over phase.....	346
8.2 Analytical generalisations arising from cross-case analysis.....	348
8.3 Conclusion.....	355

Chapter Nine

Conclusions and Recommendations

9.0 Introduction.....	357
9.1 The Objectives of the Research.....	357
9.2 Reflections on research objectives and propositions.....	358
9.2.1 <i>Research Element One:</i> Understanding public policy and public policy-making in the context of construction procurement.....	359
9.2.2 <i>Research Element Two:</i> Public sector construction procurement.....	361
9.2.3 <i>Research element Three:</i> Public sector construction projects outcome.....	363
9.3 Specific Recommendations to the Libyan Public Construction Procurement Policy.....	364

9.3.1 Transparency in the Libyan construction procurement policy.....	365
9.3.2 Enhancing the communication process in public construction procurement policy making.....	366
9.3.3 The need for a comprehensive State guidelines and codes of practice in procuring public construction projects.....	367
9.3.4 The need for vocational education and training, relating to construction procurement.....	368
9.4 Further research.....	370
Bibliography.....	372
Appendix A	
Appendix B	
Appendix C	

List of Figures

Figure (1.1) A simplified illustration of the research framework.....	8
Figure (1.2) Overall Organisation and Logical Sequence of the Thesis.....	14
Figure (2.0) Chapter Two Knowledge Building Flowchart.....	15
Figure (2.1) A generic system framework.....	17
Figure (2.2) Typology of policy Analysis.....	22
Figure (2.3) Schematic presentation of process perspective on policy.....	30
Figure (2.4) Modified system model of the Policy Process.....	30
Figure (2.5) A System Model of Policy Making Process in the Context of Construction Procurement of Public Projects.....	38
Figure (2.6) A Conceptual Understanding Model of Public Sector Capacity Procuring Municipal Construction Projects.....	59
Figure (3.0) Chapter Three Knowledge Building Flowchart.....	68
Figure (3.1) Contract selection based on mandatory requirements form previous experience or from previous experience with similar projects.....	76
Figure (3.2). Procurement selection based on strategic assessment of procurement options.....	77
Figure (3.3). Procurement selection based on risk analysis and management.....	78
Figure (3.4). The surrounding supra-system environment forces acting on the project.....	80
Figure (3.5) Key steps of local public client's in the public construction procurement process.....	104
Figure (4.0) Chapter Four Knowledge Building Flowchart.....	106
Figure (4.1) Behaviour-Performance-Outcome (B-P-O) Cycle.....	110
Figure (4.2) A diagrammatic representation of individual/organisation Behaviour to Performance.....	111
Figure (4.3) Project procurement process.....	120
Figure (5.0) Chapter Five Knowledge Building Flowchart.....	128
Figure (5.1) The Decision-making process in Libya: "Power to the People"	132
Figure (5.2) Contractual values of construction projects in Libya.....	143
Fig. (5.3) The possible municipal clients in Libya.....	145

Figure (5.4) Municipal clients public projects' contracting sequence.....	146
Figure (5.5) A diagrammatic descriptive understanding of the current sequence of the implementation of a generic municipal project in Libya.....	155
Figure (6.1) Multiple case study method replication.....	181
Figure (6.2) Taxonomy of case studies data.....	194
Figure (6.3) Case study information sources triangulation.....	202
Figure (7.1) Setting-out and general layout of the Project A. (Al- Talheeya Reservoir).....	221
Figure (7.2) Project A participating parties' relations	224
Figure (7.3a-c) Houses Models of Case Study B.....	249
Figure (7.4) The front view of housing units (Model 3 and 4)	250
Figure (7.5) The rear view of housing units (Model 3 and 4)	250
Figure (7.6) Project B participating parties' relations.....	252
Figure (7.7) Al-wahda Bank (Al Souq Branch)	257
Figure (7.8) Project C participating parties' relations.....	258
Figure (7.9) Amending foundations problems.....	260
Figure (8.1) Problems encountered in all stages and phases of the Case Studies (A, B and C).....	349

List of Tables

Table (5.1) Foreign Assistance Allocation to Libya During 1952-1960.....	135
Table (5.2) Allocation of Development Plans, 1976-80 and 1981-85	141
Table (6.1) Difference in emphasis of qualitative versus quantitative methods...	173
Table (6.2) A schematic comparison of case study with experimental and survey approaches.....	167
Table (6.3) Selected Case Studies list.....	185
Table (6.4) Relating the Questionnaire and the Semi-structured Interview questions to research propositions.....	199
Table (7.1) Questionnaire results for all Case Studies.....	210

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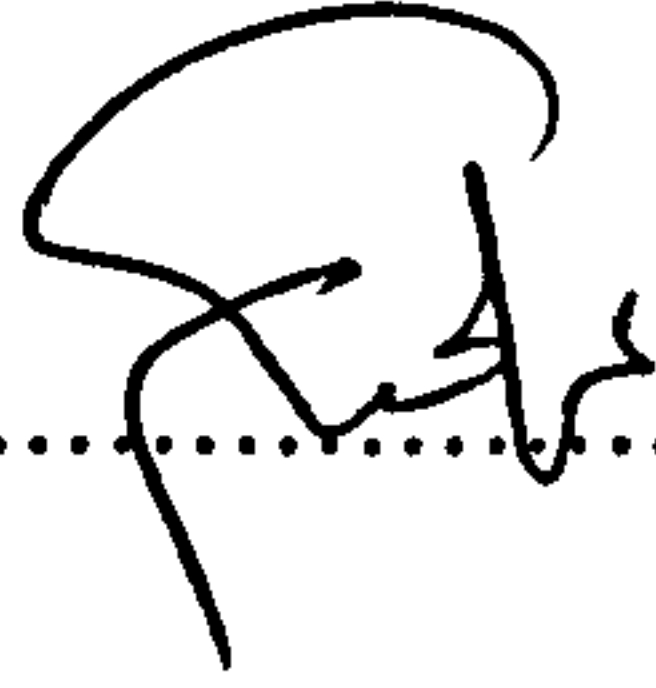
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DECLARATION

I declare that the research contained in this thesis was carried out by me. It has not been previously submitted to this or any other Institution for the award of a degree of any other qualification.

Atif El-Hasia.

Signature.....

A handwritten signature in black ink, appearing to be 'Atif El-Hasia', written over a dotted line.

ABSTRACT

The successful execution of public construction projects and keeping them within estimated cost and prescribed schedules, quality and satisfying policy goals depend on a methodology that requires sound engineering and managerial judgment. This problem is more evident in the public traditional or adversarial type of contracts in which the contract is awarded to the lowest bidder. Construction procurement policy of public projects has been utilised by many countries as an important tool for achieving economic, social, political and other objectives in developing all aspects of change in the construction industry.

Although the construction industry in Libya has suffered ever since the UN sanctions, recent events in the region coupled with the restructuring of the economy, lifting the sanctions and re-establishing new relations with the developed world and global free trade organisations, and attracting foreign investments are expected to yield an unprecedented growth in the construction activities. The Libyan infrastructure is in desperate need for development projects in many areas, especially in the fields of water collection and distribution, tourism and housing. As a result, an unprecedented number of projects are currently under planning and contract awarding stages, which poses as a potentially effective opportunity to drive for change in the construction industry and beyond.

This research is an insight of the issue of how construction procurement policies are made and how they affect the outcome of a local public construction project in the current Libyan setting. This was achieved by dividing the first theoretical part in to three pillars or elements of research concerned with, *Public policy* in the context of construction procurement; *Public Sector* construction procurement and *Public Sector Projects Outcome* to build a solid platform of a conceptual knowledge before embarking on a case study investigation to give the required realistic background to the scientific research.

Three case studies were selected based upon criteria drawn from the literature review. An intra and cross case study analysis were carried out based mainly on projects' a review and analysis of projects' documentation, but supported by questionnaires and an interviews for each project case study, which enabled a process of contrast comparison, replication and interpretation of findings.

It was found that public construction procurement policy in the Libyan local context lacked clarity in defining policy goals. Moreover, construction procurement is perceived as a contract strategy or an arrangement, where by emphasis on the technical aspect was far greater than emphasis on other related policy as a drive-for-change aspects. The policy of restricting the form of public projects contracts made for hard to local public clients to embrace other procurement systems, which might have been more beneficial to the outcome of projects in terms of satisfying policy goals. It appeared that State bodies are more concerned with the administrative side of these projects. Technical and project managerial aspects are usually left for their consultants, either public or private. This caused a serious detachment of control and therefore difficulties and shortcomings in using the construction procurement of local public projects as a policy tool.

The main findings of the analysis were based on taxonomy of documentary data collected in the case studies, which assisted in generating conclusions linking back to the theory of the three research elements mentioned above. Finally recommendations along the lines of enhancing transparency, the communication process, the need for a comprehensive State guidelines and the need for vocational education and training to participating State bodies were presented as an attempt to inform and possibly assist academics and Libyan policy makers to achieve positive and fruitful goals in local construction projects through good construction procurement policy making and implementation.

Chapter One

Introduction

Chapter One

1.0 Introduction

The successful execution of construction projects and keeping them within estimated cost, prescribed schedules, quality and satisfying State policy goals depend on a methodology that requires sound engineering judgment. To the dislike of public owners, contractors and consultants, however, many projects experience extensive delays and thereby exceed initial time and cost estimates. This problem is more evident in the traditional or adversarial type of contracts in which the contract is awarded to the lowest bidder, the awarding strategy of the majority of public projects in developing countries including Libya.

Although the construction industry in Libya has suffered ever since the UN sanctions, recent events in the region coupled with the restructuring of the economy, lifting the sanctions and re-establishing new relations with the developed world and global free trade organisations, and attracting foreign investments are expected to yield an unprecedented growth in the construction activities. The Libyan infrastructure is in desperate need for development projects in many areas, especially in the fields of water collection and distribution, tourism and housing. As a result, an unprecedented number of projects are currently under planning and contract awarding stages.

Unfortunately, the construction industry in Libya is not adequately prepared for the policies implementation and project management problems accompanying the anticipated boom in construction activities and the increasing complexity of projects. Recent findings by Libyan State bodies like the 2003 GPC (The General Peoples Congress) Report on Public Housing, the MFS (The Monitoring and Follow-up Secretariat) 2003 Public Work Monitoring Report and civil engineering and construction researchers in the Libyan universities and elsewhere namely Benkrima, (2001), Omar (2003) revealed that delays in public projects in Libya are extensive and worthy of further rigorous investigation of the circumstances affecting such problematic situation. It is imperative to understand the underlying causes of such delays for any corrective actions to be effective in enhancing performance and ultimately the outcome of these public projects.

This research is an insight of the issue of how construction procurement policies are made and how they affect the outcome of a local public construction project in the Libyan setting. This was achieved by dividing the first part in to three pillars or elements to build a solid platform of knowledge before embarking on a case study investigation to give the required realistic background to the scientific research.

The author's knowledge of the research problem was based on many aspects of the construction industry mindset and practice in Libya due to the close contact and experience of designing and supervising some public projects before taking-on the long and sometimes tiring task of producing this study, which may contribute to help policy-makers to build a healthy and prosperous construction industry.

1.1 Realisation and definition of the research problem

The first step in any research is to establish a firm research focus to which the researcher can refer over the course of study of a complex phenomenon or object. The researcher establishes the focus of the study by forming questions about the situation or problem to be studied and determining a purpose for the study.

Infrastructure development is one of the key pillars of economic growth in any given country (Kessides 2004 and *World Development Report 2004 by the World Bank*). Research shows that growth is one of the most effective ways of reducing poverty in any society. Therefore providing a developing country with good infrastructure along with other drivers of growth like better health and education services, a positive investment climate, good governance that respects property rights and is corruption free is central to the building of any country.

Given the comprehensive development that was achieved in the 1970's and 1980's by the Libyan State, the achievements that were realised, and the large number of projects that were completed over the relatively short period, it was natural to find some negative aspects that contributed to problems in construction and management of such sensitive projects and in the short and long term of the public construction industry.

There is a basic similarity between Libya and The Kingdom of Saudi Arabia, which is reflected in the time frame both countries endeavoured in improving the infrastructure

in the 1970's and the 1980's, which the following remark by (A. Al-Ashika, 1996) is relevant to both countries. Al-Ashika stated that

“ There is a very important issue here, which cannot be considered as an ordinary matter. The execution of those projects was accompanied by negligence on the part of the public sector departments that own those projects of an aspect that has a direct impact on the success of the projects, namely effective project management. There was no clear definition of the concept of project management and the role it can play.”

The Monitoring and Follow-up Secretariat (MFS) 2003 Public Work Monitoring Report stated that “The omission by public sector departments of the project management aspect, and the consequent negative effects have affected the performance of those projects. It seriously hindered the economic growth of the country, this was mainly inherited in the 1990's up-to to present time from the poorly managed boom of public construction through the 1970's and 80's State development plans, where public construction projects were and still way beyond acceptable limits of time and cost overruns.”

The realisation of the importance of choosing the suitable procurement policy and ultimately the path or method in those projects was minimum, even the basic thinking of the purpose and the aim of every infrastructure project and it's suitability to the local public and environment was ignored in many cases. Given the development needs of the ever deteriorating infrastructure of Libya in general and the city of Benghazi in particular and the complex public nature of these problematic publicly owned projects, one can not escape the national and moral duty of investigating the causes of such deterioration and the continued mis-management of public money.

In any given State, policy is an envision of the thinking of the political system. It is imperative to any public related studies to understand the process of forming a policy, within its specific environment. In the case of Libya any policy is echoed in laws and regulations governing the implementation of public construction projects, either national or local.

1.1.1 Research problem similarity in previous literature

One has to realise the fact that any research topic has academic and real-live practice roots in which it feeds on, and branches that follow its growth by neither omitting nor underestimating the work of others who embarked on researching any similar or

related areas. In the following section we review some of the literature which shed light on the issue of under performance in public construction projects in the developing countries and their main conclusions.

Ogunlana *et al.* (1996) studied the delays in building project in Thailand, as an example of developing economies. They concluded that the problems of the construction industry in developing economies, can be nested in three layers:

1. problem of shortages or inadequacies in industry infrastructure, mainly supply of resources;
2. problems caused by clients and consultants; and
3. problems caused by incompetence of contractors.

Kumaraswamy *et al.* (2000) surveyed the causes of construction delays in Hong Kong as seen by public clients, contractors and consultants, and examined the factors affecting productivity. The survey revealed differences in perceptions of the relative significance of factors between the three groups, indicative of their experiences, possible prejudices and lack of effective communication.

And in Africa, Mansfield and Ugwu (1998) studied the causes of delay and cost overrun in construction projects in Nigeria. The results showed that the most important factors are financing and payment for completed works, poor contract management, changes in site conditions, shortage of material, and improper planning.

Assaf *et al.* (1995) studied the causes of delay in large building construction projects in Saudi Arabia. The most important causes of delay included approval of shop drawings, delays in payments to contractors and the resulting cash problems during construction, design changes, conflicts in work schedules of subcontractors, slow decision making and executive bureaucracy in the public owners' organisations, design errors, labour shortage and inadequate labour skills.

Cited in Odeh (2002) where Mezher *et al.* (2000) conducted a survey of the causes of delays in the construction industry in Lebanon from the viewpoint of owners, contractors and architectural/engineering firms. It was found that owners had more concerns with regard to financial issues, contractors regarded contractual relationships

the most important, while consultants considered project management issues to be the most important causes of delays.

Battaineh (2000) evaluated the progress reports of 164 building and 28 highway projects constructed during the period 1996-1999 in Jordan. The results indicate that delays are extensive: the average ratio of actual completion time to the planned contract duration is 160.5% for road projects and 120.3% for building projects.

Almost all of the aforementioned researches in the developing world construction seem to revolve around a profoundly related and largely un-mentioned term, which is *construction procurement*. All of these different researchers in their different countries seem to agree literally or contextually at least on one issue, that there is a bigger and higher force which dictates and controls all aspects of any public construction project, which we believe is the *State's Policy* behind the regulations controlling the actual implementation of policy within the period of conception to completion of public projects.

1.2 Research initial propositions

Any researcher embarks on the task of an investigatory research has a pre-conceived ideas and views of the subject in question, which generate an initial propositions, which remains to be proven creditable or not.

Yin (1994) identified propositions as a major component of research design that is important for case studies.

As a result of the author's previous experience in dealing with the local public sector in Libya and in the city of Benghazi in particular a number of initial propositions were formed and they can be summarised as follows:

- The Libyan infrastructure is in desperate need of development, which lies in the hand of policy-makers who are influenced by the rising problem to balance the supply and demand of the infrastructural projects nationally and locally.
- The Libyan construction industry is rigidly regulated and needs flexibility.
- The contractual arrangements of many public projects are highly and strictly regulated.
- There is no clarity in the State's construction industry policies goals and implementation approaches.

- Performances of local construction projects are unsatisfactory.
- The State's general criteria of the outcome of local public construction projects is not clearly defined to the public clients and contractors.
- Emphasis on projects completion is greater than emphasis on the quality of the projects' outcome.
- Interferences of powerful State's bodies affect the outcome of local construction projects.

1.3 Research aims and objectives

Firstly the objective of this study is to evidence the aforementioned propositions by investigating the existing State's policy and practices of the construction of the local projects in the city of Benghazi, and critically focus on the State's policy towards local construction procurement of projects, and secondly investigating whether there are any explicit policies dealing with this issue, also evaluating the current State's strategies concerning reaching the intended policy goals through construction procurement and the effect on the outcome of these projects in terms of their success in reaching the intended developmental functional and political goals if any.

The main aim of this study is firstly to explore the effect of construction procurement policy on the outcome of public projects, and secondly to identify the linkage of this policy and the public construction, and whether public policy can be implemented via construction procurement or its underutilised as a potential tool to drive for change. Although the aforementioned aims are general, the emphasis of this study is on the Libyan public construction context.

1.3.1 General and specific objectives

The objectives of the study can be either general to the subject of research or to the context of the local construction in Benghazi-Libya, and they are:

- To develop a conceptual understanding of the public policy-making process in general and in the context of the construction procurement in particular using system thinking.
- To critically review the existing literature on construction procurement and the issue of policy implementation through procurement systems and its

significance on the local construction projects, and thereafter to develop a working definition of *State Procurement Policy* for the purpose of this study.

- Characterise the Libyan local construction projects' criteria to generate an understanding of the effect of the State's policies on these projects in terms of time, cost, and quality, and policy goals satisfaction.
- To reach an overall understanding of the linkage between the State's policy-making and implementation through construction procurement and its effects on the tangible and intangible outcomes of the public construction projects.

1.4 Significance and need for the research

In the thirty three years since the start of major construction in Libya which was accompanied with the lack of attention and consideration of the infrastructure management accompanied by the effect of the UN sanctions and rapid changing of political ideologies and public policies in the last five years has resulted in little research on the issue of the effect of State's policies on all walks of live in Libya. The construction industry is no exception, where there were limited attempts to follow specific State's policies during there implementation and the reaching of their goals within the public domain. This has led to the lack of feedback to policy-makers which hindered their understanding of the contemporary problems caused by a blurring picture of the reality in the construction industry.

The fact that State's public departments have not properly reported or even realised the problems encountered in their local projects life cycle and the effects of implementing specific policies, contributed in forming an inconsiderate culture of public clients, where there was no motive or incentive to highlight these problems and making them more accessible to the State's regulating bodies.

A need to understand the worth and relevance of a certain State's construction policy is paramount to achieve developmental goals in building any economy. This need has to be satisfied by a comprehensive review of the current situation by covering all aspects of policy-making, construction procurement and the outcome of public projects.

The study results will help to assess the extent of the problems encountered in the local construction projects which relate to the State's policies. Also it will put forward some suggestions to the policy-makers to make more sense of the problems which are

not clearly realised and analysed when approached by a strictly project level prospective.

1.5 The conceptual framework of the research

Construction procurement is an element of policy which can be implicit, and it forms and evolves in the decision making process depending on the setting and the surrounding environment. In a public client the decision is part of a policy, which is formed, legislated, and implemented in the State environment. Looking at the State policy making process as a system, with its inputs and outputs, allows us to have a whole and comprehensive picture of the process.

Arrowsmith (2004) argues that traditionally, governments used their extensive power to use procurement as an instrument to achieve variety of objectives. Sometimes these objectives can be unrelated to the original objectives that were formally targeted with construction procurement.

Any country's developmental objectives require an extensive knowledge of the surrounding environment, and that necessitated the search for a specific approach as a framework for the study.

The study was built on three major elements or pillars of a critically constructed literature review followed by a summary in each Chapter and they are:

Research Element One: Understanding public policy and public policy-making.

Research Element Two: Public sector construction procurement.

Research element Three: Public sector construction projects outcome.

These three elements of the study fed the overall knowledge of the issue and made it easier to construct a comprehensive understanding of the current state of the local construction procurement in Libya after reviewing the environmental and surrounding aspects of the Libyan setting. A simplified illustration of the framework is presented in figure (1.1).

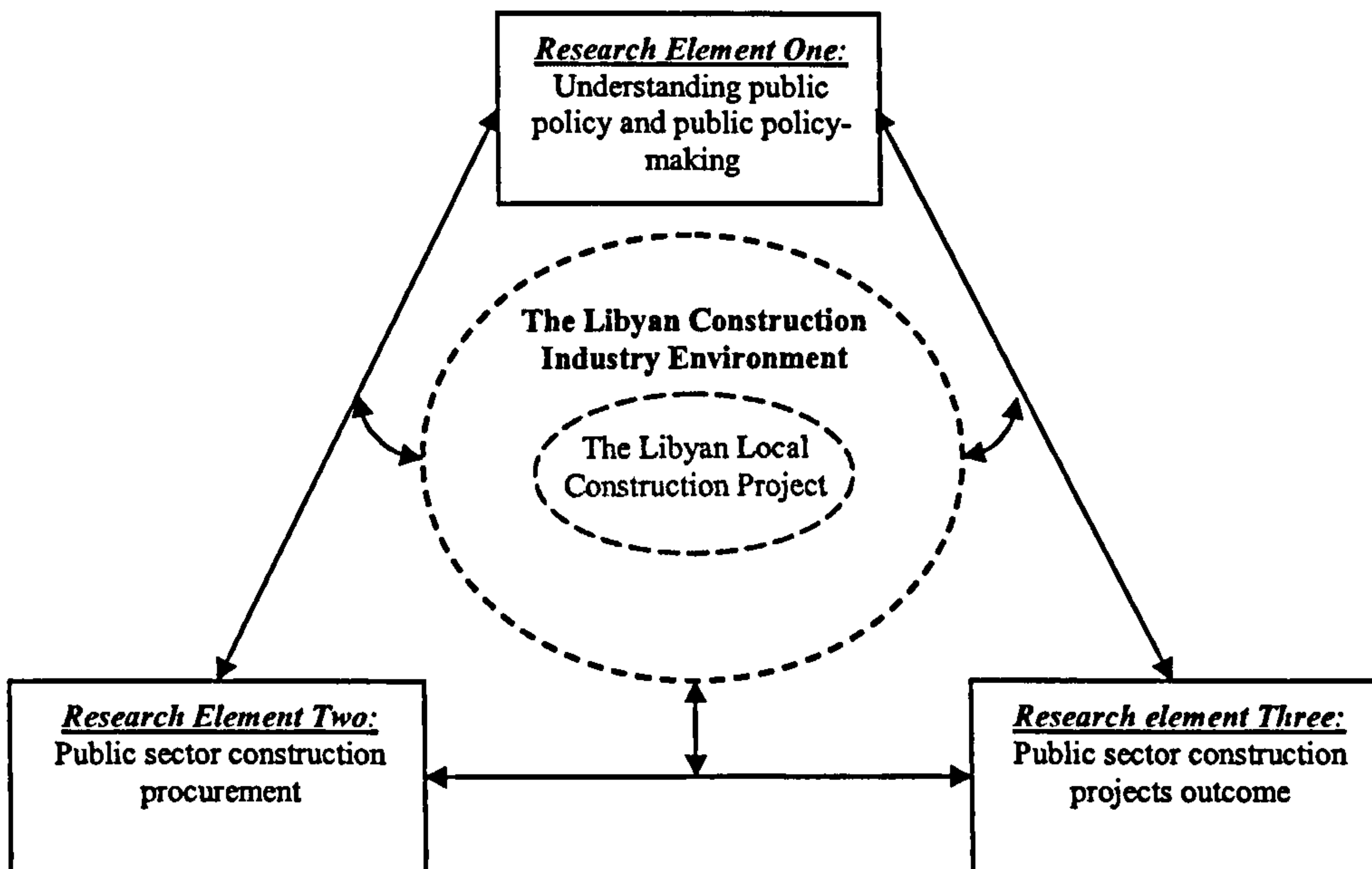


Figure 1.1 A simplified illustration of the research framework

1.6 Scope of the Study

The study was conducted in a way which ensured the specificness of the issue by going from the general issue of public policy, construction procurement and projects outcome to a more specific insight in the Libyan context. These issues were put into perspective in the Libyan context when the construction environment in Libya was reviewed and studied. The context in which this study has been investigated was envisaged in the choice of the case study projects, where the projects reflected the predefined criteria to be relevant to the subject in question. The study covered the State's policies related problems encountered in the procurement of Libyan local/municipal construction projects with reference to the city of Benghazi, which faced some limitations.

1.6.1 Limitations of the study

Political constraints: Due to the personal and 'logical' concern of the author, the ideological sources and roots of the general Libyan policy were not discussed in a bold and blatant critical manner, although a need to such critique is important. But this might happen in a future research by expanding the subject to higher levels within the political system in Libya.

Socio economic constraints: The outcome of the projects can also be evaluated against the socio economic satisfaction of the public, however in our study it was not investigated in the street level where any effective policy should be rooted. That was due to the lack of credible data or State's reports and studies on the socio economic effect in public construction in Libya. This shortcoming of our study was compensated by a concentration of the subject on the effect of the policy on construction procurement related issues alone.

Case study constraints: There were a number of limitation constraints faced in carrying out the case studies and they are:

- Although the chosen public clients expressed their cooperation they did not allow the specific referencing to personnel or correspondences, where it was agreed to reference them as an anonymous person or correspondence without mentioning names, reference numbers or specific dates.
- The time period of interviewing the public projects' managers of the case studies was limited and a follow-up interviews were not liked by the interviewees, so it exerted some pressure on conducting the interview as effectively as possible, by exploiting the approximately one hour interview.
- Documentation of the public clients was to say the least basic, where correspondences can be duplicated and some times missing within the project's files. There were no consistent weekly or monthly reports, instead there were a 'fancy' progress reports to be presented to higher public figures, which lacked details of real problems and impediments of policies in the projects.
- The lack of contemporary academic or State's studies on the subject has made it hard to reference any published work specifically related to the selected projects, although two of those were considered an "important and strategic public projects" as the General Secretary of the GPC in his speech in the GPC normal gathering in 2002 stated.
- The contractor's side of the problem was not comprehensively investigated, because of the legal and competition aspects of the contractors; however our study was concerned more from the public client's point of view.

1.7 Research methodology

The research approach adopted in this study comprised of a preliminary pilot study and a series of three detailed case studies. The pilot study, conducted following a review of the literature, took the form of a semi-structured interviews with industry participants. The pilot study was conducted to gain an understanding of the construction practice in the Libyan public arena as well as to provide information for the development of the questionnaire and also used as one of the detailed case studies later. The main aim was to ensure that the information sought in the questionnaire would be relevant to current practice as well as relatively convenient for the respondents to answer (i.e. respondent-friendly).

The questionnaire was refined a number of times, based on feedback from these discussions before it was used as a base for the semi-structured interviews carried out at the data collection stage. The case study sample was obtained by approaching municipal clients in Benghazi who have contracted construction projects in the last five years. Those who expressed a willingness to cooperate were sent the questionnaires, followed by an interview. During the interview, the author had the opportunity to clarify any ambiguities that the respondents might have encountered. The respondents were senior management personnel who were able to provide informed and competent information.

1.8 Organisation and Logical Sequence of the Study

The research departed from the initial propositions of the author on the problem in question and reviewed the relevant literature globally with some emphasis on the UK. Making it more specific it was narrowed down to suit the Libyan local construction. In order to better present the investigation carried out in the study the thesis was divided into four major parts (See figure 1.2):

Part I: *The Introductory Part*

This part included Chapter One which gave an introduction to the study and a general review and definition of the research problem followed by the initial propositions and the aims and objectives of the intended study. Significance and need of the research was also highlighted and the need for a conceptual framework to the research. The

scope of the study and the limitations which faced was also highlighted. The research methodology adopted was touched on briefly.

Part II: *The Conceptual Understanding of the Research and the Libyan context*

This part was aimed at establishing an understanding of the related subjects of the research where it included Chapter Two, Three, Four and Six. The first three chapters constituted the three main element of the investigation described earlier in the framework of the research. They reviewed the aspects of each element and generated a specific mindset to approach the research problem and put every element into the study perspective.

A summary was established after each chapter which concluded the built knowledge and its relevance to the subject, and furthermore provided a justification of the inclusion of the next element of the research in the next proceeding chapter.

Each of these chapters included a critical review of the contemporary related literature and a personal contribution, either to enhance or establish an understanding and view of the aspect in study. This included adoption and adaptation of previous ideas to be facilitated in forming a solid platform to build on the approach to investigate the research problem and attempt at providing answers to the research questions and propositions.

The last chapter of this part was specific to Libya and its State's policy aspects. The context in which the three pillar elements of the research were viewed from the Libyan construction perspective by first studying the general background of the political and economical setting and the policies driving the Libyan public construction industry. An implementation of the conceptual understanding models and perceptions established in the three previous chapters was necessary to give coherence to the study and highlight the linkage of literature to the research problem.

Part III: *Methodologies*

This part discussed the methodology of the research in general and the departure points of selecting the suitable approach. This has been reached by reviewing the types of research methodologies and the justification of selecting the case study approach in our study.

Then this was followed by a critical review of the case study and its relevance to the topic until reaching the theoretical and operational plans of the approach. More

specifically the cases criteria were established and the sources of data were also described and justified.

Part IV: *The Case Studies Reports, Analysis and Findings*

This can be described as the empirical part of the research, where an individual case study reports were constructed in Chapter Six which gave factual information and presentation of every case on its own context. Then in the following chapter, analysis and intra-case report was constructed and summarised, which led to a summary intra-case analysis of the three cases relating to the research topic as the effect of the State construction procurement in the Libyan local projects.

Part V: *The Conclusions and Recommendations*

This part composed two sections or parts, in which the first part addressed the summaries and findings of the research as a whole and concluded them in a categorised manner. The second part presents the recommendations of the study in a similar categorised format to make a clear organisation of the results and help the reader to gain as much outcome and benefits of the intended fruit of the research.

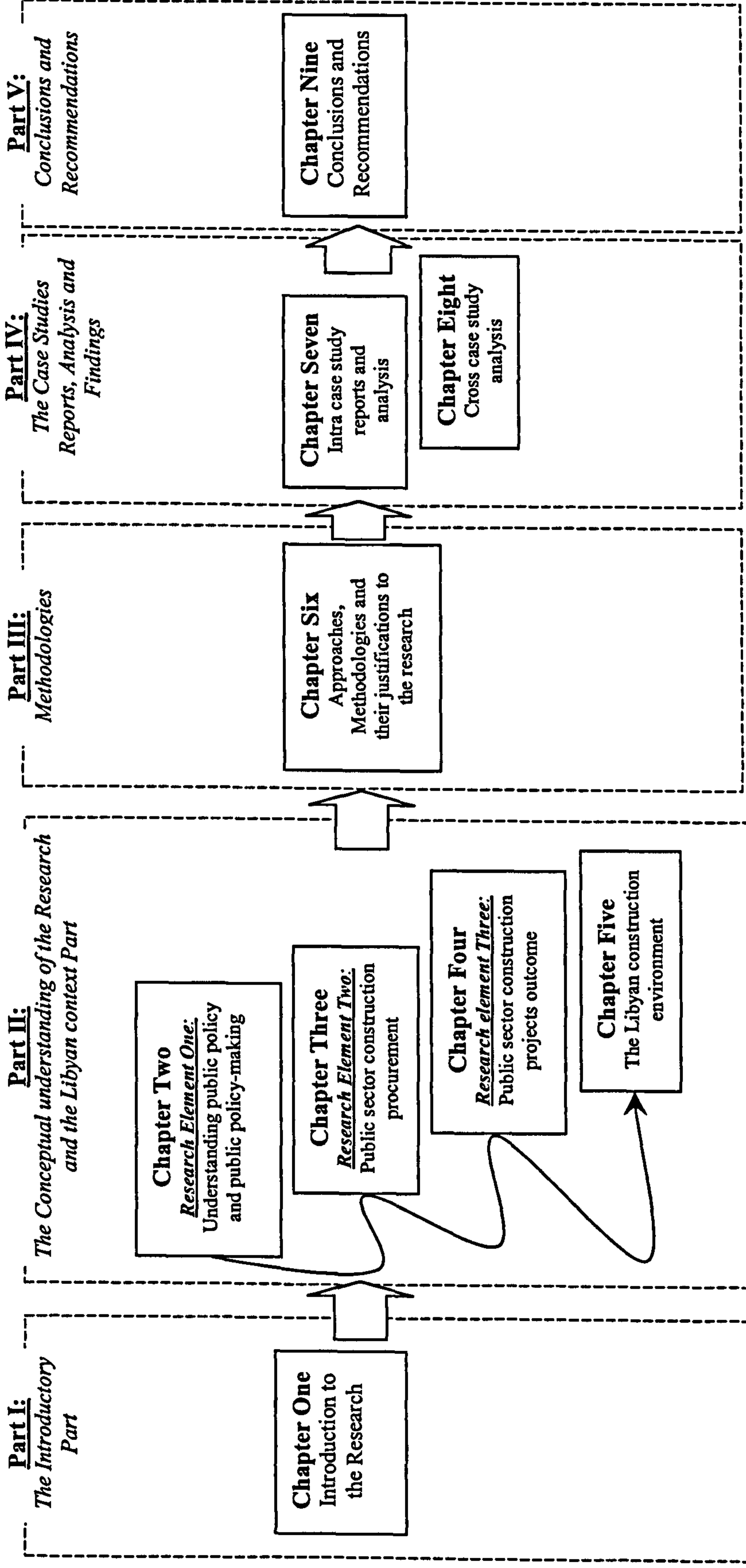


Figure (1.2) Overall Organisation and Logical Sequence of the Thesis

Chapter Two

Research Element (One)

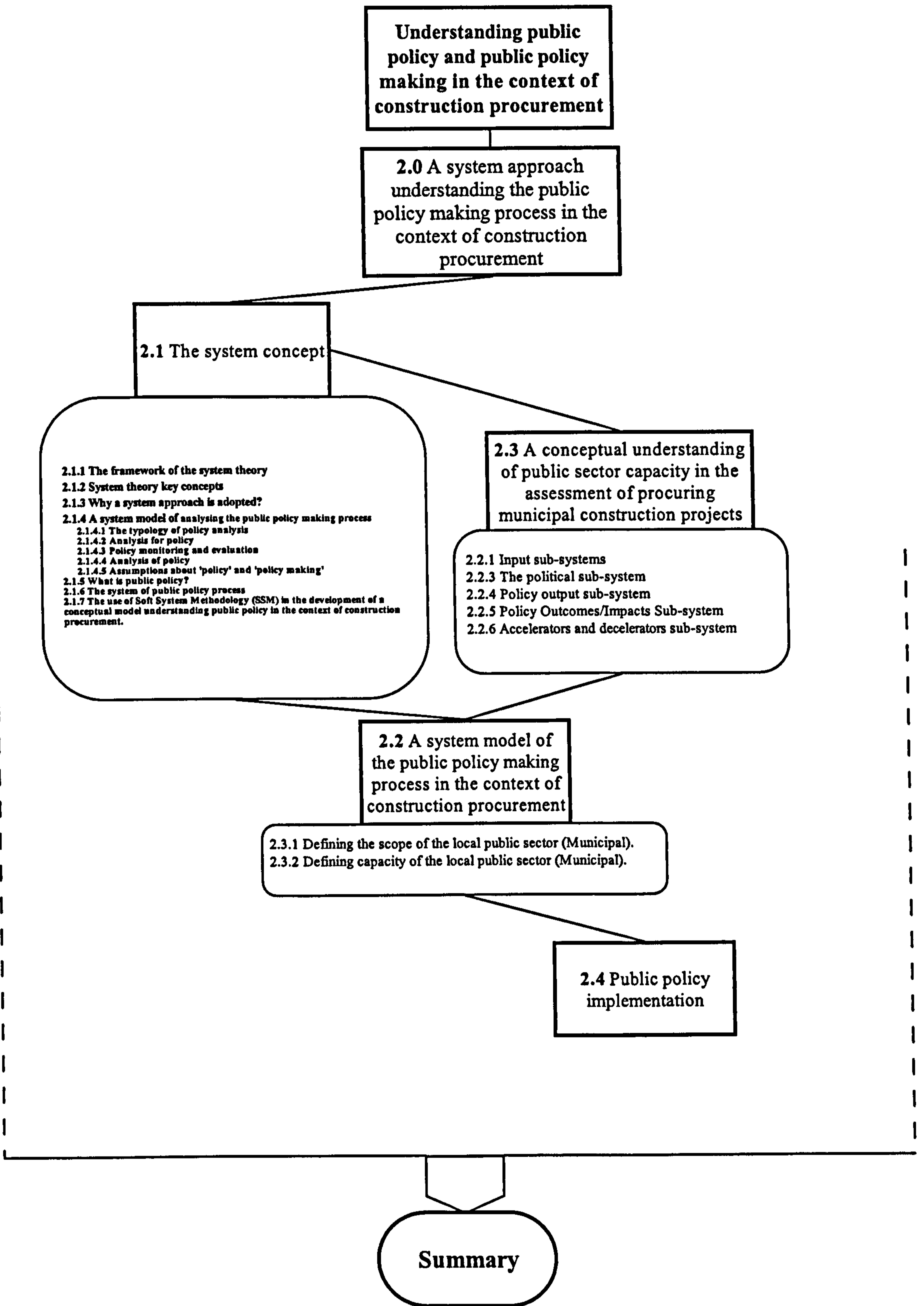
Understanding Public policy and public policy

making in the context of construction

procurement

Chapter Two Knowledge Building Flowchart

(Figure 2.0)



Chapter Two

Research Element (One)

Understanding Public policy and public policy making in the context of construction procurement

2.0 A system approach to the understanding the public policy making process in the context of construction procurement

Construction procurement is an element of the policy, and it forms and evolves in the decision making process. In a public client the decision is part of a policy, which is formed, legislated, and implemented in the State environment. Looking at the State policy making process as a system, with its inputs and outputs, allows us to have a whole and comprehensive picture of the process. The involvement of the construction procurement in the policy making process is essential in the development process in any given country. Traditionally, governments used their extensive power to use procurement as an instrument to achieve variety of objectives. Sometimes these objectives can be unrelated to the original objectives that were formally targeted with construction procurement (Arrowsmith 2004). However, markets play a major role in policy directions by dictating the demand and offer of materials and services.

Developmental objectives require an extensive knowledge of the surrounding environment, which should be reflected in the construction procurement because of the close link between the infrastructure of a State and the construction activity.

A system's approach will allow the explicit identification of the discrete factors and the careful consideration of the total picture of the policy making process in the context of construction procurement.

2.1 The system concept

Systems of various types are all around us. For example, we have topographical systems, like rivers, mountains, seas and oceans and etc, which are all surrounded by

the earth as system, and the solar system and ultimately the most open of all, the universal system.

Over the past several decades the development of general system theory has provided a basis for the integration of scientific knowledge across a wide range of fields. The name “General System Theory” and many of the basic concepts were set forth by the biologist Ludwig von Bertalanffy in 1968.

The purpose of system theory is to provide a realistic framework for understanding and analysing a specific phenomena or an organisation, by understanding the internal and external relationships and their effect on each other. The system approach is a way of simplifying complex processes by identifying the parts of the inputs, the process and the outputs.

2.1.1 The framework of the system theory

A generic system framework consists of:

- The system
- Supra-system
- Sub-systems
- Boundaries

Figure (2.1) shows a diagrammatic explanation

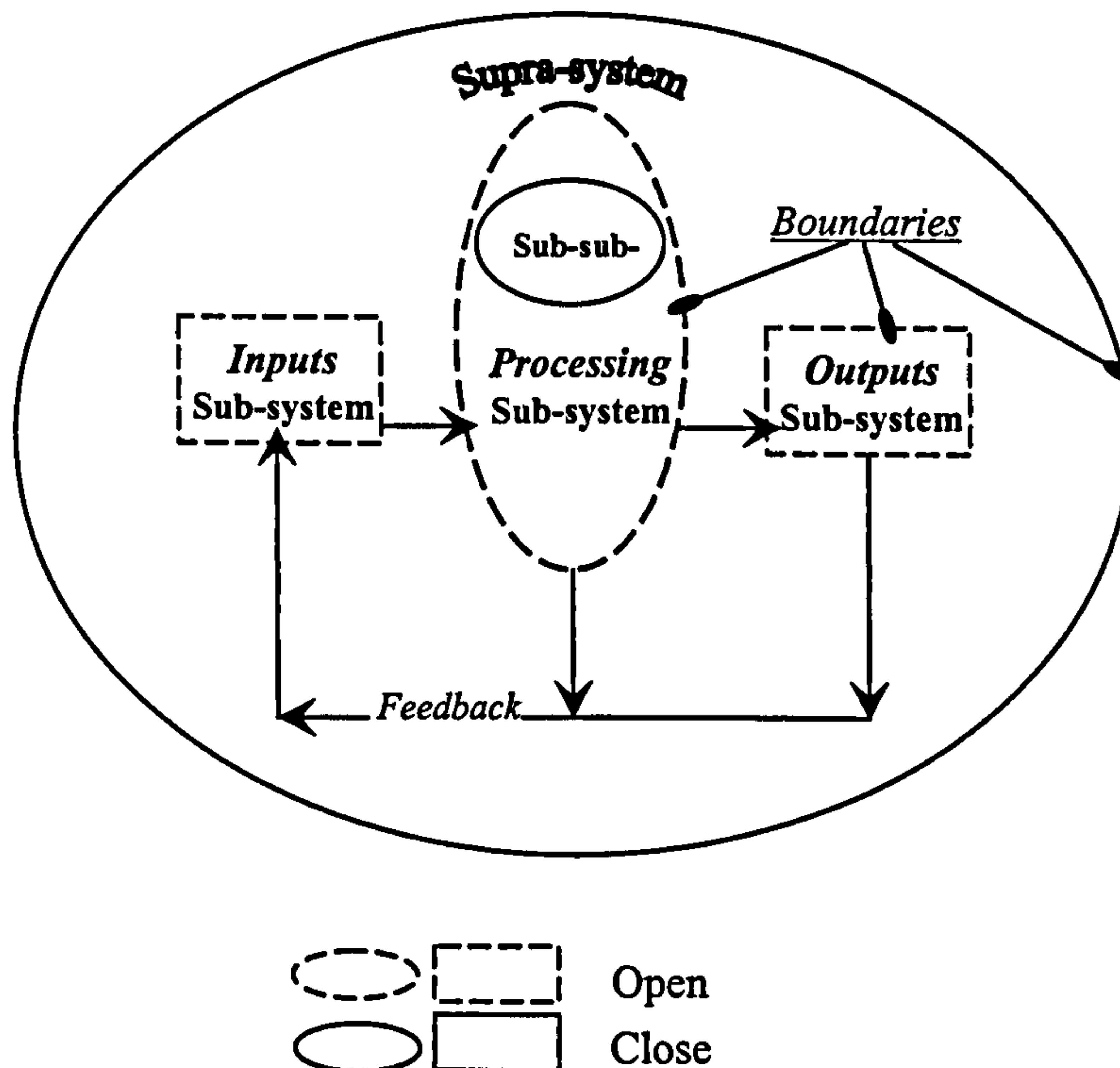


Figure (2.1) A generic system framework

2.1.2 System theory key concepts

General and key concepts applicable to many different types of systems have been set by many writers. They reflect a broad overview of the understanding and application of the system approach.

Kast and Rosenzwing (1985) illustrated the key concepts of general system theory as below:

Subsystems or Components. A system by definition is composed of interrelated parts or elements. This is true for all systems-mechanical, biological, and social. Every system has at least two elements, and these elements are interconnected.

Holism, Synergism. The whole is not just the sum of the parts; the system itself can be explained only as a totality. Holism is the opposite of elementarism, which views the total as the sum of its individual parts.

Open Systems View. Systems can be considered in two ways: (1) closed or (2) open. Open systems exchange information, energy, or material with their environments. Biological and social systems are inherently open systems; mechanical systems may be open or closed. The concepts of open and closed system are difficult to defend in the absolute. We prefer to think of open-closed as a dimension; i.e., systems are relatively open or relatively closed.

Input-Transformation-Output Model. The open system can be viewed as a transformation model. In a dynamic relationship with its environment, it receives various inputs transforms these Inputs in some way, and exports outputs.

System Boundaries. It follows that system have boundaries that separate them from their environments. The concept of boundaries helps us understand the distinction between open and closed systems. The relatively closed system has rigid, impenetrable boundaries, whereas the open system has permeable boundaries between itself and a broader supra-system. Boundaries are relatively easily defined in physical and biological systems but are very difficult to delineate in social systems such as organizations.

Negative Entropy. Closed physical systems are subject to the force of entropy, which increases until eventually the entire system fails. The tendency toward maximum entropy is a movement to disorder, complete lack of resource transformation, and death. In a closed system, the change in entropy must always be positive; however, in open biological or social systems, entropy can be arrested and may even be transformed into negative entropy—a process of more complete organization and ability to transform resources—because the system imports resources from its environment.

Steady State, Dynamic Equilibrium, and Homeostasis. The concept of steady state is closely related to that of negative entropy. A closed system eventually must attain an equilibrium state with maximum entropy—death or disorganisation. However, an open system may attain a state in which the system remains in dynamic equilibrium through the continuous inflow of materials, energy and information.

Feedback. The concept of feedback is important in understanding how a system maintains a steady state. Information concerning the outputs or the process of the system is fed back as an input into the system, perhaps leading to changes in the transformation process and/or future outputs. Feedback can be both positive and negative, although the field of cybernetics is based on negative feedback. Negative feedback is informational input which indicates that the systems deviating from a prescribed course and should readjust to a new steady state.

Hierarchy. A basic concept in systems thinking is that of hierarchical relationships between systems. A system is composed of subsystems of a lower order and is also part of a supra-system. Thus there is a hierarchy of the components of the system.

Internal Elaboration. Closed systems move toward entropy and disorganization. In contrast, open systems appear to move in the direction of greater differentiation, elaboration and a higher level of organization.

Multiple Goal Seeking. Biological and social systems appear to have multiple goals or purposes. Social organisations seek multiple goals, if for no other reason than that they are composed of individuals and subunits with different values and objectives.

Equifinality of Open Systems. In mechanistic systems there is a direct cause-and-effect relationship between the initial conditions and the final state. Biological and social systems operate differently. Equifinality suggests that certain results may be achieved with different initial conditions and in different ways. This view suggests that social organisations can accomplish their objectives with diverse inputs and with varying internal activities (conversion processes).

2.1.3 Why a system approach is adopted?

Thinking, problem solving, decision making and ultimately policy making are fundamental to the behaviour of decision makers in any public policy. Decision and policy making is central to the managerial task of coordinating public organisational endeavour towards achieving national goals in any State. The process of policy making in general has the elements of an open sub-systems surrounded by the overall environmental supra-system.

Lok Sang (2000) argued that policy studies should follow a systems approach or, in other words, a liberal arts approach, so that students of public policy are made aware of the different needs of society and the full range of costs and benefits of policies.

Stewart and Ayres (2001) argue that using systems concepts offers a way of rationalising aspects of existing practice and of suggesting directions for improvement.

As described by many writers, namely Jenkins (1997), Gounden (2000), Driessn *et al* (2001), Evans (2001) and Warren *et. al* (2001), on the public policy, the public policy emerges via a logical path; an issue moves through the political system in a process-like way from point of entry, through decision and implementation, until a final choice is made to proceed with or terminate a course of action. This public action then is considered as the policy of the State towards a specific issue. The process itself is a complex collection of entities, effects and actions. To understand the effect and significance of these entities on the policy outcome, one has to generate a process framework of the policy in the context of a certain issue. A system concept is used extensively in the studying and understanding the policy making process, and this is because of the complexity of the issue and the failure of the use of purely quantitative methods.

The system approach allows the complexity of the problem to be fragmented in manageable parts, which can be analysed and assessed individually.

Construction procurement strategy of public projects is a result of the policy process, and by its nature as an acquisition and obtainment of material or services (McDermott, 1999) for projects to satisfy public demands, then it is a strategy of the State to achieve desired economical, political, social and cultural goals through the contractual and moral obligations between the State as a client and the contractor, and ultimately the public end-user.

In making these strategic procurement decisions, the State decision making process is an organisational outcome, which results from the inter-actions of all the organisational elements in this system.

All organisations are complex socio-technical 'units' that are constrained and shaped by the inter-actions of the organisation and the environment and the inter-actions of the separate elements of the 'unit'. The organisation is thus a complex system, however, for any useful analysis, the organisation needs to be broken down into smaller parts, or 'sub-systems'. The functions of the organisation are based upon human interpretation and analysis of data and idiosyncratic reactions to the data. (Eaton, 1991)

2.1.4 A system model of analysing the public policy making process

2.1.4.1 The typology of policy analysis

The most obvious distinction in varieties of policy analysis is in terms of explicit purpose and/or client, separating analysis for policy from analysis of policy. In terms of established lines of research this is probably the most important distinction, and it also reflects a division of disciplinary concerns. Yet within this dichotomy lies a continuum of activities from policy advocacy at one end to the analysis of policy content and impact at the other.

A diagram was developed from an illustration of the typology of policy analysis by Gordon *et al.* (1977), which envisages our understanding of the issue of types and ties of policy analysis. This diagram identifies the elements of any policy analysis, and their interrelation to the policy-maker/makers. See figure (2.2)

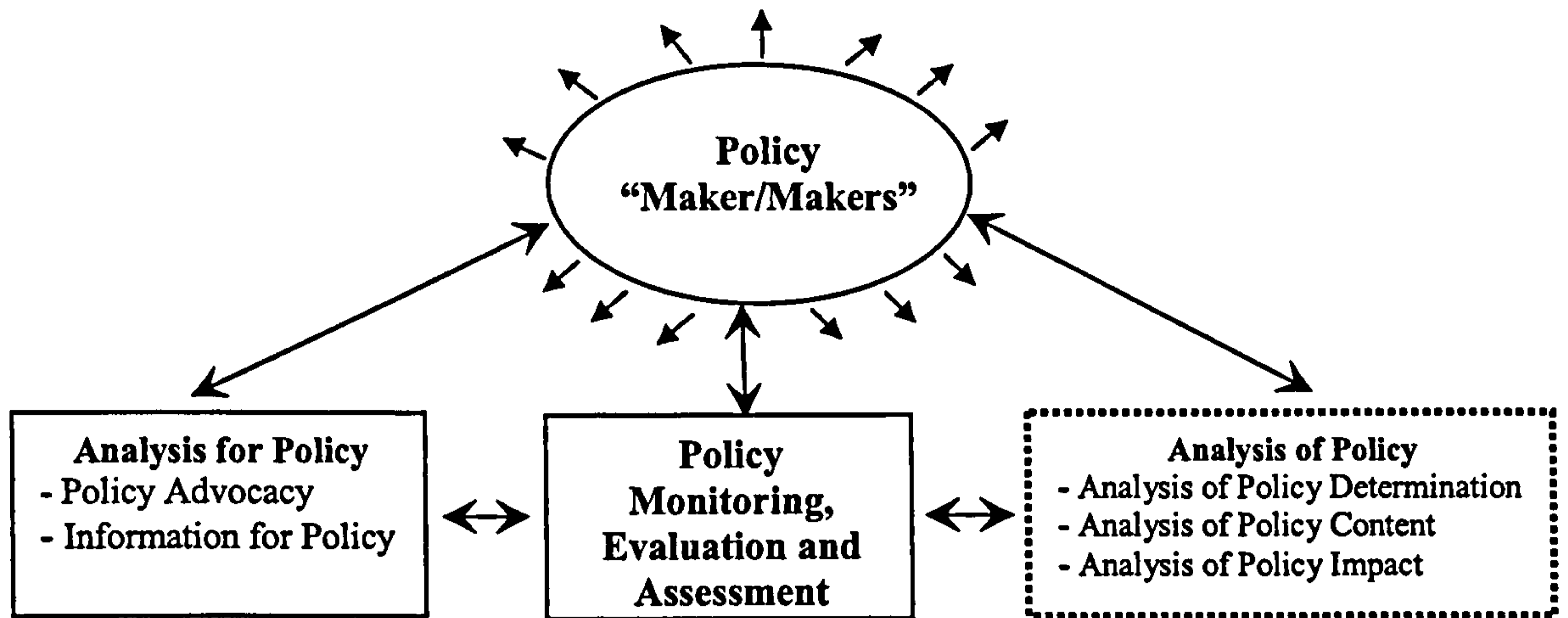


Figure (2.2) Typology of policy Analysis

2.1.4.2 Analysis for policy

Policy Advocacy

This term is used mostly to denote any research that terminates in the direct advocacy of a single policy, or of a group of related policies, identified as serving some end taken as valued by the researchers. The connection of such research with the decision network may be rather less direct. It may be aimed at policy-makers, in which case it assumes a degree of value correspondence (which may or may not be a tenable assumption), or it may serve to challenge existing policies and appeal to rival groups or public opinion at large. In some cases policy advocates argue from their findings toward a particular conclusion, which is offered as a recommendation. In other cases, where a very strong commitment to a particular course of action predates the research, whatever analysis was conducted may have been designed, consciously or unconsciously, to support the case to be argued. Information is gathered and organised in order to sustain a point. This style of policy analysis is often carried out by reformist pressure groups, although it is by no means entirely absent from some types of university research.

Information for policy

In this mode, the researcher's task is to provide policy-makers with information and perhaps advice. It assumes a case for action, in terms of either the introduction of a new policy, or the revision of an existing one. It may be carried out within the research branch of a government department; by outside researchers funded by that department; by independently funded researchers; or by un-funded individuals or associates who have simply chosen to address their scholarly activities to policy issues. The activity itself may be confined to the provision of useful data (e.g. on demographic change) for consideration in policy-making. It may, however, go beyond this to elucidate causal relationships, and thereby to suggest definite policy options.

2.1.4.3 Policy monitoring and evaluation

Policy monitoring and evaluation frequently take the form of *post hoc* analysis of policies and programmes. In an obvious sense, all public bodies perform monitoring and evaluation functions in respect of their own activities, although some may be facile, uncritical or self-legitimising. Evaluation for policy review is, on the other hand a more self-conscious business, particularly where the policy or programme in question has an experimental aspect.

Monitoring and evaluation can be aimed at providing direct results to policy-makers about the impact and effectiveness of specific policies. But it can do more than this *post hoc* review of policy impact may be used for feasibility analysis in future policy design, via the specification of a feasible set of actions. In this mode, the object of policy analysis is to inform policy-makers of the limits of possibility. 'Better' policies might then be those, which are more closely tailored to the constraints of feasibility imposed by the intractable external world of the policy-makers. (Gordon, *et al.* 2000)

The assessment activity is a stage whereby a feedback from the policy implementations forms the main element. The logic, reliability and integrity of the policy assessment process and conclusions depend largely on the political, economical and social stability of the host environment.

2.1.4.4 Analysis of policy

Analysis of policy determination

The emphasis here is upon the inputs and transformational processes operating upon the construction of public policy. Attempts to analyse the policy process are inescapably based upon explicit or implicit models of the policy system. In some cases the model is seen as being 'driven' by environmental forces, in others by internal objectives and goals, in yet others by the internal perceptions of the external environment. In contrast with advocacy or information this mode can tend to over-emphasise the constraints upon action to the point where patterns of activity are portrayed as the necessary outcomes of a confluence of forces.

Most researchers on this mode tend to cover all aspects of the policy-hosting environment, ranging from social, cultural, historical, economical, political and practical since.

Analysis of policy content

This category of activity includes many studies, which have been carried out, within the social administration and social policy field, of the origin, intentions and operation of specific policies. Typical of this category are the numerous descriptive accounts, which have been given by academics on such policy areas as housing, education, health and social services. While their results may help to inform policy-makers, this is not usually an explicit aim of such studies, for they are conducted for academic advancement rather than public impact. In their more sophisticated variants, content studies engage in 'value analysis' and show social policies as institutionalising social theories.

Analysis of Policy Impact

This stage or mode in the analysis of the policy section was added to the topology of policy analysis developed by Gordon *et al* 1977, and the main reason behind the inclusion of this stage is the need of realization of the impact on the end-user and the practiced-upon of any policy. The policy impact measurement indicators range from the satisfaction of the end-user from day-to-day basis till the impact of these policies on the national and more broadly the international levels.

In general, policy impact is the most talked about subject in public discussions in the form of criticizing any public utilities or services by giving examples of failure or success, in terms of public satisfaction or dissatisfaction.

The research here plays an important role in measuring the impact of the policy, this research must have reality, integrity, and transparency as the main element of a true success.

Walker *et al.*, (2001) argues that the analysis of the public policy should take into account the fact that the effects of policy choices depend on information about events that have happened and events that are yet to happen, including choices made by others. Policy choices further depend on preferences over these effects, which change over time. So he suggested that the assessment of the process and the policies themselves should recognise the advantages of time delay, contingency planning and pre-commitment.

2.1.4.5 Assumptions about 'policy' and 'policy-making'

It is necessary to clarify certain assumptions about the nature of policy and policy-making, since a misunderstanding of these can lead to an unduly narrow view of appropriate research strategies.

Assumptions about the process

Jenkins, (1997) suggests that the common threads in 'policy' studies can be seen to include some interest in the content (as well as the institutions, ideology and procedures) of government and States activities, some concern for its outcomes and an assumption that this activity is in some degree instrumental or purposive. The basic orientation is compatible, however, with very different implicit models of the policy process, leading to different strategies for analysis and its application.

To take ideal cases, States policy researchers may on one hand adopt the assumption that policy-making is essentially a rational process based on the classic steps from problem formulation and evaluation of alternatives through to implementation.

Conflicts over policy goals or perceptions of the situation may be admitted, but these are assumed to result in stable and determinate outcomes, which do not interfere with the consistency of the system's operations. Typically the problem is seen as technical, the climate as consensual and the process as controlled. On the other hand,

policy-making may be seen as an inescapably political activity into which the perceptions and interests of individual actors high in the power structure of any given State enter at all stages. In this case implementation becomes a problematic activity rather than something that can be taken for granted. This has higher chances of appearance in countries lacking democratic structure of policy making.

In the case of Libya one can not judge by the official claimed status of power distribution, where in theory “power is in the hands of the people”, which was envisaged in the Declaration of the Peoples Power in 1978, but it can only be judged by in-depth policy making research, which totally rely on transparency of information. A single-minded and despotic ideology of policy making can be easily identified in some Libyan policy historical cases, however it can not be generalised. The lack of ideological monitoring and auditing lead to taking ideological concepts for granted as they are believed to be the “solution” for all problems as claimed.

Assumptions about the policy

The concept of ‘policy’ has a particular status in the ‘rational’ model as the relatively durable element against which other premises and actions are supposed to be tested for consistency. It is in this sense that we may speak of ‘foreign policy or social policy or marketing policy’ as if the terms denoted local variants of a universal theme. Yet each of these examples represents very different ways of manipulating, via purposive action, the external environment of particular organisations.

Moreover, Gordon, (2000) stated that the term ‘policy’ is used even within ostensibly similar governmental agencies to describe a range of different activities including:

- I. Definition of the objectives
- II. Setting the priorities
- III. Describing a plan
- IV. Specifying decision rules.

These characterisations of ‘policy’ differ not only in their generality and the level at which it is supposed to occur but also in whether ‘policy’ is assumed to be entirely prior to action or (as we believe is often the case) at least partly a *post hoc* generalisation or rationalisation.

Gordon (2000) also suggested that there is a recursive relation between policy and action, with ‘policy’ itself representing an essentially dynamic set of constructions of

the situation. In this case, we argue that it is a mistake to conceive of policy analysis as the study of identifiable things called policies, which are produced, or crystallised, at a particular stage in the decision process in any given State, let alone an inconsistent policy direction situation like Libya.

The inconsistency in the Libyan public policies may be a result of ideological constraints, but it has not yet been investigated in a scientific and academic way and this study does not intend to do so. However validation such claim is difficult due to the lack of transparent and safe environment in dealing with such ideological sensitive issues.

Assumptions about 'boundaries'

A feature of the rational model of policy-making is that it conceives the policy system as tightly bounded, and its operations upon the external world as unproblematic. To depart from the assumptions of classical rationality is inevitably to widen the boundaries of the 'relevant' in the analysis of policy-making. 'Policy-makers' are seen as negotiating both within their own organisations and externally, with a host of other organisations and actors whose concurrence may be necessary to policy implementation. The focus shifts from 'decision analysis' to encompass the range of activities from formulation to implementation and impact. Inter-organisational politics and the manipulation of networks enter the picture, and it becomes less plausible to speak of locating the 'real' policy-makers. Policy-making, like 'power', appears as a dynamic yet diffused element in the relations between public actors and the world on which they act. This, the analysis of policy systems, is perhaps the most neglected aspect of the field.

Assumptions about problem definition

In addition to the assumptions made about the policy-making process, assumptions about problem definition also affect almost all policy analysis. It has been suggested that in every government department there are deep structures of policy the implicit collection of beliefs about the aims and intentions of the departments and about the relevant actors who influence or benefit from the policy. These constitute what policy analysts are in the position either of having to accept the 'deep structures' and the consequent assumptions made about problem definition and the range of possible

solutions, or of trying to stand outside the organisational consensus and bring new perceptions to old problems.

The former role may be more agreeable to the policy-makers themselves, but the major potential contribution of the social scientist lies in challenging the deep structures of policy-making in terms of the impact of the social structure in the process. In order that this potential be realised, policy studies must engage in the analysis of policy processes, systems and content.

2.1.5 What is public policy?

A definition adapted from Roberts (1997) was:

A set of interrelated decisions taken by a political actor or group of actors concerning the selection of goals and the means of achieving them within a specified situation where these decisions should, in principle, be within the power of these actors to achieve.

Jenkins (1978) commented on this definition by stating “Such a definition should not be seen as all-encompassing. For example, it points to the adoption of a course of action and the means of implementing it, but it does not build implementation into the policy itself. However, the definition has strengths, in that it incorporates the possibility of inaction (the decision not to move), and separates policy from ambition by linking policy decisions to available resources. Further, it stresses the point that policy is more than a single decision.”

Policy making typically involves a pattern of action extending over time and involving many decisions. Moreover, there may be types of policy corresponding to distinctive sets of decisions taken within the political system. Thus to focus on outputs alone may result in a partial and incomplete view of the dynamics and totality of public policy. Further policies have identifiable characteristics, according to which they may occupy different parts of the political spectrum and may need to be dealt with in different ways. For example, policies concerning national defence involve different actors and different structures and are likely to be processed in a different fashion from those concerning the infrastructure projects.

Walker *et al.* (2001) described public policy “as a traditional policy embodied in a static set of rules and regulations enacted by a legislative body at one point in time.

The policy remains in place until amended or replaced, often by different people, at some time in the future.”

2.1.6 The system of public policy process

Public policy-making is about the future. If we were able to predict the future accurately, preferred policies could be identified by simply examining the future that would follow from the implementation of each possible policy and choosing the one that delivers the most favourable outcomes.

Issues enter the political system; information feeds into decision; policies emerge and are implemented. How can such fragmentary events be linked? Is there an inherent and consistent logic connected with the way that policy is made in a political system? To address oneself to this problem is to conceptualise the public policy process, and here one of the simplest and most frequently used models is that of the functional set of categories. An indication of this model is given in figure 2.3. Basically, it assumes that policy emerges via a logical path; an issue moves through the political system in a process-like way from point of entry, through decision and implementation, until a final choice is made to proceed with or terminate a course of action. It is argued, a useful tool in drawing attention to the ordering of policy activities. Certain bodies at certain times are more likely to be connected with one stage of the process rather than another. Few who offer this model would consider it as anything but an ideal representation of reality and fewer still would claim that political behaviour ever takes place in such an ordered fashion. Given such reservations, the utility of such an approach, particularly as a vehicle for hypothesis generation, becomes problematic and, in the face of such criticism, it may be more productive to consider the policy process in terms of an adapted input-output model of the political system. Its major dimensions are indicated in figure 2.3, from which it will be clear that the focus of this approach is the dynamics and processes of a political system operating in its environment. Thus its advocates would wish to differentiate between:

- (i) *Policy demands*: demands for action arising from both inside and outside the political system;
- (ii) *Policy decisions*: authoritative rather than routine decisions by the political authorities;
- (iii) *Policy outputs*: what the system does - thus, while goods and services are the most tangible outputs, the concept is not restricted to this;

- (iv) *Policy outcomes (or impacts)*: consequences intended or unintended resulting from political action or inaction.

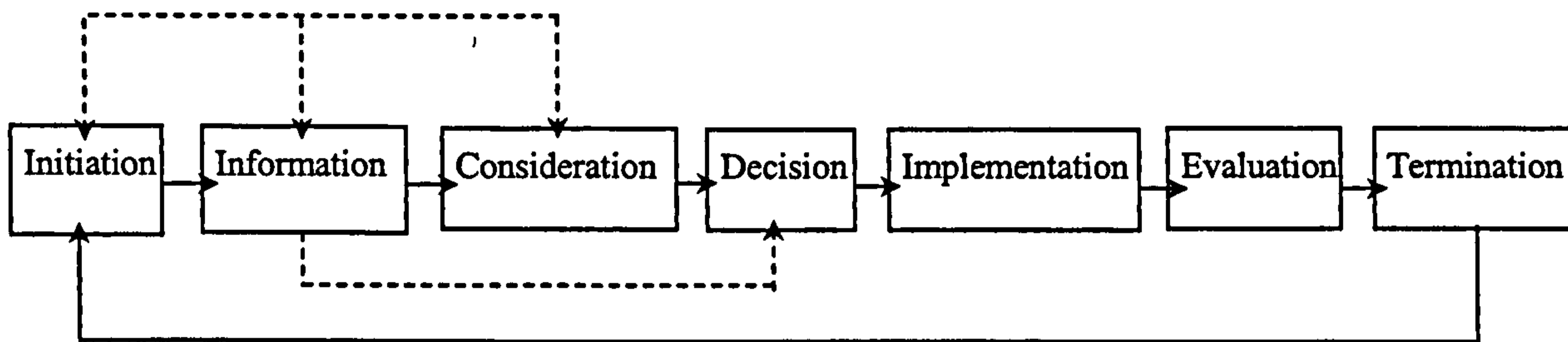


Figure (2.3) Schematic presentation of process perspective on policy cited in Jenkins, 1997 by Roberts, (1971)

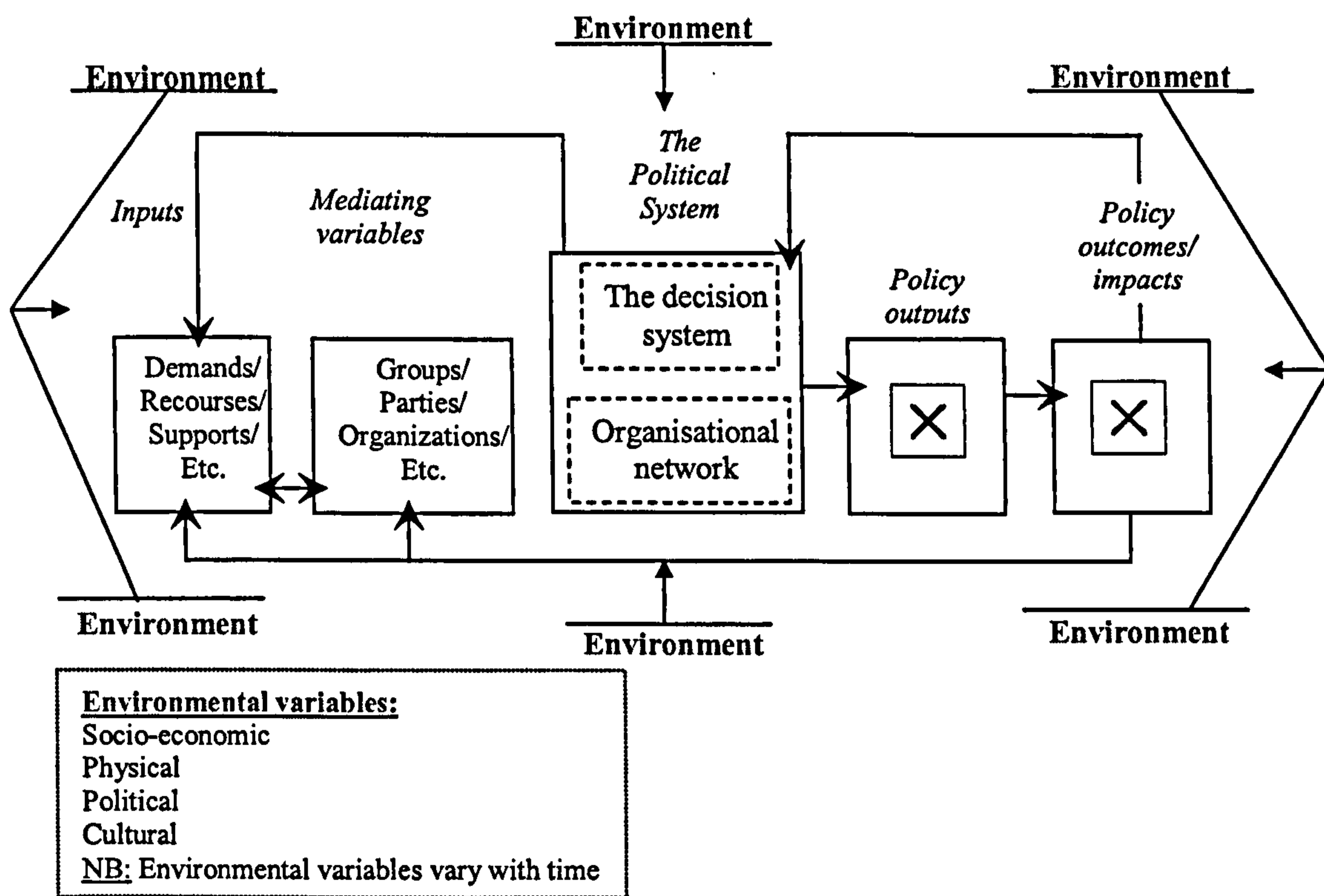


Figure (2.4) Modified system model of the Policy Process by Jenkins, 1997

A more detailed perspective was adopted by Jenkins and modified by the author (See figure 2.4). But even this is offered primarily as a guide to thought, since it is grossly oversimplified. As it stands, such simplifications being particularly apparent with regard to the model's representation of (a) the policy environment and (b) the political system itself. In this regard Jenkins (1997) stated that, "In traditional

systems models inputs arise out of the environment, are aggregated in some fashion, and impact on the political system.” In all this the environment is defined broadly in socio-economic, physical and political terms, (Thai, 2001). For the general purpose of understanding political life, and for the specific purposes of analysing policy, such a conceptualisation is too crude. The environment is not a structure-less entity. It may be made up of individuals, groups and organisations with values and interests, operating individually or collectively over time. Further, the strength of environmental influences may vary with their proximity to the political system.

In the study of public policy in particular, one needs to explore the relationship between demand patterns and what have been termed in the figure ‘mediating variables’ see figure 2.4. Further, it seems crucial to investigate whether there is any relationship between political action and the presence or absence, over time, of such variables. What passes for the ‘environment’, therefore, requires thought and attention. Indeed, because of the way systems models are usually presented, the all-embracing nature of environmental influences is rarely realised in public policy research, especially in the developing environments like Libya. As usually defined, the environment surrounds the whole process, influencing anything and everything. While useful as a first approximation, this is too gross a representation of environmental influences. A more detailed focus on environmental variables may be crucial for policy studies.

Much of the comment and criticism of researchers in the discussion above could be applied with equal force to the usual conceptualisation of the ‘political system’. Too often this has been taken as a black box from which policies emerge or, at best, in which the solution to patterns of political action can be found in the size and variation of political majorities. In terms of understanding policy such a position is simply not adequate. Often the process of choice may be as important as the actual choice itself. Moreover, decision systems may be constrained by the networks within which they operate. Thus the policy analyst or researcher needs to explore in more detail the nature of the political system and the relationship between such variables as decision processes and outcomes. To explain outcomes of any public policy however, involves another vital but often overlooked aspect of the whole problem: the need to establish some conceptual understanding of motivation and behaviour of

the system. Without such understanding, responses to policy can be neither understood nor anticipated. To assume individuals or organisations behave rationally is often an oversimplification of the issue. An understanding of behaviour and motivation is central to an understanding of public policy outcome and impact. More than this, however, such an understanding also appears crucial to an investigation of other aspects of the policy process, in particular the internal operation of the political system itself.

In this research the exploration of the internal political decision making operations of the ruling system in Libya will not be included. The inclusion of such research will complicate matters and may deviate our interests in the analysis of the public policy outcome and impacts in procuring the infrastructure projects in a local context, to the assessment and evaluation of ideologies of the political leadership, which is difficult to measure and validate due to the serious lack of truthful information and transparency of individuals and organisations close to the top end of the power distribution in Libya. Also such exploration and investigation may cause some security concerns to the author.

2.1.7 The use of Soft System Methodology (SSM) in the development of a conceptual model understanding public policy in the context of construction procurement.

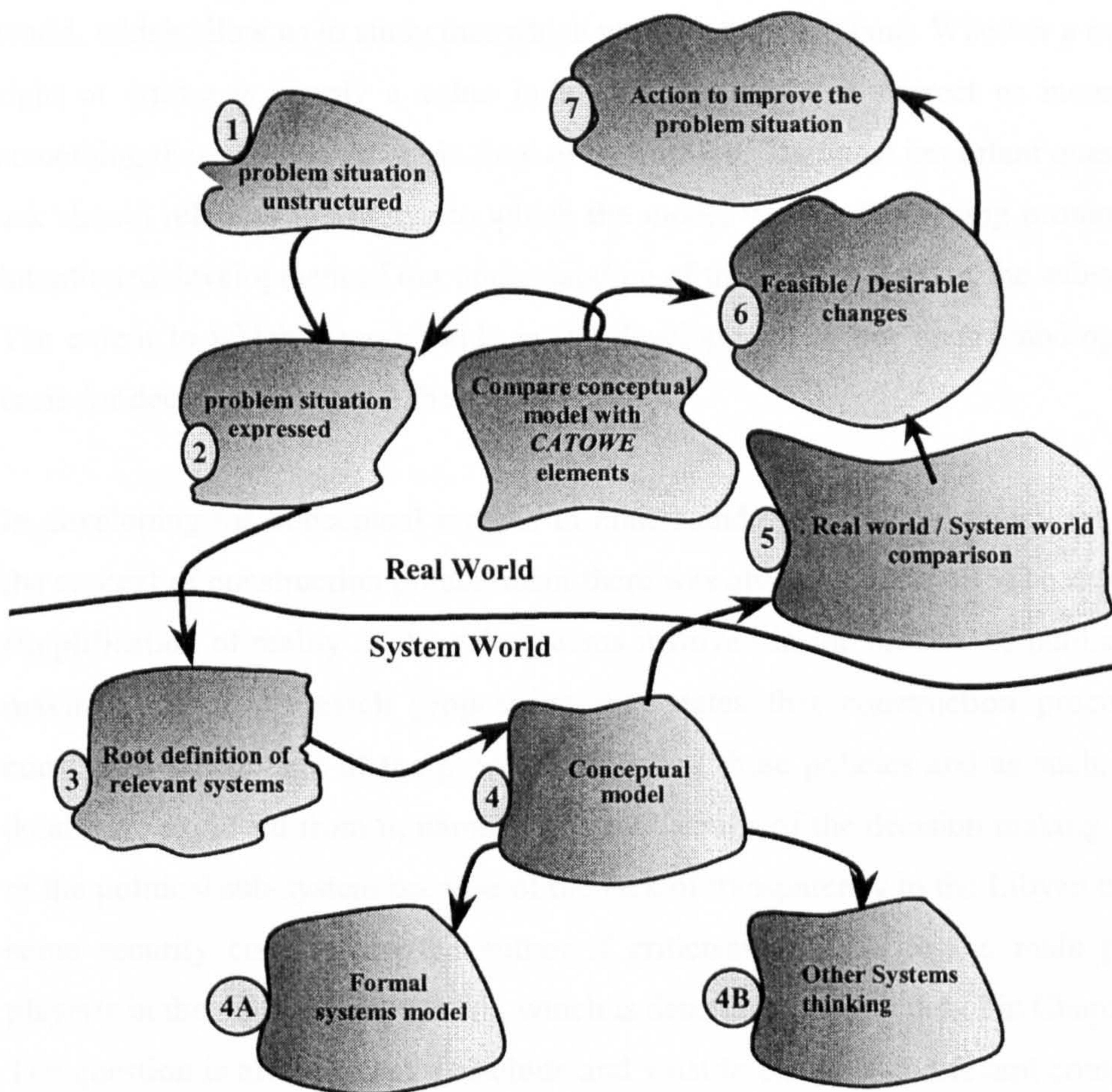
System thinking comes into the researcher's analysing mind if he/she accepts the argument suggested by Richmond (1993) that the primary source of the growing intractability of our problems is a tightening of the links between the various physical and social subsystems that make up our reality. One will agree that system dynamics and systems thinking hold great promise as it approaches for augmenting our solution-generation capacity of the ever increasing complex human environment interactions.

As the gap between the public policy making and the problems of delivering these policies' goals and the ability to understand them grows, we face a detachment of State's policy theory and what is really happening in the base of the pyramid of

delivering public services on a multitude of fronts. Systems thinking and dynamics are important for developing effective strategies to close this gap.

The system model of understanding public policy in the context of construction procurement has to accommodate all links between the sub-systems and satisfy the number-one feature of system theory, which is the holistic rhetoric.

Checkland's Soft System Methodology (SSM) provides a powerful technique for the analysis of the systems with human and social components. It has a framework for system analysis of seven stages as shown in Figure below.



The Main Feature of SSM is a 7-Stage Analysis Process Depicted in a Diagram

Source: Checkland and Scholes, 1990

Hence, in soft system thinking the systemicity is no longer assumed to be in the outside world; it is in the methodology for enquiring into the perceived world. The difference between “hard” and “soft” systems thinking is summarised thus the “soft” tradition regards system models as models relevant to arguing about the world, not models of the world; this leads to “learning” replacing “optimising” or “satisfying”; this tradition talks the language of “issues” and accommodations rather than “solutions” (Checkland, 1991).

Developing the system model

We often deal with systems that are so complex as to be beyond the limits of our intuitive comprehension. As such, we construct models, simplifications of the real world, which allow us to study that which we seek to understand. Whether a model is right or wrong is simply a value judgment, whether it is correct or incorrect is something that will be evident in time of application. The most important question to ask should relate to the extent to which the model we are developing promotes the intended development of our understanding of the relationships of the subsystems. The extent to which a model aids in the development of our understanding is the basis for deciding how good the model is.

In developing the conceptual models in understanding the public policy making in the context of construction procurement there was always a trade off. The model is a simplification of reality of the sub-systems involved in the process of public policy making, and the research proposition that states that construction procurement constitutes an element of the process conveying these policies and as such, certain details are excluded from it, namely the inner details of the decision making process of the political sub-system because of the lack of transparency in the Libyan case and some security concerns to the author if criticism is made to the main political player/s in the political sub-system, which is described in more detail in Chapter Six. The question is always what to include and what to exclude. If relevant components are excluded there is a chance of the model will be too simple in nature and will not support the development of the understanding desired. On the other hand, if too much detail is included the model may become so complicated that, again, it fails to promote the development of the deeper levels of understanding of the process. One cannot develop every model in the context of the entire supra-system.

Wilson (1990) illustrated the general use of qualitative system models in conceptual understanding as:

- an aid to clarifying thinking about an area of concern;
- an illustration of a concept;
- an aid to define structure and logic and
- a prerequisite to design.

In the light of this illustration, our conceptual system model of understanding the public policy making in the context of construction procurement aimed at, *clarifying* the thinking of construction procurement policy as an area of concern; an *illustration* of the concept as a process system and an *aid* to define structure and logic of the link between State construction procurement and the public policy.

Root Definition and CATWOE

According to Checkland and Scholes, (1999) the “root definition” should be a concise description of a human activity system (HAS), which captures a particular perspective. It expresses the core purpose of a purposeful activity system (PAS). This is always expressed as a transformation process of the inputs to produce outputs of any system.

In this Chapter “a root definition” was established that led to an activity subject to the transformation process of the public policy making in terms of construction procurement. That activity and transformation process was the nature and form of the final model explaining the first research element (*Public Policy in the Context of Construction Procurement*) shown in Figure 2.5.

The objective was the conceptualisation of the public policy and the emergence and production of the State construction procurement reflecting policy goals and objectives to understand the link between them.

Root Definition (RD): Means naming, in a short statement, a system of purposeful activity. The formal rules for a well-formulated root definition is that it should be contain the elements of the mnemonic word CATWOE (Checkland, 1999).

RD can be described as the root from which the model grew (Wilson 1990 and Checkland, 1999) and as such from the base for the creation of the model (and the connection between stage 3 and 4 in the *7-Stage Analysis Process Depicted in a Diagram*).

The root definition, which is the core of the purposeful activity, is fundamental in the research development. This model development highlights the need to understand the public policy in process-like way. This process allows the realisation of the State construction procurement as policy output, in which it can be seen as a delivery tool for public policy goals to either enhance, change or manage the construction environment in the national and local contexts.

A systematic approach is needed to develop the conceptual model, which leads to proper decision support system (DSS). Checkland and Scholes (1990) defines the elements CATWOE as follows:

- C:** stands for the customers, which means the person or persons who would be the beneficiaries or victims of the system/s;
In this research. The end-user or the public as a whole
- A:** for actors, that is the person or persons who perform the transformation process;
In this research. The political sub-system as the top decision maker/s, the public department in the national context and the municipalities in the local context.
- T:** for the transformation process of some input, the core purpose of the chosen system in which some entity is changed to some new form of that same entity;
In this research. A construction procurement policy process, which implement State's policy goals and objectives.
- W:** describes the worldview (Weltanschauung), which makes the transformation meaningful;
In this research. People are entitled to a functioning and manageable infrastructure and value for money towards more sustainable country's resources.
- O:** stands for the owner, the person who can stop the transformation;
In this research. In theory "The people" as a whole represented by State Legislative Bodies, but in more centralised or dictatorial environments, a person/s may have such power.
- E:** Constraints from the environment that is taken as given.
In this research. The present Social, Legal, Economical, Environmental, Political and Technical (SLEEPT) situation of the State, which represents the Supra-system surrounding the whole process system.

The structure of CATWOE implies that the simplest version of the root definition would be "a system to do X" where X is a particular transformation process (T). The core of the CATWOE is the pairing of transformation process (T) and the worldview, or weltanschauungen, (W) which makes it meaningful. The importance of stating ownership and aspirations in public policy making process models are illustrated in the term weltanschauungen.

ownership and aspirations in public policy making process models are illustrated in the term weltanschauungen.

2.2 A system model of the public policy making process in the context of construction procurement

From the above description of the public policy process as a system, a system thinking principle was adopted to describe and generate an insight of the public policy process in the context of construction procurement.

Thai (2001) used system thinking and applied system theory in describing the environment surrounding the public procurement system. Similar to any other systems, the public procurement system's ability to accomplish procurement policies/goals is influenced by its environment, and in turn, influences its environment. The use of such an approach appeared appealing to adopt in establishing an understanding of the formation and making of the public policy and putting it in the context of public procurement.

Although public procurement is perceived as a major function of governments and States, and although governmental entities, policy makers and public procurement professionals have paid a great deal of attention to procurement improvements or reforms in many countries, public procurement has been a neglected area of academic education and research in Libya, where there are no attempts to understand and research the subject in a systematic manner, which this study is attempting to do. The process system by definition consists of input sub-systems, processing Sub-systems, output sub-systems and the surrounding supra-system. A conceptual model system was developed as a framework (See figure 2.5), in which it describes the process of public policy making in the context of procurement. The main elements of this framework are:

- Input Sub-systems
- Mediating Variables Sub-system
- The Political Sub-system
- Policy Output Sub-system
- Policy Outcomes/Impacts Sub-system
- Accelerators/Decelerators Sub-system
- The Environment Supra-system

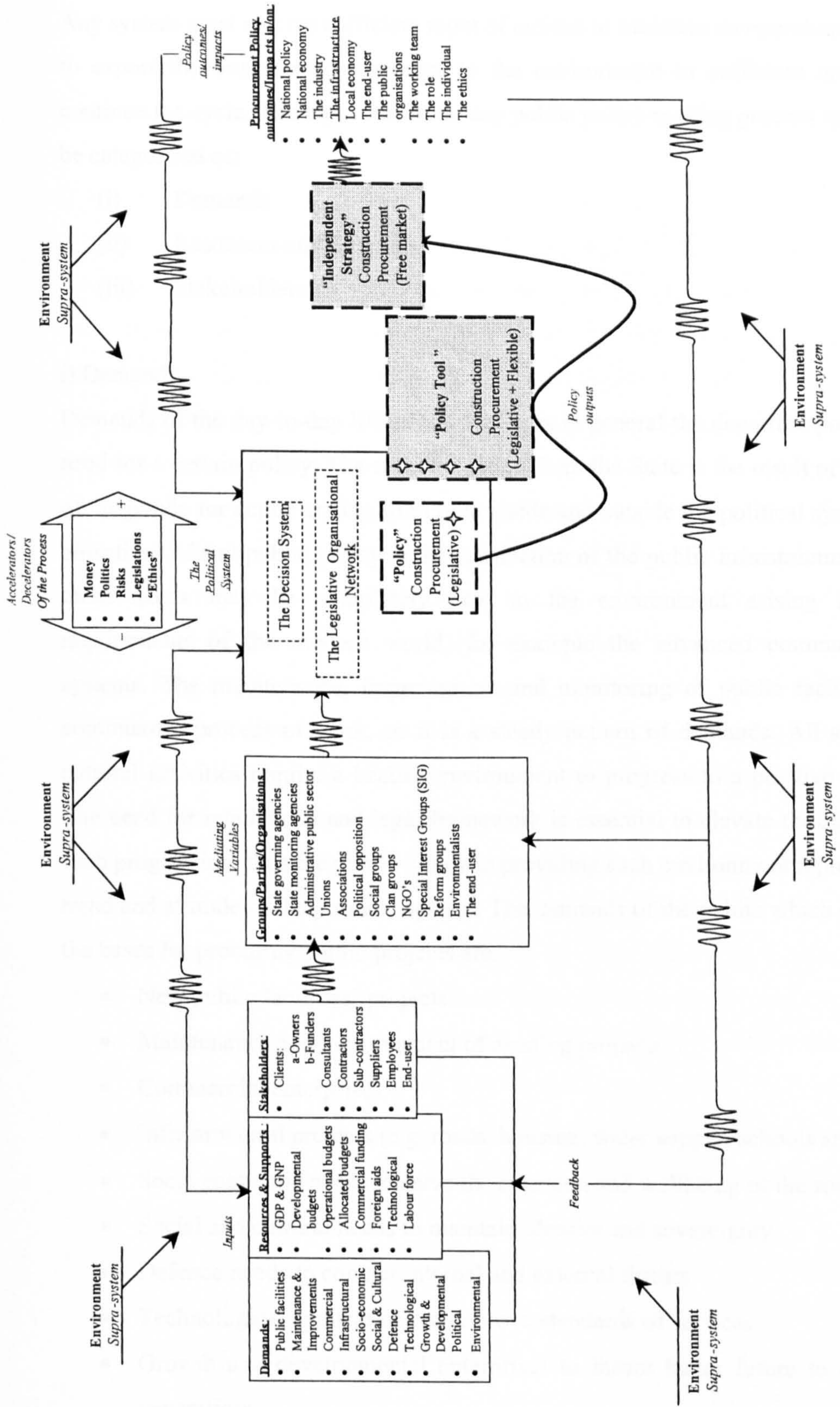


Fig. 2.5 A System Model of Policy Making Process in the Context of Construction Procurement of Public Projects

2.2.1 Input sub-systems

Any system must receive sufficient input of entities to maintain its operation and also to export the transformed resources to the environment in sufficient quantity to continue the cycle. The input entities in any public policy-making process system can be categorised as:

- (i) Demands
- (ii) Resources and Supports
- (iii) Stakeholders

i) Demands

Demands of the day-to-day life of the public, is in general the departure point in the need for a certain policy. The need for action from the State is the result of demands of the public for action arising from both inside and outside the political system. The objectives of any public policy is the satisfaction of the public infrastructural needs, these needs may be completely new to the environment arising from the requirements of the modern world, for example the advanced communications systems. The maintenance, improvement and monitoring of public facilities is a continuance process of work, so it is a steady pattern of demands. All social and cultural activities require a healthy environment to progress to a positive outcome. The need for regulations and legal framework is essential to elevate the standard of such progression, thus the public policy in providing such environment represents the trend and attitude of the political system. The demands of the public which constitute the bases for procuring public projects are:

- New public facilities' projects
- Maintenance and improvement of existing projects
- Commercial enterprises
- Infrastructural projects (e.g. roads, housing, water supply, schools and etc.)
- Socio economic needs to serve the cohesion and wellbeing of the society.
- Social and cultural needs to maintain identity and sovereignty
- Defence needs to counter internal and external threats
- Technological applications to improve standards of services
- Growth and developmental enterprises to insure better future to upcoming generations.

- Political needs which arise from internal and external challenges to the stability of the State.
- Environmental needs which satisfies the sustainability of resources and quality of living.

ii) Resources and Supports

Resources are the muscle power and capability of the State backing its policies. The presence of strong economic indicators reflects greatly on public policy. Rationally thinking, the stronger the economic status of the State, the more positive policies is made. The optimum use of resources depends largely on the State's ethics and reliability. In the so called democratic States the use of resources is down to the public and their representatives decisions; however in the more central ruling States it is down to a group of people or an individual decision.

Supports to the resources of the State are the manpower and the implementation aids to public policy. Sometimes supports are the financial help in which the State requires to push ahead with its public policy. As mentioned above the economic status of the State shapes its acquirement strategy of resources, therefore if the State lack funding in implementing a certain policy, it seeks other types of funding. There are two main types of funding: a) Commercial cooperation funding from investors, b) International aide funding.

iii) Stakeholders

The term now is widely used to mean someone who has a real or psychological "stake" in an organisation: used to include anyone who has significant dealing with it, such as customers, employees, suppliers, distributors, joint ventures partners, the local community, bankers and shareholders. It is descriptive term, implying that then user believes that a number of stakeholders have a right to determine what happens within an organisation, and more particularly in a firm, rather than just the owners (Crainer, 1995).

Stakeholders are those persons or organisations whose views, interests and/or requirements can have an impact or are impacted by the initiation and/or formulation and eventual implementation of the project solution. By definition stakeholders are the parties who hold an interest in the organisation or the product, and are involved

in making, implementing or affected by any activity. State public construction procurement policy is made by the political system, commissioned and implemented by the public client on a project constructed by the appointed contractor, with the consultation of either a public or private consultant and ultimately used by the end-user “the public”. These parties are all considered stakeholders in the issue of procuring any infrastructure project.

Policy makers, Clients, contractors, sub-contractors, suppliers and end-users are all affected by any policy in the procurement of a public project, and they all form an input sub-system to the process of the public policy making.

2.2.2 Mediating variables sub-system

The part in which the conceptual policy passes through evaluation and criticisms of state and non-state organisations. The effect of these organisations depends largely on the political and economical freedom in the State. In the context of procurement these organisations sometimes represent the client’s governing and monitoring bodies. The administrative public sector bodies affect the procurement of the public projects by expressing their concern or satisfaction during the process of procuring. All State organisations comments and recommendations are brought forward as assistance to the decision-making bodies.

Other non-state organisations like, unions, NGO’s, action groups, social groups etc. are considered influences on the decision. Their influence is highly dependent on their power in the State’s environment. These non-governmental bodies tend to act as a balance to maintain and promote a specific moral cause serving the society and they affect the process as a source for concerns to highlight sensitive public issues which the State should take into account in forming and passing any policy.

Procuring any public project is in principle serving the needs of the public, however some needs are not clearly defined and apparent, where these organisations come into play. The public express their views on the projects, either by conveying them to the government bodies or via other non-governmental bodies or a more radically the demonstrations approach. All of these channels are considered as sub-system, which mediate the process and try to affect the procurement policy-making outcome to satisfy more complicated needs and demands like racial and gender equality.

2.2.3 The political sub-system

Thai (2001) argued that in a democratic government system, although there is a distinctive division of powers between the legislative, executive and judiciary branches, procurement authorities and responsibilities vary among countries. Indeed, in countries such as the United Kingdom and Malaysia, where policy implementation is carried out by the executive branch through non-legal means, procurement organisational structure and responsibilities are determined by executive orders. In many other countries, public procurements are regulated by formal rules and regulations, which in our view envisage the Libyan case.

In order to understand the public policy process it is necessary to relate it to the power structure of a society as a whole and the power of the political system. Any public policy is the product of the exercise of political influence, determining what the State does and setting limits and boundaries to what it does.

The political sub-system of the process is the theatre of the legislations activity. The organisation of the political system is the formation of the governing network body of the State.

In some centrally governed States, procurement of the public sector projects is an activity under the legislative umbrella of the political system. Legislations are made and formulated in this sub-system due to the inputs sub-systems of the policy-making process. Some free market oriented activists may call the construction procurement policy in this case, a form of State legislation governing and controlling the procurement of the publicly owned projects. In the developed framework it was called “a legislative construction procurement policy output”. The dominance of State legislations in controlling procurement makes it more like a contract law in the construction of the public sector infrastructural projects nationally and locally.

2.2.4 Policy output sub-system

In general a policy output is the result of processing the inputs with the influence of the mediating sub-system and the supra-system. In the context of public construction procurement there are three types or modes of construction procurement policy. A *legislative construction procurement policy* output, which we believe is enforcing an ideological policy of the political sub-system, a *legislative and flexible construction*

procurement policy output, which may be a policy tool to implement specific policies to achieve specific goals and a *free-market construction procurement policy* output, which can be described as an independent strategy policy, which put more emphasis on private client's desires.

The output of such nature depend largely on the ideological frame in which the political sub-systems roles in any State. In a free market and capitalist State restriction on who construction projects are procured are driven mainly by financial constraints, on the other hand socialist States which may have some restrictions on ownership and commercial dealings may rely heavily on legislative power to enforce the way that public projects are procured. The other obvious path is something in between, where a mix of State legislative power with some flexibility in the lower State departments' judgment on which procurement system is appropriate to their project. In a project context, sensitivity and significance of the project may play a role in adopting one of the aforementioned three procurement policies, where effects of choosing the wrong option may result in more serious national and local consequences.

2.2.5 Policy Outcomes/Impacts Sub-system

There are two ways of understanding the one-way process end of a single State-policy. The outcome of the policy on a certain sector in the public arena as an effect of the policy in enhancing or impeding this sector individually and the whole society collectively. The other way is the assessment of the kind of impact of the policy on a specific sector. These two paths are used collectively to quantify and qualify the total policy outcome.

The *outcomes in* and the *impacts on* a certain construction procurement State policy is reflected in these aspects of the State:

- **National policy**

The national policy of any given State is the governmental laws, rules, statutes, or edicts that express the government's goals and provides for rewards and punishments to promote their attainment. The process of forming a policy envisaged in the model can affect the quality and sustainability of these polices in a way that national industries may be affected by their procurement quality and suitability.

- **National economy**

National economy is one of the measures needed to determine value for money. It concerns the cost of the inputs to an activity; the resources needed to deliver a service. Typical measures will include money, time, people and quality, and these can be affected greatly by the way that they are procured, which is dictated by the State policy process and outcome.

- **The industry**

A generic term for a distinct group of economic activities. Industries are described and classified by their primary activity or product and the collection of firms making the same product is called an industry. The role of the State is to regulate such sector which is affected by the policy umbrella in which it operates under from conception to completion, in other words their procurement as individual enterprises or collective industries.

- **The infrastructure (e.g. construction projects)**

Infrastructure projects provide the basic needs for human survival (food, water and shelter) and the services (transport, telecommunications, power, sanitation, and safe disposal of waste) that are crucial for socio-economic development and improvement of the general standard of living in any country.

The framework of interdependent networks and systems comprising identifiable industries, institutions (including people and procedures), and distribution capabilities that provide a reliable flow of public products and services essential to the defence and economic security of the State. The smooth functioning of the infrastructure at all levels depends on the performance of individual and local construction projects, which reflect the success of State policies in managing and procuring them.

- **Local economy**

A generic for the economy of or belonging to or characteristic of a particular locality or neighbourhood. In the classification, “local” refers to the level of government that has the authority for the delivery of services and is distinguished from “State”. Local

government can be municipal, county, or parish. This economy is sensitive to State policies in procuring their local projects, where by good national procurement policies may not be effective in some localities because of differences in the social structure or any other local community entity.

- **The end-user**

The end-user is the customer, consumer or person who uses a given product or public service. The end-user is a more precise term than a commercial consumer, because a consumer may be a retail buyer, distributor, etc., who may never actually use the product or service. Quality of services are affected in their performance by the way that they are managed, procured and used and naturally the public as end-users have the right to be satisfied and whether is a priority in the State policy or not depend on the process of forming it and implementing it.

- **The public organisations**

A generic for any organisation that is publicly owned and controlled, including government (national, provincial and local), State-owned companies and government monetary institutions. These State entities are either sources or implementing organisations of national and local policies, and they are essential in enforcing public policies. However they may be independent in terms of implementation tools but are under the bigger umbrella of the State policy, which may affect their performance as organisations which procure public projects according to State procurement policies.

- **The working team**

A group of public employees who participate or manage the participation in a public project. Frequently each team member represents a function, department, or specialty, and together they provide the full set of capabilities needed to complete the project, in which case they are affected by the overall policy goals and objectives in their project, which may enhance or impede their performance as a team.

- **The role**

The position, job, or function one holds in a given public activity or performance in relation to the other participants in the public organisation. It includes all the duties,

rules, and actions of the position, which are regulated by legislations and laws reflecting State policy objectives and goals. In one hand State policies may define roles of these people in accordance to the organisations' needs which may not be based on the overall public needs in attaining public services through the construction of public projects. This will affect satisfaction of these roles and their performance to reach policy goals, in the other hand the same policies may improve performance of public organisations which may be based on the fact that these policies have public management oriented goals which serve higher national policies.

- **The individual**

An individual, within a public organisation authorised to carry out a certain role with duties and responsibilities set by the public department. This individual in a public service context may play the role of a civil servant. However many public organisations and publicly owned corporations have no direct contact with the public but in principle must have the responsibility of satisfying the needs of the public as an end-user. State procurement policies may not be explicit in defining such responsibilities which may result in inconsiderate employees of their duties to the public and their assets.

- **The ethics**

A system of moral principles, rules or standards that govern the conduct of members of public employees. Ethical codes of conduct approach human behaviour from a philosophical standpoint by stressing objectively defined, but essentially idealistic, standards (or laws) of right and wrong in carrying out public works, those applicable to the practices of employees and managers of public departments and corporations.

A State procurement policy may dictate public employees' work behaviour by either allowing or suppressing certain right/wrong work ethics, intentionally or unintentionally, which should be taken into consideration when policies are made and implemented in the public projects procurement and construction.

This research will concentrate on the issue of the impact of State procurement policy in constructing and managing local public sector infrastructure projects.

The understanding and assessment of these outcomes and impacts brings us to the stage where by a feedback process in which part of the output of a system is returned to its input in order to regulate its further output to re-begin the whole process of public construction procurement policy-making. The continuous circulation of the process helps enhancing the policy outcome and brings the best-desired impact on the system. The speed of the process is paramount in reaching this goal, so a complementary sub-system of accelerators and decelerators is introduced.

2.2.6 Accelerators and decelerators sub-system

Similar to other systems, the public procurement system's ability to accomplish procurement policies/goals is influenced by its environment, and in turn, influences its environment (e.g., government procurement may improve socio-economic environment as intended). (Thai, 2001)

The main elements of this sub-system are; money, politics, risks, legislations and the ethics. The more funding, the less bad politics, the less risks, the less legislations and the more positive ethics in procuring the infrastructure projects is available, the more speed is gained in the process of producing a good and suitable procurement policy.

Market conditions have a great influence over the public procurement system's effort to maximise competition. Moreover, the market determines whether or not socio-economic objectives of procurement are accomplished, whether or not a governmental entity can fulfil its needs; the timeliness of fulfilment; and the quality and costs of purchased goods, services and capital assets. As there are different levels of economic growth among countries in the world, market conditions are very favorable in industrialised countries, while they may be unfavourable in developing countries like Libya.

Different from public procurement regulations and rules, the legal environment refers to a broad legal framework that governs all business activities, which Thai (2001) pointed out including research and development (regulations dealing with safety and health of new products), manufacturing (safety and health regulations at workplace and pollution control), finance (regulations dealing with disclosure of information), marketing (regulations dealing with deception of advertising, disclosure of product

characteristics), personnel (regulations dealing with equal opportunity for women and minorities), and contracts. Indeed, most aspects of contracts--public or private--such as contract requirements, disputes, and breach of contract are governed under the same contract law.

In developing and particularly transitional countries like Libya, where legal systems are not comprehensive, government contracts may need detailed provisions.

Regarding the State policy and the whole politics factor, in theory in a democracy many individuals, groups, and organisations in the private sector including trade associations, professional associations, and business firms or companies (commonly known as interest groups) are actively involved in all aspects of the public procurement system. Having various interests in public spending, objectives and beliefs, interest groups are involved in the public procurement system in several ways such as lobbying legislative bodies to pass or alter procurement statutes, influencing implementation of these statutes, and influencing budget authorisation and appropriations processes.

Normally, a government program that is eventually adopted is a compromise among different views of interest groups, policy makers and management. In this democratic environment, there are cases of a strong coalition of policy makers, bureaucrats and interest groups in their effort to get their programs adopted and implemented.

All of the elements in the sub-systems are exposed to the overall supra-system. The effects of the supra-system depend on the differentiation and integration of the social, legal, economical, environmental, political, cultural and technical aspects of the State environment. These aspects may change with time, and this will be reflected in the process of making a procurement policy for the infrastructure projects by the change in the inputs, the mediating variables, the political system and the output and ultimately feedback of users.

2.2.7 System Feedback

Similar to other systems, the feedback element is very important for a sound procurement system. By continuously evaluating what is required to perform the whole procurement system, what happens to it and what results from it, policy

makers and management can make required adjustments or reforms where they are needed.

Feedback may indicate the need for adjustments to or improvements in all procurement system elements. In some cases, feedback may indicate that procurement regulations or policies and/or agency procurement standards are no longer current or suitable, and adjustments or reforms are needed. In other cases, feedback may prove that the procurement cycle does not work effectively, and needs to be improved in areas such as prompt payments, uses of new technology such as e-procurement.

Feedback normally comes from procurement professionals inside clients and contractors alike who may feel frustrated with the whole system, including unsuitable procurement regulations and process, and a lack of procurement integrity due to inferences of policy makers and other influential parties. Feedback may be provided by external State organisations such as legislative bodies and/or legislative committees, oversight bodies (e.g. internal auditors/inspectors) and special study commissions, committees, action groups or teams, which are also active in the mediating variables sub-system.

In brief policy makers are left in the dark if feedback of the procurement systems which they formed and legislated is not conveyed with clear description of the encountered problems during implementation.

After understanding the process of making policies in the public arena with all its ins and outs and concentrating on the issue of public construction projects and their procurement policy, we reach a position where it is essential to this study to understand the capacity in which public policy makers assess and operate in the making of such policies, which depend largely on the needs of the public and their reflection on forming and implementing these influential and critical public policies.

2.3 A conceptual understanding of public sector capacity in the assessment of procuring municipal construction projects.

The first task is to define public sector capacity in some detail. This must be done in two stages: defining the municipal public sector, and defining capacity. We can take each in turn.

2.3.1 Defining the scope of the local public sector (Municipal).

It is necessary to set boundaries to the municipal public sector to decide where it begins and ends for the purpose of measuring its capacity to procure its construction projects. As mentioned before, we are not concerned directly with the political leadership of the State. Some existing literature incorporate some understanding of what “good” policy should consist of, particularly in economic management. Our specific focus on construction procurement excludes political choices such as these.

Much of the literature incorporates measures of the size of governments’ deficits in the public sector and its failures to deliver. What we will measure instead, supposing the data is available, is the extent to which the policy of the budgeted expenditure in procuring public projects reflects actual implementation and expenditure to reach the desired goals at the end of the project or a designated period of time. Our focus would be on whether the construction procurement effective implementation is a relevant and realistic policy tool that is capable of regulating local public sector projects performance, not on whether the political “leader/leaders” chose the right policy. The two are by no means necessarily linked together. It is quite common for reasonably effective State procurement policy at an administrative level to coexist with substantial shortcomings in reaching the desired policy goals.

Excluding political choices does not mean assuming that managing and procuring public sector projects is or should be independent from politics. There has been a long debate in the development of public administration literature about whether any distinction can be drawn between the two, the consensus being that they are too intermingled. Two points are worth making about this.

Firstly, excluding policy choices merely means that we are focusing on administrative and implementation capacity of the local public departments clients as our central issue. It does not mean we are assuming that other variables, including politics, have no impact on it.

Secondly, in practice some countries are better than others at keeping politics distinct from administration and implementation, which is applicable in some of Libya’s municipal projects, due to their frequent and policy independent nature.

Polidano (2000) stated “Many outsiders may find it odd that academics in the United Kingdom, which surely has one of the world’s least politicised administrations, are so united in denying the separability of politics and administration. The politics-administration distinction is an issue, which needs to be looked at from a relativistic or comparative rather than absolute perspective.”

Having excluded political choices, should we narrow our focus further? On this, depends the kind of data we need to collect and the availability of data in turn shapes the boundaries we adopt for our definition of the Local public sector (Municipal). Key questions needing to be addressed to this end are discussed below.

- Given the size and diversity of the national and local public sector, should an attempt be made to differentiate between its various public organisations? One could, for example, seek to limit the research to the construction procurement of core local facility services (e.g. Water supply, Sewage transportation and treatment, Roads and bridges, and ...etc)
- Should an attempt be made to distinguish between different levels of government? Central and local municipal authorities are usually separate judicial entities, and the capacity of each may differ markedly within the same country for a variety of reasons. Capacity can also differ markedly within sub-national government: for instance, between large city councils and their remote rural counterparts (Olowu & Smoke, 1992; Crook & Manor, 1998).
- A separate issue is whether an attempt should be made to distinguish between different policy sectors within the central government. Sector specific assessment of capacity would certainly be of value for specialised analysis, and it is possible that sufficient data for their assessment may be found in some cases. Sector-specific indices would take us away however from the concept of a general measure of local public sector capacity that is easily comparable from one to another. It would also be difficult to construct a sector-specific assessment without taking account of prescriptions for “good” policy.

- A final issue is whether the assessment should cover non-government organizations (NGO's) and other private bodies, which deliver services on behalf of government. The logic of this would be that private bodies which deliver services to, or on behalf of, the State are effectively an extension to the public sector, and they thereby boost its capacity. But particularly in many developing countries, governments often resort to such bodies precisely because of declining or limited capacity within the public sector itself. In other words, heavy involvement of NGO's and other private bodies in the delivery of core public services could be a negative rather than positive indicator of local public sector capacity in procuring these core service oriented projects.

The upshot of this section is that the assessment should be a general measure of procurement management capacity within the local public sector (municipal), that is to say public bodies (core public service) that are owned or controlled by the local authorities.

2.3.2 Defining capacity of the local public sector (Municipal).

Having set the boundaries of the public sector for our purposes, we now need to define capacity. The term is usually understood to mean the ability of an organisation to act effectively on a sustained basis in pursuit of its objectives. But to serve as the foundation for the development of an assessment, this definition needs further elaboration. This is attempted surprisingly rarely in the literature on public or development administration (one exception being Cohen, 1995).

There is, however, a separate body of literature on "state capacity" in political science, which, though not concerned specifically with the administrative and management machinery of government, is more helpful in this respect. The focus of this literature is broader than ours, but it still serves as a very good foundation for a definition of public sector capacity in general and local public sector procurement in particular. Accordingly, we will consider State capacity and local public sector procurement capacity separately in turn.

I. The literature on State capacity

In a pioneering study, Mann (1984) makes a useful distinction between the State's "despotic" and "infrastructural" power. Despotic power is the ability of decision-makers to act in isolation from or even against the wishes of non-State actors. Infrastructural power is the ability of the State to penetrate society and see that its decisions are carried out to reach the intended goals. Weak despotic power combined with strong infrastructural power is the mark of the contemporary developed State:

These infrastructural powers are now immense. The state can assess and tax our income and at source, without our consent or that of our neighbours and kin (which states before about 1850 were never able to do); it stores and can recall immediately a massive amount of information about all of us; it can enforce its will within the day almost anywhere in its domains; its influence on the overall economy is enormous; it even directly provides the subsistence of most of us (in state employment, in pensions, in family allowances, etc.). The state penetrates everyday life more than did any historical state. Its infrastructural power has increased enormously. (Mann, 1984).

While Mann is concerned with the historical development of the more advanced States, Migdal (1988) focuses explicitly on developing countries. He sees State capacity as the ability to write "rules of the game" that hold sway throughout society and supersede any pre-existing rules that are in conflict with its own. these rules, says Migdal,

encompass everything from living up to contractual commitments to driving on the right side of the road to paying alimony on time. They involve the entire array of property rights and countless definitions of the boundaries of acceptable behaviour for people (Migdal, 1988).

Migdal calls this, social control: it is closely related to Mann's concept of infrastructural power. In addition to the ability to regulate social behaviour, a key aspect of the State's social control is the capacity to extract resources, which enable it to operate and achieve its ends. Many developing countries are weak in both areas. This is because much social authority continues to reside in landowning classes, ethnic groupings, clan grouping or other social structures, which pre-date the still relatively young and insecure States established by the colonial authorities,

particularly in Africa and the Middle-East. States in such countries are effectively in competition, overt or covert, with pre-existing social forces.

A less confliction view of State-society relations is taken by Weiss and Hobson (1995), who take as their starting-point Mann's distinction between despotic and infrastructural power. To become competitive in a global economy, they argue, States must work with, rather than against non-State actors. States can vastly expand their infrastructural power by harnessing the power of civil society in pursuit of shared national goals. This is the manner in which they interpret the history of rapid economic growth in countries like Japan and Taiwan. Growth was generated through the coordination of markets by the State working in partnership with, and in support of, private firms.

This material is enough to give us a sense of the elements or components of State capacity in general.

There are three broad elements, which were also mentioned by Polidano (2000):

1. *Despotic Power*, or the ability to take decisions unconstrained by special interests.
2. *Coordinating or Policy Capacity* is the ability to take decisions on the basis of a knowledgeable assessment of a comprehensive range of information, and through a process, which brings together the various agencies of government that are involved in the area.
3. *Infrastructural Power* or, perhaps a more apt term, implementation authority, which is the State's ability to ensure that its decisions are complied with and laws are obeyed (including laws obliging citizens to pay taxes and other duties)

In other words we have broken State capacity down into its freedom to take decisions, its ability to take informed decisions, and its ability to have those decisions implemented.

II. Local Public Sector Capacity (Municipal)

Both these elements apply to the State capacity in a broad sense; they need to be re-examined with a view to whether they are all appropriate as components of local

public sector capacity for the purposes of our research. Implementation authority is clearly an important aspect of public sector capacity; but we need to look at the relevance of the other two elements carefully.

We are concerned with the capacity of the permanent administrative and management machinery of the local government, not the State as a whole. The logical implication of this is that despotic power should not be considered part of local public sector capacity. Despotic power is the extent to which political leaders are unconstrained by non-State actors in taking decisions. This relates more to the political than the administrative and management realm of government, and does not therefore come within the focus of our research.

This does not mean that politics and politicians have no bearing on local public sector capacity. In general public sector capacity and performance is profoundly shaped by a number of external influences, particularly political leaders and the system within which they operate. But if we begin incorporating such factors directly into our assessment, we run the risk of producing yet another assessment of “good/bad governance” which tells us little about the capacity of the permanent implementation machinery of the State. As we will see shortly, it is possible to take external environmental influences into account without losing focus in this manner.

Does the reasoning we employed with regard to despotic power also dictate the exclusion from the assessment of coordinating or policy capacity? After all, if politicians are responsible for major policy choices, then surely it is up to them to ensure that those choices are knowledgeable and coordinated across government departments.

The permanent administrative and management machinery of the State, however contributes much to the quality and integrity even of high-level policy-making. Policy coordination, for instance, depends on institutionalised routines, which are upheld and made to work by the central bureaucracy.

The policy routine is defined by Davis (1997) as the province of bureaucrats. Knowledge about procedures must be widespread and easily accessible. This

standardised process requires rule books, training and an agency with responsibility for enforcing standards. Behind the cabinet, therefore, must stand a central policy agency as the bureaucratic expression of executive authority, the tie which binds together policy work across the government. Such agencies are rarely popular with line departments, since they appear interfering and ill-informed, always imposing demands for information or briefing against otherwise sound policy submissions. Yet from the executive's point of view, these central policy agencies are essential for policy control and consistency. They make the policy domain manageable, and coordination possible (Davis, 1997).

Political leaders take many decisions on the basis of information and advice that is prepared by public departments and servants. Key State officials can exert a significant influence even on high-level policy; and there is an influential body of thought which sees this as legitimate, indeed desirable. This school of thought considers a competent public service playing an institutionalised policy role to be a safeguard against ill-conceived decisions or improper actions on the part of politicians. (Polidano, 2000)

In Britain, for instance, major policy failures such as the poll tax in the early 1990s have led to fears that the civil service is no longer an effective source of "institutionalised scepticism" in policy-making (Plowden, 1994).

In an African context, Luke (1990) says that the key to state coherence is the strength and authority of central agencies, which maintain leverage, coordination and accountability throughout the system. Such structures give decision-makers "a formidable base for strategic decision-making vis-à-vis policy options dictated by external agencies." Unfortunately, he finds, central agencies are all too often in disarray and unable to play such a role.

In other words, a well-institutionalised bureaucracy makes a vital contribution to the quality and coherence of decision-making through policy advice and the structuring of the decision-making process, even though the decisions themselves are taken outside the bureaucracy. Policy capacity is indeed a crucial component of public sector capacity in general and subsequently in the local public sector.

We are therefore left with two elements of local public sector capacity. These we can call:

Policy Capacity:

- The ability to structure the decision-process, coordinate it throughout State governing bodies and feed informed analysis into it.

Implementation Authority

- The ability to carry out implementation decisions and enforce rules, within the local public sector itself to comply with the overall policy direction of the State.

Given the public sector's professional concern with the management of State owned projects, a missing element concerns what we could call *operational efficiency*. This refers to the cost-effectiveness of the internal operations of the local public sector departments and the quality of the services it provides to the public. If *implementation authority* is the ability to ensure that services are delivered, *operational efficiency* is the ability to deliver those services well, that is to say efficiently and at a reasonable level of quality. Operational efficiency as understood here has become a major focus of public management reforms worldwide. This is a vital aspect of public sector capacity, which needs to be reflected in our assessment.

We have thus broken local public sector capacity down into three dimensions or elements.

- (i) Policy Capacity
- (ii) Implementation Authority
- (iii) Operational Efficiency

A diagrammatic representation of the conceptual model is shown in figure (2.6).

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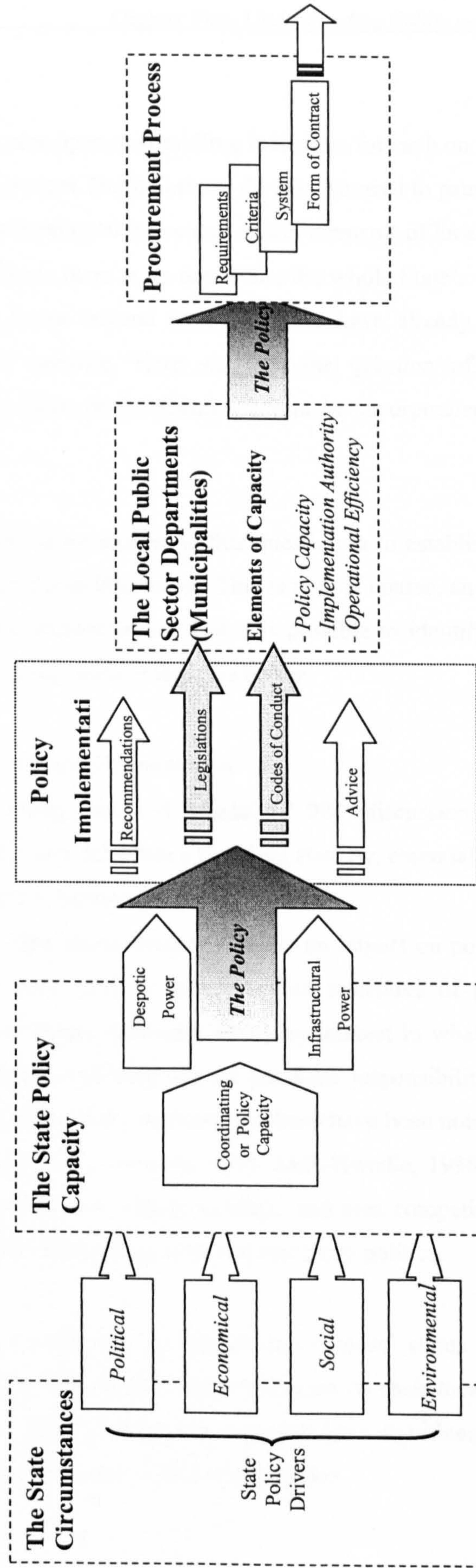


Figure (2.6) A Conceptual Understanding Model of Public Sector Capacity Procuring Municipal Construction Projects.

The way is now open to compiling indicators for each on the basis of suitable data in the Libyan context. But before we do this, we need to pause to consider the impact of external environmental influences on our elements of local public sector capacity.

In general terms there is no doubt that the whole State's public sector is profoundly shaped by forces beyond its control, we have already referred to the impact of politics, for instance. Here we face the question of, to what extent can the surrounding State environmental factors be incorporated into our assessment and how?

The first part of an answer to this question is to establish just what environmental factors affect the public sector. This is not, of course, an area that can be tied down with absolute definitiveness. But it is possible to identify major socio-political and economic factors, such as the ones below.

(a) Ethnic and clan fragmentation

We have already reviewed Migdal's (1988) discussion of how ethnic or regional fragmentation can debilitate a fledgling state by, essentially, robbing it of much of its implementation authority.

Ethnic and clan fragmentation also has an impact on policy capacity. The need for representation of various groups within structures of government may result in, among other things, ministers taking an interest in whatever affects their group or region regardless of their formal portfolio responsibilities. This distorts decision-making and slows it down. Such problems have been noted in countries as diverse as Canada and Zambia (Aucoin, 1995; Osei-Hwedie, 1998). Policy capacity can also suffer if staffing falls victim to ethnic and clan competition, particularly where the latter becomes intertwined with national party politics.

Clans play a vital role in determining peoples' status within the Libyan society, where by large clans have major influence on their local setting in terms of issues which touch them directly, but they also have significant power in determining the demands and needs for certain State policies.

(b) Civil society

At the same time, however, there is an extensive literature on civil society, which points to the positive impact of non-State actors on public sector capacity. Weiss and Hobson (1995) fall within this school of thought, as does Evans (1995). Its main exponent.

In their study, civic involvement promotes better government in two ways. Firstly, the extent to which people take an interest in public affairs gauged through indicators such as newspaper readership and voting in referendums is positively correlated with the performance and efficiency of regional government. Secondly, public involvement in social groups of any kind, even football clubs and choral societies, generates “social capital” which is a willingness to submit oneself to rules drawn up in the collective interest. This spills over into greater observance of government rules and laws. Social capital boosts the State’s implementation authority.

Civil society can be broadly defined as a society’s power to constrain and affect its political leaders. It diminishes a government’s despotic power (this does not concern us), but exerts a positive influence on both implementation authority and operational efficiency (this does).

(c) Political instability

Migdal (1988) discusses the impact of political leaders whose hold on power is insecure would not welcome the emergence of strong governing institutions, which may be the civil service, the army, even the party. They would see these institutions as potential bases from which rivals could bid for power. They would seek to undermine the institutions and put trusted persons in control of them.

Political instability thus leads to the politicisation of the public sector, which becomes little more than a source of political and material resources used by leaders to shore up their support. There is no need to elaborate on the damage this does to the capacity of the public sector.

(d) Economic crisis

We should not ignore the impact of the economy itself on public sector capacity. The experience of many developing countries shows that a sharp economic downturn can reduce public sector capacity in two ways: by compelling governments to make sharp cutbacks to the public sector expenditures and through inflation, which reduces the purchasing power of public officers and compels them to seek alternative means of earning their living.

Cutbacks need not, in theory, have an impact on public sector capacity. If savings are made entirely by cutting programs and activities, this means simply that the government is asking the public sector to perform fewer tasks. Its capacity to fulfil its remaining responsibilities is not affected. In practice, however, savings are also made in other ways: by cutting capital spending, by trimming non-wage operating budgets to the bone, or by freezing wages (which can sharply depress real wages and open up a wide public-private sector pay gap, particularly in times of high inflation).

Each of these eats away at the capacity of the public sector. Steep declines in real wages can be particularly damaging: they lead to a loss of qualified staff and a massive increase in corruption, to the point where organisational discipline breaks down.

(e) Aid dependency

Another potentially negative environmental factor is aid dependency. This is of course related to economic crisis, but it brings into play a separate set of influences relating to the behaviour of overseas aid donors. Donors may provide vital assistance, but in the process they can negatively affect policy capacity in a number of ways.

- the host country's budgetary cycle can get derailed when donors come through with project funding mid-way through its financial year. The result is to weaken expenditure control, particularly where the government has to provide counterpart funding for the project.
- where several donors are active in the same field, as is often the case, a proliferation of projects can result, often conflicting with or duplicating each

other. A ministry can end up restricted into several project offices, each siphoning off key staff and working independently from the others.

- Finally, aid money distorts policy processes in recipient countries. Governments may take initiatives because they are likely to get donor funding, not because they are needed. At an extreme, aid money can create a decision-making vacuum at the centre of government as priorities turn to whatever brings in the most money to finance public projects.

We have identified five major environmental variables, which can exert a major impact on public sector capacity relying on studies by many writers in the field of policy making in the developing world. How do we incorporate them into the research? This is less straightforward than it sounds. If, for example, economic crisis has badly damaged public sector capacity in Libya, this would presumably already be captured by the indicators in the actual annual State expenditure on public sector projects.

Including the environmental variables in the assessment of the effects of local procurement policy of municipal construction projects on their performance may lead us out of the context of the research. However it is essential to the assessment that a reflection of such effect is to be realised and subsequently reflected in the case studies investigation.

2.4 Public policy implementation

To understand the policy process as a whole it is necessary to give attention to policy implementation. Thinking about implementation has evolved from a starting point in which the translation of policy into action was seen as being, under normal circumstances, an unproblematic process so long as bureaucracies were clearly obedient to their political masters.

However the overall evolution of societies and political systems in the modern world have made it more complex in dealing with the policy implementation.

In general policy implementation is defined as the link between the policy goals and objectives and the actual actions and outcomes of enforcing the policy.

A model approach in understanding the implementation of any policy was adopted by Elmore (1997) in which he argued that viewing the implementation process through a number of different organisational models allows us to be specific about the organisational assumptions we make when we offer prescriptions for improving implementation. Different models, we will see, lead to quite different perceptions and conclusions. He also argued that through which we look at the evidence of implementation dictates our perception and conclusions to the issue.

Elmore developed four organisational models representing the major schools of thought that can be brought to bear on the implementation problem. The *system management model* captures the organisational assumptions of the mainstream, rationalist tradition of policy analysis. Its point of departure is the assumption of value-maximising behaviour. The *bureaucratic process model* represents the sociological view of organisations, updated to include recent research by his students of “street-level” bureaucracy that bears directly on the analysis of social program implementation. Its point of departure is the assumption that the essential feature of organisations is the interaction between routine and discretion. The *organisational development model* represents a relatively recent combination of sociological and psychological theory that focuses on the conflict between the needs of individuals and the demands of organisational life. Finally, the *conflict and bargaining model* addresses the problem of how people with divergent interests gather around a common task. It starts from assumption that conflict, arising out of the pursuit of relative advantage in a bargaining relationship, is the dominant feature of organisational life.

Elmore admitted that the most important aspect of these models, however, is not that they represent certain established traditions of academic inquiry. As their major appeal is that each contains a commonsense explanation for implementation failures. And each explanation emphasises different features of the policy implementation process.

The format of Elmore’s discussion was the same for each model. He presented a list of four propositions that capture the essential features of each model. The first

proposition states the central principle of the model; the second states the model's view of the distribution of power in organisations; the third states the model's view of organisational decision-making; and the fourth gives a thumbnail sketch of the policy implementation process from the perspective of the model.

Implementation consists of a complex series of bargained decisions reflecting the preferences and resources of participants. Success or failure of implementation cannot be judged by comparing a result against a single declaration of intent, because no single set of purposes can provide an internally consistent statement of the interests of all parties to the bargaining process. Success can only be defined relative to the goals of one party to the bargaining process or in terms of the preservation of the bargaining process itself.

2.5 Summary

Public policy is a general and a broad field to be studied in an overview context, and because of the subjectivity of the issue in different settings of different countries and its close dependency on the ideological understanding of public policy in the corridors of power within the country, one has to realise that pretending to understand and explain in a completely generic approach will have serious gaps and shortcomings.

In this Chapter we reviewed the public policy's literature in a conceptual manner to allow more explicit understanding of how it forms. By using the system ethos and applying the full elements of System Theory to follow the process of policy making to understand and put it into the context of public construction procurement policy in Libya. This study constituted the first part of this Chapter and formed one of the main pillars of the whole research by developing a system model which described the public policy making in the context of construction procurement (See figure 2.5).

In the next part of this Chapter we reviewed an important issue, which we believe that any solid understanding of public policy making should highlight. The conceptual understanding of public sector's capacity in general and the assessment of procuring municipal construction projects allowed more comprehensive study on the

extent of public policy and its implementation. Another model was developed to understand this issue to link it specifically to the construction procurement of the public projects in a local context, which also made it easier to relate it to the Libyan municipal arena. (See figure 2.6).

In the final part of this Chapter the implementation of public policy was touched upon and some popular models were explained to complete the picture of public policy from conception to implementation and feedback.

A number of conclusions were established after this Chapter, which can also be described as lessons learned from this critical reviewing, understanding and developing an insight to how public policy is used to reach a public construction policy in the national and local projects contexts, these aspects can be summarised as follows:

- The system approach in understanding public policy making allowed the complexity of the problem to be fragmented in manageable parts, which can be analysed and assessed individually.
- Any policy when brought into any national context when studied should lie in the domain of the analysis of policy, which analyses policy determination, content and impact.
- In the case of Libya one can not judge by the official claimed status of power distribution, where in theory “power is in the hands of the people”, which was envisaged in the Declaration of the Peoples Power in 1978, but it can only be judged by in-depth policy making research, which totally rely on transparency and consistency of information.
- Using the developed system model in understanding public policy allowed manageable emphasis on the research issue without compromising the understanding of the source and nature of policy making.
- In order to understand the public policy process it is necessary to relate it to the power structure of the society as a whole and the power of the political system. Any public policy is the product of the exercise of political influence, determining what the State does and setting limits and boundaries to what it does.

- Public sector's capacity plays a major role in establishing the strength and drive of any State policy, and it depends largely on; *Ethnic and clan fragmentation, civil society, political instability, economic crisis and, aid dependency* of any given State.
- Policy implementation is a bureaucratic process with little space for innovation, and success or failure can not be judged by comparing a result against a single declaration of intent, because no single set of purposes can provide an internally consistent statement of the interests of all parties and stakeholders involved or targeted by any policy.

Chapter Three

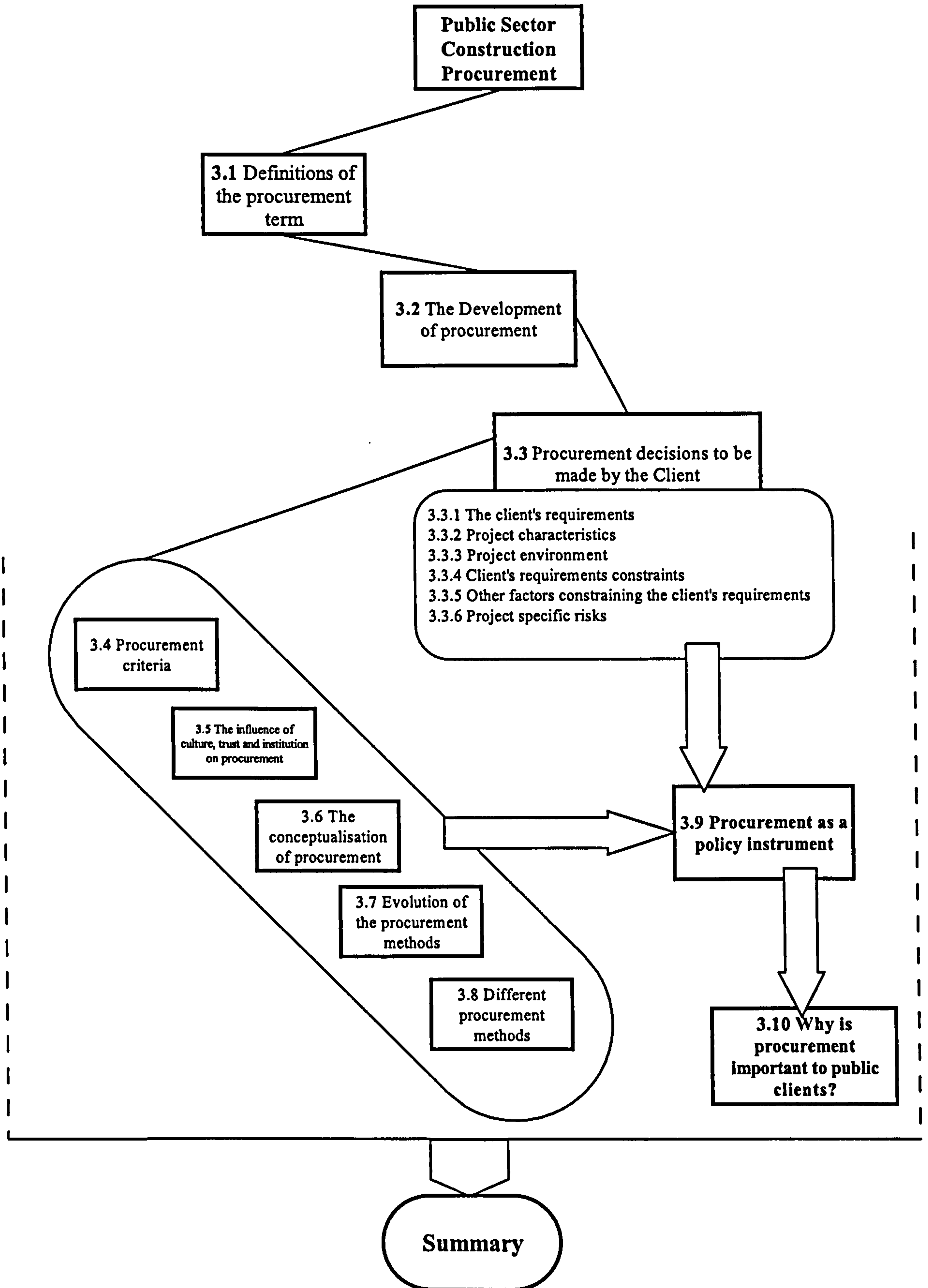
Research Element (Two)

Review of Procurement in Public Sector Construction

*Towards a Working Definition of the State's
Construction Procurement Policy*

Chapter Three Knowledge Building Flowchart

(Figure 3.0)



Chapter Three

Research Element (Two)

Review of Procurement in Public Sector Construction:

Towards a Working Definition of the State's Construction Procurement Policy

3.0 Introduction

Public procurement in general has a long history. Written on a red clay tablet, found in Syria, the earliest procurement order dates from between 2400 and 2800 B.C. The order was for “50 jars of fragrant smooth oil for 600 small weight in grain” (Coe, 1989). Other evidence of historical procurement includes the development of the silk trade between China and a Greek colony in 800 B.C.

Public procurement is an important function of government for several reasons. First, the sheer magnitude of procurement outlays has a great impact on the economy and needs to be well managed. Indeed, in all countries in the world, estimates of the financial activities of government procurement managers from purchasing material to infrastructural development are believed to be in the order of 10% – 30% of GNP (Callender & Mathews, 2000). Secondly, public procurement has been utilized as an important tool for achieving economic, social and other objectives (Arrowsmith, 1998).

In more contemporary and construction context effective organisational structures and management procedures these days are required in managing the entire process in order to contribute towards efficiency and economy on a project. Various approaches have been adopted to organise and manage the process, not only from one country to another, but also within the same nation. The process of building development is complex and diverse, involving many clients, organisations, professional bodies, suppliers, manufacturers, contractors, local authorities and individuals.

Selecting an appropriate procurement system for project delivery is a key decision, which has to be made by the client during the early stages of a project, usually under conditions of uncertainty. It is also a decision which has to be made on a

get-it-right-the-first-time basis, since the cost of making an inappropriate selection from the procurement options can range from a litigious climate for the project, to the possibility of project failure and client bankruptcy. Hence, the approach to procurement selection and the techniques used to arrive at a procurement selection decision are of great importance to clients and their advisors.

In this Chapter, the basic terms and concepts used in construction procurement are defined, and some procurement related issues in the context of infrastructural development are also addressed. This is followed by a discussion of the different approaches to procurement selections available to the client.

The main aim of this Chapter is to reach a working definition of the State Construction Procurement Policy to be applied and made relevant to this study, in order to set boundaries and limitations to the author's and reader understanding.

3.1 Definitions of the procurement term

For the purpose of clarity and consistency in communication it is necessary to define the terms and concepts used to describe the contractual and organisational arrangements established by the client to realise the project. An examination of past research and literature reveals that phrases such as 'procurement method', 'procurement form', 'procurement path' and more recently 'procurement system', 'contract strategy' and 'procurement strategy' have all been used by various authorities when referring to this subject.

The term 'procurement' in its modern context has been defined in various approaches and styles by different writers, professionals and researchers. This is hardly surprising as the term itself is used in a wide range of industries and in different contexts including commerce, industry, agriculture, defence and construction. It's important to reach a clear definition of the term 'procurement' and in order to arrive at a reasonable understanding of the term one has to clearly identify the context of use. In this study the term 'procurement' is used in the context of construction.

The terms 'contractual arrangement' and 'procurement system' are usually used synonymously, (Love, Skitmore and Earl, 1998). Also, it is common for procurement

systems, contract forms and price determination mechanisms to be regarded as synonymous or inextricably related (Fellows, 1993; Hibberd and Basden, 1996). This proliferation of definitions for 'procurement system' has led to a common and recurring theme in the construction industry, (Love, Skitmore and Earl 1998).

The starting part for the development of a definition for the purpose of this thesis was that offered by CIB W92, at its meeting in 1991, whereby a working definition of procurement was developed, defining procurement as '*the framework within which construction is brought about, acquired or obtained*' (McDermott, 1999). However this definition has been commented as being broad in sense that the context of the procurement medium may affect the definition.

Others like Hibbert (1991) used the general definition of the term procurement offered by the Oxford English Dictionary, "the act of obtaining by care or effort, acquiring or bringing about", and then argued that the concept of procurement can raise awareness of issues involved both in challenging generally accepted practices and establishing strategies.

In a wider perspective Leonard and Mohsini (1998), defined procurement as "a strategy to satisfy client's development and/or operational needs with respect to the provision of constructed facilities for a discrete life-cycle". This sought to emphasise that procurement strategy must cover all of the processes in which the client has an interest, perhaps the whole lifespan of the building.

In generic terms procurement is a framework, through which any activity is brought about, acquired or obtained, which was also envisaged in Ireland's (1984) definition of procurement as "an overall management structure and specific management practices in use on a project."

The terms in the procurement process describes the roles of the participants, the relationship among them, the timing of events, and the practices and techniques of management used.

By these definitions the procurement process is seen as the interface between the construction industry and its clients. It consists of a set of strategic decisions taken upstream of each individual project. Choosing an appropriate procurement method will offer better value for the project owner's money by allowing the project participants to work as an effective team for design and for construction. Hence, a procurement method is seen as a key set of decisions, which must be planned for, and which requires the participation of high-level decision makers.

The links which organisations establish with each other on a project-by-project basis are governed by the procurement strategy and, within the framework of that strategy, by the contractual relations negotiated by the parties, which is known by the 'Contract Strategy'. Although these different organisations come together to form temporarily a project team, they are still fundamentally independent of each other. If they are not in harmony with those of other participating organisations, they can disrupt the working of the project, hence creating a management problem (Davidson and Mohsini, 1987).

Franks (1984), describes the procurement system as 'the amalgam of activities undertaken by a client to obtain a building as a building procurement system'. This term attempts to describe the method or organisational structure used to acquire a product, in this case a building project. Masterman (2002), also defines the term 'building procurement system' as the organisational structure adopted by the client for the management of the design and construction of a building project'.

The terms contract strategy and procurement strategy, had become more fashionable ways of describing the role of procurement in construction in the late 90's. Smith (1998), describes the term contract strategy as: 'the main components of the process used to determine how the project will be procured'. He further states that the development of a contract strategy for any project should be based on a thorough assessment of the choices available for the implementation and management of design and construction. The main topics and choices for consideration can be subdivided as follows:

- project objectives

- the organisational system for design and implementation
- risk allocation
- the terms of payment
- the conditions of contract
- the tendering procedure

It has been seen that there is no commonly acceptable definition of procurement in construction, however any definition should take into account the context and the circumstances of the host environment of any particular project. The inclusion of specific terms describing the host environment helps to clarify the term 'procurement' within that environment, but it may restrict other perspectives and understandings by other researches in other environments. In the context of the construction industry, it is contended that viewing procurement as a process brings into perspective all the factors and issues influencing the successful acquisition of construction projects and subsequently the country's infrastructure projects and the infrastructure as a whole.

The procurement process in construction means the whole process of acquisition, which can occur at the functional or departmental level as well as the project and organisational levels depending on the nature of the procurement. At the project level, the procurement process spans the whole life cycle from initial concept and definition of the client's requirements and project objectives through to the end of the useful life of the asset or end of a services contract.

To the purpose of this research we define procurement strategy as the procedures, systems, and activities necessary to establish the contractual and organisational framework through which the project can be appraised, planned, commissioned, constructed, managed, operated and decommissioned. The term 'procurement strategy' will be used as the lower step from the overall 'procurement policy' of the State. Policy and strategy terms are used throughout the succeeding chapters in this research because they are sufficiently broad and encompass all the commercial, legal, political, technical and managerial arrangements made by the public client in the process of realising the project. It also includes the previously

defined concepts of 'procurement methods', 'procurement systems', and 'contract strategy', all of which are popular in contemporary literature on construction procurement.

In this research we believe that procurement is a continuing process within the policy making process in acquiring the infrastructure of a country. It is important to identify and evaluate the effects of such procurement policies and strategies on the acquisition and performance of the infrastructure projects.

3.2 The Development of procurement

During the 1980's and 1990's the technical and academic press reflected client concerns about project performance in construction, with much debate concerning international comparability and the standardisation of contracts and contract procedures. This corresponded to an environment of significant changes in the legal, economic and social structures of states in both developing and developed countries. Privatisation, in its many faces, had been implemented, not only in Europe and North America, but also in Eastern Europe (through the transition from socialist to capitalist systems), and in Africa and Asia (through Structural Adjustment Programs).

Procurement policy and systems must be appropriate to the circumstances in the host environment. This was envisaged in the recommendations in a Green paper submitted to the South African Parliament in 1997 (Green Paper on Procurement Policy Reform in South Africa 1997) in the context of procurement reform argued that they should encourage appropriate, people-intensive technology and processes, and also open the way for learning and skill development and in the socio-economic aspect, the establishment of a system that will meet the needs of the people of South Africa and will ensure development towards a better South Africa for all its citizens. In these circumstances, the process of the procurement assumes status greater than it is normally afforded. The process related goals become as important as the product-related goals.

In the developed world, much attention is focused on the funding mechanisms in the procurement and contractual relationships (Contract Strategy). For example, in the

U.K. Sir Michael Latham, through a joint governmental industry review (Latham, 1994), was given a brief to consider current procurement and contractual relations and in so doing to examine the structure of the industry. He argued that the traditional procurement and contractual procedures, which have been swept aside by market liberalisation, need to be replaced by other control mechanisms. Forms of control, such as reliance upon craftsmanship and professionalism, had been replaced with other forms, such as contract enforcement and litigation. The Latham review endorsed initiatives, such as Alternative Dispute Resolution (ADR) and partnering, as a means to replace the culture of contentiousness and to re-build trust. (McDermott, 1999)

The narrow perspective of procurement as a contractual relation between the client and the contractor is most common in the public projects in centralised developing countries, because of the strong influence of political issues on the system of procuring any project. The procurement is seen as a choice between a narrow range of contract strategies, which are bounded and controlled by the political systems governing in these countries. The move towards other approaches and systems of procurement in the infrastructure projects has been mainly due to the shortage of funding.

The need of funding in the poor developing world changed the old ways of national government procurement control, because of the emergence of new clients as the main financiers of these projects. (Merna and Dubey 1998).

The change of the governments' status from main clients to financed clients changed the procurement perspective and approach of the infrastructure projects by the introduction of the BOOT concept, joint ventures and other partnering mechanisms. These changes are not necessarily positive, whereby other agendas and objectives are brought in to play by profit and policy driven organisations. (Merna and Smith, 1996).

In other 'natural-resources' rich developing countries where by funding is not an issue, the procurement is seen as a contract choice controlled by the contracts legislations in the legal system (Al-Ashika, 1996). These legislations can range from rigid stipulations in the contract law to more flexible legislative form of recommendations to the public departments in contracting public projects, which are in-fact orders to be followed.

In the more developed countries the introduction of other procurement policies and mechanics like the Public Private Partnership (PPP), which is an output of the Private Finance Initiative (PFI) movement, is mainly to enhance the performance of the public sector projects, and satisfying the ethos “good value for money”. In the U.K. the Treasury Task Force for Private Finance described the key objective of PPP is that the taxpayers get value for money, but how such objective is assessed and evaluated is still a grey area, where definitions of the objectives behind public projects may sometimes be unclear to the client and the contractor.

3.3 Procurement decisions to be made by the Client

It is entirely possible to contract a construction project on the basis of a simple exchange of letters, or even through an oral agreement as long as the basic elements of a legally binding contract are present. However, the scale and complexity of most modern construction projects, the costs involved and the risks taken by the parties make a comprehensive and structured approach to procurement and contracting a critical matter to be addressed by the client.

Hall (2000), thinks that some clients are wasting vast amounts of money and experiencing long delays because they are not educating themselves on how to choose the right method of procurement. He stated that clients in the UK are using JCT contracts even if it is not the most appropriate approach to procure their project.

A number of approaches are available to the client when selecting an appropriate form of contract for the project. In most cases the client organisation has to first define its requirements for the project. These will determine the project objectives, which have to be identified and prioritised along with the constraints and risks that affect the project. In some cases the selection of an appropriate form of contract can be made on this basis, particularly where the client has experience with similar types of projects and the risks involved are not thought to be significant. In other cases contract selection may be a mandatory requirement imposed by the funding organisation or other stakeholder with a significant interest in the project. This method of contract selection is shown in figure (3.1)

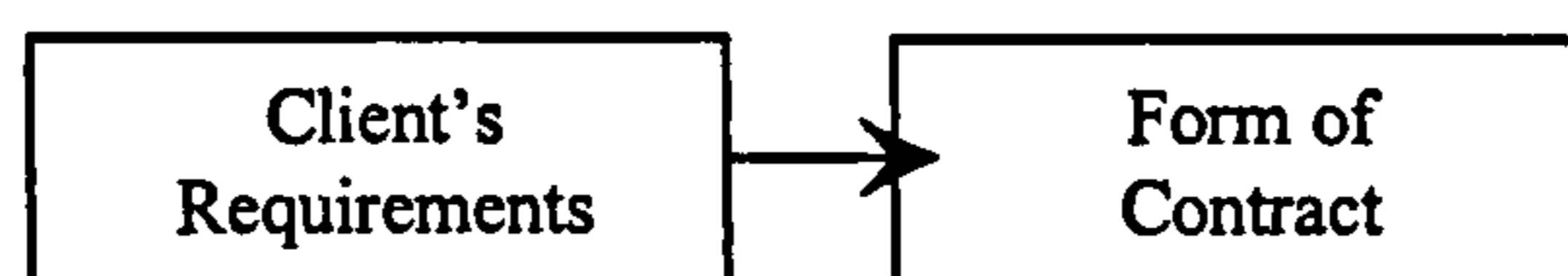


Figure (3.1) Contract selection based on mandatory requirements from previous experience or from previous experience with similar projects.

The approach to procurement selection proposed by a number of authors including: Love *et al.*, (1998); Masterman, (2002); Franks, (1988) and NEDO (1983); involve the selection of an appropriate procurement system based on key procurement criteria arising out of the client's requirements for the project. The fundamental decision sequence leading to the choice of the most suitable form of contract based on this approach is shown in figure (3.2).

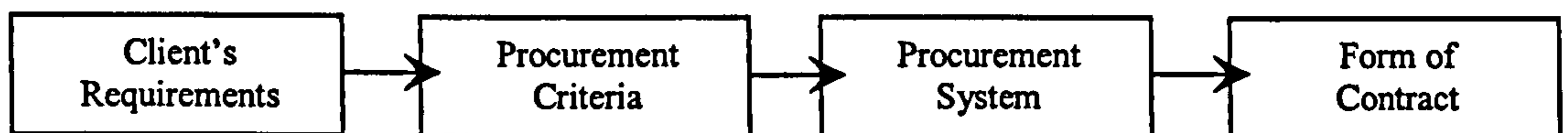


Figure (3.2). Procurement selection based on strategic assessment of procurement options. Source: Chappell (1991).

Based on Murphy's law "*What can go wrong will go wrong*" in recent years a number of authors have highlighted the importance of considering risk allocation/avoidance and proposed the use of risk analysis to determine appropriate procurement strategy for engineering projects. Hayes *et al.* (1987) suggested that the development of a procurement strategy for a project must be based on choices about how to respond to risks. Mastemann 2002, also suggest that a contractual arrangement initially should be selected so as to take into consideration how risk will be transferred between parties, therefore determining the nature of the procurement method adopted to fulfil the client's objectives. In essence, Hibberd and Basden (1996), suggest that risk is the prominent criterion that will determine the selection of a procurement method.

On the other hand some authors like Murray *et al.* (2002) argued that the adoption of formal risk management framework on the projects which he had included in his survey, which also none of them had used, would not have prevented the projects being exposed to the project staff errors.

The decision sequence shown in figure (3.3) below suggests a possible method of incorporating risk management into the procurement selection process for construction projects proposed by Evans and Evans (2001).

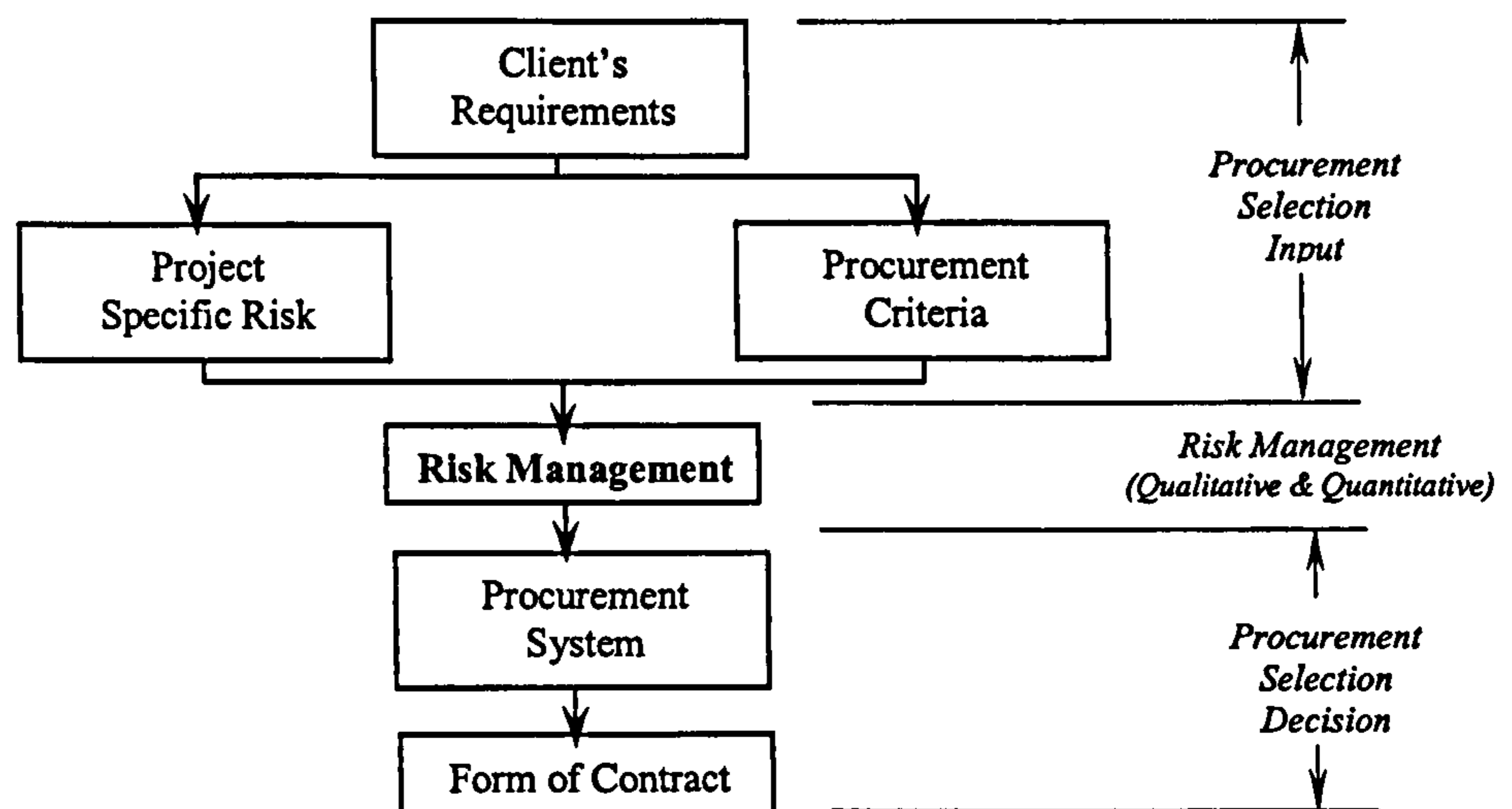


Figure (3.3). Procurement selection based on risk analysis and management
Sours Evans (2001)

The different approaches have two common aspects of the procurement selection process. The client's requirements and the procurement criteria of the project are essential in selecting a suitable and optimal choice of a procurement strategy.

3.3.1 The client's requirements

It is not uncommon for the client to have conflicting requirements for a certain project. These may include: high quality, low cost (economy), quick completion, flexibility to introduce change, large size and high complexity with low risk and minimum incentive for the contractor. In other words, "the best of all possible worlds". It is therefore essential to distinguish between those requirements that are necessary and those that are desired or even achievable in the project context.

In developing the project brief, the client with the assistance of a consultant (if necessary) must adequately define and prioritise the project objectives based on these requirements. This will reduce the chance of the client introducing significant changes to the project during the detailed design and construction stages, a factor that is known to increase cost and adversely impact project delivery targets in construction projects.

The client's requirements for the project determine the project characteristics, project environment and to some extent the constraints that affect its feasibility. These are explained briefly below:

3.3.2 Project characteristics

Every project has fundamental characteristics that make it unique. These characteristics include the project objectives, value, timing, scope, size, function, performance criteria, resources, materials, products, processes, and other physical parameters that define the project.

Other characteristics relate to the procurement and realisation of the project. These include: project organisation, stakeholder relationships, administration, implementation strategy, design, construction, technology and communication systems. The project characteristics have the potential to impose constraints on project feasibility and should be considered in the selection of an appropriate procurement strategy for the project.

3.3.3 Project environment

The project environment refers to the location of the project and the commercial setting in which it is placed. Aspects of the project location such as site topography, geology, climate and the susceptibility of the local environment to adverse impact resulting from project activities have a profound influence on every aspect of the project, from design and construction to operation and decommissioning. The introduction of stringent environmental, health and safety, planning and regulatory legislation, particularly in developed countries over the last few years has also added to the importance of project location in determining the most appropriate procurement strategy for the project.

The surrounding environment acts by its forces on the project within three logical constraints; time, cost and quality. The client should be aware of such forces in terms of their presence and effect. See figure 3.4.

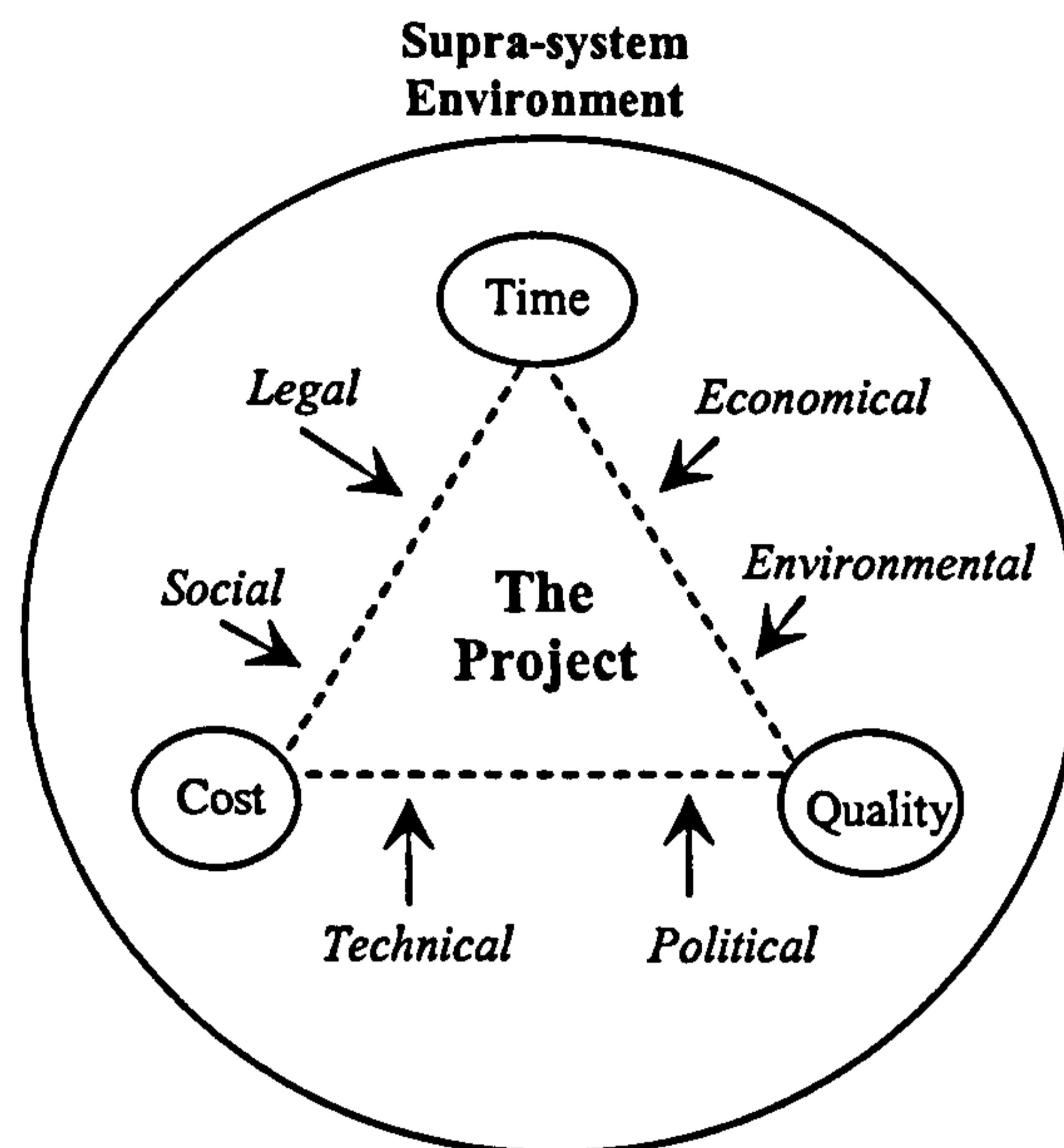


Figure (3.4). The surrounding supra-system environment forces acting on the project.

There have been dramatic changes in the construction industry over the last few decades and these have influenced the way construction projects are procured and realised. This is evidenced by the proliferation of numerous standard forms of contract as well as by the resurgence of some non-conventional procurement methods as in the case of Private Finance Initiative (PFI) and concession type contracts e.g. BOOT.

Much of the drives behind the PFI have come mainly from government, keen to fund public assets and services with private sector finance and to transfer the risks of construction, operation and maintenance to private sector ownership. There has also been a drive towards the privatisation of many traditionally state owned industries both in the developed and developing countries. The impact of these changes on the context in which projects are procured has placed greater emphasis on flexibility to introduce change during design and construction as well as on timely completion to meet customer demand or market requirements. RICS (2005)

The influence of technology on the construction industry has continued to challenge the traditional ways in which construction projects are procured and realised. The use

of Computer Aided Design (CAD) and Computer Assisted Manufacturing/Modelling (CAM) have allowed Clients to visualise products and projects in three-dimensional virtual reality before they make a commitment to finance their development. It has helped to create a new breed of clients that are more informed of the standards of delivery for their projects and are increasingly demanding greater innovation, higher quality and quicker delivery, all at lower costs.

The quicker, better and cheaper environment that now exists in many industries has forced many construction firms to adapt or die in the face of intense competition. Most clients now believe that the size of a firm and its annual turnover does associate with competence in preference to the traditional approach of selecting construction services based on reputation. It has led to a number of mergers, acquisitions, joint ventures and strategic alliances between firms across the industry and a new approach at least in some sectors, to project procurement and realisation. For these reasons the project environment is of critical importance in the selection of an appropriate procurement strategy for the project.

3.3.4 Client's requirements constraints

Any restriction that affects the extent to which the client's requirements for the project are achieved can be considered a constraint. Constraints may be related to key project variables such as time, cost, quality and function or may be associated with uncertainty and risk. The other aspect which may act as a constraint is the social and cultural acceptability of the project in that point in time.

Time constraints reflect the degree of urgency under which the project is procured or developed and may be in the form of a completion date deadline, schedule acceleration or other fast-tracking methods.

Cost constraints may be in the form of a fixed allocated budget, fixed draw down points/cash flow patterns or financial restrictions from the lender organisation.

Quality constraints may be in the form of specifications and tolerances for materials, installed plant units and works or may relate to special aesthetic requirements.

Functional constraints include limitations on size, production capacity, pollution discharge or in other ways reflect the performance requirements for the project.

The social and cultural constraint may be in a form of disagreement in the project site or design, between the owner and the end user. This kind of constraint is mostly associated with public sector projects, where by the public (The end-user) is the customer. The impact of such constrain is very dependant on the economical and political setting of the surrounding environment. The occurrence of these constrain depend largely on the power of the end-user in changing the direction of the project.

The constraints due to uncertainty may arise as a result of risks that affect the project. These may be internal risks; a direct consequence of the client's requirements for the project and are within his control. They may also be external risks, which result from other factors that are generally not within the control of the client.

The project characteristics, environment and constraints determine the project specific risks and the procurement criteria, both of which are fundamental to the selection of the most appropriate procurement strategy for the construction project.

3.3.5 Other factors constraining the client's requirements

In the process of selecting an appropriate procurement strategy for the project it is necessary to consider the effect of factors that are external to the project environment and not within the client's requirements and are to some extent beyond his control but have the potential to adversely affect the project outcome. Such factors include economic variables and events such as the price of oil, war, economic sanctions and embargoes. They also include natural disasters such as earthquakes and volcanic eruptions, which have a very low frequency of occurrence but a high impact on project performance, usually resulting in substantial losses for the owner of the facility at the time. Such factors should be considered in the procurement selection process where the possibility of their occurrence is thought to be significant.

3.3.6 Project specific risks

Due to the very nature of construction projects, unavoidable risks may occur in any given time during any phase of the project. These risks are specific to the project setting. These have occasionally been analysed and classified by various analysts. The following examples are drawn from the analyses done by Bunni, (1985).

- **Physical works** - physical conditions of the ground; artificial conditions causing obstruction; defective materials or workmanship; costs of tests and samples; weather, site preparation; inadequacy of staff, labour, plant, materials, time or finance.
- **Delay and disputes** - possession of site; tardiness in the supply of information; inefficient execution of work; delay outside both parties' control; layout disputes.
- **Direction and supervision** - greed; incompetence; inefficiency; unreasonableness partiality; lack of communication; mistakes in the documentation; defective designs; ensuring compliance with requirements; inappropriate choice of consultants or contractors; changes in requirements.
- **Damage and injury to persons and property** - negligence or breach of warranty; uninsurable matters outside the parties' control; accidents; uninsurable risks such as war, usurped power; consequential losses arising from the above; exclusions, gaps and time limits in insurance cover.
- **External factors** - government policy on taxes, labour, safety or other laws; delay or refusal of planning approval; financial constraints; energy and pay restraints; cost of war or civil commotion; malicious damage; intimidation, labour demands and unrest; strikes; lockouts; pickets.
- **Payment** - devaluation; delay in settling claims and certifying; delay in paying certificates; legal limits in recovery of interest; insolvency of contractor, subcontractor or employer; funding constraints; shortcomings in the measure and value process; exchange rate fluctuations; inflation; anything not covered by a fluctuation clause; replacement cost of plant and equipment.

- **Law and arbitration** - delay in resolving disputes; injustice; uncertainty due to lack of records or ambiguity of contract; cost of obtaining decision; enforcing decisions; changes in statutes; new interpretations of common law.

In essence, any factor that can significantly affect the project outcome can be considered a risk. Therefore this list is not exhaustive. Nevertheless, the important issues that concern this research are to do with the selection of a procurement strategy based on the identification and management of risks affecting the project and not the exact nature or characteristics of those risks.

3.4 Procurement criteria

When client's requirements and project objectives have been defined and prioritised, the next step is to set out selection criteria that will be used to determine an appropriate procurement system for the project. The selection of an appropriate procurement system for all but the simplest of engineering projects is often difficult owing to the large range of options available.

Choosing a procurement system means eliminating as many options as possible and making a reasoned choice from those which remain. In order to make such a choice, selection criteria must be established, these are referred to as procurement selection criteria. The use of multiple criteria to derive a suitable procurement method for a construction project will assist the client in identifying its principal goals and objectives for the project, (Love, Skitmore & Earl, 1998).

Latham (1994) stated in his report that "The basic decision on the procurement route is difficult... inexperience clients need advice". We believe that this is the phase when clients need to use all their capabilities to ensure the right criteria is set to allow the suitable choice of the procurement system.

The key starting point in generating a selection criterion is a clear definition and illustration of the client objectives behind any project. Rowlinson, (1999) consolidated this point by stating that the explicit statement of the client's objectives is essential during the procurement system selection process. He went further and stated that in some certain circumstances where these objectives are not set clearly,

the selection process can only be a satisfying process rather than providing a definitive answer to the procurement system question.

The use of multiple criteria to derive a suitable procurement method for a construction project will assist the client in identifying its principal goals and objectives for the project, (Love, Skitmore & Earl, 1998).

A number of factors have been proposed by various authors; Skitmore and Marsden (1988), Cheung *et al.* (2001) and Ng *et al.* (2002), for use as procurement criteria. These include the following project attributes: speed, certainty, flexibility, quality, complexity, risk allocation/avoidance, responsibility, price competition, and disputes and arbitration, most of which are based on the list produced by NEDO (1985). The criteria produced by NEDO (1985), consists these aspects:

- Timing (programme)
- Controllable variation (flexibility to adopt change)
- Complexity of the project
- Responsibility of the parties
- Quality level
- Price certainty
- Competition
- Risk allocation/avoidance

The bases of the NEDO criteria were derived from a questionnaire survey in the construction industry. In this respect Rowlinson (1999) criticised the NEDO criteria by taking into account only a limited set of criteria in developing a solution to any procurement problem. He went further and identified three problems with this approach:

- there are whole range of criteria which are not addressed by such system and other sprung-off systems;
- the range of procurement system alternatives are rather naïve and are currently not an all-encompassing set of procurement options;
- such systems are very much country-dependant and are also dependant on the particular time at which they are developed – what is acceptable in terms of

criteria and performance in Australia in 1997 may be totally irrelevant to South Africa in 2005.

3.5 The influence of culture, trust and institution on procurement

Culture is defined as historically evolved values and attitudes, which are learned and shared by the members of a given society, which influence their material and non-material way of life in interacting with each other and outsiders (Wikipedia 2005).

These inherited and evolving values and attitudes are a starting point in any decision, where procurement of any projects also starts with a set of cultural inputs to the decision maker/makers and ends with the choice of a specific procurement approach. As a generalisation the study of culture especially in developing countries has important implications for the construction industries for the developing world and industrialised countries. The difficulty is in stimulating and converting these implications into research themes (Langford, 2000).

Culture can be distinguished conceptually from social structure. Culture in this sense is restricted to meanings, symbols, values, religion and ideology. Social structure concerns concrete social organisations such as the family, clan, legal system, or nation (Fukuyama, 1995). The capability of communities to form new associations and to co-operate, Fukuyama calls it “spontaneous sociability”.

McDermott (1995) stated that the potential for the spontaneous sociability is dependant upon a network of social and political institutions. These institutions have to incorporate trust in their dealing with the surrounding culture of projects’ stakeholders.

Trust is an ambiguous and complex phenomenon and, depending on their discipline and the problems they have been studying, researchers have concentrated on diverse aspects of trust and processes of trust development. In a recent effort to bring together the elements most frequently cited in works from various theoretical perspectives, Rosseau *et al.* (1998) formulated the following definition:

“Trust is a psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behaviour of another.”

The role of trust has been repeatedly highlighted as an important factor in the successful completion of construction projects (Latham 1994, Egan 1998, National Audit Office 2001).

The manifestation of trust in procurement and contractual relations in the construction industry depends largely on the host environment. This manifestation is a reflection of the cultural trends and attitudes of individuals and organisations, for instance the presence of corruption in the client environment affects any contractor's approach to reach an agreement on the procurement path and the contractual strength of this path.

According to a series of surveys conducted in 1995 by Transparency International's national chapters, corruption in the public sector takes much the same form and affects the same areas whether one is dealing with a developed country or a developing one, and the areas of government activity most vulnerable to corruption include public procurement, re-zoning of land, revenue collection, government appointments, and local government (Transparency International, undated). It is very difficult to assess the cost of corruption. Libya is very low (120th out of 133 countries) in the list according Transparency International Corruption Perceptions Index 2003 ranking list. This should not be overlooked in any study to policy makers in establishing public construction procurement systems. Subsequently Transparency International concluded that nine out of ten developing countries urgently need practical support to fight corruption.

The potential for spontaneous sociability is dependent upon a network of social and political institutions and their constraints and freedoms. Hutton (1994), in identifying areas of weakness, argued that "the degree to which an economy's institutions succeed in underpinning trust and continuity is the extent to which long term competitive strength can be sustained". A major thrust of the Latham Review (Latham, 1994) has been the attempt to re-build trust in the construction industry. This has been attempted both through advocating of partnering at project level, and through encouraging the re-structuring and re-aligning of the existing client, contractor, subcontractor, supplier and consultant institutions.

Intermediate institutions have been given a developmental role in establishing procurement policy and practice in both developed and developing countries

McDermott and Quinn (1995), Ng Wing Fai (1994), Martins and Taylor (1996), Walker (1996), Allin (1990), and Ofori *et al.* (2000).

Ofori *et al.* (2000) summarise the advantages of such intermediate institutions in developing nations since they encourage the public sector to package projects in suitable sizes for participation by small, local contractors; the use of locally developed materials, and the formulation of contract procedures and documents, which are easy to use by the local industry.

The extent to which governments can artificially stimulate “spontaneous” sociability is debatable. It depends largely on the response of society to the credibility of their intentions. The European Community (Atkins, 1994), in a proposal for a strategy for the European construction industries, put forward the fundamental thesis that “the characteristics of the construction process and its output are such that competitive market forces do not of themselves create an efficient industry”. The report called for a legal and institutional framework which permits customers to choose from a range of procurement processes, and for an industry structure, which combines the flexibility of many small specialist and local firms with a number of large world-beating EC firms”. Institutions to support improvements in the performance of sub-contractors and the self-employed are also called for.

In general the construction industry is run and managed by science oriented people where cultural issues can be characterised as ‘soft issues’, which people can learn but take considerable experience and cultural interaction to master. Consequently, they receive less attention than ‘hard scientific’ issues such as planning, structural design and other issues, which can be learned and mastered in a lone environment.

Most of the procurement systems available today, the client, the engineer and the contractor, constitute different organisations in a projects amalgam. In general the culture of the principal members will dictate the behaviour in the organisation. In most cases, members of different organisation are strangers to one another. The quality of interaction of those people is dependent on the cultural understanding and harmony of this relationship. The realisation of the effect of culture on the contractual relation between any project’s stakeholders and consequently the procurement system will help to resolve any disputes in the process of planning, designing and constructing the project.

The underrating of the impact of the cultural aspect in procurement will affect the quality of the procurement system. This is agreed by most authors, however some authors like Masterman (2002) argued that while the importance of the consideration of the cultural, managerial, economical and political issues should not be underrated, they should be treated as a supplement of the project strategy rather than as an integral part of the procurement system. The inclusion of these aspects as supplements to the procurement system may not result in the desired output if the procurement is used as a policy or a policy tool. In this respect Arrowsmith (1995) identifies public procurement as a policy, by having industrial, economic and social policy objectives. And by this definition, these aspects should be integrated in the procurement system.

3.6 The conceptualisation of procurement

Green (1994) pointed out that the approaches to procurement are a reflection of the functionalist paradigm of sociology. The recognition that clients are pluralistic and design is a social process leads on to the paradigm of social constructivism. It contends that the recognition of such alternative sociological paradigms should have an important influence on procurement systems.

Jennings and Kenley (1996) take this issue and point out that procurement systems go beyond technical logistics and it is the perception and response to project objectives by organisations, which is a key determinant of procurement system suitability.

In a Canadian Parliamentary Secretary's Task Force (2004) report on a Government-Wide Review of Procurement, it was stated that the government's procurement policies and processes reflect the concept of procurement as that the specification of requirements and a single contract are the starting point and focus for each transaction. Most policies and processes are focused on managing the transaction, not on the management of the risks associated with a given project.

This conceptualisation of the procurement as specific requirement is echoed around many developed countries by governmental and non-governmental organisations, and seem to support the arguments by Arrowsmith, (1998) and Thai (2001) that public procurement is under utilised as a policy tool and a driver for change in the construction sector.

Kumaraswamy (2003) discussed the appropriateness of developed countries' procurement systems when applied to less developed countries and argued that a sustainable and synergistic procurement strategy must be developed in such situations. The "power paradigm" suggests that selection criteria for procurement systems are less important than the realisation that procurement paths create power structures, which dramatically affect the ultimate success of the project. (Newcombe, 1994). Using this paradigm criticises the fragmentation and friction evident in the traditional system. This is further supported by Walker (1994) who draws the conclusion that project construction speed is strongly determined by how well clients relate to the project team.

The theoretical conceptualisation of the term procurement is the way forward to establish any framework of any related issues. This conceptualisation of procurement stimulates thinking of the causes and effects of any choice of procurement path. The inclusion of a wide range of the host environment factors and issues allows the establishment of a constructive way of thinking and the comprehensiveness of the desired output. In this respect a system approach will allow the explicit identification of the discrete factors and the careful consideration of the total picture of the construction procurement issue.

3.7 Evolution of the procurement methods

Discussion on the ideal procurement system for construction projects should be viewed against the background of an industry in which the primary vehicle for procurement is what has been referred to earlier as the traditional model. This system still accounts for the majority of construction projects in the United Kingdom and in those countries where the construction industry has followed the United Kingdom influences. In the United Kingdom, the various procurement methods exist and have evolved as the indigenous construction industry developed and matured. Hillebrandt (1984) and Turner (1990) discuss how the United Kingdom industry, as the results of its organisational structures and consultants developed various dominant forms of procurement. The industrial revolution in U.K. act as a major catalyst which led to the rapid development of the industry and its associated professionals (Turner,1990). As a result of these industrialisations, a variety of dominant procurement methods began to emerge in the United Kingdom.

The vast majority of construction projects prior to the Second World War (1939-1945) were implemented by conventional methods of procurement. There are three phases in the development of contemporary procurement method that can be identified in this literature. The first was a period of sustained economic growth when the use of conventional methods of procurement still prevailed; the second was a period of recession characterised by an increased use of non-conventional procurement methods; and the third and final period was a time of post-recession recovery during which the most experienced clients of the industry designed and implemented their own procurement methods. Although conventional method still predominate, the design and build and management-orientated procurement methods increased their share of the available workload.

Many authors (Franks, 1990; Hillebrandt and Cannon, 1990) have attributed the change that is occurring in the area of building procurement to the demands of clients. It would seem that construction clients are not happy with traditional procedures and performance and as a consequence, are prepared to experiment with innovative procurement method in order to attain satisfaction of their objectives (Bennett and Flanagan, 1983). Rowlinson (1997) stated that the Hong Kong construction has been traditionally very quick, even when relying on apparently outdated construction techniques. The reason he cited, was the commercial approach by all parties, a sense of shared energy, Confucian values and *guang-xi* have made the concept of partnering commonplace in Hong Kong long before the current western interest in the idea.

Hence, many of the alternative procurement systems have appeared as a reaction to the deficiencies of the traditional model, rather than as a conscious attempt to derive the ideal system for each occasion.

3.8 Different procurement methods

The construction industry exhibits a range of procurement systems, which may be used in the process of obtaining a building. The evolution and existence of such options has been the area of discussion by many authors. Turner (1990), HMSO (1992), Masterman (2002) and Merna (1995) comprehensively outline the dominant

procurement methods and their development within the U.K context. The selection of the procurement method may depend on the type, size and location of the project, but more properly ought to be governed by the owner's preparedness and qualifications to discharge the consequent responsibilities.

All the procurement methods have advantages and disadvantages. At a given time, one method may be more beneficial to the owner, whereas another method or even the same method may benefit the contractor at another time. Although there is no single project delivery method that would satisfy all conditions, there will always be one which is best suited to the joint interest of the parties and will create the least animosity. The selection of a certain procurement path or project delivery is a process of take-and-give between stakeholders. These compromises should reach a balance status to satisfy all parties. This balance is bounded and controlled differently by every party, these boundaries and controls depends on the objectives, aims and goals of this party.

Masterman (2002) illustrates the dominant array of procurement methods which exist in the United Kingdom and provide a systems approach to their analysis. Each dominant procurement method has been functionally modelled to establish the relationship which exists between the participants in terms of operational features, risk distribution and contractual characteristics.

Regarding the system approach to the selection of the procurement path, Masterman argues that the fundamental aspect of the construction process that requires early and particular attention if success is to be achieved, is the selection of the most appropriate organisation for the design and construction of the project. The key to procurement is to identify the priorities in the objectives of the client and to plan a path, a procurement route that will be the most appropriate. The choice of construction procurement method available to clients is now so wide that the need to carry out the selection process in a disciplined and objective manner should be self-evident, but the fact that such a course of action is not adopted by many members of the construction industry suggests that the philosophy and advantages of a systems approach to both the detailed and general management of construction projects is still not widely accepted.

There are a number of construction procurement options, each having characteristics that may suit one project and not another. Amongst the first to undertake research, intended to devise a selection system to choose the most appropriate construction procurement option for any specific project, were Franks (1990), NEDO (1985), Nahapiet and Nahapiet (1985), Skitmore and Marsden (1988) and Bennett and Grice (1990). However, little is known about the degree to which the findings of such research is being applied in practice. It would seem that, whilst we now have an array of procurement options available, they may not be well understood. It could then be argued that ignorance amongst construction professionals may be a reason for the apparent lack of customer satisfaction regarding the attainment of their objectives (Bowen, 1993).

Bowen *et al.* (1997) conducted a survey on the effectiveness of the building procurement systems in South Africa and they concluded that only a few of the respondents to the survey have a good understanding of the various construction procurement systems. They stated that for most construction projects in South Africa, it is "good luck" rather than informed advice that resulted in the most appropriate (questionable) procurement method being chosen for a given project.

Thus, in their conclusion they argued that client's objectives are not being attained to the extent, which might otherwise be possible. However, because clients are largely ignorant about other procurement options, it is possible that they are blissfully unaware of this fact.

Haviland (1995) stated in his study that the design and build method has been gaining momentum steadily as an approach for procuring buildings and infrastructure. He cited an example that ENR's (Engineering News Record) top 400 US contractors did \$ 32.2 billion in design and build work in 1994, representing over 29% of their revenues for the year (ENR, 1995). Providing design and build services can be a form of assertive practice for firms who see fundamental value in integrating design, and construction, who are seeking to provide seamless services to their customers, and who are prepared to manage the resulting risks. In the US, a growing number of regional architects are offering design and build and construction management services.

In the USA, the architect firm and the construction corporation will combine their services and this is termed as "Architects that Built (Doherty *et al.* 1995). This company sell their design / build services as a single-source, one-stop-shop, package deal. In this way, the design/build services will save time and money through the architect's ability to completely control the project.

Chan and Albert (1995) conducted a survey in Australia and he concluded that the traditional approach of separating design from construction has been widely practised. Yet, the design and build has been used with success as clients consider this method to give an advantage on time. It seems that construction management is also gaining popularity with clients and consultants as this method allow for good time and quality performance.

Lam and Chan (1995) stated that the Novation contract, a variant of design and build contract has been adopted recently in Australia, and considered to be a better alternative to the design-build system. The Flinders Telecom Major Communication Building was a success to all involved, providing a project completed on time and at cost, to the client. This type of contract transfers the responsibility for the delivery of the building together with quality control to the builder sometime during the project life cycle. In this way, the builder had the opportunity to provide innovation to the delivery of the project by utilising its own special skills and abilities.

The high level of activity during the building boom of the 1980's influenced the attitude of owners to the procurement of capital facilities in Australia (Lenard and Sidwell 1997). The Business Council of Australia in 1992 conducted an analysis of ten case studies of major projects and their main conclusion indicated that a more active participation of owners in the construction procurement process is required.

It should be reiterated that several varieties of each of the procurement methods exist in any one country. Naturally, terminologies differ from one country to another. In addition, even within the same country, different names are used to refer to the same method. The broad category of the procurement methods that are used in the construction industry comprise of:

- (1) The traditional method- sequential and accelerated,
- (2) The design and build method- develop and construct, competitive and direct,
- (3) Design and manage method- contractor and consultant
- (4) Management method- management contracting and construction management.
- (5) (BOOT) Build Own Operate Transfer, financing and transferring
- (6) Partnering, a common ground between profit and value for money

Construction projects are often complex with potential for cost and time overruns or the finished building performing less well than planned. To minimise such risks, the client should select the procurement strategy which or in other means a contract strategy to match the objectives of the project. These must clearly be established and prioritised before any design or other work begins. The client must decide the relative importance of the three main types of criteria, time, cost and performance. The various procurement methods widely used today have evolved from the traditional method. The choice of the method of procurement used by different countries is influenced by several factors, which include size and nature of its physical, climatic and demographic attributes within and outside the construction industry.

The client nature also influence the type of strategy used in procuring any project, where a public client has a different ways of selecting the procurement method from a private client. The priorities of the client is the first element, which comes in to play in selecting the procurement strategy and method, where an unclear priorities and objectives may result in selecting an unsuitable procurement method and eventually failure of meeting the main goals of less time and money and high quality and performance.

The public clients rely solely on the State policy to choose and differentiate between the procurement systems. The general policy of any State is the boundaries of any decisions and actions taken by any public organisation, and this also applies to the procurement of any infrastructure project.

3.9 Procurement as a policy instrument

Public procurement has been utilised as an important tool for achieving economic, social and other objectives (Arrowsmith, 1998). The very size of government markets makes it an important factor to have significant impact on the economy of a country. Traditionally, governments used their extensive power to use procurement as an instrument to achieve variety of objectives. Sometime these objectives can be unrelated to the original objectives that were formally targeted with procurement. The Atkinson study for the European Commission concluded that in 1984, procurement of public bodies and nationalised industries accounted for 21.8% of gross domestic product in the United Kingdom and about 15% across the European Community (Arrowsmith, 1995).

Rwelamila (2002) found that an early breakthrough in the policy development process, achieving consensus amongst all South African construction industry stakeholders, was the recognition that the construction industry is a national asset, and the policy of procuring its projects should hold more convection in satisfying a wide range of social, economical and political aspects of the country.

It is interesting to see how the public sector procurement was utilised to promote the economic development through the construction of good and reliable infrastructure in Libya. It is accepted that public procurement has contributed significantly to the economic growth of all sectors in Libya during the 1970s era. This has contributed to Libya's economic boom in that era, which was a direct result of the increase in public spending due to the high prices of crude oil and the demand in the world.

Aziz and Ofori (1996) stated that the public procurement policy in Malaysia has contributed significantly to the economic integration of all sectors of the Malaysian population. This has contributed to Malaysia's competitiveness in the South Asian markets, especially in respect of design, build, finance and operate type projects in Southern and South East Asia .

Governments with their large purchasing power, are seen to be able to influence industrial, economic and social outcomes. Gounden (2000) summarised McCrudden's (1995) analysis of public procurement and equal opportunities in the

European Union, as five principal domestic, socio- economic, or political, functions which public procurement may be used to achieved:

- To stimulate economic activity
- To protect national industries against foreign competition
- To improve the competitiveness of certain industrial sectors
- To remedy regional disparities; and
- To achieve certain social policy functions, such as utilisation of local and increased employment of the disabled

Due to the sheer size of the procurement activity in the public domain, States and international agencies like the World Bank used their power over procuring their projects to implement their policies. The World Bank's Procurement Under IBRD Loans and IBRD Credits for instance specifies the following four major concerns or objectives of public procurement for projects funded by its loans:

- Ensuring that the loan is used to buy only those goods and services needed for the project;
- Ensuring fair competition for all qualified bidders from the World Bank's eligible countries;
- Promoting transparency or integrity, and
- Encouraging development of indigenous contractors and manufacturers by allowing local buyers to build in a margin of preference for local contractors and manufacturers (Tucker, 1998).

Thia (2001) and Arrowsmith (2004) identify public procurement policy as having industrial, economic and social policy objectives and the followings are some of their examples with some reflections on the Libyan case:

(a) Industrial and economic objectives

A major use of procurement has been to promote development. Heavy dependence by certain public markets and high technology nature of many purchases contribute to potential importance of procurement as a policy tool. Many states have used their purchasing powers to support domestic industry e.g. adopting general buy national policies, which is designed to promote employment or favourable balance of

payments, and also adopting policies directed at more specific objectives, such as promoting new industries or regional development. In the UK, during the mid-1960s the government pressured both the public authorities and the nationalised industries to buy national, to help ease the balance of payments problems. To promote particular sectors or regions, procurement powers have been used to assist in the restructuring of industry, in an effort to make UK industry more competitive. In the high technology sector for example the telecommunications, pharmaceuticals and information technology, the government use procurement as a tool to support the industries by using “infant industry” status to give whatever support needed. The classic case was the support given to ICL in the 1960s and 1970s to secure British capacity in the computer industry.

Procurement was also used to promote efficiency by introducing specification by reference to recognised standards and improved its competitiveness, and use of performance-based specifications can encourage innovations.

The “blacklisting” policy in the 1970s in the United States is a famous example of government using contract power as a form of regulation, threatening to withhold contracts or impose contractual sanctions where firms do not comply with its policies, including those of economic nature. In order to assist small firms to recover their debts, especially in the European Community, currently procurement is used to support initiatives relating to late payment debts. Since April, 1992 contract clauses have required prompt payment of sub-contractors, whether or not the main contractor has been paid himself.

In the defence sector the situation is more complicated and sensitive. In this sector, procurement offers particular scope for promotion of the industry, due to its size, high technology nature and importance. But it is complicated due to the fact that orders may be placed strategically, for security reasons, such as confidentiality, or to maintain a domestic basis for a product of technology. The British Government has to balance between the primary objective of enhancing efficiency and value for money by increased use of competitive procedures and opening up competition to foreign suppliers with the secondary objective of developing new domestic products.

In Libya the form of contract where it is used as a regulation to public department to procure projects, without the provision of any flexibility in the procurement system, it may be a State policy or only a blind-following of the accumulation of bad practice, that is remain to be seen in the advanced stages of this research.

(b) Procurement as a tool of social policy

“Procurement can also be used as regulatory tool to promote social objectives, either as an additional mechanism to enforce existing legal obligations, or to encourage standards or behaviour beyond those required by law” (Arrowsmith, 1995).

The UK government has used procurement to promote fair wages and conditions in the private sector, i.e. “Fair Wages Resolution” which was formalised in 1891 and applied until 1983. This was a resolution concerning wages, hours of work, working conditions, joining unions and provided for reference to collective agreements in setting conditions. The policy was abandoned in 1983 because of a change in government policy in favour of the view that conditions should be set by the market.

Current uses of procurement include to support anti-discrimination laws, to support the policy of combating religious discrimination in Northern Ireland under the Fair employment (Northern Ireland) Acts of 1976 and 1989. These laws impose obligations designed to secure fair employment opportunities. They require employers to register with Fair Employment Commission, to monitor the composition of their work force, job applications, and to review their employment practices periodically. The Commission may enforce undertakings and its directions through the Fair Employment Tribunal for Northern Ireland, which, in case of non-compliance with its orders may impose a penalty. This is an example of using procurement as an additional mechanism for enforcing existing legal obligations. The government has also recently used procurement to support job opportunities for the disabled and those in prison. In this policy called the “ Priority Suppliers” scheme, designated workshops employing such persons were given preferential treatment, where they were able to supply at commercial rates. These workshops were also given tendered jobs even they are not the lowest, provided they are willing to match the lowest bid. This policy has been forbidden under the E.C rules and therefore it

was abolished in 1993. The latest version is to give preference to workshops within the open European market as well as those in UK.

According to Arrowsmith (1995) and Thai (2001) the use of procurement has sometimes generated controversy, whereby questions have been raised about its legitimacy and effectiveness. Many attempts to promote industry or sector within industry have failed, particularly where policies concerning incentives for “infant industries”. Where these industries do not prove successful or competitive the government support may be unduly prolonged. Policies also have not been unsuccessful because they have concentrated on making them “national champion” and therefore have little incentive to compete internationally. It is argued that the beneficial effect of policies, which promoted through procurement are doubtful or minimal. For example, the European Commission estimated that regional preference schemes in the UK applied only 0.02% of government procurement, and that there was no evidence that it had made significant contribution its objectives. She also stated that even where benefits can be achieved, there must be weighed against the cost of doing so through procurement, either in terms of price premium or a compromise of other matters such as time or quality. Enforcement cost must also be considered.

According to Gounden, (2000), the transformation of public sector procurement in South Africa had two primary objectives:

- 1) To utilise public sector procurement in a vehicle to achieve specific socio-economic objectives such as the promotion of targeted small and medium enterprises, enhanced job creation opportunities, skills and technology transfer.
- 2) The promotion of good governance within the sphere of public procurement.

Public policy can play a major part in identifying optimum policy. Thus it is essential to establish a procurement system with clearly stated goals and policies. Due to its different economic, social and political environment, each country and even each governmental entity within a country has a different procurement goal or policy. In a government entity, be it a national, state or local entity, where corruption is widespread, its procurement system may focus more on procurement integrity or

transparency. In a governmental entity that has underprivileged ethnic groups, its procurement policies may focus on procurement equity. A government entity that deals with an ailing economy, may use its procurements as a tool for economic development or stabilization. (Thai, 2001)

The link between the procurement and the State policy is clear, and one has to state that the procurement is a policy stage and both are ideology outputs of the State. In this respect any comprehensive research on procurement roots must include the study of the ideology, the policy and the policy process in any given country.

3.10 Why is procurement important to public clients?

Client needs are unique and consequently each project meeting those needs has unique characteristics. This means that achieving the right project for the right price in the right time is a challenge. Only a minority of public construction clients are regular purchasers of construction work and even then the parameters of each project are likely to vary and the priorities are likely to be different. New build projects are often complex one-offs with unique designs on unique sites. A successful outcome is achievable only where the complexity of the processes involved are recognised and addressed appropriately.

Unlike the processes adopted in manufacturing, construction activities are not ongoing. The team drawn together for the project will disperse at its completion and are unlikely to form the same team again. If they do, the project will be different. In traditionally managed projects, design is largely segregated from the project construction process, which itself will need to integrate specialists from a wide range of fields of activity. The establishment of a procurement strategy is key to a successful outcome. The strategy should identify and prioritise key project objectives, as well as reflecting aspects of risk, and establishing how the process will be managed.

3.10.1 The role of the local public Client

In such a scenario the role of the local public client is vital. This should include developing a strategic brief for the project that is rooted in a clearly established business case, and ensuring that necessary decisions are made and appropriate resources available to the project. Procuring public construction as a business

solution can have a high risk to the public client organisation. Risk requires management and requires active client involvement with the assistance of a team of construction professionals at both strategic and implementation levels.

Most local public clients will want to ensure that, as far as possible from the outset, they can achieve the solution they require within affordable cost and by an acceptable date in the future. This will be best achieved if the client seeks independent advice from the outset from an experienced construction professional who will not become part of the project team. The independent advice should be at an early stage in the project development from a construction professional who is able to advise on investment appraisal, likely cost and time parameters for a particular type of project. It is good practice to select such an individual based upon his/her qualifications and previous relevant experience and to only adopt this appointment for the purpose of obtaining advice. The advisers involvement with any public projects should be limited to the provision of independent advice only.

Working Definition of State Construction Procurement Policy:

This Chapter required the relevant literature to understand the origins and implications of the construction procurement and developed a working definition of the State Construction Procurement Policy, which allows the conceptualisation of the procurement in a context of the State as a procurer of public construction projects. The following definition was established from the inspirations of many researchers in this field and a combination of all the stages of construction procurement evolution aspects and related influential factors on how public construction procurement is practiced around the world.

The State Construction Procurement Policy is the mobilisation of State's powers to achieve predefined Social, Legal, Economical, Environmental, Political and Technical objectives and goals through laws and regulations enforcing or allowing the differentiation or integration of the available procurement systems and paths in the construction of public projects.

Validating this definition is envisaged in many attempts to regulate and understand the process of public construction procurement in deferent countries. One of such, is

the 2002 review of the UK Construction Industry by The Strategic Forum (*Accelerating Change*) where by a Client should follow six key steps. These key steps were adapted to present the research's perspective of the issues which local public clients in any public construction project should consider when procuring their projects, see figure (3.5).

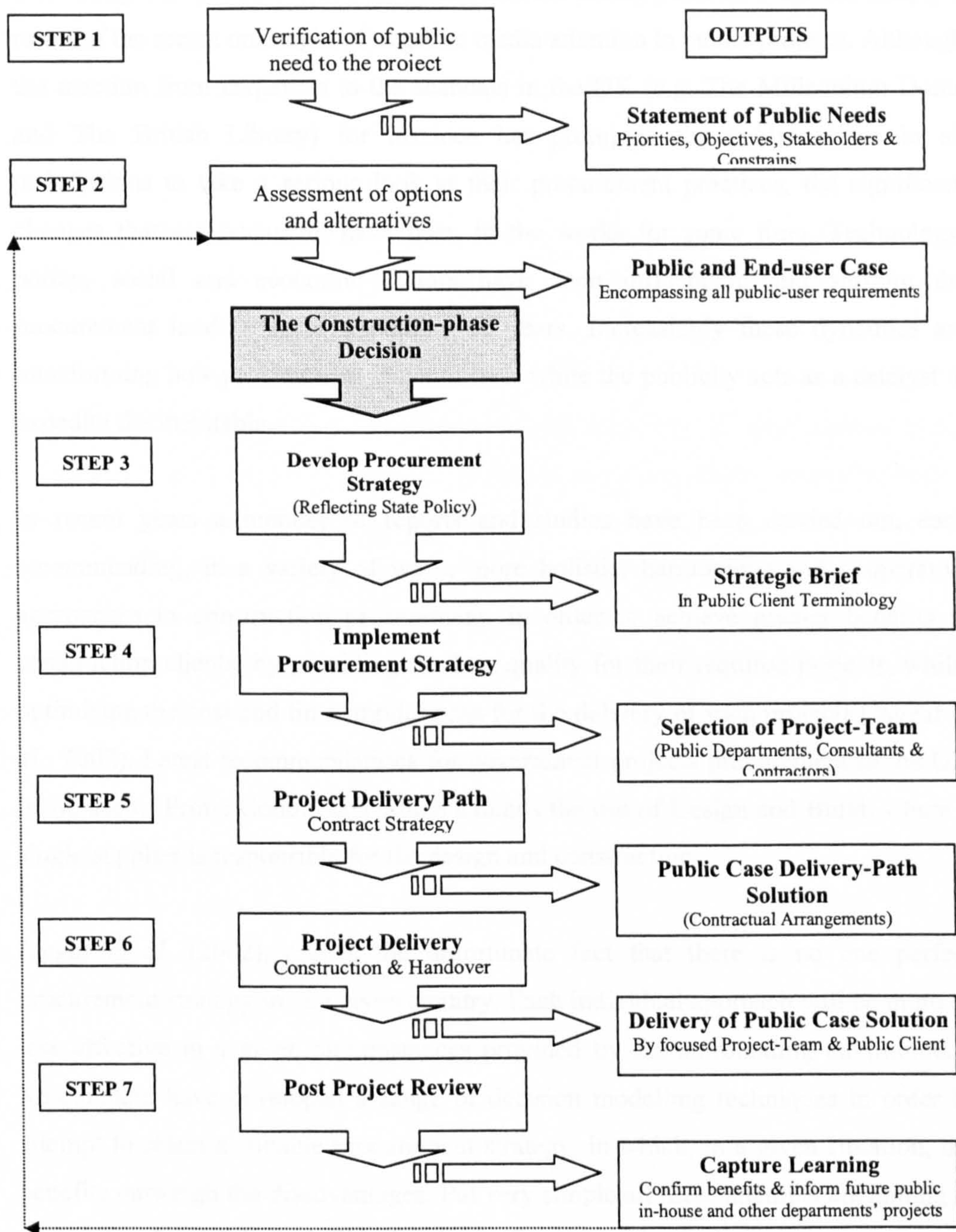


Figure (3.5) Key steps of local public client's in the public construction procurement process (Adapted from: *The 2002 review of the UK Construction Industry by The Strategic Forum (Accelerating Change)*)

3.11 Summary

The changes in public sector contracting that are taking place now are not simply a result of the recent onslaught of negative media attention to public projects. Although the reaction from taxpayers to the scandals in the UK (e.g. The Millennium Dome and The British Library) for instance has prompted the public sector in all jurisdictions to take a serious look at their procurement practices, the significant changes that are occurring have been in the works for some time. Technology, policy, social and economic factors have been influencing and shifting the procurement landscape for a number of years. Increasingly these dynamics are transforming how procurement is conducted, while the publicity acts as a catalyst to expedite the inevitable.

In recent years a number of reports and studies have been carried out, each recommending, in a variety of ways, more holistic, harmonious and cooperative approaches to construction procurement, in order to achieve greater benefits to construction clients, by providing the best quality for their required projects, whilst optimising the cost and time implications for the delivery of such projects (Jaggar *et al.*, 2002). Latest recommendations for government projects procurement in the UK is the use of Prime Contracting which extends the use of Design and Build, where a single supplier is responsible for the design and construction.

Jaggar *et al.* (2002), argues the unfortunate fact that there is no one perfect procurement strategy in any given country. Each individual approach will be more or less effective in a given circumstances provided by the surrounding environment. Researchers have developed a range of decision modelling techniques in order to attempt to select a suitable procurement strategy, in which, in a given situation, the benefits outweigh the disadvantages. Put very simple all these attempts are aiming at optimising the classic projects' triangle of (*Cost-Time-Quality*).

These three elements usually compete with each other. For example, a very short construction time may well lead to higher costs. Low costs will usually lead to lower quality so, ultimately, a compromise must be reached, and this is the crucial decision which must be taken by both the policy makers in the State and their departments both nationally and locally.

At the end of this Chapter one can realise the fact that there is no particular path, which clients can take to procure their construction projects effectively. However the appropriate choice of any procurement approach in the construction industry is very dependant on the amount and quality of rigger studying and planning of the selected method.

Public clients in Libya have the duty to carry out such tasks in planning the procurement of there local projects, but there is the issue of their capacity to do so under the State's umbrella of the ridged laws and regulations to achieve the optimum outcome of the project.

Lok Sang (2000) stated that the design of public policy in any context like construction procurement must take human nature as an immutable constraint, both with a view to choosing the appropriate policy objectives and in regard to the human response and hence the effects of the policy. Optimal public construction procurement policy making in the short term would treat those constraints as given but over the longer term the constraints themselves are also subject to revision by the policy coordination centre. Throughout this iterative process, public policy analysts will have done a great service if they can lay bare the trade-off among conflicting policy goals and the relationship between policy choice parameters and policy target variables in the public construction domain.

The outcome is a relative term and some times ambiguous, that is why we saw that it is appropriate to this research to define and clarify this term with respect to the public local construction projects in general and in Libya in particular, which is highlighted in the next Chapter as the third principal element of our research.

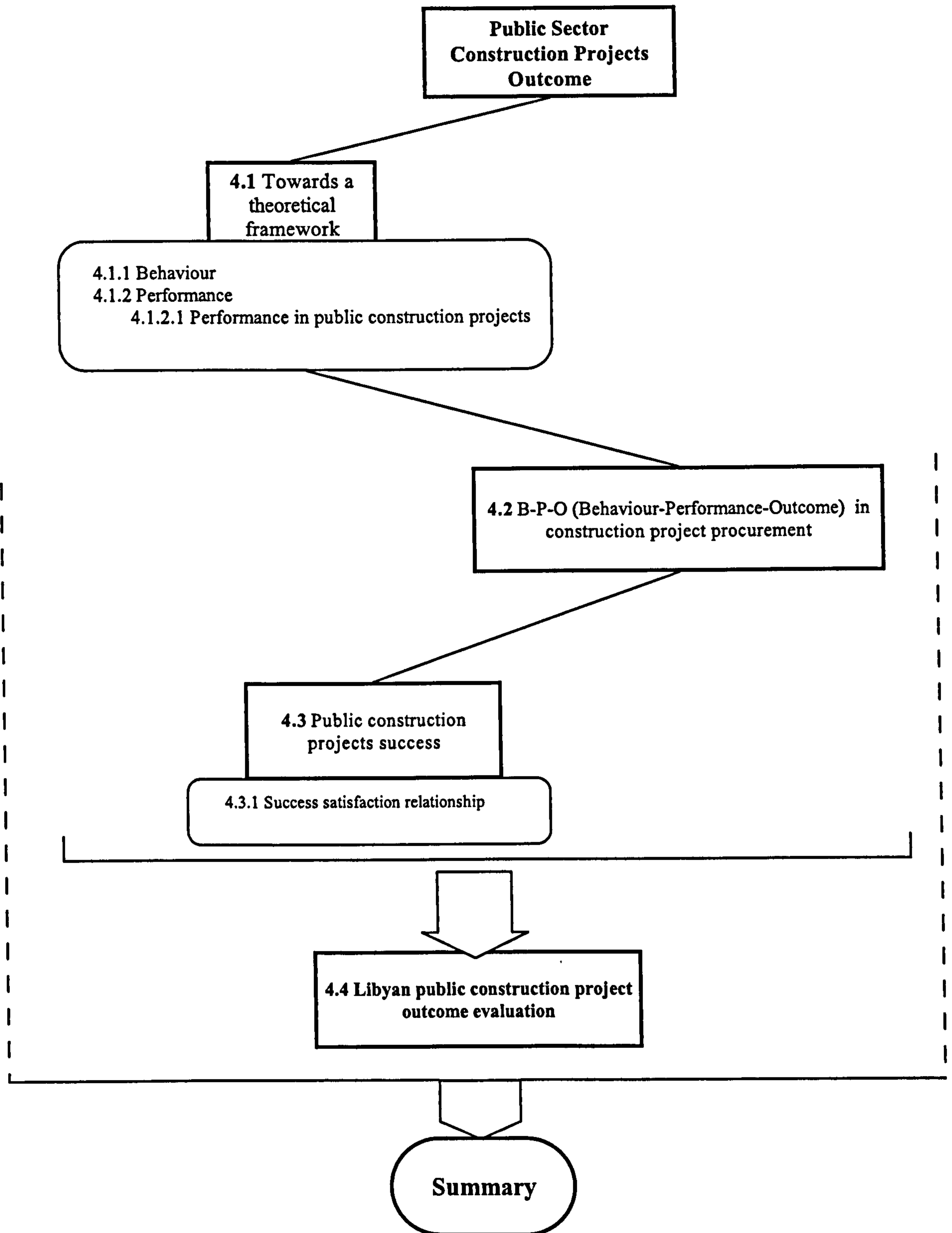
Chapter Four

Research Element (Three)

Public sector construction projects outcome

Chapter Four Knowledge Building Flowchart

(Figure 4.0)



Chapter Four

Research Element (Three)

Public sector construction projects outcome

4.0 Introduction

The need to construct can only be established through studying the needs and requirements of the commissioning client, present and future users as well as the public and society in general. (RIBA, 2001)

Much research concerned with measuring the effectiveness of the project management process depends upon the existence of a method of measuring the degree of success of a project team in achieving the completed project. Any conclusion about how good or bad the project management process was, cannot carry much conviction unless it can be judged against some measure of the relative success of the outcome of the project. The concept appears simple and leads to the idea that if the completed project satisfies the client's requirements, then it can be said that the project management process performed effectively. However, subsequent research has shown that the concept is much more complex, and leads to questions such as what constitutes satisfaction of the requirements, who are the stakeholders, and who are the claimants on the project whose feelings of satisfaction are important, what is the relationship between success and satisfaction, and how should these issues inform our judgment of the outcome of construction projects?

In this Chapter we will review the elements of projects' outcome in general and the elements, which need to be addressed in generating a criteria to evaluate the outcome of public construction projects in Libya, and also review how these elements are perceived in the eyes of the Libyan public clients, which will be a platform in generating a rational and realistic conclusions and recommendations to be taken into account when outcome-evaluation of such projects take place.

The term performance may take on different meanings depending on the context in which it is used. Performance, at a global level, represents results of activities.

Traditionally it has measured effectiveness (doing the right things) and efficiency (doing the things right) (Yasamis *et al.* 2001).

Others have attributed numerous dimensions to performance, such as quality, productivity, profitability, safety, timeliness, growth, attendance, satisfaction, etc. (Szilagyi, 1988; Milakovich, 1995).

Lui and Walker, (1998) argue that any development of project evaluation knowledge to assist in the improvement of the effectiveness of project organisations requires systematic evaluation of the organisations' performance to provide feedback for guiding the participants' behaviour in attaining project goals and thereafter the project's outcome.

However, two fundamental characteristics of project organisations complicate evaluation. They are that a project organisation is: (a) a temporary multi-organisation (Cherns and Bryant, 1984) and (b) a shifting multi-goal coalition (Newcombe, 1994). As a result project organisations have complex goals and follow complex behaviours for which a theoretical framework is required if we are to be able to evaluate project organisation performance and project outcomes.

Such framework thinking is advanced, and the impact of perceptions by different project claimants is discussed to facilitate evaluation.

There is a wide range of people within the project's parties who can claim to have an interest in evaluating the outcome of a project. The client's evaluation has a particular status but the participants in the process of producing the project, e.g. project manager, architect, engineer, etc., also can lay claim as, of course, can the occupants and the end-users.

The theoretical framework developed here can be applied to each of them. Individual perceptions of the merit of the outcome can be evaluated and are valuable but the belief that it is possible to combine these perceptions into a single measure will be shown to be a myth.

4.1 Towards a theoretical framework

The behaviour-performance-outcome (B-P-O) cycle, which is well established in industrial/organisational psychology for examining how people formulate goals,

evaluate performance and perceive outcomes. Figure (4.1) shows the framework adopted for evaluating construction project outcomes through an examination of project organisation behaviour and performance. It has been described alternatively as the act-product-outcome (A-P-O) cycle. To understand how evaluation of a project outcome occurs, a framework for modelling the discrepancy between a project organisation's goal and performance is required. Project outcome often is referred to loosely as project success (or failure) (Lui and Walker, 1998). However, it is argued that it has to be based on a theoretical construct of goals leading to types of behaviour which aggregate to performance; the discrepancy between the goal level (the level which is set) and the performance level (the level which is achieved) provides a basis for evaluating outcome. Thus, the cycle of setting project goals followed by behaviour in the project provision processes to yield a performance and, consequently, outcomes presents a theoretically rational framework.

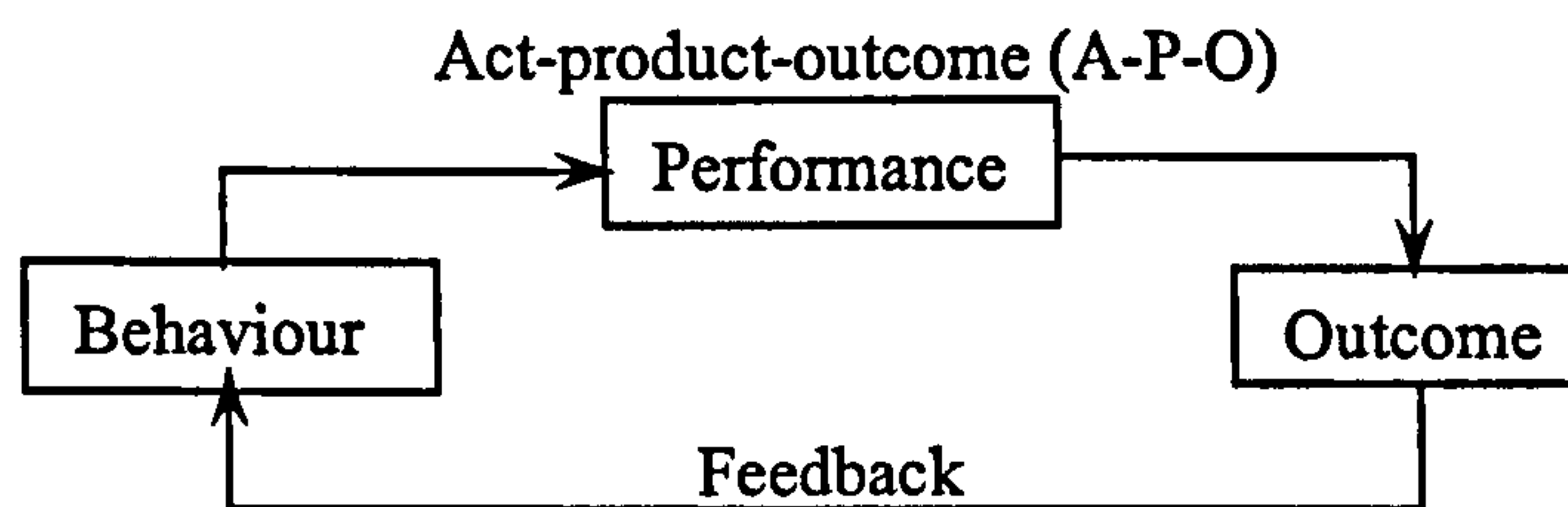


Figure (4.1) Behaviour-Performance-Outcome (B-P-O) Cycle

Translated into construction projects terms, it is the cycle of defining the project's objectives and converting them into a brief, the actual acts (behaviour patterns) of the members of the project team which by their performance (e.g. designing, constructing) create a product (the project), the outcome of which is evaluated.

Although the appropriate measures should be guided by the goals set for the project, the setting of project goals may be problematic (Cherns and Bryant, 1984) and the formalisation and communication of project goals to all participants unlikely to occur. Furthermore, previous studies, e.g. Mackinder and Marvin (1982), express the problems of eliciting adequate goal information, of translation and of communication between the construction industry participants. In such circumstances, the identity of the evaluator by role and allegiances can be critical in determining what, when and how to measure in evaluating project outcomes.

4.1.1 Behaviour

Behaviour within the cycle relates to the behaviour of the individual and has been defined as an ongoing act or process (Naylor *et al.*, 1980). This act has two defining characteristics or dimensions: 'amplitude' and 'direction'. When an individual or an organisation decides to do something, that individual/organisation, first must decide what act he/it is going to perform or attempt to perform (the direction dimension) and then must further decide how much of his/its resources are going to be committed to the performance of that act (the amplitude dimension). See figure (4.2)

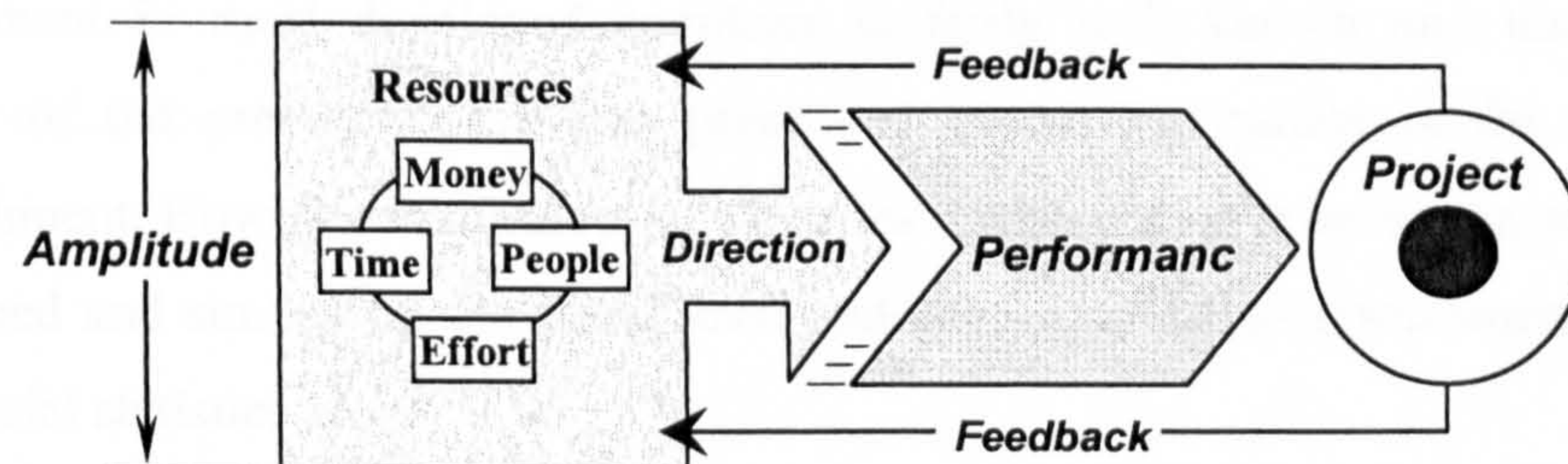


Figure (4.2): A diagrammatic representation of individual/organisation Behaviour to Performance

Direction is the specific kind of activity or process being carried out: e.g. a designer may decide to use alternative construction material for a project, and in doing so he has specified the direction of his behaviour. If while researching the alternative material, the designer is simultaneously engaged in some other activity (e.g. personal problems) then his behaviour is multidirectional in that the designer's total resources are being distributed across more than one act. The public client is also obliged by the public to be firm in defining and establishing a proper direction in procuring, constructing and commissioning any national or local public construction project. The direction is affected by the management attitudes and approaches towards reaching the desired State policy goals in these projects. For example, corruption and selfishness of the public mangers will certainly deviate directions to the benefit of these people, which apply to the old Libyan say "*Everyone is shifting the fire to cook his own bread*".

Amplitude is the total commitment to an act as defined by the amount of individual resources (money, people, time and effort) allocated by the individual/organisation to the task of performing that act. In performing any act, one can control the length (time) and intensity of people's effort with the backing of money in carrying out the act. This aspect is particularly important in the design stage of a construction project, as designers often can operate relatively independently with some freedom to decide on the time and effort they expend on a design.

The tricky business of measuring performance of any public client is dependent on the actual environment in which the project is within its boundaries. The actual environment in most developed countries is fairly well known and understood because of the presence of a free press and competing parties in the political establishment. However in developing countries the surrounding environment should be defined and studied on the street level and not according to government reports and official statistics alone.

It has been argued by Naylor *et al.* (1980), that organisational behaviour is the collective and aggregate behaviour of individuals in organisations rather than a concept of an organisation having a behaviour pattern.

The study of organisational behaviour is rooted in the behavioural sciences, particularly psychology and sociology, and has been more oriented towards empirical than theoretical issues.

Two important aspects in analysing organisational behaviour are: (i) macro (organisation) and micro (individual) levels, and (ii) cognitive (rational) and affective (emotional) behaviour. The behaviour of the project organisation (at the macro level) is the aggregate of the project participants' behaviour (at the micro level); cognitive behaviour refers to the thought processes of individuals and emphasizes rationality; and affective behaviour refers to the feelings of individuals and emphasizes emotions (Naylor *et al.*,1980).

The importance of individuals as the contributing element in the performance of organisations is stressed by Naylor *et al.* (1980). However, people do not relate to the organisations as isolated individuals but as part of a group.

The key influencing environment element for the group is the organisation of which it is a part, and the groups are viewed as social entities. An individual's behaviour is governed by the goals, self-perceived performance capability and motivation, and fuelled further by the organisation's expectations of a certain performance level from an individual and this expectation may result in a reward and be restrained by the organisation's situational constraints.

The relevance of these ideas to construction project management is apparent due to the well developed sense of professional independence arising from the well educated independently thinking participants in any project, e.g. clients, architects, engineers, surveyors, and the manner in which they relate to the project organisation in groups of like-minded professional colleagues with whom they work in a collective manner.

4.1.2 Performance

The next component in the B-P-O cycle is performance. The accomplishment of task goals is successful performance (Herbert, 1981). Performance is determined by ability and behaviour, i.e.

Performance = f (ability X motivation),

Where

Ability = f (aptitude X [training + experience]) (Vroom, 1964).

Performance can be influenced by other indirect factors, both environmental and technological. However, these environmental and technological factors act through the B-P-O cycle as moderators, e.g. adverse environmental factors will act as situational constraints affecting the individual's B-P path, while advanced developing technologies may influence performance if the individuals make an effort to acquire them.

The term performance may take on different meanings depending on the context in which it is used. Performance, at a global level, represents results of activities. Traditionally it has measured effectiveness (doing the right things) and efficiency (doing the things right). Others have attributed numerous dimensions to performance,

such as quality, productivity, profitability, safety, timeliness, growth, attendance, satisfaction, etc. (Kaydos, 1991; Milakovich, 1995; Hatush and Skitmore, 1997; Chua *et al.*, 1999; Leung *et al.*, 2004; Leung, 2004). To add to the complexity of defining performance, many of these dimensions can be interpreted as functions of each other. In general, the framework for the definition of performance in any given context as pointed out by the mentioned writers requires:

- (i) a combination of criteria (not a single measurement)
- (ii) a level of analysis (such as end-users, employees, etc.),
- (iii) a certain focus (kind of performance desired)
- (iv) a time frame (short or long range),
- (v) and a measurement system (quantitative versus qualitative, objective versus subjective).

Quality performance in construction is results oriented, and seeks evidence of quality awareness within the operations and outputs of a contractor. Quality performance is defined over the long term for the effects to be permanent. Quality performance improvements are expected to increase the productivity and profitability of contractors, as well as increasing client satisfaction. The traditional view of 'quality versus productivity' has changed to 'quality improvement'.

Performance is defined also as an aggregate of behaviour over time, tasks or people (Mitchell, 1983). As such, performance is always linked with behaviour and is always assessed by its outcome: hence the B-P-O cycle.

In the construction industry, performance is an individual's (e.g. architect's) contribution to the execution of the tasks required to complete the project, e.g. designing, preparing contract documents, constructing, etc.

Performance evaluation is the term for describing performance strengths and weaknesses within and between individuals (Landy, 1989), and this can be explained best in conjunction with the concept of level of aspiration. The concept of level of aspiration can help explain questions like: at what level of effort and challenge is the individual's own behaviour directed; what affects the perceived expectancies of a linkage between efforts and reward?

Aspiration level is a subjective goal which impacts upon performance and serves as a reference point for feelings of success or failure, so that performance which exceeds the level of aspiration is success and performance which falls short of the level of aspiration is failure' (Herbert, 1981).

An individual sets self-assigned goals based on her/his prior experience of the task. The individual not only sets the goal level to be achieved but also sets the level of aspiration. Once the acts are performed fully, an individual will judge the results upon her/his level of aspiration in order to conclude a perceived performance level. The individual will then evaluate his/her performance by comparing this perceived performance level with the goal level set originally, that means to find out if there is any discrepancy or contradiction between the goal and the performance. If the performance level meets the goal level, then the level of goal attainment is 100%, the outcome is a success and it should provide feelings of satisfaction.

As pointed out in Chapter Two similar to other systems, the feedback element is very important for a sound procurement system. By continuously evaluating what is required to perform the whole procurement system, which also applies for the performance of any construction project. Feedback also plays a major role in this cycle since it provides information (further stimulus) for setting future levels of aspiration, and the level of aspiration will affect subsequent behaviour and performance.

The process of deriving a given level of aspiration depends on a number of factors: the past performance on the same or similar events, the setting of a level of aspiration for the next performance, the new performance itself and the psychological reaction to the new performance (Herbert, 1981).

The potential attractiveness of the outcome, the individuals' and organisations' expectation of success determine their behaviour (B) and the amount of effort that they are willing to exert to achieve the goals. People evaluate their own performance (P) against the expected outcome (O), this evaluation acts as feedback for subsequent goal setting and behaviour. This applies also to the collective behaviour and performance of individuals and organisations in any construction project, to reach the desired and optimal outcome of satisfaction and functionality of the project. The

cycle of B-P-O must be realised and understood in the early stages of any construction project, whereby clients show their desire and commitments to embark on the process of procuring their project.

4.1.2.1 Performance in public construction projects

Since New Labour came to power in the UK in 1997, there has been a drive to improve the effectiveness of public services through the use of private sector principles. From the Modernising Government White Paper to the development of the Public Services Productivity Panel who produced a raft of White Papers tackling health, social services, welfare and criminal justice. The so called New Labour has also sought to bring transparency in the performance of public services through the introduction of targets. This in turn has led to the introduction of performance targets in all areas of the public sector from local, central government to education, health and community care.

In articulating the need for PMSs (Performance Management System) to be used in order to modernise government services, the Audit Commission (1999) emphasis two key reasons, namely, the need:

1. to improve public services (i.e. through increased economy, efficiency and effectiveness in service delivery); and
2. to reinforce accountability, so that organisations are clearly held to account for the resources they use, and the outcomes achieved.

Moriarty and Kennedy (2002) and Johnsen (2000) argue that performance measurement has been used in the public sector for decades. Moriarty and Kennedy (2002) suggest that because public sector service organisations operate without market competition so, the implementation of performance measurement is often used as a means of a substitute for market pressures.

Public construction projects consists to main players who in theory should incorporate efforts to achieve optimum projects outcome by enhancing their performance, thus performance in public construction projects can be divided in two main areas:

1. The performance of contractors in public projects

Public clients' long-term interests lie in the high quality of their projects and services to the public. The work performed must conform to the national and international specifications established for the project. Low cost and speedy construction should not be achieved at the expense of the quality of the project. In fact, poor quality performance results in increased rework and a rise in variation orders and subsequently, disputes in any given project, which has significant cost and time schedule implications. Doing things the right way the first time is achievable. Quality of construction products as well as the quality of processes that produce the products is crucial to contractors' competitiveness in the market (Harris and McCaffer, 2001). However, construction quality may sometimes be taken for granted and insufficient attention may be paid to it (Rad and Khosrowshahi, 1998). This is deeply rooted in the traditional procurement system used by public clients, where competitive bidding emphasises the easily quantified construction cost and time (Rwelamila and Hall, 1995), which thus become the two principal feasible objectives to clients. To compound this, different clients may have different definitions of quality, hence the term is inevitably subjective in nature. It has been argued that quality accreditation and past performance ratings are suitable indicators of a contractor's quality performance (Palaneeswaran and Kumaraswamy, 2000).

Defects are not inevitable in a construction project and the aim should be "right first time, every time" (Latham, 1994). Furthermore, buildings are designed to last for many years and therefore should be free from defects and be easy to maintain. Clients need not only the best quality possible within the budget, but also a guarantee on the products. As it may take years after completion for some defects to become apparent (Atkin and Potheary, 1994), construction products should, like other durable products such as automobiles and electronic home appliances, have a long-term warranty. The fundamental idea behind this is not to "guarantee free repair services for ten years," but to "produce structures in which defects will not occur for at least ten years" (Hasegawa, 1988). Latham (1994) also suggested the provision of a mandatory ten-year latent defects insurance for commercial, industrial and retail construction. This kind of quality assurance can give clients more confidence in the construction products they purchase. It may also bring a change in public construction industry culture from that based on a supervisory mentality to a culture

where construction publicly contracted companies accept full responsibility for the provision of goods and services in accordance with the public's requirements. McKim *et al.* (2000) suggested that the number of rework and/or repair requests could be used to compare the quality performance of contractors and the overall outcome of the project were thus used in this research to provide useful indicators of the long-term quality of the finished public project.

2. The performance of public clients

Public clients as owners of infrastructural projects nationally and locally expect contractors to provide the highest quality of project outcome in every dimension of the services that they receive. For quality improvements in construction projects outcome to be effective and long lasting, they need to be supported by all parties involved in all processes. Hence, it is critical for public clients to make sure that their and the end-users' expectations are well represented in contractor evaluation and selection systems. The manner in which a public client formulates his organisational and project-level quality policies depends on the quality of outcome challenges that are presented to him by the business environment in which he operates driven by the State's policies and legislations. In other words, the regulations and requirements of the national and municipal public construction environment on quality issues may force specific quality of outcome policies and practices to be incorporated in the performance of their departments in commissioning, tendering, contracting, monitoring and overall management of their projects.

For example, the insistence of public clients in evaluating the quality performance of contractors before awarding a contract is a motivation for contractors to improve and document their quality management in order to be competitive and maintain a continuous flow of business. Such an approach provides a win/win situation for both public clients and contractors. Public departments as clients may expect a high quality service as a desirable outcome of a certain project from contractors; they may also expect a high quality construction, which will in turn satisfy their customers, i.e. the end-users. Contractors, on the other hand, may expect high productivity and flexibility from the public client as the quality of their operations and of their service improves. As a result, the overall level of positive public projects outcome plus the

satisfaction of all parties involved (including public clients, end-users and contractors) are likely to increase.

4.2 B-P-O in construction project procurement

The B-P-O cycle in project procurement is triggered by project goals. Goal-directed action (purposive behaviour) is both focused (directed) and organised yet not all actions are goal directed. Goal-directed action is characterised by the utilisation of feedback information so as to keep actions directed towards the goals.

Goals are likely to be organised into a system with no fixed structure, i.e. there is a hierarchical organisation of goals and sub-goals, super-ordinate goals and subordinate goals, which are linked to the prioritising policy of the organisation. A State is a multi-disciplinary political organisation, so the hierarchical setting of goals in any industry depends on the intended policy goals of the State. The public sector construction is one of the stages in which the State shows and implements its policy intentions and goals.

A goal system is capable of change according to context as well as capable of change over time. Goals can be irrelevant to one another, compatible with one another or in conflict with one another (Liu & Walker, 1998)

For a public construction project goals, the features of dynamism, maximising and satisfying approaches and conflict provide further complexities. For instance, the dynamism of public project goals provides that goals may change over time, through State policy changes and modifications by designers, amendments to legislation, etc.; the satisfying approaches determine that when goals are incompatible optimal macro performance is likely to be achieved through satisfying, while for compatible goals maximising is possible; conflict may occur between goals.

To assume public construction projects' goals to be unambiguous must be false unless such goals are defined clearly and expressed to all participants; otherwise project goals are implied through participants' perceptions' and experiences and are likely to be skewed towards individuals' and organisations' interests.

Liu and Walker, 1998 stated that, the B-P-O model assumes that the basic conscious actions of the individual are the actions of choice (i.e. judgement and decision

making). They went further and explained that, the act (behaviour) creates projects as a result of carrying out the act (performance) within an input-transformation-output model, and they presented project procurement in a process system as in figure 4.3.

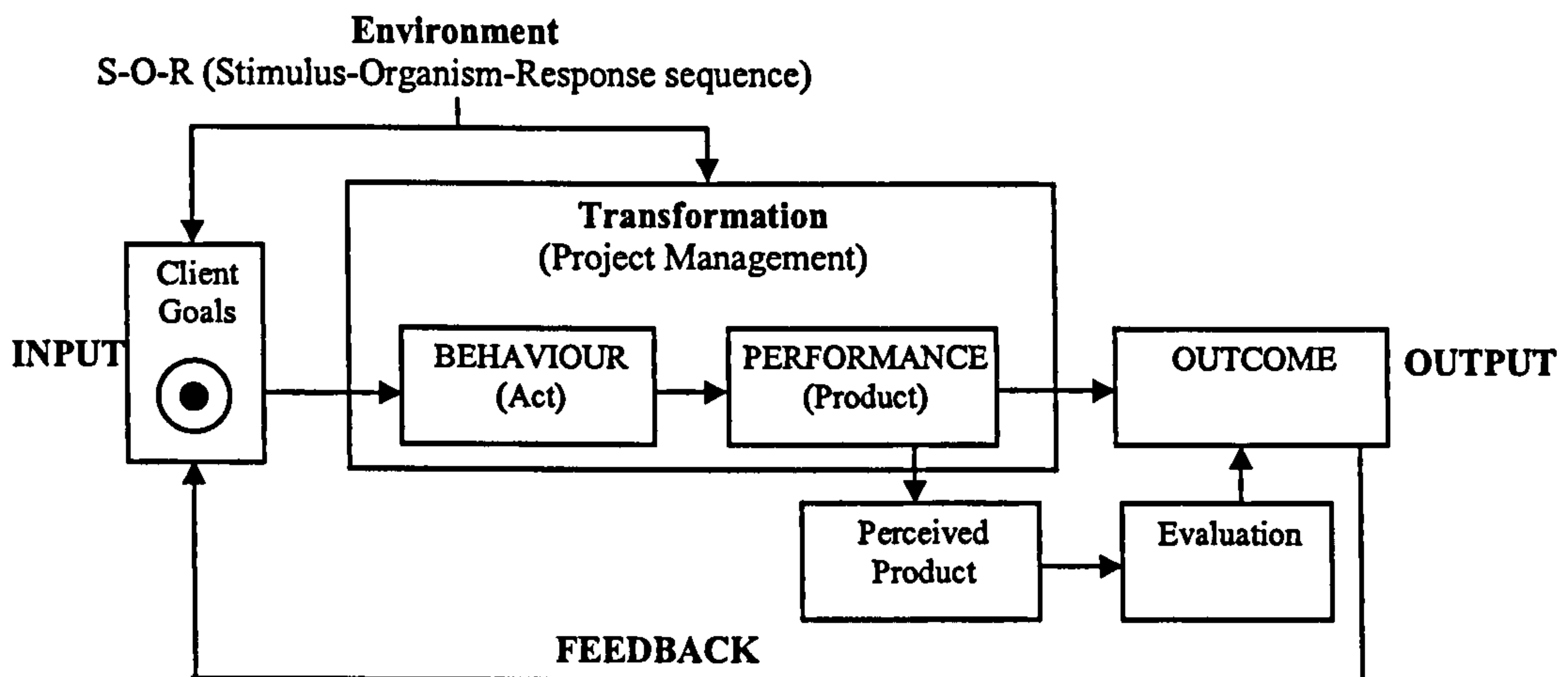


Figure (4.3): Project procurement process

Construction projects is a result of the acts of behaviour and performance of the participating parties within the project environment, will then be perceived and evaluated either by the individual directly or by some other entity such as another person or an organisation concerned with its outcome quality. In this matter Liu and Walker, (1998) believe that behaviour in such a context is a result of the stimulus-organism-response (S-O-R) sequence, which is a fundamental concept in the study of behaviour.

A similar analogy is used in our research, and for the purpose of this research, the organism can be replaced by the individuals who make up the public client organisation, which is also represented as the public departments. The S-O-R sequence is brought about as a result of the forces exerted by environmental factors on the members of an organisation. The organisation's members have to react by setting, adjusting or redefining their goals and actions in an individual manner as their approach to work and commitment in a collective manners affected by the overall policy of the public department towards construction related issues.

The S-O-R paradigm assumes that an individual is inactive until acted upon by stimuli, i.e. the stimuli cause the acts. However, Atkinson (1982) argued that individuals are active before being exposed to stimuli, i.e. individuals are actively motivated to do many different things before exposure to a particular stimulus situation.

The S-O-R paradigm in the construction procurement model by Walker, 1996 presented in figure (4.3) shows that during the transformation process environmental influences are transmitted to the potential client through his/her importation of information, energy and materials from the environment, and may stimulate a response.

The action of these influences will determine the initial decision whether to proceed. The transformation process will entail the consideration of each alternative within the environmental context and a decision will be made on the basis of the influence of the external factors. The transformation process will receive information, energy and material from the environment and will transform them in its task of identifying the appropriate decisions needed to design and construct the project, ranging from e.g. choosing among alternatives such as buying, leasing or constructing a new building, selecting the structural form, choosing the door finish, electing the contractor, etc., all of which will be determined by the environmental influences acting in the process.

The reaction of the members of the project team individually (within the transformation process) constitutes their behaviour which generates the performance which produces the outcome which is the completed project. Therefore, each individual will have his/her/it (public organisation's) own perception of the project outcome as a product of their expectation of success, the amount of effort they are willing to exert and their expectation of the outcome. All of this will be the product of the environmental forces acting on the individual or the organisation both individually and through their effect on the transformation process. The key element here is how this translates into methods for project outcomes evaluation and assessment.

4.3 Public construction projects success

In general terms, project success is a topic, which is frequently discussed and yet rarely agreed upon. The concept of construction project success has remained ambiguously defined. It is a concept which can mean so much to so many different people and organisations because of varying perceptions, and leads to disagreements about whether the project is successful or not.

At present, the literature dealing with defining project success can be divided into three categories, which emphasise the following aspects.

1. Project goals. Commonly cited goals are those concerning time, budget and functionality/quality/ technical specification. However recent research has included other aspects such as safety and environmental sustainability issues. These can be interpreted as subsumed under the project goal of quality, which, in turn is interdependent with the other two goals of time and cost.
2. Satisfaction of the claimant(s). An additional element for a successful project concerns the satisfaction of the claimants, for instance, the client and the end-user.
3. Perception and awareness of different claimant(s). Project claimants with different orientation (e.g. management versus scientific) may have different views of that constitutes a successful project outcome (Trauner, 1983). According to a significant and comprehensive study by Murphy *et al.* (1974), the definition of project success centres upon 'perceptions' and they argue that the definition can be termed more appropriately as 'the perceived success of a project'. Murphy shows that some of the strongest factors determining project success are:
 - a. Co-ordination and relation patterns.
 - b. Avoidance of initial over-optimism and conceptual difficulty.
 - c. Clarity of success criteria and consensus.

Although the first factor comes within the area of planning and organising of resources in the formal organisation structure, the other two are areas of concern in the study of organisational behaviour where perceptions and expectations concerning human needs and values are the central issues. These two factors can be put into context within the extended B-P-O cycle, whereby optimism and conceptual

difficulty are the initial feelings of the individuals/organisations at the commencement of the construction project; such feelings originate in the feedback loop of the B-P-O cycle, which relates the success of previous projects with which the individual have been involved. Feedback acts as information processing and transfer of the experience of past performance or allows new levels of aspiration to be set.

4.3.1 Success satisfaction relationship

At present, the definitions of project success and the methodology used in identifying success factors often have assumed satisfaction as an attribute to success (Ashley *et al.*, 1987; Pinto and Slevin, 1988a). However, a review of the I/O (Industrial organisation) psychology literature by Liu and Walker, 1998 demonstrates a theoretical base for the associated definitions of success leading to satisfaction.

To appreciate the success satisfaction relationship fully, it is essential to understand how goal-directed behaviour leads to performance and further leads to an outcome, which is then perceived and evaluated by the individual or the organisation.

As construction project participants exhibit goal seeking behaviour, they tend to behave in ways that result in goal accomplishment which gives rewards, that is they demonstrate motivated behaviour which is directly related to the desirability of the reward, the extent to which the reward satisfies personal motives (or personal goals), the belief that given behaviour will actually be rewarded, and the ability of the individual or the organisation's self-perceived performance capability to perform such behaviour successfully.

The experiences of success and failure do not depend on the absolute level of performance attained but on performance in relation to one's personal standard. If the standard is exceeded, the individual experiences success and feels pleasure and satisfaction; if the individual does not meet the standard, failure, displeasure and dissatisfaction are experienced; therefore, one public project manager's assessment may be different from another project manager's, as may the assessment of the overall public client and any other member of the project team.

Since success leads to satisfaction, the most straightforward relationship of goals to satisfaction is that the greater the success experienced relative to the goal set, the greater is the degree of satisfaction experienced. Similarly, dissatisfaction will be

experienced when there is failure in achieving the clearly identified goals. These conclusions follow from the principle that goals are used as value standards for appraising performance in public construction projects.

4.4 Libyan public construction project outcome evaluation

The need to evaluate the outcome of public construction projects has been felt for many years and a number of attempts have been made to measure it. For instance, the project-implementation profile measure (Slevin and Pinto, 1988a & b) and the measurement of satisfaction (Walker and Wilson, 1983).

The issues inherent in evaluating a project's outcome described by Lui and Walker, 1998 include:

- a) The definition of goals (depending on the purpose of evaluation and identity of evaluators, e.g. social versus economic benefits)
- b) Measurement criteria. (rater or ratee e.g. rater judgement suggests evaluation is to be carried out by someone who is not involved in the project realisation process such as the occupants who purchase or lease the completed building; ratee judgement suggests self-evaluation by the project team participants)
- c) The identity of the evaluator (which claimant, e.g. the client, the architect)
- d) The measurement time frame (when should the outcome be assessed, e.g. at the end of project realisation stage, at the post-occupancy stage?).

However, value judgements on what project outcomes are considered acceptable by decision makers in the Libyan public arena often change over time and, not uncommonly, decision makers disagree, to varying extents, on the use of a given set of performance criteria to evaluate the effectiveness of the public client organisations, units, projects or tasks.

As pointed out by Hausser (1980), the purposes of any assessment must be examined to determine what perspective and frame of preference the model should react to the project outcome, what processes this model should describe, what outcomes it should predict and on what level of analysis it should focus. As a consequence, the value judgement concerning what goals should be adopted and the process by which that judgement is made can lead to widely differing methods of performance evaluation.

Most studies on critical success factors (CSFs) in project evaluation have identified 'successful' projects for analyses very often on the basis of the respondents' (e.g. project managers) own level of satisfaction. The respondents' satisfaction can be affected by various external and internal rewards as well as the outer environmental variables, the nature of the public project (both in type and complexity), the nature of a participant's organisation (both in type and complexity), prioritisation of public project goals, self-efficacy, and commitment.

Because of these differences a set of CSFs may not be transferable from one project to another project. Only generic areas can be identified and used as broad guidelines. The CSFs of each project may vary subject to changing environmental variables within which the project is embedded; hence, there is no single best route to success in evaluating public construction projects in Libya.

The evaluation of the outcome of public projects is analogous to public organisational assessment, the field from which much relevant literature arises. Organisational assessment requires that the unique and conflicting definitions of performance be made explicit and that the organisation analyst determines at the outset, those value judgements and criteria will be operationalised and measured. Thus, effectiveness if defined as the degree to which a public organisation client realises its goals and, therefore, involves a comparison between the goal level and outcome level. However, to arrive at a consensus of goals, criteria and standards among the Libyan decision-makers in the public sector is quite unrealistic. This is similar to obtaining consensus amongst the end-user and the contractor for a set of common criteria or measuring project success. Only by establishing common goals, often through compromise in resolving potential and actual goal conflicts for a public organisation, can measurement criteria acceptable to all be achieved, otherwise, project evaluation has to be one in context, i.e. based on an individual or a group of individuals with common perceptions.

4.5 Summary

According to RIBA, (2001) the outcome of public projects may be required to include:

- **Functionality**

- Economic gains
- Reduction in whole life costs
- Service gains
- Cultural and aspirational achievements
- Social and environmental benefits.

The search for a theoretically sound basis or the evaluation of the outcome of public construction projects has occupied construction management researchers and public administrators for many years. In addition to its obvious practical benefit of providing the means by which a rational judgement can be made of the outcome of public construction projects, it would also be of enormous benefit to researchers into public project organisations, because the effectiveness of the project management process could be judged relative to the outcome of the project.

This Chapter argues that the theoretical base lies in the field of industrial and organisational psychology, which assists the understanding by providing the behaviour-performance-outcome cycle and the particularly significant distinction between success and satisfaction and their relationship. These theoretical constructs provide the essential underpinnings that have been studied in earlier studies in the evaluation of project outcomes. Other studies which essentially have been technical in nature, such studies did not recognise the manner by which individuals' and organisations' perceptions of public project outcomes were influenced by a range of factors, and which results in each public manager's or organisation's perception being ideological in nature.

The identification of factors of influence such as competence, project complexity, commitment, expectancy, rewards, goals and environmental variables are shown to be fundamental in understanding an individual's or an organisation's perception of the merit of the public projects outcome. For those who search for a single measure to represent the merits of a public construction project outcome, a comprehensive and thorough understanding of behaviour-performance integration is required.

Even if common goals could be agreed by all claimants in a public project the problem of matching people's perceptions would remain complex and hard to

achieve. Hence we are left with the ability to assess the evaluation of a public project's outcome by individual participants to the project (the public Client), or maybe by groups of individuals with perceptions which could be expected to be reasonably common.

To provide an overall assessment of any Libyan public construction project's outcome criteria for the sake of this study, all economical, political, social and environmental aspects of the public client should be considered.

Once again goals are shown to be of primary importance in the public arena. It is essential to determine which goals are applicable and that the definitions of those goals are in order that appropriate measures may be employed. The variability and individuality of goal identification, definition, measurement and evaluation in the Libyan public construction projects suggests that project critical success factors (CSFs) are likely to be highly individual and project-specific; a search for generally applicable CSFs may be misplaced. From within the framework of project evaluation in this Chapter many further venues of research emerge. Motivated behaviour, through expectancy and rewards, of public construction clients, professionals and contractors should be investigated further, i.e., the extrinsic and intrinsic rewards, which contribute to satisfaction, need to be identified in the (behaviour-to-performance) path.

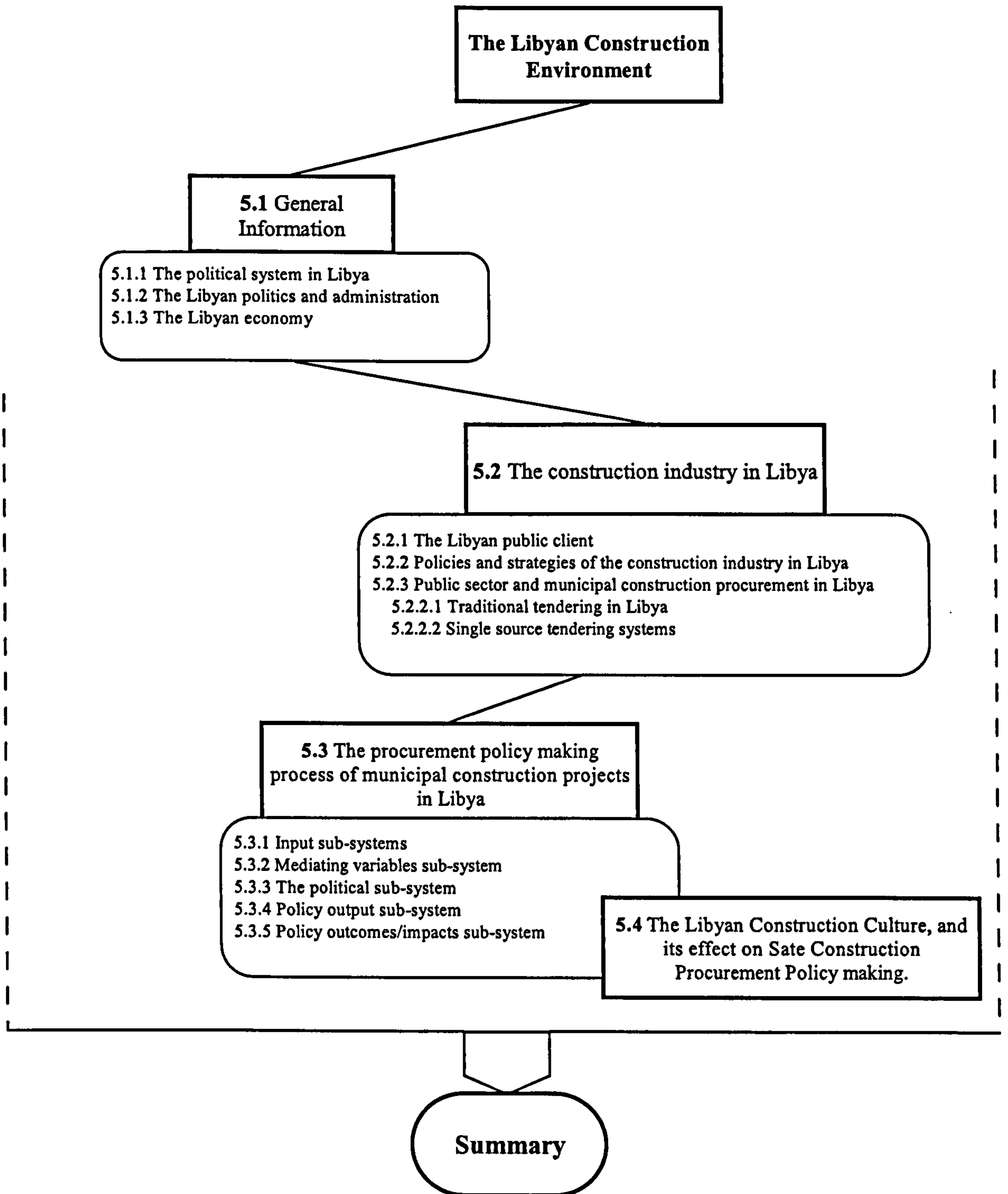
Further research is also required in the P-O (performance-to-outcome) path: e.g. the project goals needed for measurement of project success (including multiple goals, goal consensus and goal content) and the role and effect of the other components of public project performance, like motivation and feedback.

Chapter Five

The Libyan Construction Environment

Chapter Five Knowledge Building Flowchart

(Figure 5.0)



Chapter Five

The Libyan Construction Environment

5.0 Introduction

Situated on the northern coast of Africa at 9-25 E Longitude and 18-33 N Latitude, Libya has a coastal line stretching 1900 km along the Mediterranean. It is adjacent to Tunisia and Algeria to the West, Egypt and Sudan to the East, Niger, Chad and Sudan to the South and the Mediterranean Sea to the North. Libya covers a surface area of 1,775,500 square kilometres, most of which is desert. The main populated areas are along the coastline to the north of the country, where the main cities and arable lands are.

Agriculture is also found in the Eastern Mountains and around the larger oases within the desert.

5.1 General Information

Libyans are a mixture of races, with Bedouin origins in the east, Berbers in the mountains to the west, Turkish descendants in the main cities, the sub-Saharan Africans as well as the Touareg (nomads) in the south; however as a classless society; ethnic differences are very rare.

The official language of the country is Arabic; all correspondence with government authorities must be in Arabic. English is widely used by employees of foreign companies and the international community and the most widely understood foreign language by the locals, however a large number of the older population speak Italian, taken from the days when the country was an Italian colony.

Islam is the religion of the State; all Libyans are Sunni Moslems. According to the Green Book, Islam is "Society's Constitution". Although not all Islamic laws are enforced but some are, such as forbidding the sale of alcohol and gambling. Although there is a fair degree of segregation between males and females in society, local women are customarily seen in public.

5.1.1 The political system in Libya

At the time of independence in 1951, Libya was one of the poorest nations in the world, with an estimated population of one million. The average annual income was

only \$30, but by the 1960's this had risen to \$100. Agriculture and animal husbandry were the mainstays of the Libyan economy as well as a number of small factory industries managed by colonising Italians

Although Libya formally became an independent State, it allied itself closely to the western powers and followed the foreign policies of the USA, Britain and France. Internally the government was handicapped by divisions between the three provinces of Libya. A lack of co-ordination among the regional governments, a conflict of regional difference, tribal power conflicts and contention between the advisors of the King, the Cabinet and Parliament, contributed to internal political instability.

This political instability had an adverse impact on the economy where little had changed because of its dominance by Italians. The royal government also signed several treaties with Britain, USA and France which maintained the right of the first two countries to maintain their forces in several scattered military bases on the Libyan soil. In return Britain and the USA provided "funds" to cover the Libyan balance of payments deficit.

The discovery of oil in 1958 and the beginning of exports in 1964 solved some of the earlier problems. The substantial shortage of resources at that time prevented the government from launching the necessary programmes to repair the inherited damage to the infrastructure. The discovery of oil transformed Libya from a very poor to a rich country. By the oil-exporting era in 1964 the government embarked on a number of development plans. The lack of planners, administrators and technicians caused Libya to be dependent on foreign experts, consultants, administrators and technicians. At that time Libya could only provide manual workers and semi-skilled workers.

The oil discovery, led to the migration of labour from the countryside to urban areas as well as the return of Libyans who had migrated to the neighbouring Arab countries during war time. This created crowded urban centres and deserted farmland. The oil revenues were not distributed equitably and corruption in government offices was widespread. Corruption in government and a growing

resentment towards foreign states involvement in Libyan society were the factors which led to Al-Fateh, Revolution in 1969.

The revolution was led by the leader Mouammer Al-Gaddafi proceeded to abolish, the monarchy of King, Idris on September 1st 1969. The leader of the revolution as chairman of the Revolutionary Command Council (RCC) proclaimed a new Libyan Arab Republic. The RCC became the highest authority in the new Republic, exercising supreme sovereignty in the matter of legislation and general policy making. The RCC endeavoured to create an ambitious state of a healthy society in which class differences would be minimal and the country's oil wealth would be equally distributed. The Revolution declared that freedom, socialism and unity were the ideals for achieving economic, social and political changes. According to the new revolutionary principles, foreign businesses were nationalised, Italian ex-colonists were banned from owning land and British and American military bases were closed. The new Government instituted a return to the fundamentals of Islam in every day life. Social security to free public education and medical care were made available to all.

In 1973, a new form of administration (The Popular Revolution) was announced by RCC. Popular Committees were established to manage public institutions, factories, businesses, schools and so on. This form of management continued until March the 2nd 1977 when the "Jamahiriya" era (the state of the masses or people's power) was created. This created a new political organisational structure. The "Jamahiriya" political system continues to play an important role in the political, socio-economic activities of the country to this day. In 1977, Libya renamed as the "Socialist People's Libyan Arab Jamahiriya" according to this new political structure.

According to the first part of the Green Book "The Solution of the Problem of Democracy: the Authority of the People", Libya is divided into a number of Basic Popular Congresses (B.P.C.s) (Al-Gaddafi, 1981). Each B.P.C. chooses its secretariat, which is responsible for organising the Congress and transmitting the decisions made by the participants in the Congress concerning all aspects of the state to the General People's Congress (G.P.C.). In each B.P.C., there is an executive committee (People's Committee), which is responsible for carrying out the B.P.C.

decisions at the local level. From the Secretariats of People's Committees, the General People's Committee Secretariat (a cabinet) with the Secretariats of General People's Specific Committees. Secretariats (Economic, Finance, Transportation, Education and so on) are selected at the central level. All the secretariats of B.P.C.'s, G.P.G.'s, G.P.C.S.'s Committees Syndicates Secretariats, and Unions together constitute the General People's Congress, Therefore the G.P.C. is a gathering body of the B.P.C.'s the P.C.'s, the Syndicates, Unions and Professional Associations

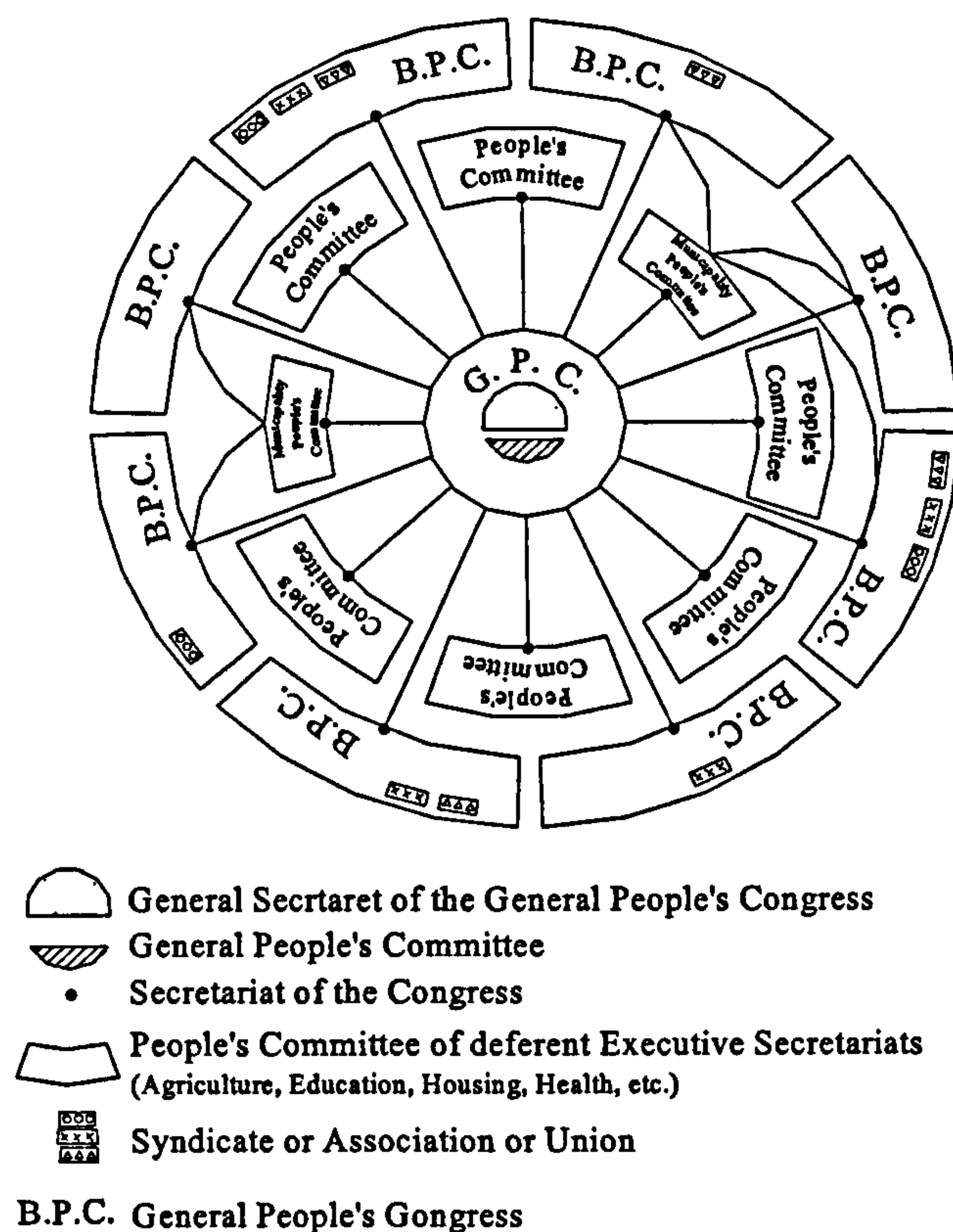


Figure (5.1) The Decision-making process in Libya: "Power to the People"

In figure (5.1) the GPC represents the highest legislative authority in Libya since 1977. It is responsible for drawing up general policies as well as issuing the general laws upon Libyan institutions and public sector companies are managed. The General People's Committee is responsible to the General People's Congress to execute the State's policies. On the local level the People's Committees are responsible to the Basic People's Congresses.

The Jamahiriya system is employed in the public sector companies as well. In these companies all employees are members of the Producers' Congress, which meets at least twice a year. The Producers' Congress of the company elects the Secretariat of this Congress as well as the People's Committee, The role of the People's Committee is to have the responsibility of managing the company. This means that the responsibility of managing the company has becomes in the hands of its employees. The public sector companies work within the system of the General People's Specific Committee's Secretariats and under their supervision. The General Facilities Company, for example. works under the supervision of the Secretariat of Facilities and Housing. Oil Companies work under the supervision of the Secretariat of Energy and so on.

5.1.2 The Libyan politics and administration

The Great Socialist Libyan Arab Jamahiriya was established according to the "Third Universal Theory" of the Green Book. The transition from a monarchy to the present system began when it became the Libyan Arab Republic following the Fatah Revolution on 1st September 1969. A 'historical speech' was made in the town of Zwara in the spring of 1972, introducing a new political, administrative and legislative system as a result of five main reforms, leading to major changes in the structure of the country. This was made to be the official announcement of the People's Revolution. In 1977 Libya became a "State of the Masses" or a Jamahiriya, after the Declaration of the People's Authority on the second of March of that year.

In 1992 further changes were made to Libya's political structure, to one of a decentralised ruling system with the introduction of communes and "mahallat" authorised to be governed through local representation. In 1998 the system saw further reforms with the creation of 26 governorates, or "Shabiyat", each headed by a governor who is given wide municipal and administrative powers. The most recent restructure of Government took place on the 2nd of March 2000, which distributed more power at local levels. Only five secretariat (ministries) have remained, these are ministries for the Interior, Foreign Affairs, Finance, Information and African Unity the rest of the governmental authorities have been devolved into General People's

Authorities, becoming consultant bodies for the secretariats that have been liquidated.

There are no other political parties in the country as the people “the masses” are those who make the political decisions directly by voting in the General People’s Congress. Over the past couple of years, Libya’s political alliances have seen a major change. Libya has been expanding its ties with Africa while relations with Arab States have been curtailed. Libya has also made major efforts to improve its relations with the international community, it has been resuming its trading activities after the ban on trade with Libya was lifted by the European Community on all products excluding arms after the suspension of the UN sanctions due to the suspected involvement of Libya in the Luckerbay plain crash in 1988.

5.1.3 The Libyan economy

This section intends to give an idea of economic development and the background in which State economic policies developed. It will be divided into the following sub-sections: the period from 1951-1960 the pre-oil period and the discovery of oil; 1960-1969, post production of oil and pre-revolution; 1969-1980, the revolution and the beginning of nationalisation; 1981-1989, completion of conversion to the public sector; and the 1990s, re-emergence of a private sector.

The pre-oil period and the discovery of oil (1951-1960)

Prior to the discovery of oil in 1959 and the commencement of production in 1961, Libya was one of the poorest countries in the world (Vandewalle, 1998). In 1951 the average per capita income was less than \$30 per year while by 1960 it rose to \$100 per year. Gross Domestic Product (GDP) was LD 15 million Libyan pounds in 1955, but by 1958 GDP had increased to LD 52 million (Abuarroush, 1996; Giurnaz, 1985).

The country became dependent on aid from foreign states and payments for the use of military bases, particularly the UK and USA, see table (5.1.3.1).

The country also relied heavily on advisors including technicians from UK, USA and UN. It was difficult to speak of any development of the Libyan economy prior to the 1960, due to the scarcity of water and other natural resources and because the country was poorly endowed with skilled and educated manpower (El Fathaly and

Palmer, 1980). During this period, the agriculture was always the major mainstay of Libyan economy and society. The industrial sector was limited, due to lack of raw materials, power and capital investment. The main export during the early years of independence was scrap metal salvaged from the debris of the Second World War (Abbas, 1987). In 1959 commercial oil was discovered by Esso, a USA petroleum company, in Zelten field, and production began in August 1961 (Giurnaz, 1985).

Table (5.1) Foreign Assistance Allocation to Libya During 1952-1960

	Total Allocation	%
United States	41,138	56
United Kingdom	28,740	39
France	893	1
Italy	1,070	1
United Arab Republic	50	-
Turkey	50	-
Pakistan	10	-
Un Technical Assistance	1,964	3
Total	73,915	100

Source: The Economic Development of Libya, published for the I.b.r.d. by the John Hopkins press, Baltimore, 1960. p.48; Cited in (Abbas, 1987:68)

The period from 1960-1968

After production in the Zelten field started in August 1961, oil production increased rapidly in the 1960s, and by 1969 Libya was the second largest producer in the Middle East/North Africa region (Giurnaz, 1985). The Libyan economy had changed dramatically; oil production revenues increased at a rate never before experienced by an oil producer. GDP and per capita income increased substantially as oil revenues increased.

From the early 1960s, planning for development in Libya had been concerned with the overall development of the economy. In the early 1960s, a National Planning Council was introduced to examine matters of planning policy, and a Ministry of Planning and Development was set up to administer and execute planning and development in 1963 (Gurnaz, 1985). Various economic development plans implemented since 1963, for either three-year or five-year period.

In 1963 the first five-year plan (1963-1968) for economic and social development was approved by the Libyan parliament. The main objectives of this development plan were: to improve the standard of living of Libyan people; to give special consideration to the agricultural sector; to be independent from foreign financial aid; to permit the public sector to continue in such services as education, health, communication and housing. The government allocated LD 169 million to fund the plan. The plan was extended to LD 625 million when oil revenues grew faster than originally expected (Ghanem, 1987) although the development of the agricultural sector was one of the plan's priorities, "the performance of this sector was very low at the end of the end of the plan" (Abbas, 1987). At the same time the plan recorded some achievement in sectors such as health and education.

Although development programmes accelerated after the discovery of oil, they were completely dependent upon oil revenues, just as previously they had been on foreign aid. Therefore, self-sufficiency and reducing dependency on the oil sector were the main objectives of the second development plan.

The period from 1969-1980

After the revolution of 1969, the structure of the Libyan economy changed again. Several steps were taken by the revolutionary government in order to reform the existing economic situation; for example nationalisation of the foreign banks, changing the oil prices and participation in production. Libya's oil price increased from \$2.3 per barrel in 1969 to \$25 per barrel in 1979 (Abbas, 1987).

After the 1973 oil crisis Libya's oil revenues increased from "LD 2.4 billion Libyan Dinars to about LD5.5 billion by 1980" (Giurnaz, 1985). This growth in the revenues enabled an increase in spending on development in all sectors, particularly the agricultural, industrial and construction sectors, which received the highest priority

in order to achieve the objectives of self-sufficiency and reducing dependency on the oil sector.

The new government wanted to change and increase the objectives of development plans. It therefore, decided to abandon the five-year plan (1969-1974) prepared by the former government. During the period 1970-1972, the government spent LD 791 million on economic and social development. The highest amount was on housing (19% of actual expenditure LD 149.1 million), then the agricultural and industrial sectors (17% and 13.8% respectively LD 135 & LD 109 million).

The first socio-economic development plan of the revolutionary government covered the period 1973-1975. The plan's highest emphasis was on housing (LD361m – 18.4%). Followed by agriculture (LD327m – 15.6% of total allocation), electricity and water (LD257.4m – 13.1%), and the industrial sector (LD231.6 million – 11.8%)

The second socio-economic plan of the revolutionary government covers the period 1976-1980. In this plan, the highest priority was the industrial sector (LD1515.4m – 21.1% of the total investment); several factories were established and run by the sector during this period. The next priority was transport and communication (LD 1197.8m – 15.7%), followed by the agriculture sector (LD1030.1m – 14.4% of total investment). Consideration was also given to housing, public services, electricity and Water. Thus, it can be seen that the priorities changed from one sector to another, regarding changes in development plans, which construction of any kind was in the heart of matters.

During this period, state intervention in the economy increased, in accordance with the new regime's ideas of socialism. Since the mid 1979s, the country's economy has been based on the new socialist ideology incorporating income and wealth. The fundamental changes in the Libyan economic structure were aimed at transforming the economy to a socialist system. Therefore, the private sector had to be stopped (Vandewalle, 1998), as the Green Book (part two in 1978) outlined that private ownership is a form of exploitation through wages, rent and profit. In 1978 and the beginning of 1979, a large number of private companies were taken over by workers committees. Similarly, all direct importing businesses were transferred to public corporation, and the issuing of licences was stopped.

The period from 1981-1989

By the end of 1981, with the exception of the agricultural sector, all private ownership in Libya was abolished, housing ownership was restricted to one house per family, business enterprises were replaced by State agencies, and workers took over private and public factories. The whole private sector was completely replaced by People's Committees, and retail activity became controlled by State-administered supermarkets.

Many social economic changes occurred in the country after the second part of the Green Book (1978) was issued, which changed all wage earners into partners through the institutions of mandatory profit sharing and workers committees. This encouraged workers to become involved in the day-to-day management of these State companies in which they worked. Although the new socialist ideology was aimed at transforming the statuses of wage labourer to those of partners, the situation of wage labourers who took over the plants where they were working is still unclear. Indeed, "the only change worthy of mention was the change of the title of wage to producer's shares".

The fourth socio-economic development plan {fourth for the country, third for the revolution} covered the period 1981-1985. The plan's highest emphasis was on the industrial sector (Light and heavy industries) 23.1% of total plan. The second emphasis was on agriculture and land reclamation (18.2% of total plan). While transport and communications came third (12.3%). Followed by housing (10%).

Libya's finances revolve around oil revenues. Therefore, the start of oil exports in the 1960s, nationalisation and oil price rises in the 1970s, all helped to expand government revenues and finance Libya's development programmes. However, government budgets have been in constant deficit since 1981. Development spending has declined since the mid-1980s, with only priority projects, such as the Great Man-Made River (GMR) continuing to attract funds and remaining relatively free of the payments delays experienced by other sectors (Arab Oil & Gas Directory, 1996).

Libya's economy was, in the 1980s, severely restricted by the effects of the low prices for oil. Oil revenue declined from \$23.2 billion in 1980 to \$5 billion in 1988 (Fisher, 1990). Decreasing revenues caused serious cash-flow problems and necessitated a major revision of the 1981-1985 development plan. In response to the new situation, most of the economic sectors faced severe cuts, as Ghanem stated:

“While the value of projects signed in Libya as part of the five year plan which was drawn up before the sudden fall in oil resources, was \$11,827 billion in 1981, the value of projects signed in 1982 went to \$1,374 billion or about 1/12 of the value of the projects signed in 1981”.

(Ghanem, 1985:228;Cited in Abbas, 1987:85)

This decline constrained government spending, reduced the level of imported goods, and increased Libya’s debt repayment problems, all of which led to a lower standard of living (Abuarrosh, 1996). In the period 1980-1986 GDP declined from \$35.5 billion to \$24 billion, while average per capita income fell from \$1009 in 1980, to \$6404 in 1985. As we have seen the Libyan economy was affected by the drop in oil prices and the decrease in production. However, output in other sectors such as agriculture, industry and construction outputs had remained at low levels despite the huge investment in them to raise their share of the GDP, and to achieve the self-sufficiency target.

The 1990s

The increase in oil prices, from \$22.3 per barrel in 1969 to about \$30 in 1977, which remained at this level until 1986, was, accompanied by ambitious public sector and development investment programmes. Indeed, “the average annual investment programme increased from \$126 million in the 1960s, to \$3 billion in the 1970s and over \$6 billion in the 1980s” (African Development Report, 1994). This process was reversed during the 1990-1993 period when annual development expenditures were estimated at about \$2 billion, mainly as a result of the decline in international oil prices. Although sizeable volumes of resources have been allocated to non-oil sectors.

The Libyan economy is centrally planned. From the late 1970s up to 1991 the State controlled both the production and services sectors. However, the crises in the economy prompted the State to introduce a series of economic liberalisations at the beginning of 1988. For example, private shops were encouraged to reopen and small size family construction firms were formed.

In September 1988 the government proposed an increase in privatisation and announced that Libya would be able to import and export in complete freedom (Fisher, 1990). This restructuring policy was initiated and regulated through the issue

of government Act number (9), Dated 5/9/1992. The Act's objective was to regulate and enhance the role of private sector activities in the national economy.

Some of its main provisions are as follows.

- The Libyan economy will be based on joint ownership, popular socialism and individual initiatives and abilities.
- The economic areas open for private and individual initiatives will include production, distribution and services. They will take place in areas such as agriculture, industry, construction, commerce, tourism, transport, and finance, as well as in the private practice of professionals. The implementation of these private activities could be achieved through various channels, such as joint stock companies; corporation and public companies; family and individual activities.
- Based on a recommendation of the General People's Committee (GPC), public or joint enterprises could be sold to private ownership.

Although there was no long-term plan between 1986-1993, the fifth economic development plan for the country covered the period 1994-1996: the "three year program". The program's main objectives in order of importance were the following: settling the debts of previous development projects [i.e. debts belonging to companies that carried out these projects]; completion of current projects, especially in health, education, public utilities and energy sectors; encouraging investment in the production sectors, especially industry, whether through the public or re-emerging private sectors; suspension of all projects which had not yet started (The Secretariat of Planning, Trade and Treasury, 1993). So, one can say that this program was not actually a development plan, rather, it was a program to settle debts from previous liabilities.

The State's final allocation for the three-year program (1994-1996) was LD 2400 million, but due to a shortage of funds the actual expenditure was LD 1450.566 million. This represented 60% of total allocation during the same period. The highest amount was in the energy sector: LD 371.5 million, this represents 25.6% of total actual expenditure. This was followed by development of administration centres (LD271.91M- 18.7%), housing & public utilities (LD140.4M-9.7%), and the

industrial sector (LD132.8M-9.1%) (The Secretariat of Planning, Economic and Trade, 1997).

5.2 The construction industry in Libya

The construction industry has played a prominent role in the economic development, as one would expect in a country largely devoid of infrastructure before the mid-1960s. The construction industry got its start as a result of foreign oil company investment during the 1960s, but since 1969 it has grown in accordance with the government construction projects called for in the successive five-year plans (see Table 5.2).

Table (5.2) Allocation of Development Plans, 1976-80 and 1981-85 (Central Bank Of Libya, 1984) (Value in millions of Libyan Dinars LD)

Sector	1976-80		1981-85	
	Value	Percentage	Value	Percentage
Agriculture	1,476	15.0	3,100	17.9
Industry (light and heavy)	1,205	13.0	4,008	23.1
Public works	1,131	12.2	3,305	19.1
Transportation and Communications	930	10.0	2,204	12.7
Education	522	5.6	100	0.6
Health	276	3.0	621	3.6
Other	3,710	40.1	3,952	22.9
Total	9,250	100.03	17,290	100.03

1. The average value of the Libyan Dinar in this period was (1 LD = \$ 3.33).
 2. Figure for 1981-85 includes all allocations for utilities and electricity.
- Percentages may not add to total because of rounding.

In 1975 the government began to reorganise the construction industry to make it more efficient. At that time, there were about 2,000 contractors, many of them small proprietorships or partnerships. The minister of housing was given the authority to merge contracting firms into a smaller number of larger firms capable of carrying out large construction projects. Firms with capital in excess of LD30,000 were converted into corporations, and the majority shares were sold to the public or the government.

Previously, the government had set up several State-owned construction companies to build factories and to carry out civil engineering projects. Among the firms were the National Industrial Contracting Company, the General Corporation for the Construction and Maintenance of Roads, and the General Corporation for Civil Works.

The many government-sponsored construction projects of the 1970s created a booming industry, so much so that by the end of the decade Libya had become the world's leading per capita consumer of cement. This was a significant economic achievement, particularly because the 1978 housing law effectively had eliminated private residential construction. In 1986 construction supplied about 11% of GDP, second only to public services in the non-petroleum sector.

The construction industry, however, was damaged more than any other sector by the severe cutback in the number of foreign workers in Libya in the mid-1980s. Between mid 1983 and mid 1988, the number of construction workers dropped from 371,000 to 197,000, mainly because of the departure of foreign workers. Nonetheless, construction remained the number one employer during 1984.

The cutbacks in development spending, together with the foreign worker exodus, led to a decline in overall construction. As an illustration, in 1985 the cement industry, which had been expanded during the building boom, was capable of producing 6 million tons a year, but domestic demand had dwindled to only 4.5 million tons.

In addition to the construction decline, there has been a rapid decline in another economic area, that of traditional handicrafts and construction skilled labour.

The shortage of labour due to the tense relations with neighbouring Egypt and Tunisia had affected the development of small construction companies and the construction industry in general. After the significant improvement in the relations with these countries in 1990 a market of cheap and skilful labour was formed. The

availability of such labour encouraged investors in forming small family construction companies to cover the rising demand in local and national housing.

Public sector construction projects are one of the main activities in the power of the local authorities, which is in a form of municipality departments. These departments appraise, plan and contract these projects. In addition to their pre-contract activities, the municipality departments allocate directly these contracts to the public construction companies.

The average annual spending on public construction projects was 1228.5 million LD (\approx £560 million) during the period of 1988-1999, see figure (5.2.1)

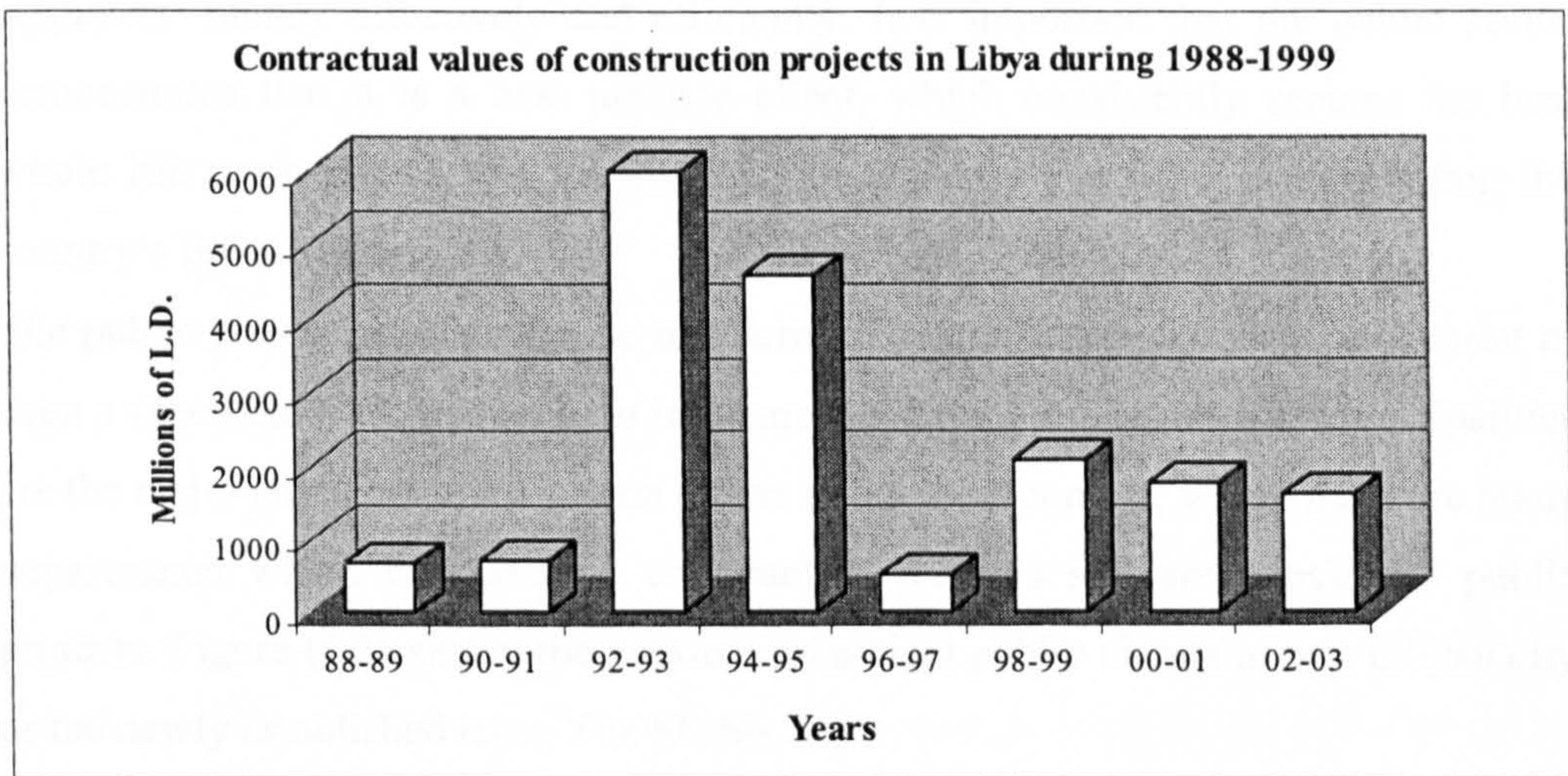


Figure (5.2) Contractual values of construction projects in Libya

Like any other sector in Libya the construction sector was affected by many internal and external factors, which is envisaged in the amount of contracted projects in any given year. Figure (5.2.) shows the sudden rise in construction projects in 92-93 and the following year. This was due to the funding of projects which aim to supply the largest cities by the Great Man Made River (GMMR) water. This decision was reached after the serious shortage and dwindling quality of drinking water in the cities of Benghazi and Tripoli.

These factors affected the progress of most of public construction projects where by 97.7% of the total public projects stopped, due to the shortage of public funding at the period of the UN sanction on Libya. A total of 3260 projects were on hold, 3186 of them were considered construction projects, with a cost of 907 million LD. This

also caused a freeze on a capital of 682.5 million LD which could have been spent on other much-needed infrastructural projects. (Benkrima, 2001).

5.2.1 The Libyan public client

The Libyan public client is the main source of work in the construction industry, which is representing 85% of construction orders in Libya, the public sector can make a substantial difference to widespread adoption of “good” construction procurement State-policy principles. It has a significant vested interest in getting best whole life value from construction if it is to demonstrate that it is spending taxpayers’ money effectively and efficiently. It is important that the public sector demonstrates that it is a best practice client, which consistently secures the best whole life performance that the construction industry can offer in developing the country’s infrastructure.

The public clients in Libya can be in a form of any public department, secretariat or even a specifically formed body to implement a certain public project. Municipalities are the major source of construction orders in the local context, where there are many departments which can contract construction projects and are considered public projects. Figure (5.3) shows the possible municipal public clients in any Libyan city or the newly established term; The Shabia.

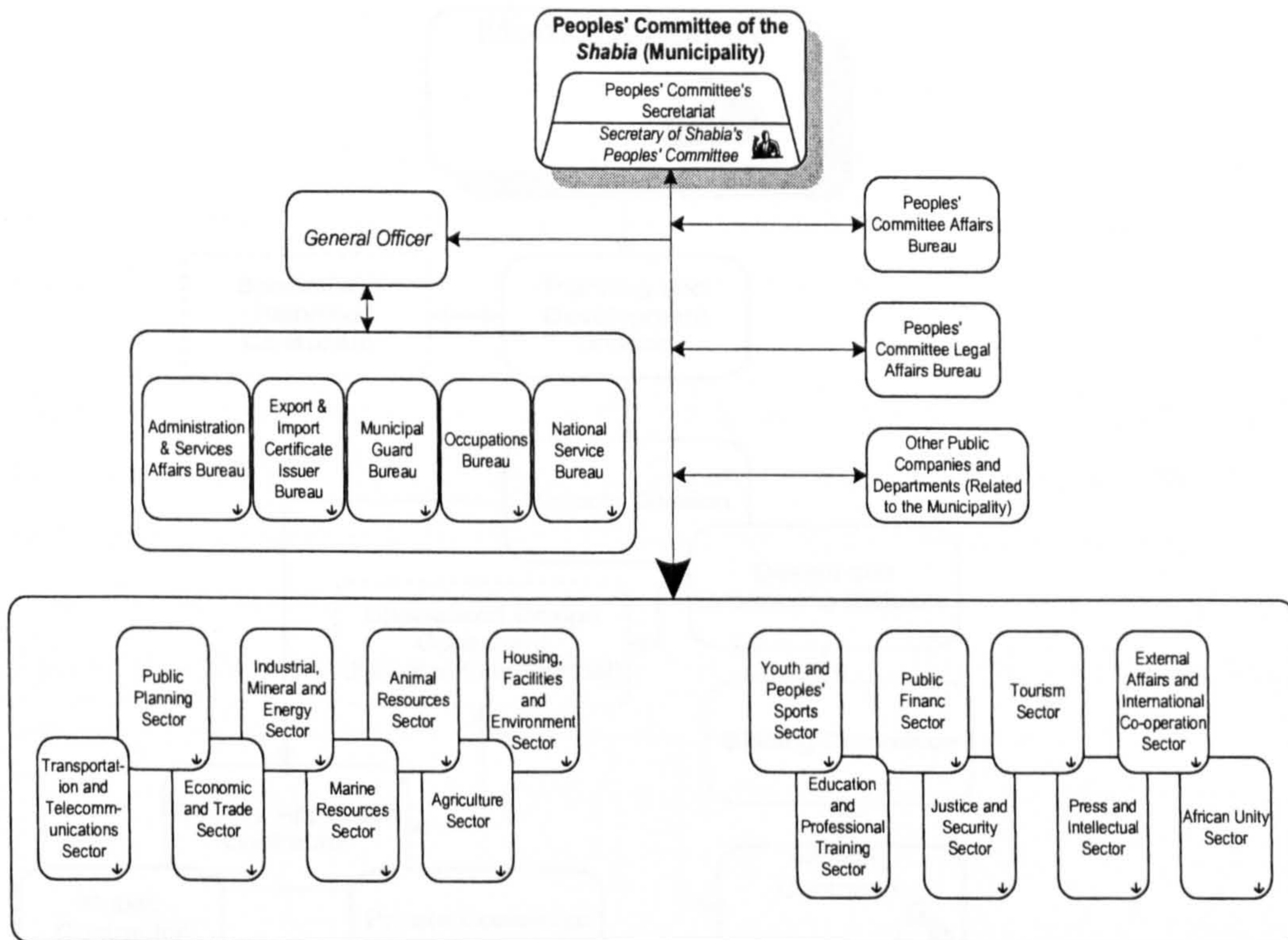


Figure (5.3) The possible municipal clients in Libya

The municipal client contracts public construction projects in its jurisdiction by following a regulated procedure, which allow the close monitoring of the local monitoring and follow-up body, which reports back to the General Monitoring and Follow-up Secretariat. Figure (5.4) shows the sequence of which Libyan municipalities follow to contract construction projects locally.

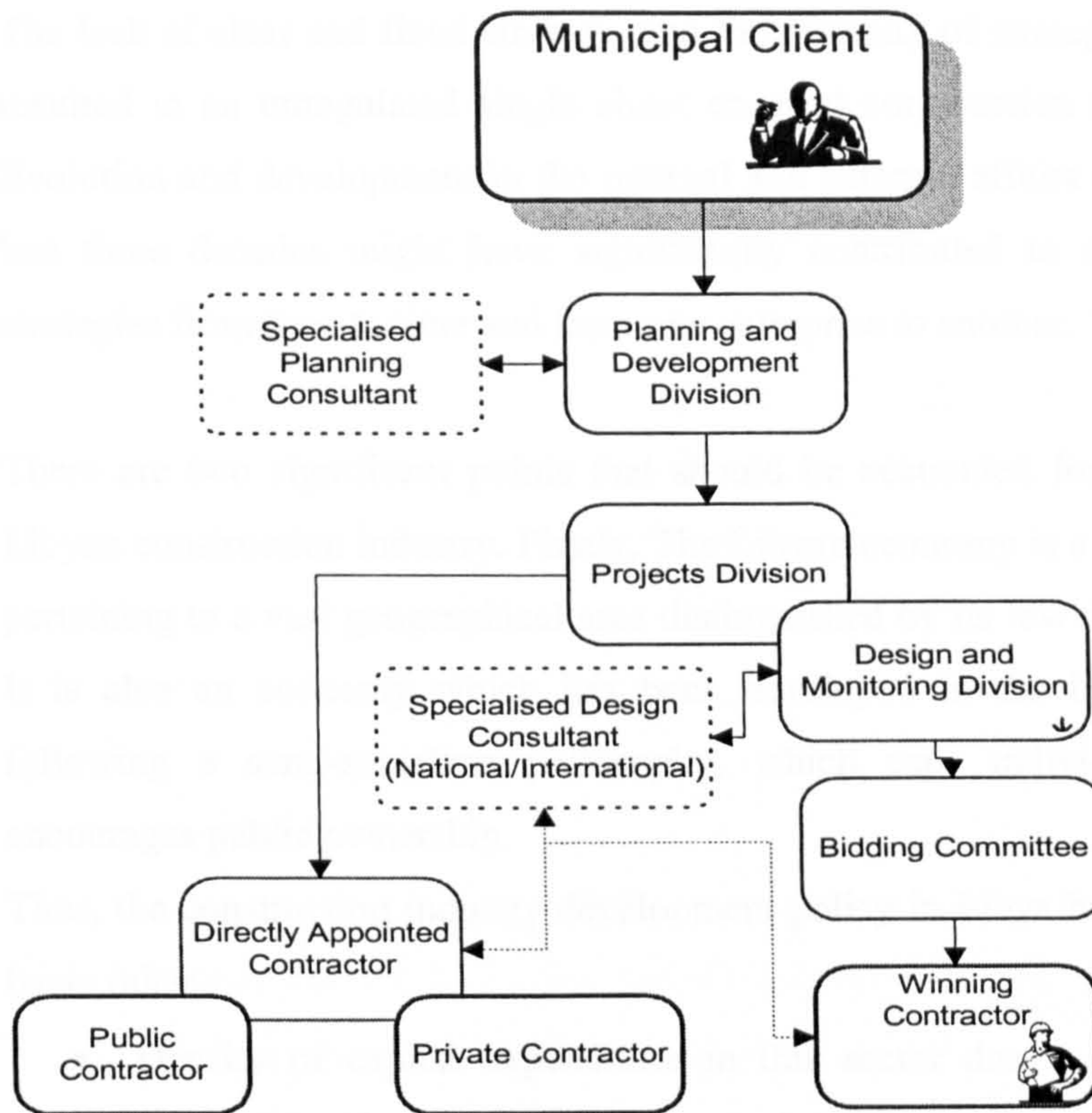


Figure (5.4) Municipal clients public projects' contracting sequence.

5.2.2 Policies and strategies of the construction industry in Libya

The Libyan State has supported the construction sector because of its vital role in the development of the country since independence. This has involved diversifying the sources of national income revenues, thereby attempting to reduce the near total dependence on oil revenues; helping to create job opportunities; satisfying the needs of consumers and exploiting the available sources, whether natural or human.

The study of the Libyan development plans shows the diversity and instability of the construction industry strategies adopted. These strategies fluctuate between the strategies of multi-national companies exclusive contracting awarding to partial and complete substitution with national construction firms to strategies that encourage and implement small size family construction companies. Additionally, there are the strategies that advocate the establishment of partnerships and joint ventures with reputable international construction firms.

The lack of clear and fixed strategy, and the diversity of strategies at the same time resulted in an unregulated single client oriented construction market environment. Evolution and development in the internal and external affairs of the country in the last three decades might have significantly contributed to such changes in the strategies from time to time and from one enterprise to another.

There are two significant points that should be accounted for in the study of the Libyan construction industry. Firstly, The Libyan economy is a developing economy pertaining to a vast geographical area distinguished by its low density of population. It is also an economy which has been developed in the last three decades by following a semi-socialists philosophy, which caps individual ownership and encourages public ownership.

Thus, the construction industry development policy in Libya has been based on two basic rules:

- Density of capital expenditure in this sector due to the high demand in establishing the State's infrastructure in a short period of time.
- Concentration on the public sector and allocating to it the primary role of developing and improving the construction sector. The 1975-1980 Transfer Plan targeted achieving 83% of the estimated all industrial projects including construction related activities through the public sector. That gives us a prospective of what was the real intention, which is clearly is the application of the ideology of the "Third Universal Theory" by Moamer Al-kadafi.

The construction industry is a vital sector to the development in any given country, and Libya is no exception to this. Due to the general policy of the Libyan State, which is based on the notion, that all national resources is in the hand of the people, the State was determined to abolish the excess individual or group ownership and monopoly of any sector. A wave of nationalising the private firms in all sectors in 1974 was the answer to this notion. All industrial and construction activities were planned, constructed and operated by the relevant public sector departments.

There are many similarities between construction and other industries in the Libyan public sector in terms of their complete reliance on public funding and the way that they are managed, by the public departments. But construction is less advanced than

others regarding the technology used, however in terms of how they are been procured they go through the same State bureaucratic channels.

The decisions issued by the G.P.C. during the period of 1985 to 2000, which are based on the decisions made by the B.P.C's were reviewed and it was clear that the general policy of the State has not changed much by involving the public sector in all sectors of the country. And more recently it was also clear from the determination of Moammer Al-kadafi in his speech in the annual celebration of Al-Fateh revolution in 1st of September 2002 in implementing his theory of the people's ownership of all Libya's wealth in a shape of public companies and firms to plan, construct and operate the public projects.

This policy of involving the public sector in most construction activities like wise in other industries, had adopted a number of significant strategic aims, and they are:

- Diversifying the basis of the national economy and correcting the defects in the economic structure so as to change it to a production economy that does not depend upon oil alone. Instead it is to be supported by several basic industries that guarantee a credible permanent source of income that can finance the process of all-round growth and development in the economy.
- Contributing considerably to the increasing demand, particularly for housing, in the local and national market, and concentrating on the improvement of the existing infrastructural civil projects.
- Creating more new job opportunities to the national labour resource and the graduates from the educational institutions.
- Utilising the available local natural resources.
- Achieving a localised balanced development.
- Avoiding the emergence of capitalist firms, which according to the 'Second Green Book' tend to monopolise the industry and exploit the people.
- According to the State governing bodies, the public sector is the medium in which the State can implement the ideological concept from the 'Third Universal Theory', which is envisaged in the statement "Partners not wage-workers" in these State owned construction companies.

5.2.3 Public sector and municipal construction procurement in Libya

There is a wealth of literature covering current approaches to construction procurement in the developed countries, which describes the characteristics of each one, and gives guidance as to the approximate circumstances under which each methodology should be used. In most developing countries these procurement systems and approaches are followed according to their political and economical circumstances. A detailed description and critique of these approaches is reviewed in Chapter three.

In the Libyan public sector construction projects arena there are a limited approaches in procuring these projects; namely:

- Traditional tendering
 - a) Single-stage tendering
 - b) Two –stage tendering
- Single source
 - c) Design and build
 - d) Package deal
 - e) Turnkey

5.2.2.1 Traditional tendering in Libya

The construction procurement system approach used in Libya's public sector is mostly a Traditional approach, which is originally based on the definition of this type in the developed world and in the U.K. in particular due the effect of the British administration era between 1943 and 1952 and thereafter the Kingdome era. Even after the revolution in 1969 the lack of administrative and management experts had not changed the Traditional approach to the specific Libyan construction industry reality. However this type of procurement approach like the others these days is based on the Facility and Housing Contract Legislations, which is formed and monitored by the General Facilities and Housing Secretariat (G.F.H.S.) in 1975 and amended in 1999.

The Libyan traditional tendering is based on a rigid separation of the design and construction activities. The public client appoints a team of consultants national/international, usually following the feasibly study, in order to develop the

detailed design. The design consultant prepares all drawings, specifications and bill of quantities, before the process of tendering for the selection of the suitable contractor takes place. The two main mechanisms for tendering are 'single stage' or the accelerated 'two stage' tendering system. Contract award is usually on the basis of the lowest bid price, although some of the more enlightened public departments these days are now starting to consider a range of criteria weighed in accordance with the potential impact on successful project outcome. The appointed contractor is responsible for the execution of all construction works, which may be undertaken using a combination of national/international sub-contractors and direct labour from the local labour resources.

a) Single-Stage Tender

The normal practice followed for single-stage tendering in the Libyan public sector is that the architect, engineer, quantity surveyor and other specialist consultants each enter into separate contracts with the client. The design team then prepares the complete specification, drawings and bills of quantities. The tender documents are sent to a suitable number of competing contractors, who must price all items of work identified by the design team.

Traditional single-stage tendering is not used on most large and complex projects, unless there is a special provision for management skills and a structure to co-ordinate the large range of specialist designers on such projects.

b) Two-Stage Tender

The system of two-stage tendering was developed during the 1960s to overcome some of the limitations inherent in the single-stage approach, mainly the problems that arise from the total separation of the design and construction processes. This is achieved by introducing a higher level of integration and exposing the design team to the management discipline of the contractor.

The allocated design team establishes a notional bill of quantities when the design has reached a suitable stage of completion. Selected main reputable contractors are then asked to tender rates against the approximate quantities contained in the bill, and may be requested to submit their proposals for the management of the

construction operation, and any suggested design changes/improvements. The successful contractor then becomes a full member of the project team, and is able to advise on any aspect of the scheme, which may be improved in terms of speed and/or economy.

A full bill of quantities is prepared when the design is fully developed, with rates transferred directly from the notional bill, or negotiated if there are substantial differences to be considered.

The two-stage system is applied mainly to large/complex public projects, where the design solution may not be derived without specialist construction input. It also been used if it is necessary to accelerate the construction programme.

There are, of course, other variations on the traditional approach used in the Libyan public sector, including continuity contracts. These were developed in primarily to reduce transaction costs. There are basically three forms of continuity contract:

- **ad-hoc**, where there is a negotiation of rates for a second project based on those from the first. This is widely in the Libyan road construction sector and follow-up projects.
- **term**, where the contractor is appointed for a fixed period of time (often between twelve months and two years) and is reimbursed in accordance with a comprehensive master schedule of rates. This type was used only several times in some sensitive and strategic projects, which are constructed by either a public construction company or an international company involved in defence projects.
- **serial**, where the public department client effectively batches a series of similar projects together, in order to introduce greater economies of scale and save time by avoiding repeated tendering. It is widely used in a similar scattered municipal projects, like the construction of 12 twenty-classroom schools in the municipality of Benghazi by DAWOO in 1994.

5.2.2.2 Single source tendering systems

There is a group of procurement systems that enables the Libyan public clients to employ one firm to take responsibility for the complete delivery of its construction needs. There are a number of variations used in Libya within this category, notably 'design and build', 'design-build', 'package deals', and 'turnkey'. In recent times in other countries a host of other variants has also emerged, including 'build-operate-transfer', 'design-build-finance-operate', and so on. These are effectively similar in concept; the difference is in the balance of responsibilities between client and contractor. But in the Libyan public sector such variations have not been used yet, this is because of the ideological-base clash between them and the State's ideology.

a) Design and Build

As its name would imply, this system simply means that the contractor offers to undertake the entire design and building of a project for the public client. Although the contractor assumes the overall responsibility for project delivery, the client may appoint an independent advisor or consultant to monitor quality and cost. Cox & Townsend argued that here is nothing particularly new about this concept; prior to the nineteenth century it was common for architects or master craftsmen to offer this complete service. This approach has also been widely employed in other countries for many years, including Japan and the United States. It was not until the 1970s, however, that contractor's design and build appeared in the UK civil engineering sector.

The Construction Round Table report *Thinking about Building* cited in Cox & Townsend 1998, considered three variants on the design and build theme, which can also be descriptive of the Libyan public sector construction environment:

- **direct**, where the designer/contractor is appointed after an appraisal, but no price competition;
- **competitive**, where there is price and design proposal competition between several contractors, on the basis of a conceptual design prepared by the client's consultant; and

- **develop and construct**, where the design is partially completed by the employer's designers, before contractors are asked to complete and guarantee the design in a competitive tender.

It has been argued by several authors that either competition or negotiation methods may be used in the selection of a design and build firm, depending on the amount of up-front information. There also obviously needs to be sufficient detail to allow a meaningful competition. Most Libyan public clients seek professional advice to prepare the brief, and monitor progress during the project because of the lack in-house construction and construction management technical capabilities.

Bennett et al, 1995 have argued that the most important factors affecting the client's choice of a design-build approach are: single-point responsibility; the need for guaranteed maximum price; and the avoidance of design and construction risks. They further maintain that this system of procurement is best used for the construction of office buildings, distribution warehouses, standard manufacturing facilities, residential and 'out of town' retail parks.

5.3 The procurement policy making process of municipal construction projects in Libya

The policy-making process in Libya in general, depends largely on the sensitivity of the issue in question, and the timing of the process. The decision-makers vary accordingly, and the way that the policy is formed also vary from time to time. By definition, policy is a set of interrelated decisions made by the political actors to achieve specified goals.

Going back to the conceptual understanding of the policy-making process established in Chapter Two, we will follow the same logical sequence of the system model shown in figure (2.5) to try to describe and understand the full picture of the construction procurement policy-making for the public sector projects in the Libyan context. Before doing so, a descriptive understanding of the current sequence of the implementation of a generic municipal project in Libya is established. Figure (5.3.1) shows the process of a municipal construction project and its evolvement from two

directions. The vertical evolvement is a policy oriented, in which it shows how a State construction procurement policy starts from being made in the Policy-making Level to Policy Implementation Level by legislations to the actual implementation in the Project Construction Level.

The other evolvement is concerned with the time and cost axis, like any other construction project. During this period of conception, construction, handover and operation the project is exposed to all parties concerned to implement technical, economical and policy goals.

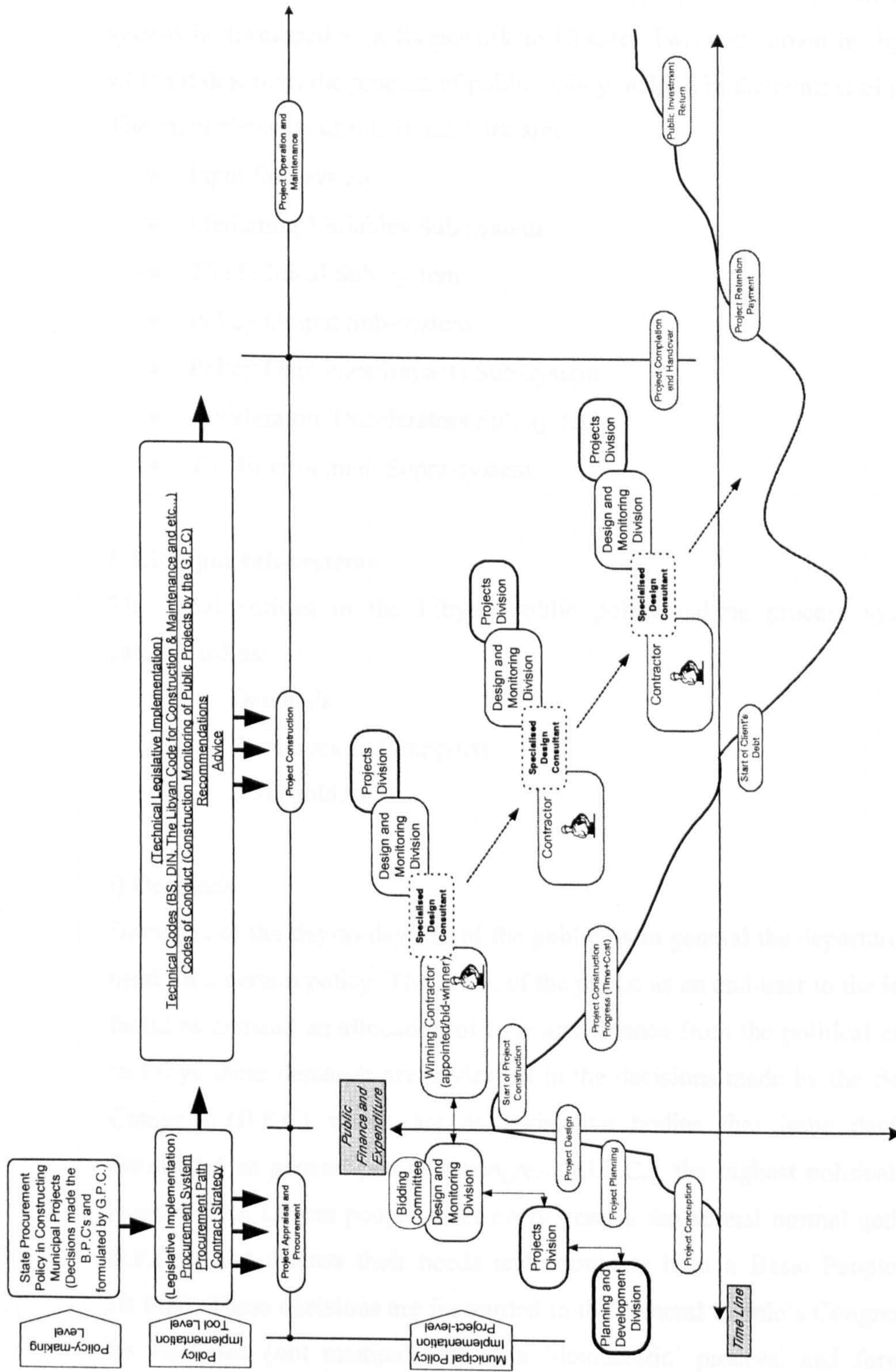


Figure 5.5 A diagrammatic descriptive understanding of the current sequence of the implementation of a generic municipal project in Libya

The process system by definition consists of input sub-systems, processing Sub-systems, output sub-systems and the surrounding supra-system. A conceptual model system is developed as a framework in Chapter Two and shown in figure (2.5), in which it describes the process of public policy making in the context of procurement.

The main elements of this framework are:

- Input Sub-systems
- Mediating Variables Sub-system
- The Political Sub-system
- Policy Output Sub-system
- Policy Outcomes/Impacts Sub-system
- Accelerators/Decelerators Sub-system
- The Environment Supra-system

5.3.1 Input sub-systems

The input entities in the Libyan public policy-making process system can be categorised as:

- (i) Demands
- (ii) Resources and Supports
- (iii) Stakeholders

i) Demands

Demands of the day-to-day life of the public, is in general the departure point in the need for a certain policy. The needs of the public as an end-user to the infrastructural facilities demand an allocation of time and finance from the political establishment. In Libya these demands are envisaged in the decisions made by the Basic People's Congress (B.P.C) which act as legislative bodies that issue decisions to be formulated in general people's congress (G.P.C.), the highest political body in the country. The Libyan people meet every year in the annual normal gathering of the B.P.G.'s and discuss their needs and formulate it in a Basic People's Decisions (B.P.D). These decisions are forwarded to the General People's Congress (G.P.C) to be regulated (not manipulated) in a 'democratic' process, and formulated in a legislative fashion.

The Libyan State claims that, demands and needs of the public is the main driving force behind their policies toward the upcoming planning, financing contracting the needed projects. Here lies the issue of procuring these projects, which is reflected in the actual contracting of the projects and the policy followed in such activity.

ii) Resources and Supports

Resources are the muscle power and capability of the State backing its policies. The presence of strong economic indicators reflects greatly on public policy. Rationally thinking, the stronger the economic status of the State, the more positive policies is made. Although strong presence of the 'sole' political player in Libya is characteristic of many political decisions, it is not widely enforced in most civil infrastructure planning and construction policies. But the times when this power is practised there is neither official complaint by the State governing bodies nor the public. However, in some circumstances the public unease with a certain policy may convince the "policy-makers" to modify or change their stand if this policy touches over-sensitive issues like clans' powers and identities.

Supports to the recourses of the State are the manpower and the implementation aids to public policy. In Libya the supports of State policies is reflected in the funding strength of such policies, for instance the policy of involving more national Libyan skilled labour in the construction projects in the 1980's demanded the State to establish new industrial training and related education institutions to elevate the level of industrial and construction skills in the country. All policies concerning the construction of public sector projects in Libya are backed by the financial power of the State, and the ability of coping with changes and compromises to reach the desired policy goals and objectives.

In January 1995 for instance the G.P.C issued a letter to all public departments in Libya informing them that no public department is to award a contract and freeze all payments to the two biggest resident international contractors (Bilfinger and DAWOO). This decision was made by the G.P.C based on a "recommendation" from the 'leadership' because of the rising power of these companies to acquire work in the municipalities. Such decision needed a substantial political and financial support, which the State had at the time.

iii) Stakeholders

Stakeholders include anyone who has a significant dealing with a project, such as customers, employees, suppliers, distributors, joint ventures partners, the local community, bankers and shareholders.

The main non-financial profit based Libyan public sector stakeholder is the public, which represents the end-user to all completed construction projects. However, other parties involved in the planning, financing, procuring and construction of the project are money and profit based stakeholders. All these parties represent an input to the process system of policy-making in general and public construction procurement policy in particular.

The effects of the stakeholders' nature on public construction policy-making is that they dictate the way that a policy is formed to satisfy all the parties (in the ideal world of course) and they provide the base of demands and requirements of the intended State objectives and goals. In the Libyan context the State identifies the most important aspect of stakeholders input to the system as the public satisfaction with the complete and un-compromising compliance with the 'Third Universal Theory'. However, other invisible aspects of stakeholders are the satisfaction of achievement feeling to the political players.

5.3.2 Mediating variables sub-system

The part in which the conceptual policy passes through evaluation and criticisms of the State and non-state organisations. The effect of these organisations depends largely on the political and economical freedom in the State.

In the context of the Libyan public construction procurement these State organisations are represented by the client's governing and monitoring bodies, like the People's Monitoring and Follow-up Secretariat (P.M.F.S.) and its departments in the municipalities. These administrative public sector bodies affect the procurement process of the public projects by expressing their concern or satisfaction during the process of procuring or their compliance with the existing policies.

Some other Libyan 'people's' organisations are also considered in our view mediating bodies as an input to the system. These organisations are envisaged in the trade and labour unions, the social associations, national and local media, clan and tribal gatherings and representations and the public as an end-user in general.

The effect of these formal and informal organisations depend on the sensitivity and the timing of the project, where the so-called strategic projects there is no significant effect on neither the way the State procure nor the way that it construct these projects. However, it has been known that even in these strategic project the State procurement policy may sometimes forced to present some compromises if State security falls in the equation.

5.3.3 The political sub-system

In order to understand the Libyan public policy process it is necessary to relate it to the power structure of the Libyan society as a whole and the power of the political system. Any public policy is the product of the exercise of political influence, determining what the State does and setting limits and boundaries to what it does.

In theory the political system in Libya is not a representation of the people but it is only a facilitating bodies to organise and manage the policies, which are base on the decisions made by the public through Basic People's Congresses and as stated in part one of The Green Book by Al-Kadafi "No representation in lieu of the people", "Representation is a denial of participation" and "Representation is a falsification of democracy". However some policies are made based on the "recommendation" of the leadership because of their ideological and political experience and "supported" by the public as a result of their full appreciation of their "non-bias" nature. The political system of the State of Libya is run by the Basic People's Congress (B.P.G), which includes all Libyans of 18-years old. The basic congresses act as legislative bodies that issue decisions to be formulated in general people's congress (G.P.C.), the highest political body in the country. The Popular Committees (P.C.) on different levels are intended to execute and follow-up the decisions of the (G.P.C.) This system was introduced in Libya in 1977 as a political framework called "The Authority of The People".

5.3.4 Policy output sub-system

In general a policy output is the result of processing the inputs with the influence of the mediating sub-system and the supra-system.

In the context of the Libyan public construction procurement there are only types or the modes we identified in the conceptual model of procurement policy-making (See figure 2.5, Chapter Two) and they are:

- **Legislative construction procurement policy, which is a policy of the Libyan political sub-system based on the decisions made by the public through Basic People's Congresses and Committees and formed into laws, for example the Libyan Municipalities Contract Law issued by the G.P.C. in 1977 and amended in 1995.**
- **Flexible Legislative construction procurement policy, which can be defined as a sprung-off procurement legislations with a certain amount of pre-defined flexibility level to the local public departments in the municipalities or in the Libyan terminology "The People's Specific Committees". These Committees can add clauses to the construction contracts that they think is a reflection of State policy towards specific circumstances. For example what happened when the policy of the State was to increase involvement of the public construction companies in municipality projects? This policy was reflected in the procurement of construction projects by obliging the international contractors to sub-contract some work to these companies or establish a joint venture between them. In theory the judgment of these People's Committees must be a result of a thorough internal and external decision-making process backed by the continued consultation of the General People's Secretariat, to ensure the compliance with the decisions made by the public through the Basic People's Congresses.**

The other type of procurement represented in the model is "Flexible Procurement" or free-market procurement. This type does not exist in the Libyan public domain, where by public clients do not have the authority to change their procurement policy and strategy in procuring the construction of public projects. This is due to strict restrictions of the State governing bodies on any decisions made by any public

department in any municipality regarding construction of public projects, even if the department regards these project as small internal departmental projects.

5.3.5 Policy outcomes/impacts sub-system

There are two ways of understanding the one-way process-end of a single State-policy. The outcome of the policy on a certain sector in the public arena as an effect of the policy in enhancing or impeding this sector individually and the whole society collectively. The other way is the assessment of the kind of impact of the policy on the sector in question. These two paths are used collectively to quantify and qualify the total policy outcome.

The *outcomes in* and the *impacts on* certain construction procurement Libyan policy is reflected in these aspects of the State:

- National policy
- National economy
- The industry
- The infrastructure construction (national and local public construction projects)
- Local economy
- The end-user
- The public organisations
- The working team
- The role
- The individual
- The ethics

Our research will be concentrated on the issue of the impact of State procurement policy in constructing of public sector municipal infrastructure projects.

The understanding and assessment of these impacts brings us to the stage where by a feedback is expected to re-begin the whole process of the Libyan public construction procurement policy-making.

5.4 The Libyan Construction Culture, and its effect on State Construction Procurement Policy making.

Cultural factors are all patterns of collective behaviour of the society that influence the project or the industry as a whole but which are impossible to control through individual project's management. They are more or less preconditions and accumulations for the various tasks that can be shaped to execute projects.

Ofori, (2000) argued that the impact of culture on a business economy attracts considerable attention in literature. The relevant written texts underscored the effect of culture on different aspects including business organisations, the construction industry and projects.

Culture involves relationships within and between organisations, resources and the environment within which work and project activities take place (Fletcher, 2003).

Cultural practices within the Libyan context have always played an influential part in defining public life (Atkinson, 2002). The Libyan working culture is defined by the State environmental constraints of economical and political situation, and from this cultural conditioning perspective, the art of management lies within the ability of the public project organisation to be inventive in its adjustment to the way of working, which should in theory satisfy the State policy goals. The effect of culture on certain aspects of public systems and organisations is largely dependant on, centralisation, bureaucracy, task orientation, team reactions towards problems and methods of work (Eaton *et al.* 2005 and Yitmen and Taneri, 2005).

Both Ofori, (2000) and Fletcher, (2003) agree that culture affects the different aspects of the construction industry such as the management styles, team and individual relations, and leadership.

Efforts have been made in different countries, through committed agencies, to improve the functioning of the construction industry, and policies are targeting it as a potential tool for culture change. These efforts included long-term plans covering certain aspects like the need for improved economies, client demands, globalisation, technological and social change. Arrowsmith (2004), Ofori (2000) and the Green Paper on Procurement Policy Reform in South Africa (1997) stressed the unique role

of the construction industry in promoting the national economies, reducing social problems and increasing value for money used in construction, in addition to sustaining environmental accountability.

Rozendal (2003) discussed the impact of cultural behaviour on projects in general and in ICT projects in particular. He suggested that in monitoring the progress of any project certain cultural factors, on the societal level and organisational level should be examined. These factors which are rooted in Hofstede cultural dimensioning shown in Table (5.3) in both the Societal Level and the Organisational Level. (Hofstede, 1991)

This cultural dimensioning will be the bases of explaining the Libyan culture in the context of the construction industry in shaping public construction procurement policies.

Table (5.3) Cultural dimensions on Societal and Organisational levels

(Source: Rozendal, 2003 and adapted from Hofstede, 1980 and Handy, 1985)

Societal Level	Organisational Level
1. Time Orientation	Centralisation .1
2. Universalism versus Particularism	Bureaucratism .2
3. Power Distance	Task Culture .3
4. Oral Culture	Private or Public .4

The effect of cultural dimensions on the Societal Level

1. **Time Orientation**: In essence, time is just a concept. You cannot see, touch, hear or smell time. Yet all cultures are conscious of time and organise themselves around their concepts of time. The concept of time in Libya is considerably different to that of many western cultures. Time is not an issue; therefore Libyans are generally unpunctual compared to western standards. Despite this, it is difficult to assess the extent of time keeping effects on the construction projects procurement, but it is easy to say that delayed projects do not make headline news in Libya.
2. **Universalism versus Particularism**: Universalism searches for similarity, and tries to impose on all members of a class in the society or universe the laws of their commonality. Particularism searches for differences, for unique and exceptional forms of distinction that render phenomena incomparable and of

matchless quality. (Rozendal, 2003). Research (Nummelin *et al.* 2005; Ankrah *et al.* 2005) points out, that developing countries have a more particularistic culture than industrialised cultures. Instead of working with a clearly defined procedure to handle a certain type of project, they will always see the person behind this role and adjust their behaviour to their personal characteristics. Libya like most developing countries has influential parties (Al-Abbar 1999 and UNDP 2004) who can change the surrounding environment in terms of the laws, regulations and even ethics of the construction industry in a way that they will ultimately affect all aspects of the public projects and cause particularism in implementing policies. Construction procurement in many ways involves contracting and is a breeding ground for corruption and favouritism if left un-monitored. The state of corruption in Libya is not particularly good, where by it is ranked 128 out 133 on the corruption index of Transparency International. (Transparency International Corruption Perceptions Index, 2003)

Perhaps the best examples of particularism in Libya that this cultural factor gives structural power to the interests of higher-level coordinators to fit a project in such a way that it also becomes a source of jobs and influential positions for their extended family or clan in their known geographical boundaries. In this way, any culture changes in the construction procurement policies are not only the procedure of the decision-making process but also its results and outputs.

3. Power Distance: Power Distance focuses on the degree of equality, or inequality, between people in the country's society. A high power distance ranking indicates that inequalities of power and wealth have been allowed to grow within the society. A low power distance indicates the society de-emphasizes the differences between citizen's power and wealth. The Arabic-speaking nations including Libya are high power distance in the Geert Hofstede index of power distance (Hofsted, 2004). This is likely to affect the construction industry in terms of State's policies which are very dependant on the power distance of the construction projects' parties involved in making and affecting construction procurement policies which lie on the top end of the industry in general and the public projects in particular. The power

distance of a culture has great influence on the way a project will be managed (Hofsted, 1991). In high power distance cultures, the contact between superiors and subordinates will only take place at the initiative of the superior or the public manager. This has great influence on the way project management will be discussed or evaluated. For instance, if the Libyan State's policy of construction procurement tries to introduce a policy that is based on negotiations between public managers superiors and subordinates of contractors, engineers and the private sector the initiative may fail because the process makes some parties feel uncomfortable.

4. Oral Culture: The meaning of the oral culture is the way that construction participating parties communicate in an oral way, which has its roots in the literacy levels and trends of communicating information and the security of disseminating information in a written documented way. In developing countries, communication patterns often follow a face-to-face oral flow, on the other hand developed societies these communication patterns follow a more complex path of writing, print, radio, telephones, telegraph, photography, film, television, and e-mail. The Libyan public construction is a State regulated environment, and employees are across the spectrum of the society in terms of educational and vocational qualifications. Oral communication in construction projects can be superficially influential and sometimes very influential.

Western policy and decision making processes use decision documents' such as contracts, invoices, proposals and implementation plans. The formal judgement function of these decision documents, the main and fundamental function they have as means of communication. Making the document requires all the public projects participating parties to exchange thoughts about the project activities and its possible outcomes in a documented fashion is essential in making viable construction procurement policy. In Libya it is difficult to rely on oral documented communication (e.g. interviews) in a culture of insecurity when issues are related to policy matters are sometimes interpreted to be opposition statements to the political ideology and leadership. (US Department of State 2002 and IPI, 2004)

The effect of cultural dimensions on the Organisational Level

Organisational culture is the pattern of assumptions, values and beliefs which are accepted and influence the way an organisation goes about its business. Lui and Fellows (1999) and Ankrah *et al.* (2005) all suggested that organisational culture shapes the way in which an organisation interacts with its environment, and the actions chosen to be implemented. Assumptions, beliefs and values are often difficult to observe as they are learnt and unconsciously followed by employees of a specific industry.

There are four cultural dimensions in the organisational level which may affect the Libyan public construction procurement policy making.

1. **Centralisation**: It describes to what extent central and higher levels take decisions concerning daily activities of public departments in construction of local projects. The more that behaviour of organisational members is determined by decisions at a higher level of the State, or at least the need for approval from that level, the more public departments concerned with public construction are centralised. This aspect of a power culture is strongly related to the effects of particularism that the top of the State has the best position to judge the consequence of strategic decisions in a public construction project in the local level. The central nature of the legislative system in Libya in making laws and regulations governing the procurement of local construction projects is also powerful and authoritative. This centralisation in regulating an important aspect of public construction projects in Libya may play a positive role in implementing policies and insuring the outcome criteria of satisfying policy goals, that is if we assume that these are the suitable ones. But on the other hand, one may argue that the shortcomings of satisfying public projects goals in the construction level are rooted in the centralised way of governance and sometime a despotic approach, may lead to time and cost overruns.
2. **Bureaucracy**: In sociological theories, bureaucracy is an organisational structure characterised by regularised procedure, division of responsibility, hierarchy, and impersonal relationships (Dunleavy, 1991). The term can characterise either governmental or nongovernmental organisations and can represent an important aspect of organisational culture. In modern usage, bureaucracy often equates with inefficiency, laziness, and waste of public

money. It is often characterised in the popular imagination as existing solely for itself and only achieving results which end up in enlarging the size of the bureaucracy. A stereotypical bureaucracy would consist of many levels of State management approaches, which require many signature approvals to make any decision, no matter how trivial. Examples in the Libyan construction industry are conspicuous to Libyans and academics alike which are embedded in everyday bureaucracies in the State control over corporations, hospitals, courts, ministries, or school. This high degree of bureaucracy in Libya can potentially hinder any initiation for culture change in the procurement of public construction projects, where by it decelerates the whole public policy making process, which is also envisaged in our *Accelerators and Decelerators* sub system in the model developed in Chapter Two (See Fig. 2.5).

Good examples of centrally controlled bureaucratic organisations in Libya can be found in public departments concerned with authorisations of documents and activities in the construction process, which follow a long and inefficient procedure. In these organisations it is quite normal to need formal authorisation, by means of a formal document, to move a desk from one room to another. Furthermore, the members of these organisations have to write down every phone call they make, and before they can use a vehicle they need written permission from the director of the organisation. It is important to stress that most of these procedures are designed in such a way that they increase the power-hold of the State over its public departments. Another tool to increase this power-hold is to create exclusive rights of the management and monitoring duties of procuring public construction to specific State public departments.

3. Task culture: Task culture exists to achieve a specific goal or set of goals, of which successful implementation of construction procurement policy in public projects is an example. In a task culture, expertise is the key factor in determining an individual's or organisation's fit for a job. Task-orientated organisations therefore tend to work in flexible teams, which change with the demands of work.

A task culture is particularly appropriate for construction project's work; it is commonly found, for instance, in consultancy organisations, which operate mainly that way. The Libyan public departments' task culture is mostly driven by regulated and restricted procedures. The flexibility of public departments in managing public construction projects is highly dependent on regulatory State bodies and the people who are in charge of managing these departments. Influential and powerful public managers can either limit or encourage work flexibility and task culture. However such flexibility may not be sufficiently rewarding to employees, because of the strong and rigid State control over public employees by *Law No. 15/1981* which is very controversial and heavily debated in term of fairness.(Dabila 2004, Samedia 2004) Because of the diversity and multidisciplinary nature of construction projects, task oriented public departments will positively affect the delivery and implementation of procurement policies.

4. Public and Private: We can also distinguish a difference in cultures between organisations in the public and in the private sectors involved in the procurement of public projects. While organisations in the Libyan public sector have a political, social and economical focus, private organisations are primarily focussed on profits. For that reason, members of public organisations operate more often in a more politicised culture than members of the private sector (Martin 2002).

This difference is also important with regard to the concept of Power Distance. Although Libyan private organisations tend to have a clear and central ownership pattern after allowing private ownership of companies in 1989, they remain under the umbrella of the powerful political system, and they do not operate in an open market in the capitalist sense. On the other hand public organisations are clearly owned by the State and power hierarchy is more clearly defined. It is therefore an important aspect to look into when construction procurement policies are passed and whether it is possible to use public and private partnership and cooperation in reaching national policy goals through construction procurement.

An important note in the discussion on the influence of the cultural environment is the fact that cultural factors tend to change the meaning of concepts in the everyday working construction environment. Taking the cultural environment of the Libyan construction into account means that the State policy maker/s should agree to focus on factors they cannot control. Managing the development process of construction procurement and exploiting its potential powers in enhancing or changing culture, means looking for methods to adjust to the somehow autonomous forces. Instead of directing or changing the environment and forcing regulations and laws, procurement policy maker/s should focus on analysing cultural patterns and trying to anticipate these patterns in such a way that, through the project procurement activities, they converge into the overall policy goal.

5.5 Summary

The study of the surrounding environment is central to any research, by establishing a sound base for forming a specific overview of the field of study. One has to recognise the importance of the knowledge concerning every aspect of social, legal, economical, environmental, political and technical setting of the State.

In this Chapter we reviewed these aspects from the point of their relevance to our research topic. The relevant factual information was categorised as; general information and an insight to the construction industry in Libya and the State's policies concerned. The other part of this Chapter was concerned with the application of the conceptual system model developed in Chapter Two in the context of the Libyan local construction and how the construction procurement policy is formed and modified to suit this specific environment.

The aim of this Chapter was to achieve an understanding of the current Libyan local construction procurement policy making through an overview of related issues in the Libyan environment, where there are no documented State systematic approach to this issue. The manner in which any policy-makers conduct their policy forming is highly dependant on the State's political structure and ideology. The Libyan State has a unique political structure, which in many aspects is an adoption of the socialist approach, but with emphasis on the continued participation of the people through their Basic Peoples Congresses (P.B.C's). Such description of the political setting has changed over time since the emergence of the Third Universal Theory in 1976

with the incorporation of some capitalist aspects, like forming the private sector with some restrictions on their activities.

The local construction industry in Libya is in need of a systematic and scientific review of its current state, where by there are no clear policy objectives and goals to clients and contractors alike.

In the next Chapter we presented a review of the methodology in this study and justification of selection, followed by a three case studies reporting and analysis in the next chapters, indicative of the local construction industry in Libya, where municipal projects were chosen from the city of Benghazi.

Chapter Six

Justification of Approaches and
Methodologies of the Research

Chapter Six

Justification of Approaches and Methodologies of the Research

6.0 Introduction

This chapter outlines the choice of research methods available and describes the methodology adopted for this study, and the justification of the selected method after consideration of all aspects of the research needs to satisfy the initial objectives mentioned in Chapter One.

The term “methodology” refers to an overall approach to the research process. Two important words, both used in research methods, are “methodology” and “methods”, but some writers use them interchangeably. The difference between the two terms methodology and methods is that “methodology” refers to overall approach in the research process, from the theoretical understanding to the collection and analysis of data. “Methods”, on the other hand refers only to the various means by which data is collected or analysed.

6.1 Research methodology

Research in general is the process by which solutions to a problem are found through a thorough study and deep analysis of situational factors. On the other hand, organisational research is described as an organised, systematic, databased, critical, objective, scientific inquiry or investigation into a specific problem undertaken with the purpose of finding answers or solutions to it (Sekaran, 2000). Research is classified as either quantitative or qualitative.

A great deal of organisational research can be described as demonstrating many of the characteristics of quantitative research, where the research process resembles a scientific approach to the conduct of research. On the other hand, qualitative research implies that the researcher seeks to establish what is important in relation to individuals as well as their interpretations of the environment in which they work, through in depth investigations of individuals and their social environment.

Research method as defined by Ghauri *et al.* (1995) is the systematic focused orderly collection of data for the purpose of obtaining information to find solutions to research problem or answer research questions. He also stressed the fact that the suitability of techniques and methods is dependent on the research problem and its

purpose. As illustrated in table (6.1) the difference between qualitative and quantitative research is viewed as being that whilst qualitative approach is subjective and uses language and description, quantitative approach is objective and relies heavily on statistics and figures. However, qualitative and quantitative approaches can be combined and used in the same research.

Table (6.1) Difference in emphasis of qualitative versus quantitative methods

Qualitative Methods	Quantitative Methods
Emphasis on understanding	Emphasis on testing and verification
Focus on understanding from respondents`/ informants` point of view	Focus on facts and / or reasons of social events
Interpretation and rational approach	Logical and critical approach
Observations and measurements in natural settings	Controlled measurement
Subjective insider view and closeness to data	Objective outsider view and distance from data
Exploitative orientation	Hypothetical- deductive; focus on hypothesis testing
Process oriented	Result oriented
Holistic perspective	Particularistic and analytical
Generalisation by comparison of properties and context of individual organism	Generalisation by population membership

Source: Robson and Colin (2002)

6.2 Types of research methodology

6.2.1 Quantitative methods

Quantitative methods are more concerned with numbers rather than words. They are useful for addressing questions related to what, whom, where, how many, and how much, and can be used to measure the incidence and prevalence of a phenomena (Sabsted et al 1995). They can yield representative and broadly generalisability information about a particular population. With proper sampling, quantitative methods allow for the measurement of many subjects` reactions to a set of questions. Because each question has a limited set of answers, the results can be compared and analysed statistically; they also can be generalised to a larger population within known limits of error. Common quantitative methods include sample surveys and semi-structured interviews.

The method is not appropriate in cases when the programme has a small number of clients (Hulme, 1999). Nor is it necessarily appropriate when policy-makers are concerned mainly with institution performance or client perspectives on the programme or circumstances changes. It also faces problems of sample selection bias, misspecification of underlying causal relationships and respondent motivation.

6.2.2 Qualitative methods

Qualitative methods permit one to understand key relationships and how different aspects of life are interrelated (Barnes 1999; Robson 2000). While the qualitative methods cannot measure the magnitude of impact, they can help bring understanding the “why and how” when something happens. It is thus helpful in illuminating relationships between the State, the end-user of the constructed project, and community. The State’s policies are made to target a certain collection of either people, organisation/s, industry/s or whole sector/s, therefore qualitative analysis of these policies regarding their formation or impact help in answering the question of how effective are they or to what extent they effect other elements of a certain case study.

In this study the qualitative methods permit a client perspective of changes due to policy implementation, participation and valuation of construction projects outcome in the municipal or local context. By measuring the tangible outcomes of the project one can reach a cause and effect mindset, which is in our view the way forward in dealing with any problem. This approach helps in revealing unforeseen and unanticipated consequences of the policy; help clarify hard to interpret findings from a survey; and allow clients to explain and learn from their experience.

It is believed that quantitative methods ignore the complexity, diversity and contingency of social studies; it reduces causality to simple unidirectional chains, rather than complex webs; it measures the irrelevant or pretends to measure the immeasurable; and, it empowers professionals, policymakers and elites, thus reinforcing the status quo and directly retarding the achievement of development national and international goals. On the other hand qualitative methods focus on participation and sharing of information between the interviewer/facilitator and the participant (Barnes 1999; Robson 2000).

The format allows for participants to discuss their perceptions and behaviours as well as issues that are important to them. As a result, these techniques permit the unveiling of unanticipated positive and negative consequences of State's policy participation, and factors contributing to and impeding impacts on the construction industry in general and the municipal construction projects in particular. They capture what people have to say in their own words and describe their experiences in depth. Although an inductive approach is used, which focus on key informants, recording by notes qualitative methods, they do not try to 'prove' impact within statistically definable boundaries, instead it seeks to provide an interpretation of the processes of involved in intervention and of the impacts that have a high level of plausibility and credibility.

Qualitative methods may include focus group discussions, case studies, or participatory action and learning. Focus groups involve asking a few key questions to generate discussion that yields information on the views and opinions of participants. Case studies involve detailed studies of either a group or individuals.

6.3 Research design and plan

Research design as described by Yin (1994) is the logic that links the data to be collected, and the conclusions to be drawn regarding the study questions, in a coherent manner. It can be perceived as an action plan to get from the study questions to conclusions. Research design however embraces a number of research strategies. Experiment, survey and case study are only some of the alternatives available for our research.

The research plan is the overall programme of research being undertaken, and involves the procedures the researcher will carry out for the study (Emory & Cooper 1991). The research plan provides procedural sign posts to keep the researcher going in the right direction.

In credible case research it is important to document the methodologies and techniques used in order to demonstrate validity and robustness (Eisenhardt 1989; Miles and Huberman 1994; Patton 1990; Yin 1994).

6.4 Why choose the case study strategy in particular?

Case studies differ from experiment and survey strategies in that they are inherently multi-method i.e. typically involving observation, interviewing and analysis of documents and records (Robson, 1993). The decision of the choice between different research strategies is based on the specific features of the different strategies. As illustrated in table (6.2) experiment and survey are mainly to do with information gathering and analyses about a small number of features of each case. Therefore, they are not well suited to conduct a study such as this.

Table (6.2) A schematic comparison of case study with experimental and survey approaches.

Experiment	Case Study	Survey
Investigation of relatively small number of cases	Investigation of relatively small number of cases	Investigation of relatively large number of cases
Information gathered and analysed about a small number of features of each case	Information gathered and analysed about a large number of features of each case	Information gathered and analysed about a small number of features of each case
Study of cases created in such a way as to control the important variables	Study of naturally occurring cases; or, in 'action research' form, study of cases created by the action of the researcher but where the primary concern is not controlling variables to measure their effects.	Study of a sample of naturally occurring cases; selected in such a way as to maximise the samples' representativeness in relation to some larger population.
Quantification of data is a priority	Quantification of data is not a priority. Indeed, qualitative data may be treated as superior.	Quantification of data is a priority
The aim is either theoretical inference- the development and testing of theory- or the practical evaluation of an intervention	The main concern may be with understanding the case studied in itself, with no interest in theoretical inference or empirical generalisation. However, there may also be attempts to at one or other, or both, of these. Alternatively, the wider relevance of the findings may be conceptualised in terms of the provision of vicarious experience as a basis for naturalistic generalisation or transferability	The main aim is empirical generalisation, from a sample to a finite population, though this is sometimes seen as a platform for theoretical inference.

Source: Hammersley and Gomm in Gomm et al (2000), p.p 2

As the case study strategy is the main approach to be adopted in this study, the following section will discuss in some detail the theoretical and practical aspects of this approach.

6.4.1 The case study approach: it's suitability and relevance to the research

Critics of the case study method believe that the study of a small number of cases can offer no grounds for establishing reliability or generality of findings. Others like Feagin *et al.* (1991); Stake (1995); Yin (1994), feel that the intense exposure to study of the case biases the findings. Some dismiss case study research as useful only as an exploratory tool, yet researchers continue to use the case study research method with success in carefully planned and crafted studies of real-life situations, issues, and problems. Reports on case studies from many disciplines are widely available in the literature across all industries' contexts.

Case study is an ideal methodology when a holistic, in-depth investigation is needed (Feagin, *et al.* 1991). Case studies have been used in varied investigations, particularly in sociological studies, but increasingly, in instruction. Yin, Stake, and others who have wide experience in this methodology have developed robust procedures. When these procedures are followed, the researcher will be following methods as well developed and tested as any in the scientific field. Whether the study is experimental or quasi-experimental, the data collection and analysis methods are known to hide some details (Stake, 1995). Case studies, on the other hand, are designed to bring out the details from the viewpoint of the participants by using multiple sources of data.

Yin (1994) has identified some specific types of case studies: Exploratory, Explanatory, and Descriptive. Stake (1995) included three others: Intrinsic - when the researcher has an interest in the case; Instrumental - when the case is used to understand more than what is obvious to the observer; Collective - when a group of cases is studied. Exploratory cases are sometimes considered as a prelude to social research. Explanatory case studies may be used for doing causal investigations. Descriptive cases require a descriptive theory to be developed before starting the project. Pyecha (1988) used this methodology in a special education study, using a pattern-matching procedure. In all of the above types of case studies, there can be single-case or multiple-case applications.

Case study research is not a sampling research; that is a fact asserted by all the major researchers in the field, including Yin, Stake, Feagin and others. However, selecting

cases must be done so as to maximise what can be learned in the period of time available for the study.

The unit of analysis is a critical factor in the case study. It is typically a system of action rather than an individual or group of individuals. Case studies tend to be selective, focusing on one or two issues that are fundamental to understanding the system being examined.

Case studies are multi-perspective analyses. This means that the researcher considers not just the voice and perspective of the actors, but also of the relevant groups of actors and the interaction between them. This one aspect is a salient point in the characteristic that case studies possess. They give a voice to the powerless and voiceless. When sociological investigations present many studies of the homeless and powerless, they do so from the viewpoint of the "elite" (Feagin *et al.*, 1991).

Case study is known as a triangulated research strategy. Snow and Anderson (cited in Feagin *et al.*, 1991) asserted that triangulation can occur with data, investigators, theories, and even methodologies. Stake (1995) stated that the protocols that are used to ensure accuracy and alternative explanations are called triangulation. The need for triangulation arises from the ethical need to confirm the validity of the processes. In case studies, this could be done by using multiple sources of data (Yin, 1994). The problem in case studies is to establish meaning rather than location.

Denzin (1984) identified four types of triangulation: Data source triangulation, when the researcher looks for the data to remain the same in different contexts; Investigator triangulation, when several investigators examine the same phenomenon; Theory triangulation, when investigators with different view points interpret the same results; and Methodological triangulation, when one approach is followed by another, to increase confidence in the interpretation.

Yin (1994) presented at least four applications for a case study model:

- To explain complex causal links in real-life interventions
- To describe the real-life context in which the intervention has occurred
- To describe the intervention itself

- To explore those situations in which the intervention being evaluated has no clear set of outcomes.

Yin (1994) stated that a case study approach is an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomena and context are not clearly evident.

From reviewing the literature concerned with case study approach implementation in studying particular phenomenon, it was believed that this applies to the subject of this research, where the phenomenon is the effect of State procurement policy approach and the context in which is applied on the construction of municipal infrastructure projects. It's our aim to explain the phenomenon first and explore its effects on these projects outcome. The basic questions of a case study is 'how and why', so we approached the selected case studies in this manner to ensure reaching a platform of asking the question of 'what impact of taking these decisions in these projects have on the outcome?'

The philosophy behind the case study is that sometimes just by looking carefully at a practical, real-life instance, a full picture can be obtained of the actual interaction of variables or events and their patterns. The case study allows the investigator to concentrate on specific instances in an attempt to identify interactive processes that may be crucial but that are transparent to the large scale survey. Thus, the aim of the case study is to provide a three dimensional picture of the situation. It should illustrate relationships, corporate-political issues and patterns of influence within a particular context.

A common concern about case studies is that they provide little basis of generalisation. But if the same setting of the surrounding environment does not change, because of the time span of these cases or the stability of the overall indicators of change, then the chance of getting a good conceptual generalisation on the initial research propositions is pretty good.

The issue of generalisation has appeared in the literature with regularity. It is a frequent criticism of case study research that the results are not widely applicable in real life. Yin (1994) in particular refuted that criticism by presenting a well

constructed explanation of the difference between analytic generalisation and statistical generalisation: "In analytic generalisation, previously developed theory is used as a template against which to compare the empirical results of the case study". The inappropriate manner of generalising assumes that some sample of cases has been drawn from a larger universe of cases. Thus the incorrect terminology such as "small sample" arises, as though a single-case study were a single respondent.

Stake (1995) argued for another approach centred on a more intuitive, empirically-grounded generalisation, which he termed it "naturalistic" generalisation. His argument was based on the harmonious relationship between the reader's experiences and the case study itself. He expected that the data generated by case studies would often resonate experientially with a broad cross section of readers, thereby facilitating a greater understanding of the phenomenon.

It is not essential to the validity of the case study research method that a case study should be able to be generalised. In this type of research, generalisation is not a central issue. The relevance of a case study is more important than its ability to be generalised. When a case study is carried out both systematically and critically and aimed at the improvement of understanding then it is relevant, and if any publication of its findings extends or expands the boundaries of existing knowledge of the subject area, then it is a valid form of research. As the case study methodology can produce excellent results in the hands of a skilled investigator, its use is on the increase in most areas of the social sciences and certainly in information research (Christie, 2000).

The case study is a method of learning about a complex instance through extensive description and contextual analysis. The product is an articulation of why the instance occurred as it did, and what may be important to explore in similar situations. Case studies can generate a great deal of data that may not be easy to analyse.

From a research point of view, the case study methodology describes the total situation as a combination of different factors. The case study may focus on the description of the process or sequence of events in which the behaviour occurs, the study of individual or group behaviour in its total social setting, and the comparison of cases leading to the formulation or confirmation of hypotheses as claimed by

Stake (1994). By means of the case study method it is possible to establish the number and variety of properties, qualities and habits combined in a particular instance.

The replication approach to multiple-case studies is illustrated in figure (6.1). This figure is derived from research on the case study method; see Yin, Bateman, & Moore, (1983).

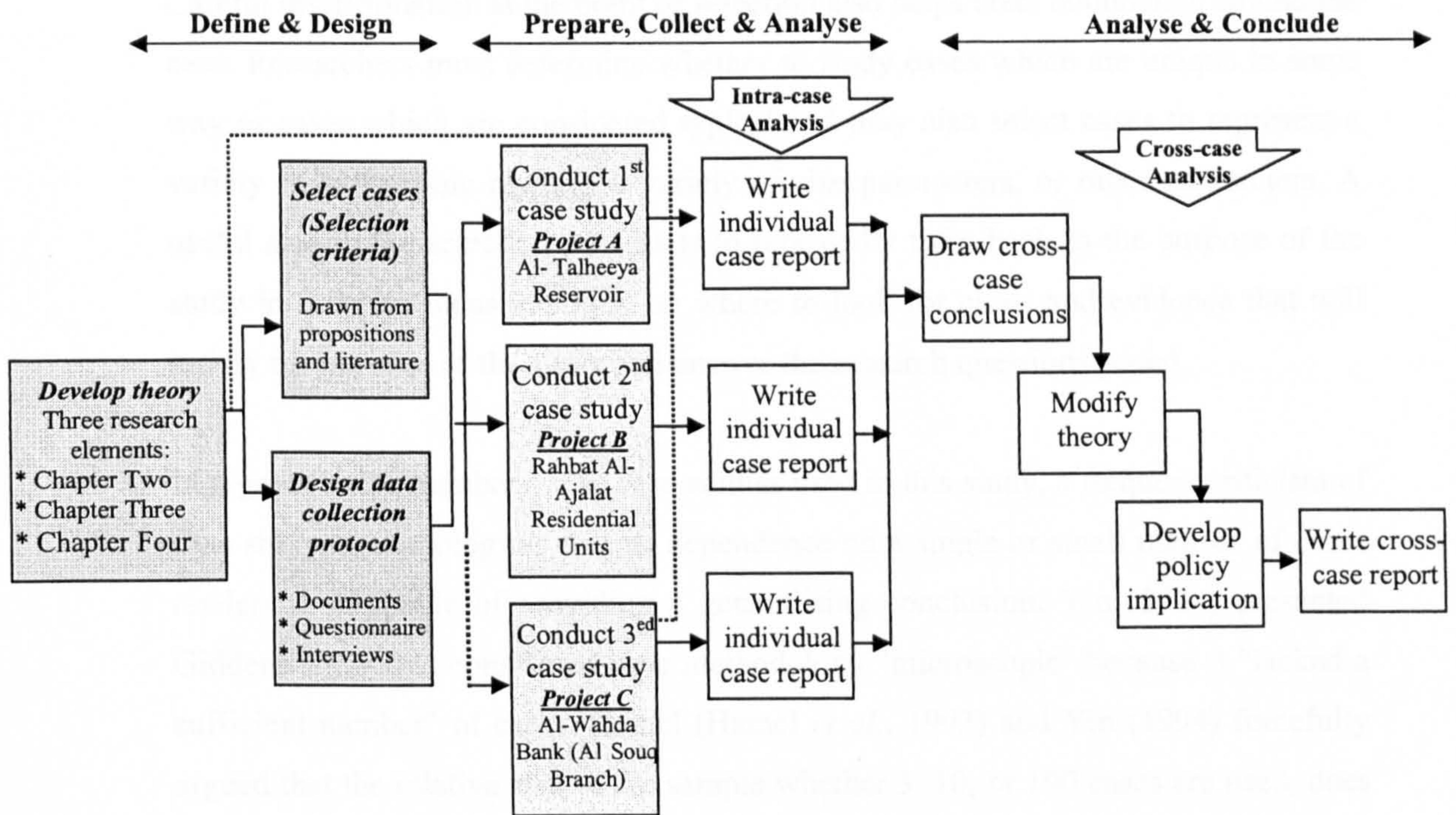


Figure (6.1) Multiple case study method replication.

To ensure a more realistic study of these problems, three case studies in different State construction projects were used. This information was obtained through a comprehensive investigation of the projects documents to highlight the encountered procurement related problems through content and pattern analysis and triangulation with a questionnaire and semi-structured interviews, which will be explained later in this Chapter and Chapter Seven and Eight.

The selection of these projects was based on a selection criterion which naturally incorporates the practicality issue in implementing case study research path, and was also consulted with key personal in the public sector known to the researcher to

ensure covering the spectrum of the public sector municipal construction projects in the municipality of Benghazi.

6.4.2 Case study selection criteria

Exemplary case studies carefully select cases and carefully examine the choices available from among many research tools available in order to increase the validity of the study (Christie, 2000).

Careful discrimination at the point of selection also helps erect boundaries around the case. Researchers must determine whether to study cases which are unique in some way or cases which are considered typical and may also select cases to represent a variety of geographic regions, a variety of size parameters, or other parameters. A useful step in the selection process is to repeatedly refer back to the purpose of the study in order to focus attention on where to look for cases and evidence that will satisfy the purpose of the study and answer the research questions posed.

In regards to the number of the case studies used in this study, a frequent criticism of case study methodology is that its dependence on a single or small number of cases renders it incapable of providing a generalising conclusion. Yin (1994) presented Giddens' view that considered case methodology "microscopic" because it "lacked a sufficient number" of cases. Hamel (Hamel *et al.*, 1993) and Yin (1994) forcefully argued that the relative size of the sample whether 3, 10, or 100 cases are used, does not transform a multiple case into a macroscopic study. The goal of the study should establish the parameters, and then should be applied to all research. In this way, even a single case could be considered acceptable, provided it met the established objective.

In this study, case studies are selected according to a certain criterion, which are not necessarily available or strong in presence in these cases, however relaxation of some criteria was intentional to give explicit realisation of as many dimensions of the problems encountered in each case study as possible and their expected or sometimes unexpected causes and effects on the outcome.

A selection criterion is used to select three potential case studies. The selection criteria elements are:

- Projects must be considered municipal infrastructure construction projects by clearly complying with the definitions of the infrastructural and local construction projects as discussed in Chapter Two and Four.
- According to the model of understanding of public policy in Chapter Two (Figure 2.5), this study is concerned with the State as projects' client, hence the client in these projects is the State, in a form of any municipal public department but not a department branched from the central government itself, in other words 'municipal public sector'.
- This study is also concerned with construction projects, so naturally the main contractor is a construction company.
- To ensure focus on the local public construction, the main construction contractor should be involved in similar projects in the past.
- According to the literature on the nature of construction of public projects and the author's background and experience, selected projects must contain at least 50% civil works.
- The three research elements in Chapter Two, Three and Four emphasise the role of the State in policy making and implementation, therefore funding of such policies is usually allocated centrally, so the funding of the selected projects have to be allocated from the general yearly national budget funds (not emergency or behind budget funds).
- The investigatory nature of this study necessitates that selected projects experienced time and cost overruns to explore and investigate the effects of construction procurement policy on such projects.
- The contemporary issue should also be considered, therefore projects must be commissioned and completed within the last 5 years.
- Due to the fact that the State as a client affects the use and documentation of these projects and for the practicality of gathering information, the targeted projects' documents must be kept by the client.
- The use of contractual documentation as a primary source of data on contractual arrangements, necessitates that contractual agreements of these projects must be comprehensively documented by the client.
- Access to projects' information is to be formally acquired and permitted by the public client.

- Defence projects are excluded from the selection process due to their discreet nature and lack of transparent information.
- Key management staff of these projects are available to interview and insuring their agreement before any selection of the projects takes place.

Some projects were identified as potential choices of our case studies. A short list of six is shown in the table 6.3. A final decision on which projects were to be included in the case studies was made after careful consideration of the selection criteria and the most feasible opportunity to gather the needed information (highlighted projects).

Table (6.3) Selected Case Studies list

Project Name	Public Client	Construction Contractor	Start Date	Scheduled Duration	Type
Al- Talheeya Reservoir Case Study A <u>Project A</u>	The Local Facilities Secretariat <i>Municipality of Benghazi</i>	Al-Fadeel Authority for Implementation, Operation and Maintenance	1998	36 months	Water retaining concrete structure
Rahbat Al-Ajalat Residential Units Case Study B <u>Project B</u>	The Facilities, Housing and Environment Secretariat in The Municipality of Benghazi	The Libyan Construction and Development Company (L.C.D.Co.)	1999	30 months	Semi-detached concrete houses
Al-Wahda Bank (Al Souq Branch) Case Study C <u>Project C</u>	Al-Wahda Bank in The Municipality of Benghazi	The Libyan Construction and Investment Company	1999	30 months	Five-story concrete facilities building
Alsabri electricity billing department building	The General Electricity Corporation <i>Benghazi-Municipality</i>	L.C.D.Co.	1998	12 months	Office Building
Africa Bridge on the 3ed ring road	Facility Secretariat <i>Benghazi-Municipality</i>	Bilfinger	1995	18 months	Concrete Bridge
Ebno-Kaldon primary and secondary school	Education Secretariat <i>Benghazi-Municipality</i>	DAWOO	1999	16 months	Pre-cast Concrete Building

6.4.3 Sources of evidence in the case studies

There are many sources of information a researcher can gather from a single case study, namely documentation, archival records, interviews, direct observations, participant-observations and physical artefacts. However we believe that the sources of evidence in our case study research were:

- The analysis of documentation
- Questionnaires
- Interviews

The selection of these sources of evidence has roots in the theoretical and practical aspects of the case studies in the particularity of the Libyan context. Libyan construction projects like any other developing country tend to be a completion-on-time oriented, and have little contribution on other future similar project in terms of project information and similar problems reoccurrence. The lack of documenting State bodies in the construction industry has affected the overall knowledge of public construction projects and its contribution in solving similar future problems in similar projects. This problem was raised in The First Conference on the Future of The Libyan Labour Market in 2004, where Al-Jehaimi (2004) (Secretary of Finance) stated that:

“the failure of many public projects is due to the lack of information sharing between public departments and have affected their management of their projects as clients and created a significant gap in the process of implementing the State’s developmental policies through the success of these projects.”

In the light of such concern the evidence of the selected case studies were mainly drawn from the aforementioned sources, which are explained below in detail.

6.4.3.1 Documentation

This type of information can take many forms and should be the object of explicit data collection plans. Yin (1994)

The documentation as a main source of evidence has been affected by many factors in this study and the following is an illustration of how these factors affected the study in general and the findings in particular:

A. Difficulties in data collection

Data collection techniques include screening records and reports, direct observation of behaviour, face-to-face interviews, telephone interviews, and mail questionnaires. If valid information is readily available in documentations and reports, then further data collection may not be necessary; or, if direct observation is feasible and will provide the information needed, then there may be no need to ask people to respond to questions. However, these techniques are often not feasible or are inadequate to provide the quality or quantity of information desired. Consequently, data collection instruments may be necessary to gather data from which judgments about progress can be made.

Bernard (1999) stated that to select a data collection instrument, there are several factors to consider:

1. *technical adequacy*: reliability, validity, freedom from bias.
2. *practicality*: cost, political consequences, duration, personnel needs.
3. *ethics*: protection of human rights, privacy, legality.

One should consider all of these factors to arrive at a decision. Usually a compromise is reached that will produce a balance among these criteria without violating any of them.

In this research, the environment in which the case studies are part of, there are many factors affecting projects' data and research in general, these can be categorised as follows:

1. Reliability and validity of respondents' information: In the field of data gathering, people are generally concerned with the reliability and validity of a task as a whole. However, most questionnaires are concerned with distinct questions or items. Consequently, extension of answers tends to be concerned with the reliability and validity of the individual items on questionnaires or the respondent himself. A reliable questionnaire or an interview item consistently conveys the same meaning. Will a person reading the question interpret it the same way each time he or she reads it? If the question does not convey a single meaning to a given person, we cannot be sure which meaning the respondent had in mind when answering the question. It is a concern to

the author that the educational and professional diversity of the personnel in the management positions of the Libyan public projects will affect the understanding of the terminology used in the questionnaire and the interview. The other important aspect is the willingness to answer questions which require bravery and transparency, which may pose some personal security concerns to the respondent, especially if the subject is highlighting a public policy issue connected to the policy making process, and even more challenging, the ideological background of the political masters in Libya. These aspects are rooted in the politics of the country which many fear unwanted repercussions.

2. **Bias:** When a response is affected by factors other than the concept a question is designed to measure, then the response is biased (Bernard, 1999). A biased response provides inaccurate information. For example, if in answering a question measuring knowledge of procurement systems used in Libya a respondent does not know the answer but guesses correctly, then the score on the question does not reflect the respondent's knowledge, and this may give misconception of the case study and affect analysis. The tendency of people to pretend knowledge is difficult to identify and quantify in questionnaires and interviews, especially when political and economical gains or losses are expected. In the Libyan management environment, people tend to dislike political criticism in recorded or documented manner.
3. The human rights situation in Libya remains a matter of concern, to international organisations where by Amnesty International (2004) stated that, "institutions and practices violating human rights continue to operate and the truth about past events remains undisclosed. Perpetrators enjoy impunity and victims suffer, often in silence". This concern is quite serious to the subject of this research, and the validity of the data. The exploration of any State policy related issues in this research may be misconceived as being judging policy ideologies. Respondents to questionnaires and interviews in this respect may feel insecure and lead to either manipulation of answers or decline answering all-together.

B. Documentations review as a main data source for the study

This type of information can take many forms and should be the object of explicit data collection plans. The validity of the documents should be carefully reviewed so as to avoid incorrect data being included in the data base. One of the most important uses of documents is to corroborate evidence gathered from other sources. The potential for over-reliance on document as evidence in case studies has been criticized. There could be a danger of this occurrence if the investigator is inexperienced and mistakes some types of documents for unmitigated truth (Yin, 1994).

In recommending that a chain of evidence be maintained, Yin (1994) was providing an avenue for the researcher to increase the reliability of the study. The procedure is to have an observer tool to follow the derivation of evidence from the case study projects. The case study report would have anonymous citations to the case study documents where the actual evidence is to be found, taking into account the limitations of naming and numbering the project documents.

In this work due to the nature of the case studies environment in terms of the unwilling nature of transparency in peoples' extracted information, because of the perceived sensitivity of State policy issues, research predominantly focused on documented data provided by the project client. Research began with a desk study involving an initial review of project documentation, including project proposals, monitoring and evaluation reports, and information found in internal project reports.

A rigorous framework or an observation tool as mentioned above was needed to extract the exact desired data and information from every case study, in other words a systematic protocol of finding documentation.

C. The use of the Generic Design and Construction Process Protocol (GDCPP) in identifying project documentation

We believed that the way forward to review project documentations was by following a logical time process of the project from conception to completion. This logical time flow is envisaged in a 'Project Process Protocol' developed in the period of 1995-98 by the University of Salford. This protocol was represented in generic terms which can be applied to any construction project and called by the name of the

Generic Design and Construction Process Protocol (GDCPP). The design and construction process was mapped into eight sub-processes (Activity Zones); Development, Project, Resource, Design, Production, Facilities, Health & Safety, Statutory and Legal, and Process Management; four broad stages, as in Pre-Project, Pre-Construction, Construction and Post-Construction; and ten phases within these stages. This protocol is used as a tool to manage\construct the data collection activity in each case study; it allows us to carry a systematic and detailed approach in gathering the construction project information.

(For background and GDCPP map see <http://www.processprotocol.com>).

The GDCPP was used purely because of its comprehensiveness of the process of a generic construction project, which we translated in terms of the existence/absence of the case study project documentations. The corresponding reviewed documentations were coded and allocated as *Deliverables* of each phase of the Process Protocol. (See Appendix C). This documentation management tool allowed a systematic selection of documents within highly disorganised documentation archives of every project.

The internal documentation evidence in each case study was generally drawn from:

- Client appraisal and planning documents
- Contract documents
- Bidding documents
- Instructions to contractors
- Formal client reports and studies on the project
- Letters, memos and other means of communication documents
- Progress reports
- Variation orders and modification of design
- Claims
- Formal complaints and praises from the stakeholders

Other external documentation evidence were drawn from:

- National and international media responses
- Government press
- Action and community groups statements

The use of the aforementioned sources of data accompanied with the Process Protocol approach as a guide allowed the extraction of the desired data which corresponded to the following predefined research characteristics and criteria:

- Data related to any cost and time overruns in the projects.
- Data which raised or highlighted any construction procurement issue concerning the projects, or any other general comment on the procurement system and path (contract strategy).
- Day-to-day construction problems, which might be affected by the construction procurement process in the projects, or any State policy.
- Any correspondences or documents identifying or highlighting any State policies directing projects' participating parties to implement or avoid general or specific aspects of the projects.

The use of the aforementioned criteria and the system model approach described in Chapter Two; figure 2.5, helped in establishing taxonomy of data collected in the case studies.

D. Taxonomy of the case studies data

The data collected mainly from the documentation of the case studies and supported by the questionnaires and the interviews need to be organised in order to reach an analytical reporting format. The system model of understanding public policy making in the context of construction procurement developed in Chapter Two (See fig. 2.5) provided a base for developing a taxonomy in a form of a *Stratified System*. Stratification can be defined various ways, but most commonly refers to institutionalised inequalities in power, wealth, and status between categories of persons within a single social system (e.g., classes, castes, ethnic groups). (Jaques, 1998)

Application of Stratified Systems Theory (SST) in data taxonomy

Stratified system is a key notion in the development of policy-making-level leaders, which is the changing nature of performance requirements as a function of the organisational level. What we need is a tool for understanding the nature of case

study data that correspond to those levels in terms of public construction procurement policy.

Stratified Systems Theory is a body of theory that asserts leadership tasks at the top of large-scale organisations are quite different from those at the lower levels. This is because the nature of work changes as an individual moves up through the hierarchy of an organisation or a State.

There are three broadly defined strata to most large-scale organisations: the top levels (strategic), the mid-levels (organisational), and the bottom levels (production or action-oriented). (Checkland 1999 and Richmond 1993)

The top level of the public policy making in Libya in terms of identifying construction procurement policies is The General People Congress policy phase (Level I), which conveys policies to the Municipality and the Public department policy phase. Top-level leaders are responsible for the strategic direction of the State within the broad context of the strategic national and local environment. By its very nature, the term “strategic” implies broad scale and scope, a mode of forward vision extending over very long time spans.

The mid-levels are responsible for setting midterm goals and directions and developing the plans, procedures, and processes of the construction procurement used by the lower levels in the construction project, which is envisaged in the construction procurement phase (Level II). Plans, procedures, and specified processes are major tools for coordinating effort. The mid-levels are also responsible for prioritising missions and allocating resources to tailor capability at the lower levels of the local construction projects. This includes supervising resource allocation plans that implement concepts developed at higher levels.

The project outcome level (Level III) signifies the operational and implementation level of the construction procurement policies. This level or strata is more concerned with the application rather than planning. The data categorised in this level holds effects and results of policies made by the top-level and coordinated and monitored by the mid-level.

The taxonomy of the case studies data was based also on the three main elements of the research (Chapter Two, Three and Four) and they were envisaged in three different levels of stratification. (See figure 6.2):

- I. Public policy (Level I)
 1. General People Congress policy phase
 2. Municipality policy phase
 3. Public department policy phase
- II. Construction procurement (Level II)
 1. Construction procurement system phase
 - Problems encountered during appraisal and preliminary phase.
 2. Contract strategy phase (procurement path)
 - Problems encountered during contractual arrangements phase.
- III. Project outcome (Level III)
 1. Problems encountered during design phase.
 2. Problems encountered in co-ordination with other public departments.
 3. Problems encountered during construction phase.
 4. Problems encountered during handover phase.

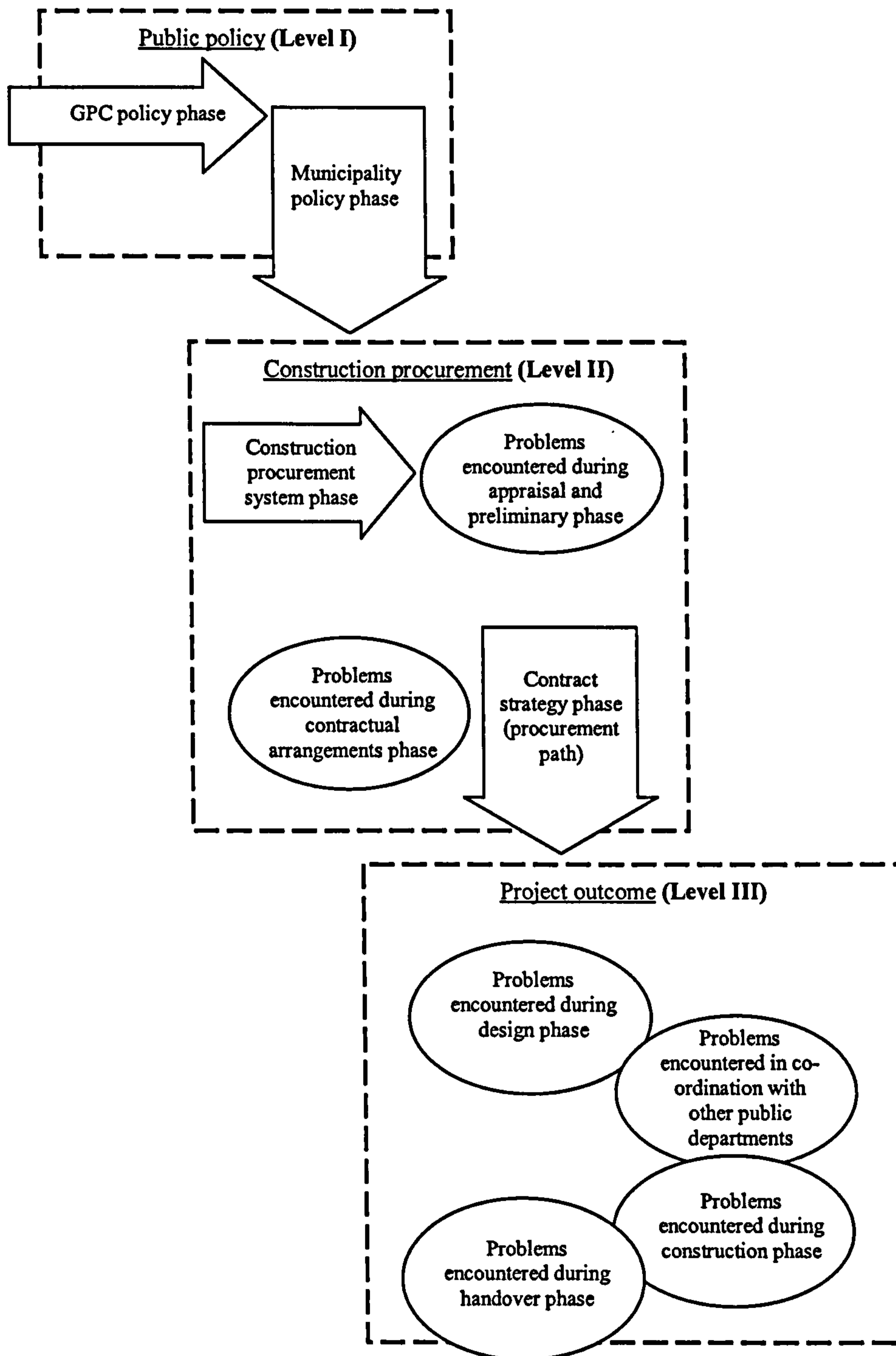


Figure (6.2) Taxonomy of case studies data

E. Research sensitive issues

There are many phenomena that within specific political, cultural and social context are sensitive. They may be defined as sensitive if they are private, stressful or sacred, and discussion tends to generate an emotional response. (McCosker *et al.* 2001)

Phenomena that deal with potential fear of unwanted repercussions such as the studies that may reveal information of a politically sensitive nature which may influence the investigated people or the people whom are harmed or benefited from making such information explicit to others.

Resnicow *et al.* (1999) define cultural sensitivity as “the extent to which ethnic/cultural characteristics, experiences, norms, values, behavioural patterns and beliefs of a target population as well as relevant historical, environmental, and social forces”

In response to the sensitive nature of the politically related issues in our study, experience and a review of current Libyan politically related literature indicates that not only the participants are affected by the research but the researchers may be in danger of playing the opposition part to the political establishment without him knowing. The researchers, helping-hands, supervisors and readers of the material may also be placed at risk. This risk may be physical and/or psychological. In order to protect all participants’ physical and psychological safety protocols or guidelines need to be developed at the beginning of the research process to identify and minimise risk, or respond to risk as they arise during the research process. In conducting this research the need for such an approach surfaced during conducting the interviews in the case study projects. A reluctance in disseminating projects’ information when issues on State political matters are investigated was noticed.

In this respect one has to pose the following questions to decide the appropriate measure to deal with sensitive data in this research:

- Will the study participants incur any unwanted implications due to their cooperation in disseminating case study data?
- Do the interviewees pose a threat to the researcher?
- Do others people associated with the interviewees pose a threat to the researcher?

- What is the nature of the environment (context) in which the data will be collected? (Paterson *et al.*1999)

A decision was reached to make the data gathered in the interviews as general as possible and not literally record specific assertions and perceptions of the Libyan political players and their ideology. In the interviews, where most of the answers are personal and give an insight in the satisfaction or dissatisfaction of the interviewee on sensitive political issues relating to the projects in hand, no attempt has been made to provoke or incite any hostile comments, and questions are directed in way that the interviewee is clearly reminded that it is relating the study to the particular project with emphasizing the researcher's concerns of the sensitivity of the data.

For the above reasons it was decided that the documentary evidence are to be the main source of data in this study, which allowed the researcher to carry out interpretation of findings without compromising any of the participants security and wellbeing.

However, there are issues to be considered when using documentation as a data source in dealing with the projects' documentation:

Authenticity: The document may contain obvious errors, or is not consistent in its representation; different versions of the same document exist; there are internal inconsistencies in terms of style, content and handwriting, and so on; the document has been in the hands of a person or persons with a vested interest in a particular reading of its content; the version derives from a suspect secondary source; it is inconsistent in relation to other similar documents; it is 'too neat' in terms of being representative of a certain group of documents.

Credibility: This refers to the extent to which the evidence is undistorted and sincere, free from error and evasion. Are the people who record the project's information reliable in their translations of the information that they receive? How accurate were their observations and records?

Meaning: This refers to the clarity and comprehensibility of the document. While meanings change and the use of words varies, social context enables understandings.

Here, meaning can be divided into intended, received and content/internal meaning. The manifestation of such concern is more likely to occur in subjective reporting of a projects activity (e.g. views of local people towards the project).

6.4.3.2 Questionnaires and Interviews

Questionnaires are considered an important source of information within each case study from which was gathered. The research necessitated the preparation of two interconnected case study questionnaire and a semi-structured interview, and they can be explained as follows:

- a) *The Questionnaire*: this is prepared to allow the collection of information on the municipal public sector infrastructure construction project individual case study that was commissioned and completed during the specified research period. The respondents of this questionnaire were representatives of the public department who represented the client in the constructed project. The questionnaire allowed cross-examination to the information drawn from documentation of the project and knowledge of the public department on the project. (See Appendix A)

- b) *The Semi-structured interview*: this was prepared as a semi-structure questionnaire, to generate the viewpoint of the client's management on procurement of such projects. The possible key informants in this interview were:
 - The public department planning division director (if any)
 - The public department technical division director (if any)
 - The public department project manager

The aforementioned approaches were prepared according to the literature review and the author's accumulated knowledge on the subject. Piloting these questionnaires was very important to reach a satisfactory degree of response and reliability. Some friends and colleagues in the Libyan construction industry were asked to take part and comment on the questionnaires. (See Appendix A for the complete questionnaires)

In order to ensure the comprehension of the staff in the various public departments who will fill in the questionnaire, and in order to ensure the accuracy of information gathered the following procedure was used:

- a) The questionnaires were piloted and discussed with some friends and colleagues in the industry. Their remarks were taken into account to enhance the quality and comprehensiveness of the questions.
- b) The questionnaires were discussed with respondents item by item.
- c) The results were filled in personally.
- d) Some follow-ups on the telephone and personal visits were done to ensure required care is given to each case study.

Relating questions to research propositions

Any study propositions derived from the study questions focus on assertions that should be examined to answer a study question within the scope of the study, and this should be done by posing and analysing questions to target investigation areas or personnel. The questions in the questionnaire and the semi-structured interview were designed to accommodate the study's propositions testing aspect. The following are the broad areas which are related to the initial propositions detailed in Chapter One with reference to the literature review as the three research elements in Chapter Two, Three and Four and questions asked in the questionnaire and the interview. (See Table 6.4)

Table (6.4) Relating the Questionnaire and the Semi-structured Interview questions to research propositions.

Research Elements	Research Propositions	Related Questions	
		The Questionnaire	The Semi-structured Interview
<u>Public Policy</u>	<ul style="list-style-type: none"> * The Libyan construction industry is rigidly regulated and needs flexibility. * There is no clarity in the State's construction industry policies goals and implementation approaches * Interferences of powerful State's bodies affect the outcome of local construction projects. 	Q11	Part IV
<u>Construction Procurement</u>	<ul style="list-style-type: none"> * The contractual arrangements of many public projects are highly and strictly regulated. 	Q2, Q3, Q4, Q6, Q7, Q8, Q9, Q10, Q11	Part II (Q3, Q4) Part III
<u>Public Projects Outcome</u>	<ul style="list-style-type: none"> * The Libyan infrastructure lack quality. * Performances of local construction projects are unsatisfactory. * The State's general criteria of the outcome of local public construction projects is not clearly defined to the public clients and contractor. * Emphasis on projects completion is greater then emphasis on the quality of the projects' outcome. 	Q5, Q12, Q13	Part II

6.4.3.3 Case study protocol

The case study protocol is a major strategy to increase reliability of the case study research. It is more than an instrument; it contains procedures and rules to be followed in carrying out the case study.

An outline of our case study operational framework and protocol is shown in detail in (Appendix B).

It was likely that questions and topics in the protocol will widen to cover all aspects of the subject. This happened in later stages in the preparation and implementation of the case studies.

6.4.3.4 The helping hands

Due to the demanding process of carrying out a multiple case study any helping hands will be very beneficial to the research speed (Stake 1994; Yin 1994). Data quality was not compromised with speed, so it was essential to choose the right people to help in sorting project documentations to be reviewed in an organised fashion. The documentation review was carried out by three friends and former colleagues of the author on selected documents from the project which covered the research topics and goals. The helping participants in selecting and sorting such documents were required to know:

- Why the study is being done,
- what evidence is being sought,
- what variations can be anticipated, and what should be done at that time,
- what would constitute supportive or contrary evidence.

An organised meeting was prepared to train the data collection helpers. The agenda of this training is shown below:

- I. Purpose of case study
- II. Field assignments
- III. Tasks for each case study
 - a) Orientation and preparations
 - b) Field appointments
 - c) Site visit

IV. Reminders

- a) Do not under estimate any documents, personal statements or comments
- b) Read about doing case studies (overview)
- c) Read a model case study
- d) Write clearly
- e) Keep in touch
- f) Do not assume information
- g) State any missing information source

6.4.3.4 Personal Interviews

Formal and informal personal interviews with the public sector department key personnel were used for the following purposes:

- a) To collect missing information that could not be obtained from the aforementioned sources.
- b) To ascertain the accuracy and validity of some information previously gathered.
- c) These interviews played a major role in enhancing our insight on the research subject by triangulating with collected data and documents review of the cases.

6.4.4 Case study operational plan

An operational plan of action was constructed to assist in carrying out the data collection activity. The plan was drawn from a triangulating approach of three main sources of information, documentation review, questionnaires and interviews. (See figure 6.3)

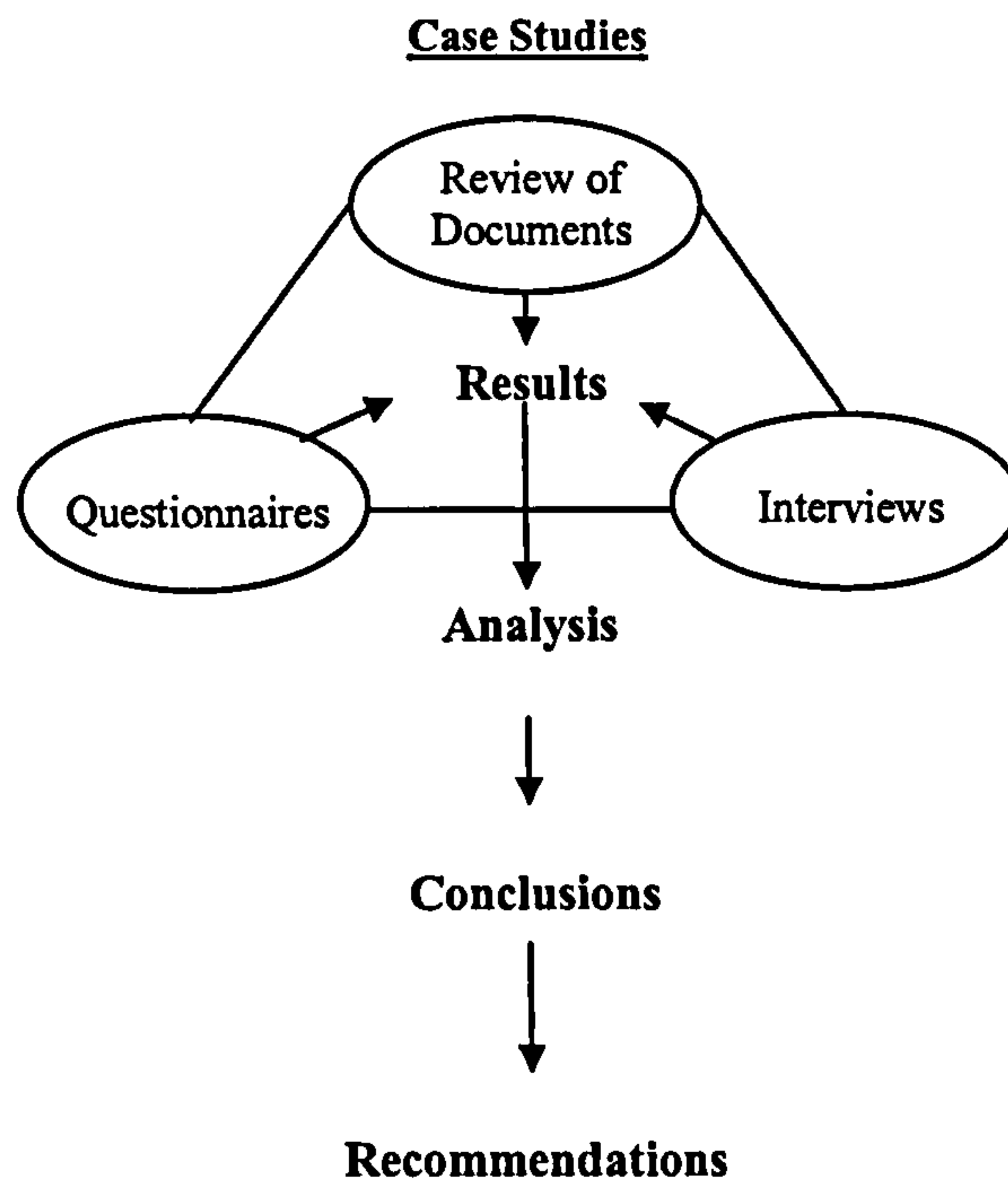


Figure (6.3) Case study information sources triangulation.

6.4.4.1 Review of documents

A- Review of contract documents

Questions to be answered in the review:

- What type of contract is used?
- What terminology is used?
- What are the regulations governing of the contract?
- Was there any special duties or obligations to the involved parties mentioned in the contract?
- Was there any indication or reflection of the State policies in the contract?
- Was there any unusual procedure in preparing the contract?

B- General review of project outcome documents

Questions to be answered in the review:

- Did the project experience any time and/or cost overruns?
- Were there any disputes?

- Were there any functional or performance shortcomings in the project?
- Was there any form or indication of public dissatisfaction towards the project?

C- General review of project construction management documents

Questions to be answered in the review:

- Were there any technical problems in the construction phase?
- Were there any alteration of the function or purposes of the project?
- Were there any changes in the State policy during the construction phase?
- Was there any indication of direct or indirect implementation of State policy in construction of the project?

6.4.4.2 Questionnaires

The questions of the questionnaires were aimed at consolidating the factual information gathered in the document review, and it was in a form of a questionnaire answered by the public department concerned with the project, and it was divided into these categories:

- General information
- Building Procurement Systems
- Owner's Staff
- Participating Parties
- Owner's Staff Assignments in the Project
- Contracts Documents
- Contracts Preparation
- Tender Procedures
- Tendering Type
- Contracts Type
- Relations
- Project Cost
- Project Term

6.4.4.3 Interviews

A semi-structured interview was conducted on a respondent in every project, and he may be either a:

- 1) Client's Project Manager
- 2) Consultant Project Manager (if any)

The questions were divided into three main categories, which reflect the three main elements of the research, and they are:

- 1) State Public Policy
- 2) Construction Procurement
- 3) Project Outcome

The areas of investigation can be summarised as follows:

- The management view on State public policy-making, legislation and implementation.
- The management understanding and interpretation of the State policy.
- The management view on the effect of State policy on the progress of work on the project.
- The management understanding of procurement as a term.
- The management awareness of the construction procurement process.
- The extent in which the project management uses construction procurement as a tool in implementing State policies.
- The construction procurement criteria used in the project.
- The project functional outcome and the management view on the success of the project.
- The management definition of project outcome.
- The management view on the causes of cost and/or time overruns if any.

This interview aimed at generating an overview of the State policy in general and the specificness of the policy in the municipal construction context. However, the issue of construction projects was the focus point of the interview, whereby the interviewee was asked about his response to a specific construction related policy, which was identified earlier in the interview. Also the strategy of the local authority in implementing these policies was investigated. Later in the interview, the interviewee's view on the case project outcome was investigated and his overall

understanding and awareness of the necessity of effective construction procurement policy in reaching the best possible outcome in public construction projects.

A pilot interview was carried out to ensure the optimum comprehensiveness of the subjects covered in the interview. This pilot interview was carried out on a willing experienced person, who had worked as a head of the municipality before.

6.5 Summary

The integrity of case study research depends largely on careful design of the approach which can avoid or at least reduce the criticisms directed at case study research for the lack of methodological rigour and possibility of bias (Billingsley & Poole 1986; Patton 1990; Smith 1988, Yin 1994, Christie 2000).

In dealing with these criticisms in this study and following the foot steps of those previous researchers who have developed a number of different approaches for increasing the integrity of qualitative research and satisfying a number of key issues in case study research, integrity or rigour of validity can be achieved through five approaches, which have been the guidance of this study from the outset, and they are: construct validity; confirmability; internal validity/credibility; external validity/transferability and finally, reliability/dependability (Miles & Huberman 1994; Yin 1994).

This Chapter has sought to establish a sound justification of the chosen research methodology and approach. In particular it attempted to explain the background of the overall qualitative methodology and its relevance to the context of this study in terms of the replication logic and the generalisation issue of the case study approach. This Chapter formed the basis for the actual data collection activity and both the intra and cross case analysis in the forthcoming Chapters.

Chapter Seven

Intra-Case Analysis

Chapter Seven

Intra-Case Analysis

7.0 Introduction

When using multiple cases, each case is treated as a single case. Each case conclusions can then be used as information contributing to the whole study, but each case remains a single case.

Reporting the case studies is an illustration of the elements of the selected projects in a brief and comprehensive way to allow the reader to capture as much factual information as the study requires. In this Chapter we presented the selected projects in a factual manner followed by analysis of the results of the questionnaire and the semi-structured interview. Although cross case analysis will follow in the following Chapter we saw that it is worth separating this Chapter to give organisation and structure to the used case study approach to explore, analyse and conclude the data in the proceeding Chapter.

The three case studies were presented in this Chapter starting from general background and description of the project and the selection criteria of every individual case study, which allowed the initial analysis, which enables the case study propositions mentioned in Chapter One and Six to be highlighted and tested within the boundary of the case study, and to strengthen the validity of the cross case study analysis. The establishment of the intra-case study review and replication analysis in an individual manner enables broad analytical generalisation to the elementary research theory and the general initial propositions established when the research problem was identified earlier.

7.1 Intra-Case Study analysis strategy

The analysis of the individual cases is an advocate for the important task of the general analysis for the three case studies in a cross case analysis, however one has to realise that it is important to establish organisation and format to test the research propositions in this analysis. In this respect the approach in which we presented and analysed the individual cases is based on the three main sources of data explained in Chapter Six and they are:

- *Project documentations review*, carried out by the researcher and the helping hands.
- *Project questionnaire*, answered by client representative.
- *The semi-structured interview*, with the client project management

The following sections of this Chapter are a presentation of results and problems encountered extracted from the three data sources. This presentation followed the following general outline:

A. Project Documentations

- Appraisal and viability studies
- Bidding documents
- Contract documents
- Design documents
- Site reports
- Client-Contractor correspondences
- Claims and variation orders
- Payment documents
- Handover documents

B. Project Questionnaire

- Results of factual background information
- Validation and analysis of answers

C. The Semi-structured Interview

- Background on the interviewee
- Validation and analysis of answers on projects outcome
- Validation and analysis of answers on procurement selection criteria
- Validation and analysis of answers on State public policy and procurement.

7.1.1 The Propositions

The study's questions are most likely to be "how" and "why" questions, and their definition is the first task of the researcher. Yin (1994) and Tellis (1997) argued that any study's propositions sometimes derive from the "how" and "why" questions, are helpful in focusing the study's goals.

The initial research propositions mentioned in Chapter One and Six arose from the literature review of the three main elements of the research (Chapter Two, Three and Four) are tested in a systematic search for problems encountered in the three case studies, and analysis of these problems in an intra-case analysis allowed the rise of other related propositions to be tested in the cross-case analysis. The relaxation of the selection criteria in each case study also allowed theoretical replications to take place. This criteria relaxation can be found in the presentation of each description section in each intra-case analysis in this Chapter.

The propositions to be tested are reiterated again as follows:

- The Libyan infrastructure is in a desperate need of development, which lies in the hand of policy-makers who are influenced by the rising problem to balance the supply and demand of the infrastructural projects nationally and locally.
- The Libyan construction industry is rigidly regulated and needs flexibility.
- The contractual arrangements of many public projects are highly and strictly regulated.
- There is no clarity in the State's construction industry policies goals and implementation approaches.
- Performances of local construction projects are unsatisfactory.
- The State's general criteria of the outcome of local public construction projects are not clearly defined to the public clients and contractors.
- Emphasis on projects completion is greater then emphasis on the quality of the projects' outcome.
- Interferences of powerful State's bodies affect the outcome of local construction projects.

7.2 Questionnaires' results

The questions in the questionnaire are concerned with gathering firstly; factual information based on answers of the projects' representatives, and secondly, testing some propositions in terms of the official projects' clients response to certain issues. Some of these propositions are related to questions in the questionnaire and were

mentioned in Chapter Six. The following table is the results of the three case study questionnaires.

Table (7.1) Questionnaire results for all Case Studies

<i>Questions Categories</i>	<u>Case Study A (Project A)</u>	<u>Case Study B (Project B)</u>	<u>Case Study C (Project C)</u>
(1) General:			
Project Name:	Al- Talheeya Reservoir	Rahbat Al-Ajalat Residential Units	Al-Wahda Bank (Al Souq Branch)
Project Type:	Water retaining concrete structure	Semi-detached concrete houses	Five-story concrete facilities building
Total Value (L.D.)	38.8 Million	3.1 Million	3 Million
Project Start Date	May 1998	March 1999	June 1999
Project Completion Date	August 2002	October 2002	December 2002
(2) Building Procurement Systems:	A general Contractor was contracted to design and construct project works on reimbursable basis with an agreed fee at the end of the project	A general Contractor was contracted to design, construct and sell the houses with permission to invest under a predefined price cap.	A specialised management firm was contracted to design and supervise construction on behalf of the client.
(3) Owner's Staff:	There was no Owner's staff on site apart from the consultant's engineers (Al-Emara) who represented the Owner on the day-today supervision.	Staff at the head office only.	Owner staff are only in the head office concerned with approval and payments.
(4) Participating Parties:	Owner Owner's Supervision consultant Main Contractor	Owner Main Contractor Sub-contractors	Owner Owner's Consultant Main Contractor

	Main Contractor's Designer and consultant Sub-contractors		Sub-contractors
<p>(5) Owner's Staff Assignments in the Project:</p> <p>5.1 Planning and Appraisal</p> <p>5.2 Design</p> <p>5.3 Construction</p>	<p>Management supervision</p> <p>Management supervision</p> <p>Management supervision</p>	<p>Private Investment Monitoring study</p> <p>-----</p> <p>-----</p>	<p>Management supervision</p> <p>Management supervision</p> <p>Management supervision</p>
<p>(6) Contracts Documents:</p> <p><u>6.1 Design</u></p> <p>Design contracts documents consisted of:</p> <p><u>6.2 Supervision</u></p> <p>Supervision of the construction works documents consists of:</p> <p><u>6.3 Execution of the work</u></p> <p>Execution contracts documents consisted of:</p>	<p>General conditions – Special conditions – Scope of work – Form of agreement</p> <p>General conditions – Special conditions – Form of agreement</p> <p>General conditions – Special conditions – Scope of work – Form of agreement</p> <p>General conditions – Special conditions – BoQ – Specifications – Drawings</p>	<p>Instruction to bidders – General conditions – Special conditions – Form of agreement.</p> <p>Instruction to bidders – General conditions – Special conditions – Form of agreement.</p> <p>Instruction to bidders – General conditions – Special conditions – Form of agreement.</p>	<p>General conditions – Special conditions – Scope of work – Form of agreement</p> <p>General conditions – Special conditions – Form of agreement</p> <p>General conditions – Special conditions – Scope of work – Form of agreement – BoQ – Specifications - Drawings</p>

<p>(7) Contracts Preparation:</p> <p><u>7.1 Design</u> Design contract was prepared by:</p> <p><u>7.2 Supervision:</u> Supervision contract was prepared by:</p> <p><u>7.3 Execution:</u> Execution contract was prepared by:</p>	<p>The client's public consultant</p> <p>The Owner (client)</p> <p>The client's public consultant</p>	<p>The Owner GFHES (The General Housing Authority)</p> <p>The Owner GFHES (The General Housing Authority)</p> <p>The Owner GFHES (The General Housing Authority)</p>	<p>The client's public consultant</p> <p>The Owner (client)</p> <p>The Owner and his consultant</p>
<p>(8) Tender Procedures:</p> <p><u>8.1 Design</u> The tender procedures for design works was performed under supervision of:</p> <p><u>8.2 Supervision</u> The tender procedures for design works was performed under supervision of:</p> <p><u>8.3 Execution</u></p>	<p>No tender (Direct appointment)</p> <p>No tender (Direct appointment)</p>	<p>The Owner GFHES (The General Housing Authority)</p> <p>The Owner GFHES (The General Housing Authority)</p>	<p>The Owner</p> <p>The Owner</p>

The tender procedures for design works was performed under supervision of:	No tender (Direct appointment)	The Owner GFHES (The General Housing Authority)	The Owner and his consultant
<p>(9) Tendering Type:</p> <p><u>9.1 Design</u></p> <p><u>9.2 Supervision</u></p> <p><u>9.3 Execution</u></p>	<p>No tender (Direct appointment)</p> <p>No tender (Direct appointment)</p> <p>No tender (Direct appointment)</p>	<p>Selected tender</p> <p>Selected tender</p> <p>Selected tender</p>	<p>Selected tender</p> <p>Selected tender</p> <p>Selected tender</p>
<p>(10) Contracts Type:</p> <p><u>10.1 Design:</u></p> <p><u>10.2 Supervision</u></p> <p><u>10.3 Execution</u></p>	<p>Included in the design and build contract on a reimbursable basis.</p> <p>Fee contracting</p> <p>Reimbursable contract with an agreed fees for the main Contractor</p>	<p>The contract was based on public ownership of the project, and contracting the project to investors to Design, Build, Market and Sell the houses under a predefined price cap.</p>	<p>Design Tender Build (Traditional contract)</p>

<p><u>(11) Relations</u></p> <p><u>11.1 Contractual Relations</u></p> <p><i>11.1.1 Parties related contractually to the Owner (The public department):</i></p> <p><i>11.1.2 In case of using the project procurement system (b). The parties related contractually to the main contractor:</i></p> <p><u>11.2 Management Relations</u></p> <p><i>(The following parties related managerially)</i></p> <p><i>11.2.1 Procurement System (a) related to the management firm:</i></p> <p><i>11.2.1 Procurement System (b) related to the Contractor:</i></p> <p><i>11.2.1 Procurement System (c) related to the Owner:</i></p> <p><i>11.2.1 Procurement System (d and e) related to the Owner:</i></p>	<p>Management firm managing all the phases of the project – Main Contractor</p> <p>The Designer and supervision consultant – Sub-contractors</p> <p>-----</p> <p>The Designer and supervision consultant – The sub-contractors</p> <p>-----</p> <p>-----</p>	<p>The main Contractor</p> <p>-----</p> <p>-----</p> <p>-----</p>	<p>The consultant and the main contractor</p> <p>-----</p> <p>-----</p> <p>-----</p>
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<u>(12) Project Cost:</u>	Project was completed at a cost higher than contract value.	Project was completed at a cost higher than contract value.	Project was completed at a cost higher than contract value.
<p><u>(12) Project Term:</u></p> <p>12.1 Causes of Delays:</p>	<p>The project was not completed at a the scheduled date.</p> <p>Contractor's poor technical abilities.</p> <p>Contractor's poor management abilities.</p> <p>Changes and modifications</p> <p>Client's lengthy administrative procedures and delay in decision making on requirements/Lack of an</p> <p>Poor abilities of some sub-contractors.</p> <p>Weather conditions</p> <p>Failure to select a suitable site.</p> <p>Unforeseen conditions.</p> <p>Interferences form other public departments</p> <p>Interferences of other influential State parties</p> <p>Influence of Contractor strong public status</p> <p>Lack of good communication between parties.</p>	<p>The project was not completed at a the scheduled date.</p> <p>Contractor's poor management abilities.</p> <p>Changes and modifications</p> <p>Poor abilities of some sub-contractors.</p> <p>Failure to select a suitable site.</p> <p>Unforeseen conditions.</p> <p>Lack of good communication between parties.</p> <p>The sudden change of exchange rates of hard currency.</p> <p>Failure in collecting payment instalments on time.</p> <p>The lack of infrastructure close to the site.</p> <p>The fall of house prices and an</p>	<p>The project was not completed at a the scheduled date.</p> <p>Contractor's poor technical abilities.</p> <p>Contractor's poor management abilities.</p> <p>Weather conditions</p> <p>Failure to select a suitable site</p> <p>Unforeseen conditions.</p> <p>Insufficient Site Investigation on ground conditions.</p> <p>Unclear contractor's construction priorities.</p> <p>Unrealistic pricing of the project.</p>

	<p>Unclear responsibilities of parties.</p> <p>Lack of power to stop work.</p> <p>Delay in importation of machinery, material and equipment.</p> <p>Lack of detailed and thorough initial planning and appraisal.</p> <p>High pricing of work by the main contractor.</p> <p>Measurement of executed work.</p> <p>The direct appointment of the public contractor.</p>	<p>uncertain market.</p> <p>The effect of adjacent low quality houses in the neighbourhoods.</p>	
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7.3 The Semi-structured Interviews

The researcher depended on the interview as a second tool, which represents the support towards understanding the public construction management mindset in Libya. This tool was selected to gain an insight into the management of these projects and the overall understanding of the three main elements of the research (*Public policy making, public construction procurement and Public construction projects outcome*).

The selection of the semi-structured interview as a complementary approach in gathering data was paramount in gaining responses of public construction managers to the issues raised in the study.

The interview was dependent on expressing the subject and involving the interviewee in highlighting the encountered problems in the project, by:

- Firstly: reminding the interviewee of the project in hand by answering some background and general information on the project in the first part of the interview, and filling the required information spaces accordingly by the researcher.
- Secondly: asking the interviewee about the outcome of the project, which contradicts with the sequence in which we reviewed and wrote the literature background on the subject, but this was done intentionally to remind and revive the interviewee's recollections of the problematic nature of the project.
- Thirdly: Inquiring the interviewee about the selected procurement system and its selection process by asking about the selection criteria used at the time of commissioning the project.
- Finally: taking the interviewee to an upper public level by raising the issue of the State's public policy which was aimed at exploring his knowledge and understanding of the issue and its links to the municipal construction projects.

The next section presents answers accompanied by analysis of results in every case study project in an individual manner. This is part of the intra case study analysis which aims at exploring the linkage between the research elements in the context of every individual project. The presentation of the results was in a form of following the same sequence of the interview by presenting every question and its answer,

followed by the authors view on the answer and the resulted implications on the research initial propositions, by either approving or dismissing them. In case of dismissal new propositions are generated to every individual case study; however this does neither generalise for the three cases nor for the whole population of municipal construction projects in Libya. Instead it only feeds back to the theory with some generalisation.

7.4 The case-study projects

The following section is a presentation and description of the three selected case studies. The description aims to provide a clear picture of each project with background information and contractual structure. Each individual report is a brief overall view of the project and its main components of work, which gives the reader a feel of the project's nature and setting.

This presentation is followed by the data collection results and analysis of each project following the established format mentioned in the taxonomy of data in Chapter Six (Figure 6.2) and above by describing the encountered problems during the phases of the project.

7.5 Project A

(Al- Talheeya Reservoir)

The construction of a reinforced concrete reservoir on the Seloq-Benghazi water supply pipe line, with a capacity of 200,000m³ of drinking and general use water for the municipality of Benghazi, with a cost of approximately 32.8 million L.D.

The project is located 21km to the south west of Benghazi in a region called AL-Talheeya. The project was signed on the 1st of March 1998, but the work did not start until 6 months later.

The reservoir is a rectangular shape reinforced concrete water retaining structure with a length of 201m and a width of 133m, with walls of an 8.8m height, see figure (7.1) for setting out and general layout of the project.

The initial scheduled period of completion was 24 months, however the period has been extended twice up to 30th of June 1999.

Although the project has been completed long after the scheduled date, the contractor has not made a final handover to the main client yet and according to the client's documents there is neither final handover procedure nor documentations proving it.

Case Study (A) Selection Criteria

Selection Criteria	Case Study A Project A <u>Al- Talheeya Reservoir</u>
1) <u>Type of project</u> <ul style="list-style-type: none"> ➤ Location ➤ Status ➤ Nature 2) <u>Client type</u> <ul style="list-style-type: none"> ➤ Owner ➤ Client status 3) <u>Contractor type</u> <ul style="list-style-type: none"> ➤ Ownership ➤ Speciality ➤ Experience 4) <u>Funding</u> <ul style="list-style-type: none"> ➤ Type ➤ Source 5) <u>Time and Cost overruns</u>	Local and municipal (City of Benghazi) Infrastructural project providing public facility Reinforced concrete water retaining structure (Civil) Central State-owned asset Peoples' Facilities and Housing Secretariat (Local Public Department) National and Public Construction 13 years in public construction Yearly Transitional Budget The General Peoples' Treasury Secretariat

➤ Source	Problems encountered in all phases of the project
➤ Time %	33%
➤ Cost %	32% (Established by the author not disclosed by the owner of project)
6) <u>Timeframe</u>	
➤ Actual start	September 1998
➤ Actual finish	September 2001

7.5.1 Project participating parties

The Owner (Client):

The Local Facilities, Housing and Environment Secretariat (FHES) - Municipality of Benghazi.

It is the main authority concerned with planning, commissioning and the construction of any public infrastructure project in the jurisdiction of the city of Benghazi.

The authority has a number of internal departments to monitor the relevant project regarding their specialty and area of concern.

The Local Facilities Secretariat contracted a public consultancy firm called Al-Emara, which was responsible for most of the public monitoring work to report back to the client and ultimately to the Municipality of Benghazi. Al-Emara has its own designers and administrators staff in the office and on site as resident engineers representing the public client.

Main Contractor:

Al-Fadeel Authority for Implementation, Operation and Maintenance.

This contractor was considered the largest public contractor in the defence sector during the 1980s, but since 1991 this establishment was transformed to a civil contractor by the Armed Forces Leadership (AFL) and the General Peoples Congress (GPC). Al-Fadeel as a public company has the backing of the State, where by a strong recommendation from the General Chief of Libya's Armed Forces stated that "every public department client in Libya should strongly consider Al-Fadeel Authority as their first choice contractor to construct public projects."

The main contractor appointed The Libyan Technical Consultancy Company (L.T.C.Co.) (a Libyan private engineering consultant group) as a technical consultant for monitoring construction and meeting with the client and their consultant (Al-Emara) to discuss progress and project related issues. L.T.C.Co. was also involved in discussions with another firm call Haiste North Africa Construction, which represents the contractor's materials consultant coordinating between subcontractors and material and equipment suppliers.

Al-Fadeel as a main contractor has only carried out site clearance work and excavation work for the reservoir, and some other minor concrete work around the construction area. This was due to the lack of experience in such projects.

Sub-contractors:

1- Bilfinge + Berger

A German international construction company, which is involved in a number of projects across Libya. The company entered the Libyan construction market in 1989 by winning the completion of the third ring road in Benghazi. The company entered a joint venture with some public companies, namely Al-Fadeel.

Bilfinger was awarded the concrete work in the reservoir and pipe installations around the reservoir cells as a separate sub-contract.

2- ABB

A German electrical contractor company, which was sub-contracted by Al-Fadeel to carryout the electrical installations of the power supply for the pump-station, and the water chlorination process, and also including any electrical work in and around the reservoir area.

3- KSB

A German pump manufacturer and contractor company, which was sub-contracted by Al-Fadeel to supply and install 6 *KSB* pumps and the chlorination system by liasing with ABB as an electrical installations sub-contractor of the power supply for the pump-station, and the water chlorination process.

7.5.2 Contractual arrangements

The contract between *The Local Facilities Secretariat - Municipality of Benghazi* (Client) and *Al-Fadeel Authority for Implementation, Operation and Maintenance* (Main Contractor) was on a reimbursable basis, where by the contractor priced work according to his cost of construction plus an agreed fee to the contractor.

The sub-contracts were based on Bill of Quantities and pricing of work accordingly by the appointed sub-contractors. A direct appointment of the sub-contractors was based on previous relations and contracted projects with sub-contractors, and was not based on any type of tendering.

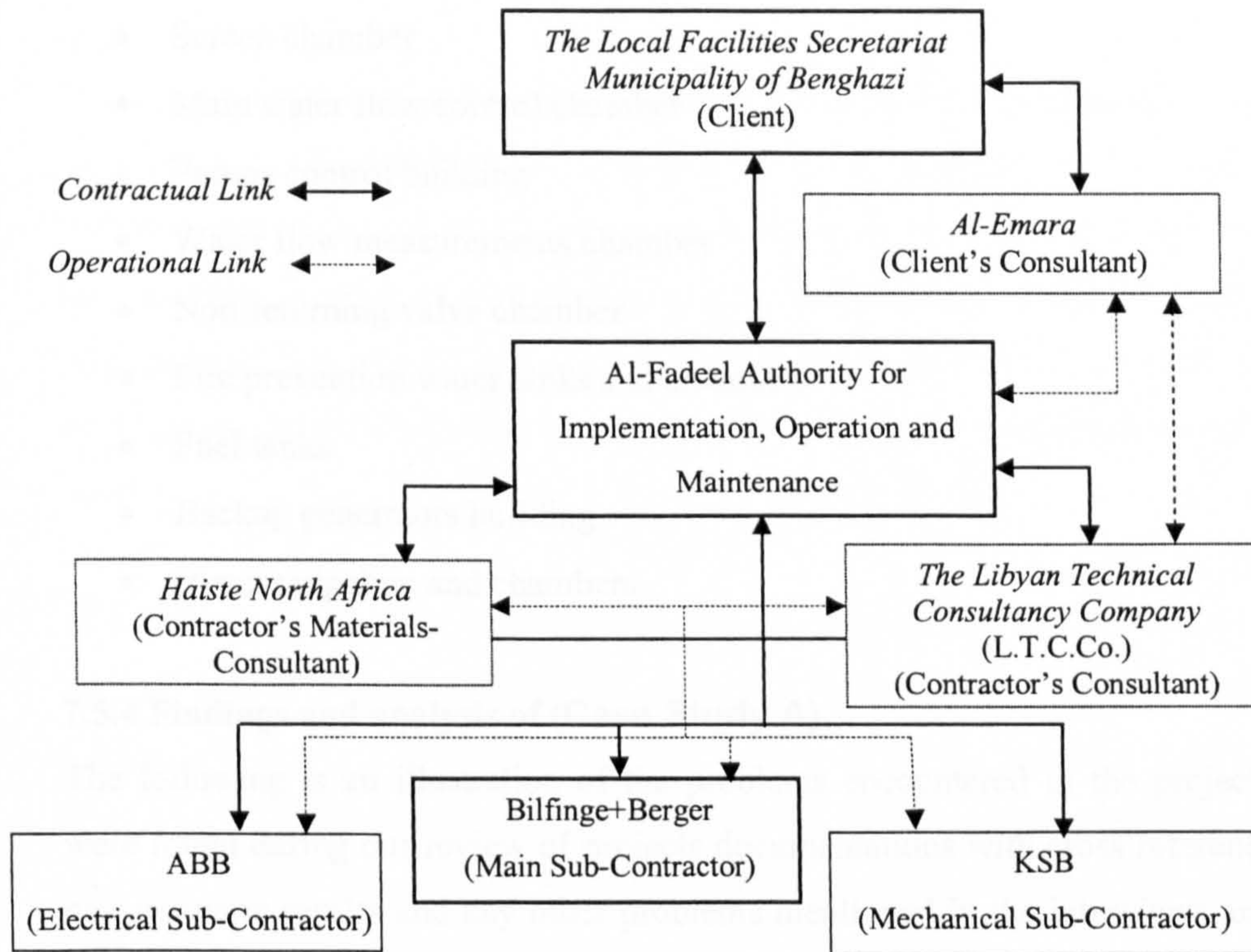


Figure (7.2) Project A participating parties' relations

7.5.3 The main work components of the project:

The two-cell reinforced concrete reservoir and the adjacent structures works:

- The main reservoir structure (200,000m³), internal and external components
- The Chlorine treatment (*Chlorination*) building
- Control and administration building
- Backup generators building
- Transformer building
- Electricity supply building
- Industrial Security (I.S) and guards building
- Internal access roads and lighting
- Employees and visitors car parking
- External fencing and brick walls
- Washing and excess water piping leading to the adjacent valley.
- Main line bypass

The pump-station and its attachments

- Screen chamber
- Main water flow control chamber
- Pumps control building
- Water flow measurements chamber
- Non-returning valve chamber
- Fire prevention water tanks and chambers
- Fuel tanks
- Backup generators building
- Bypass pipeline and chambers

7.5.4 Findings and analysis of (Case Study A)

The following is an illustration of the problems encountered in the project which were found during our review of projects documentations with cross referencing the questionnaire results and any other problems mentioned in the interviews and visits to the project client. These problems arose during different phases of the project and are recorded firsthand in the case study activity. The analysis of these problems will follow in the categorised manner.

7.5.4.1 Problems encountered in Project A

It was resolved not to supply electrical power to the project via the local electricity power plants, but by means of a special power plant, the cost of which was to be included in the project cost. After six months through project construction, the issue of how logical and how realistic this decision was addressed and it was resolved that the decision was a bad one, therefore resolved to eliminate the supply and installation of the special plants and connect power supply to the project from the electricity national grid by supplying and installing transformers which were deemed to be put in a later stage of construction.

Another issue occurred when the land in which the project was started to be constructed on, was in a disputed region between to resident tribes. Delays and court orders followed in the construction stage which could have been easily avoided if a

thorough investigation of the land ownership had been done before the planning stage.

The water supply line for the municipality of Benghazi was completed two years prior to the construction of Al-Talheeya reservoir, and the selected site of the reservoir at the time was based only on technical matters. Although it was known to the local people that this particular site was not clearly defined regarding the ownership of this plot of land. The original consultant of the GMMR project had designed the supply line and the reservoir three years before any work started on the project.

This time delay was not considered in the selection of the site when work had started after all these years. There were clear changes in the layout of the site due to two consecutive years of local flooding, which although rarely happens in that region. Work started in the reservoir relying on the old design, which obviously was not representative of the current site situation. This was also accompanied by some problems concerning the ownership of land.

The initial work on the reservoir started relying on a conceptual design prepared by the consultant of GMMR. Although the municipality contracted Al-Emara as their public consultant to prepare the detailed design, it took some time to reach a conclusion that the contractor will be on reimbursable design-build basis, but the contractor had already started work on the project. So the contractor appointed their consultant (L.T.T.C. Co.) to start reviewing and detailing the conceptual design after four months of work. Although the initial conceptual design documents were good standard, it became increasingly hard to construct more detailed items of the work, so it reflected on the cost and time of the project. Although designs of the reservoir were prepared long time before the actual work commencing date, they were not in a detailed manner. When work started on the project many items had to be detailed or redesigned completely. The contractor appointed these designs to their consultant who had insufficient time to design the whole project as a one unit; instead he designed the urgent work on site and updated the original design on an as-built basis. This urgency in designing works was accompanied by some inconveniences to the client, where there were some delays in client's approvals and monitoring of work.

The pressure on the contractor was also mounting to complete work as early as possible, and this is particularly the case in every 1st of September, when celebrations of Al-Fateh Revolution's takes place every year, where significant projects are expected to be opened by the political leadership.

The main contractor as we know from before is a publicly owned construction company, however a multi-national contractor did most of the work. The sub-contractor was in liaison with the main contractor's consultant to clear technical and other issues that have risen in the project construction with the client. Very often the sub-contractor finds himself dealing directly with the public client. The coordination of such relation was not in a systematic manner, where a direct involvement of the public client usually comes in a form of spot visits to the site. The sub-contractor has been in a position of explaining some technical and organisational issues, which are not known to be existent to the client.

As an example of this relation, the contractor was employing casual labour from his own imported workforce, when a client's representative expressed his concern of not employing some of the local labour a political issue surfaced. Meeting between all participating parties of the project followed, and it became a talking point in the local press.

The contractor noticed during construction that there were contradictions between electrical and mechanical drawings and architectural drawings to the requirements for the pump station and control and monitoring equipment. This was due to the lack of updating of architectural drawings of the project. Although these drawings were updated later in the construction period it caused delays and disputes in client's monitoring and approving of works. However the contract stipulated that the contractor shall check all drawings prior to bid submission and shall be held liable for any faults that it could have been avoided.

Although the project was awarded to the contractor on reimbursable basis, quantities of the executed work presented a real problem in measuring and claiming contractors' payments. The sub-contractors claim the executed works payment based on their measurement methodology, and the main contractor claimed the same quantities payments from the client through their consultants. There were compelling

evidence in the correspondences and documents of the project that point out very clearly that there were a serious mistrust between the client's consultant and the main contractor about the quantities measured.

The project now is completed and operational there is no final handover to the client. However the handover of the sub-contracted works was final to the main contractor and payments are cleared. The client opened the project to operation with out considering some amendments to the mechanical works in the pump station, which required urgent and rapid works to meet the official opening of the project. These maintenances and amendments were reimbursed as a separate payment to the contractor. These payments should have been reworked by the contractor without any extra cost to the client, where in principle they were a warranted works.

Following final measurements of the work in the project total cost of addition resulting from changes and modifications raised 21.3% of the total anticipated cost. 80% of the mechanical and electrical works were over the initial estimates, which contributed the most in escalating cost. A dispute arose between the main contractor and the public consultant regarding these cost escalations, because of the newly introduced items were exaggerated in pricing with no agreement of how they will be measured. Differences between the two parties on what could be considered a variation order and what could not be, arose. Verbal approvals by the client's representative were considered changes and therefore the contractor claimed them as variation orders.

The contractor's biddings for sub-contracted works through their consultant were not transparent enough to the client, and this supported the accusations of the client, that there were major exaggerations in the prices of items to be imported and installed in the project.

Regarding the every day project relations the contractor had more power then the public client. This was envisaged in ignoring client's threats to stop the work if certain work was not up to client's quality. The contractor was not concerned about the response of the municipality as a direct client; instead he was mostly concerned about the reaction of the projects progress in the eyes of the upper State departments and the country's political leadership.

The project has suffered from a lack of effective coordination between the main parties with respect to their perception to each other. The main contractor was awarded the work as a direct appointment recommended from the top political leadership of Libya.

We found in the interview with the client's consultant a great deal of dissatisfaction regarding the contractors technical ability to execute construction works by relying on the reputation of the contractor from previous public projects in Benghazi. This has helped neither the feeling of confidence of the client nor his consultant perception.

The municipality of Benghazi had no regular site visits to the project, even if they appointed a consultant, we believe that it is essential to any public client to keep on top of their projects progress by a systematic monitoring and follow-up strategy to ensure the effective implementation of the State's policies.

The client staff consisted of junior engineers with little experience in such projects. The connections with their consultant were not in a systematic way, because they had the perception of the consultant as being their representative in every aspect of the project. However they were only a technical and design consultant who are not concerned with overall public policies and the implementation of such policies.

The publicly owned consultant office appointed by the public client is an organisation governed by all State regulations, from recruitment to salaries. There are little incentives to the staff to perform efficiently, where by financial rewards were not parallel to the amount of work done by its employees. The consultant was the receiving end of much criticism from the contractor's consultant and local press. There were some points mentioned in correspondences from the contractor's consultant which claim that there is no adequate client representatives on site and there are delays in approving work and unclear systematic monitoring of the project. The cycle of communication has not been smooth as it should be as the client's consultant stated in our interview. The contractor has complained more than once about the nature and speed of communicating with the client's consultant and the client him self. On the other hand the client's consultant found it hard in discussions

and meeting with the contractor's consultant, because of the lack of authority of the consultant and the strength of representations of the contractor. The contractor sometimes sent their correspondences directly to the client. Overtaking the consultants in any work results in confusion and lack of transparency of work. The client's consultant threatened to stop his staff from being on site after the client had directly and verbally approved the piping material for the reservoir roof drainage supplied by the contractor.

Based on the contract between the client and the contractor all works of the project are reimbursed with an agreed margin of profit to the contractor. Due to the unclear profit margin figure to the contractor, the contractor estimated work to be done very generously. The contractor's consultant had the job of estimating and sub-contracting most of the work. The client stated in our interview that "it seems that the contractor wanted to misuse our trust when the contract was awarded on reimbursable basis, where he felt that he is in a strong position because of his status". He went further and stated, "The contractor either over-estimated the price of works to cover some risks or to make the most out of this project".

Dispute arose concerning the prices of some of the work in the project, and there were no signs in the project documents that any of the contractor's estimates were changed or even amended.

The reservoir was part of a bigger project, which is the main pipe of 25km to supply the municipality of Benghazi from the GMMR project. The pipeline and the reservoir were tendered in 1990 and awarded to an Egyptian company, but the work did not start and the project was suspended for six years. After all this time a different contractor (Al-Fadeel) was appointed the work on pipeline and the reservoir as two separate contracts with similar prices. The prices of the first were not realistic at the time, the contractor was not satisfied with these prices, and dispute arose between the client and the contractor. The State via the GPC decided to appoint the work to the public contractor on reimbursable basis.

All this confusion and delay was caused by the long time between the awarding of the contract and the start of actual work on site; this was due to sudden changes in

the State's intent to execute this project and the changing environment and public policy.

7.5.4.2 Categorised analysis of problems encountered in Project A

Project Documentations

- **Appraisal and viability studies**

During documentation sorting to collect data from project documents in the client's archives it appeared that most appraisal documents had been only in a form of technical documentation describing the recommended structure for the project. There were only studies concerning technical and design alternatives with the analysis of their economic implications aspects. The viability study was basic and lacked some depth regarding environmental and social aspects although this project was potentially significant to the area and the local population.

The project was considered one of the accompanied projects to the Great Man Made River and because of the significance of such projects any appraisals should include studies in which it clearly defines objectives and State goals, in this particular project there were no reflections in the formal appraisal documents on how such project should be treated differently in terms of cost, time and quality.

- **Bidding documents**

The bidding documents consisted of all the usual legal documentation of any public project in Libya, and they are:

- **Conceptual design**
- **General conditions**
- **Special conditions**
- **Instruction to bidders**
- **Scope of work**
- **Form of agreement**

However all the bidding documentation was made long before the project started. The bidding documents were corresponding to the old contract, which was a part of the Saloq-Benghazi Pipeline, which had been contracted in a different contract altogether. The project was first presented for bidding by contractors in 1991 which was won by an Egyptian contractor, but the project stopped and delayed for nearly a

decade, that because of the political leadership has not approved the use of the GMMR project water to supply the city of Benghazi.

After all these years the FHS of Benghazi has appointed a different contractor with the same conceptual design and the bidding documents were not relevant any more because of this direct appointment to the public contractor with out the need of any bidding process.

- **Contract documents**

Because of the direct appointment of the public contractor (Al-Fadeel) the contract was only in a form of the General Form of Public Contracts issued by GPC, which is only considered in many ways as guidelines to contracting between public establishments. However this form has been used extensively in the last twelve years and known to be strict in application because of the continuous and close monitoring of the GMFS especially in important infrastructural projects in the country.

In this project the form of contract has been used only as guidelines to establish a reimbursable type of contract, in which the client reimburses the main contractors for his direct or through sub-contracted work with an agreed fee for the completed project.

The initial work on the reservoir started relying on a conceptual design prepared by the consultant of GMMR. Although the municipality contracted Al-Emara as their public consultant to prepare the detailed design, it took some time to reach a conclusion that the contractor will be on a reimbursable design-build basis, but the contractor had already started work on the project. So the contractor appointed their consultant (L.T.T.C. Co.) to start review and detail the conceptual design after four months of work. Although the initial conceptual design documents were good standard, it became increasingly hard to construct more detailed items of the work, so it reflected on the cost and time of the project.

- **Design documents**

The project was first designed as a conceptual design for bidding purposes in 1991 by Brown & Root who has been and still the consultant for the GMMR project. This design has not been changed when the new public contractor (Al-Fadeel) was appointed six years later. Although project design documents were not complete, work started on the project. The contractor noticed during construction that there

were contradictions between electrical and mechanical drawings and architectural drawings to the requirements for the pump station and control and monitoring equipment. This was due to the lack of updating of architectural drawings of the project. Although these drawings were updated later in the construction period it caused delays and disputes in client's monitoring and approving of works.

- **Site reports**

The site reports were done by resident engineers representing the client in a weekly basis, however it appeared either consciously or subconsciously a certain format of the report was repeated and sometimes duplicated. The weekly reports were informing the head office only on quantities and work progress in terms of contractor's performance. Although numerous correspondences were discovered in documentation highlighting construction and management problems on site, the weekly reports have no indications of some of these events and their implications on the project.

Monthly reports were also prepared, which described progress of project and encountered problems. Most monthly reports were presented in a descriptive manner only, and lacked detailed analysis of encountered and expected problems in the future.

There were a spot reports, which have no specific frequency, these reports were prepared upon the request of other higher State departments. The reports appeared to be only for presentation purposes for State's 'important' figures, and they lack depth and sometimes even deceiving by not reporting real problematic areas in construction and overall progress of the project.

- **Client Contractor correspondences**

Like any other construction project correspondences between participating parties are frequent and hold vital information on the day-to-day construction of the project. In this particular project we found it quite difficult to review every single letter of the whole project construction period, so a strategy between myself and the helping hands was established to organise information, which states that correspondences that are routine information should only be reviewed superficially, and any other one off letter or problem reporting should be reviewed in depth and corresponded to other letters.

A number of issues were discovered concerning Client Contractor correspondences, and they are:

- Correspondences were not always daily sorted.
- Duplication in letters and files.
- Unsigned documents.
- Some letters were not properly translated to Arabic.
- Unclear drawings.
- Unanswered letters.
- Missing letters, which were corresponded in others.
- There was no other method used in sorting letters.
- Unstamped letters.
- Unclear copies.

- **Claims and variation orders**

A number of claims has been filed against the client in many occasions, and this was evident by the number of changes and modifications to the project especially in the initial stages of detailed design and construction, where by following final measurements of the work in the project total cost of addition resulting from changes and modifications raised 21.3% of the total anticipated cost, 80% of the mechanical and electrical works were over the initial estimates, which contributed the most in escalating cost and time delays. A dispute arose between the main contractor and the public consultant regarding these cost escalations and variation orders were disputed heavily every time they occur.

Quantities of the executed work presented a real problem in measuring and claiming contractors' payments. The sub-contractors claim the executed works payment based on their measurement methodology, and the main contractor claimed the same quantities payments from the client through their consultants, which challenged the Client-Contractor trust, especially when the work was not closely monitored by the resident engineers of the client and their consultant.

- **Payment documents**

Because of the reimbursable contracts nature measurements of executed work play a big role in the way that clients pay their contractors, which involve the trust issue in the equation as well. From the review of these documents it appeared that the client had been involved very early in measuring the executed work either by the main contractor or his sub-contractors who also had to claim payments from the main contractor. The way that these payments claims are traditional in the sense that there frequency seemed to be regular, regardless of the progress of work on site. Payment claims specification were predefined in the start of the contract, but due to the strong status of the contractor, pressure to pay advanced payments occurred, which was envisaged in some correspondences from the contractor to pay some advanced payments to help speed the importing process of some machinery and equipment from overseas.

- Handover documents

The handover process of any public project in Libya has to conform with GPC regulations by initial handover with retaining the guarantee payment and period.

Although the project has been technically completed and also operational, the main contractor has not handed over the project formally to the client. Disputes around the project from the start have damaged relations between the client and the contractor. Because of the State's significance nature of the project, the municipal client was overtaken by the General Facilities, Housing and Environment Secretariat (GFHES), which is higher in power. This resulted in ignoring the presence of the municipal client by the contractor, who handed over the project to GFHES only by default when the opening celebrations took place in September 2001.

In contractual and legal terms the handover process was a breach. The only proper handovers in the project were between the main contractor and his foreign sub-contractors.

7.5.5 The semi-structured interview results and analysis (Case Study A)

Background on the interviewee

After approaching the client and asking them to provide us with an interview with the project manger, they pointed out that the acting project manager at that time was their consultant (Al-Emara), who had appointed a senior person who had experience in such projects. This person's scientific background was civil engineering; he has

been an employee in the consulting office for 15 years. He was responsible for the management of the day to day progress of the projects representing the client (The Municipality of Benghazi). He was also responsible for any client related issues provided that the client is informed regularly of any encountered problems, and required for formal; approval for any unusual issue raised during construction.

The interview took place in his office during office hours with an agreed duration of maximum one hour and a half. The first five minutes were an explanation of the purpose behind the interview with some general description of the research area. The interview went ahead following the sequence of the model interview (see Appendix A).

Part I: General Municipal Construction Project Information

In this part the interviewee answered the questions with the aid of his files after realising that he had some contradiction in his recollection of the project's general information, like the scheduled and actual start date of the project's planning, design and construction activities.

He stated that this project is the biggest which he had managed so far, and it was difficulty to do so, although no questions were directed to him about the project yet. Judging by his loud sigh and accompanied smile when the project's name was mentioned, it was evident that he had some difficult and stressful experiences with this particular project.

From the dates noted in the interview it was clear that there were problems from the start of this project, where the scheduled and actual start and end dates of the design and planning of this project was not clearly recollected from the interviewee's memory even when he went back to his files he could not find a specific date of commissioning and appraising the project.

The only clear date was the scheduled and actual construction date where he pointed to a programme hung on the wall in his office representing the project in question and his recollection of his first day on site when the contractor was clearing up the site. This information enquiry was mainly to remind the interviewee of the project

and try to intentionally prepare him to relate back easily when asked other questions in the proceeding parts.

Part II: Project Outcome

The questioned interviewee responded to the following questions in their categories as follows:

1) Project Time-scale

- He stated that the time scale allocated for project appraisal and planning was *sufficient* to the type of project.
- He also stated that the time scale allocated for project design was *sufficient* to the type of project. He based this particular answer about the design time scale on the contractor's consultant when the project was contracted on Design-Build basis.
- He stated that the time scale allocated for project construction was *sufficient* to the type of project

2) Project Finance

The interviewee was asked about the finances of the projects he answered according to every question in this part as follows:

- The funding was *partly* secured at the time of appraising the project;
- and it was part of the *yearly public department's budget*.
- The funding was *not sufficient* for the project.
- The funding mechanism was *unsatisfactory* in his view.

It appeared that the client was committed to implement the project where the funding of the project was partly secured and also part of their yearly budget, however the notion that he expressed that the funding was not sufficient may be as a result of being involved in the project when it started and discovering areas which raised cost and consumed time that were not anticipated in the initial stages of the project.

The budget allocation for such infrastructural projects depends on seriousness and urgency of demand to the facilities provided by the project, and requires a detailed funding mechanism regarding the overall State's budgeting and in the municipal level as well. By expressing the unsatisfactory feeling to the State's funding

mechanism to this project, it proves that municipal clients may not have a say on the way that their projects is funded.

3) Project Tendering

The interviewee's answers when asked about particular aspects of the tendering in the project were as following:

- There were State requirements for the tender types and procedures for this project.
- The interviewee was *not satisfied* with the tendering procedure of the project.
- The interviewee was *not satisfied* with the tendering type of the project.
- The interviewee thought that the project was *over priced* by the bidding contractors.
- The contractor was appointed not chosen in a bidding process.
- There *were no* tender requirements for pre-qualifications of bidding Contractors because the contractor was forced upon us.

It was noticed that the way in which the interviewee answered the questions concerning the tendering activity that, enforcing the contractor was an unpopular act with the consultant, who also expressed the clients discomfort towards this approach. He stated that: *"The project went through a strange and unstable times in terms of who is going to execute it, it went from a Multi-national company, an Arab national company and finally they decided to involve the Libyan public construction companies, which was only an image issue where by sub-contracts were bigger than the actual work of the main contractor."*

4) Project Construction

The Interviewee was asked several questions regarding the construction of the project and his answers can be summarised as follows:

- He stated that the main construction Contractor *was not* qualified enough for the project.
- There were delays to the Contractors' payments which affected project performance.
- The Contractor *did not* deliver the promised quality of work.

- The owner *was not* directly involved in the supervision of the project, which affected the project in a negative way.
- There were some interferences from other parties, who were not part of the contractual structure, which *partly* contributed *negatively* on the project.

The interviewee seemed convinced that the contractor played a major part in the time and cost overruns in the construction of the project. He stressed on the incompetence of the contractor several times during the interview, he also thought that Libyan public contractors still a long way off, to reach a performance quality which will make them a good and wise option when tendering public construction projects, which have infrastructural projects features.

The interviewee stated: *“it seems that the contractor wanted to misuse our trust when the contract was awarded on reimbursable baises, where he felt that he is in a strong position because of his status”*. He went further and stated, *“The contractor either over-estimated the price of works to cover some risks or to make the most out of this project”*.

Interferences of other public parties were encountered several times in this project, and had some negative effect on the progress of the project, which the interviewee elaborated on during the interview and expressed some concern. However, quantifying the effect of such interferences was not established during the construction of this project.

5) Project Completion and Handover

The interviewee stated that the project *was not* completed on time and experienced extensive delays and when asked about the reasons he agreed on the following:

- Unrealistic scheduling
- changes and modification
- contractors incompetence
- supervision and approving delays
- sensitivity of the project

- lack of communication between the parties involved in the project.

We noticed that although the interviewee had answered in the previous section that delays in contractor's payments had affected the performance of the project, he did not think that it was a cause in the handover delay of the completed project. This may be a contradiction in opinion, but one has to realise that clients might be inclined to blame the contractor for every thing, especially in the public construction industry in Libya. (Benkrima, 2001).

The other issue in the handover of the project was the retention period, which the interviewee *did not* think that it was appropriate to this particular project.

At the end of this section the interviewee *did not* think that the best possible outcome was reached in this project and was *partly (50%)* satisfied with the outcome of the project.

Part III: Procurement Selection Criteria

This part required the respondent to select the criterion aspects which were considered in selecting the procurement system of the project. The answers of the interviewee can be summarised as follows:

- 1) The speed of construction *was not* considered in the selection criteria.
- 2) The flexibility of the project design changes *was not* considered.
- 3) Project client responsibility *was not* considered in the selection criteria.
- 4) Project complexity *was not* considered in the selection criteria.
- 5) Project risk allocation was considered as *medium risk* allocation to the contractor.
- 6) Project price competition was considered as *medium* in the selection criteria.
- 7) Project elements of quality was considered as following:
 - *Prestige material quality*
 - *Good workmanship quality*
 - *Prestige design concept quality*
- 8) Public accountability *was not* considered in the selection criteria.

At the start of this section a brief explanation of the term *selection criteria* was done. The interviewee asked several questions to clarify the term more to ensure his relevance in his answers, he asked about the general meanings in Arabic terms. The

interviewee appeared to be more familiar with the term procurement as the purchasing of material to the project rather than a process of conception, design and construction of the project as a whole entity.

The interviewee answered the questions concerning the criteria although he stated that there was neither literal nor specific mentioning of such approach in the appraisal documents of this project; however he thought that procurement criteria of this project might have been thought of in a way that covers these aspects at that time.

From the outset of raising the issue of construction procurement criteria in the interview it appeared that appraisal of this project was carried out in a purely traditional way, where by the interviewee had little enthusiasm in talking about it. He did not elaborate as much as expected from a project manager of such project; this may be because of the specific nature of the questions or his lack of understanding of the appraisal approach used in selecting the appropriate procurement system. However one has to be careful in assessing the interviewee's competence and knowledge due to the incomprehensive evidence of doing so in this situation.

Part IV: State Public Policy and Procurement

- 1) These are general questions aimed at exploring the respondent's perspective on public policy and procurement by first agreeing on the definitions of the general terms and after corresponding them to the project in hand. First the interviewee agreed on the definition of the Libyan State public policy as:

A set of interrelated decisions taken by the political leadership concerning the selection of goals and the means of achieving them within a specified situation where these decisions should, in principle, be within the power of these actors to achieve.

The interviewee wanted to add more on the definition which he thought is worth mentioning to clarify any misunderstanding of his answer. He stated that although the political leadership had a great deal of influence on State's public policy in strategic projects, the public through their BPC's have also a substantial

say on the general public policy and the resulted regulations and obligations to the public departments, and their role as clients in the municipal construction industry.

- 2) The Interviewee was asked: Was there any clearly defined State policy changes or modifications during the conception, construction or completion of the project?

The answer was *yes* and he elaborated more and stated that the following are the most clearly noticeable general and specific policies which he thought was behind the project:

- Economical policy
- Labour policy
- Political goal policy
- The intentional care to the project to reflect the ability of the Libyan State to build major projects, such as the Great Man Made River and its attributed projects, which this project is part of.
- Greater involvement of national public contractors to develop the construction industry in Libya.
- The speedy provision of the GMMR water to the municipality of Benghazi.

- 3) The interviewee was asked about the implementation tools to implement the public policy in the project. He stated the following tools, which he saw were used by the State to reach policy goals in this particular project:

- Recommendations by the GPC to the municipal public departments through annual and abnormal meetings of the GPC.
- Meetings with some State influential parties, like The Armed Forces General Leader, because of the close link with the contractor as a former defense establishment.

- Indirect recommendation by the political leadership in his public speeches and private gatherings with the national and municipal public departments meetings.
- 4) The extent in which the policy implementation tools were followed in the project was *strict* in application, especially the direct recommendation of the political leadership.
- 5) The interviewee stated that the policy goals intended and targeted through the project was *partially achieved*.

He elaborated furthermore and stated that: “*At least the policy of supplying Benghazi with the GMMR water was achieved, regardless of the State’s political gain behind such achievement, and that is what counts in the eyes of the demanding public for better services.*”

It appeared that the interviewee was not interested in discussing political matters either related or not related to the construction of this project, which highlighted the point that was raised in our prepositions, that there is a detachment of public policy issues and the construction managers who are at the same instance responsible for managing and keeping these projects on track towards the development of services provided by the infrastructural projects.

The answer of this question is consistent with the interviewee’s answer in the two previous questions, where he stated that there were policies behind the project some of them are clearly defined and the others are hinted in the State’s recommendations. However assessing the achievements of the policy goals is subjective and do not have documented feedback. The interviewee stated that there were no attempts to quantify or qualify policy goals achievement in the project.

- 6) The interviewee thought that any State’s public policy should be incorporated in the project in the *conception phase*.

The interviewee stated that the conception of any public project is as early as it gets to decide what policy should be incorporated and used to reach specific goals. Although the interviewee did not show the desire to discuss any issues related to political matters he appeared to be driven to do so at the start of the question but this enthusiasm did not last for long in the conversation. This cautionary action may be resulted from the sensitiveness of political issues to public construction managers and the undesirable consequences which usually follow.

- 7) The interviewee thought that public policy is a *heavy* burden on the shoulders of public construction projects.

The interviewee expressed his concern of putting the weight on the construction managers in the public departments to implement State's policies and by his answer that it is a heavy burden to carry with you when appointed as a construction manger in the public projects. He stated that this burden might affect the technical performance of public construction managers.

The interviewee's answer reflected again his uncomfortable position with dealing with political matters and State's policies in general when managing any of his construction projects. This also re-consolidates the proposition that states; public construction managers are detaching them selves either concisely or sub-concisely from the State's policy goals and think that they have no propose in implementing them.

- 8) The interviewee thought the extent of policy understanding to public construction project is *important*.

Deciding on answering "important" rather than "necessary" or "very important" reflects the attitude of the interviewee towards State's policy, which one can say detached and not worth associating him self with neither the making nor the implementation of it.

- 9) At the final question of the interview, the interviewee *did not* understand the link between the construction procurement and public policies implementation.

In this final question the answer explained the slight inconsistency of answers concerning definitions of public policy and the link of construction procurement as a tool for reaching policy goals. However one has to realise the personal attitudes, concerns and beliefs of the interviewee, which may not reflect the overall response and mindset of the collective municipal public construction management in the Libyan context.

7.5.6 Summary and Conclusion of (Case Study A)

This case study followed the selection criteria mentioned in Chapter Six in every aspect with the emphasis on project size, where by this project was three times bigger than the other two in terms of cost.

Analysis of Case Study A raised several aspects in terms of the three research elements of this study and tested most research propositions, which can be concluded as follows:

- There were only studies concerning technical and design alternatives with the analysis of their economic implications aspects. The viability study was basic and lacked some depth regarding environmental and social aspects although this project was potentially significant to the area and the local population.
- The project was first presented for bidding by contractors in 1991 which was won by an Egyptian contractor, but the project stopped and delayed for nearly a decade, that because of the political leadership has not approved the use of the GMMR project water to supply the city of Benghazi. This is a clear evidence of the unclear policy of the State regarding the project's primary function.
- Although the initial conceptual design documents were good standard, it became increasingly hard to construct more detailed items of the work because of the ongoing changes in design.
- Documentation of design document were not complete which complicated matters on site.

- Site reporting was made to inform the client of the problems rather than explain them explicitly.
- Quantities of the executed work presented a real problem in measuring and claiming contractors' payments.
- In contractual and legal terms the handover process was a breach. The only proper handovers in the project were between the main contractor and his foreign sub-contractors.
- Client satisfaction was unclear and sometimes inclined to be unsatisfied with the public contractor in terms of level of cooperation and contractual obligations.
- Construction procurement of the project was perceived by the client as contract strategy rather than a comprehensive process from conception to completion.
- There is a detachment of public policy issues and the construction managers who are at the same instance responsible for managing and keeping these projects on track towards the development of services provided by the infrastructural projects.
- There were no attempts to assess the project's public policy goals achievements.
- Political matters relating to the project were not preferred to be discussed with the management of this project.

7.6 Project B

(Rahbat Al-Ajalat Residential Units)

The construction of 37 semi-detached cast on site concrete houses with a cost of 3.1 million L.D., divided in to three models (See figures 7.3 -7.5):

Model No. 3: 18 houses with a covered area of 278m² each

Model No. 4: 15 houses with a covered area of 278m² each

Model No. 5: 4 houses with a covered area of 360m² each

Rahbat Al-Ajalat residential area is one of the selected areas for a public housing development initiative started in 1996. It is situated in the East end of Benghazi, with an area of about 25 Hectors. The case study project consists of 37 units from a total of 150, which were contracted to other construction companies.

The Facilities, Housing and Environment Secretariat in Benghazi as a public client contracted local and national construction companies to carryout the work responding to a new direction of the State's policy in involving more of the local and national construction companies in this housing initiative.

Case Study (B) Selection Criteria

Selection Criteria	Case Study B Project B <u>Rahbat Al-Ajalat Residential Units</u>
<p>1) <u>Type of project</u></p> <ul style="list-style-type: none"> ➤ Location ➤ Status ➤ Nature <p>2) <u>Client type</u></p> <ul style="list-style-type: none"> ➤ Owner ➤ Client status <p>3) <u>Contractor type</u></p> <ul style="list-style-type: none"> ➤ Ownership ➤ Speciality ➤ Experience <p>4) <u>Funding</u></p> <ul style="list-style-type: none"> ➤ Type ➤ Source <p>5) <u>Time and Cost overruns</u></p> <ul style="list-style-type: none"> ➤ Source ➤ Time % ➤ Cost % <p>6) <u>Timeframe</u></p> <ul style="list-style-type: none"> ➤ Actual start ➤ Actual finish 	<p>Local and municipal (City of Benghazi)</p> <p>Infrastructural project providing public facility (Housing)</p> <p>Reinforced concrete buildings (Civil)</p> <p>State-owned asset + Occupiers</p> <p>Peoples' Facilities and Housing Secretariat (Local Public Department)</p> <p>Private Sharing Company</p> <p>Construction and maintenance</p> <p>14 years in public and private construction</p> <p>State Subsidised land and occupiers' funds for houses</p> <p>The General Peoples' Treasury Secretariat and private buyers</p> <p>Problems encountered in all phases of the project</p> <p>47% (Completion of construction depended on selling of houses)</p> <p>40% (Established by the author not disclosed by the owner of project)</p> <p>May 1999</p> <p>August 2003</p>

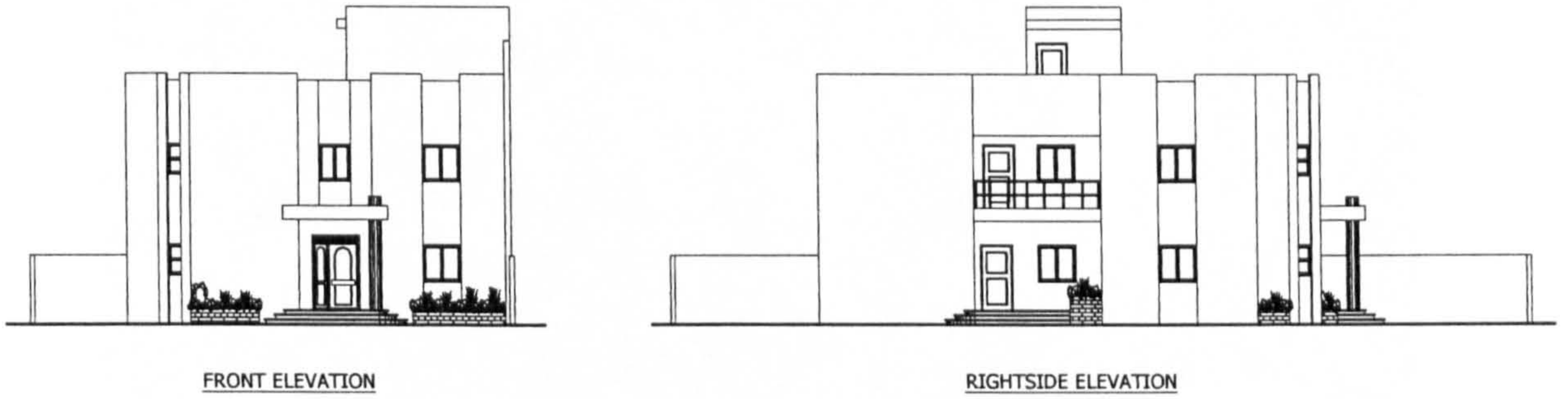


Figure 7.3a (MODEL No. 3)



Figure 7.3b (MODEL No. 4)

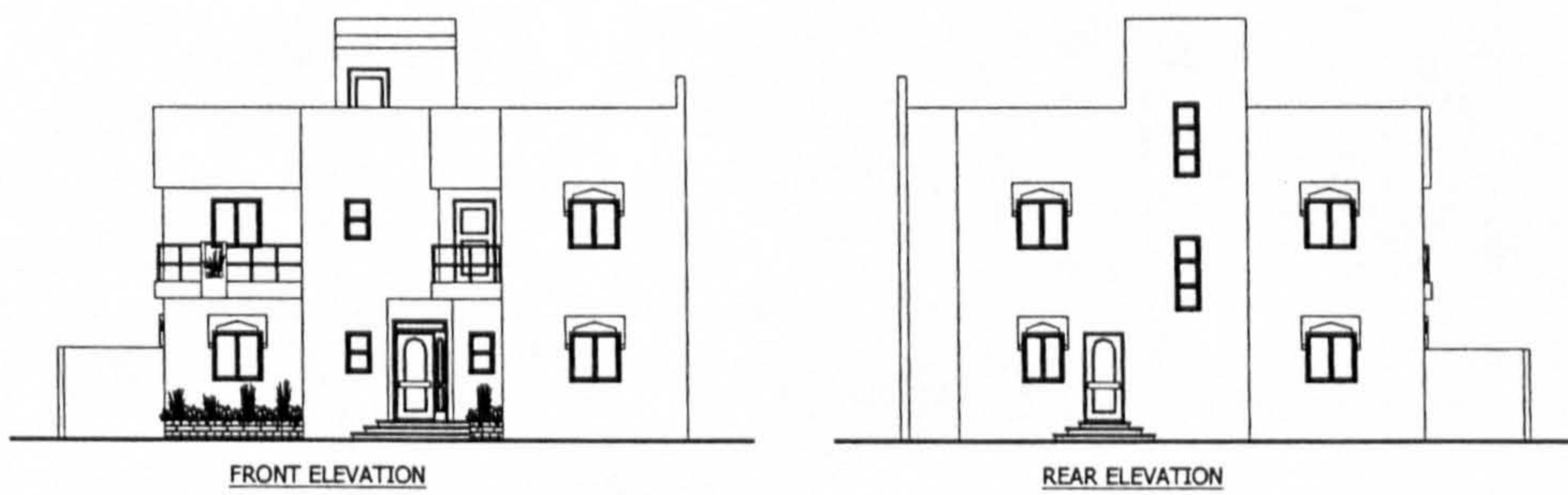


Figure 7.3c (MODEL No. 5)



Figure (7.4) The front view of housing units (Model 3 and 4)

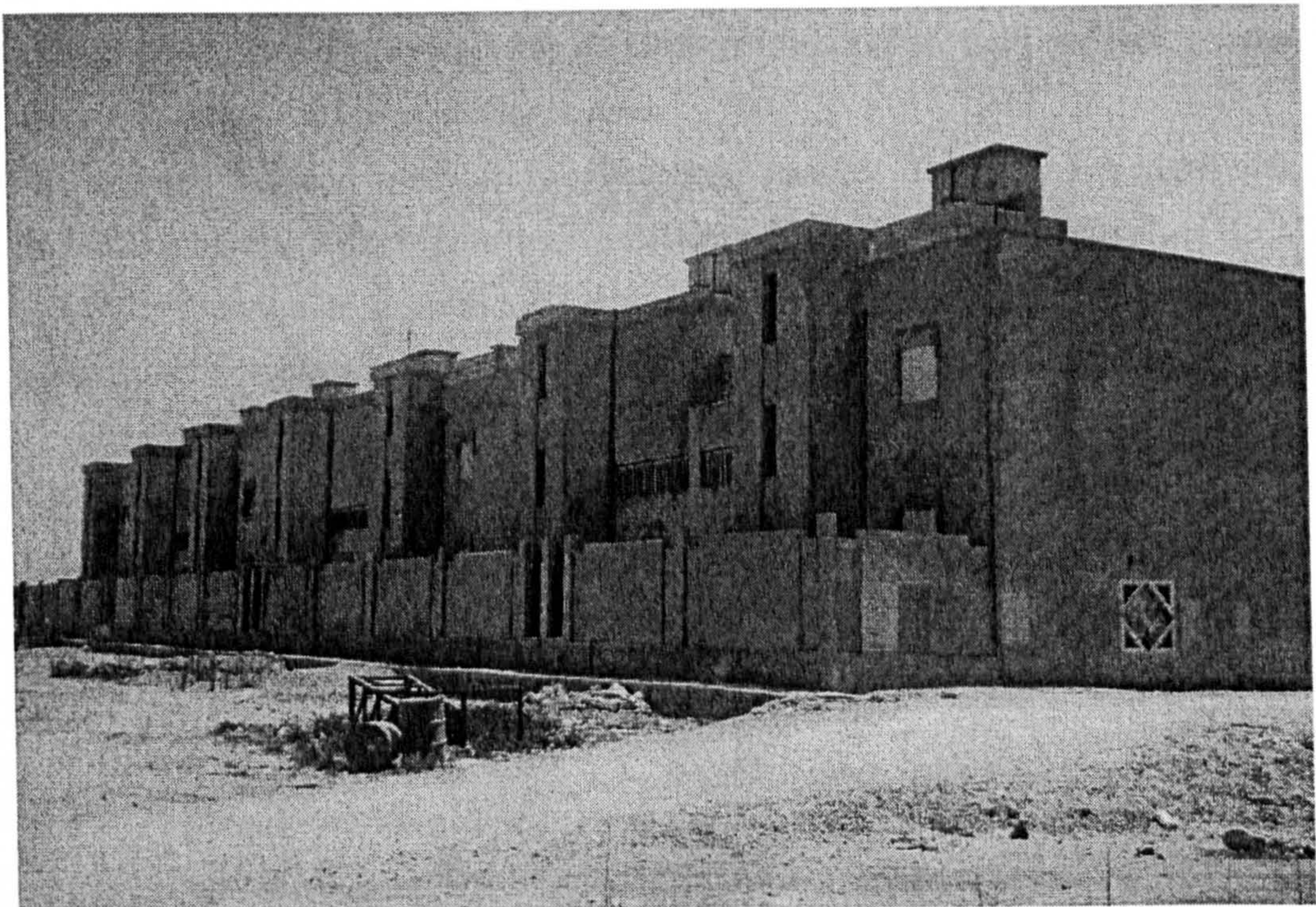


Figure (7.5) The rear view of housing units (Model 3 and 4)

7.6.1 Project participating parties

The Owner:

The initial owner of the project is the State, but after completion according to the State's housing initiative envisaged in the 60,000 Residential Units Project, the ultimate owners of these houses are the occupiers, by paying an affordable value for the property.

The Client

The Facilities, Housing and Environment Secretariat in The Municipality of Benghazi. (60,000 Residential Units Project)

Main Contractor:

The Libyan Construction and Development Company (L.C.D.Co.)

This contractor has been in the national construction industry since it was established in 1990 with an establishment capital of 1 million L.D. in 1990, after a green light was given by the State through the GPC decree in 1998 to form national private sharing companies to bid in public projects.

The company has been involved in constructing a number of publicly owned projects from office blocks to employees' residential units for the local secretariats.

L.C.D.Co. also designed these houses by consulting with potential buyers and the general public through their in-house consultants, engineers and architects.

Sub-contractors:

The main contractor has sub-contracted some small individual skilled labour companies to carryout and support the construction activities in the site, however most of these sub-contracts were agreements with known labour agents to the contractor.

The only formal and registered sub-contract was with the reinforced concrete carpenters and fabricators, where a contract was made on a unit rate basis for the whole project.

7.6.2 Contractual arrangements

The Facilities, Housing and Environment Secretariat (FHES) in The Municipality of Benghazi (60,000 Residential Units Project) has formed a pre-defined profit margin based contract strategy with the contractors involved in this project, where the contractor prices houses according to a their market survey and under a predefined price cap, and finally to be approved by the GFHES by taking public affordability into account.

The contract was on a design-build, but also you can add the term market and sell to the contract. The main client was neither involved in marketing nor selling of these houses, however the control over the project was through approving quality of the end product and prices of houses, in other words 'value for money'.

The FHES sold the public land to the contractor with a subsidised price to encourage the national private sector companies to embark on such initiative as investors with law and controlled financial risks. Furthermore the State has granted the awarded companies a subsidised hard currency exchange rate to import construction equipment and quality building material to achieve the optimum outcome of the project. Figure 7.6 shows the contractual the parties involved and their contractual relations to each other.

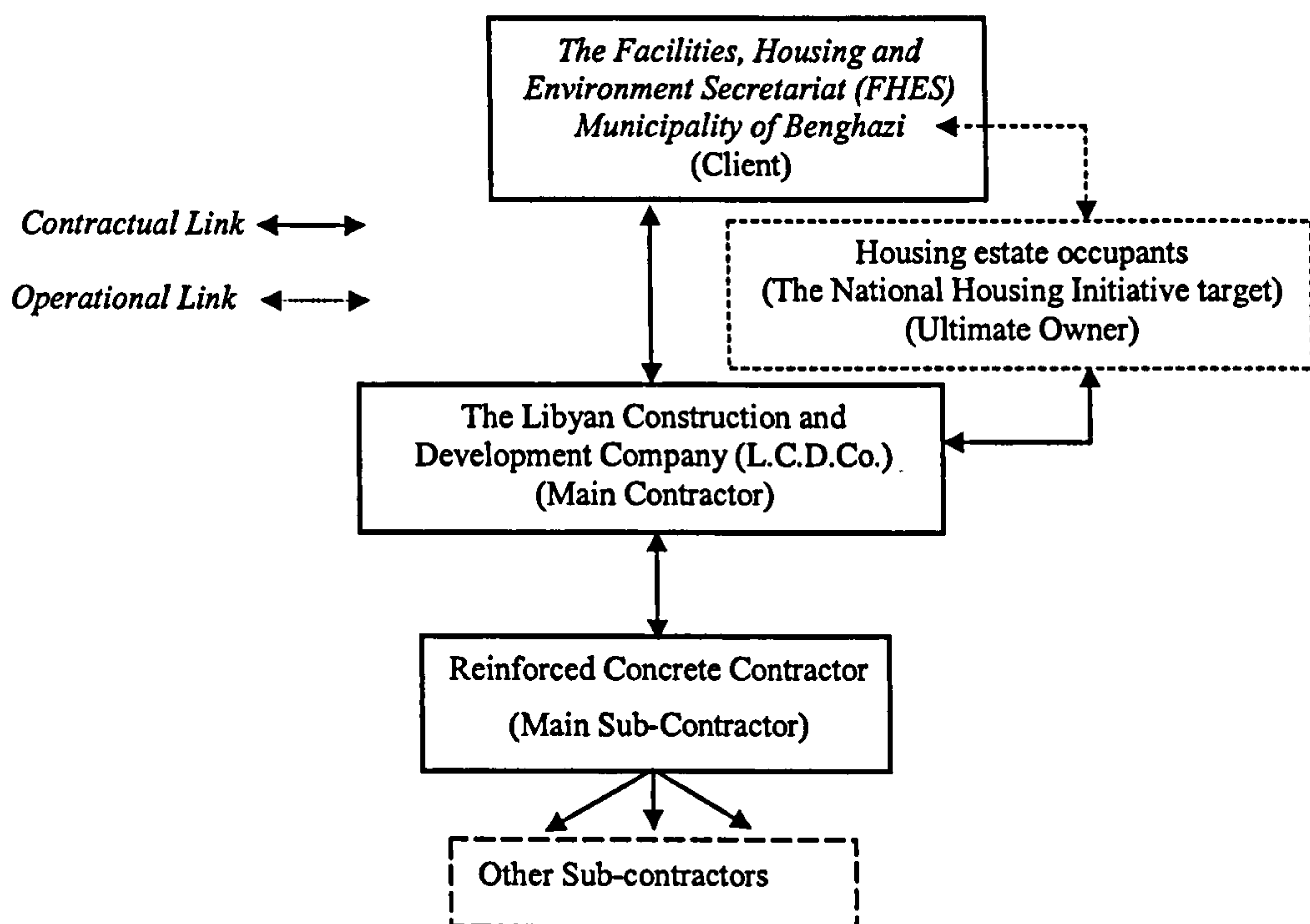


Figure (7.6) Project B participating parties' relations

7.6.3 The main work components of the project:

- Site clearance
- Foundations excavation and construction
- Substructures backfilling and treatment
- Columns construction
- Reinforcement fabrications and forms carpentering of roofs
- Concrete pouring and treatment
- Masonry building and partitions
- External and internal electricity work
- Individual unit and complete project sanitation and sewage
- Plastering and pre-paint finishing
- Internal painting and external finishing
- Internal roads and paths
- Landscaping and security buildings

This project is a housing initiative to provide housing for middle class Libyan citizens, which started in 1996, and the policy behind the project was a result of three decades of policy changes in Libya, which we should shed some light on.

Libya's housing policy

Libya's social, political and governmental system has undergone a series of changes since 1951, the year of political independence from Italy. Throughout this period, the country's housing production and delivery mechanisms have directly reflected those dynamic transitions. Thus, political and financial commitment to housing provision has changed with the different stages in the country's development.

Since the Revolution a new government came to power in Libya in September 1969, it committed itself to the provision for every family of a "suitable, decent house" regardless of the family's income or location. The government in 1969, had main goals to improve the living conditions of the poor people. It was determined that the poor should be provided with safe, healthy and liveable homes. In addition, the aim

of the Revolutionary housing policy was to help low-income groups secure housing by a variety of means, e.g. renting, purchase, or building.

However, despite the fact that the government decided, in conformity with its socialist principles, to completely socialise the housing sector, it initially gave a lot of encouragement to the private sector to contribute in solving the housing problem through granting it loans, with little or no interest, for housing construction. The government was very eager to ensure the construction of the largest number of dwelling units in the shortest time by any means. This concern led the government to create a new project, the "urgent housing project" in early 1970. (A. Omar, 2003)

The first step taken by the new government concerning its housing policy was land tenure reform. Land is one of the most important aspects of housing policy, especially in the urban areas where both population density and land prices are usually high. The second step taken by the new government was initiation and development of several housing programmes.

Under the public housing programmes, the government built at predetermined locations and with standard designs. This housing programme was mainly designed to provide housing for low-income groups, particularly those living in shanty towns.

Libya's policy on home ownership has developed rapidly since March 1978 when the Secretariat-General of the General Peoples Congress issued Law No. 4 which sets out the guidelines for home redistribution. Law No. 4 indicates that all Libyan families have the right to own one home, and no one may own more than one, with certain exceptions: Widows, whose only source of income is rent, and families with at least one son over eighteen years of age

The government through its agency had to find and provide the locations for the public housing, for financing, construction, and follow-up building processes until they were completed. After that, the government agency distributes this housing according to specific priorities. Since 1969, the public housing programmes have been organised by three major organisations. These are the Secretariat of Housing, the General Housing Corporation, and the Housing Control Department. The Secretariat of Housing generally determines the housing policies, such as number of housing units to be built and their locations.

The Secretariat of Planning stated the following broad guidelines and principles (Transformation Plan 1976-1980):

- Suitable sites will be provided for the construction of new houses and quarters by making available to individuals and co-operative societies of land fit for construction at reasonable prices. Such land will first be prepared complete with adequate utilities and services such as sewerage, water, roads and electricity.
- Realisation of physical integration between housing schemes and their requirements for public utilities and services building such as schools, dispensaries, gardens.
- Meeting the requirements of the various economic sectors such as industry, agriculture, petroleum, etc., for adequate housing for their workers in their work positions.
- The design of houses should be in harmony with the size and living system of the household as well as the localities in which they are built and should be so suited to environmental conditions as to enable utilisation of building materials available locally.
- Expansion of loans through the Land and Industrial Bank and other banks to assist in the achievement of all the objectives of the medium range housing plan.
- Taking inspiration from the importance which the state attaches to the role of the housing co-operative societies, the plan aims to remove the obstacles to the activities of these societies providing them with land fit for construction, enabling them to obtain loans on easy terms, at the same time introducing the self-service method in building wherever possible.

Laying down of suitable basis and policies for constructional activity so as to improve its standards and overcome its obstacles, as well as conducting studies on reducing its costs through determination of the requirements of the construction plan for building materials and specialised manpower.

The overall policy of the State at the time of starting this project was a move from public housing to a new form of providing housing for Libyans, this policy was envisaged when the General Organisation for Housing commenced its work under the direct supervision of the Secretary of the General People's Committee for

Housing to shape an executive programme for the implementation of the approved policy. After extensive studies decided the following

1. Long term policy plan included

- Determination of the urban plans to prepare suitable places for the expansion expected after the year 2000 up to the year 2010. The need has been estimated for 650,000 housing units. This will need plots of land not less than 50000 Hectares to cover 77% of the new units and 23% to replace old units.
- By identifying suitable economic building materials of reasonable cost, based on locally available materials, which take into account the environmental and climatic requirements.
- Simplifying the methods and systems of building construction to enable every citizen to build their houses relegating the role of the state to supervision only.

2. Short term policy plan

The State changed from a provider to an enabler in the provision of housing. During the development plan from 1994 to 1996, all organisations operating in the housing sector were expected to participate in the plan by financing and constructing thousands of dwelling units and to provide the building materials, which were not available in the country for solving the housing problem. The aims of the three-year housing programme 1994-1996 were summarised by GHC (1994) as follows, which also can be seen the latest policy elements which cover our case study project:

- To build a number of housing units in accordance with the available means and financing abilities.
- The role of the state will be limited for constructing housing for the limited income groups only.
- To achieve the construction of the target number of housing units by the national sectors (private and public sector).
- To make an executive plan to enable people construct their own dwellings.

- To direct financial and investment resources to finance housing projects.
- To minimise the housing construction cost by controlling the distribution and marketing channels of the building materials.
- To enable national companies to participate in the housing programme.
- To change the role of the state from a guarantee of residence to enable individuals, with the exception of low-income groups.
- To replace the foreign companies, the contractor sector needs to be developed and organised.
- The national consultant offices should establish partnerships companies to work in housing construction.
- To collect the real estate loans and housing repayment from the housing occupiers to provide new housing loans from commercial banks to individuals.
- To persuade the cooperative societies to organise themselves to contribute in the housing programme.

7.6.4 Findings and analysis of (Case Study B)

7.6.4.1 Problems encountered in Project B

When the client commissioned the whole housing initiative, the size of the project was not accompanied by any recruitment of monitoring and follow-up staff, so it became very hard to monitor the progress and quality of the work, which resulted in ignoring site inspection and monitoring all together and considering the project as a turn-key contract, which transferred the whole day-to-day quality of work responsibility to the contractors. After a final assessment of the project the client discovered some changes and alterations which had no approval had been done in the project.

Due to the lack of accuracy in the determination of the project requirements, it became apparent that the floor areas of the housing units did not meet the actual needs of the planned occupiers. This is because the design did not take into

consideration the social aspects of users of these housing units such as the rate that most new Libyan families expand and increase in number (Libya has the highest population growth in North Africa with a rate of 3.67%). Alterations by the occupiers were an inevitable result, which almost certainly will penetrate the urban planning laws and regulations in that area.

The project owner (FHES) could not provide all of the required sites for all the houses during the design phase, and two sites remained to be selected. The designer assumed that all sites would be similar to one provided. The work started in 20 houses of the project without considering any major changes in the other houses' site. It was not mentioned in tender documents that the hand over of the remaining two sites not yet selected would be delayed for up to four months later. After that period of time FHES and the contractor agreed on the other units' site, fortunately the new selected sites were not far away, if otherwise happened the design could have been unsuitable for the ground conditions and other design related conditions.

The issue of least bidder priority has occurred in the sub-contracting process of some of the concrete work of the houses. The contractor sub-contracted some of the main concrete forms carpentering to a small company, which had had the lowest bid. However the nature of work was not complicated and required no special skills or qualifications, the sub-contractor was not able to cope with the amount of the opened work on site, and that was due to his under-estimation of the workforce required to carryout the work on time.

To commence construction of a project, a building license was sought from the municipality. The contractor received a rejection from the municipality because the project did not have any near by access to a main sewage pipeline, which should be connected to the city network. Work on the project started regardless, because the site and the project were already selected by the FHES, which supersedes the municipality in terms of power in settling these issues. A contradiction of decisions by public bodies confused the contractor and delayed work.

The initial project requirements and specifications stipulate that the design of the houses should include water supply and sewage connections up to the entrance of

every house. The connection of these facilities to the main city network was not mentioned in the contract. The contractor was forced to carry out these connections to be able to sell the units fast, and required an added price to the already priced units, which should be incurred by the occupier. A dispute arose between the FHES and the contractor and the houses buyers, which resulted in extra cost to the public client by subsidising the material used in these works, and extra cost to the contractor and ultimately the occupiers.

Another change of specifications was the landscaping of the whole estate, where there was no mentioning of such work in the contract, and again the contractor was forced to execute the landscaping with an extra cost to him and the buyers. This work was not agreed to cost the public client and the contractor who has continued claiming payment for this work up to the time this study was carried out.

The spirit of confidence and co-operation was lacked in the relationship between the contractor, who also was considered an investor or a developer and the end-user as the occupiers of the housing units. The people who committed themselves to buy these houses and pay their payment on time saw their confidence in the contractor worsen every time the project was delayed, and rumours of fraud with other contractors in the same housing initiative start to emerge. The other major factor of this perception to the contractor was the sudden change in houses prices in Libya after the hard currency exchange rates were sharply changed by the GPC.

The contractor had sub-contracted some reinforced concrete forms carpentering to local contractors; this type of sub-contracting was based on the reputation of these small companies. There is no ranking or performance assessment bodies in Libya, neither public nor independent, so these companies are only known by their recent performances in past projects. The main contractors can only assess their sub-contractors performance by actually working on the project in hand. The main contractor was not satisfied with the performance of the reinforced concrete sub-contractor, so he was in a position to look for a new one and terminate the under performing sub-contractor's contract. This process hindered the project programme and also resulted in rework of some slabs with an extra cost to the contractor.

The contractor's design of the project took long time to be approved by the client (FHES), where the contract stated that the designs of the houses should be discussed and studied in detail between the client, the contractor and a sample of the end-user. This provision has not materialised in full due to the lack of systematic and regular consultation between parties of the project; this is mainly due to the absence of clear strategy in communications, which delayed the project even before any work took place on site.

7.6.4.2 Categorised Analysis of problems encountered in Project B

Project Documentations

- **Appraisal and viability studies**

Initial appraisal of the 60,000 Housing Units Initiative was prepared by the GFHES liaising with the General Authority of Housing (GAH) which was established as a public national organisation dealing with the growing problem of affordable public housing demand in the major cities of Libya. In the reviewed documentation of the project in hand, we found that a copy of the same general appraisal and planning study was only referred as a general document corresponding to the whole national housing initiative aspects from the description of the problem up to the aims and objectives of the plan.

Another important document prepared in the preliminary stages of the project was a pricing study, which recommendations were made to reach a realistic and affordable prices of houses, and ultimately a price cap to prevent any exploitation attempts from the contractors.

There was a study of the site location and its alternatives particular to this project. The study was made by an external consultant who was contracted by the local FHES for every targeted city in the initiative. In the Benghazi region the study highlighted the potential locations in and around the city. It appeared from the study that emphasis was on the ownership issues rather than engineering and technical issues relating to the overall conditions of the selected site.

The Site Investigation report for the project only included a description of the overall topography and some insufficient information about a number of test pits around the site. There were only four Pour Holes made, although the site is known to be very different in many adjacent places, because of the existence of lime-stone cavities, which change in size from year to year. The site is close to many places which had

been exposed to collapses in the ground after heavy rain sessions. The Site Investigation lacked comprehensiveness of the area and detailed analysis of the ground conditions.

There was no risk assessment report or any attempt to assess the risk of not selling the housing units or failure to collect payments from the occupiers or even housing market change. The notion that this is a State's initiative which aims at providing public housing, can overcome any financial risks proved to be wrong. When the State suddenly changed the hard currency exchange rate in 2001, prices of these houses were no longer affordable.

When the client commissioned the whole housing initiative, the size of the project was not accompanied by any recruitment of monitoring and follow-up staff, so it became very hard to monitor the progress and quality of the work, which resulted in ignoring site inspection and monitoring all together and considering the project as a turn-key contract, which transferred the whole day-to-day quality of work responsibility to the contractors. After a final assessment of the project the client discovered some changes and alterations which had no approval.

It was noticed during reviewing of the project appraisal documentation that there is a lack of accuracy in the determination of the project requirements as a housing project which became apparent in the selling phase. The floor areas of the housing units did not meet the actual needs of the planned occupiers. This is because the design did not take into consideration the social aspects of users of these housing units such as the rate that most new Libyan families expand and increase in number (Libya has the highest population growth in the world with a rate of 3.67%). Alterations by the occupiers were an inevitable result, which almost certainly will penetrate the urban planning laws and regulations in that area.

- Bidding documents

The contract was made on selected tendering basis, which required the preparation of a conceptual requirement for the project. The 60,000 Housing Initiative projects were tendered in their regions. The contractors known to the local FHES and had been involved in previous projects were invited to take part in the bidding of the 150 houses in the project's site. The 37 semi-detached houses have been awarded to the contractor of the case study project based on their reputation and competitive plans

for constructing and marketing the units in accordance to the preset State regulations and laws.

The documents of bidding did not include the design of the houses, where by the contractor was contracted on a design-build format. But there was an overall requirement to satisfy the public client's goals in achieving the targeted number of affordable housing in the city of Benghazi. The bidding documentation of the project consisted of:

- General conditions
- Special conditions
- Instruction to bidders
- Scope of work
- Form of agreement

The general conditions of the project were almost an identical copy of the State's uniform conditions of public contracts, which is used in all public projects. The special conditions are more specific to the housing initiative and correspond to the project context and requirements.

What struck us while seeking information about the bidding documents in our documentation review is the absence of detailed information on the design technical and economical requirements, where there were only general specifications of material to be used in the houses, which were neither innovative nor contemporary as the recommendations of the client in his initiative required it to be.

- **Contract documents**

The contract between the client and contractor was made in accordance with the Standard Contract for Public Works in the execution phase of the project. The other contract regarding the ownership and selling of the houses was made in a separate unique type of contract, which is new to the Libyan public clients. This contract explains how and when the ownership of the houses change. At first the ownership of the whole project is for the public client with the permission to be marketed and sold to the end user through an investment package for the contractor with a predefined price cap. It is up to the contractor to make their end product attractive by price competition with the other contractors to sell as fast as they wish.

The construction contract appeared to be like any other turnkey contract, but with the exception of the part that regulates marketing and selling the houses to the public.

Although the contract was made by State's departments to suit the client in his incapacity to monitor the quality and progress of the project, and the concept of risk transfer to the contractor, it failed to consider any unforeseen changes in the State policies towards public housing in general, which usually happens in Libya's unsettled political environment. This maybe because of either the incompetence of the public departments staff in expressing these changes and translating them into contract terms, or the despotic power of the political leaders to enforce their objectives regardless of the opinions of lower level local public clients.

- **Design documents**

The design documentation was made by the contractor and approved by the client before any type of work is commissioned on site. The drawings of these houses designs and models were made by the contractor's in-house architects with some external appointments of local architects.

The detailed drawings of the project were reviewed and a several versions were found to the same allocated places for the houses, this was due to the wish of some buyers who were involved early in purchasing and committed themselves to the agreed payment mechanism and have a say in the design. During our review of the drawing we noticed the following key aspects:

- There were more than one model for the same designated plot of land
- Long time between approval dates and design completion dates
- Drawings only included the design of houses without the landscaping and inner streets infrastructure.
- Finishing materials were not detailed in terms of type and make.
- There were some minor alterations to the houses, which have documented client's approval neither on the drawings nor in a separate correspondence.

- **Site Reports**

Because of the nature of the contract site reports were only to the purpose of informing the client about progress of the project. A monthly report was agreed to be submitted to the client by the contractor. In the client's documents there were a regular flow of these reports in the first year, but in the first three reports the

contractor has not detailed any of his work because of delays. In the following reports the contractor only reported on the construction process as a single entity, where he only presented the progress of the projects in a Bar Chart timeline format. A list of encountered problems were also present in some reports, but without going into details and remedial measures.

After 11 months the contractor's project reports were becoming almost identical in content and lacked in-depth insight of the project. However these periodical reports were only seen by the client's office staff, which a large percentage of them are junior female civil and industrial engineers. This has caused an apparent shortcoming in the client's feedback, which was envisaged in his overall Housing Initiative Annual report to be submitted to the GPC in their normal annual gathering.

- **Client-Contractor correspondences**

In the first year of the project correspondences to the contractor were mostly enquires about the overall progress of the project, which is a copy of a group of similar letters to the other contractors in the whole initiative. The replies were mostly general information on the construction of the project. However in the second year problems arose when disputes about the sewage and infrastructure development in the area became important.

It appeared that critical issues like the sudden and surprising change in the hard currency rate by the State were not mentioned in any correspondences and criticism of such policies were not apparent in any of the project correspondences reviewed, this may be because of the sensitivity of the issue and the political significance to the State and the leadership.

A number of issues were discovered concerning Client Contractor correspondences, and they are:

- Duplication in letters and files.
- Unsigned documents.
- Gaps between letters
- Unclear wording.
- Unanswered letters.
- Missing letters, which were corresponded in others.
- There was no other method used in sorting letters.
- Unstamped letters.

- Unclear copies.

- Claims and variation orders

The project experienced changes in the housing units designs after the first design version was approved due to the fact that some buyers wanted more space and separation between rooms in the houses. This alteration of design did not affect the contract in terms of obligations to parties but it affected it in terms of cost and time. The contractor in his documented correspondences claims that additional work has been executed to meet demand of the buyers and this affected the whole project. The client had no problem with this as long as the contractor did not go over the predefined price cap, to ensure affordability and prevent exploitation.

The client approved the major changes in design and agreed to extend completion dates to the project.

The contractor requested additional subsidies for acquiring hard currency to cope with the price fall of houses due to the exchange rate change in 2001. This was met with some dismay, because of the high support they had already got in the start of the project which was precedence in the Libyan public contracting to private contractors.

- Payment documents

The project was an investment package to national private contractors to implement a policy aims at providing affordable public housing, so the payment to the contractor was in a form of providing an opportunity to invest with some support and subsidies towards the land and hard currency exchange rates. There was no payment documentation of the project from the client's position.

- Handover documents

The handover of the project is in a form of selling the houses to the buyers, which consisted of the purchasing contracts and payment instalments to the contractor with their date and conditions of contracts.

At the first instalment buyers were committed with the dates and amounts, but after the fall of the housing market the project was no longer appealing to the public,

where by many of the buyers delayed payments and even withdrew from the contract all together.

The notion that this is a State's initiative which aims at providing public housing, can overcome any financial risks proved to be wrong. When the State suddenly changed the hard currency exchange rate in 2001, prices of these houses were no longer affordable to the public.

7.6.5 The semi-structured interview results and analysis (Case Study B)

Background on the interviewee

After approaching the client (FHES) in the municipality of Benghazi and ask them to provide us with an interview with the project manger in the project in hand, and as we expected they pointed out that the project was contracted in way that the contractor is considered as an investor to the project and the project was a part of a bigger State's initiative. This initiative was the responsibility of a newly formed public department concerned with the 60,000 Housing Units Initiative, which is under the General Authority of Housing (GAH).

We approached the Housing Initiative Department and they agreed on appointing the local project manger for the Initiative's Authority in Benghazi. The project manager was an architectural engineer who has been working with this department since it started in 1992.

The interview took place in the head-office during office hours with an agreed duration of maximum one hour. The first five minutes were an explanation of the purpose behind the interview with some general description of the research area. The interview went ahead following the sequence of the model interview (see Appendix A).

Part I: General Municipal Construction Project Information

In this part the interviewee answered the questions with the aid of archives files which he asked for during our meeting.

The aim of the first part of the interview is to remind the interviewee of the project. The required general information about the project was given by the interviewee by going back to the papers he found in the project files he had from the contractor. He

stated that because of the nature of the contract of particular project, the contractor was considered as a private investor satisfying public needs for housing under a strict price control of the built houses.

“The project was commissioned to the contractor in June 1995 to design build and sell. The owner of the project was the FHES in the municipality of Benghazi, and we are the direct department responsible for appraising, planning and commissioning the project.”

The interviewee was keen to explain the Housing Initiative goals and targets to be met in these kinds of projects, so the opportunity was given to him to do so, provided that if time was needed to complete the interview he will provide it. The interviewee explained the urgent need of housing in the country in general and in Benghazi in particular, he pointed to the rapid increase of population in Libya referencing it to the rate of population increase published by the UN in 2002, which was 3.34%. He also stressed on the role of the political leadership in realising this need and encouraging the GPC and municipalities alike, to embark on providing affordable housing to the Libyan people.

Part II: Project Outcome

The questioned interviewee responded to the following questions in their categories as follows:

1) Project Time-scale

- He stated that the time scale allocated for project appraisal and planning was *sufficient* to the type of project.
- He also stated that the time scale allocated for project design was *sufficient* to the type of project. He based this particular answer about the design time scale on the contractor's consultant when the project was contracted on Design-Build basis.
- He stated that the time scale allocated for project construction was *sufficient* to the type of project

2) Project Finance

The interviewee was asked about the finances of the projects he answered according to every question in this part as follows:

- The funding was *partly* secured at the time of appraising the project (after design and selling the houses on plans and drawings);
- The funding was *not sufficient* for the project.
- The funding mechanism was *unsatisfactory* in his view.

The answers of the project finance information section were based on the contractor's financial abilities which he showed in this project. The project was in a form of an investment package to the contractor to reach a public goal. These answers represented the clients views on the contractor's financing of the project. Any irrelevant question was omitted from the interview.

The interviewee expressed his concern on the way that the contractor financed the project, he stated that, although the client had provided very good incentives, like the subsidised land price and hard currency exchange rate, the contractor did not market their designs of houses efficiently to guarantee maximum funding before construction.

It appeared that the client was not happy with the way the some awarded contractors in the Housing Initiative projects carried out their acquisition of funding of their projects, however he stated that this particular contractor was in his view one of the best. He praised the contractor's design concept and marketing strategy to secure funding to build the houses with affordable prices.

3) Project Tendering

The interviewee's answers when asked about particular aspects of the tendering in the project were as following:

- There were some State requirements for the tender types and procedures for this project.
- The interviewee was *satisfied* with the tendering procedure of the project.

- The interviewee was *satisfied* with the tendering type of the project.
- The interviewee thought that the project was *not over priced* by the bidding contractors.
- The contractor was *not appointed* on the lowest bid.
- There *were some* tender requirements for pre-qualifications of bidding contractors.
- The interviewee thought that it is necessary to have pre-qualifications of bidding contractors.

By the outset of these answers and the ease that they were answered, one can note that the tendering of this project was satisfactory in the eyes of the client; however satisfaction of one party of the project does not reflect the whole quality of the process. But public clients in Libya are usually authoritarian in nature when dealing with their contractors, and when satisfied with a critical process such as the tendering of a project, a good starting attitude is established in early stages of construction. First impressions of public projects is important to the client, where expecting a cooperative and successful relations between the participating parties during project execution is more likely to be the dominant sensation.

4) Project Construction

The Interviewee was asked several questions regarding the construction of the project and his answers can be summarised as follows:

- He stated that the main construction Contractor *was* qualified enough for the project.
- There were delays to the Contractors' payments which affected project performance.
- The Contractor *did* deliver the promised quality of work.
- The owner *was not* directly involved in the supervision of the project, which affected the project in a negative way.
- There were some interferences from other parties, who were not part of the contractual structure, which *partly* contributed *negatively* on the project.

The interviewee commented on the question which stated the interferences of other parties, which he did not understand. He demanded more clarification on the type and nature of the interferences. After some explanation, a common line of thinking was established to answer the question. He added more on the specific answer of the presence of such interferences by stating that: *“There were some interferences from parties that we did not anticipate at the beginning of the project, like the direct involvement of the Basic People’s Congress neighbouring the project site, where they claimed that they have the priority in buying the houses with a subsidised price from the municipality, which the Housing Initiative did not include in its policy from the start. The interference of any outside party in a construction project hinders its progress by the birth of unwanted fronts of disputes in an industry of already high percentage of on-site problems.”*

5) Project Completion and Handover

The interviewee stated that the project *was not* completed on time and experienced extensive delays and when asked about the reasons he agreed on the following:

- Delays in payments
- negative interferences from other parties
- changes and modification
- Lack of owner’s incentives.

The other issue in the handover of the project was the retention period, which the interviewee *did not* think that it was appropriate to this particular project, and also thought that the best possible end product was reached in this particular project. The interviewee was also generally satisfied with the quality of the project.

Part III: Procurement Selection Criteria

This part required the respondent to select the criteria aspects which were considered in selecting the procurement system of the project. The answers of the interviewee can be summarised as follows:

- 1) The speed of construction *was not* considered in the selection criteria.
- 2) The flexibility of the project design changes was considered as *medium*.

- 3) Project contractor's responsibility was considered as *high* in the selection criteria.
- 4) Project complexity *was not* considered in the selection criteria.
- 5) Project risk allocation was considered as medium risk allocation to the contractor.
- 6) Project price competition *was* considered as *high* in the selection criteria.
- 7) Project elements of quality was considered as following:
 - o *Good material quality*
 - o *Good workmanship quality*
 - o *Good design concept quality*
- 8) Public accountability was considered as *high* in the selection criteria.

At the start of this section a brief explanation of the term *selection criteria* was carried out. The interviewee asked several questions to clarify the term more to ensure his relevance in his answers, he asked about the general meanings in Arabic terms. The interviewee appeared to be more familiar with the term procurement as the purchasing of material to the project rather than a process of conception, design and construction of the project as a whole entity.

Because of the nature of the project, one can say that it has a clear policy orientation; where it is clear that planning and appraisal of this project holds clear policy goals features. The concept of providing affordable housing to the public is a State policy, which is envisaged in the interviewee's answers about the criteria in which they built the procurement system they used. The use of a national contractor as an investor and a tool for implementing the Housing Initiative is a well thought-of plan of action to implement the State policy. What made this more evident is the answer that public accountability is considered as a high priority selection criteria. The project's criteria as a medium in flexibility, non complex and good material, workmanship and design concept with high price competition project, highlights the affordability concept of the whole project, which serves a specific policy.

Part IV: State Public Policy and Procurement

- 1) These are general questions aimed at exploring the respondent's perspective on public policy and procurement by first agreeing on the definitions of the

general terms and after corresponding them to the project in hand. First the interviewee agreed on the definition of the Libyan State public policy as:

A set of interrelated decisions taken by the political leadership concerning the selection of goals and the means of achieving them within a specified situation where these decisions should, in principle, be within the power of these actors to achieve.

The interviewee stated that although the political leadership had a great deal of influence on any of the State's public policy goals and aims, also the people who are targeted have a say in their needs and requirements of the infrastructural services from roads to housing.

This mentioning of people's needs is significant, because public clients are shaped by the demand of these needs, where the greater the demand in a certain infrastructural service, the bigger the important public department, which deals with the provision of them. The client here is a public department which is established to reach specific State's policy and understanding the source and the making process of this policy is paramount to achieve optimum performance of the public department in implementing the policy. It appeared that the perceived definition of the public policy is sensitive to the existence of the management and the whole department in the public arena. The emphasis on the role of public involvement in the policy making is a fundamental concept of the Third Universal Theory, which is established by the political leadership to rule public establishments in Libya, and keeping yourself in the same line of ideological mindset is either true belief of the concept or a hypocritical act to keep your position. However one can not judge the interviewee in which side of the argument he lies.

2) The Interviewee was asked: Was there any clearly defined State policy changes or modifications during the conception, construction or completion of the project?

The answer was *yes* and he stated that the following are the most clearly noticeable general and specific policies which he thought was behind the project:

- o Economical policy

- Social policy
- Housing policy (affordability of housing to the public)

The interviewee stressed on the affordability issue of the projects in particular and the whole initiative in general. He emphasised on this policy and stated that this was the main drive of the initiative.

In this regard it is clear from the passion of the client when highlighting the issue, that the policy of providing affordable housing was clear from the inception and commissioning of the project from the start. This clearance in objectives and goals greatly helped the establishment of the procurement system used in contracting the projects. The use of the investment incentive to the national contractors helped in creating an environment of performance and price competition, which aimed at forming and maintaining a good relations with the client, however establishing a realistic price cap for the end product resulted in channelling contractor performance and resources to not exceeding these target prices rather than value for- money to the housing units.

- 3) The interviewee was asked about the implementation tools to implement the public policy in the project. He stated the following tools, which he saw were used by the State to reach policy goals in this particular project:
 - Legislations by the GPC to the municipal public departments through annual and abnormal meetings of the GPC.
 - Indirect recommendation by the political leadership in his public speeches and private gatherings with the national and municipal public departments meetings.
- 4) The extent in which the policy implementation tools were followed in the project was *strict* in application, especially the obligation to prevent any penetration of the price cap of the houses.

The implementation tool of such policy required a strict nature because it was legislation and there was a legal obligation to the public departments to follow.

The use of legislative power in Libya is common when clear policies are determined by the State. The State's policy capacity to enforce implementation in

the construction industry may be considered a mix between *despotic* and *infrastructural* power, which was explained in more detail in Chapter Two.

- 5) The interviewee stated that the policy goals intended and targeted through the project was *poorly achieved*.

He elaborated furthermore and stated that: "*The affordable-houses-to-the-public notion was an ambitious goal of policy, especially when changes in the Libyan national and international circumstances in the last few years became unpredictable, where the sudden change in the exchange rate of the hard currency affected the Housing Initiative greatly by the instability of the house prices, which resulted in the failure of selling all the housing units in the project as was expected in the start of this project.*"

It appeared that the interviewee was not happy with the changes of the Libyan circumstances and thought that they negatively contributed in achieving the desirable outcome of the State's policy in housing at that time. However he did not dismiss the State's endeavour in solving the rising problem of affordable housing in the city of Benghazi in particular.

- 6) The interviewee thought that any State's public policy should be incorporated in the project in the *conception phase*.
- 7) The interviewee thought that public policy is a *heavy* burden on the shoulders of public construction projects.
- 8) The interviewee thought the extent of policy understanding to public construction project is *necessary*.
- 9) At the final question of the interview, the interviewee thought that the extent that construction procurement could be used as a tool for implementing public policies in public construction projects is that, all public projects should be used as a tool for implementing State's policies to reach policy goals.

In this final question the answer, highlighted the commitment of the public department in achieving the policy goals and regarding them as the main drive behind the construction of the project. However the procurement policy did not mean a lot for the interviewee and was regarded as a strategic activity which is up to the client to select and implement in any public project. The use of the procurement system in any public project appeared to mean to the interviewee; the contract strategy that reflected the State's regulations on contracting these project. Considering the interviewee's understanding of the terms; construction procurement and public policy, one has to recognise the detachment of both terms in the mindset of the management of this project. Although the project was what we call a *policy oriented project*, it seems that this public client realisation of the close linkage of any State's policy and it way or policy to procure any public construction project in the local or the national arena is not strong and lack clearance and understanding, but judging these characteristics of the interviewee is difficult under his present job circumstances, this may be possible and less biased if the same interviewee was to be asked the same questions when relieved of the public managers feedback pressure and the State's overview and scrutiny.

7.6.6 Summary and Conclusion of (Case Study B)

Relaxation of some selection criteria allowed theoretical replication of the case study and reduced some of the literal replication. This case study had fallen in to all of the selection criteria domains except the fact that this project was smaller in size from case study A and had an indirect involvement of the public client. The following are aspects of this case study which tested the propositions:

- When the client commissioned the whole housing initiative, the size of the project was not accompanied by any recruitment of monitoring and follow-up staff, so it became very hard to monitor the progress and quality of the work.
- Due to the lack of accuracy in the determination of the project requirements, it became apparent that some of the housing models did not serve peoples' cultural and space needs.
- The issue of least bidder priority has occurred in the sub-contracting process of some of the concrete work of the houses, which resulted in some problems and re-sub-contracting.

- There was no risk assessment report or any attempt to assess the risk of not selling the housing units or failure to collect payments from the occupiers or even housing market change.
- The absence of detailed information on the design technical and economical requirements. Only general specifications of material to be used in the houses were clear, which were neither innovative nor contemporary as the recommendations of the client in his initiative required it to be.
- Although the contract was made by State's departments to suit the client in his incapacity to monitor the quality and progress of the project, and the concept of risk transfer to the contractor, it failed to consider any unforeseen changes in the State policies towards public housing in general, which usually happens in Libyan politics.
- Critical issues like the sudden and surprising change in the hard currency rate by the State were not mentioned in any correspondences and criticism of such policies were not apparent in any of the project correspondences reviewed.
- The notion that this is a State's initiative which aimed at providing public housing, can overcome any financial risks proved to be wrong. When the State suddenly changed the hard currency exchange rate in 2001, prices of these houses were no longer affordable to the public.
- Concerns were expressed on the way that the contractor financed the project, although the client had provided very good incentives, like the subsidised land price and hard currency exchange rate, the contractors did not market their design of houses efficiently to guarantee maximum funding before the start of construction.
- The nature of this project was with clear policy orientation; where it is clear that planning and appraisal of this project holds clear policy goals features. The concept of providing affordable housing to the public is a State policy, which is envisaged in the criteria in which they built the procurement system they used. The use of a national contractor as an investor and a tool for implementing the Housing Initiative is a well thought-of plan of action to implement the State policy, but needed more monitoring and auditing.

- The client of this project was a public department which is established to reach specific State's policy where by understanding the source and the making process of this policy was paramount to achieve optimum performance of the public department in implementing the policy.
- It appeared that the perceived definition of the public policy is sensitive to the existence of the management and the whole department in the public arena.
- The indirect involvement of the public department as a client caused some detachment in policy making and implementation. The actual client was the potential occupier of every house. This had changed the project to an investment for the contractor instead of the intended form of cooperation between the State, the contractor and the needy public. This project in later stages of construction was transformed into a commercial enterprise to the contractor, especially when the State had no more enthusiasm in it.

7.7 Project C

Al-Wahda Bank (Al Souq Branch)

The construction of a five-story concrete building, consisting of offices, halls safes and other bank building requirements, with a cost of 3 million L.D.

The bank is expanding every year, which required building new branches around the country. The construction of these new branches were mostly executed by national public companies, and our case study project Al-Souq branch in the municipality of Benghazi is no exception, where a public contractor was appointed to construct the project.

The project is situated in the city centre, near the traditional market on the east side of the city. The branch consists a five-story concrete building with a basement substructure.



Figure (7.7) Al-wahda Bank (Al Souq Branch)

Case Study (C) Selection Criteria

Selection Criteria	Case Study B Project B <u>Rahbat Al-Ajalat Residential Units</u>
1) <u>Type of project</u>	
➤ Location	Local
➤ Status	Public facility

➤ Nature	Reinforced concrete buildings (Civil)
2) <u>Client type</u>	
➤ Owner	State-owned asset (Public Bank)
➤ Client status	Local Public establishment
3) <u>Contractor type</u>	
➤ Ownership	Public Company
➤ Speciality	Construction and maintenance
➤ Experience	12 years in public construction
4) <u>Funding</u>	
➤ Type	Public establishment expansion budget
➤ Source	The public client (Al-Wahda Bank)
5) <u>Time and Cost overruns</u>	Problems encountered in all phases of the project
➤ Source	30%
➤ Time %	38% (Established by the author not disclosed by the owner of project)
➤ Cost %	
6) <u>Timeframe</u>	June 1999
➤ Actual start	March 2004
➤ Actual finish	

7.7.1 Project participating parties

The Owner:

Al-Wahda Bank in The Municipality of Benghazi.

Al-Wahda Bank is the biggest national bank in Libya. It has more than 50 branches around the country. Like most of the Libyan banks, it's a State owned bank, where only as late as 1995 private banks were established in Libya.

The client has appointed Al-Jessr Consulting Office as a designer and overall technical consultant in this project. The design of the project was approved by the client and work started on the project in June 1999, with a scheduled completion period of 30 months.

Main Contractor:

The Libyan Construction and Investment Company

This public contractor has been in the national construction industry since it was established 1992. The company has been involved in constructing a number of publicly owned projects owned by the local secretariats.

Sub-contractors:

The main contractor has sub-contracted some small labour companies to carryout and support the construction activities in the site.

The biggest sub-contract was with the reinforced concrete contractor, which included carpenters and fabricators, where a contract was made on a unit rate basis for the whole project.

Other sub-contracts for windows, doors and glassing installations were established on the basis of as-built unit rate pricing strategy, due to the continues changes and modifications from the initial design during construction.

7.7.2 Contractual arrangements

Al-Wahda Bank (Client) has appointed (non tendering) The Libyan Construction and Investment Company to construct the branch on a Bill of Quantities basis. Where the contractor priced the work as unit rates e.g. cubic meter of reinforced concrete and a lump-sum items (e.g. lifts).

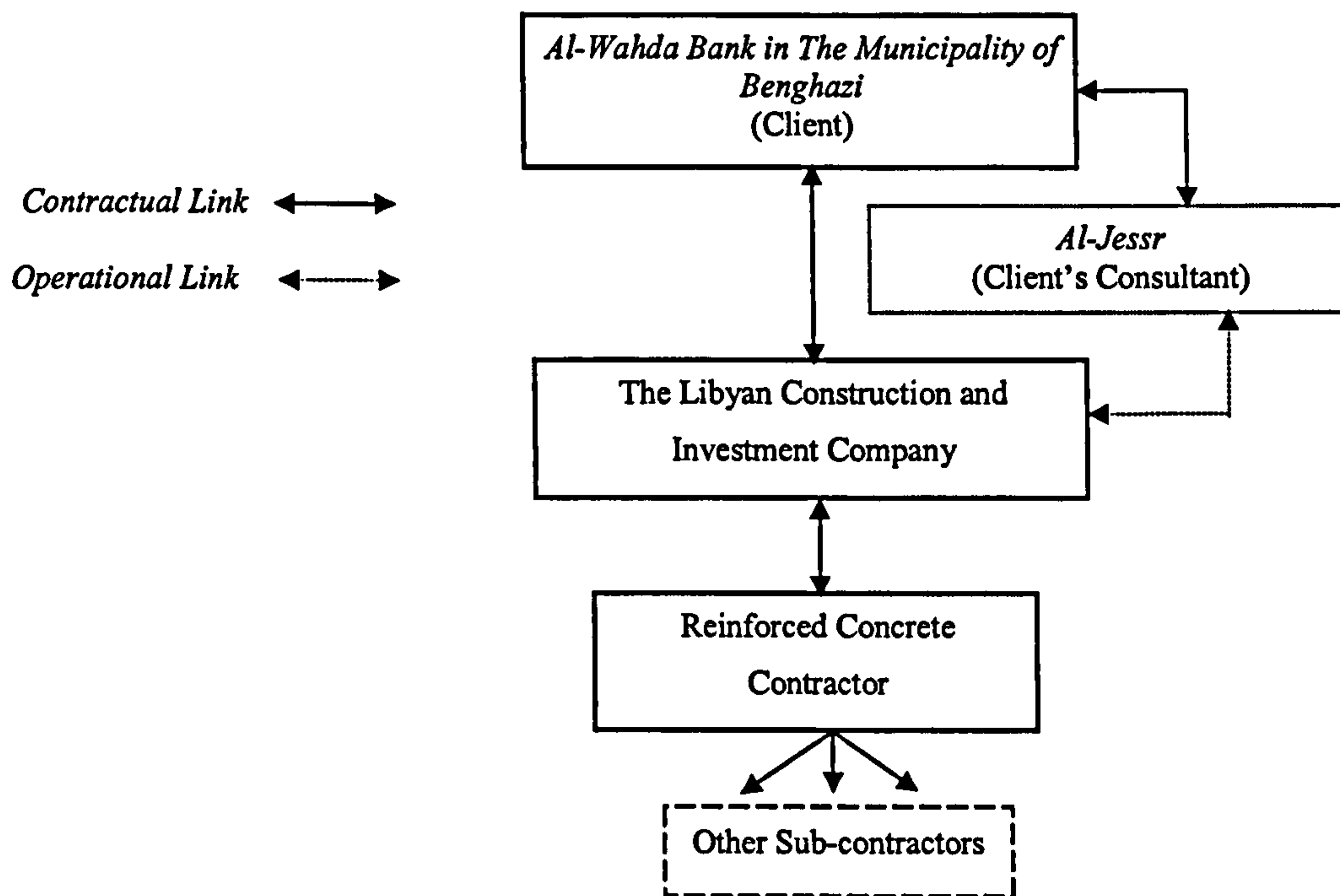


Figure (7.8) Project C participating parties' relations

7.7.3 The main work components of the project:

- Site clearance
- Basement and foundations excavation and construction

- Substructures backfilling and treatment
- Columns construction
- Reinforcement fabrications and forms carpentering of roofs
- Concrete pouring and treatment
- Masonry building and partitions
- External and internal electricity work
- Complete project sanitation and sewage
- Plastering and pre-paint finishing
- Windows, doors and glazing
- Internal painting and external finishing
- Car parking and paths
- Landscaping and security buildings

7.7.4 Findings and analysis of (Case Study C)

7.7.4.1 Problems encountered in Project C

The soil conditions of the site was not investigated thoroughly, which resulted in changing the design of foundation after construction and emergence of major structural problems, which escalated the cost by 15% of the total building cost.



Figure (7.9) Amending foundations problems

The selected site was very close to an area of Benghazi, which is known to be notoriously unsafe and a derelict part of the city. Although there were plans to revive that area but like most municipal plans in Benghazi it could take years to implement. It might be ethically harsh on that area, but in a pure business ideology this is not the image which the client needs, to attract customers.

Following signature of the design contract with the consultant (Al-Jessr), changes in the scope of work were introduced by the bank representatives, which resulted in a radically different scope of work. As the contract between the two parties was a design and supervision contract, problems surfaced during the supervision phase. The staff skills required for supervision of construction were completely different from what was proposed in the original contract signed at the outset of project design, especially in the mechanical and electrical items.

The consultant was appointed to tender the building lifts supply and installation strictly on lowest bid basis by the bank (owner). This led to contracting of a well-known supplier with a good price, but it turned out that only a local agent was bidding under that good brand name. Agencies of international companies were only allowed in Libya in the year before the start of this project, which caused some problems to the project due to the lack of experience and skilled workforce.

The client handed over the site to the contractor as a clear plot of land, however after some delay in starting the excavation of foundations, there was a cleaning-up campaign in the municipality. One of the temporary rubbish collection areas was the selected project site. The contractor contacted the client through their consultant to raise the problem to the municipality, which asked to clear the site, but there was some confusion in who is responsible for clearing up the site, where the municipality was totally convinced that the site was a dumping ground before their cleaning-up campaign, so the responsibility lies on the project's owner.

The quantities related to the bank branch, to be built as part of this project included a total item for air blowing ducts for the internal mail requirements. However, the specification indicated that this item was part of the requirements of the whole buildings. The contractor's bid price included this item. After three months into the

construction the bank decided to eliminate this item but no new immediate BoQ was produced and the contractor was under the impression of the old price and was performing accordingly. Due to contradiction, the contractor did not price this item as part of the submitted following payment request. A dispute arose between the two parties and the owner requested the contractor to re-price the whole project and redo the BoQ.

Dispute arose between the contractor and the client's consultant in approving the quantities of executed work. Each party wanted to adopt a different method to be followed, which had the outset of self-benefiting.

The contractor submitted a claim for the differences in cost between the method they chose and the method the consultant selected. These works were not an ordinary construction items e.g. reinforced concrete, plastering, and etc. The more the unusual work appeared in the project the more dispute arose the way that they should have been measured.

Some of the internal quality and type of flooring specifications were changed. The contractor submitted a claim for 25% increase in the price of this item; the client's consultant gave a verbal approval for the increase, which was based on a site visit by the public bank's manager. The client rejected the claim, stating that the contractor agreed to change without any additional cost, also verbally at that visit. The committee which was formed to settle this dispute found that the contractor is not entitled to his claim as could not obtain any official correspondents that took place between the two parties in respect of this variation, that in addition to what the client's consultant had no official records of this variation. The contractor agreed and withdrew his claim.

The interferences of the owner's staff on approving the work directly to the contractor without consulting their consultant in some items resulted in confusion of the responsibilities and authorities of project parties. A recommendation of awarding a sub-contractor to carry out some structural repairs after the foundations problem resulted in dispute between the consultant and the client, where the consultant saw that the contractor was not at all competent to do the work and he changed the recommended contractor. The client nearly terminated the consultancy contract, but

after technical meetings with the consultant, and some delay to the project, the client was convinced of the consultant decision.

Using a sub-contractor in the construction of the reinforced concrete lifts well in the building resulted in stopping the work after only three weeks. The client's consultant was not satisfied with the quality of work and required the main contractor to seek another sub-contractor or face rejecting the work. The main contractor appointed the sub-contractor base on his experience in traditional buildings without lifts (only stair cases). The sub-contractor did not regularly consult the lifts supplier and installer, which resulted in poor quality work.

The project was awarded in a time of changing environment in terms of State's policy towards public buildings and projects. The State's had embarked on a plan to involve more public construction companies in building public projects in 1999, but in year 2001 and up to now the emphasis has lightened on achieving such goal. Public companies showed no growth in size or profit. The project was awarded to a public contractor how has committed his resources to many projects at the same period. The actual start of work on site was delayed and the gap between awarding the contract and the start of work on site grew more. This time gap affected costs of labour and equipment due to new regulations and restrains in hard currency exchange rates and transactions.

7.7.4.2 Categorized Analysis of problems encountered in Project C

Project Documentations

- Appraisal and viability studies

Documentation of appraisal and initial planning of the project were surprisingly basic and minimal. There were only an 11 page report on the site assessment and with only brief mention on studying the alternatives of the site and proposed type of building to be designed. The client has not emphasised the importance of these studies in the contract, and furthermore there were no documents proving any monitoring process on such studies when approval of design and programme were granted to the contractor.

Regarding viability study, there was no viability study carried out either by the in-house staff of the client nor the consultant (Al-Jessr) on behalf of the client.

The site investigation report was in our view insufficient. The soil conditions of the site was not investigated thoroughly, which resulted in changing the design of foundation after construction and emergence of major structural problems, which escalated the cost of building by 15%.

- Bidding documents

The project was bid for as a competitive and selective bid between known local contractors, and one of the companies involved was The Libyan Construction and Investment Company. The bidding documents consisted of:

- General conditions
- Special conditions
- Instruction to bidders
- Form of agreement
- Design drawings
- Bill of Quantities

It appeared from the bidding procedure that an inclination to the public contractor to carry out the work is recommended by the client due to the growing trend of involving public contractors in public construction projects. Although the bidding was based on a competitive tendering process, the public contractor was selected on a State policy basis. This was evident in some of the client's correspondences to his consultant who managed the tendering process. The prioritising of public contractors is reasoned to the GPC decisions to involve more newly formed public investment contractors in local projects.

- Contract documents

The contract between the client and the contractor was like any other traditional contract between public construction parties in Libya, where there were based on the general and special conditions following the Standard Form of Contracting of Public Works.

Following signature of the design contract with the consultant (Al-Jessr), changes in the scope of work were introduced by the bank representatives, which resulted in a radically different scope of work. As the contract between the two parties was a design and supervision contract, problems surfaced during the supervision phase. The staff skills required for supervision of construction were different from what was

proposed in the original contract signed at the outset of project design, especially in the mechanical and electrical items.

The contract documents did not contain a stipulation which specified a quantity re-measurement methodology and this has led to dispute between the contractor and the consultant and ultimately the client. Each party wanted to adopt a different approach that serves its best interests. The contractor submitted a claim for the differences in cost between items quantified in the original BoQ and the actual items executed on site.

- Design documents

The contract with the consulting office concerned with the design of the building was based on a conceptual design submitted to the client in whom he approved prior to any detailed design. The Conceptual design was approved by a committee formed inside the bank, which consisted of five high ranking employees. Approving the conceptual design only took one meeting of this committee to decide what are the likes and dislikes about it from the architectural and functional point of view. Although the committee represented the client there were no record of consulting an independent architect or surveying the needs of employees and seeking any kind of feedback from them on the design.

There was only a copy of the specification of the main building material used in the initial phases of the project, up to the finishing phase. There were no complete interior design drawings for the whole building and its material and specifications. Some problems surfaced during the finishing phase when for example the flooring specifications were changed and the contractor submitted a claim for 25% increase in the price of this item; the client's consultant gave a verbal approval for the increase, which was based on a site visit by the public bank's manager. The client rejected the claim, stating that the contractor agreed to change without any additional cost, also verbally at that visit. The committee which was formed to settle this dispute found that the contractor is not entitled to his claim as could not obtain any official correspondents that took place between the two parties in respect of this variation, that in addition to what the client's consultant had no official records of this variation. The contractor agreed and withdrew his claim.

The design of foundations proved to be inadequate to the ground conditions on site after some structural problems appeared in the earth beams and ground floor. The

design was based on a week site investigation, which lacked detailed figures of soil conditions and insufficient Bore Holes accompanied by few in-suite and laboratory soil tests.

The foundations design had to be redesigned with a remedial measure to be implemented on site, this failure of design resulted in a significant increase in the cost (15%) and time of the project, and caused endless dispute of the responsibility issue between participating parties.

- **Site reports**

Reporting progress of the project to the client was done through their consultant who monitored contractor performance during all construction phases. The consultant supervised work by appointing onsite joiner engineers who had little experience and more senior ones in the office. It appeared from their weekly reports that emphasis on measurement of executed work is far greater than the explicit description of encountered construction problems. These problems were only highlighted in the correspondences to the contractor and not detailed sufficiently in most of the site reports. The use of photos was useful, however only few had detailed description of the problem or the cause of it.

The client required a monthly report from the consultant, which appeared to be a collection of the results of the weekly reports, without going much in analysing the results. It seems that correspondences were playing a bigger role than site reports; this may be due to the fact that public clients do not thoroughly read periodical reports from their ongoing projects and consider them as a formality and routine process, which is only to be kept in dusty archives rooms.

- **Client-Contractor correspondences**

The letters exchanged between the client and the contractor highlighted problems encountered in the site in a broad and descriptive way. Construction and technical correspondences from client to contractor were done through their consultant, who had control over the supervision of the project. In the client's files there were copies of these letters with weekly updates from the consultant. This process has been regular in the first year of construction, but when work was halted because of problems with delays and under achievement from the part of the contractor, missing letters were noticed between the two files. When reviewing client files there were

some letters addressed directly to the client and no copy was found in the consultant's files of the same period. This made it difficult to be sure if the contractor had overlooked the consultant to serve a particular agenda. However we found letters addressed to the consultant from the client informing them with the information conveyed passed from the contractor and requesting assistance and consultation to deal with the issue. For example the contractor had told the client about the lifts specifications problem directly overlooking the role of their direct monitors; the consultant, who only knew about it after the client required additional information regarding the problem.

- **Claims and variation orders**

Contractor's claims for extra work were documented as variation orders if they exceeded an agreed amount. The 25% increase in the price of flooring in the ground and first floors was agreed verbally after work had already started when the client's consultant gave a verbal approval for the increase, which was based on a site visit by the public bank's manager; this was rejected because of the informal procedure. Documentation of claims and variations are not categorised in a different file, where there were only correspondences immersed in the general in and out files. Although the major variations and claims were not many, it was difficult to trace responses of such claims. Minutes of meetings contained most of the information about such claims usually with other construction related issues discussed in those meetings which made it even more difficult to extract.

- **Handover documents**

The project has been delayed for at least 30% more than the scheduled completion period, and subsequently the contractor had to delay the initial handover for several times. However it appeared that the client have not put any ultimatums to such extensive delay, which sometimes can result in resolving the delays, instead the client was inclined to give more time to the contractor easily. The public contractor who had delays in almost all of his ongoing projects appeared to have shortcomings in his commitments towards a strict completion dates. Also, although the client through his consultant expressed his concern many times in his letters to the contractor highlighting their frustration, no attempt has been made to put a solid and decisive course of action to complete the project. All these delays contributed to

problems in the handover of the project, which up to the date of this study has not been finally handed over to the client.

7.7.5 The semi-structured interview results and analysis (Case Study C)

Background on the interviewee

The client as a public establishment has assets and the financial support for maintaining and renewing these assets. Al-Wahda Bank has an internal department responsible for any of the projects commissioned by the management. The manager of the Projects Department in the bank was met in his office to provide us with the interview, but he stated that there consultant (Al-Jessr) is more appropriate to answer any questions regarding this particular project, and they are familiar with the day-to-day management of the project. This particular manager when even asked about any questions might have any linkage with the public client's policy as a State's establishment, and may be more appropriate to be answered by him, he insisted that there consultant is even familiar with the policies of the bank regarding construction of any of there projects, because of the close and long relations between them in other previous projects. On the light of this brief conversation it was decided that we will approach the consultant (Al-Jessr) to undergo the interview with the knowledge and endorsement of the owner (Al-Wahda Bank).

The interview with the project manager in Al-jessr took place in his office during office hours with no time limit because of the author's friendship with him.

The first few minutes were an explanation of the purpose behind the interview with some general description of the research area. The interview went ahead following the sequence of the model interview (see Appendix A).

Part I: General Municipal Construction Project Information

In this part the interviewee answered the questions with the aid of his files. He asked if he could ask other office employees to answer the first part, but because for refreshing the memory and preparing the interviewee purpose behind this particular part of the interview this was not preferable and only the recollection of the manager is required.

This part of the interview took longer than expected where the interviewee had to look personally for every aspect of the enquired information. Although the process was time consuming the information given by the interviewee was consistent with

the factual data results from the project questionnaire answered by the client representative (Appendix A).

Part II: Project Outcome

The questioned interviewee responded to the following questions in their categories as follows:

1) Project Time-scale

- He stated that the time scale allocated for project appraisal and planning was *sufficient* to the type of project.
- He also stated that the time scale allocated for project design was *sufficient* to the type of project.
- He stated that the time scale allocated for project construction was *sufficient* to the type of project

2) Project Finance

The interviewee was asked about the finances of the projects he answered according to every question in this part as follows:

- The funding was *fully* secured at the time of appraising the project;
- and it was *not* part of the *yearly public department's budget*.
- The funding was *sufficient* for the project.
- The funding mechanism was *satisfactory* in his view.

It appeared that the client was fully committed and focused to implement the project where by the funding of the project was fully secured and also it was presented as part of a bigger expansion plan in the bank aiming at opening new braches around the country to cope with the growing trend of the emergence of high capital savers after the State's relaxation of the private sector in all industries in Libya.

From the answers one can sense the satisfaction of the client on the way that the project was financed, however one also has to consider that these answers were coming from the financer of the project, and realistically he may be reluctant to uncover any dissatisfaction on the way he financed the project, but these questions were originally made to explore factual information with some insight in the client's attitude towards financing the project.

3) Project Tendering

The interviewee's answers when asked about particular aspects of the tendering in the project were as following:

- There were no special State requirements for the tender types and procedures for this project.
- The interviewee was *satisfied* with the tendering procedure of the project.
- The interviewee was *satisfied* with the tendering type of the project.
- The interviewee thought that the project was *not over priced* by the bidding contractor.
- The contractor was *not awarded* on the lowest bid concept, instead a reputation and pre-qualification assessment between the lowest bidders was made.
- There *were* tender requirements for pre-qualifications of bidding contractors, and he stated that this was necessary to select the most competent contractor.

4) Project Construction

The Interviewee was asked several questions regarding the construction of the project and his answers can be summarised as follows:

- He stated that the main construction Contractor *was partly* qualified for the project.
- There were no delays to the Contractors' payments which affected project performance.
- The Contractor *did not* deliver the promised quality of work.
- The owner *was not* directly involved in the supervision of the project, which did not affect the project in a negative way.
- There were no interferences from other parties.

The interviewee seemed dissatisfied with the contractor's performance which in his view played a major part in the time and cost overruns in the construction of the project.

He also seemed convinced that the absence of the owner's staff in supervising the project did not affect the project in a negative way, where he stated that the

consultant played a good role in managing the project and supervising the day to day work on site and in the design office.

He stressed on the incompetence of the contractor several times during the interview, he also thought that Libyan public contractors are not yet up to that standard of construction which he thinks that his organisation desire.

5) Project Completion and Handover

The interviewee stated that the project *was not* completed on time and experienced extensive delays and when asked about the reasons he agreed on the following:

- Some changes and modification
- contractors incompetence
- unforeseeable construction risks
- ground conditions
- Inadequate site investigation.

When comparing the answers with the questionnaire which were answered by a representative of the clients in the first part of the case study, we noticed that there are some inconsistencies between the representative's and the project manager's. The problems which the representative saw as contributing to the cost and time overruns which were not highlighted by the interviewee are:

- The use of the Formal Typical Prices of the Benghazi Municipality did not reflect realistic prices of material and works at that period of time.
- He also questioned the priorities of the contractor in completing this project and other ongoing projects which he considered more important due to their State's profile significance.

These inconsistencies may be judgmental and dependant on the subjectivity of the person who answered these questions, however evidence of unrealistic pricing of the Municipality is widely known among contractors who work in Benghazi, where by in 2003 there were extensive delays in contractors' payments which resulted in complete stoppages in some public projects, and at that time the Municipality only agreed on the Formal Typical Pricing as a reference, which was not realistic to the cost of work carried out by the contractors during 2002 and 2003.

This brings us to the issue of procuring these projects in the first place, and highlights the importance of clear policies in construction procurement. The way that

bidding contractors go by in pricing works should be dictated by a clear client's policy if the State has full control of these public project, so if the Municipality regulated pricing is based on the so called Formal Typical Pricing then it should be realistic and updated regularly taking in to account all changes in the Libyan circumstances, which often happens.

Part III: Procurement Selection Criteria

This part required the respondent to select the criterion aspects which were considered in selecting the procurement system of the project. The answers of the interviewee can be summarised as follows:

- 1) The speed of construction *was* considered as *Medium speed* in the selection criteria.
- 2) The flexibility of the project design changes *was not* considered.
- 3) Project client responsibility *was* considered as *Medium responsibility* in the selection criteria.
- 4) Project complexity *was* considered as *Medium complexity* in the selection criteria.
- 5) Project risk allocation *was not* considered in the selection criteria.
- 6) Project price competition *was* considered as *medium* in the selection criteria.
- 7) Project elements of quality *was* considered as following:
 - *Good material quality*
 - *Good workmanship quality*
 - *Prestige design concept quality*
- 8) Public accountability *was not* considered in the selection criteria.

The interview questioned the need for such criteria concerning public accountability in such project, where he stated that the project is considered to be a straight forward multi story concrete building and has no real State and public significance, but he seemed to be convinced that other non-considered criteria in the project like flexibility and risk are linked directly with the technicality of the construction and should have been accounted for in the procurement selection process.

In the light of such response one can not escape the fact that the interviewee is more concerned with purely technical and business issues and may not realise other soft

issues like cultural and environmental implications of his project, however the high frequency of reoccurrence of such projects may contribute to the production oriented mindset of the construction managers in Libya, and the lack of exposure of these aspects in the construction industry especially in the construction phase. The procurement of such projects is carried out in consideration of hard technical aspects of construction with little emphasis on other social and cultural softer issues. The repetitive nature of simple and traditional construction projects make project managers also repetitive and prejudgmental of already considered aspects of project success which sometime do not consist soft public aspects like accountability.

Part IV: State Public Policy and Procurement

- 1) These are general questions aimed at exploring the respondent's perspective on public policy and procurement by first agreeing on the definitions of the general terms and after corresponding them to the project in hand. First the interviewee agreed on the definition of the Libyan State public policy as:

A set of interrelated decisions taken by the public departments concerning the selection of goals and the means of achieving them within a specified situation where these decisions should, in principle, be within the power of these actors to achieve.

The interviewee stated that although the public department had a great deal of influence on State's public policy in their projects, the public clients in a form of dependant public establishments like banks and companies can affect the public policy by highlighting the importance of the needs and demands which affect the policy outcome to be implemented.

Highlighting the public needs and demands through public establishments presented an interesting path in establishing public policy needs and demands which can be incorporated in our understanding of the public policy making envisaged in Chapter two. The interviewee represented an important source of public clients, where these independent public establishments have their own way of management provided they lie in the ideological frame of the State, and they

represent the second biggest source of public clients after the municipalities and their departments.

- 2) The Interviewee was asked: Was there any clearly defined State policy changes or modifications during the conception, construction or completion of the project?

The answer was *No*, and he elaborated more and stated that the project was mostly controlled by the client and reflected their policies in constructing their project, which are simple and clear in goals and objectives and hold no real significance to the State regarding implementation of public policies.

This answer brings us back to the notion that independent public establishments whom have only occasional construction activities do not see any real link between the construction of their traditional projects and the State's public policy, and furthermore the procurement of these projects are purely made on business and technical basis.

- 3) The interviewee was asked about the implementation tools to implement the public policy in the project. He stated again that the State's policies did not stand out clearly in their project, however he thought that their consultant advised them in compiling with broad issues which he thought that may reflected any State's policy at the time of constructing the project.
- 4) The extent in which the policy implementation tools were followed in the project was *strict* in application, because of the consultant's control over these issues as mentioned above, which the interviewee pointed out as an advice to comply with general State's policies and agreed to be the responsibility of the consultant.
- 5) The interviewee stated that the policy goals intended and targeted through the project was *fully achieved* in his view, although he had no comprehensive knowledge of these policies, but taking the consultants word for it and regarding them to be achieved.

It appeared that the interviewee was not interested in discussing public policy matters either related or not related to the construction of this project, which highlighted the point that was raised in our prepositions and in Case study A, that there is a detachment of public policy issues and the construction managers who are at the same instance responsible for managing and keeping these projects on track towards the development of services provided to the public.

- 6) The interviewee thought that any State's public policy should be incorporated in the project in the *conception phase*.

The interviewee stated that the conception of any of their projects is the point in which they make the decision to embark on a business venture which will affect the management of the establishment and its relation with the public as part of its duties as a publicly owned asset, and the incorporation of any State's public policies should be at this stage to allow public establishment fulfil their duties.

- 7) The interviewee thought that public policy is a *Medium* burden on the shoulders of public construction projects.
- 8) The interviewee thought the extent of policy understanding to public construction project is *important*.

Deciding on answering "important" rather than "necessary" or "very important" reflects the attitude of the interviewee towards State's policy, which one can say detached and worthless of associating him self with neither the making nor the implementation of it.

- 9) At the final question of the interview, the interviewee *did* understand the link between the construction procurement and public policies implementation. However he add that the nature of them as independent public client with no policy goals regarding construction of their project do not fully realise their role in establishing this link and play a part in any State's policy implementation. He also stated that he thought that the State should be clearer

in implementing its broad policy goals in the construction of public projects by enforcing regulations upon the consultants and the public departments concerned with public policy, and thereafter relay such goals to other independent public establishments like public banks and companies.

7.7.6 Summary and Conclusion of (Case Study C)

The replication of the case study C was based on relaxing the criteria of the client. Public clients are publicly owned by definition; however they may take different faces. The direct or indirect involvement of a public department or publicly owned establishment, like hotels, leisure projects, banks and even football clubs change the way they are managed and brought about. This case study was a public establishment in a shape of a Bank. The following aspects are conclusions drawn from the individual study of this project relating to the research elements and propositions.

- Although there were plans to revive the area in which the project was build in, there were no mention in any of the preliminary project's documents of such plans and the fact that like most municipal plans in Benghazi it could take years to implement, affected the image of the bank as a prestigious branch.
- Staff skills required for supervision of construction was different from what was proposed in the original contract signed at the outset of project design, especially in the mechanical and electrical items.
- Preliminary investigation of the site in terms of social economical and even technical suitability was not thoroughly carried out, which resulted in problems in all phases of the project.
- Although the bidding was based on a competitive tendering process, the public contractor was selected on a State policy basis.
- The project's participating parties wanted to adopt different approaches in completed items' measurement which serves its best interests.
- Correspondences were playing a bigger role than site reports; this may be due to the fact that public clients do not thoroughly read periodical reports from their ongoing projects and consider them as a formality and routine process, which is only to be kept in dusty archives rooms.

- Incompetence of the contractor was a concern to the client in several occasions during the study; it was thought that Libyan public contractors were not yet up to that standard of construction which public and private client organisations desire.
- The use of the Formal Typical Prices of the Benghazi Municipality did not reflect realistic prices of material and works.
- Priorities of the contractor in completing this project and other ongoing projects were questionable, which the other projects were considered more important due to their State's profile significance.
- Public accountability was not considered in any of the reports, documents and the outcome of this case study.
- The procurement of such projects is carried out in consideration of hard technical aspects of construction with little emphasis on other social and cultural softer issues.
- The repetitive nature of simple and traditional construction projects like the one in hand, make project managers also repetitive and prejudgmental of already considered aspects of project success which sometime do not consist soft public aspects like accountability.
- Independent public establishments whom have only occasional construction activities do not see any real link between the construction of their traditional projects and the State's public policy, and furthermore the procurement of these projects are purely made on business and technical basis.

7.8 Conclusion

This Chapter has outlined the intra-case data and analysis and the fieldwork approach with reference to the research propositions. The Case Studies were detailed and presented individually buy firstly presenting the questionnaire results, secondly the documentation review results and analysis and finally the semi-structured interview results and analysis. At the end of every case study a conclusion and summary of the results of the three sources of data in each case study was presented in a way that tests the research propositions and paved the way to carry out the cross-case study analysis in the following Chapter.

Chapter Eight

Cross-Case Analysis

Chapter Eight

Cross-Case Analysis

8.0 Introduction

Yin (1994) stated that “the analysis of case study evidence is one of the least developed and most difficult aspects of doing case studies.” In the presence of large number of data in a form of project documents and correspondences between participating parties it is hard to construct an analysis report which encompasses all aspects of the studied phenomena. However one has to approach such task in a positive way, by making it an opportunity to explore and discover new interesting and valuable findings.

Literal and theoretical generalisations are important features of any case study analysis, and the cross-case analysis enables such activity to take place productively. The use of a systematic strategy in dealing with how to categorise the data and analyse it afterwards is helpful in establishing the generalisations needed from any case study research.

Formatting the reporting approach in analysing the cross-case study analysis helped in constructing a systematic exploration and reviewing of the data sources.

8.1 Case studies analysis report

The approach was framed in a logical time sequence base on the taxonomy of data collected in the individual cases explained in Chapter Six (Figure 6.2) and on a typical Libyan construction project process described in Chapter Five (Figure 5.5), with incorporating the issues of public policy and the nature of public projects drawn from the three research elements in the literature review (Chapter Two, Three and Four). In this Chapter the cross-case analysis followed the following outline followed by the analytical generalisations arising from cross-case analysis.

Cross-case Analysis Report Outline

- I. Public policy (Level I)
 1. General Peoples’ Congress (GPC) policy phase
 2. Municipality policy phase

3. Public department policy phase
- II. Construction procurement (Level II)
 1. Construction procurement system phase
 - Problems encountered during appraisal and preliminary phase.
 2. Contract strategy phase (procurement path)
 - Problems encountered during contractual arrangements phase.
- III. Project outcome (Level III)
 1. Problems encountered during design phase.
 2. Problems encountered in co-ordination with other public departments.
 3. Problems encountered during construction phase.
 4. Problems encountered during handover phase.

The cross-case analysis report aimed at providing a comprehensive study of all impediments to the execution of the three selected case studies (A,B and C) across the phases and levels of analysis mentioned earlier. To do so we shall:

- a) Overview problems encountered during each of the project level and phase.
- b) The overview of each problem will include:
 - Definition and description of the problem.
 - Determination of causes the lead to the emergence of such problem.
 - Determination of the negative impacts on the case study project (A,B or C) as a consequence of the problem.
- c) To accurately determine the problems and obstacles and reflect real life situation in the public sector projects as case studies, we shall quote a number of viewpoints voiced by the public departments and public managers who took part in the semi-structured interviews as another head in the sources of information triangle shown in Chapter Six (See figure 6.3)

8.1.1 Public policy (Level I)

At this level of any public project a reflection of the State's policies is present in the laws and regulations governing these projects. As writers like Roberts (1971),

Jenkins (1978) and Walker *et al.* (2001) pointed out in their definitions of public policy as a set of interrelated decisions taken by a political actor or group of actors concerning the selection of goals and the means of achieving them within a specified situation where these decisions should, in principle, be within the power of these actors to achieve.

Theoretically in Libya any public policy is commissioned by the General Peoples' Congresses (GPC) in an annual agenda to be discussed and reviewed by the public in their Basic Peoples' Congresses (BPC's).

In the case of the case studies the policy reflected in the public construction regulations was different from one project to the other. An illustration of the State's policy at the time of commissioning, planning and constructing and the responses of these projects is as follows, according to each project:

Project A

(Al- Talheeya Reservoir)

Due to the sensitive nature of this project regarding its urgency and high level of political significance to the State and the Leader himself, the project was a challenging test for the municipality of Benghazi and the local public departments involved. We categorised the policies as general and special policies:

- **General policies**

In the past two decades all policies related to construction and construction procurement in Libya were ideologically based on the Third Universal Theory by Moumar Al-Gadafi (described in Chapter 5) and the decisions and regulations issued by GPC on this base. This socialist approach affected all walks of life in Libya, and the construction sector is no exception. However a changing period in 1992 had made some national private companies small and ultimately medium private companies to form.

Construction of public projects follow a strict and compulsory procurement system starting from the planning by the concerned department and contracting projects in a traditional approach, which is monitored and followed-up by the Monitoring and Follow-up Secretariat (MFS). The process is described in chapter 6.

A broad and general policy was clear in giving strategic projects with political weight a high priority in planning and execution in the shortest time possible, which obviously affected the costing and management of these projects.

In terms of the local and municipal context projects of this kind are treated in an individual manner, where a separate branch or office in the concerned public department would be formed with direct connection with the GPC to coordinate and ensure implementation of any State's policy.

A clear policy towards these strategic projects is reflected in GPC decision 263 (2001) Clause No. 4 by stating that:

"In any strategic projects the GPC is responsible for reviewing monitoring and following contractual and tendering procedures and will enforce their authorities when necessary"

- Special policies

Since the beginning of the 1990s all projects related to the Great Man Made River project (GMMR) began to possess the highest priority of construction completion in Libya. This was envisaged in the recommendations of the Monitoring and Follow-up Secretariat (MFS) report in June 1992, were a clear and distinctive warning to any local or national public department that delays or impedes GMMR project or any related work should be investigated and punished.

Another clear policy in these projects was to increase involvement of national public and private contractors in design and construction of attached small and medium projects.

A significant change in the policy behind the GMMR project was the use of the transported water, where by in the initial purpose of the projects water was intended to agricultural and industrial use only. This was a strict policy in the beginning of the project, but due to the severeshortage of water in Benghazi and Tripoli, and after a great deal of persuasion to the political leadership, a decision was reached to supply these cities only, but it expanded in 1995 by supplying another two major cities (Sirt and Musrata).

The construction of Al- Talheeya Reservoir followed the traditional paths of similar public projects at the time, however a major change in the State's policy in involving the national public contractor Al-Fadeel had significant consequences on the project,

which were apparent in many correspondence between the client and the contractor, and they can be summarised as follows:

- The lack of construction experience of such projects resulted in contracting more sub-contractors than usual
- The military background of the contractor hindered his understanding and dealing with the civil construction sector.
- The lack of clear budgeting and pricing of any work also can be related to the military background of the contractor.
- More than 80% of the contractor's workforce was military personnel, who lacked experience and civil work manners.
- The hierarchy nature of the military made it hard to the new civilian workforce to integrate in the company and made it even harder to manage.
- Due to the high profile of the contractor in the eyes of the State, the client had neither power nor control of the project, where it has been seen from the documents review of the project that more than twelve times the client asked the contractor to stop work on a certain activity, but work had carried-on ignoring the client. The consultant's project manager has stated in the interview:

"We had never been in a state that we were told to do things by the client and were completely ignored continually by the contractor, even if we threatened to seek legal advice to enforce the client's will"

Project B

(Rahbat Al-Ajalat Residential Units)

The project was intended for the provision of public housing but with minimum intervention from the State either in financing or constructing and ultimately marketing to the needed public. However policies in Libya are hardly clear, especially with any alteration or modification of the original policy ideology, which is based solely on the Third Universal Theory. Any policy ideology change was really not in the public domain, but it was only a result of the Leader's own understanding of public demand and national and international issues affecting the national arena.

But one can say that in this particular project policy targets were satisfied in concept were by the number of dwellings and houses in Benghazi had risen substantially, but this was accompanied by a sharp rise in the prices and general living.

The project suffered a major initial difficulty in marketing the houses due to the unexpected fall in the exchange rate of the Libyan Dinnar against the Dollar. This fall was a planned move by the State to tackle and abolish the parallel market of hard currency in Libya in year 2000. The policy of regaining confidence in the LD was not echoed by a change in other State's policies, like public housing provision strategy, which this project was a part of. When commissioning of the project took place there were no considerations of any changes in any major policy, although this change was long before thought of.

The fall of the exchange rate resulted in considering the prices of houses in this project, very high, however contractors and investors were already in debt due to the time and prices they procured materials and constructed the project.

In this case we believe there was a major shortcoming of policy coordination and anticipation in the part of the State, which resulted in failure of satisfying the primary goal of housing policy, which aims at providing public housing with affordable prices.

The policy of encouraging national private construction companies to take on the investors role in the Libyan housing market was propelled by a growing responsibility-transfer trend of the State. The Libyan State has long been the sole responsible for providing housing to needed public, however this responsibility turned out to be a heavy burden on the State's shoulders in the 1990's due to the continues decline of the economy as a result of United Nations sanctions in resolution 731(1992) at 12th of April 1992 and the total reliance on international crude oil sales.

We believe that such policy was sudden and surprising to most of the construction companies involved in these kind of projects. A major change in the ideology of the State will always have repercussions in any national industry, especially in the third world countries.

The project was only a small part of the 60,000 Housing Units Initiative, so one could not reach a generalisation, however in a singular since we believe that the relative success of the project in hand, was due to the quality of the contractor, and

his ability to understand the policy behind the project and the complete picture of the initiative.

Project C

(Al-Wahda Bank – Al-Souq Branch)

In construction of projects with second degree public clients which are the organisations owned by the State to provide services to the public, a different policy is adopted in Libya. Those clients have the authority to contract their own projects under their own policy of execution, provided that they always remain in the State's overall policy boundaries.

An inclination of public clients to contract national public companies is driven by the State's desire to revitalise the national construction industry.

Second degree public organisations are bounded by State's regulations and obligations, this is clear in the stipulation of GPC decision 263 (2001) in clause 2 which states:

“Any public department, administrative department, public authority or public organisation is bounded by the contracting and procurement regulations issued in any GPC decisions”

In the case of this project the client is a public bank, which is bounded by all GPC and municipal regulations. The clear policy in contracting the project was to award the project by direct allocation to a public company called The Libyan Construction and Investment Company (LCICo.) as a main construction contractor.

The other policy implemented by the bank was involving the municipality of Benghazi in planning and selecting a suitable site for the project, which they did by involving their national private consultant office, which was also another State's policy in getting more out of national construction resources.

Analysis

The implementation of these policies had small effect on gaining confidence in the Libyan contractors, neither public nor private, where complications in communications appeared between the public client and the public contractor. There were no clear definitions of client and contractor relations, neither in the traditional sense nor in the new State's vision of understanding and common goal ideology.

The use of public contractors without any attempts to clarify or explain the intended goals behind policies to participating parties had a very negative effect on the project as the consultant stated in the interview in this case.

We found little understanding and realisation of the presence of these policies neither by the consultant nor by the client. It appeared that the client interpreted regulations as a mean of control by the State, instead of an implementation of a certain policy.

Although the Libyan State has always politicise matters, people in construction seem unaware of the effort and pressure exerted on the sector to implement policies and furthermore the ideologies.

In this particular project, the consultant and the client agreed that policies goals were not met, because of the late incorporation of policy in the project and the lack of implementation monitoring and follow-up. They also believed that in their project the client had the upper-hand on most issues and that they believe because of their regular dispense of contractors' payments, which was appealing to the contractor to work, who had difficulty in attaining payments from other different ongoing project.

8.1.2 Construction procurement (Level II)

The procurement process in construction means the whole process of acquisition, which can occur at the functional or departmental level as well as the project and organisational levels depending on the nature of the procurement. At the project level, the procurement process spans the whole life cycle from initial concept and definition of the client's requirements and project objectives through to the end of the useful life of the asset or end of a services contract.

8.1.2.1 Construction procurement system phase

This phase is the step when a policy is implemented and is a tool in which national goals can be achieved. In the context of Libya there is no clear mentioning of the word system in public construction procurement regulations, instead there is a strong emphasis on contractual paths and arrangements, which oblige public departments as clients to follow strictly. In this study of the three case study projects none of the clients or consultants who took part in the interview had clear distinction between the words "procurement system" and "procurement path/contract strategy".

However there were a number of indications that pointed out that planning and appraisal of project A and B were done in a higher level of the public department with a liaison between the GPC and the municipality of Benghazi, so we decided to include planning and appraisal in the phase of selecting a system to serve the policy above.

8.1.2.2 Problems encountered during appraisal and preliminary phase

8.1.2.2.1 Inadequate preliminary planning

One of the major problems which was encountered in public sector projects is the overlooking of proper planning in preliminary studies by the public bodies in charge of those projects. In fact, the concept of planning for such bodies is limited and this affects the future phases of projects and results in problems and difficulties that impeded proper performance. A classic example of this, is the construction of a residential multi-story buildings estate project in Benghazi (1979), which was accompanied by a lack of understanding of the planned occupants needs and their requirements (Omar, 2003). This shortcoming reflected on the project by a total dissatisfaction of the whole project. The cultural aspect was totally ignored in the preliminary studies of the project, which resulted in failure of this project.

Project A

(Al- Talheeya Reservoir)

Because, of insufficient conceptual study and, inadequate planning, it was resolved not to supply electrical power to the project via the local electricity power plants, but by means of a special power plant, the cost of which was to be included in the project cost. After six months through project construction, the issue of how logical and how realistic this decision was addressed and it was resolved that the decision was a bad one, therefore resolved to eliminate the supply and installation of the special plants and connect power supply to the project from the electricity national grid by supplying and installing transformers which were deemed to be put in a later stage of construction.

Another issue occurred when the land in which the project was started to be constructed on, was in a disputed region between resident tribes. Delays and court

orders followed in the construction stage which could have been easily avoided if a thorough investigation of the land ownership had been done before the planning stage.

Project B

(Rahbat Al-Ajalat Residential Units)

There was no risk assessment report or any attempt to assess the risk of not selling the housing units or failure to collect payments from the occupiers or even housing market change. The notion that this is a State's initiative which aims at providing public housing, can overcome any financial risks proved to be wrong. When the State suddenly changed the hard currency exchange rate in 2001, prices of these houses were no longer reasonable to the public. If the Facilities, Housing and Environment Secretariat in The Municipality of Benghazi had expected or at least sensed this sudden change in policy by any kind of interpolation of the State's policy trend, a clearer solution of the problem could have been achieved, and this was envisaged in the client statement in the study interview when he stated:

“The affordable-houses-to-the-public notion was an ambitious goal of policy, especially when changes in the Libyan national and international circumstances in the last few years became unpredictable, where the sudden change in the exchange rate of the hard currency affected the Housing Initiative greatly by the instability of the house prices, which resulted in the failure of selling all the housing units in the project as was expected in the start of this project.”

When the client commissioned the whole housing initiative, the size of the project was not accompanied by any recruitment of monitoring and follow-up staff, so it became very hard to monitor the progress and quality of the work, which resulted in ignoring site inspection and monitoring all together and considering the project as a turn-key contract, which transferred the whole day-to-day quality of work responsibility to the contractors. After a final assessment of the project the client discovered some changes and alterations which had no approval had been done in the project.

Project C

(Al-Wahda Bank – Al-Souq Branch)

Again the issue of public contractor and his performance was overlooked in the planning stages of this project, which affected the project tremendously, regarding the ever escalating cost and time.

Although the client has appointed a consultant there was no risk assessment study or any other viability studies for the project. The notion of the project was “a simple construction of a multi-story concrete building” but because of the client and contractors public status, more issues than construction activities were in play.

The soil conditions of the site was not investigated thoroughly, which resulted in changing the design of foundation after construction and emergence of major structural problems, which escalated the cost by 15% of the total building cost.

Analysis

From other countries past experience like Saudi Arabia and other Gulf countries (Assaf *et al.* 1995; Al-Ashika 1996; Elhasia 2000, Benkraim 2001) it is known that public construction contractors tend to be loose and less responsible, due to the lack of incentive and desire to complete work. The client had no consideration of doing any type of research on using public contractors and its consequences on the project, neither nationally nor internationally. If even a small research had been done, a great deal of consideration of the way that public contractors execute construction projects in developing countries could have been established, which could have helped enormously in planning in terms of money and time.

The causes of these inadequacies in the planning stage were:

- Lack of appropriate project management skills within the project owner’s staff. Also lack of understanding of the important role project management plays, this has negatively affected project owner’s staff understanding of what is involved and required in the preliminary study stage.
- Lack of understanding of the construction process within the owner’s staff assuming that any negative consequences of poor planning may be avoided through amendment during subsequent stages of construction.

8.1.2.1.2 Inaccurate and incomplete project programme

The inaccurate and incomplete determination of the project programme including project needs, requirements, components and cost estimates is a certain outcome of the lack of due care on the part of the public sector department carrying out the preliminary studies. This is one of the major mistakes of those bodies and results, during subsequent project phases, in large financial losses as project performance and quality are impaired due to amendments of project scope. This often leads to disputes and results in financial claims. A local (L.T.C. Co.) consultant describes impediments encountered by consultants during the design phase and stated:

“the consultant faces great difficulty in obtaining a final programme showing project requirements and the estimated budget allocations approved by the State bodies concerned prior to commencement of the design process. This leads to continued amendment and change in the project schedule through the final phases”.

Project B

(Rahbat Al-Ajalat Residential Units)

Due to the lack of accuracy in the determination of the project requirements, it became apparent that the floor areas of the housing units did not meet the actual needs of the planned occupiers. This is because the design did not take into consideration the social aspects of users of these housing units such as the rate that most new Libyan families expand and increase in number (Libya has the highest population growth in North Africa with a rate of 3.67%). Alterations by the occupiers were an inevitable result, which almost certainly will penetrate the urban planning laws and regulations in that area.

8.1.2.1.3 Failure to select a suitable alternative of the project and the site

Any project has several choices and alternatives regarding the appropriate design, construction method, and the level of quality, which serves the purpose of the project. The owner's duty in the public sector is to make the optimum choice of the project driven by a sound policy.

In the case of most construction projects in Libya this choice was not incorporated with a comprehensive and thorough preliminary study of the project. This shortcoming affected the end product and the success of the whole infrastructure. (Benkrima, 2001).

Project A

(Al- Talheeya Reservoir)

The water supply line for the municipality of Benghazi was completed two years prior to the construction of Al-Talheeya reservoir, and the selected site of the reservoir at the time was based only on technical matters. Although it was known to the local people that this particular site was not clearly defined regarding the ownership of this plot of land. The original consultant of the GMMR project had designed the supply line and the reservoir three years before any work started on the project.

This time delay was not considered in the selection of the site when work had started after all these years. There were clear changes in the layout of the site due to two consecutive years of local flooding, which rarely happens in that region. Work started in the reservoir relying on the old design, which obviously was not representative of the current site situation. This was also accompanied by some problems concerning the ownership of land.

Project B

(Rahbat Al-Ajalat Residential Units)

The project owner (FHES) could not provide all of the required sites for all the houses during the design phase, and two sites remained to be selected. The designer assumed that all sites would be similar to one provided. The work started in 20 houses of the project without considering any major changes in the other houses' site. It was not mentioned in tender documents that the hand over of the remaining two sites not yet selected would be delayed for up to four months later. After that period of time FHES and the contractor agreed on the other units' site, fortunately the new selected sites were not far away, if otherwise happened the design could have been unsuitable for the ground conditions and other design related conditions.

Project C

(Al-Wahda Bank – Al-Souq Branch)

This particular branch of the bank was meant to be the most prestigious branch in Benghazi, which in our view was not echoed by the status of the site selected. The selected site was very close to an area of Benghazi, which is known to be notoriously unsafe and a derelict part of the city. Although there were plans to revive that area

but like most municipal plans in Benghazi it could take years to implement. It might be ethically harsh on that area, but in a pure business ideology this is not the image which the client needs, to attract customers.

Failure to select a site suitable for the project is one of the errors of the public owner's staff, which results in disputes and financial claims and may lead to a delay in performance of project works, substandard quality or higher costs. The disputes may arise because of any of the following:

- The project owner awards design works without first selecting a suitable site. This means that the design consultant has to prepare design without prior knowledge of the site, terrain conditions and soil structure, and may therefore commit a design error in the event soil structure is not compatible with the hypothesis on which the design was developed.
- The project tender is announced and bids are invited without first obtaining the land. Thus the contractors are forced to adopt the hypothesis devised by the design consultant. However, following contract signature and hand over of the site to the contractor, the nature of the soil is found to be different than that hypothesised. This may lead to dispute and financial claims.
- The project is awarded but site handover to the contractor is delayed. This subjects the contractor to financial losses and subsequently, results in claims against the project owner for compensation.
- The site does not rise to customer expectations.

8.1.2.2 Problems encountered during contractual arrangements phase

8.1.2.2.1 Contract documentation

A. Lack of clarity and consistency of contractual documents.

The lack of clarity is considered one of the major problems encountered during project design and construction supervision phases. Lack of legal specialists in most State departments has led to lack of clarity of such documentation and to the inclusion of provisions contrary to codes, regulations and rules of implementation. Since consulting works contracts are prepared by every department separately, it is natural to have differences and variations in such documentation and particularly in

the nature of the duties, obligations and authority of each party. This reduces the standard of services provided by consulting offices.

B. Lack of clarity of contract technical documents.

Poor planning and lack of accuracy and comprehensiveness in determination of requirements reduce the clarity of the scope of required works. This contributes to submission of incomplete and unclear documentation.

Project A

(Al- Talheeya Reservoir)

The initial work on the reservoir started relying on a conceptual design prepared by the consultant of GMMR. Although the municipality contracted Al-Emara as their public consultant to prepare the detailed design, it took some time to reach a conclusion that the contractor will be on reimbursable design-build bases, but the contractor had already started work on the project. So the contractor appointed their consultant (L.T.T.C. Co.) to start review and detail the conceptual design after four months of work. Although the initial conceptual design documents were good standard, it became increasingly hard to construct more detailed items of the work, so it reflected on the cost and time of the project.

Project C

(Al-Wahda Bank – Al-Souq Branch)

Following signature of the design contract with the consultant (Al-Jessr), changes in the scope of work were introduced by the bank representatives, which resulted in a radically different scope of work. As the contract between the two parties was a design and supervision contract, problems surfaced during the supervision phase. The staff skills required for supervision of construction were completely different from what was proposed in the original contract signed at the outset of project design, especially in the mechanical and electrical items.

8.1.2.2.2 Award to the least bidder

The rules of implementation of State procurement regulations, state that the bid examination committee, shall ensure compliance of bids with terms, conditions and specifications and enlist for that purpose technical assistance as it deems appropriate

and recommend the best bid in respect of both financial and technical aspects. Nevertheless many public infrastructure projects in Libya, being awarded just because their design or contracting bidding prices are the lowest. Two of the case studies had this problem.

Project B

(Rahbat Al-Ajalat Residential Units)

The issue of least bidder priority has occurred in the sub-contracting process of some of the concrete work of the houses. The contractor sub-contracted some of the main concrete forms fabricating to a small company, which had had the lowest bid. However the nature of work was not complicated and required no special skills or qualifications, the sub-contractor was not able to cope with the amount of the opened work on site, and that was due to his under-estimation of the workforce required to carryout the work on time. The main contractor seemed to have the misconception that any reinforced concrete contractor can carryout the work fairly easy. It appeared that the sub-contractor was not really experienced in tendering and formal estimations of work. Fortunately to the main contractor work had already stopped by the client due to other payments problems, so he had the time to replace the sub-contractor with a more competent company, and that was done by direct appointment because of the new company's good reputation in concrete works.

Project C

(Al-Wahda Bank – Al-Souq Branch)

The consultant was appointed to tender the building lifts supply and installation strictly on lowest bid bases by the bank (owner). This led to contracting of a well-known supplier with a good price, but it turned out that only a local agent was bidding under that good brand name. Agencies of international companies were only allowed in Libya in the year before the start of this project, which caused some problems to the project due to the lack of experience and skilled workforce.

The causes of this problem can be summarised as:

- Lack of insight on the part of some members of bid selection committees as to the importance of the technical aspects of the project, and the role they play in smooth execution of the project.
- Lack of clear-cut standards for the evaluation of the technical and financial aspects of projects tenders' committee reports poor and unconvincing. Add to that the poor technical and financial cap some of the members of technical evaluation committee, which results in unclear reports.
- Lack of clear-cut standards for award determination to be adopted by the bid selection committee members in the preparation of their report and recommendation for award.
- Negation of the role of the technical evaluation committee in the event that its opinion is not taken into consideration.

8.1.3 Project outcome (Level III)

The outcome of any construction project can be defined as the resultant of a large number of construction activities, starting from conception and planning through construction and handover to reach the time of using the end product by the end-user. Any construction project goes through phases of execution, which are very dependant on the way this project is procured and aimed at. These phases bare the actual outcome in every moment of the project construction live, which we aim to discover, explore and shed light on the case studies.

An illustration of a logical construction sequence by phases was established by reviewing the Generic Design and Construction Process Protocol (GDCPP) (For background and GDCPP map see Appendix B) and by referencing to the case studies in each phase and sub-phase according to the problem/problems presence during our study of the project.

8.1.3.1 Problems encountered during design phase

8.1.3.1.1 Unrealistic design time-frame

The owner's desire to complete design works in a very short period makes the estimation of such period incompatible with the volume of required work. This is particularly apparent when we take into consideration the failure of both parties to comply with the time frame in completion of required works.

Project A

(Al- Talheeya Reservoir)

Although designs of the reservoir were prepared long time before the actual work commencing date, they were not in a detailed manner. When work started on the project many items had to be detailed or redesigned completely. The contractor appointed these designs to their consultant who had insufficient time to design the whole project as a one unit; instead he designed the urgent work on site and updated the original design on an as-built bases. This urgency in designing works was accompanied by some inconveniences to the client, where there were some delays in client's approvals and monitoring of work.

The pressure on the contractor was also mounting to complete work as early as possible, and this is particularly the case in every 1st of September, when celebrations of Al-Fateh Revolution's takes place every year, where significant projects are expected to be opened by the political leadership.

The unrealistic design time-frame in public projects may be caused by the following:

- The long review time by the owner.
- The long period of time it takes the consultant to incorporate the owner's comments and resubmit the designs.
- Matters grow worse when numerous amendments are made on the scope of work.
- The project owner's desire to complete designs as quickly as possible.
- Neglect of proper planning in the first place.
- Public clients pressure to complete work as early as possible.
- Lack of clarity of the scope of work.
- Lack of accuracy and comprehensiveness in determination of project requirements.

8.1.3.1.2 Lack of uniform consultant pre-qualification regulations and clear-cut standards for technical analysis of the design.

The State procurement regulations and their rules of implementation provided for circulating selected invitations to bid for consulting works. The regulations do not

contain specific constraints for pre-qualifying consultants. Each State department is given a free hand to select and invite whatever consulting offices it deems appropriate and in the manner it deems appropriate.

The lack of specific and clear-cut standards for technical bid evaluation in some State departments has led to unsatisfactory technical analysis of consultants bid proposals. Add to this the possible participation of substandard consulting offices mentioned above, and the probability of awarding works to a technically weak office becomes significant. The causes of the problem may be because of the lack of emphasis on the importance of technical aspects by bid analysis committees that are charged with project award.

Project A

(Al- Talheeya Reservoir)

Although the client, when appointing their consultant had a clear perception of the consultant's performance and quality in designing, they made no effort in setting any kind of pre-qualification criteria. This might be a result of that they were under state's pressure to appoint public consultants. However it might have been helpful if a certain qualifications criteria for this particular project was established to motivate any client to rise to the desired standard, and like any other firm in Benghazi at the time, the consultant was keen on being involved in this project, due to its high State's profile.

Project C

(Al-Wahda Bank – Al-Souq Branch)

It appeared in the questionnaire and interview with the client's consultant that, although they are a private firm they were awarded the job by a "public relations" approach, where the management of the consulting firm had had good relations with the public client's management at that time. They have not been exposed to any kind of pre-qualification or technical ability screening process. In our view this was a conflict of interest from the part of the management in the public establishment (the client). In other peoples views it was a corruption case, even though there were no reported incidents of bribing of personal favours exchanged.

8.1.3.2 Problems encountered in co-ordination with other public departments

Problems in co-ordination with public departments concerned with projects such as local public organisation, civil defence, electricity companies, etc are considered one of the problems that impedes performance of public project works. The problems in co-ordination with other public departments are manifested in either of the following forms:

- When the contractor contacts such bodies to obtain their approval of the design prior to or during performance of works, it may be faced with rejection because the design may not comply with the requirements of that body. This dictates extensive modifications, creates disputes and gives rise to financial claims.
- Lengthy administrative processes in some public departments to approve designs or to connect required suit services. This leads to disputes between the client and the contractor over time extensions.
- The unclear general and specific policies of the State in managing the industry, where contractors find it hard to understand some of the goals and aims targeted by these policies. This is especially the case when contractors are newly entering the construction market in Libya.

Project A

(Al- Talheeya Reservoir)

The main contractor as we know from before is a publicly owned construction company, however a multi-national contractor did most of the work. The sub-contractor was in liaison with the main contractor's consultant to clear technical and other issues that have arisen in the project construction with the client. Very often the sub-contractor finds himself dealing directly with the public client. The coordination of such relation was not in a systematic manner, where a direct involvement of the public client usually comes in a form of spot visits to the site. The sub-contractor has been in a position of explaining some technical and organisational issues, which are not known to be existent to the client.

As an example of this relation, the contractor was employing casual labour from his own imported workforce, when a client's representative expressed his concern of not employing some of the local labour a political issue surfaced. Meeting between all participating parties of the project followed, and it became a talking point in the local press.

Project B

(Rahbat Al-Ajalat Residential Units)

To commence construction of a project, a building license was sought from the municipality. The contractor received a rejection from the municipality because the project did not have any near by access to a main sewage pipeline, which should be connected to the city network. Work on the project started regardless, because the site and the project were already selected by the FHES, which supersedes the municipality in terms of power in settling these issues. A contradiction of decisions by public bodies confused the contractor and delayed work.

Project C

(Al-Wahda Bank – Al-Souq Branch)

When any construction project commences, the first activity on site is site clearance. The client handed over the site to the contractor as a clear plot of land, however after some delay in starting the excavation of foundations, there was a cleaning-up campaign in the municipally. One of the temporary rubbish collection areas was the selected project site. The contractor contacted the client through their consultant to raise the problem to the municipality, which asked to clear the site, but there was some confusion in who is responsible for clearing up the site, where the municipality was totally convinced that the site was a dumping ground before their cleaning-up campaign, so the responsibility lies on the project's owner which is also a publicly owned establishment. This confusion could have been avoided if public departments and establishments realise the fact that they are all one body, and issues of these kind should be cleared before any public project starts to be constructed.

The problem of co-ordination of public departments in public projects may be caused by:

- Some public departments do not prepare and supply specialised information on projects on a regular basis, which would insure that information available to the parties concerned with the execution of the projects is up to date.
- The design consultant does not ensure that the design is in compliance with the requirements of public departments concerned.
- Lack of communications between the local and national public departments concerning public construction projects.

- Delay in announcing the project tender following completion of design, during which requirements may change.
- Long time periods required by some public departments to grant approval.

8.1.3.3 Problems encountered during construction phase

8.1.3.3.1 Problems related to contract documents

Because of the compulsory and strict use of the State's format of any public contract, which is known as *Uniform Contract*, some of the problems which are encountered and negatively affect all aspects of project performance are related to contract documents. This is one of the most complicated and difficult aspects. To clarify this issue, we shall divide these problems into two different categories and incorporate the findings of the case studies in the text:

- Problems related to technical contract documents.
- Problems related to contractual contract documents.

8.1.3.3.1.1 Problems related to technical contract documents

These problems can be classified according to their causes into two categories: contradictions in and between documentation, and incomplete and incorrect documentation.

a) *Contradictions Between Technical Contract Documentation Contradictions Between One Document and Another*: Foremost among contradictions the contractor has to deal with in technical contract documents are contradiction between drawings and/or specification and bill of quantities. Such contradiction usually takes one of the following forms.

- Items stated in drawings and/or specifications but not included in the bill of quantities this leads to new items in the bill of quantities that are non-existent in the original bill of quantities.
- Items stated in drawings and/or specifications as well as bill of quantities but in different quantities this leads to differences in items quantities in the bill of quantities.

Project C

(Al-Wahda Bank – Al-Souq Branch)

The quantities related to the bank branch, to be built as part of this project included a total item for air blowing ducts for the internal mail requirements. However, the specification indicated that this item was part of the requirements of the whole buildings. The contractor's bid price included this item. After three months into the construction the bank decided to eliminate this item but no new immediate BoQ was produced and the contractor was under the impression of the old price and was performing accordingly for a while. Due to contradiction, the contractor did not price this item as part of the submitted following payment request. A dispute arose between the two parties and the owner requested the contractor to re-price the whole project and redo the BoQ.

- b) *Contradictions with the same document:* It is sometimes the case that documents are not internally consistent, for instance a contradiction between electrical and mechanical drawings and architectural drawings.
- c) *Incomplete Bill of Quantities:* This is caused by inaccurate calculation of quantities and loads during construction to a need for the addition, of new items not included in the original contract, and increased quantities over what was stated in the original bill of quantities. In both cases the items are not stated in any of the technical contract documents but are dictated by work requirements.
- d) *Incorrect and Incomplete Drawings:* Incorrect and incomplete drawings are one of the major problems encountered in project construction. It impedes progress of work, causes disputes and give rise to financial claims between the two parties.
- e) *Incomplete Specifications:* Incomplete specifications may lead to the same negative consequences as incomplete bill of quantities and drawings.

Project A

(Al- Talheeya Reservoir)

The contractor noticed during construction that there were contradictions between electrical and mechanical drawings and architectural drawings to the requirements for the pump station and control and monitoring equipment. This was due to the lack

of updating of architectural drawings of the project. Although these drawings were updated later in the construction period it caused delays and disputes in client's monitoring and approving of works. However the contract stipulated that the contractor shall check all drawings prior to bid submission and shall be held liable for any faults that it could have been avoided. And furthermore in Clause 70.1 in the uniform general conditions of contract states:

"If the Contractor discovers any errors, omissions, or discrepancies in the Contract, or during the course of the Work, discovers any discrepancy between the Contract or drawings and the physical conditions on the jobsite, he shall immediately inform the Engineer in writing"

Causes of these shortcomings can be summarised as follows:

- Lack of accurate and comprehensive details of project requirements.
- Unclear scope of work in design documentation.
- Poor management and technical capabilities of the owner's staff during the design phase which have led to a lack of good supervision and follow-up on its part.
- Poor technical performance of the design consultant.

The negative consequences on the project can be numerous modifications of contract documents, which increases project cost. Poor quality of project works can lead to creation of disputes and claims and delays in performance of project works.

8.1.3.3.1.2 Problems related to contractual documents

As public departments have started to use a uniform or the typical contract form for public construction projects, it may be useful to limit our discussion in this item to the ambiguous stipulations of the uniform contract and their effect on the execution of the case study projects.

a) *Contractor's responsibility for review of technical contract documents:*

Clause 10.1 of the general conditions of the uniform contract stipulates that:

"the Contractor shall be responsible for review of engineering and technical designs in all their details and notify the Owner and Consultant of any errors or comments that are discovered in the drawings during construction."

It is apparent that this stipulation is vague and incomplete and may lead to different interpretations thus giving rise to disputes between the two parties during construction. Several questions regarding the contractor's responsibility in this area may arise in relation to the review of drawings, specifications and bills of quantity. This technical issue has affected the construction of **Project A** where there were agreed changes in the design but have not yet been changed in the technical drawings of the project.

- *Errors in Drawings and Specifications:* What are the limits of the contractor's responsibility vis-à-vis review of designs?
 - Where does it start?
 - Where does it end?
 - What is included in the phrase "errors or comments"?
 - What is the procedure that follows notification of the owner and engineer by the contractor that errors were found?
 - What errors and comments entitle the contractor to raise a claim for compensation and/or extension, and which do not?
 - Finally, an important question has to be asked. Who is responsible for the accuracy and validity of technical project documents? Is it the design consultant, the supervising consultant or the contractor?
 - These questions remain without a clear and specific answer and lead to dispute and claims and affect the progress of work in **Project A** and **B**.

Drawings and specifications appear on the list before the bill of quantities and therefore take precedence. However, what happens if a contradiction is found between the drawings and/or specifications and the bill of quantities and it turns out that the bill of quantities is correct. Will the contractor be paid for those quantities or not?

8.1.3.3.2 Contractor's responsibility for site inspection

Clause 5.1 of the general conditions of the uniform contract stipulates that:

"The Contractor shall satisfy himself completely as to the nature of the site, means of access, local facilities and all matters whatsoever affecting or which may affect the execution of the works under this contract, including but not limited to labour conditions and practices as well as all security, fire and safety regulations."

Here are several issues, which led to disputes in all of the case a study projects (A and C), in a form of questions which should have been asked before any contractor committed him self to execution of work:

- What if the contractor during construction finds that the nature and type of soil is different then on which the design of the project was based?
- Will the contractor redesign and modify and add at his own expense? The stipulation does not clarify this aspect.
- Do we deduce from this stipulation that the contractor shall carry out soil analysis? If true, will all bidders be expected to carry out a soil test separately at their own expense knowing that it is likely they may not be awarded the project. Naturally this is an unrealistic assumption particularly when we know that contractors bid for different tenders and that the cost involved in soil tests for these bids would be too large. Moreover we have to consider the time it takes to carry out such tests and the short time period allowed for bid preparation.

8.1.3.3.3 Method of Measurement

Clause 34.1 of the general conditions of the uniform contract stipulates that:

“The Engineer shall, except as otherwise stated, ascertain and determine by measurement the value of work done in accordance with the contract. He shall when he requires any part of the works to be measured, give notice to the Contractor whose authorised representative shall forthwith assist the Engineer in making such measurement and shall furnish all particulars required by the Engineer. Should the Contractor neglect or omit to send such representative then the measurement made by the Engineer or approved by himself shall be taken to be the correct measurement of the works.”

This stipulation is obviously incomplete and will lead to disputes between the two parties, as measurement methods are not specified. In a report prepared by a local contractor, it was stated that one of the causes of dispute between government departments and contractors is the choice of measurement method for completed works. (L.C.D.Co. Report 1993.)

Project A

(Al- Talheeya Reservoir)

Although the project was awarded to the contractor on reimbursable bases, quantities of the executed work presented a real problem in measuring and claiming contractors' payments. The sub-contractors claim the executed works payment based on their measurement methodology, and the main contractor claimed the same quantities payments from the client through their consultants. There were compelling evidence in the correspondences and documents of the project that point out very clearly that there were a serious entrust between the client's consultant and the main contractor about the quantities measured. This problem could have been avoided if clear and detailed methods of measurements for every categorised items of the project was agreed before any work started.

Project C

(Al-Wahda Bank – Al-Souq Branch)

As all public projects under the uniform conditions of contract, the contract documents did not contain stipulation, which specified a quantity measurement methodology and this has led to a dispute between the contractor and the client's consultant in approving the quantities of executed work. Each party wanted to adopt a different method to be followed, which had the outset of self-benefiting.

The contractor submitted a claim for the differences in cost between the method they chose and the method the consultant selected. These works were not an ordinary construction items e.g. reinforced concrete, plastering, and etc. The more the unusual work appeared in the project the more dispute arose the way that they should have been measured.

8.1.3.3.4 Evaluation of change orders cost

Clause 41.0 of the, uniform contract states that any change in the awarded work to the contractor can reach up to 25% of the total value of the project. And Clause 39.1 describes change orders and variations of the work, which states that:

“No such variations shall be made by the Contractor without an order in writing from the Engineer. Provided that no order in writing shall be required for an increase or decrease in the quantity of any works where such increase or decrease is not the result of an order given under this Clause but is the result of the quantities exceeding or being less than those stated in the Bill of Quantities (if any). Provided also that if for any reason the Engineer shall consider it desirable to give any such order verbally (which order shall be confirmed in writing by the Company/Engineer as soon as possible), the Contractor shall comply with such order and any confirmation in writing of such verbal order given by the Company/Engineer whether before or after the carrying out of the order, shall be deemed to be an order in writing within the meaning of this Clause.”

The question here is what if a mutual agreement cannot be reached if the added or omitted works, which the contractor saw necessary and crucial to the project? The result will definitely be a dispute and financial claims and a delay in project completion.

8.1.3.3.5 Warranty and maintenance

Clause 36 of the uniform contract demonstrates that the warranty period shall mean the period specified in the contract starting at preliminary hand over and ending at final hand over with a bank guarantee issued by a Libyan bank acceptable to the Client in an amount equal to five percent (5%) of the total contract compensation paid to Contractor for works. Clause 36.4, stated that:

“Contractor shall secure warranties which extend for at least the maintenance period from manufacturers and vendors of equipment, machinery, materials or supplies purchased by Contractor and used in works.”

This stipulation is incomplete and does not describe the concept of maintenance. The stipulation apparently sees maintenance as mere repair to faulty works after handover. Many questions may be asked here, e.g. what about building and equipment operation during this period? And what about periodic maintenance of the equipment?

Project A

(Al- Talheeya Reservoir)

Although the project now is completed and operational there is no final handover to the client. However the handover of the sub-contracted works was final to the main

contractor and payments are cleared. The client opened the project to operation without considering some amendments to the mechanical works in the pump station, which required urgent and rapid works to meet the official opening of the project. These maintenances and amendments were reimbursed as a separate payment to the contractor. These payments should have been reworked by the contractor without any extra cost to the client, where in principle they were a warranted works.

The causes of the problems related to contractual documents in our view was due to the lack of a uniform contract for consulting works and the consequent lack of cohesion and co-ordination between the current consulting works contract and the uniform construction works contract. Also accompanied by the lack of a clear-cut uniform method for re-measurement in the uniform contract due to some vague stipulations in the uniform contract.

These causes may have negative consequences, which may be summarised as follows:

- Contradictions with consulting works contracts.
- Heavy financial losses are incurred by the project owner.
- Delay in completion of project works.
- Creation of disputes and financial claims.

8.1.3.3.6 Changes and modifications

Perhaps changes and modifications whether in the form of omission or addition are one of the biggest problems that impede project performance and lead to disputes and claims in the local municipal construction projects in Libya. Changes and modifications are used to remedy problems, which arise during the design or tender stage.

Project A

(Al- Talheeya Reservoir)

Following final measurements of the work in the project total cost of addition resulting from changes and modifications raised 21.3% of the total anticipated cost. 80% of the mechanical and electrical works were over the initial estimates, which contributed the most in escalating cost. A dispute arose between the main contractor

and the public consultant regarding these cost escalations, which can be summarised as follows:

- The public consultant found the main contractor's cost estimates for the newly introduced items exaggerated.
- Methods of measurement of the added electrical connections and items were not agreed upon before execution.
- Differences between the two parties on what could be considered a variation order and what could not be.
- Some verbal approvals by the client's representative were considered changes and therefore the contractor claimed them as variation orders.
- The contractor's biddings for sub-contracted works through their consultant were not transparent enough to the client, and this supported to the accusations of the client, that there were major exaggerations in the prices of items to be imported and installed in the project.

Project B

(Rahbat Al-Ajalat Residential Units)

The initial project requirements and specifications stipulate that the design of the houses should include water supply and sewage connections up to the entrance of every house. The connection of these facilities to the main city network was not mentioned in the contract. The contractor was forced to work these connections to be able to sell the units fast, and required an added price to the already priced units, which should be incurred by the occupier. A dispute arose between the FHES and the contractor and the houses buyers, which resulted in extra cost to the public client by subsidising the material used in these works, and extra cost to the contractor and ultimately the occupiers.

Another change of specifications was the landscaping of the whole estate, where there was no mentioning of such work in the contract, and again the contractor was forced to execute the landscaping with an extra cost to himself and the buyers. This work was not agreed to cost the public client and the contractor who has continued claiming payment for this work up to the time this study was carried out.

Project C

(Al-Wahda Bank – Al-Souq Branch)

Some of the internal quality and type of flooring specifications were changed. The contractor submitted a claim for 25% increase in the price of this item; the client's consultant gave a verbal approval for the increase, which was based on a site visit by the public bank's manager. The client rejected the claim, stating that the contractor agreed to change without any additional cost, also verbally at that visit. The committee which was formed to settle this dispute found that the contractor is not entitled to his claim as could not obtain any official correspondents that took place between the two parties in respect of this variation, that in addition to what the client's consultant had no official records of this variation. The contractor agreed and withdrew his claim.

As we pointed out before, variations and changes of Libyan local public projects typically causes a rise in cost and may change the nature of the project due to the extent of additions and deletions major causes of dispute on change orders are:

- Unclear procedures to be followed by the parties.
- Performance of the change order on the verbal approval of the supervisory staff without obtaining the prior written approval of the project owner.
- Lack of a contract conditions which clearly specifies what constitutes a change order.
- Lack of a method of pricing new items that are not included in the contract.
- Delay in granting approval by the project owner.
- Lack of complete study by the contractor of the financial and technical aspects of change orders.

Variations and changes in these projects are a heavy burden because of their frequent use and the high cost of work covered by them. Also they are a major cause of dispute. Matters become worse when supervisory bodies try to offset increased cost and time delay by:

- Omission of some project items and components.

- Change of original specifications of some project components to make savings.

On the other hand, we find that some contractors endeavour to obtain change orders when they think they can make a profit on them. This is done through:

- Proposing changes of specifications to make savings on the project, while, in fact, the greatest benefit accrues to the contractor. For instance, suppose that the contractor discovers the prices for some items in his tender are too low. The contractor may request a change of specifications for those items, submit a new price, and avoid the loss he would incur if the original items were supplied and installed.
- Maximise financial gain from any change order by giving, exaggerated prices for that order.
- Verbal undocumented approvals are granted from the contractor to allow for savings in the event of change but at later stages the contractor refuses the savings and raise financial claims.
- Manipulation of change orders to create a dispute with the owners as a justification for delay in completion of work. This is followed by a request a time extension in orders to avoid a delay penalty.

The causes of the problem of changes and modifications in many contracts can be summarised as follows:

- Poor planning at the time of preparation of preliminary studies of the project.
- Lack of accuracy and comprehensiveness in determination of project requirements.
- Lack of clarity in the scope of works stated in design documents.
- Poor technical performance of the design consultant.
- Poor management and technical capabilities of the owner's supervisory staff during the design stage. This made them unable to provide good supervision and follow-up of design documents to discover faults and contradictions in the scope of work.
- Incorrect and incomplete project documents.

The consequences of such changes and modifications can affect the project performance and quality, and could be summarised as follows:

- Change of the nature of some projects, due to extensive omissions and additions.
- Delay in project completion. Increased cost.
- Creation of disputes and claims.

8.1.3.3.7 Delay in disbursement of contractor's invoices

Delay in payment of contractor's invoices is perhaps a leading cause of confusion and retards the progress of work, particularly when the financial position of the contractor is not strong enough to withstand the difficulties caused by the delay.

Delay in payment may also cause legal disputes, since some contractors claim compensation for damage resulting from delay in payment.

In the case of the three case study projects all three of them experienced delays in contractor payments, where this was mentioned in all of the questionnaires and interviews carried out in these projects.

We encountered many correspondences in the three projects demanding late payments, which hindered project progress continuously. Project A in particular was very bad in payment as the client's consultant stated that:

"The municipality of Benghazi made it very hard to itself by continuously delaying contractor's payments, with an endless process of bureaucracy and inconsideration of the urgent need of water supply in the city."

The causes of delay in payment in the case study projects could be summarised as follows:

- Failure of contractors to fulfil their contractual obligations in the original project contract.
- Delay of payment by some public department personnel due to bureaucracy in government payment procedures.
- Lack of documents required to complete disbursement.
- Increased volume of work at finance departments.
- Delay of disbursement of payment during transition period between fiscal years.
- Lengthy administrative procedures, such as extensive review and audit, and numerous signatures required to authorise payment vouchers.

The consequences of such delays can affected these projects performance and quality, and could be summarised as follows:

- Confusing the contractor financially resulting in negative impacts on compliance with time schedule and proper performance of work.
- Creation of disputes and claims resulting in additional costs incurred by public departments.
- Lack of confidence between the contractor and client in the future.
- Increased construction cost, since some contractors may raise their prices in the future as a safeguard against delay in payment.

8.1.3.3.8 Unclear responsibilities and authorities of concerned parties

Lack of clarity of relationships, responsibilities and authority of all parties (owner, owner's staff, supervisor consultant and contractor) as a result of unclear contract stipulations. Such lack of clarity of financial, administrative and technical procedures led to interference and cause organisational and managerial confusion that affected the project and result in disputes, claims and delays. At times we found the contractor complaining of the consultant's authority and at other times we found the consultant complaining of the interference of the owner's staff in technical matters.

The lack of clear determination of authority, responsibility, technical, managerial and financial procedures is one of the greatest faults of public departments and it led to numerous problems which impede performance of the case study projects' works.

Project A

(Al- Talheeya Reservoir)

The State's policy which targeted more involvement of national public contractors in public construction projects created major confusion in responsibilities of the two main parties of the project; the client FHES in Benghazi and the main contractor Al-Fadeel. The contractor felt very powerful when this policy started and even more powerful when awarded big projects in Benghazi. The awarding of this project on reimbursable bases made this power struggle even worse. The client has always been a powerful client in public construction projects in the municipality, but this status

was threatened by the emergence of other public establishments, which have a contractor status.

Regarding the every day project relations, the contractor had more power than the public client. This was envisaged in ignoring client's threats to stop the work if certain work was not up to client's quality standards. The contractor was not concerned about the response of the municipality as a direct client; instead he was mostly concerned about the reaction of the project's progress in the eyes of the upper State departments and the country's political leadership.

Project C

(Al-Wahda Bank – Al-Souq Branch)

The interferences of the owner's staff on approving the work directly to the contractor without consulting their consultant in some items resulted in confusion of the responsibilities and authorities of project parties. A recommendation of awarding a sub-contractor to carry out some structural repairs after the foundations problem resulted in dispute between the consultant and the client, where the consultant saw that the contractor was not at all competent to do the work and he changed the recommended contractor. The client nearly terminated the consultancy contract, but after technical meetings with the consultant, and some delay to the project, the client was convinced of the consultant decision.

The main causes of the problem could be summarised as follows:

- Unclear and incomplete contractual documentation explaining issues of authorities and responsibilities of public project parties
- Lack of a uniform guide for financial, administrative and technical procedures for public works contracted to public clients.
- Poor management ability of the owner's staff dealing with public contractors.
- Poor management ability of the consultant's staff dealing with public clients and contractors.

This problem may lead to:

- Delay in project completion due to unclear management, financial and technical procedures submission and approval of samples and shop drawings and delay in submission, approval and performance of change orders.
- Making decision which may not be in compliance with contract provisions.
- Chaotic management crises which impede project works and create disputes and claims.

8.1.3.3.9 Lack of a spirit of confidence and co-operation

Some public owner's staff still regard the contractor as a manipulative and greedy entity to the project that attempts to obtain money from the public resources through fraud, and should be therefore to be made to suffer the greatest loss possible, and provide much more than is strictly required of it. On the other hand we found the contractors in the case projects and consultants regarding the public owner's staff as individuals who are always trying to make them sustain losses and refuse dealing with them.

Project A

(Al- Talheeya Reservoir)

The project has suffered from a lack of effective coordination between the main parties with respect to their perception to each other. The main contractor was awarded the work as a direct appointment recommended from the top political leadership of Libya. This made the client reluctant in forming a constructive and common-goal relationship because of the strong political statues of the contractor, which affected the spirit of fair play and competence on the project level.

We found in the interview with the client's consultant a great deal of dissatisfaction regarding the contractors technical ability to execute construction works by relying on the reputation of the contractor from previous public projects in Benghazi. This has helped neither the feeling of confidence of the client nor his consultant perception.

There were neither effort nor a well to address this issue and designate a special meeting or gathering to rectify any misunderstanding between the project parties.

Project B

(Rahbat Al-Ajalat Residential Units)

In this project the spirit of confidence and co-operation was lacked in the relationship between the contractor, who also was considered an investor or a developer and the end-user as the occupiers of the housing units. The people who committed themselves to buy these houses and pay there payment on time saw their confidence in the contractor worsen every time the project was delayed, and roammers of fraud with other contractors in the same housing initiative start to emerge. Although the contractor of these particular units was in our view honest and transparent, some the other contractors' involvement in fraud had affected them greatly, where out 32 houses sold in the beginning of the project five of them withdrew and terminated their contract. The other major factor of this perception to the contractor was the sudden change in houses prices in Libya after the hard currency exchange rates were sharply changed by the GPC.

The causes of such misunderstanding between the parties of these projects could be:

- Short-sightness of some of the owner's staff in the way they regard contractors and consultants, and vice-a-versa.
- Poor management abilities of the parties concerned.
- Limited outlook of the parties concerned by failing to co-operate, attempting to make from other parties and rejecting a co-operative relationship that reflects positively on all parties, and the project.
- State policies from top to bottom are not perceived well by any party in any public project.

This lack of sprit of confidence and co-operation may affect the project by:

- Increasing problems and disputes instead of reaching settlement of differences.
- Losses are incurred on both sides.
- Delay of project performance due to numerous disputes.

8.1.3.3.10 Poor capabilities of parties concerned

The success or failure of any project is closely related to the capabilities of all major parties concerned (owner's staff, consultant, contractor, subcontractor). Any

weakness in the capabilities of any of the parties will have an impact on all other parties and ultimately the project itself.

1. Poor management capability of the owner staff

Benkrima, (2001) stated that in Libya, one of the major problems which was encountered in construction of public projects is the poor management ability of the owner's staff charged with managing and supervising the project.

Project A

(Al- Talheeya Reservoir)

This has been the case, particularly in this project where the municipality of Benghazi had no regular site visits to the project, even if they appointed a consultant, we believe that it is essential to any public client to keep on top of their projects progress by a systematic monitoring and follow-up strategy to ensure the effective implementation of the State's policies.

The client staff consisted of junior engineers with little experience in such projects. The connections with their consultant were not in a systematic way, because they had the perception of the consultant as being their representative in every aspect of the project. However they were only a technical and design consultant who are not concerned with overall public policies and the implementation of such policies.

2. Poor capabilities of some local sub-contractors

Among the big number of small and medium contractors in Libya, there are a large percentage of local contractors who have substandard capabilities, a matter that directly affects the progress and completion of any infrastructure project A. Omar, (2003). Lack of management capability is considered to be of the main problem that local contractors suffer from. It should also be noted that this also applies to some foreign contractors operating in the Libya.

The poor capability of subcontractors is considered to be one of the problems in public, projects. The procedure of contracting of most sub-contracted work in public projects is superficially done with little emphasis on the subcontractor's previous work and it's quality.

Lack of standards and constraints to assist in approval of subcontracting. Although the contract stipulates that the main contractor shall obtain the owner's prior written approval before entering into a subcontract. Lack of standards and constraints to be followed by the owner in evaluation has rendered the owner's approval a routine formality and has increased the risk of award to incompetent subcontractors.

Project B

(Rahbat Al-Ajalat Residential Units)

The contractor had sub-contracted some reinforced concrete forms carpentering to local contractors; this type of sub-contracting was based on the reputation of these small companies. There is no ranking or performance assessment bodies in Libya, neither public nor independent, so these companies are only known by their recent performances in past projects. The main contractors can only assess their sub-contractors performance by actually working on the project in hand. The main contractor was not satisfied with the performance of the reinforced concrete sub-contractor, so he was in a position to look for a new one and terminate the under performing sub-contractor's contract. This process hindered the project program and also resulted in rework of some slabs with an extra cost to the contractor.

Project C

(Al-Wahda Bank – *Al-Souq Branch*)

Using a sub-contractor in the construction of the reinforced concrete lifts well in the building resulted in stopping the work after only three weeks. The client's consultant was not satisfied with the quality of work and required the main contractor to seek another sub-contractor or face rejecting the work. The main contractor appointed the sub-contractor base on his experience in traditional buildings without lifts (only stair cases). The sub-contractor did not regularly consult the lifts supplier and installer, which resulted in poor quality work.

The issue of poor and incompetent sub-contracting may occur due to one of the following causes:

- Poor capabilities of the subcontractor to an extent that it may not be approved by the owner.

- Advance preparation between the main contractor and a subcontractor in order to include low prices in the tender bid to secure the contract award.
- Inaccurate calculation on the part of the main contractor of the cost of construction.
- During execution of the works, the prime contractor stands to incur heavy losses and is therefore obliged to subcontract to reduce loss.

The poor capabilities of subcontractors may affect the project by the following:

- Poor technical quality of works.
- Incorrect and incomplete project documents.
- Extensive modifications and changes during project performance.
- Delay in performance beyond the time schedule and creation of disputes and problems.

3. Shortcomings in capabilities of some consulting offices

The shortcomings in management and technical abilities of some consulting offices whether designers or construction supervisions is a cause of problems and obstacles, which impede the desired level of project performance and quality. The lack of use of the concept of quality management in such firms plays a big part of their under achieved capabilities.

Project A

(Al- Talheeya Reservoir)

The publicly owned consultant office appointed by the public client is an organisation governed by all State regulations, from recruitment to salaries. There are little incentives to the staff to perform efficiently, where by financial rewards were not parallel to the amount of work done by its employees. The consultant was the receiving end of much criticism from the contractor's consultant and local press. There were some points mentioned in correspondences from the contractor's consultant which claim that there is no adequate client representatives on site and there are delays in approving work and unclear systematic monitoring of the project. Like any other public establishment in Libya, junior employees consists most of the workforce, this is due to the very high employee turnover rates, and this has affected performance and quality consistency of work produced.

8.1.3.3.11 Lack of an effective communications system

Public projects suffer from lack of effective communications system between the parties concerned. This contributes to minor problems being blown out of proportion. It increases the gap between the parties because of the confusion it results in. Problems of this kind which affect projects may be summarised as being a result of lack of effective communications between the parties concerned to reconcile differences in viewpoints and coordinate efforts in the best interest of the project and the end user (the public).

Project A

(Al- Talheeya Reservoir)

The client has to communicate with his contractor via his public consultant, who on the other hand is communicating with a private consultant representing a public contractor. This cycle of communication has not been smooth as it should be as the client's consultant stated in the interview. The contractor has complained more than once about the nature and speed of communicating with the client's consultant and the client him self. On the other hand the client's consultant found it hard in discussions and meeting with the contractor's consultant, because of the lack of authority of the consultant and the strength of representations of the contractor. The contractor sometimes sent their correspondences directly to the client. Overtaking the consultants in any work results in confusion and lack of transparency of work. The client's consultant threatened to stop his staff from being on site after the client had directly and verbally approved the piping material for the reservoir roof drainage supplied by the contractor.

Project B

(Rahbat Al-Ajalat Residential Units)

The contractor's design of the project took long time to be approved by the client (FHES), where the contract stated that the designs of the houses should be discussed and studied in detail between the client, the contractor and a sample of the end-user. This provision has not materialised in full due to the lack of systematic and regular consultation between parties of the project; this is mainly due to the absence of clear strategy in communications, which delayed the project even before any work took place on site.

This lack of an effective communications system was mainly due to:

- Lack of an effective information exchange system between the various public departments and their contractors and end-users.
- Lack of periodicals containing updated instructions, requirements and specialised information from the departments, which could be placed at the disposal of parties related to any public infrastructure project.
- Lack of internal co-ordination between public departments related to their construction projects.
- Difficulty in obtaining information on previous public infrastructure projects and their records of performance or successes/failure outcome.

The consequences of such lack communication on public projects can be:

- Difficulty in decision making in issues which need rapid response time in the project.
- Confusion and impediment of the project time schedule and meeting milestone dates.
- Lengthy administrative procedures.
- Difficulty in implementing any State requirements or policies concerning the project or even the whole construction sector.

8.1.3.3.12 Inaccuracy in contractor's project cost estimation

Inaccurate project cost estimates are considered one of the biggest faults of public contractor, as it affects all parties connected to the project. The problem is worsened when the contractor bids low without adequate study and is awarded the contract simply because it is the least bidder. Lack of accuracy in price assessment of the project from the owner's staff makes the matters worse.

Project A

(Al- Talheeya Reservoir)

Based on the contract between the client and the contractor all works of the project are reimbursed with an agreed margin of profit to the contractor. Due to the unclear profit margin figure to the contractor, the contractor estimated work to be done very generously. The contractor's consultant had the job of estimating and sub-contracting

most of the work. The client stated in the interview that *“it seems that the contractor wanted to misuse our trust when the contract was awarded on reimbursable bases, where he felt that he is in a strong position because of his status”*. He went further and stated, *“The contractor either over-estimated the price of works to cover some risks or to make the most out of this project”*.

Dispute arose concerning the prices of some of the work in the project, and there were no signs in the project documents that any of the contractor’s estimates were changed or even amended.

This inaccuracy in this particular project was caused by:

- Poor management abilities of the contractor which reflect negatively causing poor cost estimates of their projects.
- Unclear contract bidding documents.
- There are contractors who are not serious and submit prices without a realistic study, intending to assign the project after award and obtain a commission, or to ruin the opportunity for other bidding contractors.

Consequences of this problem are:

- Contractor’s inability to complete the project and higher probability of stopping work or withdrawal of works.
- Creation of part of the contractor to seek justification for reducing its loss or for stopping work.
- Poor quality, as the contractor seeks inferior quality to cut down its losses
- Delay of project completion due to the negative effects of inaccurate cost estimates on the contractor’s ability to complete works.

8.1.3.3.13 Long time interval between, bid submission and commencement of works

One of the problems that give rise to dispute is the long time interval between bid submission and commencement of work. Contract documents usually specify the validity of the proposal at 120 days. However, award is sometimes not made until long after that period. The contractor here runs a, risk of higher material and equipment prices, rendering its bid prices low.

The contractor, out of need for the work, may accept the risk and agree to sign the contract based on prices bid a long time earlier. Matters grow more complicated when the owner asks the contractor to lower his prices as the funds allocated for the project are lower than the bid price. This is a big mistake that both parties later pay for.

The problem of price fluctuation of market and currency prices during the period from bid submission to award, is one of the problems which gives rise to dispute between public departments and contractors.

Project A

(Al- Talheeya Reservoir)

The reservoir was part of a bigger project, which is the main pipe of 25km to supply the municipality of Benghazi from the GMMR project. The pipeline and the reservoir were tendered in 1990 and awarded to an Egyptian company, but the work did not start and the project was suspended for six years. After all this time a different contractor (Al-Fadeel) was appointed the work on pipeline and the reservoir as two separate contracts with similar prices. The prices of the first were not realistic at the time, the contractor was not satisfied with these prices, and dispute arose between the client and the contractor. The State via the GPC decided to appoint the work to the public contractor on reimbursable bases.

All this confusion and delay was caused by the long time between the awarding of the contract and the start of actual work on site; this was due to sudden changes in the State's will to execute this project and the changing environment and public policy.

Project C

(Al-Wahda Bank – Al-Souq Branch)

The project was awarded in a time of changing environment in terms of State's policy towards public buildings and projects. The State's had embarked on a plan to involve more public construction companies in building public projects in 1999, but in year 2001 and up to now the emphasis has lightened on achieving such goal. Public companies showed no growth in size or profit. The project was awarded to a public contractor how has committed his resources to many projects at the same period. The actual start of work on site was delayed and the gap between awarding

the contract and the start of work on site grew more. This time gap affected costs of labour and equipment due to new regulations and restrains in hard currency exchange rates and transactions.

The problem in these to projects was caused by:

- Lengthy public administrative procedures.
- Bid prices exceed allocated funds.
- Negotiation to lower bid prices.
- Unavailability of the site and delay in hand over.
- Hesitation on the part of the bid award committee in rendering a decision on award.
- Incompetent contractors and clients in dealing with change in market and overall environment in the public arena.

The consequences of such problem on the projects when the time interval between bid submission and commencement of work is prolonged, inflation may cause the bid prices submitted by the contractor to become too low, not reflecting actual project costs. In this case, the negative impacts that arise are similar to those stated in the problem of cost estimation of the project.

8.1.3.3.14 Unreasonable construction period

There must be compatibility between the cost and duration of construction of any project. The construction period is determined by the owner and stated in contract documents or is left up to the bidders to specify in their bids. In both cases a great deal of inaccuracy occurs in estimating time periods due to the following reasons:

- The owner usually estimates the time period when it needs to complete the project rapidly. This was evident in Project A in the amount of client's correspondences urging the contractor to complete the work, which went unanswered.
- The owner has other important dates to meet, such as, political and propaganda engagements, which are not compatible with the nature of the project, which has occurred in Project A due to the political significance of the project.

- If estimation is left up to the contractors, they attempt to minimise the period, knowing that it may be considered as one of the bid analysis parameters. To win the work the contractor in Project C has proposed a significant time reduction compared to the other contractors in the housing initiative projects, which led to some problems during construction. The construction of the first phase of the houses took longer than time-scale expected.

Causes of this problem in the aforementioned cases may be:

- Owner's desire to complete some projects as soon as possible.
- Time period is sometimes considered as a parameter or award, and contractors opt to assume the shortest possible period.
- Unclear contract bidding documents.
- Poor capabilities of the contractor.
- Superior political time pressure in some critical projects.

The negative consequences on these projects were:

- Shortcomings in quality resulting from hasty performance to comply with the time schedule.
- Creation of dispute when the contractor seeks justification for time extension and avoidance of delay penalty.
- Delay in performance of project works.

8.1.3.3.15 Lack of adequate funds

This problem occurred in the case study projects in either of the following forms:

- The bid price is higher than allocated funds (Project A and C)
- The tender is announced without securing fund allocations (Project A)

a) Bid price is higher than allocated funds

This problem arises from poor cost estimates by the owner or designer. The owner in such cases is forced to adopt one of the following strategies:

- Cancel the tender and re-announce it after amendment of design.
- Ask contractors to reduce their bid prices to match the allocated funds.
- Delete some project components to reach allocated funds.

- Compromise quality of some project items.

b) Tenders announced without securing fund allocations

Because of the urgent need for any infrastructure project, the owner may announce the tender before fund allocations are secured, assuming that the amount would be obtained following tender award. However, funds may not be available at the time assumed by the owner. This resulted in the following:

- Long time interval between tender announcement and bid award, in order to gain time until funds are secured.
- Cancellation of tender.

The causes of this problem are:

- Inaccurate estimate of project cost by the owner or designer.
- Poor planning by owner's staff.
- The owner's desire to commence construction without taking the provision of basic requirements into consideration.
- Vague, unclear and incomplete tender documents.
- Modifications and changes of the project during the tender period.
- Lack of accuracy and comprehensiveness in determination of project requirements in the preliminary stage of the project.
- Unclear scope of work in design documents.

The negative consequences on the project are:

- Cancellation of tender at a loss to both parties.
- Delay of award which may lead to dispute as a result of currency, materials, tools and equipment price fluctuations during that period.
- Change of nature and purpose of the project as a result of deletion of some components.
- The tendency of compromising the quality of the project

8.1.3.4 Problems encountered during the hand-over phase

The handover of any construction project is dependant on the clients satisfaction in contractors work progress and meeting time requirements. The handover of any

project is a milestone in which all participating parties agree on, and try hard to honour this agreement.

In the Libyan public projects construction, many clients perceive final handover as a formality procedure, although the uniform general conditions of contract is not very clear in defining the handover as a procedure, private and public contractors are motivated to complete the work and handover projects only by avoiding liquidated damages and penalties.

In public projects it is paramount to make the handover definition explicit and the procedures systematic. Due to this vagueness of the handover process in the Libyan uniform conditions of contract problems arose in one of the case study projects and they are described as follow:

Project A

(Al- Talheeya Reservoir)

Although the project has been technically completed and also operational the main contractor has not handed over the project formally to the client. Disputes around the project from the start have damaged relations between the client and the contractor. Because of the political nature of the project, the municipal client was overtaken by the General Facilities, Housing and Environment Secretariat (GFHES), which is higher in power. This resulted in ignoring the presence of the municipal client by the contractor, who handed over the project to GFHES only by default when the opening celebrations took place in September 2001.

In contractual and legal terms the handover process was a breach. The only proper handovers in the project were between the main contractor and his foreign sub-contractors.

Causes of this problem in the aforementioned case may be:

- Unclear handover definition and procedures
- Delays and modifications of works confused the final product of the project
- Shortcomings in trust and confidence between the public client and the public contractor
- Interferences of other State's non project participating parties (e.g. State security agencies, powerful public figures)
- Emphasis on completing the project with out proper consideration of the formal handover.

- Lack of distinction between quality of completed work and the completing the work.
- Political pressure on the project's participating parties
- Lack of formal handover incentives.

8.2 Analytical generalisations arising from cross-case analysis.

Problems encountered in each of the three case studies regardless of the time and phase they occurred in are numerous. One has to realise that they all contributed in shaping the fact that these projects were experiencing time and cost overruns. These problems may be purely technical in nature in construction terms, but many relate to the interaction of the three elements of this research and the effect of the State Construction Procurement Policy on each project's outcome.

An illustration and summary of these problems and their presence in the case study projects are shown in figure (8.1).

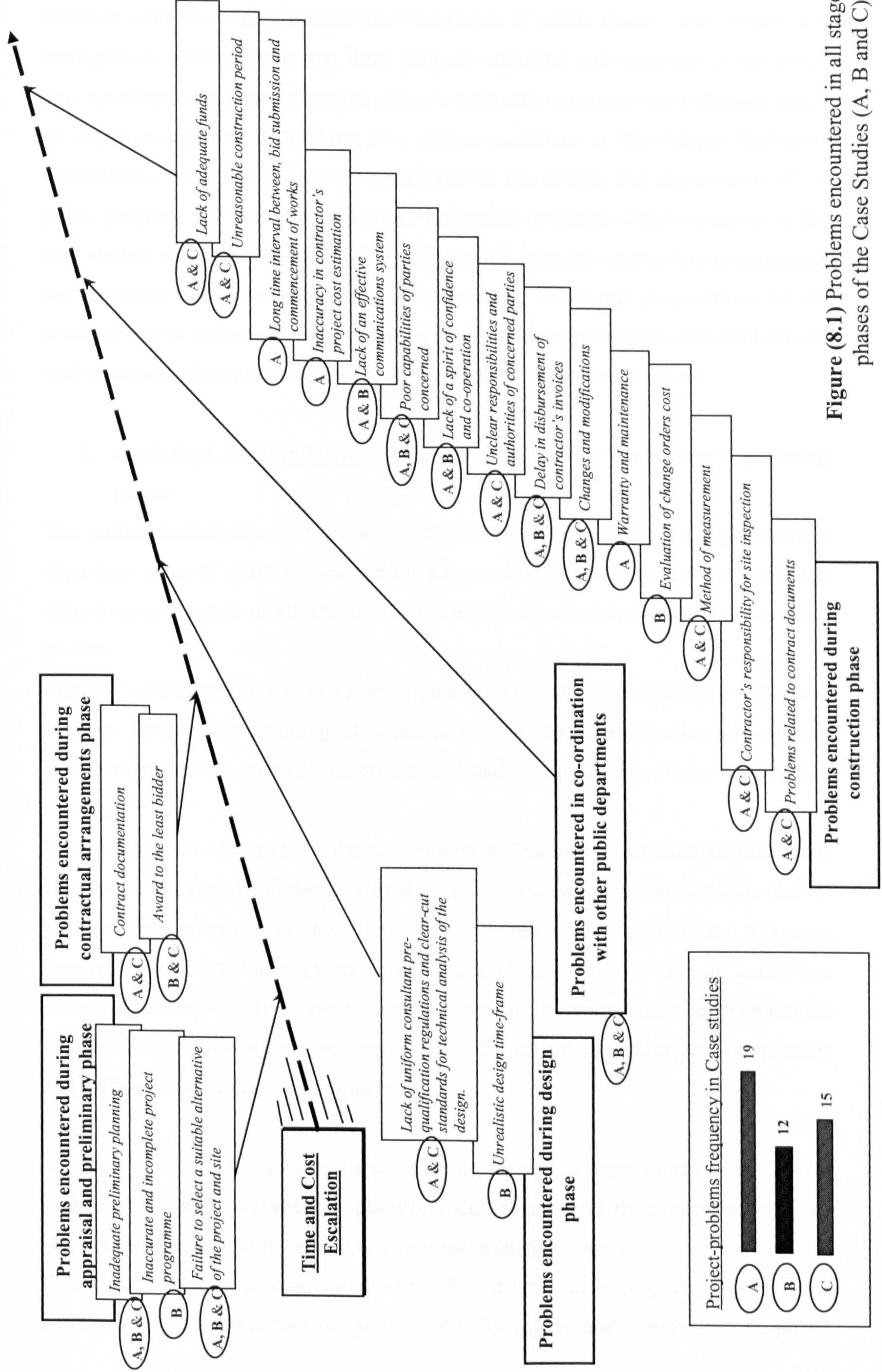


Figure (8.1) Problems encountered in all stages and phases of the Case Studies (A, B and C)

Through a review of the opinions and viewpoints of public client's and consultant's management individuals in the three projects collected and recorded in the semi-structures interviews, as well as the author's personal perception and judgment based on experience gained in working as a design consultant in The Libyan Technical Consultancy Company (L.T.C.Co.) involved in the design and supervision of 15 public projects, the most important and influential problems which occurred in the case studies and related to the State's policy on the issue of construction procurement and outcome and either supporting or dismissing the initial propositions of the research can be summarised in an analytical generalisations manner and emphasis on such generalisations are presented in bold within the following sections:

1. Analytical Generalisation A: Problems in the preliminary planning phase

The initial preliminary and planning studies of any construction projects are a departure point of defining and establishing a solid base of understanding of the objectives and nature of all activities enveloped in conception, design and execution phases.

Publicly owned projects possess an important and sensitive position in any given country. Preliminary planning of a public project should encompass all projects' financial, technical, political, environmental and social aspects of the surrounding setting.

It was noticed in the study of the case studies a **detachment of such studies from the actual reality of the day-to-day design and execution of the project**. One of the major findings was the time gap in which the preliminary planning documentations of these projects were carried out and the actual execution. Reference to these studies have seldom occurred in correspondences between project participating parties, where **emphasis on the technical aspect was far greater than other related planning aspects**.

In the interview with the three clients, they all seemed to agree on **the lack of foresightness of their preliminary planning, due to the fact that no State body or department reviewed them or even requested them to audit**.

The fact that there are regulations and codes of conduct in preparing such studies does not hide the other fact of the lack of following up and significance on public

projects' outcome. Although projects like case studies A and C are a straight forward construction projects, one have to consider that these are public projects and are deemed to be used by the public as an end user, and duty to this cause is overwhelmingly important to the State.

The policy of the Libyan State regarding public projects planning is quite clear, where the emphasis on quality of projects and availability of services has overcome the size of financial allocations in the 1970's and 1980's. In the 1990's the availability and viability of funds for such projects became more apparent in the policy setting, this resulted in changes in planning strategies and approaches. The availability of public facilities was becoming scarcer and emphasis on completing projects with minimum cost became the State's trend in procuring public projects. This change affected the studied projects by awarding less experienced and cheap contractors and sub-contractors, but it had the classical reverse effect on projects outcome quality and eventually resulted in cost and time overruns.

Preliminary and planning studies in public projects aim at providing a detailed reflection of the State's policy, but in projects A and B there were neither comprehensiveness nor clarity of policy implementation plan, especially in project B where it is considered as a part of a State's general initiative to achieve a specific goal in providing affordable housing in the municipality.

2. Analytical Generalisation B: Problems related to technical and contractual documentation of the design and/or execution phases.

These problems are diverse, numerous and interrelated. By referring to the finding when we presented these problems, the size of the problems and various negative effects which arose therefore becomes evident. What emphasises the importance of this problem is the fact that all the client/consultant interviewees we interviewed in the three case studies considered these problems as major impediments in their projects procurement and construction.

The accuracy of documentation and the proper use of the provided information are paramount to prevent any misunderstandings during design and execution of the project. The contract documentations in the three projects (A, B & C) were very similar to each other due to the compulsory use of the State's Uniform Form of Contract and Conditions of Contract. Obviously there are some minor alterations

to every specific project, which sometimes cause contradictions in the contract. **The policy of restricting the form of public projects contracts made it hard to local public clients to embrace other procurement systems, which might have been more beneficial to the outcome of the project.**

It was evident when reviewing the client's archived design documents in all projects that there were neither changes nor modifications to present the projects as a mean of updating to the actual state of the project. **This lack of documentations and follow-ups caused contradictions between the drawings and the completed work, in other words the lack of *as-built* documentation.**

Linking the State's policy towards such practice will be indirect. **The lack of effective and competent State's body to review and assess systematically public projects documentations accuracy and relevance during all phases of the project have caused the complete overlooking of this problem.**

3. Analytical Generalisation C: Problems related to changes and modifications during design and execution

These problems represented one of the paramount difficulties which hindered the three case study projects execution. **The changes and modifications of major projects' components directly impacted on cost and time of the execution of these projects and ultimately the overall outcome.** According to the interviewed clients, consultants and the author's estimation, changes and modifications of the three projects contributed largely in the cost escalation of, 21.3% in project A, 18.5% in project B and 23% in project C. The significance and importance of this problem was emphasised even more when correspondences of clients and their consultants to the contractors revealed the continued concern of the public clients towards some approved and non-approved changes to projects' items.

In the light of such finding one has to question the public client's actions to prevent major changes and modifications of these projects. Local public authorities and clients are responsible for managing their projects hence the presence of many supervisory committees and departments in the municipality, but it appeared that these bodies are more concerned with the administrative side of these projects. Technical and project managerial aspects are usually left for their consultants either public or private. **This caused a serious detachment of control**

and therefore difficulties in management of the construction of local public projects.

4. Analytical Generalisation D: Problems related to the abilities of participating parties in design and execution of local public projects

The various shortcomings of projects' participating parties had a direct impact on the success of the projects hence the time and cost overruns. The lack of adequate ability of any party concerned with the project will have a negative impact on the performance of any construction project due to nature of the continues interaction of activates in planning, execution and operation, let alone the public sector management factor in such projects. As regards to the issue of procurement and management shortcomings in the ability of the public client, which is directly related to public policy in handling the problem, we found in the case study projects, there were neither systematic mention nor assessment of contractors and sub-contractors technical ability during neither of the projects' phases. The policy of the State in tackling incompetent contractors and even public clients lacks clarity and implementation conviction and effort from the part of the municipal responsible public bodies. There are no comprehensive updated guidelines to public projects in establishing a pre-qualification system prior to contract and a periodic follow-up to projects' parties performance during projects phases. We found little evidence of the public clients taking part in any State's initiative in implementing a specific policy tackling the proven inability of them selves or their contractors.

5. Analytical Generalisation E: Problems related to failure to select a suitable alternative for the projects and the sites

Any public project's success is largely dependant on the choice of the suitable and optimum project's alternative, this process of selecting the project should be envisaged in a detailed public accountability policy. The problem of not selecting the suitable project and site is important to the design, because the designer will be forced to design the project based on general assumptions concerning the local environment from the technical and social point of view.

A classic example of failure to select a suitable site to a construction project from the technical point of view is soil and terrain conditions of the site on which the project will be implemented. Therefore, the project will subsequently face, at the time of commencing execution, the probability that the soil structure of the site will be different from initial assumptions. This has potentially impeded progress of two of the case study projects (B and C) which gave rise to cost.

On the other hand, choice of projects and differentiation between alternatives is a paramount planning issue of any public policy. The policy of the State behind procuring public projects is as expected like many developing countries to be developmental. However the Libyan State has embarked in a construction industry enhancement and development goal, this has affected the policy formation and implementation where by emphasis on this goal overshadowed some of the public accountability criteria.

6. Analytical Generalisation F: Problems related to delays in disbursement of contractor's invoices

Delayed payments of contractor's invoices cause severe disturbance to the contractor and subsequently sub-contractors financial standing. It will therefore negatively affect progress and outcome of the project. Performance of contractors and even contracted consultants is dependant on the rewards of their works. Delay of contractors and others payments, means a corresponding delay in workers and employees wages. Productivity of workers and employees will drop as well as their ability to innovate.

Findings of the study of the three projects revealed a great deal of delay in payments from the part of the public client. The management of those clients have expressed concern about the State's contractor's payments strategies and attitude. In the interview we noticed a sense of unfairness to the contractors even if they have performed up to their expectation. The Libyan public clients are known to use payments as a pressure tool to press-on the progress and performance of their projects.

Furthermore, it seems that the State's policy towards payments is sensitive in relation to the status of the contractor. Libya has been through some difficult times in the 1990's nationally and internationally, this instability affected policies and the construction industry's is no exception. International contractors'

nationality is sensitive to their acquisition of payments, where by if a certain contractor's country of origin is not in line with the Libyan international politics, payments delays are likely to occur more often. This has been the case in project A where international contractors and sub-contractors had diverse nationalities.

8.3 Conclusion

This chapter reported, discussed and analysed the problems and obstacles, which cause impediments to the selected case study projects during the three levels and phases described in Chapter Six. This was achieved first through reviewing and studying documentations and correspondences of the projects and solicitation of the clients' and their consultants' viewpoints reflecting opinions of the public management of these projects in a form of a questionnaire and a semi-structured interview in the intra-case (Chapter Seven) analysis to form the base data for carrying out a cross-case study analysis. Also the various causes giving rise to these problems and consequential negative impacts on the outcome were discussed individually. At the end of this description and analysis, analytical generalisations arising from cross-case analysis were established to relate to the main research elements of *public policy, public construction procurement and public projects' outcome* and propositions drawn from the literature review and the case studies themselves.

Chapter Nine

Conclusions and Recommendations

Chapter Nine

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9.0 Introduction

This research was built on two main parts, the literature review of the three research elements (Chapter Two, Three and Four) and the case studies. The use of such approach has helped in organising the understanding and realisation of the research problem origins and extensions. This Chapter is a presentation of the objectives, propositions and the findings of the case studies implication in reaching these objectives and supporting or dismissing these propositions. This is followed by recommendation to policy makers in the areas of the elements of this research. (*Public Policy, Public sector construction procurement, Public sector construction projects outcome.*).

The results and findings which have been presented in the case studies intra and cross-case analysis in Chapter Seven and Eight, and the analytical generalisations of these findings are a major contributor in generating the conclusion and recommendations presented in this Chapter.

9.1 The Objectives of the Research

The broad objectives of this research were:

- To understand the policy-making process in general and in the context of the construction procurement in particular.
- To review the existing literature on construction procurement and the issue of policy implementation through procurement systems and its significance on the local construction projects.
- Characterise the Libyan local construction projects' criteria to generate an understanding of the effect of the State's policies.
- To reach an overall understanding of the linkage between the State's policy-making and implementation through construction procurement and its effects on the tangible and intangible outcomes of the local projects.

9.2 Reflections on research objectives and propositions

Through the study that has been carried out in this research we find a number of significant conclusions that are linked with an attempt to recommend possible areas of focus and maybe changes in the way that the Libyan State is carrying out its construction procurement in its public projects in the local context.

The research study was an exploratory and explanatory investigation in nature, by firstly carrying out a comprehensive review of the main elements of the phenomena of the effect of construction procurement policy on local public construction projects, which was carried out by breaking up the subject into the three following parts which also constituted three chapters (Two, Three and Four):

Research Element One: Understanding public policy and public policy-making.

Research Element Two: Public sector construction procurement.

Research element Three: Public sector construction projects outcome.

Secondly bringing about the Libyan context in the research was done by insertions of specific aspects of the Libyan construction environment along the line of explaining and understanding the above elements, and a separate Chapter on the Libyan construction environment before embarking on the case studies, which necessitated the use of multiple sources of data; *Projects Documentation Review, Questionnaires and Semi-structured interviews*. In doing this the objectives of evidencing the existence or non-existence of the general research propositions mentioned in Chapter One and reiterated later in Chapter Eight and by investigating the existing State's policy and practices of the construction of the local projects in Libya, and critically focus on the State's policy towards local construction procurement of projects, and investigating whether there are any policies dealing with this issue were satisfied. Also evaluating the current State's strategies concerning reaching the intended policy goals through construction procurement, and the effect on the outcome of these projects in terms of their success in reaching the intended developmental functional and political goals if any.

The following is a categorised conclusion and specific recommendations drawn from the literature review and case studies carried out in this thesis, which is presented under the aforementioned research elements of this research.

9.2.1 Research Element One: Understanding public policy and public policy-making in the context of construction procurement.

The Libyan State through the GPC meeting in 2003 stressed that any public projects' tender should encourage public and private stakeholders participation in the policy goal formation and implementation, and promote optimal use of national natural and human resources and jobs creation. The principle of using procurement policy to advance a range of social or economic objectives is not new. As discussed in Chapter Three, a number of countries have applied the collective procurement policy of the State to achieve national objectives namely the UK and South Africa.

With the expected State's purchases and contracting amounting to over 8 billions LD in the current regeneration of the Libya infrastructure, procurement in general and construction procurement in particular are amongst the most powerful socio-economic policy instruments available to policy makers, which was poorly used in all of the case studies carried out in this research as discussed in Chapter Seven and Eight. It is important that, in addition to promoting the type of efficiency which will enable the public departments to deliver the necessary quantity and quality of goods and national and local infrastructural services, procurement policy must be used to effectively challenge and transform existing public and private construction practices and to promote good practice in the emerging public enterprises and construction projects.

Procurement policy is a key instrument of any developmental State. Through opening the economical and legislative systems to new sellers and contractors and through the terms its sets in its contracts for construction, the State is able to use its procurement power as a lever with which to bring new companies into the mainstream of the new Libyan restructuring economy and promote ethical practices in national and local contracts and

industry standards. This can assist in pushing the economy onto an innovation led, high wage, standards-based growth path, rather than keeping it on its present stagnant path of low wages and low infrastructural construction quality.

In terms of the legal system, the State construction contracts and related services should be in accordance with a system which is Fair, Equitable, Transparent, Competitive and Cost effective. The Libyan procurement policy in general and construction procurement policy in particular should not be driven by price and completion time of the project alone, but that a range of other socio-economic factors should be taken into account for example public accountability in public projects and public involvement in policy making and implementing in terms of jobs creation and the use projects or any other specifically defined States' policy goals.

The successes of the Libyan public procurement policies like any other developmental State environments are dependant on the attainment of information on *what* the public really need, *how* to satisfy these needs and *why* did or did not these policies reach their goals. The goals and the outcome of construction procurement policies in public projects should be predefined explicitly before any policy implementation takes place. Critical Success Factors (CSF's) are the most used term in defining the outcome of projects, which should be incorporated in a detailed explanations and definitions in any attempt to define construction procurement policy goals in local public projects.

The public sector departments as a client to local construction projects can be helped to achieve State procurement policy intentions and goals by:

- a financial and audit regime which supports best practice, further encouraging movement away from short-termism that places lowest initial cost ahead of whole life performance;
- removing the divide between capital and revenue expenditure in local projects to help realise value for money as opposed to lowest price bids;
- linking State funding of construction projects to the application of State policies by continuous rethinking and assessment principles;

- audit processes attached to such policies to evaluate the extent to which value and whole life performance, are used as the basis of public construction procurement;
- providing a lead in the procurement of sustainable construction and emphasis on environmental aspects.

The public clients' capacity (discussed in Chapter Two in detail) in making procurement policy is restricted in many ways in the Libyan context, where by some may argue the use of the despotic logic in forcing State policies upon local State departments in making construction procurement policies in all public project, which may be true in some projects which have political and strategic significance to the State, which was envisaged in Case Study A, but one can not generalise on the whole of local projects. The logical implication of this is that despotic power should not be considered part of national or local public sector capacity. Despotic power can only be defined as the extent to which political leaders are unconstrained by non-State actors in taking decisions. This relates more to the political than the administrative and management realm of public projects, and does not therefore come within the focus of this research.

The Libyan State should endeavour to make its construction procurement policy aimed at activities to achieve best value for money in the expenditure of public funds while being fair, ethical and transparent. In achieving this objective, the State has to set the responsibilities and standards of behaviour expected of the parties undertaking construction procurement activities in public projects by establishing a general Code of Practice to all projects, with the inclusion of spaces to accommodate special projects, which may hold strategic or political significance to the State. This strategy should be supplemented by calls on other industry stakeholders, such as employer associations, industry associations, social influential parties (e.g. Clans) and trade unions, to support and uphold this Code of Practice.

9.2.2 Research Element Two: Public sector construction procurement.

Construction projects are often complex with potential for cost and time overruns or the finished building performing less well than planned. To minimise such risks, the public

client should select the procurement strategy which in other means a contract strategy to match the objectives of the project in terms of the State definition of the preferred outcome. These must clearly be established and prioritised before any design or other work begins. The client must decide the relative importance of the main types of criteria envisaged in time, cost and performance.

The choice of the method of procurement used in Libya is influenced by several factors, which include size and nature of its projects, climatic and demographic attributes within and outside the construction industry. This does not in any way exclude the influence of the State as a policy maker, where by the existence of either clear (Case Study B) or blurred policy (Case Study A and C) in local construction projects in Libya has affected these projects in many ways when outcome of the project is assessed.

The Libyan public clients rely solely on the State policy to chose and differentiate between the procurement systems by blindly following contractual State regulations. The general policy of any State is the boundaries of any decisions and actions taken by any public organisation, and this was also applied to the procurement of the case study projects.

In identifying the most appropriate procurement strategy in the construction of local public projects in the local Libyan context to achieve the optimal balance of time, cost and quality, the following criteria should be considered:

- The effective and economic incorporation of local construction resources in the selected procurement system and path.
- The need for the public and private contractor to contribute to the design as well as the construction process in the earliest stages and phases of any public project.
- The establishment of a clear and reliable procurement incentives to make production cost savings and their subsequent control to achieve public money accountability and value-for-money.
- Continuity of dependant public works contracting under a systematic and organised manner.

- The assessment of the whole political, economical, technical and environmental risk spectrum of the public project's surrounding environment and who should bear it, by a strategic risk transfer management.
- The careful consideration of public's social issues and requirements in early stages of contracting public projects.
- Insuring any States' policy goals definitions and clarity before embarking on incorporating any aspects of policy implementation in the procurement system and path of the public projects.

9.2.3 Research element Three: Public sector construction projects outcome

To provide an overall assessment of any Libyan public construction project's outcome a criterion which takes all economical, political, social and environmental aspects of the public client should be implemented.

Once again goals are shown to be of primary importance in the public arena. It is essential to determine which goals are applicable and that the definitions of those goals are in order that appropriate measures may be employed. The variability and individuality of goal identification, definition, measurement and evaluation in the Libyan public construction projects suggests that project Critical Success Factors (CSFs) are likely to be highly individual and project-specific; a search for generally applicable CSFs may be misplaced.

The findings of the case studies carried out in this study supported the existence of different goals in every project, where by in case study B State policy goals were distinguishable from the outset of the project. The use of the procurement power of the State helped in implementing the Housing Initiative to provide affordable housing. But on the other hand goals and criteria of the project outcome in case study A and C do not exceed the technical and functional purposes of the projects, or at least have not been explicitly defined and highlighted in any of the documentations of these projects.

The reflection of public projects' intended outcome in project requirements and specifications is paramount in achieving policy goals. The connection of the State policy

goals to public projects' outcome was rarely mentioned in either of the case studies. This may not be generalised in all Libyan public construction projects, but one can not escape the fact that if such issue was not considered in a 'strategic' project like case study A and a 'clearly' defined policy project like case study B, then it is difficult to imagine how it was considered in other lesser significance to the State projects like case study C.

Public projects performance and outcome management is important in achieving the Libyan States' policies in the construction industry in general and local projects in particular, and it concerns with tracking the success of a policy in the public construction project in achieving its objectives and in securing the intended and expected benefits. For projects' appraisal and evaluation purposes, it should involve the systematic collection of data relating to the financial management and reflection of the policy in the outcome of projects in terms of the impacts on all aspects of the economical, social and political setting of the project and the industry during and after implementation.

This should in theory provide an essential source of information, indicating the extent to which objectives are being achieved, giving an early warning of potential problems and of the possible need to adapt the policy in the construction project to ensure success of these public projects in the national and local context.

Monitoring of projects' outcome should also provide information for the State and public departments' evaluation stage. To be fully effective, plans for such monitoring must form part of the initial planning of a State policy to be reflected in public projects outcome.

9.3 Specific Recommendations to the Libyan Public Construction Procurement Policy

The following are specific recommendations of this study which can be seen as an attempt to highlight areas of concerns which may help in achieving enhancements of the Libyan construction procurement policy in the national and the local context.

9.3.1 Transparency in the Libyan construction procurement policy

The Libyan State has to adopt a policy of improved transparency of information on public construction contracts awarded to national and international contractors through a thorough and careful consideration of all procurement paths available. The policy should be consistent with an open State policy and accountability for the end-user and the public funding. It should support the overall State procurement policy by improving market information for all potential contractors and sub-contractors, and promote competition and value for money. This policy will assist the construction industry to monitor the effectiveness of measures implemented to assess the outcome of public projects, which can be one of the Secretariat of Monitoring and Follow-up (SMF) activities in monitoring the policy implementation agenda .

In a joint WTO-World Bank regional workshop on procurement reforms and transparency in public procurement for Anglophone African countries (2003), they agreed that,

- transparency is needed to foster competition, competition is seen as the best way to get value for money;
- transparency fosters the confidence of the taxpayer in the public procurement institutions and its
- the most powerful way to fight corruption (thrives in the dark)

In a WTO discussion group on Government procurement transparency (2003) and a CICA, Confederation of International Contractors' Associations (2003) they pointed out that while the major developed countries remain determined in their push to bring government procurement under WTO discipline, developing countries are urging caution in approaching what is one of the few policy instruments available to them to achieve socioeconomic goals.

Libya has not yet been accepted as a member of WTO which in our view will be paramount to reform in the State procurement policy in general and the construction procurement in particular. Transparency of the construction procurement should be able to promote national and local harmonisation of public procurement laws and regulations

and better access to public procurement markets, which can be utilised in achieving policy goals.

The improvement of national public procurement systems through more transparent regulations and procedures will increase professionalism and reduced opportunities for corruption; and enhance the capacities of the local public departments in dealing with national public procurement systems to take on the responsibility of including full accountability and to carry out more cost-effective procurement systems and paths related to infrastructure projects in the local level.

9.3.2 Enhancing the communication process in public construction procurement policy making:

A gap exists between the dissemination of policy output through the outcome of public construction projects and its uptake by policy makers, this often results in policy outputs not being used effectively to precipitate in policy change. Consequently, research in the outcome of the construction projects, which is often designed to address policy questions, often fails to transfer messages to the policy-making community in Libya. Conversely, policy makers are often not aware of the availability of policy goals achievement progress measures at the end-user's end, which results in facing difficulties in using the outputs of such research in their current format of policy targeting general or specific goals through construction procurement. Furthermore, the politics involved in policy-making decisions may limit the extent to which project outcomes as an output are incorporated into policy development.

Although this gap has been identified through the case studies carried out in this research, little published work has identified the difficulties or investigated strategies for effective communication between the Libyan policy-maker/s and the public construction industry in the national and local levels alike.

In the light of such identification communication of policy goals achievements and the policy making system in Libya, there is an urgent need to bridge this gap. The presence of regulated and systematic measures and tools in probing the public construction projects in Libya will be a priceless asset to policy-maker/s to have a greater insight of

the most contemporary issues which arise in the day-to-day procurement of public construction projects. This may be done by establishing national and local Key Performance Indicators for the Libyan construction procurement, following the footsteps of the Constructing Excellence initiative, funded by the Department of Trade and Industry in the UK, which aims at influencing the Government in the formulation of their policy, by working with key stakeholder groups and by being the catalyst for the implementation of their policies. This does not in any way suggest that free spontaneous and transparent public criticism have no place in our suggestion, but on the contrary, it should be encouraged beside formal and systematic mechanisms and means of communications between the local public construction projects' participating parties and the political and governing system in Libya.

A protocol for the effective dissemination of productive construction research to policy makers is one of the means which can enhance the situation. The protocol should be able to define the gap between public construction projects' management in Libya and their uptake by reproductive policy makers, and should also be able to describe some of the barriers experienced in the dissemination of policy related information in the procurement stage. In general terms we suggest the establishment of national strategies for improving the dissemination of public projects outcomes to productive policy maker/s.

9.3.3 The need for a comprehensive State guidelines and codes of practice in procuring public construction projects:

To meet the intent of any State procurement policy there should be comprehensive guidelines which integrate these policy goals into manuals, procedures and codes of practice to support the construction of public projects and services that minimises any potential negative environmental, economic and social impacts of the any of the Libyan State construction procurement policies. These guidelines should establish any other specific requirements and procedures consistent with the principles and guidelines of a predefined sustainable development and State procurement regulations and laws.

A code of practice in procuring public construction should be established by the statement of the principles that the public construction industry wants to apply to a range of procedures from project conception and initiation, through tendering and construction activity, to project completion. The code should be initiated by the State's involving all expected participating parties in the building and construction industry as part of the process of industry development. It should be used as a tool to assist the industry to be nationally policy goal oriented by strengthening the best practices that already exist and by introducing new best practices which encompass policy implementation mechanisms and approaches. The code should also support the introduction of public assets management policies by the State local public departments and the achievement of these delivery standards by the private sector. These principles are to be applied through these implementation guidelines. The implementation guidelines should contain the procedures that State public departments (national/local) and the private sector will follow to implement the code. It also should contain the schedules that nominate industry best practice and the mechanisms to introduce them into State public construction procurement. These schedules must be amended as appropriate to ensure that the practices continue to reflect current industry best practice in achieving policy goals.

9.3.4 The need for vocational education and training, relating to construction procurement:

Unlike many other industries, the construction industry involves people working in a dynamic and ever-changing physical work environment, where they routinely and frequently move from project to project. The overwhelming majority of the public construction industry's workforce is employed by contractors and sub-contractors who conduct work on many different sites managed by many different principal State departments and clients, and often within different municipalities and localities. Because this is the way the Libyan public construction industry operates, the instruction and training necessary for people responsible in procuring these projects to be able to perform their work according to the guidelines and codes of practice set by the State without risking not achieving policy goals is paramount to the success of any public policy.

Increased knowledge and skills in the area of State construction procurement and contract management will lead to improved value for money, more consistent application of State construction procurement policies and procedures, greater supplier confidence and a more strategic approach to procurement.

Training and educational strategies and actions should be targeting the public managers involved in the construction procurement process in the public departments to further improve procurement and contract management skills in accordance of broad and specific policies by:

- Identifying training needs and demands for staff involved in public construction procurement and contract management.
- Raising the awareness of the importance of the role of State construction procurement as a policy tool in achieving change.
- Raising the awareness of the soft issues of cultural and social aspects of public procurement.
- Agreeing on an appropriate model for procurement training delivery in public clients working environment.
- The identification of specific competencies for building a sound public construction procurement policy to drive for change by developing a competency based training program to meet the training needs of State bodies' construction procurement staff.
- In the development and delivery of training and vocational education, it will be necessary to ensure that the training mechanisms meet the needs of the State as a client and also that they are presented by suitably qualified and experienced trainers; meet short term and long term public demand; can be modified to meet changing needs in case of policy change; are widely promoted across the public departments and attract appropriate public employees.
- Monitoring the effectiveness of the vocational and educational training, the performance of training providers, and emerging training needs to ensure that the training continues to meet its objectives of promoting construction procurement as an effective policy tool.

9.4 Further research

While some of the findings in this study are specific, some are imprecise and therefore deserve further investigation. The proposed areas have not been studied in the present research, as they have evolved either as a result of the case studies findings or other conflicting official State information reports on the Libyan construction industry.

1. The bureaucratic State's framework in Libya should be investigated, as it is in the author's view the single most important factor in contributing to lack of clarity in policy making and implementation and further more the overruns in public construction projects, and hence to projects' failures. Such a study would help determine which particular State statutory activities are not necessary in procuring these projects, and recommend ways of reforming the present procurement process and construction practices in the Libyan construction environment.
2. In the three case studies, concerns about monitoring policy implementation in public projects were raised through the projects documentation review and interviews discussed in Chapters Seven and Eight. This study provides no evidence in support of the existence of any systematic and organised mechanism of such policy implementation monitoring in Libya, although The General Monitoring and Follow-up Secretariat and its branches in the municipalities are the State's body responsible. Further study should therefore help to establish the nature of the monitoring, if in fact it does take place, and its limitations. The details of how monitoring is been carried out in other successful rich developing countries can provide a basis for comparison and suggest what precise lessons should be learned in implementing good construction procurement polices.
3. Results of the case study analysis suggest that there are differences between the perceptions of the construction procurement and contract strategies and arrangements in Libyan public projects management. Awareness of the procurement policy term was lacking in the understanding and the role it plays in construction projects, where by engineering technical issues are emphasised more

by the management. Further study in the management of public construction projects and their awareness of the potential and importance of the State procurement power is needed to establish a line of action in ensuring these policies are implemented correctly and optimum outcomes are reached to satisfy public needs.

4. The literature review in this study suggests that cultural, social, political and economical factors contribute in policy making in general and in theory should play a major part in making public construction procurement policy, but the Libyan policy making process is unique in many ways, where by the Libyan political structure discussed in Chapter Five affect the way that policies are made in the traditional way. The involvement of the people in the decision making process and their knowledge and understanding of the macro setting of the State should be investigated. Further research is needed in establishing the extent of the public involvement and the effect of there knowledge on the construction procurement policy.
5. Other future research can be extracted from many aspects of this study but one has to realise the importance and relevance of these aspects. The use of the analytical generalisations established in Chapter Eight may help in highlighting these aspects. In other words they can serve as propositions for future work in the issue of construction procurement policy in Libya.

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Appendix A



Municipal Construction Project Background Questionnaire

Please fill in the required information to include:

- Factual construction-management data based on available documentation of the project.
- Evidenced data by referring to formal documentation only.

Please fill the attached sheets for the project in your public department that was executed in accordance with the above data requirements.

If you would like to state information or comments that is not provided for in this questionnaire, please include on the sheets attached to the back of this questionnaire.

(1) General:

Project Name

Total Value (L.D.)

Project Start Date

Corresponding to

Project Completion Date

Corresponding to

PLEASE FILL IN THE BLANKS AS APPLICABLE

(2) Building Procurement Systems:

- a) A specialised management firm was contracted to manage all phases of the project.
- b) A general Contractor was contracted to design and construct project work.
- c) A specialised engineering office was contracted to design the project and a specialised management company was contracted to manage the construction phase.
- d) An engineering office was contracted to design the project and another engineering office was contracted to supervise construction.
- e) One engineering office was contracted to design and supervise works through:
- a single contract two separate contracts
- f) *Others (please state)*

(3) Owner's Staff:

Owner's staff consisted of:

- a) Staff on site, that reports directly to the central head office in the public department
- b) Staff at the head office only.
- c) Staff on site only.
- d) There was no Owner's staff.

(4) Participating Parties:

Parties, which have participated in the project, are:

- Owner
- Designer
- Management firm that managed all phases of the project
- Supervision consultant
- Main Contractor
- Construction Contractor
- Sub-contractors
- Management firm that managed the construction phase
- Public comities or action groups (*Pleas, name them if possible:*).....
- Other State influential parties
- Others (please state)*

(5) Owner's Staff Assignments in the Project:

5.1 Planning and Appraisal

- Management supervision
- Technical supervision
- Technical & management supervision

5.2 Design:

- | | |
|---|--|
| <input type="checkbox"/> Management supervision | <input type="checkbox"/> Technical supervision |
| <input type="checkbox"/> Technical & management supervision | |

5.3 Construction:

- | | |
|---|--|
| <input type="checkbox"/> Management supervision | <input type="checkbox"/> Technical supervision |
| <input type="checkbox"/> Technical & management supervision | |

(6) Contracts Documents:

6.1 Design

Design contracts documents consisted of:

- | | |
|--|---|
| <input type="checkbox"/> Instructions to bidders | <input type="checkbox"/> General conditions |
| <input type="checkbox"/> Special conditions | <input type="checkbox"/> Form of agreement |
| <input type="checkbox"/> Scope of work | <input type="checkbox"/> Other documents |

6.2 Supervision

Supervision of the construction works documents consists of:

- | | |
|--|---|
| <input type="checkbox"/> Instructions to bidders | <input type="checkbox"/> General conditions |
| <input type="checkbox"/> Special conditions | <input type="checkbox"/> Form of agreement |
| <input type="checkbox"/> Scope of work | <input type="checkbox"/> Other documents |

6.3 Execution of the work

Execution contracts documents consisted of:

- | | |
|---|---|
| <input type="checkbox"/> Instruction to bidders | <input type="checkbox"/> General conditions |
| <input type="checkbox"/> Special conditions | <input type="checkbox"/> Form of agreement |
| <input type="checkbox"/> Drawings | <input type="checkbox"/> Specifications |
| <input type="checkbox"/> Bills of quantities | <input type="checkbox"/> Method statements |
| <input type="checkbox"/> Other documents | |

(7) Contracts Preparation:

7.1 Design

Design contract was prepared by:

- | | |
|---|--|
| <input type="checkbox"/> Owner | <input type="checkbox"/> The management firm managed all phases (if any) |
| <input type="checkbox"/> Other government departments | <input type="checkbox"/> Main Contractor (if any) |
| <input type="checkbox"/> Others (please state) | |

7.2 Supervision:

Supervision contract was prepared by:

- | | |
|---|--|
| <input type="checkbox"/> Owner | <input type="checkbox"/> The management firm managed all phases (if any) |
| <input type="checkbox"/> Other government departments | <input type="checkbox"/> Main Contractor (if any) |
| <input type="checkbox"/> The Designer | <input type="checkbox"/> Others (please state) |

7.3 Execution:

Execution contract was prepared by:

- | | |
|---|--|
| <input type="checkbox"/> The Owner | <input type="checkbox"/> Management firm managed all phases (if any) |
| <input type="checkbox"/> Other Government departments | <input type="checkbox"/> Main Contractor |
| <input type="checkbox"/> The Supervision consultant | <input type="checkbox"/> The Designer |
| <input type="checkbox"/> Others (please state) | |

(8) Tender Procedures:

8.1 Design

The tender procedures for design works was performed under supervision of:

- | | |
|---|--|
| <input type="checkbox"/> The Owner | <input type="checkbox"/> The management firm managed all phases (if any) |
| <input type="checkbox"/> Other government departments | <input type="checkbox"/> Others (please state) |

8.2 Supervision

The tender procedures for supervision works was performed under the supervision of:

- | | |
|---------------------------------------|--|
| <input type="checkbox"/> The Owner | <input type="checkbox"/> The management firm managed all phases (if any) |
| <input type="checkbox"/> The Designer | <input type="checkbox"/> Others (please state) |

8.3 Execution

The tender procedures for execution works was performed under supervision, of:

- | | |
|---------------------------------------|--|
| <input type="checkbox"/> The Owner | <input type="checkbox"/> The management firm managed all phases (if any) |
| <input type="checkbox"/> The Designer | <input type="checkbox"/> Others (please state) |

(9) Tendering Type:

9.1 Design

The design tender was:

- | | | |
|--|---|---------------------------------|
| <input type="checkbox"/> Open tender | <input type="checkbox"/> Direct negotiation | <input type="checkbox"/> Others |
| <input type="checkbox"/> Selected tender | <input type="checkbox"/> Direct assignment | (please state) |

9.2 Supervision

The super vision tender was:

- | | | |
|--|---|---------------------------------|
| <input type="checkbox"/> Open tender | <input type="checkbox"/> Direct negotiation | <input type="checkbox"/> Others |
| <input type="checkbox"/> Selected tender | <input type="checkbox"/> Direct assignment | (please state) |

9.3 Execution

The execution tender was:

- | | | |
|--|---|---------------------------------|
| <input type="checkbox"/> Open tender | <input type="checkbox"/> Direct negotiation | <input type="checkbox"/> Others |
| <input type="checkbox"/> Selected tender | <input type="checkbox"/> Direct assignment | (please state) |

(10) Contracts Type:

10.1 Design:

- Turnkey or package deal contract
- Target and cost reimbursable contract
- Fee contracting
- Management contracting
- Lump-sum contract
- Others (please state)

10.2 Supervision:

- Lump-sum contract Fee contracting
 Others (please state)

10.3 Execution

- Turnkey or package deal contract
 Target and cost reimbursable contract
 Fee contracting
 Management contracting
 Lump-sum contract
 Others (please state)

(11) Relations:

11.1 Contractual Relations

11.1.1 The following parties related contractually to the Owner (The public department):

- Management firm managing all the phases of the project, (If any)
 Main Contractor
 The Sub-contractor
 The supervision consultant
 The Designer
 Management firm managed the construction phase (if any)
 Public action groups
 Others (please state)

11.1.2 In case of using the project procurement system mentioned in item (b) of Section (2) in the Building Procurement Systems

The following parties related contractually to the main Contractor:

- The Designer The supervision consultant (if any)
 Sub-contractors Others (please state)

11.2 Management Relations

Please mark the following data from (11.2.1) to (11.2.4) according to the used project procurement system mentioned in (Section 2):

11.2.1 The Procurement System (a):

The following parties related managerially to the managed firm managed all phases.

- | | |
|--|---|
| <input type="checkbox"/> The Designer | <input type="checkbox"/> The supervision consultant |
| <input type="checkbox"/> The construction Contractor | <input type="checkbox"/> The sub-contractor |
| <input type="checkbox"/> Others (please state) | |

11.2.2 The Procurement System (b):

The following parties related managerially to the main Contractor:

- | | |
|---|---|
| <input type="checkbox"/> The Designer | <input type="checkbox"/> The supervision consultant |
| <input type="checkbox"/> The sub-contractor | <input type="checkbox"/> Others |

11.2.3 The Procurement System (c):

The following parties related managerially to the Owners:

- | | |
|--|--|
| <input type="checkbox"/> The Designer | <input type="checkbox"/> The management firm managed the execution phase |
| <input type="checkbox"/> Others (please state) | |

11.2.4 The Procurement Systems (d) and (e):

11.2.4.1 The following parties related managerially to the Owner:

- | | |
|--|--|
| <input type="checkbox"/> The Designer | <input type="checkbox"/> The supervision consultant |
| <input type="checkbox"/> The construction Contractor | <input type="checkbox"/> Others (please state) |

11.2.4.2 The construction Contractor related managerially to the supervision consultant.

11.3 Sub-contractors:

The sub-contractors related to the construction Contractor:

- | | |
|--|---------------------------------------|
| <input type="checkbox"/> Contractually | <input type="checkbox"/> Managerially |
|--|---------------------------------------|

(12) Project Cost:

- Project was completed at contract value.
- Project was completed at a cost higher than contract value.
- Project was completed at a cost lower than contract value.

(13) Project Term:

Was project completed within scheduled contract period?

- Yes No

• *If the answer is no, please reply to paragraphs 13.1 and 13.2:*

13.1 Estimated period of delay is months -----

13.2 Causes of delay were:

- Contractor's poor technical abilities.
- Contractor's poor management abilities.
- Contractor's poor financial abilities.
- Incomplete and incorrect contract documents.
- Design complexity.
- Changes and modifications
- Inaccuracy of scheduled time estimation.
- Delay in disbursement of Contractor's entitlement.
- Client's lengthy administrative procedures and delay in decision making on requirements/Lack of an effective communications
- Poor technical management supervision by Owner's staff
- Poor technical/management abilities of the consultant.
- Poor abilities of sub-contractors.
- Weather conditions
- Failure to select a suitable site.
- Unforeseen conditions.
- Interferences form other public departments
- Interferences of other influential State parties

Others, please explain:-----

Other Overall Comments:

Department that filled this questionnaire:
Secretariat: Municipality.....
Date: Corresponding to:

The Management Semi-structured Interview



I. General Municipal Construction Project Information

1) Project Name:

 <hr/>

2) Project Type:

Which of the following classifications do you consider describes the project main function?

Agriculture	<input type="checkbox"/>	Industrial	<input type="checkbox"/>
Communication	<input type="checkbox"/>	Interior Design	<input type="checkbox"/>
Culture / Heritage	<input type="checkbox"/>	Landscape	<input type="checkbox"/>
Civil Defence	<input type="checkbox"/>	Offices	<input type="checkbox"/>
Education	<input type="checkbox"/>	Religious	<input type="checkbox"/>
Entertainment	<input type="checkbox"/>	Residential	<input type="checkbox"/>
Health	<input type="checkbox"/>	Retail	<input type="checkbox"/>
Historic Building	<input type="checkbox"/>	Sport & Recreation	<input type="checkbox"/>

(Tick as many categories as are appropriate. Other classification please specify below)

Others: <hr/>

3) Project Dates:

Project Planning, Appraisal and Tendering:

Project Scheduled Start Date:	<input type="text"/>
-------------------------------	----------------------

Project Scheduled End Date:	<input type="text"/>
-----------------------------	----------------------

Project Actual Start Date:	<input type="text"/>
----------------------------	----------------------

Project Actual End Date:	<input type="text"/>
--------------------------	----------------------

Project Design:

Project Scheduled Start Date:	
-------------------------------	--

Project Scheduled End Date:	
-----------------------------	--

Project Actual Start Date:	
----------------------------	--

Project Actual End Date:	
--------------------------	--

Project Construction:

Project Scheduled Start Date:	
-------------------------------	--

Project Scheduled End Date:	
-----------------------------	--

Project Actual Start Date:	
----------------------------	--

Project Actual End Date:	
--------------------------	--

4) Project Participating Parties:

Please fill in the information in the boxes if applicable to the Project.

Owner:

Designer:	Nationality

Management firm that managed all phases of the Project:	Nationality

Supervision Consultant:	Nationality

Main Contractor:	Nationality

Construction Contractor:	Nationality

Sub-contractors:	Nationality

Management firm that managed the construction phase:	Nationality

Public Comities or action groups:	Nationality

Other State influential parties:	Nationality

Others:	Nationality

5) Project Finance:

Projects Cost:	L.D.	U.S.D. (\$)	G.B.P. (£)

Note: Currency exchange is at the date of the last project payment.

II. Project Outcome

Please place a tick, on your chosen priority rank, in the grey shaded box.

In case of not knowing please leave the boxes blank.

In case of declining to answer please make note at the end of the questionnaire.

1) Project Time-scale	<i>Yes</i>	<i>No</i>	<i>Partly</i>
Was the time scale allocated for project <u>appraisal</u> and <u>planning</u> sufficient to this particular project?			
Was the time scale allocated for project <u>design</u> sufficient to this particular project?			
Was the time scale allocated for project <u>construction</u> sufficient to this particular project?			

2) Project Finance	<i>Yes</i>	<i>No</i>	<i>Partly</i>
Was the funding guaranteed at the time of appraising the project?			
Was the funding part of the department's yearly budget?			
Do you think that the funding allocated for the project was sufficient?			
Are you satisfied by the State funding mechanism of the project?			

3) Project Tendering	<i>Yes</i>	<i>No</i>	<i>Partly</i>
Were there any State requirements for the tender types and procedures for the project?			
Were you satisfied by the tendering procedure of the project?			
Were you satisfied by the type of tendering used in the project?			
Do you think that the project was over priced by the bidding Contractors?			
Was the main construction Contractor chosen on the lowest bid concept? If yes, do you think it was appropriate?			
Was there any tender requirements for pre-qualifications of bidding Contractors? If yes, do you think that it is necessary to have such requirements?			

4) Project Construction	Yes	No	Partly
Do you think that the selected main construction Contractor was qualified enough for the project?			
Were there any delays in payments to the Contractor?			
If there were any delays in payments, did it effect the performance of the Contractor?			
Do you think that the Contractor delivered the promised project construction quality?			
Was the Owner directly involved in the supervision of constructing the project?			
Do you think that the level of involvement had a positive effect on the project?			
Were there any Owner-Contractor disputes during the construction period?			
If yes, do you think that they had a negative effect on the project?			
Were there any interferences by other parties (not included in the contract) during the supervision of construction?			
If there were any, did those interferences affect the construction in a negative way?			

5) Project Completion and Handover	Yes	No	Partly
Was the preliminary handover on time?			
<i>If not, do you think that it was a result of:</i>			
- unrealistic scheduling?			
- delays in payments?			
- negative interferences of other parties?			
- changes and modification?			
- Contractors incompetence?			
- supervision and approving delays?			
- design suitability and failures?			
- unforeseeable construction risks?			
- access problems?			
- sensitivity of the project?			
- lack of communication between the parties involved in the project?			
- lack of Owner's incentives?			
Do you think that the retention period was appropriate for the project?			
Do you think that, the completed project was the best end result possible?			
Do you think that the end user of the project will be satisfied by the quality?			

III. Procurement Selection Criteria

This part requires the respondent to select the criterion aspects which were considered in selecting the procurement system of the project.

Note:

A definition of the criterion aspect is provided with every question.

<p>1) Was construction speed considered in the selection criteria? <i>(Speed of a construction project is in the sense of early completion, i.e. earlier than it would otherwise be.)</i></p> <p><u>If yes</u>, what was the project speed considered:</p> <table style="margin-left: 20px; border: none;"> <tr> <td style="padding-right: 20px;">High speed</td> <td style="border: 1px solid black; width: 40px; height: 20px;"></td> </tr> <tr> <td>Medium speed</td> <td style="border: 1px solid black; width: 40px; height: 20px;"></td> </tr> <tr> <td>Low speed</td> <td style="border: 1px solid black; width: 40px; height: 20px;"></td> </tr> </table>	High speed		Medium speed		Low speed		<table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <thead> <tr> <th style="padding: 2px 5px;">Yes</th> <th style="padding: 2px 5px;">No</th> </tr> </thead> <tbody> <tr> <td style="width: 30px; height: 20px;"></td> <td style="width: 30px; height: 20px;"></td> </tr> </tbody> </table>	Yes	No		
High speed											
Medium speed											
Low speed											
Yes	No										
<p>2) Was project flexibility considered in the selection criteria? <i>(Flexibility is the ability to accommodate design changes or alteration during the construction phase.)</i></p> <p><u>If yes</u>, what was the project flexibility considered:</p> <table style="margin-left: 20px; border: none;"> <tr> <td style="padding-right: 20px;">High flexibility</td> <td style="border: 1px solid black; width: 40px; height: 20px;"></td> </tr> <tr> <td>Medium flexibility</td> <td style="border: 1px solid black; width: 40px; height: 20px;"></td> </tr> <tr> <td>Low flexibility</td> <td style="border: 1px solid black; width: 40px; height: 20px;"></td> </tr> </table>	High flexibility		Medium flexibility		Low flexibility		<table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <thead> <tr> <th style="padding: 2px 5px;">Yes</th> <th style="padding: 2px 5px;">No</th> </tr> </thead> <tbody> <tr> <td style="width: 30px; height: 20px;"></td> <td style="width: 30px; height: 20px;"></td> </tr> </tbody> </table>	Yes	No		
High flexibility											
Medium flexibility											
Low flexibility											
Yes	No										
<p>3) Was project client responsibility considered in the selection criteria? <i>(Responsibility reflects the degree the client wishes one single organisation to be responsible for the project.)</i></p> <p><u>If yes</u>, what was the project client responsibility considered:</p> <table style="margin-left: 20px; border: none;"> <tr> <td style="padding-right: 20px;">High responsibility</td> <td style="border: 1px solid black; width: 40px; height: 20px;"></td> </tr> <tr> <td>Medium responsibility</td> <td style="border: 1px solid black; width: 40px; height: 20px;"></td> </tr> <tr> <td>Low responsibility</td> <td style="border: 1px solid black; width: 40px; height: 20px;"></td> </tr> </table>	High responsibility		Medium responsibility		Low responsibility		<table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <thead> <tr> <th style="padding: 2px 5px;">Yes</th> <th style="padding: 2px 5px;">No</th> </tr> </thead> <tbody> <tr> <td style="width: 30px; height: 20px;"></td> <td style="width: 30px; height: 20px;"></td> </tr> </tbody> </table>	Yes	No		
High responsibility											
Medium responsibility											
Low responsibility											
Yes	No										
<p>4) Was project complexity considered in the selection criteria? <i>(Complexity is concerned about the need that the client want his final project to be highly specialised, technologically advanced of highly serviced.)</i></p> <p><u>If yes</u>, what was the project complexity considered:</p> <table style="margin-left: 20px; border: none;"> <tr> <td style="padding-right: 20px;">High complexity</td> <td style="border: 1px solid black; width: 40px; height: 20px;"></td> </tr> <tr> <td>Medium complexity</td> <td style="border: 1px solid black; width: 40px; height: 20px;"></td> </tr> <tr> <td>Low complexity</td> <td style="border: 1px solid black; width: 40px; height: 20px;"></td> </tr> </table>	High complexity		Medium complexity		Low complexity		<table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <thead> <tr> <th style="padding: 2px 5px;">Yes</th> <th style="padding: 2px 5px;">No</th> </tr> </thead> <tbody> <tr> <td style="width: 30px; height: 20px;"></td> <td style="width: 30px; height: 20px;"></td> </tr> </tbody> </table>	Yes	No		
High complexity											
Medium complexity											
Low complexity											
Yes	No										

5) Was project construction risk allocation considered in the selection criteria?

(Construction risk allocation reflects the degree the client wishes to transfer the risk of cost and time overruns to other parties.)

If yes, what was the project risk allocation considered:

- High risk allocation
- Medium risk allocation
- Low risk allocation

Yes	No
<input type="checkbox"/>	<input type="checkbox"/>

6) Was project price competition considered in the selection criteria?

(Price competition covers such issues as value for money, maintenance costs and competitive tendering. Essentially, the price competition level depends on the amount of financial savings that might result when carrying out competitive tendering)

If yes, what was the project price competition level considered:

- High price competition
- Medium price competition
- Low price competition

Yes	No
<input type="checkbox"/>	<input type="checkbox"/>

7) Was project elements of quality considered in the selection criteria?

(Elements quality covers the quality of material, workmanship and design concept)

If yes, what was the project elements quality considered:

- Prestige material quality
- Good material quality
- Basic material quality

- Prestige workmanship quality
- Good workmanship quality
- Basic workmanship quality

- Prestige design concept quality
- Good design concept quality
- Basic design concept quality

Yes	No
<input type="checkbox"/>	<input type="checkbox"/>

8) Was public accountability considered in the selection criteria?

(Public accountability is the careful consideration of the social, economical, political, environmental and functional requirements of the end user)

- High public accountability
- Moderate public accountability
- Low public accountability
- Ignored public accountability

Yes	No
<input type="checkbox"/>	<input type="checkbox"/>

IV. State Public Policy and Procurement

These are general questions aimed at exploring the respondent's perspective on public policy and procurement.

Please answer the questions by ticking the appropriate answer, reflecting the specific construction project you managed.

1) Which of the following definitions you think is appropriate in defining the State public policy in Libya:

A set of interrelated decisions taken by the **political leadership** concerning the selection of goals and the means of achieving them within a specified situation where these decisions should, in principal, be within the power of these actors to achieve.

A set of interrelated decisions taken by the **people** concerning the selection of goals and the means of achieving them within a specified situation where these decisions should, in principal, be within the power of the people to achieve.

A set of interrelated decisions taken by the **public departments** concerning the selection of goals and the means of achieving them within a specified situation where these decisions should, in principal, be within the power of these public departments to achieve.

None of the above. **(Explain)**

2) Was there any clearly defined State policy changes or modifications during the conception, construction or completion of the project?

Yes* No

* If yes please tick one of the below:

- Economical Policy
- Social Policy
- Industrial Policy
- Labour Policy
- Performance Policy
- Political-goal Policy
- Environmental Policy

Other Policies **(Explain)**

3) If there were a specific policy during the conception, construction or completion of the project, which of the following tools were used to ensure the implementation of this policy?

- Legislations
- Codes of conduct
- Recommendations
- Advice

Others (**Explain**)

4) To what extent you think that the policy implementation tools were been followed in the project?

- Strictly followed
- Loosely followed
- Ignored

5) To what extent you think that the policy goals were been achieved in the project?

- Fully achieved
- Partially achieved
- Poorly achieved
- Not achieved

6) When do you think that a public policy should be incorporated in the project?

- Conception Phase
- Construction Phase
- Completion Phase
- Operation and Use
- Should not be incorporated at all

7) To what extent you think that a public policy is a project construction management burden?

- Heavy
- Medium

- Light
- Negligible

8) To what extent you think that public policy understanding is important to the public construction project managers?

- Necessary
- Very important
- Important
- Not important at all

9) To what extent you think that construction procurement could be used as a tool for implementing public policies in public construction projects?

- Should be used in all public construction projects to reach the related policy goals
- Construction procurement is a result of the policies not a tool for implementing them
- There are no links between policies and construction procurement
- I do not understand the link between them

Appendix B

Appendix B

The Case study protocol

I. Overview of the case study approach

- Purpose of the case study
- Key features of the case study approach
- Organisation of the protocol

II. Procedures

a) Initial scheduling of field visits

- Review of preliminary information
- Verification of access procedure
- Limitation of the client
- Tim scale of the study (program)

b) Determination of respondents to the questionnaires and other sources of information

- Administrative staff
- Management staff
- Archival staff
- Project planning documents
- Project bidding documents
- Project contract documents
- Project construction documents

c) Training of helping-hands

- Purpose of training
- Topics for training
- Review of the theory
- Review of the case studies

III. Case study protocol and questions

a) Client appraisal and planning approaches

- Topics
- Summary of questions of section (a)

b) Project procurement

- Topics
- Summary of questions of section (b)

c) Client and contractor (duties and responsibilities)

- Topics

- Summary of questions of section (c)
- d) Stakeholders
 - Topics
 - Summary of questions of section (d)
- e) Client management and monitoring of the project
 - Topics
 - Summary of questions of section (e)
- f) Client procurement policy awareness indicators
 - Topics
 - Summary of questions of section (f)
- g) Client policy application indicators
 - Topics
 - Summary of questions of section (g)
- h) Problems encountered during contract agreement
 - Topics
 - Summary of questions of section (h)
- i) Problems encountered during construction
 - Topics
 - Summary of questions of section (i)
- j) Problems encountered during completion and handover
 - Topics
 - Summary of questions of section (j)

IV. Analysis plan and case study reports

- a) Individual case studies
 - Descriptive information
 - Explanatory information
 - Outline of individual case study reports
- b) Cross-case studies analysis
 - Descriptive information
 - Explanatory information
 - Cross-case study report
 - References for case study protocol

Appendix C

	<p>• Process execution plan (finalised): With regards to the start and finish times of the construction works the process execution plan should be finalised. However if construction works are phased there might be a need to continually adjust those dates</p> <p>• Performance management report (finalised): The performance criteria for the project should be firmly finalised and not revisited unless circumstances are changed significantly i.e. main client requirement</p>												
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