USE OF THESES

This copy is supplied for purposes of private study and research only. Passages from the thesis may not be copied or closely paraphrased without the written consent of the author.
Bangkok and the Second Bangkok International Airport
Politics of Planning and Development

Thongchai Roachanakanan

A thesis submitted for the degree of Doctor of Philosophy of
The Australian National University, Canberra
July 1999
To my beloved country

and

For everybody born Thai
Dr. Larry Sternstein: Good Memories

Dr. Lawrence Sternstein, 'Larry' to everybody, was of Romanian descent born in the United States of America. His childhood in New York made him a tough man. He held scholarships throughout his education career. He was interested in Thailand and his Ph.D. thesis in 1965 was 'Settlement in Thailand: Patterns of Development'. He wrote, read and spoke Thai and understood Thai culture well. That was a reason why he wrote many articles and books about Thailand. On completion of his doctoral studies, the several organisations with which he was affiliated provided him with funds to carry out a number of research projects.

Dr. Lawrence Sternstein was my first supervisor. The first time I met him was in June 1994 when I was looking for a supervisor at the Australian National University. A closer relationship developed when I started the Ph.D. programme with him in April 1995. We enjoyed talking about every problem in Thailand. He told me many amazing stories about his experiences in dealing with corrupt people in Thailand. He taught me when and how to get tough and wished me to be a good planner. Unfortunately, I did not have the chance to learn everything from him that I could have.

Dr. Lawrence Sternstein suffered and stayed in bed for months. He died of cancer at the age of 63 on 24 May 1997 at Canberra Hospital. Nobody was invited for the cremation ceremony according to his last wish. Despite only two years working with Dr. Lawrence Sternstein, it seems to me to be a very long time and I can remember everything about him. His name and his smiling face with an old pipe in his mouth will be in my mind forever.

The last student of Sternstein
Acknowledgements

Grateful acknowledgement in the completion of this thesis is made to the following organisations and individuals.

The Australian Government for its financial support through the past four years of my study

Department of Town and Country Planning, Royal Thai Government, for allowing me to carry out a Ph.D. programme in Australia

My supervisory panel, Dr. Helen Ross, Dr. Ken Johnson and Dr. Craig Reynolds, for academic enthusiasm, personal support and helpful recommendations

Professor Robert J. Wasson for reading and giving recommendations about the flood context

Dr. Antony Diller, Simon Baker and Pamela Sherpa for editing my English

My former supervisors at Katholieke Universiteit Leuven in Belgium, Professor Han Verschure and Professor Louis Albrechts, for their support of my further study at the Australian National University

Steve Leahy and Val Lyon for making beautiful maps and diagrams

Mrs. Chintana Sandilands for giving me access to see many scholars

My colleagues at Department of Town and Country Planning, Royal Thai Government, for providing and sending a number of research materials to me

Ms. Malee Manmind and my colleagues at the Bangkok Metropolitan Administration for providing maps and research materials

My parents, Niwat and Rampung, and my wife, Raywadee, for acting as supporters during the hard time in Canberra
# Contents

Statement of Originality ........................................................................................................................................ ii
Dr. Larry Sternstein : Good Memories ........................................................................................................ iv
Acknowledgements ........................................................................................................................................ v
Contents ...................................................................................................................................................... vi
Chapters ..................................................................................................................................................... vi
Figures ........................................................................................................................................................ ix
Tables .......................................................................................................................................................... x
Abbreviations .............................................................................................................................................. x

Chapters

Introduction .................................................................................................................................................. 1

Part I: Planning History; Bangkok and Its Airport .................................................................................. 10

Chapter One: The Development of Bangkok, Its Airport and Planning ................................................... 12
  1.1 The Planning of Bangkok ...................................................................................................................... 14
      1.1.1 A Citadel, 1563 to 1782 .................................................................................................................. 14
      1.1.2 The 'City of Angels', 1782 to 1932 .............................................................................................. 20
      1.1.3 Instability and Transition, 1932 to 1960 ...................................................................................... 24
  1.2 Thai Aviation and Bangkok Airport, 1910 to 1960 ........................................................................... 27
      1.2.1 Early Development ...................................................................................................................... 28
      1.2.2 The American Role ..................................................................................................................... 33
      1.2.3 The Second Bangkok International Airport .............................................................................. 37
  1.3 Origins of the Second Bangkok International Airport ......................................................................... 39

Chapter Two: Planning in Action, 1961 to 1991 ................................................................................. 42
  2.1 Planning Bangkok, 1961 to 1991 ........................................................................................................... 43
      2.1.1 Failures of Bangkok City Planning ............................................................................................ 44
      2.1.2 The Greater Bangkok Plan 2533 [A.D.1990] .......................................................................... 47
      2.1.3 The First Revision of the Plan, 1971 ......................................................................................... 52
      2.1.4 Development Planning .............................................................................................................. 56
  2.2 The Second Bangkok International Airport, 1961 to 1991 ............................................................... 59
      2.2.1 Site Selection and the Prime Minister’s Interest ....................................................................... 60
      2.2.2 Chaotic Period of Airport Development ................................................................................... 63
  2.3 Urban Primacy ....................................................................................................................................... 68
  2.4 Changes in the Built Environment of Bangkok .................................................................................. 71
Part II: Politics of Planning and Development

Chapter Three: Bangkok; The Problems of Planning Practice

3.1 The Administration System
- 3.1.1 Historical Analysis of the Administrative System
- 3.1.2 The Bangkok Metropolitan Administration
- 3.1.3 Balance of Power?

3.2 The Legal System
- 3.2.1 Review of the Legal System
- 3.2.2 Town and Country Planning Act 1975
- 3.2.3 Loopholes in the Law

3.3 The Planning System
- 3.3.1 Development of the Planning System
- 3.3.2 City Planning

3.4 Boundaries; Interaction of the Three Systems

Chapter Four: Planning Bangkok in the 1990s

4.1 Politics of Bangkok City Planning in the 1990s

4.2 The Bangkok General Plan 1992
- 4.2.1 Review of the Bangkok General Plan 1992
- 4.2.2 Planning under Siege
- 4.2.3 Reflections on the Bangkok General Plan 1992

4.3 Review of the Bangkok Plan 1995
- 4.3.1 Land Use Planning in the Bangkok Plan 1995
- 4.3.2 Maximum Allowable Floor Area Ratio
- 4.3.3 Urban Development Plan

4.4 Review of Metropolitan Regional Structure Planning Study

4.5 Bangkok City Planning and the SBIA

Chapter Five: Politics of Airport Planning and Development

5.1 Policy Analysis and Political Influence
- 5.1.1 The Dictatorship; 1957 to 1973
- 5.1.2 Changes and the Balance of Political Power, 1976 to 1988
- 5.1.3 Boom and Bust, 1989 to 1999

5.2 Airport Development and Political Changes

5.3 Airport Reports and Studies, 1991 to 1997
- 5.3.1 Airport System Master Plan (ASMP)
- 5.3.2 Rayong U-Tapao International Airport
- 5.3.3 SBIA: Site Confirmation Study

5.4 Is the Second Bangkok International Airport necessary?

Chapter Six: The Master Plan of the SBIA

6.1 Master Plan as a Prelude for a Mega-Project

6.2 Review of the SBIA Master Plan
- 6.2.1 Master Plan Area and Methodology
- 6.2.2 Development Concepts
- 6.2.3 Review of Land Use Plan
- 6.2.4 Infrastructure Development Plan
- 6.2.4.1 Traffic and Transport Systems
- 6.2.4.2 Soil and Groundwater Conditions
6.2.4.3 Water Supply 209
6.2.4.4 Solid Waste 211
6.2.4.5 Wastewater Collection, Treatment and Disposal System 214
6.2.4.6 Electrical Power System and Telecommunications 216

6.3 Assessment of Implementation 217
6.3.1 Development Preparation 218
6.3.2 Detailed Design 220
6.3.3 Politics over the Landfill 220
6.3.4 The Master Plan and Time Management 222

Part III: The Implications of the Politics and Planning and Development

Chapter Seven: The Second Bangkok International Airport and Flood Protection

7.1 Floods and the Physical Environment 228
7.1.1 Geography of Bangkok 228
7.1.2 Changes in Built Environment 233
7.1.3 Contemporary Flood Geomorphology 237

7.2 Reconsidering Bangkok’s Flood Problems 242
7.2.1 Floods Before 1952 as a Natural Phenomenon 245
7.2.2 Man-made problem since 1952 247
7.2.3 Flooding as a Chronic Problem 249

7.3 Review of Flood Protection for the SBIA 252
7.3.1 Flood Control and Drainage 253
7.3.2 Response to Flooding; Choice of Adjustment? 258
7.3.3 Ignorance of the Flood Hazard and the Economic Response 259

7.4 Impact of the SBIA on Flood Protection 262
7.4.1 Changing Patterns of Flooding 262
7.4.2 Flood as a Planning Issue 264
7.4.3 Beyond the Boundary of Administration and Responsibility 265

Chapter Eight: The Politics of Planning and Development

8.1 The Political Paradigms of Planning in Operation 271
8.1.1 Key Influences on Political Dynamics in Planning 272
8.1.2 Lack of Connection between City and Airport Planning 277

8.2 Planning under Political Pressure 281
8.2.1 Reconsideration of the Definitions of Planning 281
8.2.2 Reflection of John Friedmann’s Ideas and Theories on Planning 284
8.2.3 Environmental Impact Assessment 288
8.2.4 Integrating Impact Assessments into the Planning Process 290

8.3 Pluralism, Regimes and Leadership 292
8.4 Future Prospects for Planning Practice under Political Direction 296

Conclusion 298
Appendices 302
Bibliography 318
Figures

1.1 Indiana by Isaac Tirion
1.2 Sketch of the Town of Bangkok, 1825 by a Native
1.3 Plan of Bangkok 1994 drawn by J. Antonio
1.4 Plan of Bangkok, 1936
1.5 Don Muang airport and the development of Bangkok, 1900 to 1968

2.1 Land Use in Bangkok, 1958
2.2 The Greater Bangkok Plan 2533 (A.D.1990)-The Litchfield Plan
2.3 Land Use of Bangkok 1968
2.4 The First Revision of the Plan for the Metropolitan Area 1971
2.5 Site Selection for the Second Bangkok International Airport in 1962
2.6 Urbanised Areas of Bangkok-Thonburi, 1900, 1936, 1958 and 1968
2.7 Bangkok Metropolitan Region: Standard constituent provinces 1960-1990
2.8 Bangkok Metropolitan Region: Districts in the region, Area of Impact from the SBIA

4.1 Land Use in Bangkok, 1972
4.2 Land Use in Bangkok, 1986
4.3 Bangkok General Plan 1992
4.4 Bangkok General Plan 1999
4.5 Land Use in Bangkok, 1993
4.6 The Bangkok Plan 1995 [land use]
4.7 The Bangkok Plan 1995 [maximum allowable FARs]
4.8 The Bangkok Plan 1995 [urban development plan]
4.9 Chao Phraya Multipolis Land Use Plan
4.10 Chao Phraya Multipolis Population Growth in 2010 and 2015

5.1 Public Works Projects developed by USOM, 1962
5.2 Layout of Don Muang Airport, 1999
5.3 Study of the Third Runway at Don Muang Airport
5.4 Location and layout of the U-Tapao Airbase, 1991

6.1 Master Plan of the SBIA, 1994 (for ultimate capacity)
6.3 Land use around the SBIA site, 1993
6.4 Land subsidence in Bangkok, 1991
6.5 Strategic land use plan around the SBIA, 2010
6.6 Land use in Samut Prakan, 1989
6.7 Land use in Samut Prakan, 1994
6.8 Land subdivision plan of the business zone, 2010
6.9 Obstruction zone around the SBIA
6.10 Noise contour map
6.11 Solid waste dumping site

7.1 Plan to accompany: General Report on Irrigation of the Lower Manam Valley
7.2 The natural drainage area of Chao Phraya River
7.3 Reduction of waterways and development of road system in Bangkok in 1935, 1955 and 1975
7.4 Flood Protection System, 1968
7.5 Master plan on flood protection for Bangkok, 1987
7.6 Chiangrak-Khlong Dan project
7.7 Existing drainage, canals and pumps around the SBIA
7.8 Proposed drainage, canals and pumps around the SBIA
Tables

2.1 Development of Bangkok urban primacy, 1780 to 1990 68
2.4 Population numbers by standard constituent districts around the Second Bangkok International Airport: 1960, 1970, 1980 and 1990 75
5.1 Distribution of professional backgrounds in selected cabinets 163
5.2 Aircraft movements at Don Muang airport from 1992 to 1996 179
5.3 World's airports in comparison 180

Abbreviations

AAT Airports Authority of Thailand
AIT Asian Institute of Technology
ASMP Airport Strategy Management Plan
BMA Bangkok Metropolitan Administration
BMR Bangkok Metropolitan Region
BoI Board of Investment
CIA The Central Intelligence Agency (USA)
DOLA Department of Local Administration
DRI Department of Royal Irrigation
DTCP Department of Town and Country Planning
EIA Environmental Impact Assessment
FAA The Federal Aviation Administration (USA)
FAR Floor Area Ratio
ICAO The International Civil Aviation Organization
IMF International Monetary Fund
JICA Japan International Cooperation Agency
MIT Massachusetts Institute of Technology
MoI Ministry of Interior
MRSPS Metropolitan Regional Strategy Planning Study
MRTA Metropolitan Rapid Transit Authority
MWA Metropolitan Waterworks Authority
NACO Netherland Airport Consultants
NADC Northrop Airport Development Corporation
<table>
<thead>
<tr>
<th>Acronym</th>
<th>Full Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>NBIA</td>
<td>The New Bangkok International Airport Company</td>
</tr>
<tr>
<td>NESDB</td>
<td>Office of the National Economic and Social Development Board</td>
</tr>
<tr>
<td>NGO</td>
<td>Non-Government Organisation</td>
</tr>
<tr>
<td>OECF</td>
<td>Overseas Economic Cooperation Fund</td>
</tr>
<tr>
<td>OEPP</td>
<td>Office of Environmental Policy and Planning</td>
</tr>
<tr>
<td>OSBAC</td>
<td>Office of the Second Bangkok Airport Development Committee</td>
</tr>
<tr>
<td>OSS</td>
<td>The Office of Strategic Services</td>
</tr>
<tr>
<td>PWA</td>
<td>Provincial Waterworks Authority</td>
</tr>
<tr>
<td>SAP</td>
<td>Social Action Party</td>
</tr>
<tr>
<td>SAMP</td>
<td>The Second Airport Master Plan</td>
</tr>
<tr>
<td>SBIA</td>
<td>The Second Bangkok International Airport</td>
</tr>
<tr>
<td>SIA</td>
<td>Social Impact Assessment</td>
</tr>
<tr>
<td>SRT</td>
<td>State Railways of Thailand</td>
</tr>
<tr>
<td>TA</td>
<td>Telecom Asia</td>
</tr>
<tr>
<td>TAMS</td>
<td>Tippetts-Abbett-McCarthy-Stratton</td>
</tr>
<tr>
<td>TOT</td>
<td>Telephone Organisation of Thailand</td>
</tr>
<tr>
<td>TT&amp;T</td>
<td>Thai Telephone and Telecommunication</td>
</tr>
<tr>
<td>USAID</td>
<td>The United States Agency for International Development</td>
</tr>
<tr>
<td>USOM</td>
<td>The United States Operations Mission to Thailand</td>
</tr>
</tbody>
</table>
Introduction

The Cabinet's approval of the development of the Second Bangkok International Airport at Nong Ngu Hao on 7 May 1991 was minor news in Thailand. The 97,000 million baht airport project progressed so gradually, and not at all, that only some 5,000 million baht had been spent by early 1997. The project became big news when General Chavalit Yongchaiyudh, the Prime Minister, first raised objections to the project on 19 January 1997 during talks with the provincial chambers of commerce from all over the country in Trang, a province in the south of Thailand. His statement affected the project soon after. On 1 February 1997, the Bangkok Post, a local English newspaper, highlighted this news as a hot issue:

City's second airport destined to never get off the ground. Bangkok's citizenry have grown old waiting for the city's second airport at Nong Ngu Hao. Many of those now involved with it were likely in short pants when the project was first mooted. The reason General Chavalit gave for shelving Nong Ngu Hao was that the first phase would not be ready by 2000. Thailand is also burdened with a severe current account deficit [Bangkok Post, 1 February 1997, p8].

However, the reason for the Prime Minister backing way from the project seems to be conflicts of interest, with the allegation that the coalition government had benefited from the project. Meanwhile, another old development activity became less important news. On 24 February 1997, an article on 'Planning Bangkok's Future' was published in the Bangkok Post. Its highlight was

Believe it or not, but the vast, chaotic urban metropolis that is Bangkok has operated under a centralised urban development plan for the past five years. The first attempts at urban planning in Bangkok date back to 1958, but authorities then rejected the idea as unworkable. Not until 1992 was a master plan actually implemented [Bangkok Post, 24 February 1997, p12].

People had different views on the two planning projects. What people were interested in most was the corruption allegation over the Second Bangkok International
Introduction

Airport project, one of the longest planning projects in Thai history second only to the Kra Canal project initiated in the late nineteenth century. A number of substantial articles about the airport project were published through the month. In contrast, the Bangkok city planning project did not interest the public much. Did people know that the two activities had a long relationship, since the 1960s?

As a professional planner and resident of Bangkok, I have followed these projects for years. I noticed a number of unusual things. The government’s many unclear explanations about development decisions seemed to indicate a dark side of the two projects that has never been studied seriously before. My investigation started here. I was curious to study what really happened to the two planning projects and what they were all about.

Given my background and my current career working for the Department of Town and Country Planning¹, this provided a very good opportunity to study the weaknesses of city planning in Thailand. I have a strong belief that a good city plan, made at an early stage, can solve urban problems. Although, a number of city plans have been made and enforced by law in Thailand but none of these has solved urban problems. A question is what is going wrong with the current application of planning practice.

To my knowledge, no study on the problems of planning practice in Thailand, viewed as a whole system, has yet been conducted. Moreover, some practical problems between the administrative system, legal system and planning system are overlooked. There is occasional discussion on the failures of city planning in huge projects in the big cities such as Bangkok [Sternstein, 1982 #3, 117-135]. This is a reason why Bangkok, in association with the Second Bangkok International Airport, is a very good case for this thesis.

To foster interest in the serious consequences of failures in planning practice, I have selected the chronic problem of flooding in and around Bangkok for particular attention. A comprehensive analysis of flood conditions is made to understand the changing patterns of flooding. Studies of flood protection date back to 1903, early times in the development of modern responses to flood protection needs. One of my tasks is to evaluate the likely

¹ Department of Town and Country Planning is a national department under the Ministry of Interior, and is responsible for city planning throughout the whole country. Its main task is to control the land use and development of towns and cities following the Town and Country Planning Act 1975.
Introduction

Impact of the Second Bangkok International Airport (SBIA) on flooding and present flood protection systems.

Where a bureaucratic system cannot solve such problems effectively, one could be optimistic and argue that politics is supposed to fill this gap by introducing good policies and providing quick solutions. Thailand is not like this[^2] because the politicians put individual interest first and public interest last. Consequently, every major project in Thailand is affected by narrow political influence. The strange thing is that public interest does not react. Moreover, the nature of Thai politics, with constant power struggles among a number of parties and their factions, exacerbates the problems and puts solutions out of reach.

However, the implications of the politics of planning can be understood from theoretical perspectives. I discuss my findings in terms of theories of planning, theories of urban politics and the idea of environmental integrating impact assessment into the planning process. I expect this thesis to stimulate the authorities involved in planning and development to realise the seriousness of planning problems in Thailand. Ultimately, I hope for great improvement in the planning system through more effective planning practice in Thailand.

Background

During the study period, politics in Thailand changed. The nation stepped from a military dictatorship to democratic government. Changes happened through social upheaval.

The 1960s, under the dictatorship of Field Marshal Sarit Thanarat, was a turning point in Thai planning: American consultants introduced modern planning. Two planning projects emerged together in 1960, the first modern master plan of Bangkok and the Second Bangkok International Airport Project were proposed. It had been understood that the first master plan of Bangkok recommended the separation of civil and commercial aviation out of the military base at Don Muang, and the military government used this point to develop the new Bangkok airport proposal.

[^2]: Thailand’s parties are not real political parties but political cliques or political factions [Tongdhammachart, 1982 #114, 39].
Sarit’s regime was more centralised than any other in Thai history. He demanded that his needs, which included the new airport, be met immediately and without question. Site selection for the new airport was achieved simply by identifying a site named Nong Ngu Hao in the east of Bangkok, and the government started purchasing the land instantly. After his death in 1963, the master plan of Bangkok was ignored but the power elite strongly supported the development of the new airport. The two planning activities influenced many other projects through the following decades. In the 1970s and 1980s a number of study reports and master plans were produced to solve problems in Bangkok; however, none was successfully implemented.

The two planning projects have much in common. Both started and stopped many times even though the benefits of airport development and the need for a Bangkok master plan have been on the national agenda for years. The politics of planning of the two projects are complex and controversial, reflecting the power struggles of Thai politics.

Apart from describing their supposed economic benefits, governments during the past four decades did not tell the people much about the development of the Second Bangkok International Airport or the intent of the Bangkok Plan. The information in the report prepared by the foreign experts distributed and circulated between the government departments was mostly in English. It may help explain why people of Bangkok took little interest in the plans. The government neglects the fact that the SBIA is being built on a swamp blocking the natural floodways. This increases the likelihood of flooding and limits the effectiveness flood protection for the east of Bangkok and the city core. Despite this critical problem, the project continued.

The first master plan of Bangkok enforced by law in 1992 did not influence the city because the implementation of the plan was weak. This is in contrast to the new airport. A number of infrastructure development projects have conglomerated in the east of Bangkok, moreover, some reports including the master plan of the Second Bangkok International Airport were made hurriedly to guide development in Bangkok and around the airport site. Environment impacts were studied superficially but many important issues were not included. By using these reports, some concerned authorities are putting pressure on the making of land use plans of Bangkok and nearby areas to allow more commercial developments around the new airport. This degree of interest suggests that some people stand to benefit a great deal from the airport going ahead.
Nobody can deny that Bangkok's geography in the 1990s has changed greatly since 1960. The city has extended in every direction, with a number of problems. The site of the Second Bangkok International Airport has become a part of Bangkok surrounded by houses, schools, universities and factories; however, the government has not considered these changes.

Moreover, two existing large airbases developed by the Americans during the Vietnam War, Kampaengsan in Nakhon Pathom and U-Tapao in Rayong have been studied and proposed for expansion as the new Bangkok airport. Both airbases were alternatives for the governments of the 1970s and 1980s when the decision on the Nong Ngu Hao site became uncertain. Facilities were provided at U-Tapao airport, which has become an international airport since 1990. However, U-Tapao airport currently serves less than 10 per cent of its capacity and its potential of being the second Bangkok international airport is ignored.

It is a fact that the upgrade of an existing airport is more economical than building a new one. Furthermore it is particularly costly to develop a new airport on swamp. Despite all the shortcomings, the authorities concerned appear convinced that it is necessary to develop a Second Bangkok International Airport and insist that Nong Ngu Hao is the most suitable site. There must be some important reasons why the governments in the 1990s retain this policy of spending 120 billion baht or 3 billion US$ to develop the new Bangkok airport on swamp.

Aim of this Thesis

In the 1960s it was not possible to study the two planning projects because debate and discussion about the military government's projects was not allowed. Politics in Thailand have changed. The 1990s is a decade of more accountability and transparency, with more democracy. The public can follow the government's work more closely. The Second Bangkok International Airport is now one of many projects attracting public discussion about corruption and other shortcomings; however, little serious study has been attempted on the development of the Second Bangkok International Airport under current conditions.
Almost four decades of delaying the two projects suggests that there have always been political concerns, indicating a comprehensive study should be undertaken. It is quite evident that the making of the Bangkok plan and the development of the Second Bangkok International Airport are related, and that political interests form part of this relationship. My study of the two projects is intended to demonstrate hidden dimensions of the politics of planning in Thailand. Hence, the purpose of my thesis is to find out the truth about what really happened to the two projects during the past four decades, how they react and what are their implications for planning practice in Thailand.

Subsidiary research questions are:

- Has the existing Bangkok International Airport at Don Muang really reached its ultimate capacity so that it can no longer be expanded? If it has, what are the constraints for expansion?

- Since Bangkok in the 1990s has six times the population it had in the 1960s, is the site at Nong Ngu Hao still the most suitable for the Second Bangkok International Airport?

To reflect on:

- How do Thai politics relate to the conduct of planning: using Bangkok and the new airport as case study?

- How does the nature of the administrative and legal systems contribute to the interface between politics and planning?

- How effective can planning be in such a dynamic political context?

Methodology

My methodology used a combination of documents and fieldwork, with focus on critical analysis of historical and contemporary papers, reports, maps and press coverage.

The process started with fieldwork in Bangkok for six months from March to September 1996. That included personal interviews with 18 people who were involved with the two projects: politicians, military officers, senior bureaucrats, developers, policy makers, landlords and scholars. The most revealing informant was a contractor who lost the bidding for an airport contract.
Unfortunately, I did not have the chance to discuss the projects with some of key actors involved, due to this being the election campaign period for the new BMA Governor in June 1996. Some bureaucrats explained that they were not willing to give me information at that time. Despite the fact that a senior bureaucrat of the BMA, and a senior colleague at the DTCP had collected a great deal of useful information in their computers, I was allowed only to have a glance on their computer screens. Moreover, some informants avoided answering my questions and tried to mislead the objectives of my study.

I was helped in these interviews by my wide range of personal and professional contacts. Knowing the political sensitivities of my subject matter, I have made a close critical analysis of the interview records, comparing them with one another and documentary sources, and looking for what was omitted as well as what was said.

Some research materials used in this thesis are from Dr. Larry Sternstein's collection in Canberra. After his death in May 1997, I was able to study a number of rare materials, some of which I had been unable to find in Thailand. That includes the original reports of Bangkok city planning and the new airport project prepared in the 1950s through the 1970s. I found that some reports are different from the versions in Thailand. For instance, the Litchfield Plan from Sternstein's collection is a series of monographs but a single bound version is in Thailand. It is not clear how many versions of this plan were made in 1959 and 1960. Some parts of the two planning projects remain a mystery.

I also had personal access to some confidential information, including some primary data that was somewhat different to that shown in the government's reports. This supports my argument that some authorities concerned have tried to cover up facts and suppress data about the airport project. Compared with other materials gathered from Thailand, some materials from Sternstein's collection made more sense. However, the comprehensive analysis in this thesis is made carefully, based on the best available materials in each country.

Ultimately, my methodology requires integrative analysis drawing on both human and biophysical aspects of geography, planning and environmental assessment. While the focus is on politics, the administrative system is examined as a compounding feature. Theoretical analysis is important for this thesis. Planning theory, urban politics theory and the concept of integrating impact assessment into the planning process are discussed.
towards the end of this thesis, in order to explain the interactions between urban and airport planning described in the preceding chapters.

**Sequence of the Thesis**

My study is a narrative tracing Bangkok’s development from the relocation of the capital in the eighteenth century through to the origins and development of planning for Bangkok and the SBIA.

The first part (Chapters 1 and 2) deals with the planning and administration of Bangkok from the reign of King Taksin, late in the eighteenth century, to the first stages of development of aviation early in the twentieth century. In this the planning and politics of King Rama I (1782-1806) are studied, focusing on his reasons for relocating the capital city. The environment of Bangkok in the late eighteenth century is discussed to give a picture of old Bangkok. Changes in the urban geography of Bangkok in the reign of King Chulalongkorn (Rama V, 1868-1910) are studied showing the influences of modern civilisation. The development of aviation explains how Don Muang became Bangkok’s airport.

The second part (Chapters 3, 4, 5 and 6) studies the problems of the political, legal, administrative and planning systems in the context of the development of Bangkok and the SBIA. Politics in Thailand after the revolution in 1932 are discussed to show how the military government influenced the urban structure of Bangkok. The dictatorship regime and regional conflict in the 1950s are studied to show how the development of the transport system in Thailand was important during the Vietnam War and how these political events influenced airport development in the 1960s. I analyse why the dictator, Sarit, wanted the new airport.

I proceed to a comprehensive analysis of the relationship between the first modern master plan of Bangkok and the new Bangkok airport in 1960. Development of the two projects in the 1970s and 1980s is studied, emphasising how and why the SBIA project survived without actually being constructed for decades.

Revival of the two projects in the 1990s is discussed in the context of the different attitudes of government in 1991.
A policy analysis of Bangkok metropolitan region and air transport development is made, highlighting the government’s policies and their consequences. Meanwhile, an overview of the current situation is given to reconsider the issue of putting the new airport on a swamp at Nong Ngu Hao. Most importantly, the existing Bangkok International Airport at Don Muang is studied to investigate whether it has already reached its ultimate capacity and what are the actual constraints on expansion. Moreover, U-Tapao International Airport in Rayong and other airbases around Bangkok are discussed in terms of their feasibility for the development of a new Bangkok airport. This evaluates whether the SBIA at Nong Ngu Hao is really necessary.

I analyse the interactions between the making of the Bangkok plan and the new airport plan. The politics of making the Bangkok master plan in 1998 are discussed, using The Bangkok Plan submitted by the planning team of Massachusetts Institute of Technology (MIT) in October 1995 as a detailed case study. I emphasise planning concepts and the development recommendations associated with the new Bangkok airport development. The master plan of the SBIA (August 1994) and other related studies are reviewed in detail.

The third and last part (Chapters 7 and 8) evaluates the consequences and impacts of the decisions made about the development of the two projects within the political, legal, administrative and planning systems. The study of flood protection shows how much politics influences the development of the SBIA and Bangkok city planning. Chapter 8 discusses, within the theoretical frameworks of politics, planning and environmental concerns, the outcomes of planning and development, taking into account the political, legal and administrative systems. A brief and concise conclusion integrates the key findings to present an understanding of the present situation.
Part I Planning History; Bangkok and Its Airport

Bangkok is a primate city, probably the most primate city in the world. The population of Bangkok is currently thirty-fold more than the second most populous city of Thailand, as a consequence of being the centre of administration, transportation, trade, finance, education and services for decades, causing a number of problems. Many attempts have been made and a lot of money has been spent but most Thai governments have failed to resolve the collective problems of Bangkok due to their complexity and a lack of understanding. One way to understand the complex problems of Bangkok is to learn its history. The development of Bangkok through the past centuries has been concerned with changes in the balance of political power. New urban elements such as the airport and city plan did not serve their function in meeting the needs of the city but they did serve the needs and aspirations of the power elite.

For centuries, city development and planning in the Thai kingdom has been military-oriented rather than trade and commercially-oriented. From the period of absolute monarchy to the military dictatorship regime and the struggle for democracy in the 1990s, the power elite was concerned with the development of Bangkok, the centre of power. Despite radical changes in Thai politics, this priority has not changed much in the view of the ruling class. This is one of many reasons why the urban primacy of Bangkok remains unsolved. An analysis of planning history in this part will present my argument.

Part I briefly discusses the historical background of Bangkok and Bangkok’s airports in a planning context. However, it has been argued among scholars for years that the power elite has written Thai history and therefore some facts are biased and cannot be used for analysis. This argument is reasonable in my view and is recognised in this thesis. Despite this, it is possible to study Bangkok by making an historical analysis of city planning and development. Settlement patterns and the development of urban form and structure through time can be explained in terms of planning which has been influenced heavily by politics in association with social, economic and technological changes.

---

1 The Thai power elite is an intermarried set of people with hereditary status, political, financial and bureaucratic power.
Part I provides a basic understanding of how Bangkok became the capital city and a comprehensive analysis of how the planning of Bangkok and Bangkok’s airports became political concerns. In this part we can distinguish two general periods in the history of Bangkok, before and after the turning point of Thai planning and the birth of the Second Bangkok International Airport (SBIA) in 1960. Chapter 1 presents a development overview of Bangkok, Thai aviation development and planning from the early period of settlement in 1563 to 1960. Chapter 2 discusses how the SBIA project and the making of the Bangkok plan were introduced and why the two projects made no real progress for three decades from 1961 to 1991.

In my view, Bangkok and its complex urban problems can be understood in terms of political interaction between three systems, the administrative system, the legal system and the planning system. As a core of this thesis, the analysis concentrates on these three systems which the power elite has used to control the development of Bangkok. The same approach of historical analysis will be applied in Part II as well.
Chapter 1: The Development of Bangkok, Its Airport and Planning

Bangkok celebrated the Bicentennial Anniversary of its foundation in April 1982. In the view of urban historians, Bangkok is quite a new city compared with other ancient towns in the world, many of which are more than 2,000 years old. However most Thai people view Bangkok as an old city because they compare the age of everything with their own life spans. In fact, in studying the age of a town, one should not compare the age of town with human life but with other older towns.

Despite their different geography and different chronicles, the urban history of Bangkok and other older towns have something in common. The ancient planning of these towns followed a similar pattern of imposing human order on the natural environment to achieve both social and political purposes [Stout, 1996 #82, 333], as did Bangkok. This crucial fact is overlooked in Thai society. People understand history only from what they learned in class and what is written in Thai history. An historical review is not their concern and is far from their interest. This may explain why people have a general knowledge about Bangkok but know very little, probably nothing, about its planning history.

A number of problems in Bangkok are the consequences of the lack of planning.

This short statement is usually mentioned when the authorities involved have run out of ideas to solve the problems of Bangkok. People seem to understand that Bangkok has never been planned. So, it is expected that planning can solve or make the problems less critical. In fact, plans have been made since Bangkok was a small fortress in the 17th century. Even with a perfect plan, however, one would have to admit that the context of planning by itself cannot solve every problem. In fact, success depends on the ability to use the plan as well.

In this chapter, therefore, it is interesting to study Bangkok city planning and the development of Bangkok based on the interaction of three systems: the administrative system, the legal system and the planning system. This chapter briefly describes the
Chapter 1 Development and Planning

ey early periods of Bangkok to give a better understanding of how the city was developed. The discussion focuses on some political events affecting the planning context. The emphasis is on the turning point during the period that changed Bangkok from the ‘City of Angels’ to the ‘Bedeviled City’.2

From the early period of Bangkok as a citadel to the glorious period as the ‘City of Angels’, the administrative, legal and planning systems were integrated and applied by the king who had absolute power. Consequently, planning processes and decision-making by the king were by means of ‘just in time’ solutions. Despite great changes in governance during the reign of King Rama V (1868-1910), the integration of the three systems remained practicable under the new administrative structure and the new legal system. King Rama V recruited his sons as the heads of the new administration. The relationship between father and sons may be the main reason why the new systems worked. The political reform3 in 1932, on the contrary, separated the integrated systems into a number of component parts that were controlled separately by different factions in the government. This caused confusion and numerous problems in Bangkok. However, the three systems became integrated again under dictatorship from 1959 to 1963. The consequences of the fragmentation of the three systems are discussed in the following sections based on historical analysis.

The main argument in this chapter is that absolute power, in the terms of ‘command and control’, was crucial to the ruler as a key factor in planning and developing the city. Hence, the problems of Bangkok city planning can be understood in terms of the use of power over the administrative, legal and planning systems. Despite the different models of governance, in my view, politics in Thailand cannot and will not allow a reasonable balance of power to plan Bangkok as an expression of the public interest. As a result of the slow process of democratic development, politics in Thailand became pluralist with a number of factions, resulting in shortcomings in managing changes to the built environment of Bangkok. The struggle for power among factions has influenced Bangkok city planning. Even though there have been some developments in Thai politics as a result of the new constitution of 1997, the political struggles remain and continue under the new form of governance.

1 This statement was recently repeated by Kamroplak Surasawadi, Director-General of the Office of the Commission for the Management of Road Traffic in the Bangkok Post, the local newspaper on 15 March 1997 that ‘a lack of town planning causes traffic problems’.
2 Sternstein expressed this view of Bangkok in his article Exorcising the Bedeviled City of Angels’ in ‘Portrait of Bangkok’ in 1982. However, arguments on the English meaning of Bangkok are extensive due to its long official name.
3 The absolute monarchy ended on 24 June 1932 starting the era of democracy in Thailand.
1.1 The Planning of Bangkok

The main theme in this section is the rationale behind planning in Bangkok, focusing on three periods of development: the early settlements from 1563 to 1782; the new capital of Siam from 1782 to 1932; and the period of violent political struggle from 1932 to 1960.

These three periods can be distinguished in terms of the administration, the legal control and the planning strategy that influenced the development of planning in Bangkok. In the first period prior to becoming the national capital, Bangkok was one of the most important citadels planned and controlled by the French. During the second period, from the reign of King Rama I (1782-1809) to the reign of King Rama VII (1925-1934), it became a stronghold, totally created and developed by the kings. The third period started from the end of the absolute monarchy in 1932 until 1960 when the development of Bangkok became a political concern of the military government.

The principal concern in this section is to reconsider the planning effort initiated by the rulers under different circumstances and under different forms of governance. More importantly, my attempt is to study how the planning process worked in each period and what actually turned Bangkok from the ‘City of Angels’ into the ‘Bedeviled City’.

1.1.1 A Citadel, 1563 to 1782

Bangkok was one of several small fortress-towns established during the reign of King Prajai (1534-1546) along the river to guard the waterways leading from the Chao Phraya across the delta south of Ayutthaya, the main Thai centre in those days. During the reign of King Chakkapat (1549-1565), a town named Muang Thon Buri Si Maha Samut was founded on the west bank of the Chao Phraya in 1563 to defend against invaders. Bangkok town appeared on the west bank of the Chao Phraya as ‘Banckock’ on a chart of the Chao Phraya river drawn by Joost Schouten, manager of the Dutch factory at Ayutthaya in the 1630s. ‘Banckock’ was described as the head of the province and the most important place down-river from Ayutthaya.

A fort on the east bank was built first in the 1660s to the design and under the supervision of Father Thomas, an Italian member of a French Jesuit missionary group which came to Ayutthaya in 1664. Both forts, Thon Buri on the west and Bangkok on
the east, were reconstructed by a French engineer in 1675. Steel chains were tensioned
between the two forts to control access to the river [Sidhithankij, 1995 #49,47].

In 1686, a distinguished French naval officer, the Chevalier de Forbin,
modernised the fortifications at Thon Buri and Bangkok. The two forts appeared in a
portrait evoking the Battle of Bangkok between the Thai army and the French guards in
1688 that showed that the east fort at Bangkok was bigger than the west fort. The fort at
Bangkok was demolished after the battle in that year. About 30 years later, Captain
Alexander Hamilton described the fort at Bangkok as a regular tetragon. The fortress at
Thon Buri retained strategic pre-eminence in the area and became the new capital of the
kingdom during the reign of King Taksin (1767-1782) [Sterstein, 1982 #3, 6-8].

It is worth noting that Bangkok has been an important checkpoint for tax
collection since it was a small fortress town [Sidhithankij, 1995 #49,17]. Every vessel
had to stop here before sailing upstream to the capital, Ayutthaya. Joost Schouten stated
in the 1630s that the trade was very good, as reflected by the number of European and
Asian trading houses in Ayutthaya. The water became shallow a little way above
Bangkok and big ships were sometimes forced to stay until the annual high tides in
September, October and November. Only smaller vessels could reach Ayutthaya.
Besides its military function, Bangkok also became a meeting point for a number of
vessels and played an important role as a port.

Apparently both Bangkok and Thon Buri were originally designed and planned
on the basis of military needs. The strategic significance of the stronghold at Bangkok
was clearly shown in maps and charts drawn by the Europeans in the late 17th century
(see Figure 1.1). However, the destruction of Ayutthaya by the Burmese in 1767
changed the fate of the kingdom. The compact citadel at Thon Buri on the east bank
was the most strategic position available for King Taksin who was crowned on 28
December 1768, and it became the capital of the kingdom for a short time from 1770 to
1782.

---

2 Nowadays the citadel has become a historical monument known as 'Vichai Prasidh' of Old Thon Buri Palace where the headquarters of the Royal Thai Navy are located.
During the reign of King Taksin, there was little development in Thon Buri because of many full-scale invasions by the Burmese and the restoration of the territorial limits of the kingdom\(^6\). In fact, King Taksin was more interested in offence than in defence and spent most of his time in the battlefields. The palace at the citadel of Thon Buri seemed to be a temporary residence [Sternstein, 1982 #3, 8]. His small

\(^6\) There were 10 battles between the Thai and the Burmese from 1767 to 1782.
bedroom and few simple belongings preserved at the old palace seem to reflect a personality that was content with very little.

In short, development in this period was concentrated within the citadel and the growth of Thon Buri City occurred naturally along the river and the waterways. The most interesting issue for discussion is preparations for relocating the capital from Thon Buri to Bangkok. According to historical records, it is not clear who actually proposed this idea and why the capital was not relocated during this period. The most controversial issue among historians is the politics between King Taksin and his ablest general, Chao Phya Chakri.

A close relationship between King Taksin and Chao Phya Chakri had developed since the fall of Ayutthaya in 1767. However there is no conclusive evidence of how the relationship changed afterwards. A coup attempt and a riot occurred in Thon Buri in 1781 while Chao Phya Chakri was in Cambodia. This was a turning point, after which King Taksin became incapable of governing. Chao Phya Chakri returned to Bangkok and took power. As a result the dynasty of King Taksin suddenly ended. On 6 April 1782, Chao Phya Chakri was crowned King Rama Thibodi (he was known as King Rama I) and established the new dynasty of Chakri. Thai history does not use the term 'coup' for this political event.

On 6 April 1782, King Rama I gave an order to two officers; Phya Thanmathikorn and Phya Wichitnavee, to survey and prepare a site on the east bank for the new palace [Sidhithankij, 1995 #49, 85]. He moved the citadel from the west bank to the east bank and founded the new capital of the kingdom on 21 April 1782. The need for additional security from the Burmese was viewed as the primary reason for relocating the capital. It is interesting to reflect on why King Rama I seems to have decided to relocate the capital so soon, only two days after being crowned. As we shall see the story is more complicated.

In Sternstein’s view, King Taksin had planned to establish a new citadel on the east bank of the Chao Phraya River. The construction, or at least planning for building, had been under way for some time before the move by King Rama I [Sternstein, 1982 #3, 8]. In contrast, historian Prince Damrong Rachanuphap (1862-1943) thought that King Rama I, not King Taksin, had proposed the initiative as a general in 1775. However, King Taksin did not agree with this idea [Rachanuphap, 1971 #47, 588-589].

7 Prince Damrong Rachanuphap [1862-1943] wrote a book Thai Rop Phama which was republished in 1971.
These different views should be considered carefully in the context of political events during the reign of King Taksin.

King Taksin was a great warrior who had a magnificent military strategy and so was Chao Phya Chakri. His home base was some distance from Ayutthaya along the east coast of the Gulf of Thailand, now the provinces of Chon Buri, Rayong and Chanthaburi [Sternstein, 1982 #3, 5]. It was understood that King Taksin might abandon Thon Buri and move back to his home base if necessary. This argument gives a reasonable explanation of the situation during his early period of uncertainty. However, his military strategy and policy changed after he gained control of the whole kingdom some years later. The home base along the coast seemed to be less important and was replaced by other fortress towns in the west and the south of the kingdom. On the one hand, Thon Buri and Bangkok had become the commercial centre of the kingdom and any plans to relocate the capital had to be considered carefully. Besides military security reasons, economic and political affairs seemed to be other crucial factors which influenced his decision.

In terms of political geography, there were several possible reasons for King Taksin wanting to relocate his palace and citadels. Firstly, King Taksin’s army had increased from less than 1,000 soldiers in 1767 to more than 30,000 soldiers in 1780 so the old citadel was too small for his larger army. Secondly, the growing numbers of Chinese, Mons and Laotians who migrated to live in and around Thon Buri required more land. Thirdly, the fortifications at Thon Buri were surrounded by numerous temples and villages that limited urban expansion. Under these circumstances, the rationale for relocating the citadel during the reign of King Taksin seemed reasonable.

It is interesting to study the way the site was selected in the preparation for relocating. Given the political situation at the time, my argument is that a civil war and violent riots in Thon Buri did not allow King Rama I to think about relocating the capital. In fact, the possibility of relocating the capital may have occurred some years previously.

The next question was where to move the capital. It has been explained repeatedly in Thai history that a site on the west bank of the river was chosen for the new palace and citadel [Rachanuphap, 1971 #47, 587-588], but it was already occupied by a rich Chinese merchant and a considerable community of Chinese. The Chinese were invited to move to an uninhabited area immediately beyond the walls of the new citadel [Sternstein, 1982 #3, 8]. My question is why the Chinese had to move
immediately. Besides a number of military and geographical reasons\(^8\), there have been no other explanations for selecting the site. Given the political fragmentation at the time, there may have been another critical reason for choosing the site. More importantly, it is also doubtful who actually asked the Chinese to move out, King Taksin or King Rama I.

Given the pattern of Chinese settlements, the removal of the large community would have been hard work in those days, particularly moving to a new bushland site. It is worth noting that Chinese in the Thai kingdom were powerful in terms of financial and military supporters and had a very good relationship with King Taksin\(^9\). On the one hand, a vast swamp known as the Sea of Mud stretched to the east of the river and had to be drained before construction could begin [Sternstein, 1982 #3, 8]. In addition there was pressure from a Burmese invasion which was being planned after news about the riot in Thon Buri. Certainly it was a good opportunity for the Burmese to attack the Thai kingdom. Given these circumstances, the new capital could not have been completed within three years without proper preparations.

In terms of relocating the Chinese community, in my view there are two possibilities that suggest that preparations might have been underway already. Firstly, King Taksin may have been negotiating with the Chinese before King Rama I moved the capital in 1782. This would mean that King Taksin had his own plan to develop a new citadel but not build the new capital because of his personality. Secondly, King Rama I may have had a plan to rearrange his political bases after terminating the dynasty of King Taksin. In other words, political stability and security for the new dynasty may have been, and in fact, probably was the most important factor for King Rama I.

It is quite clear that both King Taksin and King Rama I had planned to develop the west bank of the river for some time earlier but with different motivations. However, further discussion on this issue requires more conclusive historical evidence and a more comprehensive analysis than is possible here.

Obviously, in terms of relocating the capital, Bangkok city planning during this period was a political concern with command and control reflecting the hegemony of the current king. In fact, many capitals in the region such as Burma, Laos, Cambodia

\(^8\) Thai history explains that by moving the citadel from the west to the east bank, the river became in effect, a ready-made moat, a quarter of a kilometre wide and nine fathoms deep; and the bow was easily ‘strung’ by a canal [Sternstein, 1982 #3, 8].
and Vietnam were relocated during the same period in accordance with struggles for power. Political pressure and military confrontations were the primary reasons for relocating the capitals. The case of the Thai kingdom was no different. If political conflict had not been so critical, Bangkok might not have been chosen for the new capital.

1.1.2 The ‘City of Angels’, 1782 to 1932

At 6.55am on 21 April 1782, after being crowned for two weeks, King Rama I formally founded and named the new capital: Krung Thep Pra-Maha-Nakorn, Boworn-Thawarawadi-Sri-Yudhya, Maha-Dilokpop, Noparatana-Radhani, Buriram, Udom-Pra-Rajnivet-Mahasatan. Four years later, the capital was renamed: Krung Thep Pra-Maha-Nakorn, Boworn-Ratanakosindra, Mahindra-Yudhya, Maha-Dilokpop, Noparatana-Radhani, Buriram, Udom-Rajnivet-Mahasatan, Amorn-Pimarn-Avatarn-Satit, Sakkatuttiya-Vishnukarm-Prasit.

Later King Rama IV (1851-1868) altered Boworn-Ratanakosindra to Amorn-Ratanakosindra. Translated, the formal name of Bangkok reads: The City of Gods, The Great City, The Residence of The Emerald Buddha, The Impregnable City (of Ayutthaya) of God Indr, The Grand Capital of The World Endowed With Nine Precious Gems, The Happy City Abounding Enormous Royal Palaces Which Resemble The Heavenly Abode Wherein Dwell The Reincarnated Gods, A City Given by Indr and Built by Vishnukarm [Sternstein, 1982 #3, 11]. This name is highly meaningful. In beautiful poetry, the formal name of Bangkok, therefore, gave the hope, the promise and the confidence of prosperous living in the new capital of the whole kingdom.

In fact, Bangkok was born during the most troubled time for Thai warriors fighting against the Burmese invasion\(^9\) from the west and the Vietnamese from the east.

---

\(^9\) King Taksin’s father was Chinese. As a consequence, he got a great deal of support from the rich Chinese who were majority along the east coast, location of his early home base.

\(^{10}\) There were 44 battles between the Thai and the Burmese from 1538 to 1885, in 103 years of fighting. There were 24 battles in the Ayutthaya period (1538-1767), in comparison, there were 10 battles during the fifteen years of King Taksin’s reign and 7 battles during the reign of King Rama I (1782-1809). The largest Burmese invasion with 144,000 soldiers, compared with 70,000 Thai soldiers, was in 1785 a few months after the new capital of Bangkok was completed.
Bangkok was planned meticulously in the image of Ayutthaya (see Figure 1.2). The layout of the city and the form of the principal structures were intended to correspond as closely as possible to Ayutthayan prototypes. King Rama I did not wish to create a completely new city but to recreate Ayutthaya and reproduce the form of the old capital as an essential part of his wish to restore the whole of the Ayutthayan way of life [Sternstein, 1982 #3, 11]. The old names of places in Ayutthaya and all traditional ceremonies were brought to Bangkok. This explains why Bangkok has become the ritual centre following the experience of Ayutthaya.


Figure 1.2 Sketch of the town of Bangkok, 1825 by a native
Chapter 1 Development and Planning

The kings of the Chakri Dynasty in this period developed Bangkok enormously after Burma became a British colony in 1852, which allowed the kingdom to be peaceful for decades. A number of canals were constructed in Bangkok for public transportation and irrigation. Not surprisingly, Bangkok was known by European envoys and tradesmen as the Venice of the East\textsuperscript{11} or the floating city. The beauty, splendour and the glories of Bangkok in this period were gracefully described and expressed in numerous maps, drawings, photographs and written documents. The first road named Charoen Krung or New Road, was built in the reign of King Monikut (Rama IV, 1851-1868) for Europeans as recreation space for riding in carriages. Many public works and several modern roads were completed at the end of his reign (see Figure 1.3).

The kingdom changed considerably in the reign of King Chulalongkorn (Rama V, 1868-1910)\textsuperscript{12}. King Rama V truly brought the kingdom into the modern world and the signs of modernization were nowhere more obvious than in the capital [Sternstein, 1982 #3, 20-21]. Besides a number of modern physical features, King Rama V worked hard on arranging the administration as well as on legal reform, as both were necessary for effective management.

Legal reform began in 1891 when the Ministry of Justice was established. The courts were rearranged under the new administration and numerous old laws and legal procedures were greatly improved and many new laws were issued. The ministerial system for the central administration was first introduced in 1892. A number of responsibilities and authorities were rearranged under a new administration of twelve new ministries. In 1894 the local administration was divided under the administration of the Ministry of Interior (MoI). It should be noted that the administrative system and the legal system were rearranged and expected to balance the use of power among the different authorities by laws.

Thailand had never been colonised and in the 19th century the Thai kingdom succeeded in the slow process of bureaucratic reform and modernization. In terms of administrative restructuring, King Rama V aimed at centralising power in the government because he demanded an effective tool for control over the kingdom after losing territory to the British and the French\textsuperscript{13}. It is unfortunate that the King's strategy on decentralisation was less important. After the revolution in 1932, however, his

\textsuperscript{11}Fernao Mendez Pinto was the first to use the epithet 'Venice of the East' when referring to Ayutthaya in a letter to the Society of Jesus in Lisbon dated 1554 [Sternstein, 1982 #3, 13]. The prototype of Bangkok was compared with Ayutthaya.

\textsuperscript{12}Sternstein called the enormous development in this period 'an awful momentum'.

22
attitude towards centralising the local administration and power was of benefit to the military government.


Figure 1.3 Plan of Bangkok 1904 (drawn by J Antonio, dated by Sternstein)

13 From 1786 to 1909, Thailand lost territory 8 times to the British and the French.
Chapter 1 Development and Planning

King Rama V recruited his princes and members of the Royal Family as the heads of the new administration and also initiated most of the development projects. However during his reign the process of Bangkok city planning was fast because the king made all the decisions. As a result only 15 canals and 110 roads were developed in Bangkok from 1868-1910 [Kabilkarn, 1995 #50, 68-70]. In Sternstein’s view, Bangkok during this period was well laid-out and park-like, intersected with a network of broad shady roads running in all directions [Sternstein, 1982 #3, 87]. However, the new administrative and legal systems were in the early stage of development and needed more time for improvement. Unfortunately, this great period for Bangkok lasted for only 150 years from the reign of King Rama I to the reign of King Rama VII (1782-1932).

This elegant and glorious period of development which Sternstein called the ‘City of Angels’, ended after the revolution on 24 June 1932 which terminated the era of absolute monarchy in the Siamese kingdom. Bangkok was well planned during this period because the king had used his absolute power to proceed with Bangkok city planning by command and control. Bypassing the administrative and legal systems, his command was effective in development management and implementation.

1.1.3 Instability and Transition, 1932 to 1960

An increasing number of urban elements and factors greatly influenced Bangkok urban planning during this period (see Figure 1.4), and the situation became more complex. Following the main theme of this chapter, the emphasis in this section is on the use of power wielded by those who controlled Bangkok city planning in different circumstances.

For 27 years from 1932 to 1960, Thailand experienced 13 coups and seven constitutions under the administrations of 29 governments. As a result, urban problems in Bangkok increased under the administration of ‘come and go’ governments which had no interest in Bangkok city planning.

It is apparent that the lack of political stability and unity in this period was a major cause of Bangkok’s problems. Some arguments focus on the poor performance of the Thai bureaucratic system, with greed and corruption causing more critical problems [Komonlachet, 1972 #124, 97-111]. However, it is necessary for the discussion to move beyond these arguments.
Figure 1.4 Plan of Bangkok, 1936.

Source: Department of Survey, Ministry of Defence
Since the political changes in 1932, the democratic movement did not progress as military governments controlled the country for decades. People did not understand what democracy was about and the military governments concentrated on the struggle for power. Consequently, Bangkok city planning was dominated by the military. For instance, the road network was developed in association with military purposes. Most problems in Bangkok during this period were caused by natural disasters, such as the great flood in 1942.

The resignation of King Rama VII on 2 March 1934 as a result of strong political conflict was a turning point for the Royal Family and Thai politics. Prince Anan became King Rama VIII when he was only 10 years old. However, King Rama VIII was assassinated on 9 June 1946 and his younger brother, Prince Bhumipol became King Rama IX. The Royal Family did not get involved in politics in this period and Bangkok became a ground for power struggles among factions in the military and in the parliament.

The key person who influenced the development of Bangkok during this period was Field Marshal Phibun Songkhram. Phibun had played a very important role in the first coup from 11–25 October 1933 as a young Major standing at the frontier. He was in command at Bang Sue, a railroad junction north of Bangkok while rebels took over Bangkok airport at Don Muang, some kilometres away. Bangkok in the 1930s was still compact and there were few roads in the city. Most people travelled by boat as a local means of transportation although railroad was the best means of transportation.

The seasonal flood in October became a huge problem for the army because Phibun could not move his tanks and failed in his plan to attack the rebels by putting his tanks on carriages in front of a locomotive. After that Phibun understood how important the road network was. This may explain why Phibun developed many new roads after he became Prime Minister in December 1938, starting the first military dictatorship regime in Thai history. Phibun introduced many new things. He renamed the country and Siam became Thailand on 28 August 1939. The traditional New Year was also changed from 1 April to 1 January on 29 August 1940.

Phibun was also the first person who tried to relocate the capital during the Second World War to Phetchbun, about 400 kilometres north of Bangkok. He believed that the location of Phetchbun, far away from the sea and surrounded by high mountains would be safe from military attack, but his project was cancelled by the end of the war.
Phibun developed new roads to connect the military camps in and around Bangkok. In other words, road developments in this period reflected military functions rather than economic functions, as we shall see later. Despite three assassination attempts and many bloody coups, Phibun survived and served as Prime Minister for many years, becoming one of the most dominant actors in Thai politics in the 1940s through to the 1950s.

In Sternstein’s view, the worst aspect of Bangkok’s drive to modernise started at the end of the Second World War with the destruction of the urban waterways system. Roads intersected many canals and many waterways were buried beneath avenues. Many streets were widened by uprooting bordering shade trees. In short, the network of waterways was dismembered. Its function as a transportation system has never been reconstituted by roadways. More importantly, its function as a drainage system has not been replaced although a grandiose, costly sewerage, drainage and flood protection scheme was drawn up. The beauty of the waterways has been lost, while Bangkok has become as mean as any modern city anywhere, a ‘city of great distance’ since the 1960s [Sternstein, 1982 #3, 87]. These words express the current image of Bangkok well because it takes so much time to go anywhere because of traffic congestion.

Regional conflict in the 1950s became a new factor which influenced Thai politics. In response to the Thai policy against communism, the United States of America aimed to exploit the political geography of Thailand as a military base for covert operations in Laos and Vietnam. American roles and political intervention in Thailand were open. Phibun and some military generals became political actors who obtained weapons and financial support from the Central Intelligence Agency (CIA). However Phibun failed to balance military power between his two close colleagues, General Pao and Field Marshal Sarit Thanarat. Sarit staged a coup on 16 September 1957. Phibun and Pao were forced into exile. The political struggle in Thailand ended for a while (1958-1973) under the new dictatorial regime of Sarit then Thanom Kittikachorn, Sarit’s colleague. However, American technical and financial aid to Thailand continued and substantially influenced the development through the next three decades, which will be discussed in the next section and in Chapter 2.

1.2 Thai Aviation and Bangkok Airport, 1910 to 1960

As discussed, the traditional Thai way of life changed rapidly during the reign of King Chulalongkorn (Rama V, 1868-1910). The Great King and his progressive

---

14 Prince Borvorndej was the leader of the rebels. He controlled military forces in the northeast.
policies, described as one of the most advanced sovereigns of Eastern Asia, brought the kingdom into the modern world. The Royal Family introduced a number of modern elements over a half century including the telephone in 1881, the railway in 1893, the electric tram in 1894 and the motor car in 1909. This included the development of aviation in the early 20th century.

This section gives an overview of developments in Thai aviation. The emphasis is on how Don Muang became Bangkok’s airport and how important it has been. The discussion also focuses on political events relating to Bangkok airport to explain how it became a political concern during the early cold war period.

1.2.1 Early Development

In January 1911, van den Bern, a Belgian representative of a French aircraft company, asked permission to demonstrate its flying machine in Bangkok. After receiving official approval from the King, the field of Sra Prathum (see race course in Figure 1.3) was prepared, which is now the Royal Bangkok Sports Club at Pratumwan. A temporary runway was built while the exciting news was announced and a flying schedule was published in both Thai and English newspapers. The airshows were scheduled for 31 January, 1 and 6 February 1911, thus starting Thai aviation history.\(^{15}\)

Tickets outside the field along Sra Prathum Road, Sanammar Road and Rachadamri Road cost 25 satang\(^{16}\) each. Tickets inside close to the show with seating cost 2 and 5 baht each. This historical event took place in Bangkok only seven years after the Wright Brothers took the first plane into the sky on 17 December 1903. The Belgians and the French did not expect much profit from ticket sales as their concern was with the Royal Family who were very interested in the new machine as a sign of modernisation. On 31 January 1911, Prince Kampaeng Peth Akara Yodin was the first Siamese passenger to board a plane flying over Bangkok.

Later, Prince Nakhonchaisri Suradej visited Europe and studied the successful development of aviation in France. After returning to Bangkok, he reported to Prince Pithsanuloke Prachanard, Minister of Defence and stressed the importance of planes for

\(^{15}\) An article in a local magazine, *Transport*, volume 12 in July 1990, states that the first plane was landed in January 1910 by the French. But a book; *100 Historical Events 1983*, with information gathered from Department of Art, Pakgard Palace and Siam Society claims that the first plane was landed in January 1911 by the Belgians. *The Pictorial History of the Thais*; collection from the Royal Family, shows a photograph of Prince Kampaeng Peth Akara Yodin and van den Bern on the plane taken on 31 January 1911.

\(^{16}\) Thai currency unit; one baht equals 100 satang.
national defence. The Royal Thai Army also realised this and decided to establish an aviation unit in the army. On 28 February 1911, three army officers departed from Bangkok and arrived in Paris on 21 March 1911. While they were being trained to fly different planes, the Ministry of Defence bought seven planes and one more was donated by Chaopraya Apaibej, a general. Thai aviators tested and flew the new French planes before they were transported back to Thailand. After finishing the training course, the new aviators arrived at Bangkok on 2 November 1913.

Obviously the planes were firstly considered as a sign of modernisation from the military point of view. Thai society was not very impressed with the French at the time due to territorial losses to the French some years previously. The first planes were therefore bought from France due to their advanced technology. In fact, the recognition of modern technology had existed for years in Thailand. Politically, King Rama IV and King Rama V understood the importance of the development of transportation. The territorial losses of nearly half the kingdom from 1786-1909 were a painful experience which reminded them that many things needed to be done to protect the nation and maintain independence. This situation forced them to develop telegraph, road and railway systems towards the frontiers of the western colonies.

The field of Sraprathum with its former runway became a base for the first squadron. Hangars were built on the north of airfield, now the Headquarters of the Police Department. However, after being used for only three years, the airfield could not be expanded to accommodate larger aircraft. Squadron Leader Luang Saksulyavud, one of the three aviators trained in France, then conducted an aerial survey over and around Bangkok for a new airport site. He found an area named Don Muang in Bangkaen district (see Figure 1.5) which would not be flooded and which was not too far from Bangkok. His report proposed the Don Muang site, 29 kilometres from the Royal Palace and was approved by Ministry of Defence. A relocation plan was undertaken immediately. The criteria for site selection were simple and reasonable. Its geographical location with a large area of high land was not attractive to farmers in those days who relied more on flood plains, leaving the high land empty. It was also close to the railway, which had been developed in March 1896, providing good access to Bangkok. It is worth noting that the government allowed people to own land and a certificate of land ownership had been issued in 1901. However, the king still owned almost all the land of the kingdom therefore there was no problem with land acquisition for the new airport.
Figure 1.5 Don Muang Airport and the development of Bangkok, 1900 to 1968

Source: DTCP (reproduced by Thongchai Roachanakanan)
Chapter 1 Development and Planning

The relocation from Sra Prathum to Don Muang was completed on 17 March 1914. The Ministry of Defence officially established the first air defence division on 27 March 1914 and this became a part of the foundation of the Royal Thai Air Force later. However, it remained a small unit under the direct command of the Royal Thai Army.

On 22 January 1914, the Ministry of Defence started an aviation training programme which produced another two new aviators seven months later. The development of Thai aviation continued rapidly. Many more airfields were gradually built throughout the country: Prachuapkirikan in April 1914, Chantaburi in June 1919, Nakhon Ratchasima in February 1925 and Lopburi in September 1925. These airfields became primary and secondary strategic airbases and military camps.

After the First World War, veterans gained much more experience in Europe and their mechanical knowledge greatly contributed to the development of Thai aviation later. A one-day round trip from Bangkok to Chantaburi on 17 June 1919 carried mail and earned 9,250.72 baht. Many air shows were held in other provinces in order to gather money to buy more planes.

Thai aviation was now in progress. Thailand signed an agreement on International Air Conventions in Paris on 14 October 1919 which paved the way for international air transportation. However, Thai civil aviation actually started on 23 June 1920 when a flight between Bangkok and Nakhon Ratchasima took only one hour, 25 minutes. Three planes extended the service to faraway provinces and served wider areas particularly during times of epidemics and natural disasters. In June 1921, for instance, the planes took doctors and medical supplies to Ubon Ratchatani where cholera was spreading.

In 1928, the Dutch Airline became the first international carrier to begin overseas aviation to Southeast Asia with flights from Amsterdam to Battavia, its colonial town in Java. A large aircraft with three engines landed at Don Muang airport at 5.00pm on 8 November 1928 and a new era of modern transportation had begun. Since then a number of international carriers from Europe to Bangkok have brought great changes to the country.

Meanwhile the small air defence unit at Don Muang was gradually upgraded in association with an increase in aviation personnel. This included the Department of Army Aviation on 1 December 1921, the Department of Air Force on 12 April 1935 and
eventually the Royal Thai Airforce on 9 April 1937. Hence, there is a sense of belonging with the Don Muang district.

The landscape of Don Muang in the 1930s can be described as a military town surrounded by paddy fields. Most headquarters and offices were on the west of the runway close to the railway. A new road; Prachathipat Road (later renamed Phaholyothin Road\(^\text{17}\)) was built two kilometres from and parallel with the railway on the east connecting Bangkok and the northern suburbs and a military hospital. More residences were built along both sides of the new road which became another Air Force compound. An area south along the road next to the military residences was developed and became a fresh food market. More road networks and the adoption of the *Automobile Registration Act* in 1909 provided much more convenient transportation.

From a political point of view, the changing pattern of transportation had a strong impact on the strategic location of Don Muang airbase, which could control both primary accesses to Bangkok by railway and roads from the north and northeast.

After the revolution in 1932, there was serious fragmentation in the Thai military amongst the Army, the Navy, the Air Force and even the Police which led to a number of political incidents in the capital city. The coup from 11-25 October 1933 was the first time Don Muang was involved in a political conflict when troops from Nakhon Ratchasima took over the airport and threatened the government in Bangkok.

After the coup in 1933, the Army established more military camps in Bangkaen to achieve a balance of power, only some kilometres south of Don Muang. The most powerful camp was the Eleventh Regiment (see Figure 1.5), covering an area almost as large as Don Muang airbase. Since this force was involved in every political conflict and Bangkok was a ground for power plays, its geography and development had been watched by the military government for decades. In December 1943 for instance, two new roads, Laksi-Pakkred (later renamed Chaengwattana Road) and Laksi-Minburi (now Ram Indra Road), were built during the regime of Phibun so that the Eleventh Regiment and other military camps on the two roads could control access routes better than from Don Muang camp. The army was concerned about air travel and therefore the airport has been a military concern since the 1930s.

\(^{17}\) Prachathipat Road was relatively under-developed until it was redeveloped in December 1943 as a strategic road to Chiangrai under the administration of Marshal Phibun Songkhram. It was known as Highway no. 5 before being renamed Phaholyothin Road. Its official name now is Highway No. 1.
There have been many attempts by civilian governments to move the military camps out of Bangkok but these have been unsuccessful due to military threats and coups. In contrast, military governments have expanded their territory and increased their role on the grounds of national security.

Between 1948 and 1952 Don Muang airport was improved by the Air Force in order to enhance the capacity, efficiency and safety of aviation. Don Muang airport was ready to welcome the jet era. However the management and operation of both commercial and military aircraft movements were totally the responsibility of the Air Force.

In 1953 the city of Bangkok covered an area of only 67 square kilometres. Don Muang airport was still remote and surrounded by rice fields. Most vehicles in the country belonged to the military. Railway was the most convenient form of transport between Bangkok and Don Muang while the waterways were still popular with local people. However, the geographical importance of Don Muang was changing along with current regional politics and Thailand’s involvement in the cold war.

1.2.2 The American Role

There was no development in Thai aviation through World War II between 1937-1945. The economic bases of Thailand were heavily damaged, as with other countries. It was the United States which played a unique and constructive role in the development of Thailand during the post war period. This section discusses aviation development in Thailand in the 1940s and 1950s under the supervision and assistance of the United States government.

The great Indochinese peninsula attracted little American interest and attention until the closing months of the Second World War. President Franklin D. Roosevelt’s anticolonial sentiments expected Indochina to be free from France. During the war, in fact, the American role in the region was limited by British pressure that it only support the Free Siamese Movement, Ho Chi Minh’s force and other political groups against the Japanese. Due to the British willingness to revive France as a European power to help balance the growing strength of the Soviet Union in Southeast Asia, the United States was drawn into this region starting a new era of cold war [Furtrell, 1981 #27, 3-5].

In the late 1940s and the early 1950s, the political situation in Southeast Asia changed dramatically in association with greater intervention by the American government. In the view of Thai society, the U.S. was more friendly than its allies
Britain and France, which took away a half of Thai territory during the colonial period. Not surprisingly, a great friendship developed with the Thai government following American policies on anti-communism. Regional conflicts became direct Thai concerns which led to the deployment of American forces in Thailand between 1961-1975. However, this friendship became controversial as the American prosecution of the Indochina war came to an end and corruption was exposed.

As part of the close friendship and mutual interest, U.S. official economic and military assistance started in 1946 and ended in 1988, amounting to roughly US$ 3.3 billion. However U.S. investment in infrastructure in Thailand was mostly for military purposes. It is very important to note that Thailand was heavily dependent on foreign expertise in the 1950s and in the 1960s. A number of development programmes involving American professionals and institutions as providers, strongly influenced the Thai knowledge base and later development policies [Muscat, 1990 #25, 39,265].

In terms of air transport, a small civil aviation project began in 1951, implemented by the United States Operations Mission (USOM) in Bangkok. This was at the same time that the Central Intelligence Agency (CIA) which was working closely with USOM, started one of the biggest operations named Project Paper on 7 February 1951. Civil Air Transport, a CIA facility, later became Air America in 1959 and in association with Sea Supply another CIA facility, set up a station in Bangkok. Its planes used Don Muang airport as a base to supply arms and ammunition to Chiang Kai-shek’s army in northern Burma. Such a large operation would have been impossible without support from Thailand. Prime Minister Phibun Songkhram had approved and supported the American operations based on the same anti-Communist rationale [Leary, 1984 #24, 127-132, 208].

In late December 1951, an open controversy erupted when the Chinese communists publicly charged that the American government was ferrying nationalist soldiers from Taiwan to Thailand and Burma through Don Muang airport [Prados, 1986 #17, 73-75]. This episode involved Don Muang airport in the American secret war.

The first phase of a 10-year programme in aviation development was actually begun by USOM in 1955. It included the financing and installation of navigational aids at Don Muang and 13 other civil airports. Various communication systems, airport improvements including control towers, runways, an instrument landing system, aprons

---

18 Sea Supply was staffed by professional paramilitary personnel, many of them former The Office of Strategic Services (OSS) agents in Thailand [Randolph. 1986 #16, 25].
and a power plant were developed at Don Muang. The U.S. aviation authorities also considered that Bangkok’s geographical position was certain to make it a major traffic hub. Hence, it is interesting to study why the U.S. spent a lot of money developing the transportation system in Thailand.

In October 1954, an article in *Foreign Affairs*, ‘Spotlight on Thailand’ by Edwin F. Stanton; the resident U.S. ambassador who served from 1946 to 1953, stated that:

> Because of her geographical and strategical location, Thailand or Land of the Free, is the heart and citadel of the region...Thailand’s assent to that is, of course, absolutely essential; and it is equally necessary for the United States and the members of any Southeast Asian alliance...Such a defensive system for Southeast Asia can best function if it is based on Thailand [Randolph, 1986 #16, 26].

Obviously the geography of Thailand was viewed mainly in terms of political security. Certainly, any reason could be raised and quoted depending on the motive of the observer. Meanwhile, many secret operations in Laos had been underway and the CIA’s first flight was a supply lift to a camp in Laos on 6 May 1953 [Prados, 1986 #17, 115].

The large investment in airport development during this phase resulted in the greatest reform to Thai aviation. By February 1960, construction had been completed at Takhli, Udorn, Ubon, Nakhon Ratchasima (Korat) and Chiangmai airports. In April 1961, a new control tower was completed at Don Muang airport. The largest scale construction was the development of three new airbases: U-Tapao in Rayong, Nam Phong in Khonkaen and Kamphaeng Saen in Nakhon Pathom built from 1963 to 1968.

Seven airports became primary strategic bases for U.S. Air Force operations during the Vietnam War. Meanwhile Don Muang became the centre of American facilities and the base of fighter interceptor squadrons where U.S. Air Force personnel had begun their operations in April 1961 [Furtrell', 1981 #27, 279-280; Randolph, 1986 #16, 52]. After other airbases were better developed, Don Muang was used mainly as a passenger and cargo transfer point.

A decision on the second phase of Don Muang was made in early 1965 as a result of the growth of the Vietnam conflict. The prime reason for the second phase was a realisation that the build-up in military air traffic was going to place increased demands on Thailand’s civil aviation structure for handling military traffic and mixing it safely with the expanding civil traffic. When the second and last phase was finally completed in 1974, Bangkok had become one of the major hubs of the world as expected [Muscat, 1990 #25, 104-105]. However, the American policy on Bangkok
airport development changed in the 1970s. A comprehensive analysis of this will be made in Chapter 2.

It should be noted that Air America closed its bases in June 1974, the last year of the final phase of the 10-year programme in aviation development. Its facilities at the airports were taken over by the Thai Airways Aircraft Maintenance Company, while its personnel in Bangkok opened new companies with new addresses which continued other secret missions as usual. Since 1974 American aid has not played a significant role in Thailand. Many American projects were revised and redeveloped by Japan through the next decades.

Besides the construction programme, assistance from the U.S. also covered several areas of research work; one of which was a report submitted to the Ministry of Communication in June 1959, *A Comprehensive Evaluation of Thailand's Transportation System Requirements*. This report has become important evidence against the development of the SBIA. A comprehensive analysis of this will be presented in Chapter 5.

This report gave most attention to a national system and network of transportation development in which selected alternatives were rationalized given the current situation. In accordance with other projects being undertaken by USOM, large transport investments were a first priority in order to accommodate the growth of the Thai economy and the military capability.

In terms of air transport, the report stressed two prime considerations: (1) the relation of global air travel to Thailand’s economy; and (2) the need for an integrated military and civilian air transportation system for Thailand.

The report also pointed out the tourist potential for Thailand and the favourable location of Bangkok with its excellent international airport on global jet routes which would enable the Thai economy to benefit quickly from the influx of visitors. A recommendation of high and continuing budgetary priority strongly emphasized that Don Muang airport must be improved and maintained to jet age standards set out by the International Civil Aviation Organization (ICAO) [Consultants, 1959 #15, 97].

It is worth noting that this report was written in association with the USOM-programmed project to reconstruct the Bangkok-Don Muang road section to a four-lane highway which would safely carry the increased airport traffic together with a growing load of suburban and inter-urban traffic. This new highway was finished in 1962 and
later named Vibhavadi Rangsit Highway. It greatly influenced the land use pattern of Don Muang airport in the 1970s.

Similar recommendations were given with respect to other provincial airfields. In the case of new airport developments, the Federal Aviation Agency (FAA) group of USOM was qualified to give valuable assistance with equipment and construction standards and the final selection of sites. Unfortunately, this goodwill was completely forgotten when the site selection for the second international airport in Bangkok was undertaken three years later.

In 1960, another study by the FAA, *Air System Requirement Plan and Survey for the Kingdom of Thailand*, pointed out that there should be a second international airport in Bangkok to accommodate larger civil aircraft. No one knows how and why this contradictory recommendation was made to the Thai government only one year later. While the FAA study was referred to from time to time through the next three decades, in contrast, the former study has never been mentioned.

The method of the FAA study is questionable. The report, *A Comprehensive Evaluation of Thailand’s Transportation System Requirements*, had just been completed. Why did the FAA undertake a new study? In fact, it was another American team working on Bangkok city planning who originally gave the same recommendation. More details on this are discussed in the next section. It is quite clear that the FAA’s study was concerned with politics therefore its recommendations supported the new Bangkok airport project.

**1.2.3 The Second Bangkok International Airport**

In 1959, the U.S. Agency for International Development (USAID) started a Public Administration Project on Bangkok city planning with a contribution of US$ 1.4 million. Litchfield, Whiting & Bowne, a U.S. private contractor for USAID, was working on *The Greater Bangkok Plan 2533* (AD.1990), the first modern plan for the country. In 1960, the consultants recommended the separation of civil and commercial aviation at the military airbase at Don Muang. A site 17 kilometres east of Bangkok was originally suggested for the new international airport. This recommendation was associated with the proposed direction of industrial development along the seaboard of the Gulf of Thailand. It was expected that the new airport would facilitate both Bangkok and the new industrial area.
The rationale for the need for a second international airport seemed to have been based on urban and regional development. No matter what the fundamental reasons were, this initiative was welcome.

Thai society learnt the exact meaning of dictatorship after the second coup\(^1\) of Army Field Marshal Sarit Thannarat in October 1958. His regime was more highly centralised than any other in Thai history. He was Prime Minister, Supreme Commander, Commander-in-Chief of the Army and Acting Director of the Police Department among a host of other top positions in State Enterprises. He demanded that his needs be met immediately and without question. A decision on the route of a new road was easily implemented by calling in the landowners and paying them off after a short talk; the new airport project therefore started immediately. Construction of the new airport, however, was different from other projects. In short, Sarit himself wanted the new airport.

On the one hand, the political situation in the region during the post-war period provided a reason for this reaction. Direct U.S. military involvement in Laos during 1960-1962 and the deployment of U.S. troops in Thailand was a major concern for the Thai government which was staunchly anti-communist. It was simply understood in the early 1960s, that the Don Muang airbase would be mainly military and that the unstable political situation in Southeast Asia dictated that national security was the primary concern. The new Bangkok airport was seen as a necessity.

The introduction of the new airport was a political concern and its actual rationale was kept quiet through the period of dictatorship. Any criticism of politics in Thailand was unusual in the 1960s. The permanent secretary of Ministry of Transportation and Communication, Mr. Kan Nakamdee, who was dismissed in 1977, had argued in 1978 that some high-ranking officers in the military government were involved in Nong Ngu Hao land acquisition. He also argued that only a few people who had a close relationship with the committee took part in purchasing such a large plot of land\(^2\). In the view of landlords living near Nong Ngu Hao, land prices were unreasonable as cheaper land with better access and greater potential was available\(^3\).

A turning point occurred when Sarit died of cirrhosis of the liver on 6 December 1963. Since then the Nong Ngu Hao project became of less importance and no progress

---

\(^1\) The first coup of Sarit that forced Phibun and Pao to exile was on 16 August 1957.

\(^2\) Mr. Kan Nakamdee expressed his concern on Siamrath Weekly on 11 December 1983 p.18-23.

\(^3\) A landlord who has lived near Nong Ngu Hao for three decades expressed this viewpoint in a fieldwork interview in 1996.
was made on it for three decades until 1991. What happened to the new Bangkok airport project during these three decades will be discussed in Chapter 2. However, land acquisition continued until 1968 with a total budget of 129 million baht for an area of 19,241 rai (30.78 square kilometres).

If Sarit had lived for a couple of years longer, the Nong Ngu Hao project might have been completely finished which would have greatly changed the future of Bangkok. He was the only person who could proclaim the name of the Second Bangkok International Airport in any purposeful way. Similar statements are made when other people talk about this project, but some important questions are forgotten. Did Sarit know that the new airport would be built on a swamp? If he did, why he decide to build it there? And what did he really expect from the project?

Both the positive and negative consequences of Sarit’s absolute power throughout his regime have been discussed for years. Whether his decision on the second international airport was right or wrong, he started the agenda for the longest development programme with the most controversy in Thai history, the legendary Nong Ngu Hao project.

It is also interesting to study the contradictory recommendations contained in the FAA study in 1960 and the previous report of A Comprehensive Evaluation of Thailand’s Transportation System Requirements in 1959. Recognising that Sarit was one of the most corrupt dictators in Thai history, my concern is to search for a clear understanding of what the new Bangkok airport project is all about.

1.3 Origins of the Second Bangkok International Airport

Thai governments for decades have argued that the first Bangkok city plan made by Litchfield, Whiting & Bowne and the FAA study in 1960 both recommended the separation of civil and commercial aviation from the military base at Don Muang. Governments have used this point to continue with the Second Bangkok International Airport project at Nong Ngu Hao. This recommendation has been repeated again and again in local newspapers throughout the past few decades. However, no one has ever studied the details of this recommendation. My investigation starts here by finding out

---

22 Land Measurement in Thailand; one square kilometre equals 625 rai.
the truth about the Second Bangkok International Airport project. A serious question is what really happened in 1960.

Unfortunately, the FAA document is not available for this thesis. However, I have the catalogue which represents the complete holdings of the Documents Section, USOM Technical Library publications on Public Administration, dated October 1972, and the original copies of the first master plan of Bangkok and some letters that Litchfield, Whiting & Bowne wrote to the government in 1959 and 1960. These materials are enough to reveal the truth about the origins of the new airport project.

From December 1957 to August 1960, the Litchfield consortium submitted 15 reports to MoI. All were published, however, none were related to the airport project [(USOM), 1972 #125, 16-25].

After carefully checking every single page of the main report of the first master plan of Bangkok, I have found nothing relating to the new airport project. Despite the most important section which recommended the development of a new seaport on the eastern seaboard, which has become Lam Chabang deep seaport in Chonburi, there is nothing about the airport development. However, this recommendation may have been written elsewhere in a letter or may have been discussed amongst the people involved. If it was, then the recommendation could not have been properly proposed.

My argument is that the Litchfield consortium did not have time to seriously study the new airport idea (see Appendix 1). Moreover, the consortium specialised in city planning but not in air transport planning. The idea to move things out of Bangkok was probably due to tension between the military and planners. However, what really happened in 1960 was concerned with politics under the dictatorial regime of Sarit.

In 1963, Cyrus R. Nims, the USOM city planning advisor to the government of Thailand from August 1961 to November 1963, submitted a report City Planning in Thailand to the City Planning Office, Ministry of Interior. Nims discussed the Litchfield Plan and stated that at least 75 per cent of the basic policy recommendations of the Litchfield Plan had not been adopted or even seriously considered [Nims, 1963 #122, 105-106]. Nims mentioned very briefly that the new airport site selected was near the recommended site [Nims, 1963 #122, 5], however, no details were given about the new airport project.

It should be noted that Nims became the USOM city planning advisor one year after the Litchfield consortium had left Bangkok. He was responsible for recommending
that further action be taken to more effectively establish city planning as a permanent function of the Thai government [Nims, 1963 #122, introduction]. In the report Nims concentrated on the technical and administrative basis of city planning. The new airport was not his concern.

It is clear in the planning document that there is no evidence about the separation of civil and commercial aviation at Don Muang airport and the need for a new Bangkok airport. The task of this thesis is to understand what happened with the SBIA project.
Chapter 2: Planning in Action, 1961 to 1991

There were many political changes in Thailand from 1961 to 1991 starting with Sarit’s death in 1963, the collapse of military dictatorship in 1973, the violent struggles for democracy in 1973, 1976 and 1991 and the replacement of the power elite in the political theatre in the 1980s. From October 1958 to February 1991, Thailand experienced eight coups and eight constitutions under the administration of 21 governments. These political changes and the consequent instability influenced the fate of almost every development project in this period.

Neither the plan for Bangkok nor the plan for the SBIA progressed from 1961 to 1991. The Litchfield Plan was ignored. Land was purchased for the new airport throughout the 1960s, but there was no construction. Despite many attempts to implement the two projects, nothing happened for three decades. Meanwhile as a consequence of the lack of development control for these decades, Bangkok has become the city of magnificent distances\(^1\) with a growing number of urban problems.

After 1960 the two projects had parallel developments under different authorities. The two projects became active again in the early 1990s after the SBIA was approved in May 1991 and the first legal city plan of Bangkok, the Bangkok General Plan 1992 was approved in July 1992.

This chapter discusses important developments in Bangkok city planning and the SBIA from 1961 to 1991. The first section discusses what happened after the first master plan of Bangkok was submitted to the Thai government in 1960. The emphasis is on a review of the first master plan of Bangkok and attempts to revise the Bangkok plan in the 1970s. A shift to development planning for Bangkok will be discussed in accordance with the new form of Bangkok local administration.

The second section discusses attempts under different political conditions to continue the SBIA Project in this period. The third section discusses the shortcomings of planning due to a lack of development control for decades in the face of the urban primacy of Bangkok. Changes in Bangkok’s built environment between 1960 and 1990 will be discussed to reconsider how reasonable it would be to develop the new Bangkok airport on the site chosen three decades ago.

\(^1\) The term City of Magnificent Distances or City of Great Distances is given by Larry Sternstein [Sternstein, 1982 #3, 65-106]. Sternstein explained that Bangkok is ‘city of great distances’ because to go any distance takes a great deal of time.
2.1 Planning Bangkok, 1961 to 1991

In hindsight a plan for the development of Bangkok was crucial for few could have foreseen the growth which took place over three decades. An effective, or even partly effective plan, could have facilitated the planning of infrastructure. It might also have influenced the planning and development of a second airport for Bangkok. But here the influence of a plan for Bangkok would necessarily have been limited for the area under the jurisdiction of a city plan did not extend to the proposed site of the airport.

Litchfield Whiting Bowne & Associates completed the master plan of Bangkok in April 1960 and ended its three-year contract with the Bangkok-Thon Buri City Planning Project in August 1960. The American government’s aid to Thailand on city planning continued until 1966 under USAID Public Administration Projects with a total contribution of US$ 1.4 million [Muscat, 1990 #25, 310]. The Thai government in the 1960s did not place any importance on the first master plan of Bangkok. City planning skills and techniques introduced by the American consultants in the 1950s and 1960s, however, influenced the development of many Thai government departments. This included introducing the use of a five-year plan prepared by the National Economic and Social Development Board (NESDB) in 1963 and the creation of the Department of Town and Country Planning (DTCP) in 1961.

It is worth noting that the most serious problems of Bangkok were clearly apparent by the late 1960s. However, the problems were concentrated within the inner area of the old city such as traffic congestion at the Memorial Bridge linking Thon Buri and Bangkok and the problem of seasonal flooding in Thon Buri. The problems of this period were studied and it was recognised that something should be done about the Bangkok city planning.

My argument is that the government could have controlled and resolved the problems in this period if the Litchfield Plan had been implemented. Despite the power struggles among the political factions, there were many times that the rulers, sometimes as dictators with extreme power, could do something about ‘planning’ to solve the problems effectively but instead they did nothing. This chapter discusses how the rulers were concerned with dealing with the problems of Bangkok after the plans had been made.

The first master plan for Bangkok in 1960 and the re-plans in 1969 and 1971 are good examples. In Sternstein’s view, these plans never received the legal and financial
support necessary for their implementation. The master plan for Bangkok, therefore, never had a chance to realise its potential [Sternstein, 1982 #3, 117].

Bangkok city planning did not move forward from 1961 to 1991. Even though from 1961 to 1991 the Town and Country Planning Act provided legal power in 1975 and the administrative system of Bangkok had been reformed giving it more authority, the authorities concerned failed to implement the master plan of Bangkok in 1976. What went wrong with Bangkok city planning?

2.1.1 Failures of Bangkok City Planning

The purpose of this section is to identify the failures of Bangkok city planning in this period. It will also examine the ‘transition period’ when planning could have achieved something before Bangkok’s problems became too complex and critical for any resolution.

There are many reasons why the DTCP and the Bangkok Municipality, which became the Bangkok Metropolitan Administration (BMA) in 1975, failed to implement the master plan for Bangkok from 1961 to 1991. In my view, the failure was due to political interference and the separation of three systems, the administrative, legal and planning systems. This section concentrates on political interference. The failures caused by the three systems will be discussed in Chapter 3.

Numerous experts had already prepared many reports and master plans in this period to solve Bangkok’s problems but none were implemented. Consequently, the problems have increased rapidly since the 1970s, from the core of the city in every direction where new roads have been developed. An interesting question is why these plans were ignored. It cannot be denied that two military dictators, Field Marshal Sarit and Field Marshal Thanom, both with strong power in this period, ignored city planning for Bangkok. The consequences of this will be discussed in the last section of this chapter, focusing on urban primacy and changes in Bangkok’s built environment which have influenced Bangkok city planning.

Thanom was not as authoritarian as Sarit. In February 1969 there was an election and a commitment to issue a new constitution soon. According to the report on the first revision of the Bangkok Plan prepared by the DTCP in February 1971, the biggest constraint was likely to be a legal concern because the government was waiting for the new planning law and expecting the use of more powerful legal measures. The

---

2 See Appendix 2.1
current planning law, the *Town and Country Planning Act 1952*, was not practicable and a proposal to revise it had been made as early as 1959. The first draft of the new planning law was completed in 1965 but the House of Representatives rejected it in 1966. Some Members of the Parliament argued that the new planning law should be issued in association with the new constitution which was being drafted. Cabinet received the amended draft in November 1970 and was preparing to send it to the House of Representatives ([DTCP], 1971 #51, 2). Unfortunately, the coup on 17 November 1971 prolonged the procedure of issuing the new law until 1975.

In 1976, the DTCP attempted to proceed with city planning for Bangkok. However it could not continue after receiving thousands of complaints in 1977 and 1978. As a result, the process was suspended indefinitely. The failure of planning in this period was controversial. Some projects were developed soon after the city planning was suspended. This included the most scandalous case in which a large commercial complex was developed on State Railway of Thailand (SRT) land at the intersection of Vibhavadi Rangsit Highway and Phaholyothin Road. This area had been proposed as a public park and for recreation development in the 1976 master plan.

It is clear that the failures in this period were due to political interference. Nuanpen Sawasdimongkol, who worked for the DTCP in this period, stated that discussions on the master plan for Bangkok were held at General Kriengsak Chomanan's residence. It also cannot be denied that the suspension of Bangkok city planning in this period greatly benefitted the landed elite.

Without controls on urban development for many decades, the delay in legislation strengthening planning caused a number of serious problems for Bangkok such as urban sprawl and the poor provision of infrastructure. It took 16 years, from 1959 to 1975, to re-issue the *Town and Country Planning Act*. However, it took another 17 years to implement the first legal plan for Bangkok in 1992. In my view, these delays were a result of manipulation by the power elite. More arguments on this are included in Chapter 3.

Moreover, the issue of political interference includes the fragmentation between the authorities involved, which is a basic problem with the administrative system in Thailand. It is generally understood that city planning is a concern of local government. However, this view was controversial in Thailand in the 1960s through to the 1980s. Responsibility and authority for making the Bangkok plan involved a serious conflict.

---

3 Army Field Marshal Sarit Thanarat controlled the country from 1958 to 1965 and Field Marshal Thanom Kittikachorn took the power and became Prime Minister from 1965 to 1973.
between the national government DTCP and the Bangkok Municipality according to the flexibility of planning law. Both claimed responsibility for making the Bangkok plan. The DTCP argued that the Bangkok Municipality was not ready to make the Bangkok plan. My question is whether in fact local government could make the plan.

The Bangkok Municipality was enthusiastic and had its own planning office from 1956 with sufficient manpower, recognized as the largest local planning authority in Thailand. In other words, everything had been ready for years to make the plan but this potential was overlooked.

Besides the new planning law issued in 1975, there was also a need in the government’s view for a better form of local administration to deal with the numerous problems of Bangkok and another new Act was issued in the same year. Consequently, the Bangkok Municipality and the Thon Buri Municipality were merged and became the BMA. The BMA Act gave considerable authority to the governor of Bangkok.

Although the capacity to solve Bangkok’s problems using planning measures had existed since 1975, there was no attempt to proceed with Bangkok city planning in the 1980s. The failure of Bangkok city planning in the 1980s therefore was not involved with the administrative, legal and planning systems but due to the ‘politics’ of the use of power. Why did the governors in the late 1970s and 1980s hesitate to proceed with Bangkok city planning that might have impacts on the landed elite?

In comparison, the Bangkok General Plan 1992 was completed under the administration of Chamlong Srimuang who was the Governor of the BMA from 1988 to 1994. He was viewed as a religious man whose politics were impressive and energetic. Chamlong challenged the power of the central government during his six-year administration, compared with previous governors who always thought about their political interests and popularity.

A similar problem of planning occurs in almost every city in Thailand where it is compulsory to have a city plan that is controlled by law. It is believed by local people that the local authority, particularly a municipality, is unable to prepare its own plan. This is not the case. In fact, in many cases the mayor is unwilling to deal with planning procedures because he does not want to be involved in any conflict with the local people in case this influences his popularity during the next election. As a result, municipalities let the DTCP prepare any plans and prefer to play the role of an observer.

Chamlong was not reluctant to proceed with Bangkok city planning and to use every available tool to develop Bangkok. Unfortunately, the old concepts of city

---

1 Kriengsak was Prime Minister from 12 November 1977 to 29 February 1980.
planning in Thailand had strong influence on the Thai planners. The first legal plan for Bangkok showed only a colourful land use map and a road network plan. Emphasis was on zoning and enforcement was not strict. The road network plan became useless. As a result it was not possible to solve Bangkok’s problems with the Bangkok Plan 1992. The Plan could, however, slow down development in some areas, at least for a while.

In the case of a big city with rapid growth such as Bangkok, it was the view of professional planners that the sooner the plan was implemented, the more effective it would be. In other words, Bangkok might not have faced such critical problems if the first plan had been implemented in 1960. Despite its implementation by law in 1992, however, the eventual first plan had very little influence on the development of Bangkok because the BMA could not provide a budget to implement any of the development projects included in the plan. Hence, Bangkok city planning seems to be an unfinished affair and the planning system seems to be discredited accordingly.

2.1.2 The Greater Bangkok Plan 2533 [A.D.1990]

The most classic case of Bangkok city planning is the first master plan for Bangkok, The Great Bangkok Plan 2533 [A.D.1990] widely known as the Litchfield Plan [Litchfield, Whiting, Bowne and Associates, 1960]. It is interesting to study the Litchfield Plan because it has been referred to in numerous studies and has guided the preparations of many infrastructure development plans. In this section, the basic approach is to consider this plan from a different angle to other scholars. The discussion in this section also reflects the politics of planning in the 1960s. The consequences of this plan in the context of changing Bangkok will be discussed in the section on the First Revision of the Plan for the Metropolitan Area in 1971.

In 1955, the Bangkok Municipality under the mayorship of General Mangkorn Promyodhi, wrote a letter to the Ministry of Interior asking USOM to send technical experts to help with city planning. An agreement was reached between USOM and the Thai government in June 1957. A contract was signed between Litchfield Whiting Panero & Associates and the Thai Ambassador to the US on 16 December 1957. The town-planning experts of the Litchfield consortium arrived in Bangkok in March in 1958 and started work at once [Pore, 1959 #83, 1-3]. The land use of Bangkok in 1958 was surveyed as shown in Figure 2.1.

---

5 The letter dated 28 October 1959 from the US Embassy in Bangkok to Washington mentioned this name according to the contract on 16 December 1957. Litchfield Whiting Panero became Litchfield Whiting Bowne & Associates when the consortium was in Bangkok.
Chapter 2 Planning in Action

The American consultants spent less than three years on their study. The Plan shown in Figure 2.2 was essentially a land use plan: blocks of different uses separated by access ways and coloured to produce a pleasant mosaic-like structure able to comfortably accommodate four and a half million people, attendant facilities and anticipated industrial growth in 1990 [Sternstein, 1971 #18, 1]. The basic problems with making the Litchfield Plan, which influenced the quality of the plan, were apparently time management concerns. The American consultants spent too much time gathering data and focusing on too many details in unnecessary areas such as the distribution of education services in all the districts of Bangkok. However, the emphasis in this section is on the planning problems, a better understanding of which can explain what went wrong and why the plan was not practicable.

Besides the report on the First Revision of the Plan for the Metropolitan Area in 1971, the problems of the Litchfield Plan have been pointed out repeatedly by Larry Sternstein6 [Sternstein, 1971 #18, Sternstein, 1976 #19, Sternstein, 1982 #3]. Sternstein strongly argued in his article Bangkok 2001: A Space Odyssey that...

On arrival, the American consultants found no adequate map of the city. A base map of the area was then produced from aerial photos.... A considerable time was devoted to providing the bare necessities of planning.... It appears that a considerably greater period of time ought to have been devoted to the compilation and analysis of basic data, for the result is neither complete nor critical. In particular, it seems strange that the available population data were not carefully assessed.... None of the data elicited were used in preparing 'The Greater Bangkok Plan 2533'. Apparently, advance returns for the Metropolitan Area were not requested or could not be supplied before the contract between the Thai Government and its consultants terminated in August 1960.... [Sternstein, 1982 #3, 109].

Bangkok Land Use 1958

Source: Litchfield, 1959 #81.

Figure 2.1 Land Use in Bangkok, 1958
Source: Report on the first revision of the plan for the Metropolitan Area.

Figure 2.2 The Greater Bangkok General Plan 2533 [A.D. 1990]; The Litchfield Plan
Inadequate information was likely to be the first problem for the Litchfield Plan. Without a reliable survey system, little data collected by different authorities could be used for analysis and this problem remains today. The second problem was a poor management of limited time, which the American consultants could have used to prepare a better plan. However, these were general problems which have been discussed in many other documents [(DTCP), 1971 #51, 5].

Sternstein briefly stated that the American consultants were ‘to develop general, practical plans, including programmes for their implementation’ for a number of facilities and ‘to institutionalise planning a continuing...process in the Metropolitan Area’. The Plan included a budget document which indicated the costs involved in providing the necessary facilities, translated the land-use plan into a series of projects to be strategically phased in over time and discussed the need for fiscal, legal and administrative changes to enable implementation of the Plan [Sternstein, 1982 #3, 109]. In other words, the expectation was to apply western management techniques to Bangkok city planning. However, making the Bangkok Plan in 1960 was not to be smooth.

The most critical problem, in my view, was that the American consultants did not understand systems in Thailand. Without previously studying the administrative, legal and planning systems, the Litchfield Plan introduced the so-called new planning philosophy which insisted on strategic measures and the provision of the necessary fiscal, legal and administrative infrastructure. This caused confusion [Sternstein, 1982 #3, 109]. Perhaps this planning philosophy was little understood by the Thai authorities. Consequently the series of projects in the Plan became a series of conflicts among Thai authorities.

In Sternstein’s view: Thai authorities referred to *The Greater Bangkok Plan* 2533 in bolstering arguments for specific developments included in it when these cropped up in the traditional project-by-project approach and ignored it when the project was not included in the Plan [Sternstein, 1982 #3, 109]. This statement implies that the planning philosophy in the Litchfield Plan was ignored and misused.

In accordance with the Litchfield Plan, the government concentrated on efforts to restructure and rearrange the existing systems. In the administrative system, the municipalities of Bangkok and Thon Buri were merged in 1971 and became a special form of local administration named the BMA in 1975. What the Litchfield Plan required most was the new *Town and Country Planning Act*, the legal authority for a more
effective planning system [DTCP, 1971 #51, 1-2] which was issued in 1975. Obviously, a considerable time was wasted by taking 15 years to restructure the administrative and legal systems. Consequently, the series of projects proposed were ignored and there was little concentration on advancing Bangkok city planning.

It is not clear whether the American consultants expected these consequences with their approach. My argument is that it is not reasonable to make a plan on the basis of entirely changing the existing systems.

The Litchfield Plan may not have been a perfect plan but it could have achieved something if it had been implemented. It recommended that controlling the urban population could solve the problem of the urban primacy of Bangkok, and that the regional cities should be developed in accordance with a programme of decentralisation. A transportation network was proposed, giving importance to a mass transit system. All of these recommendations were based on development policies which required only ‘good will’ from the government. If any of these recommendations had been implemented, Bangkok might have been more properly developed.

While there were opportunities to reconsider the Litchfield Plan in 1969, 1970 and 1971, nothing happened. The failure of planning for Bangkok in this period was expressed precisely by Sternstein in his article ‘Exorcising the Bedeviled City of Angels’ [Sternstein, 1982 #3, 117]. Bangkok became a big city with a number of problems. In the view of some Thai people, it seems to be the fate of Bangkok that evil spirits have settled down in the capital permanently and enjoyed extending their territory to the nearby provinces through this period.

2.1.3 The First Revision of the Plan, 1971

Very little in the Litchfield Plan was implemented during the 10 years after its completion. Meanwhile Bangkok had changed so rapidly that it became necessary to do something with the plan. Figure 2.3 shows land use in Bangkok in 1968. An effort to refashion it was made unofficially in 1969, transformed unofficially in 1970 and officially revised in 1971. These three efforts reflected something about the planning of Bangkok in this period. The emphasis in this section is to study planning philosophy according to the different views of Thai planners. Moreover, it will also give another interesting aspect of what went wrong with the planning of Bangkok.

7 See Appendix 2.2
Source: DTCP, 1971 #51

Figure 2.3 Land Use of Bangkok, 1968
In October 1969 Arporn Chancharoensook, an architect with the City Planning Division, Office of the City Clerk, Municipality of Bangkok, completed a *Memorandum Describing Activities under the Responsibility for Planning and Proffering Advice Concerning the Future of Bangkok*. A large amount of data was presented. The problems of Bangkok were discussed briefly. The proposal that the population of the Greater Bangkok Area in 2000 be limited to 6,500,000 and the area fixed at 975 square kilometres covering four municipalities would require a new metropolitan planning authority. Eventually a land use plan in association with a road plan, a facility plan and other development programmes were presented [Sternstein, 1971 #18, 93-168].

In April 1970, Professor An Nimmanhamindr, an architect, planner and lecturer in the Faculty of Architecture, Chulalongkorn University, presented a *Solution to the Traffic Problem in Bangkok-Thon Buri and Establishment of a New National Administrative Centre*. The problems of Bangkok city planning were discussed briefly. He stated that authorities could not solve the problems because of the lack of finance, manpower and authority. In his view, the population of Bangkok should be limited to 3.5 million. Besides a solution to traffic congestion, Professor An proposed that the government should consider moving the capital to a new site and relocating the deep sea port and certain types of factories [Sternstein, 1971 #18, 183-213].

In February 1971, the DTCP, Ministry of Interior completed a *Report on the First Revision of the Plan for the Metropolitan Area*. DTCP briefly reviewed the Litchfield Plan which was considered as a policy guideline but was no longer the master plan. The greatest problem for the DTCP was the lack of data on industry and commerce in Bangkok and Thon Buri. After studying a wide range of urban and regional data, it concluded that the metropolitan area should be delimited so as to include areas under the direct economic influence of Bangkok. It also proposed that the 1990 population should be limited to 6.5 million living within an area of 732 square kilometres. The emphasis was on land use and communication planning and different zones were presented [Sternstein, 1971 #18, 17-91]. Figure 2.4 shows the First Revision of the Plan for the Metropolitan Area in 1971.
Figure 2.4 The first revision of the Plan for the Metropolitan Area, 1971
In 1971, these three papers were republished in Sternstein’s *Planning the Developing Primate City: Bangkok 2000*. In Sternstein’s view, the papers showed authoritative Thai thinking on city planning in this period. Besides presenting strong criticisms and arguments about differences between the three papers, Sternstein concluded that ‘to grasp the opportunity for planning, Bangkok needs people in authority who are aware of what is going on in the many and varied fields pertinent to urban development and who know Bangkok.’ [Sternstein, 1982 #3, 115]. During the past decades however, the people Sternstein mentioned could not be found and the old problems of Bangkok city planning remain.

The papers also highlighted another aspect of the planning problem. The authors were the representatives of three primary actors who were involved in Bangkok city planning. First, the Municipality of Bangkok was viewed as the local government agency which has to act as the manager in the development of Bangkok. Second, Chulalongkorn University was viewed as the primary planning school which supplied personnel to the planning authorities. Last, the DTCP was viewed as a representative of the central government responsible for city and community planning. In principle, all of them were closely involved with Bangkok city planning and cooperation was therefore crucial. The fragmentation in planning philosophy was another serious problem for Bangkok city planning in this period. A consequence of this problem was evident when the fragmentation became worse and the effort of proceeding with the Bangkok Plan in 1976 failed despite the new planning law being issued in 1975.

### 2.1.4 Development Planning

After 1976, Bangkok city planning was in limbo, while the problems of Bangkok became worse every day. Traffic congestion, floods, slums and pollution extended in every direction of road development. The city demanded any practical and urgent solution that could be implemented immediately. As a result, many multi-million baht projects were rapidly approved to solve Bangkok’s problems, such as the first stage of the expressway project of the expressway project9 started in the late 1970s. However, these solutions were undertaken separately by different public authorities and without any coordination. As a result, infrastructure development projects in this period extended the built environment

---

8 The highlights of these three papers with the same context was republished on the new title *Bangkok 2001: A Space Odyssey*, in *Portrait of Bangkok* in 1982 [Sternstein, 1982 #3, 109-105].

9 The first expressway system, comprising three sections, namely Din Daeng-Port, Bang Na-Port and Dao Khanong-Port, of respective lengths of 8.9, 7.9 and 10.3 kilometres was completed in 1987.
of Bangkok in a disorderly fashion. Without development controls, the city was growing rapidly in every direction while the new infrastructure was being developed.

Under the new form of local government with a larger administrative structure and more financial support, the BMA became more autonomous in development management and could implement its own large projects. As a result of this new arrangement, the BMA and other authorities were mutually responsible for the chaotic development of Bangkok in this period.

A fundamental shift of planning strategy was evident when the BMA started the first five-year development plan (2520-2524 B.E. or 1976-1981). It was supposed to be implemented in 1976 but was not completed until October 1977. Its goal was to provide clear development guidelines and policies in accordance with the five-year national development plan prepared by the NESDB [BMA, 1977 #52, 1-9]. The five-year development plan is divided into five smaller plans including (1) the land use and infrastructure development plan; (2) the environmental development plan; (3) the social and economic development plan; (4) the BMA revenue development plan; and (5) the BMA administration development plan. The process of making the plan suggests that the BMA could not manage and integrate the five-year plan with its urban planning for Bangkok and other projects.

The five-year plan then became an agenda that allowed development projects to proceed in an orderly manner. Besides the five-year plan, however, there are also plans and master plans which the BMA produces under the responsibility and supervision of its different departments. Some projects are implemented in accordance with new regulations issued by the BMA itself. As a result, the BMA is able to develop its own multi-million baht projects in Bangkok.

The most controversial project is the mass transit system initiated and developed by the BMA, known as the Sky Train Project. Authority for this project is written in the BMA Act of 1975. In 1990 and 1991, the SRT proposed its mass transit system separately. Meanwhile, the Metropolitan Rapid Transit Authority (MRTA), a new state enterprise established in August 1992, is also developing an underground mass transit system. Cabinet approved the first stage of the MRTA project on 17 May 1994.

The BMA is a special form of local government. The MRTA is a new state enterprise under the Office of the Prime Minister and the SRT is another state enterprise under the Ministry of Transportation. Factions in the coalition government have made
decisions on these authorities. Consequently, the mass transit systems\textsuperscript{10} are completely different in terms of technology, planning philosophy, operation and development management. In 1997 and 1998 construction problems at many road intersections became evident.

According to the coalition government, compromise was the best way to satisfy the different political factions which had interests in these mega-projects. It was understood by the government that the result of this lack of coordination would be costly. However, any intervention by the government was to compromise and let the projects continue. The government obviously ignored the issue of 'public interest'. Why did the government not have a clear policy on these projects? Political interest seemed to be more important than public interest. The problem of the chaotic development of Bangkok therefore remains unsolved.

Besides implementing the local five-year plan, the Department of City Planning of the BMA also provides numerous plans for districts in Bangkok focusing on city and community planning. Private consultants and academic institutions are hired separately to make an 'urban development plan' for each district. A great number of urban facts are presented and the problems are discussed. Existing land uses are analysed briefly and assumptions are made in order to make projections of population growth and infrastructure requirements. A brief conclusion is made and some recommendations in terms of project planning are proposed for urban development. However, the consequences of this method of planning are another story. 'Development planning' becomes a political concern of the district council when it is dealing with budget allocations. Not surprisingly, urban problems at the district level are included in the plan to increase the budget. In reality, the budget seems to be spent to increase political popularity, not to solve problems.

It can be a considerable waste of time to make this sort of plan because they are never actually implemented. Also, the proposed project for the district is seldom functional particularly when it has to be connected with the systems of Bangkok. This sort of plan seems to satisfy some members of the District Council who used it as a political tool for election campaigns.

Moreover, other infrastructure development programmes and projects with bigger budget allocations have already been considered and planned as systems by many other departments of the BMA. A good example is the BMA flood protection project which is integrated with the traffic congestion resolution programme. At least

\textsuperscript{10} See Appendix 2.3
five departmental bodies within the BMA's administration have responsibilities for this: the Department of Public Works, the Department of Traffic and Transportation, the Department of Drainage and Sewerage, the Department of Policy and Planning and the Department of Public Cleansing.

Therefore, in my view, it is not necessary to make urban development plans for districts in Bangkok. Evidence supporting this argument is the idea to cut the budgets for all district councils in Bangkok in which candidates campaigned during the local election for district council members in April 1998.

Besides this sort of plan, the development planning of Bangkok has been studied extensively on a regional scale with reports and regional plans being submitted to the government since the 1980s. The planning doctrine has changed and a larger scale of planning with different viewpoints has influenced the old tradition of Bangkok city planning due to the fact that Bangkok has become a part of the global city system. Consequently, the context of planning has moved beyond the old planning philosophy focusing on a simply land use planning towards the networks of international trade, information and transportation which will be discussed later in terms of Bangkok as the aviation hub.

The rapid growth of Bangkok with the boom in the Thai economy in the late 1980s influenced the government's policy on Bangkok and airport development in the early 1990s. A number of chronic problems in Bangkok, which were consequences of uncontrolled development during the past three decades, became a serious constraint because the site at Nong Ngu Hao was now surrounded by a number of houses, factories, schools and universities. However, the government continued its new policy on metropolitan regional development, making Bangkok much bigger.

### 2.2 The Second Bangkok International Airport, 1961-1991

As discussed, Bangkok city planning and the SBIA Project had parallel development agendas from 1961 to 1991. It is evident that the power elite in this period required a high degree of command and control to develop a project as big as the SBIA. This section discusses what happened to the airport development in this period and why it did not progress for three decades. An analysis of the airport development in this period shows that the new Bangkok airport project was a political concern to make money. The emphasis in this section is on the site selection and the Prime Minister's interest. The discussion covers the chaotic period of airport development in the 1980s.
2.2.1 Site Selection and the Prime Minister's Interest

The matter of site selection is usually a controversial process and no site passes acceptance on all important factors such as air space, meteorological considerations, topographical conditions, environmental concerns, capital and operating costs and surface transportation capacity. This process normally takes much time, usually years, however such troublesome activities were bypassed in the case of the new Bangkok airport.

However, the official reports available do not mention much about proceeding with the new airport in 1961 and 1962 despite the latest reports in the 1990s.

In 1961\(^{11}\) (probably early 1962), Army Field Marshal Sarit Thannarat, a particularly authoritarian person in Thai history, quickly set up a committee to progress the development of the new airport. After the committee was set up, its first task was to select a suitable site. The site selection methodology was to point to locations around Bangkok. Figure 2.5 shows seven sites which were proposed and evaluated briefly: (1) Lad Lumkeao and (2) Lad Bualuang in Pratumtani province; (3) Sai Noi in Nontaburi province; (4) Nong Ngu Hao and (5) Bang Bo in Samut Prakarn province; (6) Nong Chok; and (7) Don Muang in Bangkok. None of the sites were studied in detail and the committee expressed a clear preference for developing the site east of Bangkok at Nong Ngu Hao.

It might have been good timing that the US Federal Aviation Administration (FAA), meanwhile, submitted an aerodrome study and proposed that a site be found approximately 25 kilometres east of Bangkok. This would offer enough separation between Don Muang and the new airport for aviation operations. This is the location of Nong Ngu Hao. The FAA study proposal showed an interlocked decision implying that the government had expressed an interest early to choose Nong Ngu Hao for the new airport. The military government immediately proclaimed its intention to purchase 19,000 rai (30.4 square kilometres) at the Nong Ngu Hao site. In September 1962, the Land Acquisition Act for Nong Ngu Hao was approved as a legal measure to enable early development.

\(^{11}\text{Sinamrath Weekly Magazine on 11 December 1983 briefly mentioned that Sarit started the site selection in 1961.}\)
Figure 2.5 Site selection for the Second Bangkok International Airport in 1962

Since 1961, official documents and reports from the authorities concerned have elaborated a number of positive characteristics about the Nong Ngu Hao site. But the facts cannot be denied. Nong Ngu Hao is a flood plain comprising nearly a thousand large and small ponds located between the Chao Praya and Bang Pakong rivers; a natural floodway to the sea. The name itself means ‘the great swamp of cobras’. The terrain is flat, close to the sea and only 0.50-0.80 metres above mean sea level. There is a great risk of flooding from both stormwater and high tides. Unconsolidated sediments cover nearly the whole of the site and the topsoil consists of soft clay and mud to a depth of 10-20 metres. In short, construction in this area is costly. Despite these critical and well-known constraints, the project got underway.

Utis Kaothien\textsuperscript{12}, Director of the Urban Development Coordination Division in the NESDB, argues that all these constraints could be solved by the application of modern technology. He also argues that the cost of advanced technology is becoming cheaper compared with rising land prices. In the view of a policy maker at the national level, land price is more important, probably the most important factor in deciding on the development of the SBIA. In my view, politics in the 1960s may tell a different story.

As discussed, American experts played vital roles in Thai aviation development in this period. Three new airbases\textsuperscript{13}; U-Tapao in Rayong, 175 kilometres southeast of Bangkok, Nam Phong in Khonkaen and Kamphaeng Saen in Nakhonpathom 50 kilometres northwest of Bangkok, were being developed by USOM. Apparently, these sites were much more carefully studied and better prepared compared with the new Bangkok airport project. In fact, USOM did not play any role in site selection for the new Bangkok airport. Its role and policy on the new Bangkok airport became clear after Sarit died.

Over the past decades, the subjective matter of site selection in 1962 has been discussed little, even today. Many attempts were made to propose new sites for the SBIA in the 1980s and 1990s. However, the ability to carry out a survey for another new site and land acquisition has become more difficult and also a political concern because it may affect the local people. Certainly, no government wants to commit itself openly to dealing with this troublesome problem. A recent example is the failure of an attempt made in 1997 to propose a new site some kilometres south of Nong Ngu Hao.

\textsuperscript{12} Utis gave this interview and expressed his concerns at his office in Bangkok on 25 April 1996.

\textsuperscript{13} Currently, Kamphaeng Saen is only a training school for the Royal Thai Air Force while Nam Phong, which was also designed for the B-52, has never been used since the end of Vietnam War. U-Tapao, with the largest runway in Southeast Asia, has never reached 15 per cent of its capacity.
Ultimately, the government has been forced to continue the SBIA at the site selected in 1962 and let the authorities involved repeatedly cover up information and the shortcomings of Nong Ngu Hao.

2.2.2 Chaotic Period of Airport Development

After Sarit’s death, Field Marshal Thanom took power and maintained the military dictatorship. Meanwhile, the Nong Ngu Hao project was continuing. In 1964, the FAA was asked to restudy the six former sites for the new airport. A year later, it reconfirmed that Nong Ngu Hao was the most suitable site for new airport development. Why did its selection have to be confirmed?

In January 1966, Cabinet approved a policy to maintain Bangkok as the regional aviation hub. It then asked its old friend, USOM, to survey and design a new airport at Nong Ngu Hao site, but its request was officially denied in 1968. It is interesting to study what USOM was doing at that time.

USOM started the construction of U-Tapao airbase in October 1965 at a cost of US$105.9 million and completed it early in 1967 while Nam Phong was being developed. In fact, the second phase of a 10-year programme (1965-1974) had just started and the relationship between the Thai and American governments became much closer when the Thai government officially approved the deployment of US forces in February 1964. Why did USOM not want to play a role in the SBIA Project? Was this project not in its interest? It is possible that USOM knew well that it was costly to develop the new airport on a swamp. Only the American documents would allow an answer to these questions.

The Thai government then looked for assistance from other countries. In January 1969, the governments of France, Japan, Canada, Italy and Israel submitted proposals to design and develop the second Bangkok airport. Cabinet approved the Canadian proposal and provided a budget to move the SBIA Project forward.

As a consequence of the rapid growth of international aviation in the 1960s, the second stage of the development and extension of Don Muang airport was undertaken during 1970-1973. In this period, civil aviation and associated commercial activities were separated from the military. New international and domestic terminals replaced the old administrative offices of the Air Force on the west of the runways. The east of the runways became the military sector and the west of the runways became the civil aviation sector with its own access from the new highway of Vibhavadi Rangsit. A number of modern facilities were provided to facilitate the first generation of wide-body
aircraft. Pressure for this came from the Air Force due to its intervention in the national airline.

The Northrop Airport Development Corporation (NADC) first proposed developing the SBIA in June 1971 but the Committee of Thai Aviation objected to it. The budget for the Canadian proposal was cut in September 1971 with no explanation from Cabinet. The NADC proposed the construction and operation at the new airport again on 11 October 1971 but it was strongly opposed by the public. It was not the right time to propose any projects because the public movement against the dictatorship had started asking for democracy.

On 17 November 1971, a coup by Marshal Thanom was made early in the morning and on the same day the military government set up a committee to consider the NADC proposal. Although this committee had refused the proposal in March 1972 because of insufficient return to the government and serious doubts that the NADC could develop the airport within the timeframe, the military government itself approved the proposal on 10 May 1972. Without any bidding, Air Marshal Dawee Chulyasapa, Minister of Transportation, signed a contract with the NADC on 1 February 1973. This contract became a major scandal after the collapse of the military regime in October 1973 when Kurk-rit Pramoj identified that a reason for the coup in 1971 seemed to be to pave the way for Nong Ngu Hao development [Wonghanchao, 1974 #33, 15; Chanapai, 1998 #85,18].

After Thanom went into exile in Singapore following the overthrow of the dictatorship in October 1973, Dawee tried hard to validate the contract. However, the NADC was not able to finance the project by the dateline of 31 December 1973. The political movement for democracy, meanwhile, became stronger with demonstrations by students and the labour unions taking place every day and everywhere. The SBIA development was viewed as military exploitation. Criticisms focused on corruption rather than on the poor location of the airport. After heavy pressure from the public, the NADC officially informed the civilian government that it could not continue the project and wanted to cancel the contract without any request for compensation on 15 January 1974.

Obviously these political concerns had a direct impact on the dismissal of the development of the new airport. The NADC concentrated only on proposed revenue and its monopoly rights over international aviation for 20 years, but it did not actually

---

14 Kurk-rit Pramoj, a leading Thai journalist, identified this reason in his article published in Siam Rath, a local newspaper, on 28 September 1972.
prepare a feasibility study. As a matter of fact, the arguments from the public were not so critical in terms of technical references because of the lack of data and information. However, the environmental impact of the new airport was mentioned for the first time and this issue was taken into consideration later.

Democracy movements in Thailand collapsed in October 1976 when the military dictatorship returned. Riots in Bangkok in 1976 became the turning point of Thai politics. A number of activists were brutally killed and some were put in prison. Some students joined the Communist Party and the country was controlled under martial law for one year.

Another attempt to revive the development of the SBIA occurred in late 1976 after the collapse of the democracy movement. However there was no public reaction because of the repressive Thanin Graiwichien government recruited by the military. Tippetts-Abbett-McCarthy-Stratton (TAMS), funded by the Ministry of Transportation, studied the ultimate development capacity for Don Muang airport in comparison with the investment in the new airport development at Nong Ngu Hao. It submitted a Site Investigation and Master Plan to the government on 20 February 1978. This study adopted a general technical approach, without sufficient evaluation of environmental impacts. Surprisingly, however the impact of flood protection on Bangkok was not included.

On 2 May 1978, Cabinet approved the expansion of the Don Muang airport for another 10 years within a budget of 4,000 million baht, including a new runway. Meanwhile, it provided other funds to continue further study on the Nong Ngu Hao project.

On 20 September 1979 Cabinet, under the administration of Kriengsak Chomanan, the newly elected Prime Minister, gave approval for the Ministry of Transportation to urgently develop U-Tapao in Rayong province as a commercial airport. The approval cancelled the previous order dated 2 May 1978 on the feasibility study for the SBIA. However this decision to dismiss the Nong Ngu Hao project became illegal in terms of compulsory procedures under the Land Acquisition Act of 1962, an act created for the sole purpose of airport development. Hence, it is quite clear why the SBIA Project could not be cancelled legally. On 21 December 1979, Cabinet revised its decision and let the Department of Civil Aviation continue the study.

In 1980, the third stage of the development of Don Muang airport started under the responsibility of the Airport Authority of Thailand (AAT), a new state enterprise.
established in July 1979. The capacity of Don Muang airport during 1980-1989 was increased to 16 million passengers per annum.

The political situation in this period was critical due to changes in military power and in the coalition government. After the general election in March 1980, the new cabinet under Prem Tin Oon’s administration approved the proposal for the Ministry of Transportation to develop Nong Ngu Hao with a budget of 21,300 million baht on 21 September 1980. The main reason was that Don Muang airport could facilitate only 35 aircraft movements per hour and it would reach its ultimate capacity by 1992.

More surprisingly, on 3 February 1981 the same Cabinet approved another proposal for the Ministry of Transportation to purchase more land of 51 rai (8.1 ha) at Nong Ngu Hao with a budget of 50 million baht. Another budget of 60 million baht for master planning was approved on 19 May 1981. The Nong Ngu Hao project was again becoming of greater interest. In September 1982, a Thai-Belgian consortium proposed a loan of 46,000 million baht without interest for 19 years for the construction of new airport but this was not considered.

Following procedures undertaken by the Ministry of Transportation, the Netherlands Airport Consultants (NACO) won the bidding for master planning in October 1982. After reaching agreement on more detailed designs and services, the Acting Cabinet approved a contract worth 136 million baht with NACO on 12 April 1983. The doubling of this budget later caused political conflict.

The results of the general election on 18 April 1983 totally changed the fate of the new airport. The new Minister of Transportation, Samuk Sundaravej, formally announced that policies on the new airport project must be revised. He argued that the Nong Ngu Hao site was unsuitable for airport development and proposed a new site in Nonthaburi province. On 22 November 1983 he submitted a proposal to restudy the development alternative between Don Muang airport and Nong Ngu Hao.

In 1984, meanwhile, the NACO completed a master plan for the Nong Ngu Hao site. It submitted a report; The SBIA Master Plan, Study, Design and Construction Phasing. This was based on extensive data gathering and has often been referred to in subsequent studies. However it was not the right time for Nong Ngu Hao as Don Muang airport was being tripled in area. In the view of the decision-makers, there was no need

---

15 The political situation in 1980 was complex. The elected representatives avoided a confrontation with the army as they required political stability. Consequently the factions in the parliament reached an agreement to support General Prem Tin Oon form the government.
to spend a large amount of money on a similar project at the same time. Also the great flood in 1983 had completely submerged Nong Ngu Hao for three months. Under these circumstances, the government returned Nong Ngu Hao to the shelf, leaving the purchased land idle again.

In 1985, TAMS shifted its task to Don Muang and submitted a report; *The Expansion Feasibility Study for the Bangkok International Airport*, to government. On 27 August 1985, Cabinet approved the development of a commercial airport at U-Tapao airbase as a supplementary airport under the responsibility of the Royal Thai Navy. Phojana Simasathien\(^\text{17}\), Deputy Project Director; Second Bangkok Airport, has stated that the mid 1980s was a period of chaos for airport development because of changing governments. Political lobbying, which was common for every multi-million baht project, made the airport development confused.

The development of Don Muang airport, completed in 1989, still could not meet the increased rate of air traffic as the average growth of passengers was at 15 per cent per annum, which was much more than estimated. A budget of 165 million baht was then provided for the improvement of U-Tapao airport in April 1990 and its name was changed to ‘Rayong U-Tapao International Airport’. This solution was stressed again when the NESDB submitted a report, *Feasibility Study and Master Plan for Rayong U-Tapao International Airport*, by Louis Berger International Inc. to the government in March 1991. Under the national policy, the emphasis was not only on commercial development but also on aircraft maintenance and cargo handling. However, the new project, Global Transpark, did not attract the air transport industry. In 1995, Rayong U-Tapao International Airport served only 2,186 commercial aircraft movements compared with a capacity of 150,000 annual movements [Thannews, 1996 #84, 12].

Early in 1991, Louis Berger International Inc and its partners sponsored by the AAT, submitted an *Airport System Master Plan Study* which projected air traffic growth of 58 million passengers by 2010. The Don Muang airport’s ultimate capacity was to be reached by the year 2000.

On 23 April 1991, Cabinet approved the fourth development stage of the Don Muang airport. As a result, a second passenger terminal was completed in 1995 increasing the capacity of Don Muang airport to 25 million passengers per annum.

The Thai economy was booming in the late 1980s and the early 1990s and the right time had come. Cabinet approved the development of the SBIA at Nong Ngu Hao

\(^{17}\) He gave an interview and expressed this point at his office in Bangkok on 30 April 1996.
on 7 May 1991 thereby initiating the most expensive infrastructure investment ever in Thailand.

2.3 Urban Primacy

A ‘Primate City’ may be defined as the existence of one overridingingly large city which dominates the nation functionally as well as in terms of size [London, 1980 #1, 1].

This section discusses the most significant shortcoming of development without planning and control. The urban primacy of Bangkok, in my view, is the primary problem that has caused a number of chronic problems in Bangkok. Despite a policy on development decentralisation, most governments have failed to retard the growth of Bangkok and the urban primacy problem has been ignored.

<table>
<thead>
<tr>
<th>Time Period</th>
<th>Multiplier**</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1780-1900</td>
<td>10</td>
<td>Data are limited and of uncertain accuracy, but Chiang Mai appears to have been the second most populous centre during the period 1780-1900.</td>
</tr>
<tr>
<td>1900</td>
<td>11</td>
<td>Chiang Mai was the second most populous centre during the period 1900-1950.</td>
</tr>
<tr>
<td>1910</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>1920</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>1930</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>1940</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>1950</td>
<td>23</td>
<td></td>
</tr>
<tr>
<td>1960</td>
<td>25</td>
<td>Hat Yai-Songkhla was the second most populous centre during the period 1960-1980. Hat Yai and Songkhla are separate municipalities but there is reason to regard the two as comprising a twin-city. Taking Chiang Mai to be the second most populous centre would increase the multipliers for 1970 and 1980 to approximately 35 and 55, respectively.</td>
</tr>
<tr>
<td>1970</td>
<td>33</td>
<td>Nakhon Ratchasima was the second most populous centre in this period.</td>
</tr>
<tr>
<td>1980</td>
<td>51</td>
<td></td>
</tr>
<tr>
<td>1990***</td>
<td>28</td>
<td></td>
</tr>
</tbody>
</table>

Table 2.1 Development of Bangkok Urban Primacy* from 1780 to 1990

* ‘Primacy’ means the disparity between the population of built-up Bangkok and the second most populous centre in Thailand.

** The ‘multiplier’ is the number by which the multiplicand (the population of the second most populous centre in Thailand) is multiplied to reproduce the population of Bangkok; it is expressed as a whole number to suggest only general accuracy. For the 1780-1900 period the multiplier is not more than a reasonable supposition.

*** Recalculated by Thongchai Roachanakanan in 1999.

Source; [Sternstein, 1982 #3, 107],

Bangkok has been a primate city for decades as shown in Table 2.1. It is a primate city by any definition [London, 1980 #1, 28] both in terms of size and function.
Chris Dixon [1999] states that Nakhon Ratchasima was the second most populous centre with a multiplier of 30 in 1993 [Dixon, 1999 #115, 194].

As a result of a national policy which has been biased and neglected balanced development for decades, Bangkok has become the primate metropolis and has extended its boundary to cover all nearby provinces. It is undisputed that the urban primacy of Bangkok is a serious concern causing a number of chronic problems. In this section the historical development of urban primacy will be discussed briefly and the analysis will answer the question of why the problem of urban primacy cannot be solved.

In the view of Bruce London, the primate city has historically been parasitic in Thailand and the nature of the primate city-hinterland relationship has changed over time with evolving national and international situations [London, 1980 #1, 67, 121]. His study is based on modern Thai history regarding the political primate city and the distribution of power in Thai society from 1850 to 1973. He argues that primate city parasitism is much more likely to exist in a situation in which an elite monopolises power and dominates decision-making and policy implementation than in a case in which power is decentralised [London, 1980 #1, 42]. The power elite, which played a role in exploitative and neglectful policy-making during different periods, is discussed by London to explain the development of the primate city.

His analysis and arguments on the comparative use of power and the continued ruling class through different periods of modern Thai history which influenced the existence of urban primacy, are reasonable. Even though he did not focus on legal and planning contexts, his emphasis on elite motives as key distinguishing criteria among types of parasitism supports my arguments in the next chapters which focus on how the power elite transformed the urban structure of Bangkok.

However, his hypothesis should be revised to explain the changing phenomenon of urban primacy in the 1980s and 1990s. In my view, primate city parasitism exists in every situation. After the collapse of military dictatorship in October 1973, the new power elite groups ignored all the facts about urban primacy. These new power elite groups included a number of factions in the political theatre. Consequently more resources were distributed to the hinterland but Bangkok remained the primate metropolis. In my view, urban primacy has become a complex problem that cannot be solved quickly.
The best available materials show that the urban primacy of Bangkok has been studied and solutions have been proposed since 1959. It is interesting to investigate what happened and why the problem of urban primacy has been ignored by successive governments for decades.

In the Bangkok-Thonburi City Planning Project, Litchfield Whiting Bowne & Associates studied the urban primacy of Bangkok and pointed out the shortcomings in a technical monograph submitted to the Ministry of Interior in November 1959. Importantly, one of their many recommendations was to build up the economic health of other cities, which in turn would attract and support additional population. The decentralisation of government to the greatest extent possible was discussed and some regional cities such as Chiangmai, Korat (Nakhon Ratchasima) and Petchaburi were recommended for decentralisation [Litchfield, 1959 #81, 43].

Cyrus R. Nims [1963] submitted a report *City Planning in Thailand* in November 1963 and stressed the importance of controlling population growth in Bangkok. He recommended that the government should stimulate urban growth in other parts of the kingdom so that the migration of people to Bangkok could slowed down. Importantly, he noted that a population of 6 to 9 million in 30 years would have serious consequences for the standard of living in Bangkok and for the economy generally [Nims, 1963 #122, 108].

Despite the first warning about the serious problem of urban primacy, the NESDB, which is responsible for planning at a national level, did not include these crucial recommendations in its first national plan in 1961. On the contrary, the NESDB concentrated on the development of the capital city and its concise reason was economic efficiency. In fact, the national agenda on decentralisation development policy on selected regional cities was written in the fifth national plan in 1982, some 20 years later. Why did the NESDB ignore the problem of urban primacy? Is the NESDB responsible for the continued urban primacy of Bangkok?

Despite the shortcomings and many arguments through the past decades, the NESDB is continuing its staunch policy on urban and regional development by aiming at a targeted population of 32 million living in the radius of 200 kilometres around Bangkok in 2010. Is it a reasonable policy to agglomerate nearly half of the national population in an area less than 15 per cent of Thailand?

---

18 Modern Thai history may be divided into three periods: (1) the period of absolute monarchy from 1850 to 1892, (2) the period of bureaucratic reform from 1892 to 1932 and (3) the ascendancy of the military-civilian bureaucracy over the monarchy from 1932 to 1971 [London, 1980 #1, 49].

19 Cyrus R. Nims was a USOM city planning advisor to the government of Thailand from 1961 to 1963.
In Bruce London's study on the primate city and the distribution of political power in Thai society, two key words are mentioned to explain the use of power. They are the *Phuyai* (big people) with power and the *Phunoi* (little people) without power in the Thai society. Hence, the coexistence of these two groups should be reconsidered. What is the distinction between the two groups? Why doesn't Cabinet give orders to the NESDB to revise its policy on urban primacy? Cabinet and the NESDB may have the same motive for maintaining urban primacy.

In reality, the Phuyai cannot give orders to the Phunoi. The use of power is only effective within the same faction. Factions, in my view, are probably the most important factor that influences the use of power.

### 2.4 Changes in the Built Environment of Bangkok

Bangkok in 1990 is completely different from Bangkok in 1960. This is evident in material produced by the DTCP, Ministry of Interior in the *Report on the First Revision of the Plan for the Metropolitan Area Bangkok in 1971*.

Figure 2.6 shows changes in the built-up area of Bangkok which has gradually increased from 13 square kilometres in 1900 to 43 square kilometres in 1936 and to 67 square kilometres in 1953. The built-up area of Bangkok has changed rapidly from 96 square kilometres in 1958 to 141.5 square kilometres in 1968 and to 330 square kilometres in 1981. The built-up area of Bangkok in the early 1990s covered parts of all the nearby provinces of Nonthaburi, Samut Prakan, Pathum Thani, Nakhon Pathom, Samut Sakhon and Chachoengsao. It is believed that the built-up area of Bangkok metropolitan region has covered more than 2,000 square kilometres with a population of more than 10 million [Roachanakanan, 1997 #55, 67]. An examination of the built-up area of the Bangkok Metropolitan Region (BMR) has not been undertaken in detail in this study. However, the study has considered the BMR population growth and structural change. These aspects are discussed in this section.

---

20 Definitions of the two words are given by B London [London, 1980 #1, 53].

Figure 2.6 Urbanised Areas of Bangkok-Thonburi, 1900, 1936, 1958 and 1968
There were 1,474,455 people living in the Municipality of Bangkok and 302,732 people living in Thon Buri Municipality in 1956 compared with 10,127 people living in east Bangkok, that is Bang Kapi and Lat Krabang, at that time [Litchfield, 1959 #81, 14]. The built environment of Bangkok in the 1960s is viewed as a compact city with a very high density of 65,300-84,000 persons per square kilometre living in the core of Bangkok or China Town. In the same period east Bangkok was remote rural with a very low density of 160-240 persons per square kilometre compared with 15-145 persons per square kilometre around Nong Ngu Hao [Sternstein, 1995 #41, 23].

A significant urban change in Bangkok during 1960-1990 was the decline of the inner city and the urban sprawl with a high rate of growth at the periphery. In 1990 the population of the city core including China Town, decreased from 65,300-84,000 persons in 1960 to 39,800-41,200 persons per square kilometre in 1990. Development directions along the north and east corridors of Bangkok were evident as a consequence of industrial and housing developments on cheaper land on the outskirts of Bangkok.

Six provinces around Bangkok, Samut Prakan, Nonthaburi, Pathum Thani, Nakhon Pathom, Samut Sakhon and Chachoengsao, substantially absorbed young labour migrating from the countryside. A growing number of factories, industrial estates and housing projects became typical development phenomena in these provinces from 1960 to 1990. Population distribution and change over this period are described in the following tables.

From Table 2.2 and Table 2.3, one may conclude that Bangkok and its nearby provinces (see Figure 2.7) have grown very fast in terms of population during the period 1960 to 1990. Samut Prakan, where the SBIA is located, shows the highest rate of growth through the three decades. Table 2.4 shows more details of great changes in population by districts (see Figure 2.8) around Nong Ngu Hao in the same period.

The SBIA Project will have an impact on five districts in Bangkok and one district in Samut Prakan. They are Bang Kapi, Pra Kanong, Lat Krabang, Min Buri and Nong Chok in Bangkok and Bang Phli in Samut Prakan. From Table 2.3 it can be seen that the population in the six districts increased sharply from 370,500 people in 1960 to 1,670,800 people in 1990.
Chapter 2 Planning in Action

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>BMR (total)</td>
<td>3,616.0</td>
<td>4,883.9</td>
<td>7,089.8</td>
<td>9,142.0</td>
</tr>
<tr>
<td>Bangkok</td>
<td>2,136.4</td>
<td>3,077.3</td>
<td>4,697.1</td>
<td>5,882.4</td>
</tr>
<tr>
<td>Samut Prakan</td>
<td>234.7</td>
<td>329.4</td>
<td>484.8</td>
<td>769.8</td>
</tr>
<tr>
<td>Nonthaburi</td>
<td>196.2</td>
<td>269.1</td>
<td>369.8</td>
<td>574.8</td>
</tr>
<tr>
<td>Pathum Thani</td>
<td>189.8</td>
<td>233.9</td>
<td>319.7</td>
<td>412.4</td>
</tr>
<tr>
<td>Nakhon Pathom</td>
<td>370.5</td>
<td>419.3</td>
<td>525.9</td>
<td>629.6</td>
</tr>
<tr>
<td>Samut Sakhon</td>
<td>165.7</td>
<td>200.5</td>
<td>247.2</td>
<td>321.0</td>
</tr>
<tr>
<td>Chachoensao</td>
<td>322.7</td>
<td>354.5</td>
<td>445.4</td>
<td>552.2</td>
</tr>
</tbody>
</table>

Source: [Sternstein, 1995 #41, 10]

Table 2.2 Bangkok Metropolitan Region: population by standard constituent provinces 1960, 1970, 1980 and 1990 (Population in thousands)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>('000)</td>
<td>%</td>
<td>('000)</td>
<td>%</td>
</tr>
<tr>
<td>BMR</td>
<td>1,267.9</td>
<td>35.1</td>
<td>2,205.9</td>
</tr>
<tr>
<td>Bangkok</td>
<td>940.9</td>
<td>44.0</td>
<td>1,619.8</td>
</tr>
<tr>
<td>Samut Prakan</td>
<td>94.7</td>
<td>40.4</td>
<td>155.4</td>
</tr>
<tr>
<td>Nonthaburi</td>
<td>72.9</td>
<td>37.1</td>
<td>100.7</td>
</tr>
<tr>
<td>Pathum Thani</td>
<td>44.1</td>
<td>23.2</td>
<td>85.8</td>
</tr>
<tr>
<td>Nakhon Pathom</td>
<td>48.8</td>
<td>13.2</td>
<td>106.6</td>
</tr>
<tr>
<td>Samut Sakhon</td>
<td>34.8</td>
<td>21.0</td>
<td>46.7</td>
</tr>
<tr>
<td>Chachoensao</td>
<td>31.8</td>
<td>9.8</td>
<td>90.9</td>
</tr>
</tbody>
</table>

Source: [Sternstein, 1995 #41, 11]

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Bang Kapi</td>
<td>61.2</td>
<td>87.9</td>
<td>236.1</td>
<td>599.3</td>
</tr>
<tr>
<td>Pra Kanong</td>
<td>170.8</td>
<td>382.5</td>
<td>482.3</td>
<td>701.9</td>
</tr>
<tr>
<td>Lat Krabang</td>
<td>23.6</td>
<td>29.4</td>
<td>39.5</td>
<td>77.4</td>
</tr>
<tr>
<td>Min Buri</td>
<td>29.5</td>
<td>36.7</td>
<td>51.4</td>
<td>103.4</td>
</tr>
<tr>
<td>Nong Chok</td>
<td>32.4</td>
<td>40.4</td>
<td>46.6</td>
<td>56.5</td>
</tr>
<tr>
<td>Bang Phli</td>
<td>53.0</td>
<td>57.1</td>
<td>69.3</td>
<td>132.3</td>
</tr>
<tr>
<td>Total</td>
<td>370.5</td>
<td>634.0</td>
<td>925.2</td>
<td>1,670.8</td>
</tr>
</tbody>
</table>

**Part A: Population in thousands**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Bang Kapi</td>
<td>43.6</td>
<td>168.6</td>
<td>153.8</td>
</tr>
<tr>
<td>Pra Kanong</td>
<td>123.9</td>
<td>26.1</td>
<td>45.5</td>
</tr>
<tr>
<td>Lat Krabang</td>
<td>24.6</td>
<td>34.4</td>
<td>95.9</td>
</tr>
<tr>
<td>Min Buri</td>
<td>24.4</td>
<td>40.0</td>
<td>101.2</td>
</tr>
<tr>
<td>Nong Chok</td>
<td>24.7</td>
<td>15.3</td>
<td>21.2</td>
</tr>
<tr>
<td>Bang Phli</td>
<td>7.7</td>
<td>21.3</td>
<td>90.9</td>
</tr>
</tbody>
</table>

**Part B: Population growth over decade**

Source: [Sternstein, 1995 #41, 25, 27]

**Table 2.4 Population numbers by standard constituent districts around the SBIA 1960 to 1970, 1970 to 1980 and 1980 to 1990.**

However, the government in the 1990s did not consider these facts and approved the new airport project very quickly. The flight path of the SBIA over Lat Krabang and Bang Phli will have the strongest impact in terms of noise pollution. Bang Kapi, Pra Kanong, Min Buri and Nong Chok will receive the direct impact of floods because these areas are on the flood prone area where the new airport will block the natural floodway.
Figure 2.7 Bangkok Metropolitan Region: Standard constituent provinces 1960-1990

Source: Sternstein, 1995, #41, 7. Reproduced by Thongchai Roachanakanan 1999

Figure 2.8 Bangkok Metropolitan Region: Area of Impact from the SBIA 1999

Source: Sternstein, 1995, #41. Reproduced by Thongchai Roachanakanan 1999
Part II Politics of Planning and Development

The historical analysis in Part I presented an overview of how the planning processes for Bangkok and the SBIA became political concerns in the 1960s. The fact that neither project progressed for three decades is a reflection of the political culture and traditions of Thailand. This part continues to discuss the politics of the two projects with a more comprehensive analysis.

Part II is regarded as the core of this thesis. Attempts are made to view the failures and problems of the two projects systematically. A task of this part is to understand how the authorities and actors involved influenced the progress of the two projects. Political changes from 1961 to 1998 are discussed in association with an analysis of the political influences over Bangkok city planning and the development of the SBIA. Discussion focuses on the consequences of political interference in planning.

The analysis in this part relies on a review of many studies and master plans. It is worth noting that Bangkok’s problems have been studied extensively and discussed in numerous articles, papers and research works in the past three decades. Most studies have concentrated on empirical problems such as traffic congestion, environmental problems and floods, however, there has been little attempt to actually consider and study the problems in Bangkok as a system [Ross, 1997 #106, 1-8].

In my view, it is a waste of time and money to produce reports and plans which cannot be implemented because of political interference. A number of planning studies for Bangkok and the SBIA discussed in this part are examples of this.

The main task in this part is to prove my hypothesis that political factions which aimed to serve their individual interests, used weak points in the administrative, legal and planning systems to manipulate multi-million baht\(^1\) projects. This includes the process of project planning.

Chapter 3 discusses Bangkok and the problems of planning practice by focusing on the weakness of the three systems (the administrative, legal and planning systems) which has left them open to exploitation. As the centre of power, Bangkok has been the centre of

---

\(^1\) Based on the currency exchange rate in May 1999, one US dollar equals 37 baht and one AUS dollar equals 24 baht.
considerable interest and as a result the three systems are deeply involved in both local and national politics. The discussion focuses on the historical development of these three systems to show how political factions have been able to manipulate the systems. The emphasis is on the abstract element of boundary which is regarded as problematic in the interaction between the three systems.

Chapter 4 discusses the politics of Bangkok city planning under different administrations in the 1990s. An analysis is made to rationalise the development concept and planning procedures. The focus is on a review of three city plans made for Bangkok in 1992, 1995 and 1999 and the relationship between Bangkok and the new airport.

Chapter 5 is concerned with a policy analysis of the development planning strategies for the Bangkok metropolitan region and the SBIA. Reports and studies on these two projects are reviewed. Discussions focus on why Bangkok airport development policies were frequently changed during the past three decades and whether recent policies on Bangkok metropolitan region development and the new Bangkok airport development are reasonable. An attempts is made to argue whether the SBIA is necessary.

Chapter 6 discusses the rationality of master planning for the SBIA. The main recommendations in the master plan are discussed to explain what the master plan is all about and how it has influenced the preparation of plans for Bangkok and the nearby provinces.

The discussions in Part II reflect the political drama of the power struggle in Thailand from the 1960s to 1990s. Delays to these two activities over three decades may imply that the achievement of development in Thailand requires a continuity in the use of power. Political stability is a crucial for every government, however, this stability relies heavily on the leadership and resources\(^2\) of key people, which will be discussed in Part III.

\(^2\) Hence money, personnel, materials and social power are viewed as resources.
The application of a good city plan is supposed to solve the problems of a city effectively. Many city plans have been made in Thailand but none have been able to solve the problems of traffic congestion, flooding and pollution in the city. Some problems have become more complex. What went wrong with city planning and what are the problems with planning practice in Thailand?

Terdkiat Sakkumduang [1997], President of the Thai City Planners Association states that

It is easy to set up a master plan before the city is built. But if [development is] already in place, it is difficult for ‘any plan’ to really control land use and activities.'1

In Terdkiat’s view, urban plans focus on the negatives in which what cannot be done in any given area is regulated rather than regulating what is allowed to be done. A good plan should instead give incentives for investors and developers as encouragement to follow planning objectives [Bangkok Post, 24 February 1997, p24]. The term ‘good plan’ has been discussed among Thai planners but its definition remains unclear.

Planning is an abstract word in Thailand. Only a small number of people know the definition and the theoretical meaning of the word planning, particularly legal interpretations and concerns [Wongsawasdikul, 1996 #46, 1]. Most of these people are urban planners who have general knowledge and practical skills in terms of land use planning. Discussions on theories are sometimes viewed as nonsense by Thai planners2. Consequently, the semantics of planning within a more complicated context such as the term of ‘urbanism’ are rarely discussed among Thai planners.

People seem to recognise that there is a crucial need for a city plan. However, the basic understanding of city planning which is occasionally expressed in the local media reflects the fact that people know very little about city planning. Few people participate in city planning even though public participation has been written into planning law as a

---

1 Bangkok Post, 24 February 1997, p12
2 For example, Director General of DTCP, Charoen Thamrongkiet (1981-1987) and Chaiwat Arunothaiwiwat (1996-1997)
compulsory procedure. Hence, it is interesting to study what has happened to city planning in Thailand.

Opportunities and constraints for the planning of a city are created within a particular national framework. Planning gains its power through its embodiment in the legislation and regulations, which form part of the legal apparatus of a particular country. The implementation of planning occurs through the administrative system, which again varies considerably across the region [Thornley, 1996 #77, 27]

Patsy Healey and R.H. William [Healey, 1993 #105, 701] state that planning systems can be differentiated by ‘variations in national legal and constitutional structures and administrative and professional cultures’ [Thornley, 1996 #77, 27].

Based on my experience as architect and planner working for DTCP from 1982 to 1995, many problems with planning practice concern the legal and administrative systems. This is the main reason why Peter Newman and Andy Thornley’s approach [Thornley, 1996 #77, 27] is applied in this thesis. Discussions in this chapter give an overview of why the current style of planning practice in Thailand does not work.

The study of Bangkok city planning in this chapter is based on the analysis of three systems: the administrative, legal and planning systems, which have been partly discussed in previous chapters. Discussion focuses on the abstract issue of boundary which is regarded as the problematic interaction of the three systems. Politics of boundary will reflect the complexity of problems of planning practice in Thailand.

It is undisputed that politics can influence administration, legislation and planning. A task in this chapter is to study how distinct groups of people with political links have manipulated these three interactive systems and how political influences have caused the coextensive problems of planning and development in the case of Bangkok and the SBIA.

3.1 The Administrative System

For political reasons, the administrative system has been the root of numerous problems which date back to the early period of the Siamese Kingdom since it became an independent state in 1247. Changes in the administrative system are a common phenomenon in Thai bureaucracy as a consequence of power struggles. In this section, therefore, a historical analysis will be made to give a better understanding of the development of the administrative system starting from the reign of King Chulalongkorn
Chapter 3 Politics of Planning and Development

when the sanitary district\(^3\), a form of local administration with some autonomy, was first introduced. Some changes in administration\(^4\) are discussed to explain how they have influenced Bangkok’s problems.

The BMA, which is currently the only specialised model of local administration (see section 3.1.2), is described by focusing on its practices for dealing with urban problems. Administrative problems will also be analysed. At the same time, the national policy on local autonomy will be reviewed by focusing on the need for the balance of power.

### 3.1.1 Historical Analysis of the Administrative System

Political struggles in the Kingdom of Siam have existed for centuries and power arrangements have influenced the administrative system strongly. The king was concerned with the distribution of power which reflected the development of the urban system and settlement patterns based on military strategy since the 13th century\(^5\). During the Ayutthaya period (1350-1767), it was the tradition that the king appointed his eldest son to be the next king to rule Phitsanulok, a fortress city in the north. However this tradition was ignored when Thon Buri became the capital of the kingdom in 1767.

After King Rama I (1782-1809) founded Bangkok as the new capital in 1782, there was little change in the administrative structure. Major changes started in the reign of King Chulalongkorn (Rama V, 1968-1910) as a consequence of a power struggle in the Royal Family\(^6\). The conflict in the Royal Family ended in 1885. King Chulalongkorn then had absolute power over the whole kingdom [Kabilkarn, 1995 #50, 21]. He significantly restructured and modernised the administration. A ministerial system was first introduced

---

\(^1\) Sanitary District was a form of local administration for small towns with population of more than 1,500 living in an area of less than 13 square kilometres. If the town became bigger, it could be upgraded to a municipality. As a consequence of the implementation of the new constitution in 1997, all 981 sanitary districts throughout the country have become municipalities since 25 May 1999.

\(^2\) Using administrative data and statistics as the formal authoritative reference, the Department of Local Administration, MoL has issued a collection of administrative data from all over the Thai Kingdom, as of December 1997. There are 75 provinces, 794 districts, 7,255 sub-districts and 67,884 villages under the Provincial Administration. There are nine city municipalities, 89 town municipalities, 51 tambol municipalities and 981 sanitary districts under the Local Administration. The census of 1998 is 61,466,178 with 30,591,602 male population and 30,874,576 female population. The Bangkok census of 1998 is 5,647,799 with 2,762,252 male population and 2,885,547 female population.

\(^3\) Distances between the strategic forts were two days travelling by horse. Warriors, weapons and supplies gathered from satellite towns and villages of the strategic fort had to be ready within 15 days after getting an order from the capital [Chayabutr, 1996 #75, 44].

\(^4\) It is known as Wang Na Crisis or Front Palace Crisis. The conflict in the Royal Family ended after the Front Palace Prince died in 1885.
on 1 April 1891 and the MoI became responsible for administrative arrangements. There were a number of reasons why he had to restructure the administration.

The French and British threat during the colonial period in the late 19th century resulted in the new administrative system becoming highly centralised and the Kingdom of Siam becoming a unitary state [Chayabutr, 1996 #75, 11]. Since then a number of responsibilities and a great deal of legal power have been agglomerated and given to the Department of Local Administration (DOLA) of the MoI. King Chulalongkorn used the centralised administration to command and control everything, under his most trusted brother, Prince Damrong, the first Minister of Interior. This explains why the Minister of Interior has been very important and second only to the Prime Minister throughout the past century.

Among many remarkable reforms, King Chulalongkorn was quite concerned with local administration and gave importance to participation by local people. Then, Bangkok became the first sanitary district in 1897, which was an early model of local administration. At the same time the Local Administration Act was first issued in 1898 and was revised in 1914 (B.E. 2457)\(^7\). As an experimental case, the sanitary district of Bangkok was initially managed by appointed bureaucrats concentrating on sanitation and the provision of some public services within a limited boundary of urban area\(^8\).

As a result of coup attempts from 1925 to 1935 which were influenced by French educated revolutionaries, King Prachathipok (Rama VII, 1925-1935) recognised the strength of the political movement for democracy in the kingdom. In his view, however, it was too soon to have complete democracy in Thailand. He believed that local administration, in the form of municipalities, would be a starting point for Thai people to learn gradually about democracy\(^9\). Unfortunately, the municipality concept was too complicated for his cabinet and other people when the King proposed this idea in 1930. The Municipality Act had been drafted but it was suspended after the revolution on 24 June 1932 which ended the absolute monarchy system.

---

\(^7\) The Local Administration Act B.E. 2458 was used until 1998. According to the decentralisation policy written in Constitution 1997, all sanitary districts will become municipalities.

\(^8\) In fact, the first sanitary district managed by the local people was established in Tha Chalom, a community in Samut Sakhon some kilometres west of Bangkok on 18 March 1905. Tha Chalom was chosen because King Chulalongkorn mentioned its hygiene problems in his cabinet meeting [Chayabutr, 1996 #75, 164-165].

\(^9\) King Prachathipok expressed his concern about the initiative of municipality in The New York Times on 28 April 1932. He believed that the people would understand democracy by learning how to manage their community [Chayabutr, 1996 #75, 122-123].
Despite a number of arguments in favour of the development of democracy, King Prachathipok's idea was ignored for 68 years. After the 16th Constitution was approved in September 1997, the MoI submitted a draft bill in September 1998 to upgrade all sanitary districts in Thailand to municipalities. The MoI believed that local administration, in the form of the municipality, could promote democracy to the Thai people. A serious question is why governments during the past 68 years ignored the municipality. Besides causing an outrageous delay in the development of Thai democracy, it also reflects a poor commitment to the development of local administration in Thailand.

The government issued the Administration Reform Act in 1933 which divided the administration system into three categories with different responsibilities: central administration, provincial administration and local administration. The division into three categories has become the primary structure of administration in Thailand\textsuperscript{10}. The Municipality Act was also issued in 1933 (B.E. 2476). As a result, Bangkok, Thon Buri and all provincial capital cities have become municipalities with a mayor reporting to a provincial governor.

The Municipality Act has been revised and amended\textsuperscript{11} many times. Most amendments were made to rearrange the hierarchy of administration\textsuperscript{12} so that the municipality could play a greater role in local development. However, more serious concerns such as financial problems, local autonomy and management structure have been ignored while at the same time, administrative boundaries have become a key element for quickly resolving conflicts among authorities, for example tax collection and budget allocation.

In spite of many legislative amendments, administrative duplication has become a problem in and around Bangkok as a result of the changing urban systems of Bangkok and Thon Buri, which are dominated by two metropolitan municipalities and many sanitary districts. The duplication problem has been exacerbated by the continuing rapid growth of Bangkok. The municipal area of Bangkok, focused on the city core, extended from 43.15 square kilometres in 1936 to 66.78 square kilometres in 1953, and 96.37 square kilometres

\textsuperscript{10} Central Administration consists of ministries and departments, all of which are located in Bangkok. Provincial Administration consists of provinces, districts and villages. Local Administration is in the forms of municipality and sanitary district. Currently, there are 125 departments in 15 ministries.


\textsuperscript{12} According to the Municipality Act, there are three categories of municipality; Tambon (community) Municipality, Muang (town) Municipality and Metropolitan Municipality based on number of population.
in 1958. By 1965 the area of the Bangkok Metropolitan Municipality was 238.57 square kilometres or 21.7 per cent of Bangkok province; meanwhile in 1966 the area of Thon Buri Metropolitan Municipality was 52.0 square kilometres or 11.5 per cent of Thon Buri province. The administration of the metropolitan municipality and the province therefore overlapped in terms of development management.

As a consequence of more and more urban problems, an attempt was made in 1965 to combine the Bangkok Metropolitan Municipality and the Thon Buri Metropolitan Municipality in an administrative arrangement for the metropolitan region. The Director of the Department of Local Administration, Chamnan Yuwaboon, wrote a confidential letter to the Minister of Interior on 21 April 1965 and pointed out the problem of duplication between the provincial administration and the municipal administration because of the geography of the twin cities of Bangkok and Thon Buri. He proposed rearranging the administration of the capital city and nearby towns, and submitted a draft of the Metropolitan Municipality Act which included merging the Bangkok Municipality and Thon Buri Municipality.

In 1971 the military government merged the two provinces of Bangkok and Thon Buri and renamed them the Metropolitan Bangkok-Thon Buri province. The two metropolitan municipalities were merged in a similar fashion on 13 December 1972.

However, the new arrangement caused confusion for administration and management because the two different administrative structures could not be integrated. As a result, the new administration was rearranged by the military government.

In fact, the use of power to overcome conflicts was a serious concern for the authorities involved. Administrative chaos continued after the collapse of the military dictatorship and the rise of the democracy movement in October 1973. However the democracy movement influenced great changes in Thailand. Many essential laws\(^\text{13}\) such as the TCPA and the Promotion and Conservation of the Environment Act were issued in 1975 including the BMA Act. In other words, it took 10 years to apply a new model of administration enforced by law even though urban problems had been recognised for years. This is another reflection of the poor development of local administration in Thailand.

---

\(^{13}\) It is worth noting that these Acts had something in common. All had been under long processes of legal consideration and were issued in the same year.
Since then Bangkok has become a special model of local administration with the highest degree of autonomy covering the whole area of the old province with a total area of 1,568.737 square kilometres. The BMA Act was amended in 1985 giving more authority and more legal power to the governor. However, the problems of Bangkok remain unsolved and have become so complex that no single solution can be applied. Why is the new administration unable to solve the problems of Bangkok?

In spite of significant changes since 1975, the administrative duplication still exists and has become a serious political concern. During the past three decades, more and more independent agencies in the form of state enterprises have been set up to deal with infrastructure development in Bangkok. They operate under the administration of different national departments and ministries, duplicating similar agencies already established under the BMA.

As discussed in Chapter 2, a good example of administrative duplication is the development of the mass transportation in Bangkok in the early 1990s. Three authorities have been involved in developing similar projects in the same city: (1) the Hopewell project developed by the SRT, a state enterprise of the Ministry of Transportation, (2) the Thanayong project developed by the BMA, and (3) the underground subway developed by the MRTA, a new state enterprise under the Office of Prime Minister. All three have different development philosophies and apply different technology.

Many problems in Bangkok have become chronic, such as traffic congestion, pollution and flooding. Consequently, the solutions to Bangkok’s problems are complex and none have been successful because the metropolitan area is not under a single coordinating body [Sternstein, 1971 #18, 2-3; Ross, 1997 #106].

Obviously, the failure to find solutions to Bangkok’s problems over the past three decades is a consequence of administrative fragmentation in which every agency is manipulated by numerous factions. The most critical problems in Bangkok reflect lack of an ongoing strategic policy and a lack of coordination by the authorities involved in terms of policy design and decision making. Despite all these shortcomings, successive governments have been unable to eliminate the problem of duplication by rearranging the administrative system.
3.1.2 The Bangkok Metropolitan Administration

This section concentrates on the administrative problems of the BMA which plays a major management role in dealing with almost every issue concerning Bangkok. However, there are some areas of Bangkok’s problems that the BMA cannot solve by its own means. Traffic congestion and flood protection are obvious examples. Although the metropolitan administration model used in Bangkok is expected to be functional and to assist in dealing with the city’s numerous problems, the metro model for Bangkok is also controversial.

It is worth noting that the BMA is not a province but a political ministry according to a new law. Elections are held at the city level and district level every four years. The Governor of the BMA is directly elected as the head of an administration which works with the elected members of the City Council of the BMA. Based on the parliamentary system, decisions are made at both the City and District Councils depending on the issue and the budget scale. It is a unique model of local administration specifically designed for Bangkok only.

In 1978 a similar form of administration was applied to Pattaya, a tourist town on the east coast, in the form of a City Manager. However because of openly political intervention by the local Mafia, this form of local administration failed, ending with strong violence. Consequently, Cabinet approved the MoI’s proposal to turn Pattaya back into a municipality in February 1997.

Compared with other models of local administration in Thailand, the BMA has better established personnel, facilities and financial support. Some facilities have been established since it was a metropolitan municipality\(^1\). Notwithstanding its strengths in these areas, the BMA has some human resource weaknesses. For instance, the development of a mass transit system requires more knowledgeable and experienced experts. In practice, a simple solution is usually tried by giving exclusive rights to manage a project on a fixed period contract. A fundamental problem for the BMA seems to be its approach to human resources and financial management. Hence, it is interesting to study how the BMA understands the problems of administration and how the BMA solves urban problems in Bangkok in terms of administrative management.

\(^{14}\) For instance, Bangkok and Thon Buri municipalities have established City Planning Sections since 1956 compared with the re-establishment of DTCP in 1953. In 1995, moreover, there were 31,285 people working for the BMA compared with a total of 26,012 people working for the other 144 municipalities in Thailand. In the fiscal year 1996, the BMA had a total budget of 20,400 million baht, much more than some government ministries.
The approach to administrative management taken by the BMA assumed that administrative efficiency and public service could be improved by rearranging district boundaries. Consequently, the number of districts in Bangkok has increased from 24 districts in 1975 to 36 districts in 1990 and 38 districts in 1993. In June 1997, moreover, the BMA submitted a proposal to the MoI to increase this to 49 districts. Some simple criteria were made to limit population to 130,000 for the inner districts and 100,000 for the outer districts\textsuperscript{15}. However, the problems of Bangkok remain critical and unsolved.

My argument is that the tactic of district redivision is fruitless. Too many districts have been created in Bangkok causing fragmentation in solving urgent problems. A good example is flood protection which requires quick decisions and solutions within short administrative timeframes to deal with chronically affected large areas\textsuperscript{16}. The increasing number of districts has only increased the size of the BMA bureaucracy. It is also costly to have district offices and district councils which are very close to each other. For example, the Bang Kaen district office is only two kilometres from the Don Muang district office. Nobody knows how many districts there will be eventually. In my view, the BMA should have fewer districts which would make for more efficient management of resources.

Moreover, administrative efficiency and public service could be greatly improved by extending the BMA boundaries to cover built-up areas in nearby provinces that have become physically part of Bangkok. By merging the districts of Samut Prakan, Nonthaburi and Pathum Thani, the administrative areas of duplication could be reduced. However, the DOLA and the governors of these provinces would strongly resist this reform because they do not want to lose control over their interests in these territories. Another crucial factor is that these areas have political implications in terms of local revenue\textsuperscript{17} and tax collection. The problems of duplication are multiplied by overlapping responsibilities with the national government, especially the MoI.

More importantly, administrative arrangements to combine these areas will affect the political bases of two powerful families\textsuperscript{18} in Pathum Thani and in Samut Prakan. They would lose control if the heads of villages and districts came under the administration of the

\textsuperscript{15} Bangkok Post, 4 June 1997.
\textsuperscript{16} A discussion on flood protection with a comprehensive analysis will continue in Chapter 7.
\textsuperscript{17} See Appendix 3.1
\textsuperscript{18} The two families have been Members of Parliament for decades in the provinces and have held ministries many times.
BMA. Under these circumstances, therefore, any attempt to rearrange the administration by extending the boundaries of Bangkok would be strongly opposed by these factions.

A serious shortcoming in the BMA’s administrative arrangements will be discussed in Chapter 7 in reference to cases where the BMA must deal with critical problems outside its administrative boundaries. The study will examine the impact of the SBIA, located in Bang Pli district of Samut Prakan on Bangkok flood protection to the east of the city.

Admittedly, the BMA has many more serious administrative and management problems. Besides the problems of duplication and administrative arrangements discussed previously, in my view the most serious problem concerns the abuse of power. Despite a high level of autonomy, it is controversial as to whether the BMA understands how to use its power and how to play the role of executive manager. The problems of Bangkok may be complex, but the BMA could selectively use legal tools to prevent some problems before they arise. A good case is development control through of building permission and Bangkok city planning. A comprehensive analysis of this case is included in Chapter 4.

Despite extensive arguments presenting different points of view on the administrative problems of the BMA, the public interest seems to concentrate on the roles of the BMA Governor rather than on the metropolitan organisation. That may be a result of the many controversial projects initiated by the Governor and also the high personal profile of each governor as this is an elected position. There has been little discussion on the external impact and the role of the more powerful authority which influences the on the metropolitan organisation of the BMA. Hence, it is interesting to examine the local autonomy of the BMA. Does a balance of power exist within the administrative system? What is the real problem for the BMA administration?

3.1.3 Balance of Power?

It is generally understood among the authorities involved that the political status of the BMA is second only to the Minister of Interior. In fact, this balance of power is underpinned by law. According to the BMA Act, in the case of a failure in administration, the Minister of Interior has the authority to carry out an investigation of the Governor of the BMA\(^\text{19}\). However, impeaching the Governor requires Cabinet approval\(^\text{20}\). As mentioned, local and national politics cannot be isolated from the BMA and Cabinet well recognises

\(^{19}\) Article 123 of the BMA Act.

\(^{20}\) Article 52 of the BMA Act.
this sensitive matter. Despite some political tensions between the BMA Governor and the Minister of Interior, compromise solutions are usually found to end any conflict quickly. However, some ongoing conflicts involving political interest and money-making by key actors in the city of Bangkok remain. This section examines the more powerful actors who control the BMA and how they influence the BMA in terms of development management.

The parliamentary system determines the administrative structure and system of the BMA. Decisions are made by the city council and the district council. This system is viewed as providing an internal balance of power for the local council in matters of local politics. However, the real problems for the BMA administration come from the NESDB, a small yet powerful national planning organisation with strong political linkages to the Office of Prime Minister. Hence, the balance of power is disturbed by the NESDB as a third party influencing the development mechanisms for the country.

The BMA has to submit every public project which involves high investment to the NESDB. The NESDB has responsibility for screening projects before passing them to Cabinet for final approval. This includes numerous infrastructure development projects such as water, power and telephone projects provided by other independent agencies in the form of state enterprises. In this way, the NESDB has the power to indirectly control and define the fate of Bangkok. A good example is the BMA Tram Project along the canals in August 1998, which was not approved by NESDB due to the poor feasibility study.

Over the past four decades, the NESDB has become a political instrument used selectively by the Prime Minister to control the major interests of the coalition government. The Prime Minister can make himself appear to stay above the conflict of local and national politics by using the NESDB as a third party. By delaying a project proposal, the NESDB can postpone a mega-project until the next government is formed. The NESDB also seems to have a closer political linkage with the Democrat Party because some of its members used to work with the NESDB and this connection remains close. This explains why other political parties are not keen on the NESDB and they ignore the role of NESDB when they become the government.

Despite these political concerns, there is the possibility that the BMA can maintain a balance of power and its autonomy. Under the governorship of Chamlong Srimuang (1985-21 The National Economic Council was established on 15 February 1950 and became the Office of the NESDB in July 1959.
22 There was conclusive evidence for this argument during the administrations of Prem (1980-1988) and Chuan Leekpai (1992-1995). The NESDB played a great role in screening all multi-million baht projects.
1991), the BMA challenged and overcame the NESDB by starting the development of a mass transit project in Bangkok, which is expected to be completed in December 1999. Besides many crucial projects, Chamlong also put some political pressure on the implementation of the first legal Bangkok Plan\(^{23}\) in 1992. A question is how Chamlong succeeded in achieving a balance of power while other BMA Governors have not been able to.

In my view, the coexistence of a balance of power and local autonomy depends on two key factors: strong leadership and a continuity of administration. Chamlong was BMA Governor for six years and his politics were impressive in terms of leadership and his popular support. Chamlong retired from his political career after losing the leadership in 1996.

Careful political observation reveals that these two factors are rarely present in Thailand. When present, it appears that the balance of power and the local autonomy of the BMA does not depend on the administrative system but on the quality of leadership of one person. However, lasting solutions to chronic problems in Bangkok cannot rely on waiting for such leadership. The public must tolerate each leader elected and allow them time to solve at least some problems. Therefore, what is needed is a radical change in the administrative system so that the BMA can truly play the role of executive manager.

However, there should be further study on how to improve the administrative system so it will not leave an opening for powerful people to exploit. The focus should be on the patronage system between the two groups, the elected politicians who have the power to approve the project, and the bureaucrats who understand the system and the loopholes. Exploitation can only happen when the two groups have mutual interests. This is the reason why many cases of corruption cannot be exposed and why investigations of key actors cannot be finalised. In my view, a worst scenario is the continuity of administration with two corrupt groups without an effective monitoring system.

The continuity of administration related to the problems of the legal system and the planning system will be discussed in the following sections.

\(^{23}\) Discussion is in Chapter 4.
3.2 The Legal System

Law is created and has become a legitimate instrument the government can use to control society by referring to the need to keep discipline and order. However, the way legal power is used depends on the motive of the user rather than on what is written in the law. The development of the Thai legal system is a good example.

King Chulalongkorn started legal reform in 1891 and administrative reform in 1892. Hence, one may argue that King Chulalongkorn attempted to control the use of power by law, with the optimistic assumption that this might bring good governance to Thai society. In my view, there should be a balance of power between the administrative system and the legal system. The struggle for power and many political changes over the past century have overlooked this basic principle and problematic systems were ignored.

In this section, it should be noted that the legal context is not a primary concern of this thesis but is viewed as a part of the urban development problem. The emphasis in this section is to briefly study shortcomings in the legal system that influence the administrative system and the planning system. Some weak points in the legal system will be explored through an empirical study which explains the coexistence of numerous problems in Bangkok.

3.2.1 Review of the Legal System

Each government department can create laws and regulations in accordance with its particular concerns. Consequently, a number of independent laws have been issued separately and implemented in accordance with the different responsibilities of 15 ministries and 125 departments. These laws represent the distribution of responsibilities and powers which influence subsequent budget allocation.

Thanin Kraivixien explains that a Bill may be introduced by the government or by a private member of the Assembly. Bills brought forward by the government are a result either of policy decisions made in Cabinet or of the recommendations of various government departments. They are drafted by the legal staff of the department concerned and are generally reviewed by the Juridical Council. Expert advice is obtained from time to time from professional men in their specialised fields depending on the nature of the law under consideration. When the Bill has passed through all its complicated stages in the Assembly, it is presented to the King for Royal Assent [Kraivixien, 1967 #78, 8].
Chapter 3 Politics of Planning and Development

It is worth noting that most laws in Thailand have a similar legislative approach but were created within a framework of different timing and on the basis of different ideologies and purposes. Despite the fact that some old laws, with their complicated terminology, cannot be applied in the current situation which has changed radically, these old laws are still important because they give considerable power to certain authorities. Additionally, authorities are competing to gain more legal power than other authorities. However, the controversy seems to be over the use of legal power rather than outdated laws.

These independent and conflicting laws reflect the struggle for power among different administrations because no department wants to lose its legal power. None of the departments can therefore be integrated. Chaos results when different public agencies use their different legal powers to solve Bangkok’s problems. For instance, 17 authorities from three ministries have responsibility for solving Bangkok’s traffic congestion problems.

The weakest point of the Thai legal system is that every legal activity takes a long time to complete because of the complicated processes involved. This is a major problem for professional planners because time is regarded as the key element which can influence all aspects of the planning process.

One may argue that the long legal process is a common constraint which should be expected. In my view, however, time consuming legal processes have several impacts on administration and planning. A BMA Governor may not succeed in achieving anything if it involves too much legal activity during a four-year term of administration. This supports the argument of the importance of the continuity of an administration. Moreover, time consuming legal processes may also badly affect the implementation of a development plan and the schedule provided in the financial plan.

My argument is that the legal system in Thailand discourages effective administration and planning because every activity in the legal process takes too much time. The Legislation for a new form of Bangkok administration is a good example. The Director General of Local Administration Department, Chamnan Yuwaboon, submitted a draft of a Local Administration Act for Bangkok with 87 Articles to the MoI on 21 April 1965. It took 10 years before it became the BMA Act in 1975.

Consequently, it is impossible to solve urgent problems that require new legal powers. Moreover, political factions understand the legal system and sometimes use its weaknesses by prolonging decisions which require legal power. The shortcomings of the legal system will be discussed in the next section regarding the case of planning law.
3.2.2 Town and Country Planning Act 1975

There are very few studies on planning law in Thailand. The best available study on city planning law is the *Introduction to City Planning Law in Thailand* by Akboon Wongsawasdikul [Wongsawasdikul, 1996 #46]. However, his arguments are based on legal interpretation and there is little discussion on planning philosophy.

The *Town and Rural Planning Act (TCPA)* issued in 1952 was Thailand’s first planning law. There were only 29 articles however these could not be applied effectively. [Wongsawasdikul, 1996 #46, 1, 73-84]. Additionally, its focus was on building codes rather than on the context of planning. In 1959, the MoI considered a revision of planning law and many committees were set up to study and draft a new law.

In my view, the American consultants who were working on Bangkok city planning from 1958 to 1960 tried to initiate planning law revision. As discussed in Chapter 2, the American consultants expected to have legal powers to implement their plan. However, the American consultants did not have time to work on this initiative because their contract ran out in August 1960. The revision of planning law continued. It is not clear why Thai planners followed and adopted the British experience in town planning in the 1960s, which became the backbone of Thai planning law through the next three decades.

The first draft, based on the British town planning system, was completed in 1965. The Juridical Council reviewed it in 1966. Subsequently, the government submitted it to the House of Representatives but it was returned for amending. In August 1969, Cabinet approved the second draft and submitted it to the House of Representatives in November 1970. The draft was suspended because of the coup on 17 November 1970. Ultimately, the TCPA was declared on 5 February 1975 after a long legislative process of 16 years during which Bangkok’s problems had become critical for 10 years.

It is worth noting that the British town planning system in the 1950s and 1960s, with many centrally controlled planning instruments, was strongly influenced by the social sciences in the 1970s. The British *Town and Country Planning Act 1959* was amended in 1968 and later consolidated into the 1971 Act [Cherry, 1996 #104, 136-147]. British planners had previously viewed cities as physical entities with physical problems. Cities were viewed as social entities, the product of a particular society at a particular time [Cherry, 1996 #104, 181]. Unfortunately, this great change in British planning system did
not influence Thai planners in the 1970s. The British experience in the 1960s has remained the guide for drafting new Thai planning law and has become the primary basis of planning law since 1975. This reflects another poor development of city planning in Thailand.

An analysis of the TCPA will be made briefly to provide a better understanding. Two legal planning procedures are the primary concern of the TCPA: (1) Comprehensive Planning and (2) Project Planning which can generate other related laws and regulations depending on sequence of use. The Comprehensive Planning physical planning procedure aims at producing land use plans with two main purposes. First, it is designed to control the detailed use of land which includes determining the distribution of land for different functions. Second, it is intended to prepare and provide basic infrastructure for the physical expansion of the city, mainly in the form of road structure. It is believed that the road system should be associated with the land use plan for the good future development of the city [Roachanakanan, 1990 #20, 77-78].

The other type of planning which comes under the TCPA is Project Planning. This may be considered as the most crucial legal procedure for city planning in Thailand. Within the legal framework of comprehensive planning, the project plan is created in order to develop and/or improve a specific area for a particular purpose. The scope of Project Planning can cover various scales and functions of a physical development. According to Article 28 of the TCPA, it allows or does not allow a number, scale and type of building permission and gives power to planners to restore, demolish or remove any building or object in the planning area. According to Article 47 of the TCPA, a surrounding area one kilometre from the planning boundary is forced to follow the Building Control Act which is a related regulation [Roachanakanan, 1990 #20, 78]. That means Project Planning is the most powerful legal approach that the DTCP and local governments including the BMA can apply to control the development and growth of the city. However, written power alone is not enough to solve urban problems. There is a crucial need for stronger controls in the form of Project Planning. However, the legal approach of Project Planning was not applied for Bangkok from 1992 to 1999. The Project planning has never been used to date are a political concern because the implementation will affect the politicians who are landed elite.

---

24 Akboon Wongsawasdikul is a lecturer at Faculty of Law, Thammasart University in Bangkok. His study is based on his experience working for DTCP.
25 The most important related law is the Property Acquisition Act. The others are applied in the form of Ministerial Regulations.
The TCPA is viewed as the most flexible and democratic law in Thailand. It allows local authorities to produce their own development plans, both in terms of comprehensive plans and project plans (Article 29). People can participate in the planning process and determine the direction of development in their communities (Articles 33, 34 and 35). However, a major weakness in the planning process occurs when a compromise cannot be reached between different points of view. One example was the failure of the first proposed master plan for Bangkok in 1977 when it was drastically rejected by the public [Roachanakanan, 1990 #20, 79-80].

The second major weakness is the lack of financial support. The TCPA does not mention anything about the provision of funds which are necessary for implementing the master plan. As a result, most infrastructure development projects in the master plan have not been implemented. This weakness has just been recognised officially however only a limited budget has been made available.

The third major weakness concerns timing. According to Article 26, both a comprehensive plan and a project plan are legally only valid for five years and must be revised or corrected to cope with changes in the local economy, society and urbanisation. Time has become the key element which can influence the interaction of administration, planning and legislation. If a plan is valid during the last year of a BMA Governor's administration, this will be a political dilemma for interaction between the administration, planning and legislation.

In cases where there have been more plans and more forms of administration involved in an area with different validity of legal control, the dilemma will be very critical. Hence, the highlight of this thesis is to study the case of the SBIA and planning for Bangkok and its nearby towns.

As discussed, delays in the introduction of the TCPA reflect the weakness of the Thai planning system. However, there is another reason why Bangkok had no legal city plan until July 1992 or 17 years after the TCPA had been introduced. The consequences of Bangkok having no development control for decades are quite serious, making many of Bangkok's problems more critical and unable to be permanently solved. What went wrong seems to be a result of the administrative system rather than the legal system. In my view, it is due to loopholes in the legislation which will be discussed in the following section.

26 To provide an example of this, Krisda Aruvongse na Ayulya, BMA Governor from 1992 to 1996, and his making of the Bangkok Plan is discussed in Chapter 4.
The Town and Country Planning Act 1975 was amended in 1982 and 1992. However, this has had little influence on the current style of city planning, and problems with planning practice in Thailand remain.

3.2.3 Loopholes in the Law

Loopholes are an unresolved problem. Both greedy entrepreneurs who want the greatest possible benefit and corrupt bureaucrats who understand and use the law, introduce loopholes if mutual interests can be met. The emphasis in this section is on the loopholes of planning law and the resulting shortcomings.

Loopholes have become big business which involved corrupt people at every level, including the political factions in the coalition government. Loopholes in association with property development seem to be the most evident.

Based on my experience, many loopholes in Thailand are consequences of the poor monitoring system. The authorities involved argue that they cannot inspect every building in the city for financial reasons. Planning law and Building Codes and Controls are good examples. Regarding the procedure of building permission, an inspector visits the construction site only once or twice and there is no monitoring whether the land and building will be used as written in the building permit. In most cases, bribery is popular, and can end any troublesome process quickly.

In terms of land use control, Article 26 of the TCPA has a crucial influence on land speculation and land development in urban areas in the form of construction permission [Roachanakanan, 1990 #20, 77]. This Article provides that developments in some areas may be frozen for five years. Use of loopholes occurs everywhere beginning with the early planning process, legal interpretation, through to the selective use of the planning law. Political pressures on planners, frequent lobbying of the legislature and bribery are usually applied. However, the simplest way that the actors involved can avoid legal problems is to delay the implementation of a plan. The 17 years of delaying the Bangkok Plan is evidence of this tactic.

Jurgen Ruland argues that the frequently delayed master plan for Bangkok was a reflection of the land elites' interest in preserving the utmost flexibility for their real estate.

---

27 In February and March 1995, I designed two small office buildings in Bang Kapi district in Bangkok. Despite the fact that my designs followed all regulations completely, my clients had to pay 100,000 and
ventures [Ruland, 1996 #79, 38]. Two interesting questions are: who are the land elites and how do they influence planning? Should politicians who own many large plots of land throughout the country be regarded as part of the land elite?

In my view, the most serious loopholes occur in delays in the Project Planning process. It is worth noting that Bangkok city planning in 1992 was only one early stage in the Comprehensive Planning procedure. This generally controls land use in Bangkok and primarily impacts on land prices.

Delay has become another key word in this thesis, in studying the more complex interaction of the three systems using the case of the 17 year delay to the Bangkok Plan and nearly four decades of delaying the SBIA.

In my view the legal terminology of 'time' should be revised in the Thai legal system with a clear definition in terms of commitment and responsibility. Meanwhile, the concept of time in TCPA should be revised in association with revision of the planning system. More discussion on these points is included in the following section.

3.3 The Planning System

The planning system in Thailand can be divided into three levels: national, regional and local. At the national level there are five-year plans, the first of which started in 1961. Regional plans are prepared by government departments and are likely to provide general policies and development guidelines for large areas. It is only at the local level that plans are truly enforced and implemented by law. Local plans are made for towns and cities in the form of comprehensive plans according to TCPA legal procedure. My argument is that the Thai planning system is not integrated and the current style of city planning fails to solve the problems in Bangkok because the emphasis is only on land use planning.

The discussion of the administrative system and the legal system in the previous sections is integrated with arguments on the planning system in this section. The focus is on the weak points of the Thai planning system to explain the failure to solve urban problems by planning measures.

120,000 baht to the Division of Public Works of Bang Kapi district. A corrupt bureaucrat stated that the bribes must be distributed to every person in the office. My clients got building permits shortly thereafter.
3.3.1 Development of the Planning System

The planning system in Thailand was developed comparatively more recently than either the administrative system or the legal system. That is why the planning system appears to be different from the other two systems. Secondly, the planning system is more concerned with long term policy and decision-making as a part of development strategy.

After many attempts under the American economic aid programme to Thailand which began in 1950s, the USOM along with the World Bank, supported the establishment of development planning as a new concept and process for the systematic ordering of public sector investment and operations. The NESDB was set up to carry out these functions under the administration of the Office of Prime Minister. The NESDB has responsibility for drafting the five-year national plan and participating in government policy review and decision-making processes [Muscat, 1990 #25, 267-268]. As a result, the NESDB has become a very powerful agency with a dominant role in every multi-million baht project including the SBIA. The NESDB is thus a model of highly centralised administration.

However, the role of NESDB is not impressive in the view of some scholars. Dr. Weng Tochirakan believes that the NESDB has inherited the dictatorship of the 1950s and that its role and authority should be reformed. In Nithi Eiew-sriwong’s view, the NESDB has failed to guide the development direction of Thailand and the government should close down the organisation.

During the past four decades with eight national plans, the NESDB has never changed its working philosophy which caused a number of chronic problems in its development. The urban primacy of Bangkok discussed in Chapter 2, the permanent crisis of both the urban and rural poor through to the deterioration of national resources and environs in Thailand, are all consequences of the NESDB’s staunch policies on economic development and an ignorance of more balanced development. The most controversial issue is the gap between the rich and the poor in terms of per capita provincial income distribution, which has increased from 12 fold in 1988 to 16 fold in 1996.

The NESDB also plays a role in making regional plans, however, these plans represent a narrow view and display poor theoretical understanding. Regional plans for

---

28 Dr. Weng Tochirakan is the chairman of the Democracy Federation. He expressed his concern and gave this statement during the seminar on the 25th year anniversary of democracy movement on 14 October 1998 at Royal Hotel in Bangkok.
29 Nithi Eiew-sriwong gave this statement at Mahidol University in Bangkok and his view was published in local newspaper on 6 April 1999.
growth centres, which the NESDB developed using Growth Pole Theory\(^{31}\) and put in the fifth national plan (1982-1986), is an obvious failure in the decentralisation of development [Roachanakanan, 1990 #20, 15-39]. This point was emphasised in a report on Metropolitan Regional Structure Study submitted to the NESDB in 1995 [Leman, 1995 #10, 67]. However, the NESDB seems unconcerned with arguments about its poor policy on regional development planning. More discussion on the controversial role of the NESDB is included in Chapter 5 on the issue of policy analysis.

Despite having numerous roles and a broader authority at the national level, the NESDB has no legal power to control planning at the local level. Instead the NESDB puts political pressure on the relevant authority, such as DTCP, which has the legal power to fulfil its requirements. The case of the SBIA is a case in point which will be comprehensively analysed in Chapter 6.

In fact, the Thai planning system itself is not complex but the planning activities are. Probably frustrated by the administrative system, government departments\(^{32}\) have made a number of regional and local plans based on different interests. These plans, which are not enforced by TCPA, are concerned with politics and the budget allocations of independent agencies. Each authority makes and implements its own plans without reference to any coordinating body. Consequently, none of the plans can be integrated and some even become contradictory. The environmental improvement plan and the slum upgrading plan for some areas in Bangkok are good examples. Any overview of these planning activities is chaotic and costly for the government departments and the BMA itself.

Independent departments do however have a nominal level of cooperation in planning. Most of them have a single representative sitting on the planning boards of other departments. However in reality, each representative plays the role of an observer rather than an active commentator because the Director General of each department eventually makes the critical decisions through to the final approval. This explains why the planning boards in each department are disfunctional.

\(^{31}\) See Appendix 3.2

\(^{32}\) Francois Perroux introduced the term ‘growth pole’ into economic literature in 1949. The term became ‘growth centre’ in geography. By developing a selected city as a growth centre, it is expected to play a role as a regional core to promote decentralisation of the population and industrial activities providing the driving force in regional development [Fu-Chen, 1978 #119].
Planning theories have not been truly applied and the focus is still on singular land use planning in the form of the comprehensive plan.

In practice, the traditional procedure of survey-analysis-plan is widely used in the state planning apparatus of Thailand. Even though the data and information required are provided well in the city plan and project plan preparation, planners still face several problems such as the limitation of time and poor organisational structure. Moreover, Thai planners are not able to produce plans that are acceptable to both the politicians who will endorse and support them and to the administrators who will have to implement them [Roachanakanan, 1990 #20, 83]. Hence, it is interesting to evaluate the current style of city planning. What are the problems and how reasonable are the plans which are produced?

Besides the very basic problem of data collection and analysis that has been mentioned in the Litchfield Plan, the first modern plan for Bangkok in 1958 and the Bangkok Plans of 1992 and 1999 indicate that there are many more serious problems in city planning. This section discusses the working style of Thai planners and their settled mode of thinking which has resulted in a critical failure in solving the urban problems.

During the early years of the TCPA, plans were made to get rid of narrow streets because it was thought, incorrectly, that the traffic congestion problem in the city could be solved simply. Consequently, it was proposed to make roads and streets much wider in association with the land use plan. This was based on the western experience of modern planning in the late 19th century [Turner, 1996 #80, 5] which Thai planners have followed for decades without making any further developments. However, this has become an obvious failure because the existing narrow streets, which are full of old buildings and densely packed houses, cannot be extended. Eventually, the idea of road planning was revised and the widening of the existing roads and streets was no longer considered in the plan.

This is just one of many fundamental problems. For a long time Thai planners have also overlooked and ignored other modes of urban transport such as the need for an effective mass transit system. In fact, they need a better understanding about urban transport planning and more knowledge about urbanism. Additionally, they should pay attention to the more rational application of planning theories and concepts.

The second problem, which is even more serious, is concerned with dimensions in planning. Most planning activities concentrate on land use plans, in which blocks of different land uses are separated by access ways. Only two-dimensional drawings are used
to define the future of the city. The third dimension of height is discussed only in the procedure of project planning and the fourth dimension of ‘time’ is descriptive and only mentioned briefly. Social dimensions and economic dimensions, moreover, are not included and the interrelation of these dimensions is not considered. Consequently, the traditional plan with only two documents, the land use map and the road map, cannot control and guide the growth of the city in terms of urban form and urban density and cannot solve the city’s problems.

Time is a key element which can influence every aspect of planning. Besides the five-year validity of each plan, nothing more is done with the time factor. Rapid changes in the economy and society are not treated as planning concerns. A new plan is simply made by looking back at what happened over the past five years and rearranging land use blocks. Apparently, it is largely based on the existing land use. Plural land use zoning with different functions in the same block is not applied, despite this being the reality in much of Bangkok, where commerce and industry are found throughout many residential areas. This approach makes city planning in Thailand static. Consequently, the plan cannot define the development direction of the city by guiding how many houses and how much space there should be for new office buildings in each block over a certain period of time. In my view, if it could, the collapse of the property market in and around Bangkok in 1997 might have not happened and the Thai economy would have not been in such a critical state today.

On the other hand, the reliance on modern technology indicates a poor understanding by planning authorities in Thailand. A large sum of money has been spent on upgrading computer systems and buying more new high-tech instruments. Despite the wide application of Geographic Information Systems, Thai planners have not changed their planning style and continue to produce two-dimensional drawings which have become the sole style of planning. Every plan shows a commercial zone in the middle as the core of the city, surrounded by residential zones and green areas outside regardless of the reality of plural uses. There is no attempt to adapt plans to environmental conditions such as flood plains or to the economic and social processes of change.

The effectiveness of a plan is proven over time. Through the past two decades, it has been proven that the current style of city planning in Thailand does not work and cannot solve the problems of town and city. The discussion in this section will support this argument.
John Friedmann\textsuperscript{34} may be the first scholar who argued that the TCPA 1975 was unsuitable for Thai conditions and therefore was not likely to improve the planning of cities in the future. His argument was given on 21 March 1975, 44 days after the law had been issued. In Friedmann's view, the master plans made by the DTCP were extremely simplistic in concept and execution and out-of-date according to rapid changes in Thailand’s cities.

He recommended the preparation of urban pre-investment studies for selected cities based on an in-depth social, economic, physical and environmental analysis. Within a given time period, urban development may be viewed as resulting from specific public and private investment projects that are properly articulated in both space and time. [Friedmann, 1975 #39, Memorandum # 3]. However, his critical argument was ignored and his recommendations were not considered.

Hence, the two key elements of space and time have been recognised since 1975 by Friedmann. It seems that Thai planners do not understand the philosophy of planning. Although these two elements have been taught as fundamental subjects in every planning school since the modernism movement in the early 20th century, abstract concepts seem to be difficult for Thai planners to grasp.

After the first comprehensive plan for Rayong, an industrial town on the east coast, was issued on 29 December 1983 and had been legally implemented for some years, the DTCP, under the administration of Charoen Thamrongklat, evaluated the plan and found that it was unsuccessful. As a result, new roads and other development projects proposed in the plan were not implemented. Despite all these shortcomings, however, DTCP continued with its old style of planning and by 1997 had produced 276 comprehensive plans, however none of them applied the second step of project planning. Obviously, the DTCP has known for years that its planning style does not work. What has gone wrong? Was it a failure of the planning system or planning law or planning style?

This may be the reason why the DTCP is shifting its interest to other planning approaches such as Land Readjustment, which was introduced through technical and financial support by the Japan International Cooperation Agency (JICA) in 1990. With the agreement of a majority of landowners, parcels of land which have no road access will be

\textsuperscript{34}USOM nominated Dr. John Friedmann to assist NESDB in planning rural-urban development strategies and to select possible long-term advisors to the NESDB on regional planning in the rural-urban context. Dr Friedmann visited the Department of Town and Country Planning on 21 March 1975. after the most important planning law in Thailand was declared on 5 February 1975.
pooled to develop projects on the basis of sharing benefits evenly. New roads and infrastructure will be developed on the land. Ironically, the *Land Readjustment Act* has been drafted by the DTCP and is expected to solve urban problems in some areas. In principle, land readjustment could overcome the existing poor organisation of land parcels and services caused by the failure to plan ahead for new urban construction.

I argue, however, that the land readjustment concept is unsuitable for Thai conditions. It cannot solve urban problems in the big city because every single step in the legal procedure of land readjustment takes time and cannot keep up with rapid changes in the economy and built environment. It may be possible to implement in newer areas or in areas clearly due for urban renewal, but reorganising land parcels is clearly difficult in the older built-up parts of the city. Most importantly, it cannot be applied to any area where the landed elite is powerful. In my view the DTCP is following the earlier experience of taking 16 years to issue the TCPA in the 1960s. As a consequence of the weak points in the Thai legal system described in the previous section, the DTCP is starting from zero to have a new planning law and nobody knows when the Land Readjustment Act will be approved.

In terms of the interaction between the three systems under the circumstances discussed, any attempt to solve Bangkok's problems seems to be a job of the utmost difficulty. The next section discusses the problematic issue of planning in terms of the complicated interaction of the administrative system, the legal system and the planning system.

### 3.4 Boundaries: Interaction of the Three Systems

The concept of boundary is the concern of all three systems. Geographical boundary, which is understood by all the agencies involved, has been referred historically to mean the territory of administration and the limitation of use of legal power. It can rapidly end disputes between and among government departments. However, a serious conflict may occur if the administrative, legal and planning boundaries are not clear or overlap. Some experts overlook the importance of the boundary, consequently, they do not succeed in their work. The making of the first modern plan of Bangkok in 1960 and the master plan of the SBIA, which have overlapping boundaries, are good examples.

---

35 Discussion on this is in Chapter 6.
Conflicts over Bangkok city planning, the mass transit projects developed by three different authorities, flood protection plans, solid waste disposal projects and many other infrastructure development programmes in Bangkok illustrate the shortcomings of overlapping boundaries. The focus of this section, therefore, is on the controversial boundaries which are reflected in the chaotic development of Bangkok.

In Thongchai Winichakul’s view, the overlapping realms of the supreme overlords became the root of troubles when the notion of a modern boundary with absolute and exclusive territorial sovereignty was applied in the late 19th century [Winichakul, 1994 #60, 96-97]. This implies that the perception of boundaries has been very important and meaningful in Thai society. The boundary can represent and express sovereignty, autonomy and the identity of a person and institution, however, these abstract concerns require a tangible and clear means for classifying and identifying the different hierarchy.

This may explain why the distribution of power is based on the physical boundary. A good example is the military areas, which are not included in DTCP plans. However, much less attention has been paid to studying whether this privilege is illegal and against the new constitution of 1997.

In fact, overlapping boundaries between the three systems have existed throughout the country. It has become a problem when mutual interests between and among power groups cannot be met. As mentioned, Bangkok is the hub of considerable interest where a number of factions compete in making money. In this situation, the problem of overlapping boundaries in Bangkok is more critical.

It may not be productive to overlay all the legal and administrative boundaries of 125 government departments on the same map of Bangkok. Nevertheless, the complexity of boundaries has understandable impact. Although everyone seems to recognise these facts, the government does nothing about the boundary problem.

The only person in Thailand who has no problem with administrative, legal and planning boundaries is King Bhumipol. All the agencies concerned respond to his initiatives promptly with very good cooperation. His solutions to the problems in Bangkok are remarkable. In one of many good examples, King Bhumipol proposed the temporary storage of floodwaters project37 as a solution to the flood problem in Bangkok and some

---

36 An agreement was made in 1985 between the Ministry of Defence and the MoI that master plans under the TCP would not include any military areas because of security reasons [Roachanakanon, 1990 #20, 84].

37 It is known as Monkey Cheek project.
swamps in military camps were developed immediately. I have not attempted further study of this sensitive issue.

This extraordinary approach is interesting and may be regarded as the most effective solution to the complex problems of Thailand. However, it may also reflect the fact that the three systems in Thailand are too complicated and too flexible so that none are effective for dealing with the problems of Bangkok. It is quite clear that the government cannot create a more disciplined administration under these circumstances. In my view, there is the need for a more rigid system in terms of command and control, which will be an issue for discussion in Chapter 8. A discussion of political influences on these three systems continues in the next chapter using the case of city planning for Bangkok in the 1990s.
Chapter 4 Planning Bangkok in the 1990s

Bangkok city planning in the 1990s is regarded as the beginning of land use control under legal processes. The *Bangkok General Plan 1992* was Bangkok’s first legal city plan and was implemented in July 1992. This started a legal commitment to Bangkok city planning which must continue under the *TCPA 1975*. However, most of Bangkok’s problems remained unsolved. The problems are extensive because of local and national politics.

For decades Bangkok has been Thailand [London, 1980 #1, 113]. Many scholars mention this statement to describe the urban primacy of Bangkok. This image of Bangkok has never changed and Bangkok remains the national centre of administration, economy, finance, education, transportation and information. Bangkok also plays a greater role at the regional level, for instance as the aviation hub and the automobile production base for Southeast Asia. Because of the importance of Bangkok, any impact on Bangkok has an influence on Thailand and the region. The economic crisis which erupted in Bangkok in 1997 provides a clear example of this.

As discussed in Chapter 3, Comprehensive Plans and Project Plans are only legally valid for five years and must be revised or corrected in order to cope with urban changes. This also applies to Bangkok where a new revised plan was supposed to be implemented in July 1997. Although the BMA is responsible for preparation of the new plan, nothing happened with the plan between 1997 and 1998. The BMA expected the new Bangkok city plan to be implemented by July 1999. What went wrong and what caused the delay in the planning process?

Figures 4.1 and 4.2 show land use in Bangkok in 1972 and 1986 and show how Bangkok has expanded to cover all nearby provinces. Bangkok in the 1990s is different from what it was between 1960 and 1971 in terms of physical structure and political

---

1. L. W. Huff [1967], B. London [1980] and many Thai scholars have repeated this point through the past decades.
2. Bangkok is the ritual centre of Thailand and this has created cohesion in Thai society as the primate city. This argument may help explain events in Bangkok before the 1960s when ceremonies such as the Royal Ploughing Ceremony were revived on 5 May. In my view, these activities are much less important than Bangkok’s economic functions. In fact, the revival of old traditions and ceremonies has become a part of tourist promotions and there is very little relationship between the traditional rituals and ceremonies and the younger generation of people living in Bangkok today.
3. Many articles published in local newspapers and magazines in 1998 and 1999 support this argument.
4. Article 26 of *TCPA 1975*
environment. This explains why Bangkok city planning in the 1990s is more difficult and more complicated than when the Litchfield Plan was made in 1960 and the first revision of the Plan for the metropolitan area was made in 1971. Despite more local autonomy, the BMA is unable to apply planning measures to cope with the complex urban problems because Bangkok has become a metropolitan region extending far beyond the BMA’s jurisdiction. This is the reason why a single city plan of Bangkok, using the current style of planning, is not effective in solving problems at the regional level. Hence, Bangkok’s planning has become a national problem and the government needs to revise its political orientations on extended metropolis development.

In my view, there is a crucial need for a revised approach to planning in Thailand in which political influence on decision is also regarded as a planning concern. In other words, to understand the planning process is to understand the political situation.

This chapter discusses planning for Bangkok in the 1990s. A task in this chapter is to understand how the politics and changing administration influenced Bangkok planning in the 1990s. It concentrates on a review of three plans and one study: (1) the first legal city plan for Bangkok prepared by the DTCP in 1992; (2) the city plan prepared by the team from the MIT; (3) the city plan prepared by the BMA in 1999; and (4) the Metropolitan Regional Structure Planning Study. The planning concepts of these plans are discussed.

4.1 Politics of Bangkok City Planning in the 1990s

Soon after the first city plan for Bangkok, the Bangkok General Plan 1992, was enforced by law on 6 July 1992, the DTCP played a lesser role in Bangkok city planning and the BMA began preparing another city plan for Bangkok for the next five years. Krisda Arungwensena Ayutthaya replaced Chamlong as Governor of the BMA in 1994 and preparation of the next city plan became his political commitment. Despite a lack of cooperation and political support from the BMA Council, Krisda used all available

---

5 See Appendix 4.1 The registered population used in the urban study is based on officially available data that does not include the unrecorded population which lives illegally in the city. That includes the Thais from the countryside and the illegal migrants from Burma, Laos, Cambodia, the former USSR and China. Most of them work in the informal sector. Some live in good apartments and work in the red light areas. It is believed that the illegal population in Bangkok may be more than 30 per cent of the total population.

6 The ‘Bangkok Plan’ is a collaborative planning project of the Department of Planning (BMA), the MIT Consultant Team and the EC/BMA Project Team completed in 1995.
Bangkok Existing Land Use 1972

Source: DTCP

Figure 4.1 Land use in Bangkok, 1972
Figure 4.2 Land use in Bangkok, 1986

Legend
- Residential
- Commercial
- Government Institution
- Education
- Churches, Cemeteries
- Industrial
- Warehouse
- Parks and Recreation
- Public Utilities
- Agriculture
- Open Space

- provincial boundary
- district boundary
- subdistrict boundary
- road
- railway
- bridge
- river
- city hall
- district office
- police station
- hospital
- school
- church
- mosque

Land Use
Bangkok 1986
power to complete the new city plan. An American team from the MIT was invited to prepare a master plan. In October 1995, the MIT team submitted *A Vision for Bangkok: The Bangkok Plan* to the BMA, which was expected to be implemented legally in 1997. Political change in the following year had strong impact on this plan as we shall see.

During the election campaign for the BMA Governorship in June 1996, Arkorn Huntakun, an independent candidate, highlighted the key to all Bangkok's problems. 'Make Bangkok smaller and make Thailand bigger' was his campaign slogan. In the election, Arkorn got only 20,985 votes compared with Bhichit Rattakul who won with 768,994 votes. [BMA, 1996 #44, 168]. However, Arkorn's idea was interesting.

Under the planning law, the expiry date for the first Bangkok Plan was 5 July 1997. The MIT Bangkok Plan was also supposed to have been substantially implemented by then. A turning point occurred when Krisda lost the election in June 1996. The new Governor, Bhichit Rattakul, opposed the MIT plan for Bangkok and his new team prepared another plan. There was no official explanation. However, it was understood that Bhichit did not want to lose his face because the making of Bangkok Plan had been Krisda's primary campaign. Consequently, the Bangkok Plan prepared by the MIT team was completely ignored and became a waste of time and money. The shelving of the plan is an example of political influence on Bangkok city planning.

This became a problem because Bhichit mainly concentrated on environmental issues but knew nothing about city planning. Air pollution in Bangkok was his concern and a lot of money was spent to grow new trees around the city. He did not understand that a city plan could be used for solving the environmental and other problems in Bangkok.

City planning is still required by law to be implemented to control the development of Bangkok. Bhichit's simple solution was to prolong the old plan for another two years. During these two years, however, Bhichit's planning team did not succeed in making a good city plan despite the fact that his Deputy Governor, Dr. Bannasopit Makewichai, was a professional planner who had worked with the DTCP for many years. Bhichit's planning team also included Associated Professor Manop Pongsathat from the Urban and Regional Planning Division at Chulalongkorn University who has now become Chair of the Consulting Committee to the Governor of the BMA and is responsible for city planning.

In January 1999, Manop Pongsathat confirmed that the *Bangkok General Plan 1999* would be implemented in June 1999 after being postponed since 1998. However,
the draft of the new city plan presented to the public was disappointing to many Thai planners because it seemed that both professional planners did nothing about planning.

It is controversial about what planning was conducted from July 1996 to 1999. The Bangkok General Plan 1992 shown in Figure 4.3 is little different to the Bangkok General Plan 1999 shown in Figure 4.4. Both have 14 land use categories. The overview of land use zoning in the two plans is the same. Land use for Bangkok from 1999 to 2004 is divided into 509 blocks with the descriptive controls using the same patterns which have been applied to other towns and cities in Thailand. Furthermore, it is believed that Bannasopit and Manop were playing the role of politicians rather than professional planners in making the new plan for Bangkok.

This short history of political change and its effect on BMA planning activities illustrates the futility of a purely 'rational' planning approach in Bangkok (see Chapter 8). The following section reviews city plans made in the 1990s.

4.2 The Bangkok General Plan 1992

This section reviews the first legal plan of Bangkok which was implemented in 1992. The discussion focuses on planning concepts and problems. It focuses on how the boundary conflict discussed in Chapter 3 has become a problem for city planning and how this plan influenced Bangkok city planning in the mid 1990s.

4.2.1 Review of the Bangkok General Plan 1992

As discussed, the legal application of city planning is crucially needed to control the growth and development of Bangkok. After waiting for decades, the Bangkok General Plan 1992, prepared by the DTCP, was first legally enforced on 6 July 1992. According to Article 4 of the TCPA 1975, the DTCP or the local authority has authority to prepare city plan. While the DTCP has played a major role in preparing the Bangkok General Plan 1992 implementation of the Plan was the responsibility of the BMA.

The Bangkok General Plan 1992 was based on land use maps surveyed in 1986, shown in Figure 4.2. This means that the planning process took more than six years before completion in 1992. The Bangkok General Plan 1992 covered 1,568.7 square

---

7 Article 4 defines the BMA Governor, municipality, provincial governor and provincial council as 'the local authorities'.
Figure 4.4 The Bangkok General Plan 1999
kilometres which included the total area of the BMA. The registered population\(^8\) of Bangkok in 1992 was 5,562,141 persons living in 1,383,267 houses with an average density of 3,546 persons per square kilometre. In this plan, land use control was a primary concern and Bangkok was divided into 14 zones. A list of activities for each zone briefly explained what could and could not be done. A road network development plan was presented to assist with land development.

Apparently the planning area was simply defined and based on the administrative boundaries of the BMA, although the built environment of the city extends far beyond those boundaries. This means that the authority to control land use in Bangkok was entirely in the hands of the BMA, although only at the level of planning law. In reality, as discussed in Chapter 3, a number of authorities could intervene in planning areas\(^9\) using their own laws and political powers. In other words, the land use controls were not completely effective and authorities continued to ignore the Bangkok General Plan 1992.

Figure 4.3 shows that the pattern of land use control in the Bangkok General Plan 1992 is very similar to plans made by the DTCP for other towns and cities in Thailand. The commercial areas are mainly located in the city core in which most urban activities are highly concentrated. The residential areas are located around the city core and the green areas or agricultural areas are located outside performing as greenbelt areas to limit the growth of Bangkok. However the 276 plans made by the DTCP across Thailand from 1983 to 1997 provide evidence that the greenbelt approach cannot control and direct the growth of towns and cities in Thailand. Even so, the same greenbelt concept is applied to Bangkok, the metropolis with the highest rate of urban growth in the country.

It is worth noting that very few industrial development areas were included in the Bangkok General Plan 1992. It was stated as a public policy that because of environmental problems, no more industry and factories will be allowed in Bangkok. The same policy applies to Samut Prakan, south of Bangkok however it does not include other urban fringes in Pathum Thani, Samut Songkharm and Chachoengsao where numerous factories are located within kilometres of the BMA boundaries.

---

\(^8\) The registered population used in the urban study is based on officially available data that does not include the unrecorded population which lives illegally in the city. It is believed that the illegal population in Bangkok may be more than 30 per cent of the total population.

\(^9\) The most powerful authority in Thailand is the military. The Bangkok General Plan 1992 does not cover military areas because of an agreement between the Ministry of Defence and the MoI. Other powerful
Chapter 4 Planning Bangkok in the 1990s

The most significant contribution of the Bangkok General Plan 1992 was to define and preserve areas for floodways and temporary storage for floodwaters as a flood protection measure for Bangkok. However, a number of loopholes occurred which were not covered by planning laws, for example single houses were allowed to be built in floodway areas. Developers were able to modify their drawings to apply for building permission. As a result, a number of new houses have been developed in these areas. The landscape along some roads in floodway areas such as Pracha Ruamchaid, Ratsadorn Uthis and Mitr Mitree in Nong Chok district east of Bangkok has become full of ugly housing developments.

My argument is that the method of land use control in the Bangkok General Plan 1992 and its extension to the present day cannot alone direct the development of the city. The land use plan for Bangkok was made without a comprehensive analysis and the descriptions of the land use permit in particular areas focus on what cannot be done. Despite the legal adoption of the plan, very little of the Bangkok General Plan 1992 has been implemented and it has become descriptive rather than effective. In this respect, the plan is no different from the 1960 Litchfield Plan and other plans which have had no influence on Bangkok. However, what the Bangkok General Plan 1992 has been able to do most effectively is to stop large developments in some areas of Bangkok for the time being.

It is also the view of the DTCP, as national planning authority, that the Bangkok General Plan 1992 is not practical nor is it the best plan. However, the DTCP argues that it is better than having no plan. The question is what went wrong with Bangkok city planning during this period.

Many factors have caused the failure of the Bangkok General Plan 1992. The first problem concerns the preparation for planning. This took more than six years after the land use map of Bangkok was completed in 1986. As an unavoidable consequence of rapid economic growth, Bangkok was moving into a peak period of property speculation from 1986 to 1992 and consequently the land use survey database created in 1986 was out-of-date and not very useful for planning.

The built-up area of the city also continued to expand rapidly to cover all nearby provinces from where millions of people commute to work in Bangkok every day. These

---

authorities are the State Railway of Thailand and the Bureau of Crown Property which own many large plots of land in Bangkok.

10 Chalerm Kaewkungwall, Director General of the DTCP (1990-1992), gave this statement in an interview in a local newspaper on 14 December 1993.
empirical facts were mentioned but were not considered or included in the plan which effectively planned for a static city.

The second problem concerns the poor performance of the DTCP, which was unable to develop its planning style or advance its planning philosophy to deal with the Thai conditions of urban change. It seems that the DTCP knew only one style: land use control, and only one transportation mode: road networks. These approaches are outdated and not practicable for a city of six million.

The third problem was a lack of enthusiasm to complete the planning task. After the completion of the Bangkok General Plan in 1992, the DTCP was reluctant to continue with the next legal procedure, project planning. This had the potential to provide a stronger planning measure in the form of density control. Some scholars believe that density control enforced by project planning, is the most effective approach to direct the growth of Bangkok and handle the problems of Bangkok effectively.

The fourth problem was that the BMA did not provide a sufficient budget to implement development projects set out in the Bangkok General Plan 1992. As discussed in Chapter 3, this problem occurs in every city which has applied planning laws and it seems that the DTCP also ran out of ideas to solve the problem.

Further discussion on the Bangkok General Plan 1992 will focus on the complex situation when the planning process was under the greatest pressures. In my view, this was a big constraint on the planning process and the authorities overlooked this problem. The term ‘planning under siege’ explains the problem of city planning during this period.

4.2.2 Planning under Siege

The 17-year delay between the TCPA 1975 and the first legal city plan for Bangkok was serious because Bangkok and nearby cities and towns grew without control. Today, urban sprawl can be seen everywhere around Bangkok. In terms of the physical environment, Bangkok has become a metropolitan region comprising a number of settlements linked along road corridors under different forms of local administration. This phenomenon is a major problem for planning practice. This section discusses the consequences for city planning policy during the past three decades, which influenced the making of the Bangkok General Plan 1992.

---

11 The DTCP has commissioned studies of transportation for the Bangkok city planning since 1984.
The term ‘planning under siege’ is used to explain a critical situation in which planners are working under pressure in the face of a number of chronic problems. The siege can be understood in terms of tangible and abstract elements. The term refers to the situation in which a big city such as Bangkok is surrounded by dozens of municipalities each with local autonomy. These municipalities have implemented their own city plans. This has caused a fragmentation of responsibility in land use control. It is interesting to study how this phenomenon has occurred.

After an attempt by enthusiasts to issue a city plan for Bangkok failed in 1976, the DTCP changed its strategy by shifting the use of the new planning law from big cities such as Bangkok to smaller towns. The DTCP targeted Rayong, an industrial town on the eastern seaboard and proclaimed a victory when the first city plan enforced by law was issued on 29 December 1983. Since then, a number of plans have been issued using legislation to control the land use of most towns and cities in Thailand. The DTCP continues the task of producing this sort of plan. Plan after plan, town after town and city after city - every plan has the same layout showing a similar pattern of land use planning. This includes plans for all urban centres within a radius of 100 kilometres around Bangkok. And yet ultimately, Bangkok city planning is blockaded by these plans as if it is under a siege created by the DTCP itself.

These plans are produced separately by different planning teams based on provincial administrative boundaries. They are then implemented by a number of independent public authorities. It is important to note that this planning approach is different from the approach in the Litchfield Plan in 1960 and the First Revision of the Plan for the Metropolitan Area in 1971 which covered the inner urban areas of Bangkok and considered the physical built environment as their primary concern.

In terms of Bangkok as a region, the separate plans are ineffective in terms of development management. They also reflect the different approaches taken by DTCP and the BMA to making plans. These different approaches can be understood in terms of national politics and local politics. While their focus is apparently on planning boundaries, the context of the metropolitan region is not actually recognised by them. The need for the metropolitan regional plan, implemented and enforced by law, is ignored.

\[^{12}\text{These urban centres are Nonthaburi, Pathum Thani, Samut Prakan, Samut Songkhram, Samut Sakhon, Nakhon Pathom, Nakhon Nayok and Chachoengsao.}\]
As discussed in Chapter 3, it is very difficult to change this approach to planning because the administrative boundaries represent the limitation and degree of the use of power according to Thai law. This is very important in the view of the Ministry of Interior as the DOLA, which is the most powerful department in the ministry, handles most laws and uses the boundaries to solve conflicts between the different authorities.

Besides being under siege by the abstract nature of many DTCP plans, the planning process in Bangkok is blocked by the many built forms and new settlements which have developed without control for many decades. Industrial estates and housing projects have been developed by both the public and private sectors and are dispersed across the seven constituent provinces - Samut Prakan, Nonthaburi, Pathum Thani, Nakhon Pathom, Samut Sakhon and Chachoengsao - which comprise the BMR13. According to the 1990 census, the population of the BMR is about 9.283 million living in 51 districts of the seven constituent provinces [Sternstein, 1995 #41, 1-25].

In 1995, Sternstein presented a report on population changes in the Bangkok Metropolitan Region. It gave conclusive evidence that the rate of population growth in the inner core of Bangkok14 had dropped sharply and continuously. For example, Pom Prab Satru Phai district lost 63.2 per cent of its population from 1970 to 1980. Meanwhile, the censuses showed a much higher percentage of population growth in the periphery in the same period. Bang Kapi, Min Buri, Nong Kham and Bang Phli were among the districts with high rates of growth over 100 per cent. Bang Kapi district showed the highest percentage of growth of 168.6 from 1970 to 1980 [Sternstein, 1995 #41, 27]15. However, the Bangkok General Plan 1992 did not take into account this pattern of population change.

Besides these elements, the implementation of the Bangkok General Plan 1992 was blocked by a number of other laws and regulations16 many of which had been issued previously. Some were rewritten later such as the Building Codes and Controls for Bangkok and Ministerial Regulation No. 33, 1991. For the effective implementation of the plan these laws have become problematic. Most important was the overlap among the laws and the consequent confusion and potential for loopholes in the whole set of planning law.

---

13 See Appendix 4.2.
14 These districts are Phra Nakhon, Pom Prab Satru Phai, Samphanthawong, Bang Rak and Prathum Wan.
15 See Appendix 4.5
16 Besides the TCPA 1975, there are seven Acts and 14 Regulations which apply to Bangkok [Boonchuan, 1997 #54, 124-126].
While the case of Bangkok may be not clear because very little of the plan has been implemented, a serious conflict over laws occurred in 1997 in Phitsanulok, a town some hundreds of kilometres north of Bangkok. In the city plan, the DTCP proposed building a new bridge across the river. However, the Department of Public Works, which was given a budget to build the bridge, opposed the site for the new bridge. Eventually, the DTCP lost the case and the bridge was built at a new site chosen by the Department of Public Works.

The case of Phitsanulok indicates how current planning law is not effective and highlights another weakness in city planning in Thailand. Similar conflicts can occur anywhere, anytime if competing interests are not settled. This is a serious problem for Bangkok as it is the centre of significant competing interests which are influenced by many political factions. Boundary conflicts over the administrative, legal and planning systems in Bangkok are more complicated than elsewhere. However, many conflicts are ended quickly after a compromise is reached between factions on the basis of their mutual interest.

The idea of legislation being able to establish and give effect to the interests of the wider community, in the presence of strong vested interests, is unlikely in the planning context in Bangkok.

4.2.3 Reflections on the Bangkok General Plan 1992

Even though the Bangkok General Plan 1992 has not solved Bangkok’s problems and is viewed as ‘a paper tiger’ because so little of the plan has been implemented, it has had some influence on later changes in Bangkok city planning. Firstly, the plan has started an agenda for city planning under legislation and has highlighted the continuing need for planning legitimacy. Secondly, it has started a political commitment to city planning so that the Governor of the BMA is required to prepare a new plan every five years. Thirdly, city planning in Bangkok has truly become local practice and the DTCP now plays a minor role by providing only framing recommendations. This suggests that city planning has now become more a matter for local politics.

The plan’s greatest influence has been in providing enthusiasm for the next Governor of the BMA, Krisda Arungwonse na Ayutthaya (1994-1996), who has worked hard to introduce a new planning style. The land use of Bangkok was surveyed in 1993.
to facilitate this energetic movement (see Figure 4.5). The Governor completed his task through the Bangkok Plan 1995.

4.3 Review of the Bangkok Plan 1995

As discussed, the Bangkok General Plan 1992 was completed during a period of political polarisation under the BMA Governor, Chamlong Srimuang. Chamlong had considerable support from his active Deputy Governor, Krisda Arungwongse Na Ayutthaya after the election in 1992. Krisda was the former Dean of the Faculty of Architecture at Chulalongkorn University and took responsibility for city planning because of his professional background in architectural design and project planning.

The first Bangkok city plan became a political obligation which needed to be completed quickly. Because of time limitations, density control was not considered or included in the Bangkok General Plan 1992. However, Krisda continued with this attempt when he became the Governor of the BMA in 1994. Density control measures were recommended in the Bangkok Plan 1995.

Instead of giving the task to local planning staff at the BMA, he gave it to a planning team from the MIT. There is however an explanation of why Thai planners did not play a leading role in making the new plan. The main reason why the planning team from the MIT was chosen was that Krisda had graduated from and had personal connections with this Institute. Hence, the arrival of the MIT planning team was understandable. Knowing the worldwide reputation of MIT would bring him political credibility, Krisda used the Bangkok Plan 1995 for his campaign during the election in 1996. Another candidate, Bhichit Rattakul aimed his campaign at environmental problems in Bangkok. Chamlong, whose political relationship with Krisda had broken down, sold the idea of Bangkok 2000 as the city of the future. This shows the importance of the planning process as an electoral issue. However, the result of the election on 2 June 1996 did not reflect these campaigns as the voters considered the personality and leadership of candidates rather than their policies.

Despite the fact that people in Bangkok did not care about the MIT plan and the plan was not implemented, it is interesting to study how the MIT planning team prepared the plan. The focus in the next section is on development planning and the methods that the MIT team expected to succeed in improving Bangkok. The discussion is on three key issues: (1) land use planning; (2) the maximum allowable floor area ratio; and (3) the urban development plan.
Chapter 4 Planning Bangkok in the 1990s

Figure 4.5 Land use in Bangkok, 1993

Source: MIT

Land Use Map of Bangkok 1993

- Agriculture
- Commercial
- Historical Conservation
- Government Institution
- Residential, High Density
- Industrial
- Residential, Low Density
- Residential, Medium Density
- Public Park
- Churches, Cemetery
- Schools
- Warehouses

SBIA The Second Bangkok International Airport

Scale 1: 200,000
4.3.1 Land Use Planning in the Bangkok Plan 1995

The property booms in association with the high rate of economic growth in the 1980s had an influence on the MIT planning team. By the early 1990s, Bangkok was a city where competition for land and property was intense and property values were high. These facts were discussed and included in the main report.

The MIT study concentrated on the role of Bangkok in the metropolitan area. The Bangkok Metropolitan Area population in mid-1995 was estimated at 8 million with an annual growth rate of 3 per cent. This estimation was higher than the census shown in the BMA annual report of 1996 which gave a figure of 5,570,743 people who lived in Bangkok in 1995 [BMA, 1996 #44, 6]. The BMR population was approximately 11 million. It was expected that the population of the BMA would be about 11 million in 2005 [(MIT), 1995 #13, section 4, 3-4].

The MIT planning team seemed to work on the daytime population rather than the registered population17, an assumption which was not considered seriously in the previous planning process. Hence, a constraint for the MIT planning team was the lack of more accurate data and information for planning. In fact, this has been a very basic problem since the first modern city plan was made in 1959 and 1960. The authorities involved did not explain why this problem remained unsolved in the 1990s. This reflects another problem with city planning in Thailand.

Bangkok's chronic traffic and environment problems were discussed briefly in the MIT report. Development control in association with a development guidance system was proposed on the basis of a package concept. This included a small number of use zones, maximum density of development, special areas with overriding contextual regulations, a density bonus system to reward developments that serve public purposes and a special permit system for large developments [(MIT), 1995 #13, section 4, 11].

The planning concepts and policies are represented in the land use plan. Six use categories were proposed as shown in Figure 4.6, compared with 14 employed in the Bangkok General Plan 1992. The three current resident development categories (low, medium and high-density housing) were combined into a single residential category. The same principle was applied to combine other categories into a single category. The six categories are (1) mixed-use; (2) commercial use; (3) residential use; (4) public parks and

---

17 The registered population is the total number of people who have a permanent address in Bangkok and who are registered with the local authority in Bangkok. The daytime population means the number of people who live outside but work in Bangkok. This includes unregistered illegal migrations from rural areas.
six categories are (1) mixed-use; (2) commercial use; (3) residential use; (4) public parks and open spaces; (5) industrial and warehouse use; and (6) agricultural use. The most significant difference between the current and proposed regulations was the introduction of a mixed-use zone. Most small scale residential, commercial and light industrial uses are permitted in the mixed-use zone [(MIT), 1995 #13, section 4, 13-19].

Source: MIT.

Figure 4.6 The Bangkok Plan 1995 (land use)
There has been little impact on Bangkok city planning in changing the zones from 14 to six categories. In reality, land uses in Bangkok have always been mixed so it is difficult to differentiate which urban blocks are actually residential or commercial. One example is a commercial complex where apartments, offices, shops and a theme park have been integrated in the same building. Another example is the old parts of town which have grown informally. Here small service businesses such as mechanical workshops are scattered among houses. The interpretation of land use and building use is controversial in cases where contradictory functions are merged in a single building. However, this may be not a problem because some of these projects have been approved. The most interesting case is the multi-million investment Industrial Condominium project developed by the Bangkok Land Group in a suburb north of Bangkok in which an office, factory and warehouse have been put in the same tower compound. Are these reasonable and effective concepts for solving Bangkok's problems?

My first argument is that the MIT planning team did not consider the urban primacy of Bangkok as a primary problem. Why was this serious problem overlooked?

The main report of the Bangkok Plan 1995 discussed and expressed a positive view of the Metropolitan Regional Structure Plan[^18], prepared by the NESDB, which supported many development projects in and around the Bangkok metropolitan region [(MIT), 1995 #13, 30]. This reflected the influence of the NESDB on the planning team. For the same reason, other development guidelines in the Bangkok Plan 1995 supported policies proposed by the NESDB in its former studies, such as the master plan of the SBIA which was submitted in August 1994. The NESDB, for example, wanted to develop Lat Krabang as a suburban centre which would serve the new Bangkok airport.

As discussed in Chapter 2, the NESDB has maintained its staunch policy on the further development of the primate city. It has now become clear why urban primacy was not regarded as a problem in the Bangkok Plan 1995. The MIT planning concept was in fact likely to increase the role of Bangkok as the central ‘knowledge economy’ of Southeast Asia by developing a sophisticated infrastructure and providing a higher quality of urban life.

I support the policy on Bangkok development as the economic development centre and aviation hub of Southeast Asia. However, the Thai government should study how smaller cities such as Singapore with less population, can play a role as the centre

[^18]: Discussion on this study is in section 4.4
of finance and transportation in the region. In my view, Bangkok is not competitive because of the number of chronic problems and the lack of city planning. As long as the urban primacy of Bangkok remains, it will be extremely difficult to make a good plan for a city which continues to grow rapidly without limitation.

My second argument focuses on the concept of mixed-use development. Figure 4.6 shows a large area of commercial land use forming the core of Bangkok, surrounded by mixed-use. One of the main purposes of encouraging mixed-use development was to reduce the need for travel, as multiple purposes can be served by one trip and people can live near the workplace. Commuting distances are minimized when offices, shops and housing are located in close proximity and the problem of traffic congestion could be reduced [(MIT), 1995 #13, 49]. In my view, this concept reflects a poor understanding of the development pattern of an urban economy and the social behaviour of commuters in Bangkok [Punpuing, 1996 #107, 132-168]. My argument is that the concept of mixed-use development cannot solve traffic problems in Bangkok. People who live outside Bangkok and work in the city core cannot afford expensive accommodation in the mixed-use areas.

Coupled with the land use plan, the concept of density development was introduced as the most powerful way of carrying out the intentions of the new development plan. The concept was simple. The land use plan shown in Figure 4.6 was interpreted in the density control plan shown in Figure 4.7. A discussion on the implications of this is included in the next section.

4.3.2 Maximum Allowable Floor Area Ratio

A highlight of the Bangkok Plan 1995 was the control of maximum allowable floor area ratio. Two key terms of ‘Floor Area Ratio’19 or F.A.R. and ‘Building Covered Ratio’20 or B.C.R. were discussed and FAR was included in the plan. The concept was an attempt to broaden the view of city planning into three dimensions. However, the density control approach requires a large amount of information and a complicated study process which cannot be completed quickly.

19 Floor Area Ratio is a ratio between the total floor area of building and the land area covered by that building. It is applied for controlling the density in urban areas.
20 Building Cover Ratio is a ratio between the total ground floor area of a building and the land area in which that building is located. It is applied for controlling open space in the city.
Figure 4.7 The Bangkok Plan 1995 (maximum allowable FARs)

Source: MIT.
It was believed that controls over the density of development were potentially the most powerful way of carrying out the intention of the new development. The density plan was proposed on the basis of four notions:

(1) to create a high density city core;
(2) to concentrate further development along the routes of the mass transit system;
(3) to encourage infill development within the Outer Bangkok Ring Road, except in areas designated for new metropolitan subcentres; and
(4) to restrict the intrusion of development into agricultural lands beyond the Outer Bangkok Ring Road on the west side of the city and beyond the King's Dyke, east of the city.

Figure 4.7 shows the FARs assigned to various areas range from an FAR of 10:1 (1,000%) in the central core of the city to an FAR of much less than 1:1 in agricultural areas on the fringe of Bangkok. Hence, it is interesting to study the FAR concept proposed in the Bangkok Plan 1995.

The application of FARs was superficial in the Bangkok Plan. An analysis was made of intensities in Asian cities and North American cities, showing a variety of maximum FARs from 1:1 (100%) up to 14:1 (1,400%). Ultimately, six basic FAR zones were designated with generally declining FARs with distance from the core: 10:1 for the city core, 6:1 and 4:1 for inner areas, 2:1 and 1:1 for outer areas and a FAR for rural areas where not more than one dwelling associated with agricultural activities [(MIT), 1995 #13, 22-23].

It was acknowledged that a great constraint on the application of FARs was the traffic capacity of arterial roads in Bangkok, which are extremely overloaded. The development of mass transit systems would allow intensities to increase; even to rise above 10:1 (1,000%) in areas well served by mass transit [(MIT), 1995 #13, 22].

I agree with the idea that there is a crucial need for density control in Bangkok. FARs are an alternative approach which have been adopted in many countries. However, the case of Bangkok is completely different from other cities in Japan and North America. In my view, the application of FARs in Bangkok is more complicated than has been shown in the Bangkok Plan 1995 as it requires a large amount of data and information. Importantly, it also requires a comprehensive analysis of urban structure.

---

21 Hence 'ribbon development', the growth of the city along major roads, is regarded as a problem because the infrastructure provision is not effective. The areas parallel with the main road cannot be developed properly.
and mobility status of people and firms in the metropolitan region. Given this information there is a stronger basis for identifying and classifying the different categories of density control. Besides the transportation issue, the criteria should include other infrastructure and public services such as water supply, sewage and the flood protection systems.

In recognition of the fact that Bangkok is critically short of open space, the *Bangkok Plan 1995* proposed an open space incentive programme which would serve as an incentive for private developers to dedicate and open up portions of their land for recreational purposes *(MIT), 1995 #13, 25*. Developers do not regard this incentive as a primary concern. In fact, a decision on property development in the city core is based on a cost-benefit analysis in which many factors must be considered carefully.

It is worth noting that land parcels are a major constraint on property development in Bangkok. There are very few large plots of land in the city core. Despite the proposed high FARs of 10:1, this incentive may not attract developers if a greater profit can be made from cheaper land outside the city core. The boom in property development, with many tower blocks on Rama III and Bang Na-Trad Highway, is an example.

However, density control is becoming a new area of conflict in terms of the overlapping use of legal power. The Department of Public Works claims responsibility for issuing FAR regulations based on its legislation, through Building Codes and Controls. In fact, as density control is concerned with city planning, the regulation of FARs should be carried out in association with land use control for the whole city. A new power struggle is emerging between DTCP and Department of Public Works. The issue of density control and the fragmentation of responsibility between the two departments cannot be easily resolved. This conflict reflects another shortcoming with the administrative, legal and planning systems in the Thai bureaucracy.

### 4.3.3 Urban Development Plan

Besides the land use plan and density control, another significant issue proposed in the *Bangkok Plan 1995* was the urban development plan which focused on the development of the peripheral areas of Bangkok. The urban development plan in Figure 4.8 shows a development overview of Bangkok in terms of development corridors along the mass transit system in association with the proposed five metropolitan subcentres *(MIT), 1995 #13, 56-59*. The development of these centres (Lat Krabang, Min Buri,
Lam Lukla, Taling Chan and Bang Khun Thian) was proposed in order to balance jobs and housing in suburban areas [(MIT), 1995 #13, section 4, 34]. This section discusses the rationality of the urban development plan.

Source: MIT.

Figure 4.8 The Bangkok Plan 1995 (urban development plan)
Chapter 4 Planning Bangkok in the 1990s

The main focus was on Lat Krabang which was the most promising location for developing an initial metropolitan subcentre. The layout plans covered 1,335 hectares and sketches showed a large development complex. However only a basic financial study was presented.

The most important reason for choosing Lat Krabang was its location close to the SBIA, which would be a new economic magnet for this area. A study of the Bangkok Plan 1995 stated that new airports throughout the world have provided the stimulus for a host of related developments such as high technology research and manufacturing parks, airport-related industries, convention and exposition facilities and offices for international companies which rely heavily on air-travel [(MIT), 1995 #13, discussion section, 132].

In fact, the same concept was proposed in the Master Plan and Feasibility Studies for Area around Second Bangkok International Airport 1994. Areas of 2,168.3 hectares on the east and 2,384.5 hectares on the west of the runways were planned for a large commercial development which would serve and facilitate the aviation industry and business [Norconsult, 1994 #38, part A, main report, 8-10, 8-14]. A discussion with comprehensive analysis of the airport master plan is included in Chapter 6.

It seems that all nearby areas around the SBIA were seen as feasible for every sort of airport-related investment. The total area of 5,887 hectares in Lat Krabang in the Bangkok Plan 1995 and the east and west of the SBIA proposed in the Norconsult study are much bigger than the city core of Bangkok. The question is why these two studies proposed such a huge area around the new airport. Are these areas really attractive and feasible for investment? The air freight business is a good case to consider.

In reality, more than half of the air freight business is located in the city core for two reasons. Firstly, these companies have to deal with clients whose head offices are located in the city core. Secondly, the primary business of these companies is organising a forwarding service in which most goods and products are transported through the inland Bangkok Port at Klong Toei, some kilometres southeast of the city core. A manager of an airfreight company stated that his business only wanted two things: a big warehouse located anywhere between the client’s office and the airport and a small

---

22 The city core of Bangkok in terms of Central Business District (CBD) covers the areas of three inner districts; 553 ha of Bang Rak, 141 ha of Samphanthawong and 836 ha of Pathum Wan.
It is not clear whether the two studies considered these factors as part of their concern for rational planning.

Furthermore, the studies did not include an analysis of geographical factors and did not consider legal concerns. In fact, the proposed area in Lat Krabang is regarded as a residential area for low density development. The areas around the SBIA are on floodways which were to be preserved for rural and agricultural uses in the *Bangkok General Plan 1992*, as shown in Figure 4.3 and in the master plan of Samut Prakarn shown in Figure 6.4. This means that any large development project is forbidden in these areas. The question is why the two studies proposed the idea of developing Lat Krabang, given the development controls enforced under the law of *Bangkok General Plan 1992*.

On the issue of flood protection proposed in the urban development plan of the *Bangkok Plan 1995*, flooding was viewed as a serious problem for both the east and west of the city. However, the project proposed in the *Bangkok Plan 1995* reflected a different story.

It stated that the development of the SBIA would have an impact on flooding in the east of Bangkok but it did not identify the kind of impact and how critical this would be. No study was made of flood geomorphology. Development controls for the agricultural fringe and flood protection were proposed to limit development in this area [(MIT), 1995 #13, discussion section, 98-99]. However, the development controls did not include the Lat Krabang subcentre of 1,335 hectares, previously discussed. In my view, the urban development plan of the *Bangkok Plan 1995* gave insufficient attention on flood protection. In fact, its primary concern was the property development of five proposed subcentres around Bangkok, illustrated with a number of architectural sketches.

It is not clear whether the MIT planning team clearly understood the problems of Bangkok and how the plan they were making would function in Bangkok. The pattern of the physical development of Bangkok was discussed as an introduction, with a recognition of the extended metropolis which has covered all nearby provinces. However, the land use plan of the *Bangkok Plan 1995* shown in Figure 4.6, seems to encourage ribbon development which is not integrated with the concept of metropolitan centres in the urban development plan shown in Figure 4.8.

---

23 The informant is the manager of Airfreight Company who has 11 year-experience in this business. He gave the interview in May 1996 at his office on Changwattana Road in Bangkok.
mechanism is behind many of the development failures in Thailand. If the government gives orders to the NESDB to review a project, it is well known that the project will be suspended at least until the last day of that government’s administration. A report recently submitted to the NESDB has been selected in order to illustrate regional development policy and concepts.

In November 1992, the Canadian International Development Agency provided consulting services to the NESDB for a regional study. As a result, Leman Group and its consortium submitted a report, the *Metropolitan Regional Structure Planning Study*, to the NESDB in February 1995. The main task of the study was to identify a regional and urban structural development framework for the Greater Bangkok Metropolitan Region. The area identified was the great lower Chao Phraya River Basin, covering the areas of BMR, the Eastern Seaboard and the Upper Central Region. This represents an area covering 18 provinces, and an area exceeding 100,000 square kilometres.

The NESDB provided data and information to the consortium. On the basis of a holistic, transdisciplinary and integrative study, the methodology was to review previous related studies and reports. A full-day workshop was held on 27 October 1993 with some 160 participants from related agencies and the consortium presented and discussed the interim report. Eight sectoral studies were subsequently prepared on the key issues of (1) urbanisation and human settlements, (2) population growth, (3) industrial development, (4) land use planning, (5) water supply and sewage, (6) drainage and flood protection, (7) environment, and (8) organisation and management.

The term ‘Chao Phraya Multipolis’ was introduced and defined as ‘a distinct, large-scale urban system within the inter-urban transactional dynamics of high-order and rapidly growing intensity’. In other words, a large area within a radius of 200 kilometres of Bangkok has become a system of economic, environmental, social, tourism, industrial and commuting transactions. In addition, it was strongly recommended that all future studies of the Chao Phraya Multipolis should include the entire Central Region of Thailand. In other words, it would cover about 103,900 square kilometres, including more than 250 urban districts in 27 provinces.

The existing pattern of settlements in the study area was analysed, taking account of a number of old problems. It was found that urban sprawl was evident everywhere around Bangkok but that there was little or no evidence of transactional linkages between the cities and towns. The context of analysis focused on the emerging
role of the Chao Phraya Multipolis in the future as a centre for Indochina for international trade and development.

The study claimed a Multipolis, a multi-nodal system of human settlement, could provide more and better opportunities than a primate city. This development model of a vast and complex metropolitan urban system, was expected to minimize the functioning cost of an major urban area in terms of time, energy and money.

The study concluded that the Multipolis, as an open-ended, dynamic, diverse system of settlement, would offer a whole new range of solutions to the problems created by the centripetal, concentric forces which have been at work in Bangkok and the region for the past century. Consequently, a number of strategies and phasing priorities were recommended for its implementation. However the regional policies and strategies are controversial. How reasonable are they? Why was a Multipolis recommended and will its implementation be successful? Some of these questions can be answered by examining details of the study.

After examining the patterns of urban problems in Bangkok and highlighting the importance of deconcentration strategies, four options were evaluated in the study: (1) to let present trends continue; (2) to continue concentration with improved urban management; (3) a growth pole strategy; and (4) a Multipolis. The first three options were found to be unsuitable. The study emphasised the last option and outlined how the diversity of cities in the Multipolis: a port city, an industrial city, a university city, a government administration city, a tourist city, etc., could enhance the diversity of opportunities for people who lived within its boundaries. It highlighted the freedom to move in the Multipolis with a minimization of time, energy and money. This wonderful development model seems to be propaganda only. How could millions of people living in an area of over a 100,000 square kilometres do this?

My argument is that the study did not point to past government policies with their strong bias towards Bangkok which have accelerated its growth as a primate city for decades. The causes of the failure of the NESDB decentralisation strategy and rural development policy were not identified in the study, even though it was clear that from the 1970s through to the 1990s, these policies were accompanied by increased levels of regional inequality. Many important factors relating to the emerging Bangkok mega-urban region were not adequately studied; furthermore, it simply analysed urban systems without enough logical explanation which took account of present reality.
In fact, the existing settlement systems in the Chao Phraya River Basin are much more complicated than the consortium indicated. Even though some agricultural communities around Bangkok have changed as a result of the economic boom that
Chapter 4 Planning Bangkok in the 1990s

existed before 1997, the significance of the physical and hierarchical structure of waterbound settlements with social coherence at the local level was overlooked. From an empirical observation, a number of new industrial areas with modern factories dominate everything along the highways to Ayutthaya, Samut Sakhon and Chachoengsao. The reality is that a lot of small settlements and traditional clusters remain hidden quietly behind these huge factories but the contrasting landscape cannot be seen from the highway.

The problems of the primate city were reviewed briefly. The study concluded that Bangkok was no longer receptive to further expansion, despite the economic benefits. An overview of land use was discussed. The study found that suburban areas in a ring between 20-40 kilometres from the centre of Bangkok include a mixture of land uses. Its rough measures showed that out of a total of 1,000 square kilometres; 212 square kilometres were residential, 85 square kilometres were occupied by commerce, manufacturing and government offices and the rest was agricultural and open land. Some potential constraint factors were investigated and a land use plan was proposed as shown in Figure 4.9.

The development policy of the seventh national plan (1993-1997) proposed the integration of the Bangkok Metropolis with the Eastern Seaboard. It also suggested that the same planning pattern used at city and regional levels be extended to cover the upper central region. Recognising its geographical potential, a policy on industrial development was proposed for Sara Buri, a city 100 kilometres north of Bangkok. Alex Leman recommended that Sara Buri be developed as a new Metropolis at the crossroads of Indochina. He also proposed the intersection of the Controlled Access Inter-Urban Motorway linking the NorthEastern Seaboard and Northeast-Western Region be located at Sara Buri [Leman, 1995 #10, final report, sectoral study 4, 4-10].
Figure 4.10 Chao Phraya Multipolis Population growth in 2010 and 2015

Source: Leman.
Chapter 4 Planning Bangkok in the 1990s

But Sara Buri, with an urban population of 53,000 in 1995, is not a metropolis. The Comprehensive Plan for Sara Buri issued by the DTCP on 9 October 1996, projected that the population in the area of 51 square kilometres will be 110,410 in 2011 with an annual growth rate of 2.24 per cent [DTCP, 1997 #37, 16-17]. The term Metropolis is used to describe a large city with a major centre of urban activities, a gathering place of people, processes and ideas and a centre of political influence for surrounding areas [Robinson, 1995 #6, 81-82]. In fact, Sara Buri is only a secondary city. Certainly, it is a long way from reaching its population target of being a metropolis. On the one hand, its local economic base relies on the construction material industry and it has a number of pollution problems that are constraining other developments. More importantly, Sara Buri requires a great deal of investment to provide an adequate infrastructure system.

On the proposed land use plan shown in Figure 4.9, the Future Development Reserve Area (FDRA) was especially introduced. It suggested that land contiguous to existing human settlements be preserved in order to accommodate large scale, carefully planned and properly approved future urban uses of various kinds. Eventually, some 12 FDRA s were selected and recommended in order to fulfill the multipolitan system concept. An urban compact concept was recommended for planning the FDRA.

The issue of industry growth was discussed and studied. The study argued that Thailand has never had a long-term plan for industrial development. Without detailed studies, it could not present a clear picture of industrial development toward the year 2010. Recent developments were taken into consideration such as technological changes, the loss of the cheap labour advantage, the increasing competitiveness in the global market and the more liberal monetary system. After taking a wide perspective and identifying a number of constraints for industrial development, some basic recommendations were made such as infrastructure improvement. Other key factors which have had strong impacts on patterns of industrial development were overlooked. In fact, the Promotion Acts of 1960, 1972 and 1977 implemented by the Board of Investment (BoI) and the rearrangement of zoning in accordance with the government policy of dispersing industrial investments to regions outside Bangkok, should have been reviewed comprehensively, particularly their consequences.

On 28 January 1993, the BoI approved some further measures to encourage regional investment and decentralisation of industry. Three zones were set up in Thailand which provide tax benefits for the establishment and operation of new factories.
Chapter 4 Planning Bangkok in the 1990s

[BoI], 1996 #118, 1. The zones have different incentives and this has created a new problem of uneven development. As the zones are based on the administrative boundaries of 75 provinces, only a few urban centres can gain the benefits of the zone system. Consequently, foreign investment with an export orientation has expanded greatly in some areas of zone 2 close to Bangkok. A number of new factories are also now located in this area of high agricultural value, which has good fertile soil and irrigation, only 100-120 kilometres from the centre of Bangkok.

The role of the BoI and its promotion of the zone system has been a controversial issue for years. A number of industrial estates are agglomerated in Zone 2 where transportation networks, basic infrastructure and water resources are well developed. As a result, the disparities among provinces in the zone are becoming wider, particularly in terms of income distribution and spatial settlements. The basic argument is that the zoning arrangement should be carefully considered on the basis of geographical economy rather than the boundaries of local administration.

It is a great disappointment that the consortium did not clarify a direction for policy for the industrial development of the Bangkok Metropolitan Region. Moreover, it stated that:

The Central Region has high agricultural potential because of good fertile soil and a complete irrigation system. It is also near Bangkok markets and it has infrastructure to service the market as well as to receive the required technical, financial, transportation and agricultural research support from them. However, the manufacturing industry has the same potential and therefore demands the use of land [Leman, 1995 #10, final report, sectoral study 3, 3-14].

Tables with old statistics were presented in the study. Eventually, the most impressive statement was that 'Government policy on this conflicting issue should be clarified'. Why did not the consortium itself suggest clarification?

Conflicts between agricultural and industrial developments on the Chao Phraya River Basin have existed since the 1970s. The first environmental disaster affecting the fresh water ecosystem on Mae Klong during 1970-1973 is a good example. Following the NESDB's national policy promoting sugar cane production to match favourable world market prices, a number of sugar cane factories were rapidly built along both banks of the Mae Klong River. The polluted water flowed directly into the river without any protection measures. This resulted in the complete extinction of many fresh water fish and habitats and a painful experience for the local people. An environmental policy
was presented for the first time in the third national plan (1972-1976) drawn up by NESDB.

However, the failure of the industrial policy in the 1970s and repeated environmental problems were not addressed in the NESDB's planning. Since then, these problems had become more complex and have remained unsolved. In the 1990s many similar cases have occurred in Lamphun, the Upper Ping River in the North and in Khon Kaen, and upstream of the Nampong River in the Northeast. Obviously the NESDB needs to understand the importance of watershed management and the different geographical domains of the Chao Phraya River Basin. The term 'sustainable development strategy' written in the national policy will remain rhetoric unless environmental factors are considered. The high rate of economic growth being achieved and statistics of increasing number of new factories are impressive indicators of development for the NESDB.

The Metropolitan Regional Structure Planning Study presented the projected population of each of the 18 provinces for the years 1990 to 2010 by urban and rural residences, for the purpose of spatial planning and infrastructure development. This was based on the 1990 Census Report and a survey of population change in 1991. After considering all basic assumptions, the study projected that the population would increase from 15 million in 1990 to 21 million in 2010 with the urban portion of the population to be over 70 per cent. Figure 4.10 shows the population growth in 2010 and 2015. The study concluded that the population density in urban areas would increase sharply, particularly in the vicinity of Bangkok and in the Eastern Region, in parallel with the expected rapid economic development.

At a conference in Melbourne in November 1995, Utis Kaotien from the NESDB reported that the projected population living within the radius of 200 kilometres of Bangkok would be 32 million in 2010 compared to 72 million for the whole country [Kaothien, 1994 #30]. Why would nearly half the nation's population live within an area that is only one-fifth of Thailand? Hence, the fundamental principle in decentralization written in the national plan is questionable.

The proposed strategy of changing a sprawling metropolis to a multipolitan system in the Metropolitan Regional Structure Planning Study is unclear and descriptive. An implementation guideline was also not included with the proposal. However, Wilbur Smith Associates, a well-known consulting firm in transportation, did not play a vital role in the most critical and important issue of transport development policy. The
access motorway, the SBIA, the high-speed train and other development projects were expected to provide a regional network. One serious concern is that the integration of the transport system, the most important element for regional development, was not studied. More seriously, urban systems planned for the year 2010 are located in areas around Bangkok which were proposed in the Metropolitan Regional Structure Planning Study for the network of corridor development close to existing urban areas. My argument is that this will increase the high degree of ribbon development in every direction along the highways out of Bangkok.

Compared with other reports submitted to the government, the study on the Bangkok metropolitan region seemed to be less important to it. The study may have been so complicated that Cabinet had no idea of how to deal with the complexity of the Bangkok Mega-Urban Region. In fact, a number of committees were set up, mostly chaired by Cabinet members and representatives from the NESDB acting as committee secretaries, to consider projects in and around Bangkok. However none of the committees are integrated and have no executive role.

The study reflected the NESDB’s policy on development concentration in and around Bangkok making the metropolis much bigger. While this development policy and concept remains, it is extremely difficult to do away with a number of chronic problems in Bangkok.

4.5 Bangkok City Planning and the SBIA

This section discusses the interaction and relationship between Bangkok city planning and the SBIA. It is interesting to study how big development projects such as the SBIA have influenced planning in the 1990s.

A basic fact for discussion in this section is that the SBIA is located in Samut Prakarn province. It is some hundreds of metres south of Lat Krabang which is also outside the administrative boundaries of the BMA. The consequences of this geographical fact are extensive. As discussed in Chapter 3, the physical boundary represents the limitations of decision making, the use of legal power, budget control, responsibility and planning concerns.

Cabinet approved the development of the SBIA on 7 May 1991. Implementation of the Bangkok General Plan 1992 started on 6 July 1992. That means the DTCP knew one year earlier that the new airport would be developed at Nong Ngu Hao. However,
Chapter 4 Planning Bangkok in the 1990s

the impact of the SBIA was not included in the Bangkok General Plan 1992 as a planning concern.

In August 1994, the Master Plan and Feasibility Study for the Area around SBIA was completed and submitted to the Office of the NESDB. The study concluded that the new airport would serve an ultimate capacity of 100 million passengers per year. However, the figure of 30 million passengers in 2006 was not considered in the Bangkok Plan 1995 prepared by the MIT planning team which concentrated only on the potential of the areas around the new airport. This fact which would affect infrastructure planning was also not included in the Bangkok General Plan 1999.

It is obvious that millions of passengers will have to use the facilities and services of Bangkok. This fact should be regarded as an influential factor which will affect the provision of infrastructure such as transportation between the city and the new airport.

There should be an explanation of why the SBIA was not included in the Bangkok General Plan 1992, the Bangkok Plan 1995 and the Bangkok General Plan 1999. It may however be the same reason why the Bangkok city plan was not included in the Master Plan and Feasibility Studies for Area around SBIA. The BMA Governor has nothing to do with the new airport and the authorities involved in airport development have nothing to do with the problems of Bangkok. Hence, the two planning domains, city planning and airport planning, are separated in terms of the administrative, legal and planning systems. The reason for not integrating the two planning domains seems to be a matter of arrangement of powers between the local and national government.

Consequently, the impact of the SBIA on Bangkok such as aircraft noise and flood protection was not considered in the three plans. Meanwhile, the impact of 100 million passengers per year on Bangkok’s water supply demand and solid waste disposal, which are critical problems in the east of Bangkok, were not considered as problems in the master plan of the SBIA. This reflects a fragmentation of responsibility in solving problems by planning measures.

The new airport is one of many urban elements which planners should consider in association with other urban facts. In my view, the making of a new city plan for Bangkok will be more difficult due to the complexity of the problems as well as the notorious environmental problems of Bangkok [Ross, 1992 #127]. This includes new factors such as the impact of a large number of unoccupied houses24 and the over-supply

\[24\] In September 1997, it was calculated that there were 291,196 unoccupied houses in Bangkok, Nonthaburi and Samut Prakan. The calculation was made by counting the number of electricity meters
of office space in Bangkok resulting from the economic collapse in 1997. Hence, no matter how critical the situation is, Bangkok needs a good plan that works.

As discussed, Bangkok is a serious problem for the country and any attempt to make improve Bangkok planning requires a comprehensive understanding of the complex situation. The study will now move away from planning problems to policy problems. A further task of this thesis is to understand how the government’s policy on the Bangkok airport development has affected the formal process of city planning and airport planning. A policy analysis in the next chapter will explain how political factions have influenced rational planning since the 1960s.

---

in houses in these areas that had not used the electricity longer than three months. Source: the Matichon Weekly Magazine, 12 September 1997, vol. 886, p. 32.
Chapter 5 Politics of Airport Planning and Development

Corruption has become a part of Thai politics. Throughout the past four decades, every large project in Thailand has suffered from scandal because of corrupt bureaucrats and politicians who have viewed a project as a source of quick money making. This includes the SBIA and a number of arguments and allegations about corruption since it began in 1962. However, no one has ever been charged.

The historical analysis in Chapter 2 provided a basic understanding of how the development of the airport became a serious concern in Thai politics. This chapter provides a comprehensive discussion of issues behind the government’s decision on the development of the SBIA and the driving forces behind the project.

My investigation dates back to the dictator period of the 1960s to explain why Field Marshal Sarit wanted the new airport. I discuss how the regional conflict over the Vietnam War influenced the development of transportation in Thailand. One task is to understand how the military government exploited the project. The focus is on a review of reports and studies prepared in the early 1990s. I discuss why the government approved the development of the SBIA and who was behind Cabinet’s decision on the SBIA in May 1991.

Lastly, this chapter studies whether the SBIA is necessary. The current use of Don Muang airport is analysed in terms of aircraft movement and the efficiency of land and building uses based on the best available materials.

5.1 Policy Analysis and Political Influence

This section discusses the political influences on development of the SBIA. It focuses on the close interrelationship among three key elements: time, actors and tools. Under different circumstances, actors selectively used tools to fulfil their own interest and express their political will in the form of policy. It is interesting to study how these actors have used different tools under changing circumstances to progress the project.

’Policy is made in a framework of political constraints and opportunities.’

The above statement gives an overview of how politics have influenced policy on the SBIA during the past three decades. The dictators, governments, politicians,
consultants and the financial institutions are regarded as actors. These actors have used every available tool, including reports, research papers, money and legislation to politically influence and control the project.

5.1.1 The Dictatorship, 1957 to 1973

To understand how the U.S. Government became involved in airport development in Thailand, we have to turn the clock back to the early period of the cold war and understand the political situation at the time.


Vietnam was separated at the 17th parallel and foreign troops were deployed although arms and munitions were prohibited as a consequence of the Geneva Agreements. The communist victory worried the White House in Washington D.C. A conference on U.S. command problems in the Pacific was held in February 1955, focusing on Southeast Asia, and it was decided to build air facilities in the region [Furtrell, 1981 #27, 29-48]. The U.S. military decided that Thailand was the most suitable location to embark on their attempt to defeat the communist threat in Southeast Asia.

During the 1950s, the US was careful in its dealings with political conflicts in Thailand, particularly with the three generals: Phibun, Phao and Sarit. All three received American assistance under different projects. Internal military conflicts in Thailand ended after Sarit staged a coup in September 1957 and forced the others into exile. He had absolute power over the country after staging his second coup in October 1958. To maintain successful control, Sarit had to pay a lot of money to military colleagues to maintain his absolute dictatorship. The US understood his politics well. My question is where the money came from?
It was openly known that both Phao and Sarit made a fortune from the opium trade in the early 1950s [Fineman, 1997 #26, 31-146]. This easy way of making money could not be maintained after the international community put strong political pressure on Thailand to ban narcotics. Consequently, opium became illegal in Thailand under a new law promulgated by Sarit in December 1958. However the opium trade and narcotics production networks were never destroyed and after Sarit’s death they quickly grew again. The drug trade became bigger and political conflicts over the region known as the Golden Triangle, became more complex.

Politics in Thailand through the dictatorship period were very controversial, particularly the special relationship between the United States and a corrupt, undemocratic and often brutal Thai military. On the basis of an U.S. Military Aid Agreement with Thailand on 17 October 1951, the U.S. provided arms, money and political support to military regimes in Thailand during 25 years of regional conflict from 1951 to 1975. The U.S. supported different factions in the Thai military to ensure overall compliance with U.S. military ambitions in the region, including the development of airports in Thailand. A question is how the new Bangkok airport became involved with this. This section concentrates on the period of dictatorship in the 1950s.

In the 1950s, the transportation system in Thailand was fragmented and the US viewed this as the most critical constraint on economic development. From 1957 to 1961, USAID funded a company to evaluate the country’s transportation system.

A Comprehensive Evaluation of Thailand’s Transportation System Requirements [Transportation Consultants Inc., 1959], was made two years before the new Bangkok airport was addressed in the national agenda. As far as I can establish, this is the earliest research work in Thailand which took a wide view of national transportation covering roads, rails, waterways and air transport systems. It is important to review this report because it explained the current situation. The role of air transportation in development was also studied. Moreover, it gave many reasonable recommendations, which were completely different from those in other studies.

The importance of air transport was focused on in association with tourism development as a basic element for stimulating the Thai economy. Consequently, the report strongly recommended that Don Muang airport be improved and maintained to

---

1 See Appendix 5.1
meet modern standards. In the 1950s, there were only three paved-runway airports in Thailand: Don Muang, Chiangmai and Songkla. In other words, the nearest airport to Don Muang equipped to receive jet aircraft was several hundred kilometres away. Nakhon Ratchasima, often known as Korat, was then selected as an alternate international airport although investment was necessary to bring it up to International Civil Aviation Organization requirements [Consultants, 1959 #15, 98-99].

The most significant item in this report regarding air transport development was a recommendation for an integrated military and civil transport system. It also urged USOM to provide a maintenance and repair base at Don Muang. It also stated that Thailand was not ready to engage on its own in the very costly, highly competitive field of international air transport [Consultants, 1959 #15, 97-112].

However, the government pointed out that Litchfield Whiting Bowne Associates, another American consultant group also funded by USAID and working on the Bangkok City Planning Project from 1959 to 1966, recommended the separation of civil and commercial aviation from the military airbase at Don Muang in 1960. A site east of Bangkok was selected for a new airport. What were the real reasons behind this contradiction of whether to establish a new airport?

The second Bangkok airport proposal emerged during a difficult time in Thai politics. People lived in fear and knew very little about politics. What they knew best was the name of the great dictator who could stop anything in seconds.

By using brutal political methods, Field Marshal Sarit Thanarat gained a reputation as the strongest dictator in Thai history after his second coup in October 1958. In the view of some scholars, however, the political situation during his military administration from 1958 to 1963 was probably the most stable period in recent history. He decided unilaterally to start the new airport project at Nong Ngu Hao. The tool he used was the Land Acquisition Act in 1962 which was issued under martial law and enabled him to compulsorily acquire the land. Why did Sarit want the new Bangkok airport? What were the politics of the new airport all about?

Between 1955 and 1960, USOM and USAID were directly involved in every major highway project in Thailand. Some years later, this highway network provided a strategic access corridor to American airbases in the region, close to the Indochina frontier [Randolph, 1986 #16, 22-24].
Chapter 5 Airport Planning and Development

Figure 5.1 shows public works projects developed by USOM in 1962. Obviously, everything was well planned and prepared for US military deployments. If Thailand was so important to US Air Force operations, how could the separation of civil and commercial aviation from military airbases benefit American interests? The rationale behind the USOM programme for airport development in the 1960s should be analysed.

In April 1961, a new control tower was completed at Don Muang airport providing the most modern air traffic control facility in Southeast Asia. In the same month, the U.S. detachment of the first fighter interceptor squadron moved to Don Muang for an indefinite duration. Additionally, the construction and installation of air facilities at Korat, Takhli, Udom, Ubon and Chiangmai airports were completed by February 1960. US strategic air forces were deployed at Takhli in May 1962, Korat in July 1963 and Udom in April 1964. Airfield construction and improvement continued through 1971 in accordance with the increasing number of American personnel and aircraft.

It is worth noting that all these airports, except for Takhli where its geography did not permit commercial activities, followed recommendations made in 1959 by the Transportation Consultants Inc. to integrate military and civil transport systems.

My first argument here is that this integration provided greater benefits to American interests because more military supplies could be transported by commercial airlines. This was particularly true for CIA covert missions using the names of Air America and other private companies. Secondly, personnel from the RTAF were involved in the American secret war, mainly as mercenaries in Laos, so it was much easier for them to travel freely as ordinary passengers without being noticed. Moreover, the RTAF was too small in those days to use these air facilities, so USOM had no reason to develop a new commercial airport. The separation of military and commercial activities would seem only to benefit the Thai side. However, politics between the Thai and American governments were complex so there needs to more explanation of what this was all about.
Figure 5.1 Public works projects being developed by USOM, 1962.

Source: USOM.
During this period, USOM played a lasting role in public administration. A number of political and administrative figures were notorious for intervening in the process of granting contracts for large public sector construction projects in order to extract bribes and rents through various devices. The best way for technocrats to insulate a project from these corrupt practices was to engage USOM and other international donors in every step of the process, from feasibility studies to the finished product [Muscat, 1990 #25, 144]. Within this context, Sarit was learning the politics of aid and developing applications for his particular interests.

As a result, several large-scale projects such as the deep seaport on the eastern seaboard\(^2\) were initiated by Sarit’s government. His government undertook land acquisition procedures for these projects including the new Bangkok airport project. The UN Special Fund, however, did not approve the proposal for a deep seaport in 1962 and USOM officially refused playing a role in the development of the new Bangkok airport in 1968.

A logical explanation for rejecting projects was to point out that the projects were costly. However, later the U.S. provided another budget for improvements to the Don Muang airport and Bangkok’s river port at Klong Toei. The politics of aid to Thailand continued as long as mutual interest was still the major concern for the two countries and their individual benefit was not adversely affected.

Sarit is the most interesting actor in this thesis. His politics were remarkable. In Thak Chaloemtiarama’s view, on the practical side, Sarit was a born problem-solver. His instinctive ideas were always tempered by a concern to solve problems with skill and dispatch [Chaloemtiarana, 1979 #108, 169]. The \textit{Land Acquisition Act}, introduced for the new airport under the martial law in September 1962, became a concrete foundation for the project. The Act is one of Thailand’s strongest legal forms, second to the Constitution and can be amended only by the majority of the National Assembly not by Cabinet. Hence, Sarit was responsible for the legacy of the SBIA project.

Sarit’s biography, published at the time of his cremation on 17 March 1964, did not mention anything about the SBIA project. Other persons involved in the SBIA have so far not been willing to give more information. The legend of the Nong Ngu Hao project remains a mystery. However, my investigation could be continued further based on more information which might be available in the archives in Washington DC.

\(^2\) It became Laem Chabang Port Project, the largest infrastructure built in the 1980s, as a part of the Eastern Seaboard Development Programme funded by Japan.
Chapter 5 Airport Planning and Development

After Sarit’s death in December 1963, Field Marshal Thanom Kittikachorn continued the dictatorship but with less control. During the Thanom administration, several new actors, referred to as ‘consultants’, influenced policy through proposals which offered to provide benefits to the government. Tools used by the actors included technical studies and reports. The biggest groups of actors were the people who called for democracy. Their tool was a massive demonstration against the new airport project.

Even though the old tradition of military hierarchy was followed, the political situation was not stable. Due to a lack of strong leadership, Thanom was not as successful as Sarit. Moreover, the army was fragmented while the political movement for democracy was gradually developing.

The airport project continued to be an important source of money for corrupt politicians. The politics of airport planning became technically oriented. However, the relationship between the U.S. and the new military government was changing.

The American military presence in Thailand in the 1960s was so extensive that political scientist Benedict Anderson has called the period the ‘American Era’ of Thai history [Fineman, 1997 #26, 1-9]. Thanom was involved with the Americans to a greater extent than Sarit, and they came to play a major role in the politics of the region.

With the refusal by USOM to survey and design the second Bangkok airport and a shift in US advisory roles from technical assistance to providing funds, the Thai government changed its approach to development assistance. The American actors were using a new tool in the name of the World Bank. Eventually the Thai government looked for assistance from other countries.

In March 1968, the Canadian government sent a team of aviation experts to study the feasibility of the second Bangkok airport\(^3\). Their report in June 1968 recommended that the government proceed with and finish the second Bangkok airport by 1975. In January 1969, the governments of France, Japan, Canada, Italy and Israel and some private consortiums from the United States, proposed numerous new strategies to develop the new Bangkok airport. Cabinet however approved a package from Canada, which included a soft loan provision. Cabinet also approved a budget for making a master plan, however, it was suspended later.

---

\(^3\) Siamrath weekly. volume 25. 11 December 1983. p18-23
In June 1971, Northrop Airport Development Corporation and a Thai joint
venture, the Italian-Thai Company\(^4\), submitted a proposal to develop the new airport
with a budget of 3,000 million baht. It would invest and provide everything in exchange
for monopoly control of the airport for 20 years. The Cabinet set up a committee to
consider this proposal. On 24 August 1971 the committee reported that the government
should wait for the Canadian master plan and the Northrop proposal was therefore
suspended.

In September 1971, the budget for making the master plan for the new Bangkok
airport project was cut by the House of Representatives’ Committee for Budget
Provision. No explanation was given for this. On 11 October 1971 the Northrop
consortium revived its proposal and included 1,000 million baht for the government as
an extra benefit that would speed up the final decision. As a result, renewed interest in
the proposal was controversial. It was especially controversial when Thanom led a
successful coup against himself on 17 November 1971 and as a result tore up the ninth
constitution which had been issued only three years previously. On the same day he set
up a committee to consider the second Northrop proposal. In March 1972, the
committee reported that the proposal was not profitable and obligations could not be
met and recommended that the government should not accept the proposal.

Despite strong opposition from some factions, the military government set up a
new committee on 10 May 1972 to prepare a draft contract. The first contract was
signed between the Ministry of Transportation and the Northrop consortium on 1
February 1973. Although the consortium was unable to meet its financial commitments
providing soft loan sources and fell behind schedule, the government extended the
contract three times. Meanwhile, the democracy movement became stronger and public
opposition to the project increased. However Thanom appeared not to care.

Obviously, the extra money offered by the Northrop consortium influenced
Thanom’s policy on the new airport. It was viewed as open corruption with the military

---

\(^{4}\) An Italian businessman and a Thai tycoon, Chavyudh Kanasutra, founded the Italian-Thai Company.
Later the Kanasutra family took over and successfully extended it until it has become one of the largest
construction companies in Thailand. Chavyudh met Sarit and tried to develop the new Bangkok airport but
Sarit died before a contract was signed. The roles of the Italian-Thai in the development of the new
airport are controversial. Since the beginning of the project in the 1960s, its name has been mentioned
every time this project is revived. It is widely known that the Kanasutra family has a very close
relationship with the military and is a big political supporter of almost every government. It is not clear
why this family is trying hard to take part in this project.
government making its decision in order to gain the money. After the bloody victory for
democracy on 14 October 1973, Thanom and two other tyrants were forced into exile.\(^5\)

In January 1974, several public debates were held in Bangkok. The new airport
project was viewed as a corrupt product of the military regime. Papers and documents
against the project were widely distributed. In response to increasing pressure against
the project, the Northrop consortium submitted an official letter to the civilian
government on 15 January 1974 stating that it wanted to cancel the contract without
receiving any compensation [Wonghanchao, 1974 #33, 1-338].

Obviously, the October 1973 uprising had a strong impact on the SBIA. Although there were some technical arguments against the airport project
[Wonghancho, 1974 #33, 34-38], the strongest influence against the project came from
the people who hated Thanom and viewed the project as his money making project.
From a political point of view, the civilian government was forced to make a decision
which appealed to the powerful public movement. It decided to suspend the project for
the time being.

However, democracy was short lived. On 6 October 1976, further bloodshed and
a riot in the heart of Bangkok ended all public movements and after a coup on 9 October
1976, the country was back under military control. As a result, a number of young
scholars moved into the jungle and waged a liberation struggle in the name of the
Communist Party of Thailand. Meanwhile, new actors tried to revise the Nong Ngu Hao
project. A number of provincial businessmen and the local Mafia became members of
Parliament and a new era of Thai politics began.

5.1.2 Change and the Balance of Political Power, 1976 to 1988

This section discusses how new interest groups influenced the development of
the SBIA from 1976 to 1988. The Vietnam War ended in 1975 and U.S. commitment to
Thailand and the region declined. In Kevin Hewison’s view, 1977 to 1988 was a time of
evolution for the constitution and the parliamentary regime under various governments
led by former military leaders. This included an expansion of the role of the parliament
and political parties [Hewison, 1997 #109, 14].

As a result of a political vacuum from October 1973 to October 1976, the
military played a lesser role and kept only their senate seats in the National Assembly.

\(^5\) From 14 to 16 October 1973 the uprising against the military regime in Bangkok started a new era of
modern democracy in Thailand.
In 1975, 41 new political parties were registered and 22 parties went into parliament, including a number of young candidates representing one of the new interest groups.

After the coup on 9 October 1976, a puppet government was formed. However it was unsuccessful and another coup took place on 20 October 1977. Democracy returned with the elections in May 1979. Since then, politicians as entrepreneurs and developers have gradually replaced the majority of the Cabinet. Decision-making was now in the hands of new interest groups.

Christensen [1993] refers to urban bankers, industrialists, organised business, provincial elites and the rural majority as interest groups. Christensen and Ammar [1993] argue that they are ‘single-issue interest groups lobbying for their own particular benefit’ [Christensen, 1993 #112, 1-19; Hewison, 1997 #109, 7]. The politics of airport development continued through a restructuring of political power between 1976 and 1988.

In the 1970s and 1980s, research studies and reports relating to the new Bangkok airport project were conducted regularly under political pressure and uncertainty. Some were revised or rewritten shortly after a new coalition government came into power. The old reasons of the limited capacity of Don Muang airport were always raised to support the development of the Nong Ngu Hao project. However, the longer the Nong Ngu Hao project was postponed, the more money was provided to improve Don Muang airport. The lack of progress on the second Bangkok airport reflects the political culture of those decades. Certainly, changing administrations meant changing policies. In my view, 1976 to 1989 was the most chaotic period for airport development in Bangkok.

In 1976, the military-appointed government revived the new airport project. On 20 February 1978, TAMS submitted a feasibility study to the new elected government of Kriengsak Shamanan [Siamrath Weekly, 11 December 1983, 18-23]. Meanwhile Cabinet had approved the improvement of Don Muang airport on 2 May 1978. After a reshuffle, the new Cabinet suspended the new airport project study on 20 September 1979. On the same day, a proposal for U-Tapao airport development was approved as an urgent issue. Approval to continue a study of the Nong Ngu Hao airport was given by the same Cabinet on 21 December 1979 because of a legal commitment based on the Land Acquisition Act issued in 1962 for the new Bangkok airport development.

This decision caused confusion as to why it had to be reconsidered only three months later. Political factions in the Cabinet may be the reason. As a result Kriengsak
became the first Thai politician to announce his resignation to the National Assembly thus ending his administration on 29 February 1980. However, confusion over the SBIA and the state of policy remained.

On 21 September 1980, under the administration of Prem Tinsulanonda, the Cabinet approved a proposal by the Ministry of Transportation to develop the SBIA at Nong Ngu Hao with an investment of 21,300 million baht. An internal conflict erupted over this and Cabinet refused to approve the budget of 60 million baht requested to prepare a master plan. After a reshuffle, Chumpol Silpa-archa, a younger brother of Banharn Silpa-archa (Prime Minister from 1995-1996), became the Minister of Transportation and submitted the proposal again on 19 May 1981. His idea was to separate the task of master planning from the construction work. Moreover, he allocated another budget of 300 million baht for a detailed design and stated that assistance from Japan had been agreed to. Between July and September 1981, more than 20 companies from the United States, Japan, Germany, France, Canada, Singapore, Australia, the Netherlands and Brazil and another three local companies submitted their proposals.

In February 1982, Prem set up a committee to study whether a detailed plan for the airport would be necessary. In September a Thai-Belgian consortium with Arab financial support, proposed an investment package of 46,000 million baht as a soft loan without interest for 19 years, but this was not considered.

In October 1982, the Ministry of Transportation approved the proposal by the Netherlands Airport Consultant (NACO) for a master plan and detailed design work at a cost of 190 million baht. Despite strong protests from other consortia, the interim Cabinet approved the NACO proposal on 12 April 1983, six days before a new election. Eventually Chumpol signed the 136 million baht contract with NACO on 20 April 1983.

The result of the election on 18 April 1983 totally changed the fate of the project. Samak Sundaravej became the Minister of Transportation and announced that the new airport would not be built at Nong Ngu Hao. In July 1983, Samak stated his policy was to improve the Don Muang airport. No matter what the political situation was, he continued to argue strongly against the new airport through to the end of his term as Minister in 1991. The conflict between Chumpol and Samak seemed to be personal and political rather than over technical matters.

Despite political conflict and the changing situation, NACO completed its contract and submitted The SBIA Master Plan, Study, Design and Construction Phasing to the government in 1984. Meanwhile, TAMS started another study and submitted The
Chapter 5 Airport Planning and Development

Expansion Feasibility Study for the Bangkok International Airport in 1985. Despite these reports, Cabinet approved the development of a commercial airport at U-Tapao on 27 August 1985. Why were three airports proposed at the same time? The chaos created by these policies was very controversial in Thailand.

Even though Prem’s administration from March 1980 to September 1988 was the longest in this period, political stability did not exist. In fact, Prem’s critical problem was the constant power play within the coalition government; moreover, his political base was challenged by two coup attempts in 1981 and 1985. The troublesome cabinet became the biggest constraint not only for the airport project but also for every other development programme. What was Prem thinking about the SBIA development? Did he know anything about the corruption associated with this project?

It should be noted that Prem did not have absolute control through his administration. His prime ministership did not follow the democratic path of an election process. This is the reason why he withdrew from the position of Prime Minister after enormous pressure from various groups and political parties demanding that the leader be drawn from the ranks of Members of Parliament. In Kevin Hewison’s view, it soon became clear that the polity established under Prem was one which appealed to conservatives as decision-making and policy were not entrusted to popularly elected politicians [Hewison, 1997 #109, 1,14]. The chaotic policy on airport development during this period reflects this argument.

The SBIA project did not progress from 1976 to 1989, meanwhile, a lot of money was spent on substantially developing Don Muang airport. The runway and facilities associated with modern lighting systems and navigation aids were opened in 1983. Two crash-fire-rescue stations were opened in 1983. The Domestic Terminal was opened in 1985. An aircraft parking apron with a hydrant fueling system, service road and sewage treatment system was opened in mid-1986. A new overpass crossing Vibhavadi-Ransit highway to the Domestic and Cargo Terminal was opened in 1987. Parallel taxiway ‘C’ and a parking apron with 15 bays were opened in 1987. The International Terminal with loading bridge gates was opened in 1987. The central block office building was opened in 1988 [Berger, 1991 #9, volume 2, 7.5]. In fact, it was a period of major development for Don Muang airport.
As a result, the capacity of Don Muang airport increased from 41,247 aircraft movements with 2.5 million passengers in 1975\textsuperscript{6} to approximately 80,000 aircraft movements with 9.85 million passengers in 1988 [Berger, 1991 #9, volume 2, 7.6]. This also explains why the government shelved the Nong Ngu Hao project again. The argument on the ultimate capacity of Don Muang airport and the need for the new airport was forgotten for a while.

5.1.3 Boom and Bust, 1989 to 1999

This section discusses the politics of airport development from 1989 to 1999, a period of rapid change in the Thai economy. Thai politics in this period reflects another episode in the series of corruption allegations in recent history.

After Chatichai Choonhavan became Prime Minister in September 1988, trade policy towards Indochina became a popular development issue for the government, starting the era of the ‘bubble economy’. The rapid growth of the Thai economy continued in the late 1980s. However, Chatichai’s administration was very controversial, as it was perceived to be very corrupt. His scandal-ridden government was called the ‘Buffet Cabinet’ and this was given as a justification for the military coup on 23 February 1991.

Air transportation development was viewed as a gateway to the global market. As a result, U-Tapao airport was renamed Rayong U-Tapao International Airport in April 1990. Moreover, there was an informal attempt to redevelop Nampong airport, the former American airbase designed for B-52 planes, to stimulate the economy in the northeast of Thailand. It is clear that the SBIA was not included in the national agenda under Chatichai’s administration.

The main reason for this was that Samak Sundaravej, who had staunch policy against the new airport project, was Minister of Transportation. An interview in a local magazine\textsuperscript{7} in February 1991, a few days before the coup, provides important evidence of this. He emphasised his policy against the development of the SBIA at Nong Ngu Hao. He also pointed out that it was costly to develop a new airport on a swamp.

However, the government under Anand Panyarachun’s administration approved the SBIA on 7 May 1991, 73 days after the coup. I agree with the argument that Anand’s Cabinet was one of the best Cabinets in recent history. It is worth noting that

\textsuperscript{6} Siam Rath weekly, 29 October 1987, p34-35

Anand did not prepare himself to be Prime Minister. Therefore, there needs to be an explanation of why his Cabinet approved the project quickly.

The Director of Urban Development Coordination of the NESDB, Utis Kaothien, stated that the new airport project was being reviewed by the NESDB and its agenda was being prepared for the Chatichai Cabinet. But this statement is contradictory to the facts, which will be discussed in the next section and in Chapter 6. It could be interpreted that the project was already on track and only waiting for the green light from Cabinet. An interesting question is who was actually driving the project: the politicians or the bureaucrats.

Given Anand's personality, he may have had different reasons for this decision. A new company, The New Bangkok International Airport Company (NBIA), was set up to take responsibility for the development of the new airport project. In my view, Anand wanted an autonomous administration to handle the highly competitive global aviation market and wanted civil aviation in Thailand to be free from political influence. A move away from Don Muang airport seemed to be his desired long-term solution. However, implementation of his idea was interrupted after interest groups returned to parliament and the project became chaotic again.

After receiving official approval, the NESDB became responsible for the development of the SBIA and it started the project by preparing a master plan. In August 1994, a Master Plan and Feasibility Studies for Area around SBIA [Norconsult, 1994] was submitted to the NESDB. The master plan covered the eastern region of the Bangkok Metropolis, Chachoengsao province and the Eastern Seaboard. Many other multi-million projects such as a high-speed train, a mass-transit system and a global transpark, have since been proposed in the Master Plan area.

In April 1994, Murphy Jahrn and its partners won a bid with a proposed budget of 792 million baht to design terminals and facilities for the SBIA. The contract included a commitment to finish detailed plans within 27 months. The Office of the Prime Minister issued this procedure as a regulation. The Thai government usually selected a designer with the lowest fee for any costly projects. The question is why there was no design competition? The consequences of this are critical and will be discussed later in Chapter 6, particularly with respect to the design work and increasing construction costs.

8 Utis Kaotian gave an interview at his office in Bangkok on 25 April 1996.
Chapter 5 Airport Planning and Development

In September 1994, contractors were called for the early stage of airport construction. It was estimated that roughly 30 million cubic metres of sand would be needed for landfill. Political lobbying then began. Some local newspapers reported at the time that the price of sand in the open market was 86 baht per cubic metre; and that 16 baht would go to one person and another 2 baht to the lobbyist. Lastly, the contractors would gain only 68 baht per cubic metre. There were many corruption allegations over the landfill project.

The project did not get off to a good start. In early October 1994, the Deputy Prime Minister, Chalvalit Yongchaiyudh; met the Chairman of the new airport development and argued that Nong Ngu Hao was not suitable for airport development as it would cause many problems, particularly the risk of flooding on the East of Bangkok. He also proposed Kamphaeng Saen as an alternative location but the Transportation Committee of the National Assembly opposed this location.

In addition, the Minister of Transportation, Wanmuhamadnoor Matha, who served from 1995-1996, personally expressed the view while he was visiting the Australian National University in Canberra on 16 May 1997 that Nong Ngu Hao should be used for other functions such as flood protection. Why then did he not oppose this project while in his post in the government? Even though he was President of the National Assembly at the time, he failed to give any reasons.

Changes in Thai politics became a turning point again after the general election in November 1996. Many contracts were signed and the construction of Nong Ngu Hao project began again in 1997 under the administration of new Prime Minister; General Chavalit Yongchaiyudh. Surprisingly, Samuk who was Deputy Prime Minister and who presented many arguments against the Nong Ngu Hao site in 1983, 1989 and 1991 remained very quiet on the issue even though it was the hottest issue in the country. Despite all this criticism, construction of the most expensive infrastructure in Thai history continued.

On 19 January 1997, Prime Minister Chavalit first raised objections to the new airport project during talks with provincial chambers from all over the country in Trang, a province in southern Thailand. His interview had an immediate affect on the project. Two days later it became the hottest news in local newspapers and continued throughout the month. In fact, the real reason behind his interview was related to corruption allegations over the landfill contract. The price of sand in the open market jumped from
86 baht per cubic metre in September 1994 to nearly 1,000 baht in January 1997. A discussion of the politics of the landfill will continue in Chapter 6.

On 20 January 1997, Prime Minister Chavalit stated that he would relocate the SBIA to Bang Pu in Samut Prakan province and turn the Nong Ngu Hao site into a reservoir as part of the King’s project. On 22 January 1997 the Cabinet decided to temporarily suspend the airport project without giving a detailed explanation. On 1 February 1997, Chavalit was forced to continue with the Nong Ngu Hao project. He decided to reduce the size of the new airport and simultaneously expand the capacity of Don Muang airport with a budget of 970 million baht, to handle 47 million passengers annually by 2005. On 30 April 1997 the RTAF started moving out of Don Muang to pave the way for its expansion. The AAT then obtained an area of 1,342 metres by 142 metres.

On 2 June 1997, the government decided to float the Thai currency, triggering a collapse of the Thai economy. Chavalit was forced to resign. In November 1997, Chuan Leekpai became Prime Minister. After a long investigation, a charge of corruption over the landfill for the new airport was dismissed in April 1999. The SBIA continued despite the economic recession.

It is clear that every political party in the 1990s has been involved with the SBIA, led by Chuan Leekpai (elected in September 1992), Banharn Silpa-archa (July 1995), Chavalit Yongchaiyudh (November 1996) and Chuan for a second term (November 1997). All were associated with a series of corruption allegations.

Besides the power struggle among factions in the coalition government seeking to control the development of new airport, the RTAF expressed its concern on 4 January 1999 about the appointment of the Managing Director of the NBIA. This would suggest that Anand’s view on the separation of civil aviation from the military airbase at Don Muang may be reasonable. However, the separation of civil aviation from military airbase would not guarantee that the project would be free from military interference. The RTAF is a major shareholder of the AAT and Thai International Airways.

In examining the politics of the airport development over the past three decades, I agree with Paul Handley that, in seeking and exerting power, the ‘new’ elite is little different from the ‘old’ elite. The new elite has displayed a primary concern for the

---

9 Chavalit did not explain clearly why he chose Bang Pu. It became controversial because the Army owned a large plot of land in Bang Pu. Meanwhile the factions in the coalition government forced him to continued the airport project at Nong Ngu Hao.
5.2 Airport Development and Political Changes

Political space is a site of struggle as well as negotiation and agreement; it is an arena of contestation. However, this contestation is not always a challenge to the state, especially where an expanded political space is considered a legitimate part of political activity [Hewison, 1997 #109, 10].

From the period of military regime in the 1960s to the period of political reform with the 16th constitution in the 1990s, political changes have influenced airport development. The highly authoritarian regime under Sarit’s administration seemed to be the most favourable period for the SBIA development.

After new interest groups replaced the military in the 1980s, the project became chaotic and did not progress. In Christensen and Ammar’s view, interest groups in Thailand are not conducive to the development of good policy, as participatory institutions are identified as localised and fragmented [Christensen and Ammar, 1993 #112, 55; Hewison, 1997 #109, 9]. Some background information on these groups also reflects this view.

A significant phenomenon of Thai politics in the late 1970s was the emergence of new political candidates after the military stepped back from politics. A number of local developers and businessmen changed their role from supporting the army generals to supporting the politicians. The new candidates gradually gained more political experience and became the majority in the House of Representatives.

The first generation of many scandal-prone provincial politicians included Banharn Silpa-archa and his brother Chumpol from Supanburi, Montri Pongpanich from Ayutthaya, Chai Chidchop from Buriram and Sanoh Thienthong from Sa Kaeo who started their political careers as Members of Parliament during this period. Even though these people have different backgrounds, they all have something in common, that is dealing with illegal business [Baker, 1996 #5, 177].

The use of brutal power, along with the patronage system, was used by 'gangster MPs'. That is why their careers achieved such a great success in such a brief period, during which they also tried to establish themselves as reputable businessmen and developers. They became involved to protect their interests. The bigger their businesses, the deeper they got involved. This can be seen by examining the professional background of Cabinet Members in selected governments.

<table>
<thead>
<tr>
<th>Professional Background of Cabinet Members</th>
<th>Sarit (Feb 59-Dec 63)</th>
<th>Thanom (Mar 69-Nov 71)</th>
<th>Kriengsak (Nov 77-May 79)</th>
<th>Chatichai (Aug 87-Feb 91)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Police and Military</td>
<td>5</td>
<td>12</td>
<td>9</td>
<td>5</td>
</tr>
<tr>
<td>2. Civil Servant</td>
<td>12</td>
<td>14</td>
<td>19</td>
<td>1</td>
</tr>
<tr>
<td>3. Businessman</td>
<td>-</td>
<td>2</td>
<td>5</td>
<td>27</td>
</tr>
<tr>
<td>4. Others</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>12</td>
</tr>
<tr>
<td>Total</td>
<td>18</td>
<td>28</td>
<td>33</td>
<td>45</td>
</tr>
</tbody>
</table>

Source: Rangsan Thanapornphan; *Process of Policy Making in Thailand*, p155-171

Table 5.1 Distribution of professional backgrounds in selected cabinets

Table 5.1 shows the changes in cabinet representatives that occurred in Thailand from 1959 to 1991. First, the leaders of these four governments were army generals. Second, the number of Cabinet Members increased sharply from 18 in 1959 to 45 by 1987. Third, the military and bureaucrats were much less important in the later Cabinet. Lastly and most importantly, businessmen became the largest group, totally dominating the balance of political power by the late 1980s.

Changes in the makeup of the various governments also influenced policies. This resulted in the problem of uneven development in Thailand which became more complicated. Public projects were concentrated in the provinces from where Cabinet

11 In the Sarit government there were no businessmen because all trade was in the hands of the Chinese who had a negative image in the eyes of the dictator. Thanom had better relations with the bankers so that he took a high position in some commercial banks. After the collapse of the military in 1973, more businessmen became politicians and had more opportunities in the Kriengsak government. In the Chatichai government they represented over half of the cabinet and played the major role in the Cabinet.

12 The best example is Supanburi province, the political fortress of Banharn and his family for life. No matter what Banharn's position was in government, a considerable budget had to be pumped into this small province so that it became known as 'Banharnburi' or the city of Banharn. He succeeded in this strategy and impressed the local people. Consequently, Banharn and his family have been able to go to the House of Representatives in every 'election festival'. Before starting political life, going from nothing
Members were elected. Moreover, the families of Cabinet Members usually owned the construction companies which won the bidding for projects.

In the early 1990s, the Thai economy was booming and the time was right for big projects. Meanwhile, a second generation of politicians, directly descended from the scandal-prone politicians of 1980s, became young actors in the National Assembly, for instance, Kanchana Silpa-archa, Nawin Chidchop and Vithaya Thienthong. Thai politics essentially came to another turning point, known as the era of money politics, when vote buying, financially supported by the big companies, was everywhere in Thailand.

It is worth noting that 230 of 393 MPs elected on 17 November 1996 declared themselves as professional politicians after having been representatives only once. The other 114 MPs, the second largest group, were businessmen. Policy-making was completely in the hands of big businessmen. During this period, the businessmen in government used a tool in the form of studies and reports to make their decision on the development of the new airport.

Pasuk Phongpaichit and Chris Baker viewed these changes as a consequence of the new wave of provincial businessmen and a rethinking of Bangkok’s business leaders who rapidly grew richer and more confident. They were less concerned with the need to share their profits with the generals. More seriously, the provincial businessmen had very complicated networks and relationships to deal with money made quickly from investing in illegal business [Baker and Phongpaichit, 1996 #5, 167-224]. Despite this strong controversy, they have been in the National Assembly for decades without any legal challenge.

The fundamental attitudes of these new interest groups could not easily be changed. Most decisions in Cabinet were made on the basis of individual interest which reflected their different attitudes and professional backgrounds.

In the 1980s and 1990s, the coalition government paid attention to the central budget which was easy to exploit. Later, after better understanding the bureaucratic system, a task of the coalition government was to manipulate and rearrange the administrative structures and management systems so it could exert general control. The top positions in almost every ministry and department were therefore rearranged soon

to a millionaire in the Cabinet, Banharn had been a local construction contractor for years dealing closely with the Department of Public Works. When he became Prime Minister in July 1995, not surprisingly, on 1 August 1995 he immediately approved an additional budget of 11,000 million baht for the construction of public works.

after a new minister took office. This has been a tradition for every new government until now. As a result, fragmentation occurred everywhere in government offices from the small village to the office of Prime Minister and in the military. Organisational arrangements and a loss of the balance of power became dilemmas for development.

Through the period of political transition, more political tactics were developed so that some irrational policies became apparently reasonable. Any public comment on a project by a minister could immediately raise the land price sharply. In this way Chatichai and his Cabinet made a fortune from land speculation besides benefiting from the corruption involved with big projects. This easy way of making money is continuing. The question is what is happening to Thailand’s political parties.

Kramol [1982] argues that according to Western definitions of a political party, Thailand’s parties are ‘not real political parties’ but ‘political cliques’ or ‘political factions’ [Tongdhammachart, 1982 #114, 39]. Kanok [1993] provides the most comprehensive checklist based on a review of previous studies and offers the following 10-point summary of the failings of Thai parties:

- lack of principles;
- unclear and similar policies;
- predominance of personalities;
- lack of discipline and disunity of party members;
- lack of stability among parties (partly because of coups);
- lack of real support from the public;
- conflict between parties and state officials who look down on parties;
- too many parties, producing unstable coalitions;
- need for substantial funding produces over-reliance on, and excessive influence of, party financiers; and
- misunderstanding by politicians and the public concerning the role of party.

Duncan McCargo examines the conflicts and tensions within three parties, all of which have some claim to the elusive status of a ‘real’ party: the Democrats, the Palang Dharma and the New Aspiration Parties. In his view, Thai parties are not static entities, but fluid organisations in a constant state of transformation. He concludes that all three lack some hallmarks of an ‘authentic’ party: the Democrats lack any clear political direction; Palang Dharma is plagued by factionalism; and New Aspiration is deeply immersed in ‘money politics’ [McCargo, 1997 #111, 114-131].
Chapter 5 Airport Planning and Development

All three, as members of the coalition governments from 1992 to 1999, got involved with the SBIA project. Apart from allegations of corruption, the conflicts and tensions in connection with the airport project were serious among the factions in terms of interest distribution. The leader of New Aspiration Party, Chavalit, is the only person who opposed the project in 1994 and 1997, however, most factions eventually approved and supported the SBIA at Nong Ngu Hao.

Neher [1981] argued that conflict was not a major defining characteristic of political activity, which was strongly influenced by passivity, individuality and deference [Hewison, 1997 #109, 4]. This explains why factions with strong conflicts in the past, can form a coalition government quickly after to meet mutual interests. In terms of policy, the issue is not to identify 'good' and 'bad' policy choices, but which policy agendas emerge and hold sway under particular political regimes [Hewison, 1997 #109, 9].

Airport development policy during the past three decades concentrated on the best choice at the time. However, the government seemed to have only two choices, to build or not to build the new Bangkok airport at Nong Ngu Hao at that moment. Delays to the SBIA during the 1960s to 1990s in association with the increasing budget are consequences of choosing one of the two choices.

5.3 Airport Reports and Studies, 1991 to 1997

One of consequences of the second Bangkok airport project has been the production of many studies and reports. Reports relating to the project include the Eastern Seaboard Development and the Bangkok Plan. A number of articles have also been published in local and regional newspapers and academic journals. Almost every government has spent time and money producing reports supporting or opposing the project. Governments have selectively used and referred to these reports and at times, the same reports have been used to argue different cases. Some of these reports have had a strong impact on decision-making and development policy that has changed the fate of this project.

This section discusses the situation in the 1990s, which is the transition period of Thai politics. Compared with previous periods, the politics of airport development in the 1990s and corruption allegations have remained on the agenda although no one has been charged.
Chapter 5 Airport Planning and Development

What happened during this period reflects the crucial fact that the project has actually started. Many contracts have been signed and a large amount of Japanese loan money has been spent. Nobody can stop the SBIA and the project must continue at Nong Ngu Hao site. However, the data and information used by the authorities involved are controversial and this raises two interesting questions:

First, is it true that the SBIA is necessary and that Don Muang airport can no longer be expanded? Second, what are other alternatives for international airport development if the SBIA at Nong Ngu Hao is not necessary?

Fortunately, research materials are available for studying and answering these questions. The focus here is on a review of three reports which provide clear answers to the above two questions. The three reports were prepared by the same consulting company, Louis Berger International, Inc, however the recommendations contained in each report were contradictory [Berger, L. (1991a), (1991b), (1991c)].

5.3.1 Airport System Master Plan Study in Thailand (ASMP)

In 1991, Louis Berger International Inc and consortium submitted a final report, the *Airport System master Plan Study in Thailand (ASMP)* [Berger, L. 1991a] to the AAT. It examined the existing facilities at Don Muang airport and special emphasis was given to alternative developments for long-term airport capacity, including a comparison of continued expansion at the present site and construction of the new airport at the Nong Ngu Hao site.

It is important to review this report for a number of reasons. Firstly, it paved the way for Cabinet approval of the SBIA in May 1991. Secondly, present airport planning activities are based on the forecasts in this report. Thirdly, issues related to the potential role of a new Bangkok airport were examined and an implementation strategy for the airport project was recommended. Lastly and probably most importantly, it was undertaken in association with two other studies, the *Feasibility Study and Master Plan for Rayong U-Tapao International Airport* and the SBIA: Site Confirmation Study.

A significant point in the report was that the current ultimate capacity of Don Muang would be exceeded by 2000 and that air traffic at Bangkok airport was projected to be 58 million passengers by 2010.

The first controversial issue was the area of study. As mentioned earlier, the RTAF and the AAT mutually occupy land at Don Muang airport. Figure 5.2 shows that
the AAT only has responsibility for civil and commercial activities within a narrow strip west of the runways along the Vibhavadi Rangsit highway. The same layout plan shows larger areas including sportclubs, two golf courses and other military compounds occupied by the RTAF.

Source: Thongchai Roachanakanan.

Figure 5.2 Layout of Don Muang Airport, 1999
The study area was limited within the boundaries authorised by the AAT. Not surprisingly, a number of critical problems involved with the expansion of Don Muang were also presented. However the military and its political power is such a big barrier that the civilian government is not willing to deal with these problems.

The second controversial issue was the forecast of aviation activity at Don Muang airport based on 1988 data. The consortium expected that there would be 20,176,000 international and 6,467,000 domestic passengers in 1995. The study presents forecast numbers of 102,660 international aircraft movements and 49,370 domestic aircraft movements in 1995. Additionally, 132,200 international and 64,550 domestic aircraft movements in 2000 excluding military movements were forecast [Berger, 1991a #9, volume 2, 7-44, 7-45].

The most interesting issue in this report was the analysis of the ultimate capacity of Don Muang airport. The study compared a total terminal development area of about 130 hectares for Don Muang airport with 300 hectares for Kansai airport in Japan for the same functions. In conclusion, the ASMP study stressed that the Don Muang airport was extremely limited. Is it true that Don Muang has reached its ultimate capacity?

The study referred to a survey in 1990. It pointed out that although the International Terminal Complex, including the Main International Terminal, Central Block and North Wing, covered a total area of 224,115 square metres, only 11,000 square metres were occupied by the AAT and government offices and 14,000 square metres by airline offices. The AAT and airlines used the North Wing, the former international terminal with an area of about 50,000 square metres, while other portions were not in use. The Central Block built in 1988, was also used by the AAT and airlines but only 9,500 square metres out of a total area of 31,000 square metres were used. [Berger, 1991a#9, volume 2, 7-14, 7-26]. Obviously, the existing buildings were not used effectively. However, these facts were not considered when the government approved the development of the second terminal a few years later.

In addition, the ASMP study caused confusion when it considered the feasibility of the third runway. On the basis of past studies and recent trends in urban growth and property values in the airport vicinity, it was clear that additional runways at Don Muang airport were not economically feasible. However, triple runway operations were analysed, as shown in Figure 5.3. The third runway would be located approximately along the present alignment of Paholyothin road if all military facilities could be relocated. The report indicated that the operation of three runways would be able to
facilitate a total capacity of 80 aircraft movements per hour [Berger, 1991a #9, volume 2, 7-60, 7-63].

Source: Louis Berger.

**Figure 5.3 Study of the third runway at Don Muang Airport**

From a political point of view, the proposed third runway seems to provide some opportunities for the future. In addition, the ASMP study examined other existing airport facilities in great detail: cargo terminal, traffic flows, parking space and other infrastructure, providing more figures and statistics. The report stressed that there were
some options for continuing to expand Don Muang which would require brave decisions.

Probably frustrated by the lack of opportunity for expanding facilities at Don Muang airport, the study eventually recommended the implementation of the SBIA at Nong Ngu Hao rather than the further development of the existing airport at Don Muang. Through the 1990s, the authorities involved always referred to this point to progress the SBIA project. However, they did not include or even mention other facts such as the third runway and other possibilities for expanding Don Muang airport.

5.3.2 Rayong U-Tapao International Airport

In 1922, Prince Arpakorn, or Prince Chumporn Ked-Udomsak, the so-called Father of the Royal Thai Navy, surveyed and started to develop a naval base at Sattahip in Chonburi province, 175 kilometres southeast of Bangkok. Sattahip and its geographical domains were known as the best location for a deep seaport in the upper Gulf of Thailand. An area of Sattahip was developed by USOM in the 1960s and became U-Tapao airbase. Figure 5.4 shows the location and lay out plan of U-Tapao airbase.

U-Tapao is different from other former American airbases in Thailand. It was developed in association with Sattahip Naval Base as a large military complex based on a strategy of the integration of land-sea-air transport systems. The giant runway of 60 x 3,450 metres, aircraft parking of 432,300 square metres, a deep seaport and other facilities were particularly designed for B-52 operations during the Vietnam War. This airport can handle any type of aircraft. Since the withdrawal of American forces in 1975, U-Tapao airport and its total area of about 16,700 rai or 2,670 hectares, had been under the responsibility of the Royal Thai Navy.

The significance of U-Tapao airport was later considered and taken into account as part of the Eastern Seaboard Development programme in the early 1980s. In August 1985, Cabinet gave its approval for the Royal Thai Navy to take responsibility for development of the commercial airport at U-Tapao. A budget of 165 million baht was provided for the improvement of U-Tapao in 1988. Its name was officially changed to the Rayong U-Tapao International Airport in April 1990.

In March 1991, Louis Berger International Inc. and consortium submitted a final report, a Feasibility Study and Master plan for Rayong U-Tapao International Airport, to the Office of the Eastern Seaboard Development Committee, National Economic and
Social Development Board. This study analysed the ultimate potential of U-Tapao airport and recommended a number of plans for implementation. This section concentrates on review of this report.

Source: Louis Berger.

Figure 5.4 Location and layout of the U-Tapao airbase, 1991.
It is crucial to review this report because almost every public debate against the Nong Ngu Hao project is related to U-Tapao airport as an effective solution which would require less investment. Its name is not new; in fact, it has played an important role as an alternative airport for Don Muang since the 1970s. This report was completed only two months before the approval of the SBIA development in May 1991. The report was carried out by the same consortium that prepared the ASMP study previously discussed. The detailed study in this report reflects the uncertain policies of airport development in the early 1990s. The government’s decisions were supposedly based on reports by the same consortium. However, the government’s final decisions were made without logical explanation. Why was the potential of U-Tapao not considered seriously?

The report stated that the existing single runway of U-Tapao airport could facilitate 180,000 to 200,000 aircraft movements annually or over 30 movements per hour. Most of the airport infrastructure had already been provided and only some additional facilities would be required for commercial uses [Berger, 1991b #7, I-7].

The report forecast that annual passengers at U-Tapao airport could increase to 1.1 million by 2005 with annual growth rates between 4.4 and 7.8 per cent. Most importantly, it claimed that the opening of the second Bangkok airport at Nong Ngu Hao would cause a 25 per cent decrease in U-Tapao traffic [Berger, 1991b]. In other words, this meant that only one of the two projects was feasible for investment purposes. If the new development stage of Don Muang airport were completed, what would be the future of Nong Ngu Hao and U-Tapao?

Some of the figures are frightening. In 1995, there were only 2,186 aircraft movements with 17,487 arrival passengers and 13,967 departure passengers at U-Tapao. Even though it had been upgraded for international aviation in 1990, U-Tapao could not achieve its potential. The Director of U-Tapao Airport, Admiral Thaveechai Liangpibul, stated that old and complicated regulations, coupled with poor management by the Thai Royal Navy were the biggest constraints [Thansettakij 1996, vol. I, 034, 12].

While the development direction of U-Tapao airport was still controversial and unclear, two more projects were proposed: the High Speed Train and Global Transpark. These attempts were made to increase the importance of U-Tapao and the Eastern Seaboard.
The *High Speed Train Study* was submitted to the NESDB in March 1994. Three routes to the Eastern Seaboard were evaluated and the study proposed that the most appropriate route was Bangkok-Nong Ngu Hao-Chonburi-Phattaya-Sattahip and Rayong with eight stations along 191 kilometres and a travelling time of 104 minutes. An investment of approximately 30 billion baht was estimated. It was understood that modern technology such as the high-speed rail link would be the most effective solution to gaining access to Bangkok.

In May 1997, the Eastern Seaboard development committee approved an initial budget of 600 million baht to fund the first year of construction of the Global Transpark at U-Tapao airport. An integrated transport facility would be developed for the air cargo airport that could efficiently transfer products to world markets. However, these two projects did not attract private sector interest as expected and are likely to remain on the waiting list for the next government. Obviously, the case of U-Tapao is following the start-and-stop development programme experience which has become a common situation in Thailand.

In my view, several conclusions in the report are very interesting and reasonable. Extensive commercial development could take place at U-Tapao airport without significantly restricting the base’s military capacity. A second runway is possible for U-Tapao airport that would provide enough capacity to serve as a second Bangkok airport if the problem of ground access systems could be solved. The most important argument of the report was that U-Tapao could be a magnificent alternative to the second Bangkok airport at Nong Ngu Hao [Berger, 1991b, 1-5]

The implication is that the SBIA project could be shelved, probably forever, if U-Tapao airport could function as the SBIA. Given this recommendation was proposed, why did the government continue to develop Nong Ngu Hao? It seems that Cabinet did not realise or did not want to consider these facts and figures.

Following the crisis in the Thai economy in 1997, the government was required to cut all public expenditure under the supervision of the International Monetary Fund

---

13 Maurits van Witsen was searching for a basic criterion for high-speed train development in Europe. He reported to European Ministries of Transport at a Conference in Paris in 1991 that a high-speed train should have a highest speed of 200-300 kilometres per hour with the average travelling speed being 150-200 kilometres per hour. The number of stops must be limited and a distance between each station should be over 150 kilometres [Witsen, 1992 #34, p.47-67]. In comparison, the proposed high-speed train for the Eastern Seaboard in Thailand seems to be only an ordinary express train. Due to the impacts of the delay of Nong Ngu Hao airport, this project was to be reviewed in terms of passenger volume and financial returns in April 1997 because it was originally planned to serve the new airport. Its future remains controversial.
In February 1999, the government cancelled the development of the Global Transpark at U-Tapao airport.

5.3.3 SBIA: Site Confirmation Study

In June 1991, Louis Berger International Inc. and consortium submitted the SBIA: Site Confirmation Study to the AAT only one month after the Cabinet approved the Nong Ngu Hao project. A basic question is why did this site have to be confirmed? The report was probably done in response to political uncertainty. The primary task of the study was to determine whether Nong Ngu Hao remained the preferred airport site. Details of this study illustrate the unusual process of this project.

The study approach was simple. Three alternative areas: Nong Ngu Hao, an area west of Bangkok and an area east of Bangkok, were considered as potential locations for a new airport. The report argued that the areas north of Bangkok were not desirable for a second airport because the flight paths would conflict with Don Muang operations. Areas to the south on the Gulf of Thailand were also undesirable because of extremely high construction costs. Only these three areas were compared and were evaluated using six key factors: aeronautical factors, construction feasibility, implementation cost, ground access, regional compatibility and environmental factors [Berger, 1991c, 2-4].

No specific site was evaluated, however, the consortium insisted that its approach was reasonable. The study added that previous studies had identified Nong Ngu Hao as the best site for the new Bangkok airport [Berger, 1991c, 8-15]. Consequently, the only purpose of the study was to review current information including any changed conditions since the 1978 site selection study.

It is a fact that the urban part of Bangkok metropolis has increased more than three-fold since 1974. It has become a metropolitan region with a radius of more than 100 kilometres from the old centre of Bangkok. In short, Bangkok in the 1970s and in the 1990s are completely different. Nowadays there are primary schools, universities, housing complexes, factories, industrial estates and shopping centres surrounding Nong Ngu Hao. Despite this, the report concluded that Nong Ngu Hao could offer the lowest total cost, the best location and the shortest implementation time. The report confirmed the suitability of Nong Ngu Hao.

The bias of this study is evident. The evaluation of the airport location was simply made by giving an excellent rating to all the factors relating to Nong Ngu Hao.
Chapter 5 Airport Planning and Development

[Berger, 1991c, 4]. More importantly, the crucial factor of noise pollution was not studied. Why and how the Berger misinterpreted the evaluation of the airport location?

The study stated that the airport at Nong Ngu Hao would fit in with present and projected land use patterns, ground transportation infrastructure and urban growth patterns. Its site on the high-growth corridor east of Bangkok could serve future demand in the metropolitan region well. The issue of urban primacy seemed to have been forgotten. How could a large airport with an expected 100 million passengers per annum, be viewed in isolation from the collective problems of the primate city of Bangkok?

Soft soils and flooding were generally considered as two key factors that could greatly increase the construction cost of the airport. Based on research studies on soil characteristics at Nong Ngu Hao and throughout the Bangkok region, it was concluded that soft and compressible clay with an average of 15 to 20 metres in thickness was the primary factor which would make the construction costly [Berger, 1991c, 18-22].

Moreover, the Nong Ngu Hao terrain is located on a floodway. Its ground elevations have a range of only 0.50-0.80 metres above mean sea level and its continuing land subsidence shows a rate of between 5-10 centimetres per year. These have been openly recognised as serious problems [Camp, 1967 #31, 9]. The report itself stated that the Nong Ngu Hao elevations might be below mean sea level if the subsidence continues. Even though these facts had been discussed repeatedly, the report continued to indicate a number of construction feasibility factors which could solve these problems. Eventually, the technical solutions of preconsolidation were recommended at a cost of approximately 6,800 million baht. The accuracy of this was proven some years later. On 30 November 1996, the Italian-Thai Company won the bidding for landfill with 30 million cubic metres of sand for the Nong Ngu Hao project at the cost of 11,650 million baht, excluding the flood protection system. Over the period of the project, the original cost of Nong Ngu Hao at 68 billion baht had increased to over 100 billion baht in December 1996.

The accuracy of the numerical data used in the report is not known. The task of the study had been to determine the best site for the new Bangkok airport. However, it is not clear why and how these failures happened.

---

A discussion on land subsidence is included in Chapter 6. A map of land subsidence of Bangkok is shown in Figure 6.4.
Chapter 5 Airport Planning and Development

It is worth noting that the continuing land subsidence will affect the project. The study should have given the utmost importance to airport operations in the long run. A good example is Kansai airport in Japan where increased investment has resulted in bigger debts. Its' notoriously high landing fees cannot earn enough profit to cover interest payments [Rowe, 1997 #117, 22-24]. Certainly, Nong Ngu Hao will follow the experience of Kansai under the same conditions.

The most controversial issue in the report is the brief conclusion. The report stated that U-Tapao was not appropriate for the SBIA [Berger, 1991 #8, 32]. This was contradictory to the other report made by the same consortium only three months previously which clearly stated that U-Tapao could be a significant alternative to the SBIA at Nong Ngu Hao [Berger, 1991 #7, 1-5].

It is clear that the real purpose of the confirmation study was to support Cabinet's decision and to end public controversy about the project. However, the short investigation with a report of only 66 pages was not used or even mentioned by the Cabinet.

Louis Berger International Inc. submitted the three reports to the NESDB and its counterpart, the AAT, in 1991. It cannot be denied that both the NESDB and the AAT were behind the politics of airport development in the early 1990s in attempting to revive the Nong Ngu Hao project.

A review of three reports in this section explains the role of the NESDB, which attends every Cabinet meeting. Although the NESDB may demonstrate technical expertise in some areas, its overall role has remained controversial. How much and how well does the NESDB understand the meaning of development? Why are some projects unable to be integrated? The new airport is one of the projects which clearly shows the disconnection and the discontinuity of the transportation network development.

5.4 Is the SBIA necessary?

It is worth noting that the government developed and upgraded many new airports during the boom in the Thai economy in addition to the SBIA

As a result of the ASMP report, the head offices of the AAT have moved to new multi-million baht compounds built on the other side of Vibhavadi Rangsit highway from the Don Muang airport. The old office headquarters and the first terminal have

\(^{16}\) See Appendix 5.2
become a ghost compound. A new building for the Second International Terminal and substantial improvements to the Domestic Terminal were completed in 1995.

After it was confirmed that the Nong Ngu Hao project could not be finished in 2003 as planned, the expansion of Don Muang was the only alternative. Private talks between the Prime Minister, General Chavalit Yongchaiyudh, and the Air Force Commander-in-Chief on 29 January 1997 had the result that the RTAF allowed an additional 100 ha at Don Muang to be developed for commercial use. Compensation of about 10 billion baht will be provided to relocate some military units to Lopburi, an airbase 150 kilometres north of Bangkok. It should be noted that the Prime Minister, who has a military background, was involved in every stage of the Don Muang development. It would seem that only military persons were able to deal with this particular problem.

On 11 August 1997, Cabinet approved an additional budget of 11,828 million baht to improve Don Muang airport so that it will be able to handle 45 million passengers annually by 2007. It is expected that the fifth stage of Don Muang development will be completed by the year 2000. The controversial issue of the ultimate capacity of Don Muang airport appears to have been forgotten for a while.

The government’s decision on airport development raises two questions. Is it true that Don Muang airport cannot be expanded? Is the SBTA necessary? The task in this section is to answer these questions.

My investigation starts with the doubtfully forecast of aviation growth and assessment presented in the ASMP study. Primary data were gathered from the Aeronautical Radio of Thailand, which controls air traffic and all aircraft movements at Don Muang airport.
Table 5.2 Aircraft movements at Don Muang airport from 1992 to 1996

Table 5.2 shows that the current trend of aviation growth at Don Muang airport is completely different from the forecast in the ASMP study in 1991. Focusing on the period of 1992-1996, the figures of domestic aircraft movements continued to increase sharply and became the greatest in 1996. The table reflects two interesting facts.

Firstly, the two runways at Don Muang airport can serve more than 250,000 aircraft movements annually. Moreover, there were 15,119,065 international passengers and 5,805,827 domestic passengers in 1995. The rapid growth of domestic aviation may reflect a changing lifestyle of travelling in Thai society during the period of the ‘bubble’ economy.

Secondly, the statistics clearly show that the main function at Don Muang airport is civil and commercial activities, while the military currently accounts for only five per cent in terms of aircraft movements. It should be noted that the last squadron of jet fighters was withdrawn from Don Muang in the 1970s, after the end of the Vietnam War. In fact, the primary strategic centre for air defence is Korat and secondary centres are at Takhli, Ubon and Suratthani. However, the RTAF usually maintains the importance of Don Muang airbase by deploying some aircraft for military transportation.
Thai authorities always argue that Don Muang airport has reached its ultimate capacity. The total terminal development area available at Don Muang airport is only 130 hectares and the total width available for taxi-lanes to Vibhavadi-Rangsit highway is less than 400 metres [Berger, 1991 #9, volume 2, 7-119]. In this argument, some old facts are repeated again and again to promote the SBIA at Nong Ngu Hao.

In terms of airport capacity, land is not the only issue that limits airport development. Table 5.3 compares the current capacity of a number of large airports worldwide, in which the Airports Council International ranks world airports by three different indices: aircraft movements, total passengers and total cargo per annum. Land requirements for airports vary depending on the aerodrome characteristics and design.

<table>
<thead>
<tr>
<th>Airports</th>
<th>Land Area (ha)</th>
<th>Total Passengers</th>
<th>Aircraft Movements</th>
<th>Total Cargo</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. London-Heathrow</td>
<td>1,141</td>
<td>56,037,789 (5)</td>
<td>440,340 (20)</td>
<td>1,140,767 (12)</td>
</tr>
<tr>
<td>2. Frankfurt-Main</td>
<td>1,700</td>
<td>38,761,174 (8)</td>
<td>384,971 (27)</td>
<td>1,497,245 (7)</td>
</tr>
<tr>
<td>3. Paris-Charles de Gaulle</td>
<td>3,104</td>
<td>31,724,035 (12)</td>
<td>367,222 (31)</td>
<td>979,008 (14)</td>
</tr>
<tr>
<td>4. New York-J.F. Kennedy</td>
<td>2,052</td>
<td>31,155,411 (13)</td>
<td>355,214 (33)</td>
<td>1,636,497 (4)</td>
</tr>
<tr>
<td>5. Singapore-Shangi</td>
<td>1,663</td>
<td>24,514,248 (28)</td>
<td>179,883 (87)</td>
<td>1,211,411 (11)</td>
</tr>
<tr>
<td>6. Tokyo-Haneda</td>
<td>586</td>
<td>46,631,475 (6)</td>
<td>211,190 (76)</td>
<td>670,689 (22)</td>
</tr>
<tr>
<td>7. Bangkok-Don Muang</td>
<td>620</td>
<td>24,992,738 (27)</td>
<td>180,594 (85)</td>
<td>787,539 (18)</td>
</tr>
</tbody>
</table>

Notes: 1. Statistics collection by Airports Council International
2. Aircraft movements: landing+take off of an aircraft
3. Cargo: loaded+unloaded freight+mail in metric tonnes
4. (xx) World Ranking in 1996
6. In 1996, the AAT currently occupied the land of about 384 ha of 620 ha. Meanwhile, it is believed that the total area of Don Muang airport should be more than 1,280 ha excluding other military compounds outside the base.

Table 5.3 World’s airports in comparison

In Table 5.3, Bangkok International Airport was ranked 85th by aircraft movements, 27th by total passengers and 18th by total cargo in 1996. Even though a
large area of Don Muang is occupied by the RTAF, as a regional hub for air transportation, it is better off than some of the larger airports in the world. This implies that land is not the only key element which determines the airport capacity.

Runways may be considered as another element. There are two runways at Don Muang airport, the west runway (03L/21R) 60 x 3,700 metres and the east runway (03R/21L) 45 x 3,500 metres [Berger, 1991 #9, volume 2, 7-8]. In June 1999, the Director of Don Muang airport, Wing Commander Uthai Thaisanthad, gave an interview in a local newspaper\textsuperscript{17} in which he said that the east runway would be closed from November 1999 to February 2000 for foundation maintenance with a budget of 400 million baht. He insisted that this would not affect aircraft movements and the single runway on the west could serve all airlines effectively.

In the layout of Don Muang airport shown in Figure 5.2, from the review of ASMP study, the analysis of land and building uses and the government’s decisions in 1997, it is clear that Don Muang airport can be expanded greatly. If all military facilities could be moved out to provide more space, its capacity would be enlarged dramatically. Greater efficiency could also be gained if the facilities were used to their full capacity.

My argument is that the SBIA at Nong Ngu Hao is unnecessary. The above reasons are sufficient for the government to stop the project. Moreover, U-Tapao has been an international airport for years and should be used as the first alternative for a second Bangkok airport. However, the politics of airport development in Thailand are complex. Factions in the coalition government seem to enjoy costly development projects despite the financial problems.

Besides the issue of costly investment, the planning politics of the SBIA are likely to involve other scandals. My investigation continues to search for a deeper connections of exploitation behind this project in terms of property speculation.

\textsuperscript{17} Thansetthakij, 6-9 June 1999, http://www.thannews.th.com
Chapter 6 The Master Plan of the SBIA

This chapter discusses the politics of rational planning for the new airport project by reviewing the master plan of the SBIA. The main task here is to understand what was involved in making the master plan. The focus is on development concepts, methodological study and an analysis of the land use plan. I also discuss whether the recommendations are reasonable given the evidence available.

It is important to review the SBIA master plan because it has influenced many related activities, particularly the infrastructure provisions and the preparation of plans for Bangkok and nearby urban centres. After the completion of the master plan in 1994, a different consultancy firm proposed a better alternative for solving the flood problem, but the authorities involved rejected the cheaper option on the grounds that it did not follow the master plan. A discussion of this is included in Chapter 7. Hence, it is interesting to study what the making of the new airport master plan was all about.

Cabinet approved the development of the SBIA in May 1991. The Office of the Second Bangkok Airport Development Committee (OSBAC) of the NESDB signed a contract with a consulting group on 9 June 1993. In August 1994, *The Master Plan and Feasibility Studies for the Area around the SBIA* was submitted to the NESDB [Norconsult, 1994 #38, main report, 1-1] and copies of the final report were distributed to many departments for implementation. It had taken two years to get budget and choose a consultant but only one year to make a plan. The making of the master plan is another episode in the politics of the SBIA.

'Planning' is viewed as a rational process of thought and action which ultimately aims at promoting human growth. The politics of rational planning is a politics of a second order concerned with how ordinary political processes relate to planning. Likewise, the rationality involved is a second-order rationality: to plan successfully does not necessarily mean to plan in a completely rational way [Faludi, 1973 #4].

The above statement implies that success of planning practice as part of the political process may not be on the basis of rational ways completely. Planners sometimes have to be flexible and learn tactics to plan successfully.
My understanding is that planners who are good at planning also seem to require skills and experience in dealing with politics. This is understandable. However, the situation for planners in Thailand is problematic because of the complex nature of Thai politics. There are two reasons for this.

First, there is a need for a clear meaning of 'rational'. As discussed previously, political factions in Thailand do not care about the process of rational planning. Second, what the factions care about most is individual interest. Consequently, the more politics are involved, the more irrational planning can become. The making of the master plan for the SBIA is a good example.

I agree with Brian Graham [1995] that the geography of air transport is inseparable from national self-interest and political advantage [Graham, 1995 #116, 46]. This idea reflects an overview of the world’s airline industry in which airlines have become part of the very symbolic iconography of the state's identity [Graham, 1995 #116, 47]. However, the case of Thailand is different. The government has expressed its concern for air transport development as a domain of national self-interest. However in Thailand, political advantage is also concerned with individual interests among the factions in the coalition government. Thus the development of air transport infrastructure has become associated with factional interests.

As a result of the economic crisis in 1997, the airport project had to be revised and scaled down. However some of the work had been completed and this work can be evaluated. This work may be enough to enable an evaluation of the master plan to be made and an assessment of the likely success of this project, which focuses on the politics of landfill.

6.1 Master Plan as a Prelude for a Mega-Project

A master plan provides an overview of a large project. A master plan indicates all stages of development within a certain period of time in which commitments and activities are addressed precisely. It is not clear how and when the use of master plans was first introduced in Thailand. In the 1960s and 1970s, American agencies created a number of master plans for Thailand under U.S. economic aid programmes. Master plans were sometimes prepared in association with a proposal to apply for an overseas loan or financial assistance. As a result, almost every Thai government has followed this approach by producing master plans for every development programme, including the new airport project.
In Thailand, the master plan has become a political tool used by the government when it wants to start a new project. The master plan can be used to stimulate public interest and highlight the government's concerns. The bigger the project is, the more interesting a master plan can be made. As a result, a master plan can highlight positive outcomes showing a beautiful perspective of the development. This is to increase the popularity.

The case of the SBIA is no different, although the airport project is more complicated in terms of its wider consequences. As discussed in Chapter 5, the airport project was promoted in association with other projects such as the High-speed Train and the Global Transpark. The master plans for these projects were merely viewed as a prelude during the boom in the Thai economy, in that ministers enjoyed promoting their agendas by talking about the progress of grandiose projects almost every day.

It should be noted that there was no attempt to make master plans during the military regime of Field Marshal Sarit from 1958 to 1963. A Canadian consortium prepared the first master plan for the new Bangkok Airport in 1969. The NACO completed the second master plan in 1984. Despite different political situations, the Ministers of Transportation closely supervised the preparation of the first two master plans and arguments about them among politicians were widely publicised. Details about the making of the master plans can therefore be studied in local newspapers. In contrast, the third master plan was prepared without publicity and very little information was revealed to the public. What were the politics behind the making of the third master plan from 1991 to 1994?

Before the coup on 23 February 1991, the Minister of Transportation, Samak Sundaravej, staunchly opposed the new airport project at Nong Ngu Hao. As discussed in Chapter 5, he had repeatedly argued against the project since 1983. The revival of Nong Ngu Hao was therefore proposed after Samak had stepped down.

Respected civilian Anand Panyarachun was installed as Prime Minister by the military and Nukun Prachuapmor was made the Minister of Transportation on 6 March 1991. Despite the fact that the powerful military was behind the political scene, Anand worked freely without any apparent military intervention and his administration was transparent and accountable. Cabinet approved further infrastructure developments at Don Muang airport on 23 April 1991 and the development of the second Bangkok airport on 7 May 1991. Cabinet ordered the authorities concerned to speed up both projects. It is important to note that the emphasis in Cabinet records was on design work.
and the selection of experts while the issue of making a master plan was not mentioned.

It is clear that Anand had not been well prepared for the position of Prime Minister before his appointment. The military relied heavily on his diplomatic reputation to present an image of good government. The Ministry of Defence and the Ministry of Interior were also controlled by the military. Anand recruited well-known professionals who had never been involved in scandals for the Cabinet. As an interim government, the Cabinet had only one year to carry out its work and its major task was to prepare for the coming general election. Meanwhile, the military was primarily concerned with purchasing new weapons rather than with development projects. The new airport project seemed to be initiated by the authorities concerned, that is the NESDB and the AAT, rather than the government.

As discussed in Chapter 5, Utis Kaothien of NESDB argued that the new airport project had been considered before there was a coup. This means that the NESDB was well aware of the current political situation and was waiting for the right time to propose the project. The revival of the new Bangkok airport was therefore promoted by the NESDB. When political turmoil occurred, the NESDB was then left to manage the project.

After the election on 22 March 1992, Suchinda Kraprayoon, a General who took part in the 1991 coup, took up the position of Prime Minister, a step strongly opposed by the whole country. Weeks of political demonstrations with mass killings of demonstrators in Bangkok ended when Suchinda resigned in May 1992. Anand and his former Cabinet returned to office on 10 June 1992 and stepped down after another election on 13 September 1992. The Cabinet, as an interim government, did not make any decisions on big projects and its major concern was to prepare the drafting of the new constitution, which aimed at providing new legal measures to prevent political corruption. Consequently, Cabinet let government agencies work on the new airport project during this period. The NESDB played the biggest role in managing these mega-projects during the period of political uncertainty. Despite its controversial role and

---

1 Siamrath, the local weekly newspaper in May 1991, reported a synopsis of the Cabinet meeting about the new airport project. I found nothing about the making of the master plan.

2 Under the Thai political system at the time, non-MPs could be appointed direct to ministerial posts.
powerful authority\(^3\), the NESDB still played the role of big manager and continued to dominate these projects, however, its attempts to do did not proceed smoothly.

It is important to note that all state enterprises\(^4\) including the AAT have to submit their financial plans for mega-projects to the NESDB before proceeding to Cabinet. This has enabled the NESDB to manipulate state enterprises. However, the fiscal budget of the state enterprise is less controlled compared with the government departments. The state enterprises have higher autonomy in management. The role of the government, as the biggest shareholder in the state enterprises, is to provide the main policies and make any important decisions recommended and guided by the NESDB. Corrupt governments have therefore become involved in profitable state enterprises.

Some budget items such as research work do not require Cabinet approval. This explains why many studies and reports could be funded by the AAT, before and after the SBIA project were officially approved.

The NESDB has little authority to control the government departments of the 15 ministries. As discussed in Chapter 3, most departments have separate legislation, for example, the BMA and DTCP. However the implementation of a large project requires the integration of many legal measures and investments and this cannot be done without cooperation between these departments.

In the case of the SBIA, the master plan was one of very few instruments the NESDB could use to manage the development of the entire project. However, the NESDB’s guidelines were followed selectively by some departments provided their mutual interests could be met\(^5\). The strongest reaction against the NESDB by any government agency came from the BMA. As discussed in the review of *The Bangkok*

---

\(^3\) As a consequence of the political conflict in 1992, approval of the budget for the fiscal year 1993 was postponed from September 1992 to 1993. There was little publicity when the proposed budget of 25 million baht for the study of the new Bangkok airport and 25 million baht for the study of High-Speed Train project were submitted by the NESDB in February 1993. The Budget Provision Committee of the House of Representatives argued strongly over the role of the NESDB and its proposed budget as it was viewed as intervention by the NESDB in other government agencies’ areas of responsibilities [1. 1993 #22]. Despite this, the budget was approved two weeks later.

\(^4\) State enterprise is a form of semi public-private administration in which the government is the biggest shareholder. Most state enterprises are responsible for developing and providing public infrastructure and utilities.

\(^5\) The Department of Highways, a department of the Ministry of Transportation, and the Expressway and Rapid Transit Authority of Thailand, a state enterprise of the Ministry of Interior, seem to get along well with NESDB because their multi-million baht projects are included in the NESDB reports. As a result, the Bangkok-Chonburi Tollway passing north of the new airport site and the new stage of the expressway passing south of the new airport site were completed and officially opened in February 1998 without any obstruction by the NESDB.
Chapter 6 Master Plan for the SBIA

Plan 1995 prepared by the MIT Consultant Team, the BMA did not follow the master plan of the SBIA. The master plan did not indicate clearly how to integrate infrastructure provisions under a number of different authorities.

The NESDB had ignored arguments by agencies and hired a group of private experts to prepare the master plan. Many government organisations now follow the same approach by spending a lot of money to hire private experts. The politics of making a master plan therefore reflect the network of consulting businesses and relationships between experts and political factions.

The successful completion of a project depends on many factors, one of which is having a good master plan. During rapid changes in Thai politics in the 1990s and the overnight collapse of Thai economy in 1997, the early stages of the largest airport project in the region became the only lasting memory while politicians searched for other means to promote themselves. The master plans of other project proposals were forgotten. However, some of the facts behind the airport proposal were gradually revealed. These will be discussed in the next section.

6.2 Review of the SBIA Master Plan

Besides Norconsultant International A.S. as the leading company, there were another six small companies which jointly signed the contract for the master plan for the second international airport with the NESDB. It is not clear how these companies were selected to prepare the master plan for the new Bangkok airport. The structure of the project management was set up to provide separate responsibilities for each company. Under this structure, the measures proposed by each working group were not integrated and caused confusion.

The NESDB provided data and information to the hired consortia. Most of this had been gathered and analysed in previous reports. It was also second hand and out-of-date data which had been collected by other agencies. As a result, a number of facts were misrepresented\(^6\). In fact, much more reliable and more accurate data was available and could have been collected directly from the departments and authorities concerned. It is not clear why the out-of-date data and information were used.

\(^6\) Two large business zones were proposed to attract commercial investment around the airport, however, they were not studied in detail. Land use in Bangkok in 1986 and a property market survey by some private firms were referred to as a data base to indicate the growth of commercial space.
The master plan for the new airport repeatedly proposed development guidelines which the NESDB had drawn up in other documents. It therefore seems that the experts were hired as draftsmen for the NESDB. In addition, its employees played a lesser role than the employer did. The NESDB became the main manager in making the master plan for the second Bangkok airport.

It was stated in the introduction of the master plan that the Airport Authority of Thailand had been appointed by the Government as the agency responsible for the master planning, design and management of the construction of the airport within the defined boundary of the airport site. The master plan stated that outside the airport boundaries, the NESDB was responsible for the development of a master plan for the airport environs and for infrastructure projects. This would be needed to support the operation of the airport itself as well as the expected growth of economic activity in the area that the airport is expected to generate [Norconsult, 1994 #38, main report, 1-1].

Figure 6.1 shows the SBIA layout plan, which presents the full development scheme with detailed planning for airport functions. The ultimate capacity of 100 million passengers per year was stressed and used as a basic criterion for every calculation [Norconsult, 1994 #38, main report, 1-1]. In fact, the planning context within the airport boundaries is not complex. It is worth noting that the geographical location and landform of Nong Ngu Hao will only allow one scheme for the north-south aerodrome, which has technically affected the architectural and engineering layout and design.

The master plan mainly emphasised areas around the new airport. It was expected that the new airport would be highly attractive for commercial investment. Consequently, a detailed land use plan was proposed to identify the necessary infrastructure. A number of infrastructure development projects were planned and designed to facilitate these new activities. It is interesting to discuss how this idea originated, how the planning process occurred and how reasonable the master plan was.

6.2.1 Master Plan Area and Methodology

The first controversial issue is the master plan area, an issue which can completely distort the context of any planning process. Despite its name, 'the SBIA', the new airport is not located in Bangkok, but in Samut Prakan province, some hundreds of metres outside the administrative boundaries of the BMA.
Figure 6.1 Master Plan of the SBIA, 1994 (for ultimate capacity)

Source: Norconsult
Chapter 6 Master Plan for the SBIA

Three areas were defined: the study area, the master plan area and the land use plan area. Some rough boundaries were drawn up. However the geography and man-made benchmarks such as the administrative boundaries, were not taken into consideration. The study area that was given the greatest attention was apparently the Eastern Seaboard. The master plan area covered the areas within the radius of 30 kilometres around the airport, including some built-up areas of Bangkok and the lower basins of the Chao Phraya River and the Bang Pakong River. The land use plan area was the smallest, and included the whole eastern part of the master plan. The reason for this was to control development that was expected to extend to the East Coast.

The planning methodology was apparently simple. A Geographical Information System (GIS) and some aerial photograph maps taken in January 1991 were used to study existing land use. The environmental, economic, organisational and legal implications and impacts were assessed briefly. After reviewing the current situation, land use was planned in accordance with population projections and the priority of infrastructure projects was formulated within the boundaries of the master plan.

As discussed in Chapter 3, the political geography of local administration in Thailand is complex [Winichakul, 1994 #60, 115-127]. The legal system, the administrative system and the planning system are all concerned with administrative boundaries. This is probably the most important factor that must be considered before starting any project. In fact, the politics of boundaries are so sensitive that they influence every political issue.

The boundaries in the second Bangkok airport master plan were defined to cover some areas of the BMA, Samut Prakan province and Chachoengsao province. It was stated in the master plan that these boundaries were determined in discussions with the NESDB. Obviously the NESDB influenced the planning process starting from the early stage of defining the boundary. However, it was not explained in the master plan why the more influential areas of Bangkok relating to air transportation were not included in the master plan, for instance, the city core where most international companies are located. Consequently, some of the data and information supplied by the NESDB was used selectively and a number of facts were misrepresented in the master plan.

In practice, boundaries may cause many troublesome problems when dealing with legal procedures. It is worth noting that land uses around the new Bangkok airport
have been legally controlled by the Samut Prakan Comprehensive Plan since December 1993, as shown in Figure 6.2.

The larger areas of the new airport master plan have also been included in two other Comprehensive Plans: the Bang Pakong and the Suwinthawong which are in the process of being legally issued. Both Comprehensive Plans concentrate on land use control around the new airport.

This implies that the areas around the second airport included in the master plan are controlled by four other master plans including the Bangkok Plan 1992. In other words, three big authorities at the provincial level have responsibility for controlling land development around the new Bangkok airport. The new airport master plan did not however explain how to manage the development of the airport under the autonomy and different legal powers of these authorities. More details on this are included in the discussion on development concepts and land use control.

6.2.2 Development Concepts

The theme of the new airport master plan had remarkable similarities to other NESDB reports. The Bangkok Metropolitan Region was expected to be the economic hub of Southeast Asia and the development of the SBIA would stimulate the flow of economic activities across the region. It was strongly believed that the new airport, as a part of Bangkok-Eastern Seaboard development corridor, would attract considerable investment [Norconsult, 1994 #38, main report, 6-1].

Many development projects that were being implemented by other authorities were reviewed briefly by Norconsult International and consortium. Policies on high-tech and export-oriented industrial development and the urban decentralisation proposed in the new airport master plan were similar to other reports and studies submitted to NESDB. It seems that Norconsult International followed the development concept of the ‘Multipolis’ proposed in the Metropolitan Regional Structure Planning Study (MRSPS).

---

7 The most influential areas are the Central Business District areas where most economic activities related to overseas trade and the tourism industry are largely concentrated, covering Silom/Sathon, Surawongse, Chula, Lumpini, Ratchada South, Petchaburi and Sukhumvit/Asoke [Ellis, 1995 #42].
8 Besides the reports that have been reviewed in Chapter 5, the sectoral reports referred to the overview of previous studies; (1) Seventh Plan Urban and Regional Transport March 1991, (2) Development of Transport Planning Strategy; Metropolitan Regional Structure Planning Study October 1993 and (3) The Eastern Seaboard Corridor March 1994.
Source: DTCP.

Figure 6.2 Samut Prakan Comprehensive Plan (1993-1998)
In my view, the case of the making of the new airport master plan is no different from the case of the making of the airport study discussed in Chapter 5. The NESDB played a great role in making the master plan. There was excellent cooperation among a number of consultants hired by 'the same employer'. Despite the different scale of planning, as a result, the development framework and concepts for the SBIA had been concluded in complete harmony with the MRSPS.

After reviewing a number of urban problems and inefficiencies in the primate city, the SAMP suggested that areas around the new airport would enable the further development of Bangkok [Norconsult, 1994 #38, main report, 2-9]. However these basic assumptions were based on poor analysis. The new airport was not the only key factor for success in attracting investment. In fact, many factors and elements must be studied carefully and a more comprehensive analysis is needed. Some crucial factors seemed to have been ignored.

The development potential of Bangkok is very diverse and changeable. A large number of companies and businesses have been established there for decades. In many cases, superstition and religious belief have influenced decisions on the selection of a location. A Chinese prophet or a fortune-teller may be the one who makes the final decision where the business should go.

Property markets in Bangkok have also become more competitive due to the continuing over supply of property during the past decade. In the early 1990s there was a huge surplus of unlet office space in the Central Business District [Ellis, 1995 #42]. However, these facts were not mentioned in the new airport master plan.

From a different perspective, the Vice-President of Land and House Company, Viroj Leetrakul, one of the largest property development firms in Thailand, argued that the areas around the new airport were not suitable for high investment. His discussion focused on several issues such as poor physical geography, the annual flood problems and the poor image of Nong Ngu Hao. He eventually recommended low cost housing as being more feasible. Other people have also expressed similar viewpoints which are totally opposite to the development concepts in the new airport master plan.

The conclusion in the new airport master plan stated that the master plan and the land use plan for the area around the new airport should be harmonized with the airport master plan to ensure the best possible location and environment for business

---

9 Mr. Viroj gave an interview at his office in Bangkok on 4 June 1996.
development. However, the new airport master plan did not elaborate precisely what kind of business should be developed. Airlines and private firms related to air transportation such as hotels seem to be included and targeted.

In the view of an airfreight company, it was too early to make decisions on any investment because the government’s policy on how two international airports would be managed was not clear. It is worth noting that every airfreight company has its own connections with airlines depending on the quota available and contracts. In addition, it is already known that landing fees at the second new airport will be much more costly than at Don Muang airport, which will affect their business significantly.

Apparently, the AAT had no early planning on how to manage and operate two international airports and this issue was not addressed in the new airport master plan. There has also been a controversy about whether domestic and international flights would be separated or merged and which airlines would move to the new airport. Despite this, no arrangements have yet been made by the AAT.

The expectation of high economic growth may be the primary aim of any master plan, however, this possibility needs to be considered carefully and rationally. In the case of the master plan for the new Bangkok airport, it is interesting to study how the expected high rate of economic growth was assessed. A discussion on this is in the review of land use planning below.

6.2.3 Review of Land Use Plan

As discussed in Chapter 3, planning in Thailand is legally based on the Town and Country Planning Act 1975 in the form of land use planning. This is the only available legal instrument which NESDB can use to control development around the new airport. The main concern of the master plan of the SBIA was expressed in terms of the land use plan, which also provided information for infrastructure planning.

The making of the SAMP did not follow the legal procedures of the Town and Country Planning Act. After the development concepts had been defined, a 1993 map of the land use around the new airport (see Figure 6.3) was studied briefly. Because of a bias in the definition of the boundary in the new airport master plan, a land use area of

---

10 The issue of management of the two Bangkok airports was first discussed in February 1998, seven years after approval and four years after the new airport master plan was completed. On 21 February 1998, Chatumonkol Sonakul who heads a government committee studying the investment pattern of the new airport project announced that Nong Ngua Hao airport would open in 2003 and would serve 70% of
some 140,000 ha was misrepresented by classifying 90 per cent of the area as agricultural use, wasteland or retained natural habitat while only 10 per cent was shown as built-up. The 10 per cent had been agglomerated around the site of the new airport.

Figure 6.3 Land use around the SBIA site, 1993

the total passengers and Don Muang would be closed in the following 10-15 years. However, this decision will be not finalised easily and the debate continues.
The emphasis of the study in the new airport master plan was mainly on the areas within the land use plan. Population density, physical conditions, location of main industrial estate and existing infrastructure were analysed briefly by the consortium, consequently, most of the results of the analysis were optimistic. The positive potentials of the areas around the new airport were presented repeatedly, but several facts were ignored. During the rainy season, the water level rises one to two metres above mean sea level and large areas can be flooded for months. The continuing land subsidence shown in Figure 6.4, the inadequacy of the water supply and the number of poor public services are all critical problems.

Despite these already known problems, the areas north, south and west of the new airport site have been rapidly urbanised since the 1980s [Sternstein, 1995 #41, 27].

In my view, plans to build the new airport did not influence the above changes. The new airport master plan seems to focus on the positive elements which have influenced development around Nong Ngu Hao. In fact, a similar pattern of development has occurred around the outskirts of Bangkok as a result of the cheaper land prices, the increasing demand for housing and the lack of land use control.

The consortium ignored these facts and problems and the bias has continued. The projections of population, employment, office space, housing demand and infrastructure requirements in the new airport master plan area were presented showing great opportunities for the future. Besides a projected ultimate capacity of 100 million passengers per annum, the population projections in 2010 indicated that there would be 1,881,000 inhabitants in the new development areas around the new airport and 5,649,000 inhabitants in the master plan area [Norconsult, 1994 #38, main report, 4-6, 4-7, 4-8]. These projections were used as primary information for infrastructure planning for the SBIA.

Figure 6.5 shows the ‘strategic land use plan 2010’. It proposed that the area inside the five-kilometre zone around the new airport would be developed as a primary business zone for commercial and industrial enterprises related to or attracted by the airport. Consequently, the east and the west of the new airport, covering about 100 square kilometres, were defined as a business zone which was the highlight of the land use plan. This huge business zone has become controversial. Hence, it is interesting to review why and how this huge business zone was defined in the land use plan.

The approach to land use planning that every planning school has in common is to study and to analyse existing land use in association with other basic information.
The land uses around Nong Ngu Hao was first surveyed in 1989 by the DTCP for the preparation of the Samut Prakan Comprehensive Plan of 1993, the land use control for Samut Prakan province from 1993 to 1998. The 1989 land use map in Figure 6.6 shows the significance of industrial development in the area. A number of factories were built along the both sides of King Kaew Road east of the new airport site. The automobile industry and assembly plants with big investments from Japan have already been developed along highway no.34 (Bang Na-Trad Road) south of the airport. The development of the new housing projects is still limited as this depends on the improvement of road networks. The strips of old settlements along the waterways already existed. The landscape of Nong Ngu Hao in 1989 was mainly dominated by nearly a thousand fishing ponds.

Figure 6.7 shows the second survey in 1994 in the same area covered by the DTCP but it was extended to cover the larger areas east of Bangkok, the coastal areas and the Bang Pakong River. The ground survey was undertaken for the preparation of the new airport land use control. The 1994 land use map in Figure 6.7 shows some significant changes. Most of the old settlements had been replaced by low cost housing projects. Many commercial complexes and high-rise office buildings have been built along highway no.34. The most controversial of these large developments is the multi-million Thana City project with a number of housing blocks which were built under the flight path of the new airport.

Compared with the land use plan 2010 in Figure 6.5, the business zone proposed in the new airport master plan seems to be contradictory to the current environment. It did not explain how existing factories would be replaced by the new commerce and business functions. In June 1995, a proposed land sub-division plan for the business zone in the new airport master plan was submitted to the NESDB, causing more confusion. The term ‘light manufacturing industry’ was introduced which would require an additional 30 to 50 ha per year in the business zone. The consortium recommended some special industries which would have great locational advantage in being close to an airport. However the consortium did not clarify the definition of special industry. Lastly, the consortium concluded that there should be more detailed research and (regional) policy clarification.

Figure 6.8 shows the land sub-division plan for the business zone according to a grid system of main access roads and internal main distributor roads on the west of King Kaew Road. In June 1995 the consortium introduced an urban structure plan for the
zone to include all the necessary development criteria, guidelines, procedures, regulations and priorities for the development of the entire zone. These details were prepared for the development implementations. Because of legal procedures, however, it may not be easy to convince the Planning Board of the Ministry of Interior to approve the proposed zoning patterns. More importantly, the private developers, that is the big actors who play the major role in development, have never expressed any interest in this business zone. Those speculating in land in that area are investors, not businesses seeking to develop there.

In terms of the obstruction zone indicated in Figure 6.9 and the noise contour map shown in Figure 6.10, the land use plan is confused. The new airport master plan recommended that special building regulations and safety measures would be necessary in the business areas east and west of the new airport. However, the new airport master plan did not explain what were the special regulations and how to apply them.

Most importantly, the environmental impact of the new airport was mentioned briefly but no recommendations were made. Apparently, the study avoided identifying any initial environment impact statements. In the new airport master plan, the noise contour map and safety zones along aircraft flight paths completely cover both proposed east and west business zones. In addition, the impact of noise pollution will directly affect a number of existing buildings in the urban centre of Lat Krabang in the north and the large housing complex in the south. These factors were not included in the new airport master plan.

It is interesting to study why this bias has occurred in the land use plan. As mentioned, land uses around the new Bangkok airport have been legally controlled by Samut Prakan Comprehensive Plan since 1993. In Figure 6.2, the area east and south of the airport site are clearly defined for agricultural use only. The narrow strips along King Kaew Road west of the airport are defined for industrial use. Beyond the industrial strips, most areas are defined for residential use with medium-density. It is clear that land use which is controlled by law is completely different from the land use plan proposed in the new airport master plan. Moreover, areas north of the airport which are preserved as a floodway are enforced by the Bangkok authorities. The weakness of the Samut Prakan Plan, however, is that the validity of its five-year term expired in December 1998.
Figure 6.4 Land subsidence in Bangkok, 1991.
Figure 6.5 Strategic land use plan around the SBIA, 2010
Figure 6.6 Land use in Samut Prakan, 1989 (Key to this map on Figure 6.7)
Figure 6.7 Land use in Samut Prakan, 1994

Source: DTCP.
Figure 6.8 Land subdivision plan of business zone, 2010

Source: Norconsult.
Source: Norconsult.

Figure 6.9 Obstruction zone around the SBIA
Figure 6.10 Noise contour map

Source: Norconsult.
In addition to the business zone controversy in the new airport master plan, the proposed concept for a green belt in the east between the new Bangkok airport and Chachoengsao was another controversial issue. The large areas in the east covering the districts of Lat Krabang, Bang Bo, Chachoengsao and Bang Pakong that are still undeveloped were proposed as a green area. The term ‘Lake District’, shown in Figure 6.5, was identified as a green area. The new airport master plan pointed out that the primary function of the Lake District was to maintain a water retention capacity east of the airport.

It is worth noting that the strongest impact of restricting land use is usually on land prices. As discussed in Chapter 3, this fact is well known among property speculators. The new airport master plan promoted by the NESDB has become a fundamental mechanism for changing land use control. However, access to information on this issue is very difficult because of the political situation. More importantly, an investigation of property speculation is also very difficult because most politicians are also the landlords who make a fortune from land speculation. The politics of land use continues to greatly influence the planning system in Thailand.

6.2.4 Infrastructure Development Plan

Infrastructure planning is a part of the process of land use planning. Projections of population, employment and other information provide basic data for the provision of public services. In the new airport master plan, eight factors affecting infrastructure development were separately studied and planned for: (1) traffic and transportation systems, (2) flood control and drainage, (3) soil and groundwater conditions, (4) water supply, (5) solid waste, (6) wastewater collection, treatment and disposal system, (7) the electrical power system and (8) telecommunications.

The main task in this section is to review the infrastructure development plan by focusing on the rationality of seven of these issues. The more complex issue of flood protection will be reviewed in Chapter 7 because it has serious implications for the Bangkok Plan 1992 and is the focus of controversy about the new airport project.

6.2.4.1 Traffic and Transport Systems

Because of severe traffic congestion in Bangkok for decades, the issue of the traffic and transport systems is the most important issue, after land use planning. Besides the traditional approach to the problem taken in previous studies, for example,
National Urban Development Policy Framework 1990, the consortium identified the administrative structure of transport authorities in the Thai Government as the most significant approach to traffic and transportation system planning. More than 20 authorities under four ministries have responsibility for the development of traffic and transportation within the boundaries of the new airport master plan [Norconsult, 1994 #38, volume I, 1-2 to 1-6]. A number of studies\(^\text{11}\) relating to road and public transport systems in Bangkok that have been prepared by different authorities have been reviewed by the consortium showing a series of opportunities and conflicts. In Helen Ross's view [1997], this underlines a serious obstacle to development planning which has existed in Thailand for decades. This implies that the need to restructure the administration in association with the institutional development should be considered [Ross, 1997 #106].

In the planning methodology used in the new airport master plan, the main emphasis was mainly on road network development. Transport modeling was applied as an approach and two steps were adopted. Firstly, trip origin-destination activity catalyzed by the new airport was estimated by focusing on the regional patterns of transportation. The boundaries were redefined to include the 19 provinces in the Central Region and Bangkok. Secondly, a more detailed review of the land use area was presented. Airport passengers, employees, business and cargo trips were studied for demand projection for the years 2000 and 2010 [Norconsult, 1994 #38, volume I, 3-1].

A large number of data from a series of 18 superzones with 167 zones were studied using transportation planning modeling software. On the basis of the information given, a number of maps, tables, charts and diagrams were presented showing demand patterns on the road networks. Ultimately, the new airport master plan showed a long list of recommendations.

The report of the new airport master plan accepted that a road-oriented infrastructure system has finite capacity limits, either in the form of road space or parking space. The study concluded that a key to future mobility for Bangkok is 'urban mass transit' [Norconsult, 1994 #38, volume I, 4-1]. These facts have been widely recognised by outsiders for decades but not in Thailand. Although a mass transit route was proposed and shown in the master plan for the new airport, there was no

corresponding proposal in the master plan for a mass transit system. In fact, NESDB got approval from Cabinet on 21 July 1992, one year after the approval of the new airport project, to modify the whole operation plan for mass transit systems in Bangkok. It is not clear why the NESDB did not consider the new airport as a serious concern. As discussed, the NESDB has its own approach however this has some limitations. In this case, the NESDB cannot go beyond the bureaucratic boundaries which serve the political concerns of uncountable interests.

The planning context for traffic and transport systems was apparently more flexible compared with other issues in the new airport master plan. The many different conditions given by key persons involved with the second airport were always discussed. Consequently, all the measures and recommendations proposed in the plan were carefully based on the assumptions made by those persons. For example, discussions in January 1994 with senior representatives of Thai International Airways confirmed that the new airport and Don Muang airport were expected to evolve as independent hubs. As a result, the new airport master plan concluded that there would be no need for ground transport services between the two airports. However in fact, a decision on the operation and management of the two airports has not been finalised. Several factors were totally ignored and consequently no transport linkage between the two airports was proposed in the SAMP. Transit passengers who use the services of different airlines seem to have been completely forgotten in the master plan. As a result, international passengers may avoid the Bangkok route unless they want a stopover.

In my view, the traffic and transport system planning in the SAMP was based on a number of uncertainties. My argument is that given the current situation with numerous changes in Bangkok’s transport infrastructure, the transport plan in the master plan is unusable and a major revision is needed.

6.2.4.2 Soil and Groundwater Conditions

The issue of soil conditions was the shortest section in the master plan and was only discussed briefly on two pages. It recommended that 30 metre-long concrete pylons would be required for the construction of new airport areas and the cost would be substantial compared with other development costs. This would cover up one of the weakest points in the new airport project.

---

12 Initially, there were three mass transit systems under different authorities: (1) Metropolitan Rapid Transit Authority (set up in 1996, the operation will start in 2003), a new state enterprise under the Office of the Prime Minister. (2) Taniyong Electric Train Project under the BMA and (3) Hopewell Community Train Project under the State Railways of Thailand. The Hopewell Project became bankrupt in 1998.
The issue of groundwater conditions and subsidence in the new airport areas was discussed, based on some old data from surveys in the early 1980s. The serious problem of continuing subsidence of about 30 to 100 millimetres per year was described as shown in Figure 6.4. Despite these known geographical constraints, the study firmly stated that, from a geotechnical point of view, no areas were classified as unsuitable for development. A dike and polder system was recommended for flood protection [Norconsult, 1994 #38, volume II, 3-8].

In my view, the study of soils and groundwater conditions has covered up the most serious problem in the project. It cannot be denied that it will be costly to develop the airport project at Nong Ngu Hao. More importantly, it will be even more costly to maintain the operation, as is the case with Kansai airport in Japan [Rowe, 1997 #117, 22-24].

However, the real facts about the soil and underground water have been gradually revealed during the construction of the flood protection system. This will be discussed in the section on implementation assessment.

### 6.2.4.3 Water Supply

Water supply development planning is another controversial issue in which a number of facts were misrepresented in the new airport master plan. It is worth noting that a shortage of water supply in the east of Bangkok has been a critical problem for decades and that water supply development is costly.

In the new airport master plan, the Metropolitan Waterworks Authority (MWA), a state enterprise under the Ministry of Interior, is responsible for providing piped drinking water to the Bangkok Metropolitan Area and some districts of Samut Prakan province. The Provincial Waterworks Authority (PWA), another state enterprise, is responsible for water supply provision to other areas in Chachoengsao province.

Both authorities share the same serious problem of providing water. The most serious problems that exist in areas around the new airport through to the east coast are salinity and the availability of water particularly during the dry season. The study in the new airport master plan stated that the only way to increase the water supply was to build dams in the Bang Pakong River to create storage. As a result, a dam 10 kilometres upstream of Chachoengsao City, the Bang Khla Water Treatment Plant, 12 kilometres upstream of the dam and other similar projects are being developed. However, these

---

13 The figures of land subsidence in Bangkok are from Norconsult’s report.
projects were originally planned to serve industrial demand in Bang Pakong Basin and surrounding urban areas, not the new airport project.

The development of water supplies for areas in and around the new airport is the responsibility of the MWA. Based on the assumed consumption of activities proposed in the new airport master plan, the forecast of water demand is shown in tables of demand figures for 2000 and 2010. It is interesting to discuss how reasonable the forecast of water demand is and how development of the proposal is possible.

According to the MWA, average water consumption per capita per day in Bangkok is currently more than 350 litres. However, the actual consumption is no more than 200+ litres per capita per day because the MWA has not succeeded in solving its own problem of about 30 per cent leakage in the water supply [MWA, 1991 #43]. In the new airport master plan, the consumption per capita for MWA in 2000 was set at 259 litres per day; however, the leakage problem was not considered.

The total amount of water demand was calculated very simply. The population was multiplied by the consumption per capita. However the most serious controversy is that only the populations in Lat Krabang, Bang Phi and Bang Bo were used in calculating the figures. In other districts, it was assumed that only 10 per cent of the total population would need a water supply according to the Land Use Plan that identified 10 per cent of these areas as residential. For instance, it was projected that there would be 533,000 inhabitants in the Pravet district of Bangkok in 2010, but it was assumed that only 53,300 people would require a drinking water supply.

Similar criteria were applied to water demand in the industrial areas. The low figure of 8 to 8.5 cubic metres of water per rai (or 1,600 square metres) per day was used for the calculation compared with the current rate of 12 cubic metres used by the Industrial Estate Authority of Thailand. It recommended a separate system for supplying low quality water from reservoirs instead of providing only drinking quality water to the industries [Norconsult, 1994 #38, volume III, 4-9, 4-10].

The study concluded that an amount of 501,837 cubic metres of water supply per day would be provided by MWA, of which 27,000 cubic metres per day would be needed for the new airport in 2010 [Norconsult, 1994 #38, volume III, 4-10, appendix 12]. However, the SAMP did not present any calculations relating to the figure of 100 million passengers per year. Furthermore, it stated that the projections presented should be considered as a planning aid, rather than as absolutely correct data.
Chapter 6 Master Plan for the SBIA

It was proposed that two pumping stations in Lat Krabang and Bang Phli would be developed in 1997 and 2000 respectively and that water would be supplied through a pipeline direct from Bang Khen Water Plant\(^{14}\). Despite the confusion of these projections, it was estimated that a total cost of 14.6 billion baht would be needed for the proposed development projects to the year 2010, which was viewed as a profitable investment by the entrepreneur [Norconsult, 1994 #38, volume III, 4-21].

Obviously, the planning context of water supply development is no different from other issues in the SAMP. A number of facts were misrepresented and the conclusion covered up weak points in the airport project.

6.2.4.4 Solid Waste

Solid waste disposal has become a serious problem for every Thai city because of increased public awareness about environmental concerns. The biggest problem is dumping sites and although proposals have been made for suitable treatment sites, they are not welcomed anywhere. Consequently this issue has become a political concern at both the local and national levels\(^{15}\). It is therefore important to review how the issue of solid waste was studied and planned in the SAMP.

Under the Local Administration Act in Thailand, three different types of local authorities are responsible for solid waste collection and disposal: the Municipality, the Sanitary District and the Local Administration Organisation. Medical and industrial inorganic hazardous wastes are mostly collected, burnt or treated by the BMA and the Department of Industrial Works of the Ministry of Industry. However in some areas, the private sector is hired to transport, collect and dispose of solid waste.

In terms of boundaries for the SAMP, solid waste collection and disposal is the responsibility of all three local authorities. Besides the BMA, the municipality of Samut Prakan, the two sanitary districts\(^{16}\) of Bang Phli, Bang Bo, two authorities in and around the new airport and the Provincial Administration of Samut Prakan were all responsible for improving their solid waste collection and disposal systems. It is not clear why areas of Chachoengsao province, which had been considered in other issues in infrastructure

\(^{14}\) MWA has three water treatment plants: Bang Khen, Sam Sen and Thonburi. The sources of raw water for these plants are in Prathom Thani province, 90 kilometres upstream of Bangkok. The raw water is pumped along an 18-kilometre canal to the Bang Khen Treatment Plant, the largest treatment plant with the current capacity of the production of 2 million cubic metres per day. MWA has a plan to increase the capacity by pumping the raw water from Meklong River in Kanchanaburi, 120 kilometres west of Bangkok. The project would cost more than 3 billion baht.

\(^{15}\) One good case is the strong protest against the proposed dumping grounds of the Chiangmai City that were moved around for years before being concluded.
development in the master plan, were not included. Some boundaries were overlooked in the study and as a result the disposal of solid waste was not fully studied in the SAMP.

Projections for solid waste disposal in and around the new airport were simple. Population numbers projected in the master plan were multiplied by the average disposal quantity of solid waste per capita. This methodology however was flawed and controversial.

It was simply concluded that a solid waste generation rate of 0.9 kilogramme per capita per day and a density of 275 kilogramme per cubic metre could be used for calculations. Consequently, the total volume of solid waste generated in areas of the new airport Land Use Plan would be 1,620 tons per day or 590,000 tons per year in 2010. By using a rate of 2 kilogrammes per bed per day, the medical waste in the Land Use Plan would be only 4.3 tons per day or 1,570 tons per year in 2010. The industrial hazardous waste would be 81,000 tons per year in 2010 [Norconsult, 1994 #38, volume III, 5-18, 5-19].

Some crucial facts were not considered in the second airport study. In April 1995, the Department of Public Cleansing in the BMA reported that the average solid waste generation rate in Bangkok was 1.8 kilogrammes per capita per day and projected that there would be about 10,000 tons per day in 2003. It is believed that the current amount of solid waste generated in the Bangkok Metropolis is more than 8,000 tons per day but the BMA can only collect 6,633 tons per day [(BMA), 1996 #44].

However, the focus of the solid waste study was not on the new airport. The second airport study briefly concluded that in 2010 there would be 130 tons of solid waste daily from the new airport and 125 tons from areas around airport [Norconsult, 1994 #38, main report, 7-22]. It is not clear why the figure of 100 million passengers per year was not mentioned in the calculations.

The SAMP proposed three possible alternatives for solid waste treatment and disposal: (1) sanitary landfill, (2) a composting plant and (3) an incinerator. However, no conclusion was made on the most suitable option. The issue became confused when the second airport study also recommended that a further study be done on a conceptual engineering and financial feasibility.

\[^{16}\text{All sanitary districts in Thailand have been upgraded to municipalities since May 1999.}\]
Chapter 6 Master Plan for the SB/A

The most serious issue relates to the dumping site. In Figure 6.11, a site in Samut Prakan province, close to the sea was proposed for solid waste treatment and disposal. This means that in 2010 an amount of about 1,280 tons of solid waste would be dumped and treated every day at the site, just metres from the Gulf of Thailand. The Gulf of Thailand was not shown in the original map recommending the dumping site (see Figure 6.11). The issues of environmental risks and the serious consequences of the proposed site were not studied or even mentioned in the SAMP.

My argument is that the presentation of the solid waste issue in the SAMP was done to cover up more sensitive facts about environmental concerns which could stop the development of the new airport project. A review of the following issues reinforces this argument.

6.2.4.5 Wastewater Collection, Treatment and Disposal System

Water pollution is not a new problem in Thailand. Because of ignorance for decades, water pollution has become critical and widespread not only in Bangkok but also in every town and city. In Thailand, the management of water pollution in the 1990s is at an early stage of development. A recent initiative by the BMA in association with environmental movements, started the first stage of a wastewater treatment project in Bangkok which has stimulated public interest in solving water pollution problems properly. The issue of wastewater collection, treatment and disposal was therefore addressed in the SAMP as an environmental concern.

The importance of wastewater management was recognised in the master plan but the details were totally misrepresented. The study stated that five industrial estates located in the second airport Land Use Plan had their own wastewater collection and treatment facilities, therefore wastewater from these industrial estates was not considered in the master plan. Worsening water pollution from individual factories in Samut Prakan was pointed out briefly and solutions proposed by the Department of Public Works were discussed. However it was simply concluded that wastewater from the industrial sector was not a primary concern for the master plan [Norconsult, 1994 #38, volume III].

The projections of water supply demand referred to in the section above were reviewed in association with former reports prepared by the NESDB. It was assumed that about 80 per cent of the water used would be discharged as wastewater. The wastewater generated would be 200 litres per capita per day in 2010. This assumption
became confused when the consortium reconsidered the land use distribution in the land use plan.

The consortium assumed that there would be 210 persons per ha in the industrial areas in 2010. For commercial and institutional land use, an average population of 40 persons per ha was assumed. An equivalent population of 20 persons per ha was assumed for community land use. After identifying the percentage of land use distribution, tables showing wastewater projections were presented, however, details about the calculations were not included. Based on the number of passengers, the wastewater projection for the new airport was about 23,000 cubic metres per day in 2010. It was concluded that the total flow of wastewater in the master plan would be 436,819 cubic metres per day in 2010 based on the assumption of the land use distribution [Norconsult, 1994 #38, volume III, 6-9, tables 11 and 13].

Because of the geographical constraints of the flat terrain, the wastewater collection system\(^\text{17}\) would require a high investment. Besides costly lifting stations and effective pumping stations, a conventional high-rate activated sludge process was proposed and a site at Bang Phi was recommended for the location of the treatment plant. Because of poor soil conditions and the possibility of ground water contamination, the ocean disposal of treated effluent through a short outfall was considered to be the most suitable disposal option.

However a number of facts were misrepresented in the study. The physical constraints of elevation of about 0.50 to 0.80 metre above the mean sea level and the serious risks of the daily high tide were not examined in the study. The consortium assumed that all aspects of the wastewater issue had been studied in the master plan. However, the impact of possible failures caused by seasonal floods and flash floods were not studied or even mentioned in the SAMP.

If environmental concerns were actually the first priority in decision making, the new Bangkok airport at Nong Ngu Hao site would have been cancelled. The same approach was also taken with other large controversial projects and a similar approach and methodology was used when it came to discussing the sensitive issue of environment. Facts are presented in ambiguous way in cases where they may have a negative impact on the project.

\(^{17}\)Without a reasonable slope, water will not flow away at the required speed.
Not surprisingly, the environmental impact assessment of the new Bangkok airport became controversial when the master plan was completed. Unfortunately, the assessment became less important after implementation of the project began. Public interest moved away from environmental issues to political scandals when the extent of corruption involved with the construction of the new Bangkok airport became known. This will be discussed in the section on implementation.

6.2.4.6 Electrical Power System and Telecommunications

The electrical power system issue was briefly discussed in the SAMP. The emphasis was on forecasting electrical power consumption in the new airport and developments in the surrounding areas. Based on land use distribution in the master plan, the residential, commercial and industrial areas were defined as the three major consumers. A simple calculation for the residential area was made based on number of dwellings. Another calculation was based on the number of persons in the commercial and industrial areas. However, details of the calculations and forecast were not presented in the report.

New electricity terminal stations were proposed and a total investment of 21,266 million baht was estimated. The electrical power system is one of the most complex issues in planning and requires a large amount of data and reasonable assumptions. Because the study was limited to less than a year, the electrical power system planning for the new airport and the surrounding areas could not be completed. As a result, the electrical power system was not reviewed in detail in terms of the planning context.

Telecommunications developments were also discussed briefly but not studied in detail. The Telephone Organisation of Thailand (TOT), a state enterprise, and two private companies, Telecom Asia (TA) and Thai Telephone and Telecommunication Pcl (TT&T), have played a role in the development of telecommunication in areas around the new airport. Two million additional lines for the Bangkok Metropolitan Region and one million additional lines for the provincial areas were being provided as a part of the seventh national plan (1992-1997). However, the national plan stated that the new airport and its impact on these areas were not included in current development projects.

Consequently, the additional demand created by the new airport was studied only briefly in the second airport study. Three main sources of additional demand for services were identified: the airport complex, the additional industrial and commercial
Chapter 6 Master Plan for the SBIA

development attracted to the area and the residential development around the airport. It was assumed that the total additional lines needed in 2010 would be based on the density of 30 telephone lines per 100 persons. But the population used for this calculation was much less than the projections in the Land Use Plan in the new airport master plan. For instance, it was assumed that only 100,000 persons in Lat Krabang in 2010, compared with 213,000 persons projected in the land use plan, would demand the telephone service [Norconsult, 1994 #38, volume III, 8-8, 8-9]. This calculation confused the resident population with commercial need.

The study concluded that the total demand generated by the new airport project from all sectors would be 235,588 lines in 2010. A total development investment of 7,500 million baht was presented based on the average cost in 1994 of US$1,200 to install a line [Norconsult, 1994 #38, volume III, 8-11].

Hence, it is clear what the making of the new airport master plan was all about. In my view, the new airport master plan was made to convince the public that the project was ready and would not have negative impact on Bangkok.

In the overview of the infrastructure development planning contained in the SAMP, a large number of facts were misrepresented and numerous negative consequences were ignored. Projections of infrastructure demands were low as they were based on poor assumptions. Despite these controversies, biased assumptions about the prosperity of the new airport project continued and its development potential was stressed on many occasions. However, undeniable deficiencies are gradually being revealed during implementation of the airport project and these will be discussed in the following section.

6.3 Assessment of Implementation

In this section, the implementation of the SBIA project will be assessed focusing on a number of development projects and the consequences of recommendations proposed in the SAMP. This focus will be on the implementation of the airport project during the administration of Chavalit Yongchaiyudh from November 1996 to November 1997. The most interesting case is the landfill project which supports the arguments presented in previous sections. It will also illustrate the frustration of the authorities concerned when faced with a number of undeniable facts which were covered up in the master plan.
Chapter 6 Master Plan for the SBIA

The issue of management will also be discussed in terms of the management of time and resources. It is worth noting that the dramatic changes\textsuperscript{18} in Thai politics in 1996 and 1997 greatly influenced every mega-project in Thailand including the new airport project. It is interesting to study how the actors involved played their roles defensively and offensively in the development of the new Bangkok airport under political pressure and uncertainty.

Most information used in this section is from contemporary newspapers and weekly magazines published in English and Thai. Different viewpoints will be discussed in order to point out the complexity of political networks and their consequences during this period.

6.3.1 Development Preparation

After the SAMP was completed in August 1994, there was little progress in the development of the new Bangkok airport, which was originally planned to open in 2000. A new state-owned company named NBIA was established during the second administration of Anand Panyarachun\textsuperscript{19} to take responsibility for the new airport development. The NBIA was designed to be independent from the AAT at Don Muang airport, which is controlled by the Thai Air Force. The establishment of the NBIA was an attempt to end the military engagement in civilian affairs.

The NBIA was set up with an initial registered capital of 10 billion baht provided by the Finance Ministry with 49 per cent and the AAT with 51 per cent of investment and ownership. An investment plan for the new airport development was approved in August 1996. In January 1997, the NBIA received a 50 billion baht loan from Japan's Overseas Economic Cooperation Fund (OECF); however, more funds were needed. It was expected at that stage that the cost would increased from 97 billion baht to over 100 billion baht. The poor and unstable financial conditions in Thailand became a critical factor which totally influenced the development direction of the airport project later\textsuperscript{20}.

\textsuperscript{18} There was a sign of financial problems in early 1997. The government floated the Thai currency in June and the Thai financial system collapsed promptly. Chavalit was forced to resign in November 1997.

\textsuperscript{19} 10 June 1992 to 13 September 1992

\textsuperscript{20} Consequently, on 13 January 1997, the government had to reconsider the costs and benefits of the proposed new airport. Eventually, on 27 May 1997, Cabinet approved that the new Bangkok airport would be scaled down with the total cost of 68.8 billion baht. Only one runway will be built, which can serve about 20 million passengers annually by the year 2003.
Financial feasibility is a most important issue that must be seriously and carefully considered with every major investment. However, this issue was not studied or comprehensively examined in the master plan of the new Bangkok airport. As a result of this ignorance, many unexpected critical problems have arisen. The main theme of the SAMP has been completely forgotten.

In the early stages of development preparation, there was an argument over the relocation of villagers out of the construction site. By January 1997, 1,792 families who had been paid compensation years previously, had not yet been moved out. The argument was that they were compensated at a rate of 4,000-5,000 baht per rai, based on 1961 calculations, but current land prices had reached 6-7 million baht per rai. After each family was given 800,000 baht more in compensation, the last 60 villagers moved out in February 1997. A total of 1.4 billion baht was paid by the NBIA in compensation.

This resulted in a conflict between the NBIA and the AAT because neither of them had prepared a budget for relocating the villagers. This matter had never been discussed and the SAMP did not consider it as a problem. This has situation has influenced many construction projects for which contracts have been signed, particularly the landfill project and the dike and polder system.

Even though the problem of the villagers was over by February 1997, the landfill project had not yet started in May 1997 because the contractors had to wait for the completion of the northern polder and dike which were due to be finished in 2000. The landfill project actually started after a corruption allegation was dismissed in April 1999 because of poor evidence.

The delay in the construction of the polder and dike system is another interesting issue. The system was designed to dredge existing canals around the airport site. The dredged soil and silt was to be used in layers up to 3.50 metres high to build the floodwalls. In practice, the floodwalls could not reach the designed level because of the poor physical properties of the soil and silt. Obviously, this should have been anticipated in the Master Plan.

On 21 February 1997, the Minister of Transportation, Suwat Liptapallop, stated that the new airport project would take more time to complete because of natural difficulties. He mentioned that a variety of factors would prolong the construction including its geography. Importantly, he stated that one cannot fight against the nature. His statement supports my previous arguments that key environmental factors were ignored or suppressed in the preparation of the SAMP.
There was also little progress in other works unrelated to the site preparation, such as the detailed design work which will be discussed in the following section.

6.3.2 Detailed Design

In April 1995, a Thai-American consortium, Murphy Jahn-TAMS-Act Group, was selected to prepare a detailed design of the new airport under a 792 million baht contract. The consortium had 27 months to complete the design work. However, its architectural design became controversial because the all-glass passenger terminal did not depict Thai identity and did not suit the tropical environment.

By May 1997 the consortium had worked for over one year but the NBIA had not yet approved even a preliminary design for the passenger terminal. A conflict arose when the contract was due to expire in the next three months. The consortium needed 500 days to complete the final design. On 31 July, the NBIA gave the extra time of 550 days to the consortium. The design work was 10 months behind schedule and the delay cost the NBIA 200 million baht in damages.

There were many controversies during the design work process. Qualifications and experience in airport design were not considered as the primary criteria in the selection of a designer. Instead the candidate offering the lowest professional fees was chosen. Before signing the contract with the MJTA, Airport de Paris, a French consortium who was another candidate, complained that the procedure for selecting a designer was not transparent. The matter was so serious that there was a protest by the French Embassy in Bangkok.

It is not clear why the design work took so much time, nearly four years. Apparently, the cost damages caused by the delay in design work have been greater than the lower fee charged by the consortium. Moreover, the delay in design work influenced the delays of other projects.

6.3.3 Politics of Landfill

Landfill for the new airport project has been a scandal since September 1995. A number of local contractors were active in bidding for the landfill project. The price of sand quoted in the local market at the time was 86 baht per cubic metre. It was believed that 16 baht of every cubic metre of sand would go to the commissioning authorities and another one baht would go to each of the two middlemen. The contractor would actually
be paid only 68 baht per cubic metre of sand [Matichon, 1995 #45]. Certainly, the prospect of making a fortune from millions of cubic metres of sand became attractive to certain groups.

As a result, heavy lobbying by influential politicians over the landfill bid caused a delay to the new Bangkok airport project. The Deputy Minister of Transportation, Somsak Thepsuthin, changed the specifications for the landfill bid, resulting in a 40 per cent rise in the original budget. The changes affected the bidding procedures and as a result, very few contractors were qualified to bid. Obviously, this delay was caused by political conflict rather than by technical problems.

On 29 November 1996, the Italian-Thai Development Plc. won the bid to reclaim the new airport site at a price of 11,650 million baht for two runways only. This became a political scandal because the contract was signed only two days before a new government took over the administration21. Moreover, the price of sand increased sharply from less than 100 baht to 900 baht per cubic metre. The NBIA argued that the landfill cost was high because the engineering consultant for the airport project required good quality sand. Their explanation was controversial and the allegation of attempted corruption was submitted to the Counter Corruption Committee by a group of losing bidders.

It was estimated that about 20 million cubic metres of sand would be needed which would come from Ayutthaya, Ang Thong and Kanchanaburi, all more than 100 kilometres from Bangkok. Following the signing of the contract, the landfill work was expected to take 1,100 days or three years. The landfill project became controversial and strong reactions came from everywhere.

In December 1996, the governor of Samut Prakan strongly objected to the new airport project. He argued that traffic problems in the affected areas were already critical. The large scale landfill with hundreds of truck journeys every day would cause more problems and would damage the local economy. This was a reasonable argument.

An investigation of a corruption allegation was completed and submitted to the Prime Minister in September 1997, however this matter was kept quiet for two months. The landfill work had already started on 1 November 1997. A political game began when Suwat, as the Minister of Transportation, was to officially open the landfill project on 12 November 1997. But on the same day, Pokin Polkun as Acting Prime Minister,

21 Banharn Silpa-archa took the office of Prime Minister until the last day on 30 November 1996 and General Chalvalit Yongchaiyudh replaced him on 1 December.
suspended the landfill contract and recommended the NBIA cancel the contract it had signed with the Italian-Thai Development Plc. because of the allegation of corruption. This became a time bomb for Chuan Leekpai who became the new Prime Minister a few days later. The politics of the landfill work will continue for as long as it is a political concern.

The landfill issue, involving 20 million cubic metres of sand, and the problems of sand transportation for three years, were not discussed in the SAMP. The landfill project highlights the factors which were neglected in the master plan: the great natural constraints of the geography, the poor condition of the built environment and the poor management of natural resources.

The corruption scandals have eclipsed these facts and the question is how reasonable and profitable the new Bangkok airport will be. In April 1999, the allegation of corruption over landfill was dismissed on the grounds of poor evidence. The landfill project is now back on track.

6.3.4 The Master Plan and Time Management

The time schedule for implementing the airport project was precisely addressed in the master plan, showing a long list of activities and commitments in accordance with the responsibilities of the authorities concerned. Certainly, the completion of any mega-project greatly depends on time management. In the case of the new Bangkok airport project, time management was so poor that almost everything was behind schedule resulting in a number of problems.

A fundamental problem of the new Bangkok airport development is the administrative structure of the management. Even though the NBIA has been established to take responsibility for the project, the coalition government set up a committee to manage the development as a whole. The Prime Minister is chairperson of the main committee and the Minister and Deputy Minister of Transportation chair other sub-committees.

The administration of Chavalit Yongchaiyudh from November 1996 to November 1997 was the airport project's worst period of management. Prime Minister Chavalit was from the New Aspiration Party. The Minister of Transportation, Suwat Liptapallop, was from the Chat Pattana Party and the Deputy Minister of Transportation, Somsak Thepsuthin was from the Social Action Party. These three big parties had completely different policies on the airport development. During this period
of implementation there were a number of changes to the sub-committees and Cabinet made most decisions.

Consequently, management of the airport project became chaotic and its implementation fell behind the schedule in the master plan. The lack of transparency in association with political interference was blamed for the project's delay. It is interesting to study how and why the delays occurred.

The first time the AAT officially acknowledged a delay in the new airport project was in October 1996. The Authority stated that the major cause of the delay was the difficulty in relocating residents from the airport construction site. However, this problem was quickly resolved after more compensation was provided.

Time management became critical when the government was unable to follow up anything in the master plan. By January 1997 the government had already signed 16 contracts with private firms for the new airport project. On 8 January 1997, the Ministry of Transportation stated that the NBIA was running out of funds for the project. This became very confusing because contracts had been signed without any financial planning. As a result, the issue of financial management was discussed urgently as they searched for solutions.

Frustrated by the allegation of corruption with the landfill project, Chavalit caused further confusion when he announced on 20 January 1997 that the new Bangkok airport would be relocated from Nong Ngu Hao to Bang Pu. A few days later Cabinet decided to temporarily suspend the new Bangkok airport project without any detailed consideration of the consequences. The controversy of Bang Pu ended after the proposed move was disputed. In February 1997 it was proposed to reduce the size of the new airport and simultaneously expand the capacity of Don Muang airport. These changes in Cabinet's decisions influenced the development of the new Bangkok airport and confidence in the management of the project.

The future of the new Bangkok airport became more uncertain after the government devalued the Thai currency on 2 July 1997. Consequently, it was expected that the new Bangkok airport project and the expansion of Don Muang airport would cost an extra three billion baht each. Pressured by the economic crisis and influenced by IMF advice on restructuring the economy, the government was moving towards privatisation as a solution. The issue of the management of the two international airports was discussed with the possibility of privatisation being extended to other regional
airports. However, the process of airport privatisation is complex as it would affect the interests of all the authorities involved.

In October 1996, a sub-committee of the Ministry of Transportation recommended that all international flights by Thai Airways International would use the new airport, while Don Muang airport would mainly serve domestic routes. The AAT opposed this and there was a major change in the committee after the change of government in November 1997.

In February 1998, Thai International Airways denied it was moving its base to the new Bangkok airport. It estimated a cost of 20 billion for relocating its headquarters. Other airlines immediately reacted strongly. Their argument was reasonable in that every airline should be treated equally.

On the policy of privatisation, the new government has addressed several possibilities for private investment. In fact, many overseas companies have been interested in privatisation but their main interest has been the international airports at Phuket and U-Tapao, not the new Bangkok airport at Nong Ngu Hao. This degree of interest by the private investor somewhat contradicts the viewpoints expressed in the SAMP.

The implementation process raises serious questions about the success of the new Bangkok airport project and the quality of the master plan. The impact of the new Bangkok airport on the issue of flood will be reviewed in the next chapter.
Part III The Implications of the Politics of Planning and Development

Part I and Part II discussed the historical background of how planning for Bangkok and the development of the SBIA became political concerns. This analysis explained why no progress was made on these two projects for decades and how the consequences of poor administrative, legal and planning systems influenced the development of Bangkok and the SBIA.

As argued in Part II, it is evident that the power struggle among factions in the government influenced these two projects. The formal process of rational planning was interfered with and the public interest was ignored. Moreover, planning for Bangkok and the development of the SBIA did not include the study of urbanisation, which should be a concern of planning.

I agree with David Harvey [1989] that the study of urbanisation is not the study of a legal, political entity or of a physical artifact. It is concerned with the process of capital circulation; the shifting flows of labour power, commodities and capital, the spatial organisation of production and the transformation of time-space relations, movements of information, geopolitical conflicts between territorially-based class alliances and so on [Harvey, 1989 #87, 6-7]. This approach, with all its concerns, is hardly applicable in the case of Thailand because of the narrow and limited view taken by the authorities charged with the task of planning. Previous discussions on these issues have been limited to a small number of scholars with different viewpoints about urban studies in Thailand. However, this thesis concentrates on the rather simplistic idea that people can understand the story of what is happening to their built environment.

It is worth noting that Thais do not care much about the implications of complex issues involved in planning politics. People seem to think that city planning and the development of a new airport are not their concerns. This may explain why very few people attended a public hearing about planning in Bangkok in 1997 and 1998.

In Part III, therefore, I have chosen as a case study a problem which is fundamental and very apparent to Thai people through its direct impact on daily life in Bangkok. To
understand the issues and problems one has to think about the implications of politics for the planning and development of Bangkok and the SBIA. People should know how the city plan and a big project such as the new airport would affect their living conditions.

Flooding in Bangkok has been selected for discussion because it is a recurring problem and one likely to be exacerbated by the development of the airport. The analysis of flood conditions is based on the best available materials that date back to an early study on irrigation and drainage system for areas around Bangkok in 1903.

Chapter 7 discusses the impact of the SBIA on flood protection. An historical analysis of the flood phenomenon is made to explain how and why flooding has become a chronic problem in Bangkok. Reports and studies on flood protection are reviewed to explain why the flood problem remains unresolved. An attempt is made to assess whether the study of flooding and protection measures proposed in the SBIA master plan are reasonable. The implications of planning politics in terms of flood protection for Bangkok are discussed by focusing on the abstract concept of the boundary.

Chapter 8 is a theory chapter. Discussions in chapter 8 focus on three planning domains: city planning, airport planning and environmental planning. The focus is on planning theories, theories of urban politics and the environmental concept of integrating impact assessments into the planning process. A task in this chapter is to understand the impact of politics on planning and development in association with arguments based on these theoretical viewpoints.
Floods are a chronic problem in Bangkok. Besides the daily problem of traffic congestion, people are tired of flood problems. During the monsoon season, some areas of Bangkok are under water for months. But everyone seems to accept this fact as a part of life in Bangkok. Attempts have been made and large amounts of money have been spent on controlling and protecting the city from floods for decades. However, the flood problem remains critical and causes considerable damage to Bangkok and the Thai economy every year.

This chapter discusses the SBIA in terms of flood protection because the airport will block the floodways east of Bangkok. The emphasis is on the impact of the SBIA's development on Bangkok's flood protection. The analysis begins with a geographical perspective of Bangkok and the lower basin of Chao Phraya River to describe its natural setting. As in previous chapters, an historical analysis is made to show how floods have become a problem for Bangkok. Key early studies of flood problems in Bangkok are reviewed to provide a better understanding and a clearer picture of the development of flood protection. Discussions focus on changes in the built environment of Bangkok to explain why the flood protection system is not functioning. The SBIA master plan is reviewed by focusing on planning solutions.

As argued in previous chapters, it is not practical to develop a massive project such as the new airport on a floodway especially as the project is costly and will change the natural pattern of drainage. The landfill project discussed in Chapter 6 is a good example. Bangkok's flood problems were not considered in the SBIA master plan and no solutions were provided. A key question is what Bangkok will be like after the new Bangkok airport is completed. Because of political interests, this controversy has had very little influence on the development of the SBIA and the project is continuing. As a result, flood control and flood protection in Bangkok will eventually be more costly. This chapter compares the different planning philosophies of the Bangkok Plan 1992 and the SBIA master plan, focusing on flood protection planning.
Chapter 7 The Airport and Flood Protection

7.1 Floods and the Physical Environment

A comprehensive analysis of the causes of flooding and other flood-related studies requires a wide-range understanding of geography, topography, geology, hydrology, climatology and meteorology. The discussion will be integrated to illustrate the development of flood conditions in Bangkok. It is worth noting that current understanding of Bangkok’s flood problems is extensive and there has been no agreement on solutions. Unfortunately, the origins of the flood problem seem to be ignored while authorities concentrate on finding solutions to the problem. In this section the geography of Bangkok is discussed with an emphasis on the development of the built environment, focusing on flood geomorphology and flood protection planning over the past century.

Floods are both physical and socio-economic phenomena which result from a number of basic causes. The most frequent causes are climatological and nature [Ward, 1978 #59, 5-11]. The problems Bangkok faces are largely the result of human activity. In fact, the floods were once part of the ecological system that brought fertile sediments to the lower plains of Bangkok which were the best areas for rice growing in Thailand. During the past few decades, it has become clear that enormous changes in the man-made environment have become the primary cause of flood problems.

The human response to the problem of flooding in Bangkok in terms of making adjustments has not been rational. Despite the empirical facts, the causes of the flood problems have been misrepresented and alternative solutions have been overshadowed by economic reasons. In the short term, the benefits of developing the SBIA have been presented so as to obscure the damages that floods will undoubtedly have on Bangkok.

7.1.1 Geography of Bangkok

It has been known for centuries that Bangkok is on a flood plain\(^1\) which is built of sediments carried by the Chao Phraya River. The term ‘Sea of Mud’ on east Bangkok was described when the city was built in 1782 [Sternstein, 1982 #3, 8]. In other words, Thais have always been aware of the geography of Bangkok. Most tools in those days were primitive and scientific knowledge was limited, however, the Thais understood their environs, which included the frequency of flooding.

---

\(^1\) William G. Hoyt and Walter B. Langbein describe the flood plain as the low land that borders a river, usually dry but subject to flooding [Hoyt & Langbein, 1955 #57, 12].
A better understanding of Bangkok and its surrounding environment in terms of an informed approach, gradually developed after Westerners introduced new scientific methods. Rainfall statistics in the lower Chao Phraya River were first collected systematically by American missionaries in 1845 [Heide, 1903 #28, 150].

During the reign of King Mongkut (1851-1868), mapping and topographical surveys played a much greater role in modernisation projects in Bangkok and certain provincial areas. The growth of urbanism and construction projects fostered the development of modern mapping, reshaping knowledge and understanding [Winichakul, 1994 #60, 116-117]. Systematic data collection techniques and map making greatly influenced numerous studies during the next few decades.

In addition to the 1894 Directory for Bangkok and Siam by James McCarthy, one of the earliest modern studies of the geography of Bangkok was the General Report on Irrigation and Drainage in the Lower Menam 3 Valley prepared by J. Homan van der Heide, an engineer with the Waterstaat of Netherlands India. This report was submitted to the Ministry of Agriculture on 24 January 1903. The report was prepared to develop an irrigation system which would provide sufficient water to increase rice production 4 [Heide, 1903 #28, 33].

The elevation and topography down-stream of the Chao Phraya River from Paknamp 5 down to the coast were surveyed for the Bangkok-Chiangmai railway from 1887 to 1889. The survey concluded that Bangkok and Paknam 6 had the slightest slope of about 1/14,000. The same report presented a table showing the approximate elevations of Bangkok at 6 metres and Paknam at 4.5 metres above sea level at the low tide as shown in Figure 7.1. It also pointed out that the lowest parts of the river lay at nearly the level of the ordinary high tide [Heide, 1903 #28, 4-8].

---

2 Because of political turmoil in the Mekhong region, boundary mapping surveys started in 1884 and as a result, the first modern map of Siam, the so-called McCarthy map, was made in 1887. In 1885, the Royal Survey Department was established and mapping was no longer regarded as a foreign activity in Siam [Winichakul, 1994 #60, 119-129].

3 Menam in Thai means 'river' which hereby is the Chao Phraya River.

4 In 1889, the Siamese Government granted a concession to a private Company, the Siam Canals, Land and Irrigation Company, for a period of 25 years to dig canals in the jungles between the great Menam and the Nakon Nayok river to the north of the Klong San Sep under the stipulation 'that all the uncultivated lands in the region crossed by the canals to be excavated, to a certain distance at both sides thereof, should belong to the Company' [Heide, 1903 #28, 26].

5 It is now Nakhon Sawan City.

6 It is now Samut Prakan City.
Figure 7.1 Plan to accompany General Report on Irrigation of the Lower Menam Valley

This is very interesting information. In my view, these figures are reasonable because Hiede referred to a modern map of Bangkok that had been made by McCarthy.
in 1887. If this data is accurate and is compared with Bangkok's current elevation of about one metre above mean sea level (MSL), it can be concluded that Bangkok has sunk about five metres during the past century. This is why continuing subsidence has become a serious problem for Bangkok as we shall see later.

Heide also described the flooding and the landscape south of Bangkok along the coast in 1903.

The flooding in the lowest tracts of land is not entirely owing to the rivers, but partly, especially in the commencement, when the rivers have not yet risen to their highest level, to the fact that all the water drained off, in consequence of the irregularity of the rainfall, from the higher parts of the whole regions between the main rivers, is gathered in these lowest tracts.

The natural drainage line of these tracts is in a southern direction, about parallel to the main direction of the rivers, but drainage in this direction is obstructed very much by the embankment of excavated earth along the existing klongs (canals) running transverse to this direction [Heide, 1903 #28, 25].

Studies of Bangkok's geography were also published in technical monographs when Litchfield Whiting Bowne & Associates prepared the first modern city plan for Bangkok in 1960. More comprehensive studies were undertaken in the 1960s focusing on Bangkok's drainage system problem.

Figure 7.2 shows the geography of Bangkok in terms of the natural drainage area of Chao Phraya River. Camp, Dresser & McKee submitted a report, Sewage, Drainage and Flood Protection Systems; Bangkok and Thonburi, to the Bangkok Municipality in February 1968. In this report, an area of about 177,000 square kilometres was identified as the drainage area for Bangkok [Camp, 1968 #61, 31]. This explains why a large amount of water is discharged from Bangkok during the monsoon season. Geological knowledge was also applied in the study. In 1967, 12 bores sunk to a depth of 20 metres indicated that the subsurface conditions of Bangkok were relatively uniform. The survey identified a thick layer of very soft clay and silty clay of two to 18 metres beneath the surface. The ground-water level in Bangkok is very close to the surface during the wet season. Even during an extremely dry season the ground water is rarely more than a metre below the surface [Camp, 1968 #61, 3-5][Camp, 1970 #62, 2-3]. These geological facts greatly affect the underground construction of drainage facilities in Bangkok.
These geographical facts have also been discussed in almost every study of Bangkok’s flood problems. However another important fact which is rarely mentioned, is Bangkok’s geographic location. Bangkok is located in a flood climate region with...
100 or more thunderstorms per year [Victor & Baker, 1988 #63, 16-23]. This means that there is a high risk of floodwater from thunderstorms.

Because of these natural conditions, the risk of flooding in Bangkok is extreme. However, these serious concerns have had little influence on the physical development of Bangkok and the city continues to grow. These natural factors combined with the expansion of urban areas without any control for decades, has resulted in the constant failure of flood protection and flood control. More details on this are discussed below in changes in the built environment.

7.1.2 Changes in the Built-Environment

In this section, the emphasis is on how changes in the built environment of Bangkok have influenced the flood problem. Socio-economic influences on the growth of the city are also discussed briefly to give an overview of these changes.

It is worth noting that a problem with studying changes in the built environment of Bangkok is the accuracy of available data, and the compatibility of data collected by different authorities. This problem may be not serious for local authorities but it is very important for scholars. For decades, despite numerous studies and reports, little comprehensive analysis has been carried out. In addition, some studies are controversial and unreasonable in their use of data. Little attention has also been given to the consequences of changes in the built environment on the flood problem.

Despite these problems, however, the best available information and data is used in this section to explain the development of built forms in Bangkok. The analysis and discussion of patterns of urban change over time will substantially support the argument in the next section that uncontrolled changes in the built environment have affected the flood geomorphology in Bangkok.

---

7 According to annual rainfall statistics for Bangkok from 1952 to 1962, the minimum rainfall was 1,275 mm. in 1959 and the maximum was 1,957 mm. in 1957. From 1972 to 1982, the minimum was 1,040.1 mm. in 1977 and the maximum was 1,829.6 mm. in 1982. Compared with recent statistics, the maximum rainfall in 1995 was 1,693.6 mm. with 120-150 days of rain in a year.

8 In principle, all local authorities are required to collect and classify data as routine work and this data usually appears in the BMA annual report. According to my field surveys, data collection is controversial because local officials make up data because of corruption. Importantly, there is no feedback process to check the reliability of the data. The most scandalous controversy involves data on building permits. In reality, a building permit can be issued after a suitable bribe has been offered to the authority concerned, consequently, a large number of illegal buildings have been constructed all over Bangkok including numerous slums and other illegal settlements. After careful investigation, in my view, the statistical data only presents a general view of Bangkok and should not be used for mathematical model study.
Floodplains have attracted economic development and settlements in most parts of the world [Ward, 1978 #59, 113]. Some floodplains have become permanent settlements. People who live close to flooding rivers learn the behaviour of floods by observation [Victor R. Baker, 1988 #63, 79]. The experience of Thais is similar. Typical Thai houses on bamboo rafts and rows of floating shop-houses along the river in Bangkok in the 19th century, reflected the adjustment between man and river. In other words, the people of Bangkok in those days understood its geography and knew how to live in harmony with nature despite the problems of sanitation during the dry season.

After the Treaty of Friendship and Commerce was signed with Britain in 1855 which paved the way for trade with the West, Bangkok underwent a radical change ‘from a floating village to a modern metropolis’. Rice became the most important export product for Thailand⁹ and the irrigation and drainage systems were extensively developed to increase rice production. Hence, foreign trade influenced the built environment of Bangkok, although the city was still relatively compact and surrounded by rice fields in 1925 [London, 1980 #1, 29-30]. When James McCarthy surveyed the area in 1888 to make maps, he insisted that there was no settlement in the north or east of Bangkok. When he returned in 1895, he found that the land in Rangsit had become villages and paddy fields. A town named ‘Thanyaburi’¹⁰ was established in Rangsit in 1902, followed by more settlements [Arsawai, 1987 #21, 89-91].

Apparently the rice fields on the wet land around Bangkok functioned as floodways and the built environment did not cause ‘significant’ flood problems during this period. Other changes in the built environment in terms of waterway development during this period will be discussed in detail in the section on flood geomorphology.

As discussed in Chapter 2, Bangkok changed greatly from 1910 to 1975 as shown in Figure 2.6 [Sternstein, 1982 #3, 86-91]. Development patterns in the north and along the east coast were a result of infrastructure development and industrial development during this period. During the 1980s, the mangrove and nipa forests south of Bangkok, along the old Sukhumwit Road disappeared completely as the area was urbanised. Uncontrolled development during this period had an impact on the drainage system of Bangkok.

Figure 7.3 shows the development of the road system in Bangkok in 1935, 1955 and 1975 which was studied by Sternstein [Sternstein, 1982 #3, 89]. The most serious

---

⁹ The value of exported rice increased from 22.481 million baht in 1900 to 65.840 million baht in 1911 [Arsawai, 1987 #21, 129].
change was the reduction in the significance of waterways. As a result the natural floodways and drainage systems in Bangkok have permanently disappeared. This also explains why floods in Bangkok have become a chronic problem since the 1960s.


Figure 7.3 Reduction of waterways and development of the road system in Bangkok, 1935, 1955 and 1975

In addition to aerial photographs, changes in the built-environment of Bangkok can be studied by analysing the number of building permits issued for new buildings and floor areas by local authorities in Bangkok. However, this approach is limited by the data collection system which just started two decades ago.

10 The meaning of Thanyaburi is the town of rice, which may reflect land development in this period.
Statistics of development trends Bangkok in the 1980s and 1990s provide the best available data\(^1\). In 1984, there were 33,678 new buildings with a total floor area of 7.108 million square metres. During the period of economic boom and property speculation in Bangkok from 1990 to 1994, the total area of new buildings higher than four storeys was 75.139 million square metres. High-rise buildings became possible because of technological advances in construction methods and began to reshape the landscape of Bangkok along with increasing land prices. Statistics\(^2\) in this period show that property development in the Khlong Toei district near the port was the highest with 11.09 million square metres. Meanwhile, similar statistics from peripheral districts such as Lat Krabang, north of the new Bangkok airport, where almost 80 per cent of the area is identified as a floodway by planning law, also show significant changes in the same period. Importantly, the total floor area of new buildings approved in Lat Krabang increased sharply from 17,732 square metres in 1990 to 296,344 square metres in 1994 [BMA, 1995 #65, 8]. As a result, these new built forms are on the floodways and influence not only the existing drainage system but also the pattern of flood protection.

The built environment of Bangkok in the 1990s has changed greatly. The city is more dispersed and urban areas are spread in every direction and cross the boundaries of Bangkok to nearby provinces. Rice fields and the beautiful landscape on the floodplains, including in the supposedly preserved green belts, have been replaced by housing projects. These changes do not reflect the mechanism of supply and demand in the housing markets but property speculation in the early 1990s. As a result of the collapse of the Thai economy in 1997, many of these projects have become bankrupt, including the new town of Muang Thong Thani on Changwattana Road, one of the mega private projects that has become the most expensive ghost town in Thailand.

Besides shortcomings in these projects which have caused considerable damage to the national economy, these empty built forms which were developed as a result of loopholes, now permanently block floodways. In Bangkok as a whole, there is only one open area in east Bangkok which still acts as a natural floodway with about four kilometres of floodpath. This floodway, which was included in the Bangkok Plan 1992, has been preserved and runs more than ten kilometres towards to the sea. The SBIA is located near the end of this floodway.

---

\(^1\) The first annual report and statistics for Bangkok were produced in 1980. Unfortunately, data sets for 1981 and 1982 were lost because of flood problems. In addition the BMA only had four persons working on the statistical data collection. As a result, the second annual report was produced in 1984 but did not include statistics for building permits [BMA, 1984 #66, 1].

\(^2\) More details are shown in Appendix 7.1.
Chapter 7 The Airport and Flood Protection

The increasing number of built forms has influenced not only flood protection patterns but also the increased demand for water supplies in Bangkok. Because of the inadequate distribution of water supplies, these new developments have increased the use of underground water, which has caused serious subsidence problem in many areas of Bangkok. This explains why drainage systems are not working and why drainage networks in these areas have to be revised often. The increased demand for water supplies has also affected flood problems in terms of the increased amount of wastewater flowing into waterways, which will be discussed in the following section.

7.1.3 Contemporary Flood Geomorphology

Paradoxically, there is little scientific interest in flood geomorphic research because of the lack of data and information. A complete study of the flood phenomena in Bangkok has never been made and modern attempted studies of the flood problem have been unable to proceed. However, the geomorphic flood experience during the past few decades has provided another perspective on floods in terms of the mutually interactive systems between man and nature. The historical background to flood control will be discussed briefly to explain the development of the present situation and to give an overview of changing policies on water management. The discussion in this section focuses on the role of floods in shaping the landscape of Bangkok and how changes in the built environment have affected flood processes. The emphasis here is on the floodway east of Bangkok where the SBIA is being developed.

It is worth noting that since the first settlement, man has interrupted the balance of the water cycle on the floodplains of the Chao Phraya. During Bangkok's early days, most canals and waterways were developed to facilitate military movements; for instance, in 1737 Klong San Saep connected two rivers, the Chao Phraya and the Bang Pakong. An initiative to control water as part of the southern central plain conservation scheme started at the end of 1902. Many rivers, canals and waterways around Bangkok were redredged and completed in 1912. They were all were connected and controlled by locks and regulators at both ends of the canals to conserve water for navigation and irrigation. The main canals on the west bank of the Chao Phraya River were redredged in 1939 and all were dredged in 1957. However, the water in these canals and waterways was still far from sufficient to feed the agricultural areas. It was concluded that the scheme could not be regarded as completed until a major dam, the Chao Phraya Dam on the Chao Phraya River, was built and the water was regulated by passing
through these canals to these areas. Eventually, a water distribution system of 246 canals about 2,200 kilometres\(^\text{13}\) in total length, were developed \([\text{(UN), 1959 #64, 107-111}]\). Great attempts were made during the first half of the century to reshape the landscape to conserve water rather than to protect the land from floods.

Since the Chao Phraya Dam in Chainat was completed in February 1957, the drainage basins of the lower floodplains have changed. More significant impacts on the geomorphic aspects of flooding began after the Bhumiphol Dam, the first hydroelectric power project which was located some hundreds of kilometres upstream of Bangkok, was completed in 1964. Since then, it became national policy to develop dams upstream of every river in Thailand. In accordance with consequences of upstream deforestation, these dams have had a number of impacts on the floodplains downstream such as erosion, transportation of sediments which affect drainage patterns, and seawater intrusion. It is taken for granted that upstream dams are important and can protect settlements downstream, including Bangkok, from flood hazards. However, arguments about the advantages of these dams have become controversial since Bangkok’s floods have become a chronic problem.

In contrast to the enormous upstream development of bigger dams in the 1970s and 1980s, the need for improvements to canals on the floodplains around Bangkok has been ignored. Public policy on water control has also changed. Rice is no longer the country’s primary export and has been replaced by modern industrial products. Canals in and around Bangkok have become drainage systems for new urban areas and numerous factories. As a result, these canals are heavily polluted and their old functions of transportation and irrigation system have been forgotten.

In February 1968, Camp, Dresser & McKee proposed a flood protection plan for Bangkok. Figure 7.4 shows the various components of the proposed drainage system with approximately 300 kilometres of flood barriers or embankments to keep the Chao Phraya River floodwaters out of protected areas which are concentrated in a core area of 150 square kilometres \([\text{Camp et al, 1968 #61, 98-100}]\). However, the recommendations for the historical quarters of Bangkok were implemented and the city has continued to grow and flood protected areas have been extended accordingly.

\(^{13}\) This total length does not include the five main canals.
The policy in 1980s was to protect and control floods in the city core of Bangkok. Consequently, more pumping stations were built in association with the development of polders and embankments. During this period, many reports and
studies on Bangkok’s flood problems were produced and many alternatives were proposed. However, these expert studies and proposals have been ignored and the solutions became political concerns that will be discussed later.

In the 1985 master plan for flood protection as shown in Figure 7.5, the Prakanong polder was determined as the second and outer barrier for flood protection east of Bangkok. The larger areas beyond the Prakanong polder, from Klong Nong Bon to Lat Krabang, the location of the SBIA, were defined as flood retarding areas. Although an area of 501 square kilometres was to be included in the study in 1985, the study only covered an area of about 260 square kilometres because of financial problems. Consequently most areas in east Bangkok were totally submerged for three months in 1985. The floods were among the worst experienced by people who lived outside the barriers.

It is clear that flood problems in the 1990s have been caused by more complex factors than geomorphic factors because of changes in the built environment. In 1995, flash floods resulted from seasonal rains in Bang Bua Thong, a district of Nonthaburi some kilometres north of Bangkok and some newly built housing projects were nearly three metres under water within a few hours. These floods created a controversy as there had never been flash floods like this before. How could they happen in areas such as this? The local authority prepared a report on flood damage however no further investigations were undertaken. It is time that flood geomorphology in Bangkok is seriously studied.

Basically, flood flow depends on the physical characteristics of drainage basins and stream channels. The flood phenomena in the 1990s reflect this. There is now serious concern that the problem of flash floods, similar to the case of Bang Bua Thong, has spread throughout Bangkok. Even though a comprehensive analysis cannot be made here, it is quite clear that these unusual floods are consequences of changes in drainage networks and the interactive system between the built environment and flood geomorphology. Most importantly, this interaction has caused failures in flood protection and control in Bangkok, resulting in flood problems becoming more complicated.

---

14 See Appendix 7.2
15 In 1985 Japan International Cooperation Agency (JICA) submitted ‘The Master plan for Eastern Suburban Bangkok’ that proposed floodplain management and structural measures for an area of 501 square kilometres.
Chapter 7 The Airport and Flood Protection

It is clear that the SBIA will greatly affect the drainage basins and the flood geomorphology in east Bangkok. Despite the empirical fact that many areas around Bangkok are facing flood problems, there has been no action from the authorities involved or even from the public. A curious question is what people in Bangkok are...
thinking about in terms of the flood problem. If floods are considered to be a chronic problem in Bangkok, why are people so uninterested in the problem? A more serious question is how planners and decision-makers understand the flood problems of Bangkok? These interesting points will be discussed in the following section.

7.2 Reconsidering Bangkok’s Flood Problems

There are good reasons to reconsider Bangkok’s flood problem. Firstly, it is important to study the basis of the flood problem by presenting different perspectives on the understanding of the flood phenomena. Secondly, it is interesting to find out whether floods should be considered as a problem. If the floods should not be considered as a problem, what is the real problem? Most importantly, it is misleading to treat Bangkok’s flood problems in isolation from the politics of development control and flood management. This includes the case of the SBIA.

The analysis in this section focuses on the historical facts, some of which are reviewed to explain how Bangkok’s floods have become a chronic problem. The discussion focuses on why all previous solutions have failed to solve the flood problem. Using the best available information, this section focuses on events before and after 1952.

Before any large dams were built on the Chao Phraya River in 1952, the Royal Irrigation Department concluded that large floods would only occur on the central plain when typhoon rains followed one another in close succession in the Mae Ping River and the Nan River watersheds in northern Thailand during August and September each year. A distinction between flood and drought was made by analysing the discharge of the Chao Phraya River at the end of the rainy season, which can vary from 2,500 to 6,500 cubic metres per second (c.m.s). If the supply was between 3,500 to 4,200 c.m.s., the flood would have positive results. If the supply failed to reach 3,500 c.m.s. it resulted in a drought situation. If there was too much water, the crops would be damaged if the discharge rose above 4,200 c.m.s. [Kambhu, 1952 #68, 242-243].

After the big dams were developed upstream during the 1960s and 1970s, the ecology and the hydrogeography of the rivers were affected. In 1987 it was reported that the discharge of the Chao Phraya River at Bangkok was 1,500-1,600 c.m.s. compared with the upstream discharge of 3,500 c.m.s. It was believed the upstream dams were likely to protect Bangkok from floods.
Other interesting data given in the same report was measurements of the water level at Ayuthya which had been recorded for the previous 118 years or since 1834. During this period there were only four high floods, damaging between 21-31 per cent of the crop. During the same period there were 53 years with good normal water and 61 drought years, the worst of which damaged 43.04 per cent of the crop. The study concluded that floods on the central plain were not as serious as droughts, and that was why irrigation was more urgently needed than flood control [Kambhu, 1952 #68, 243].

It also pointed out that the high risk flood areas were to east Bangkok where flood discharges from the Nakhon Nayok River, some kilometres northeast of Bangkok, were usually strong and damaging [Kambhu, 1952 #68, 243]. As a result the Chiengrak-Klong Dan project shown in Figure 7.6, a large irrigation system which is now the site of the SBIA, was developed and completed in 1953 as the main channel running south to carry surplus water into the sea [UN, 1959 #64, 109]. East Bangkok was originally set aside for floodways in the 1950s. A serious question is why these facts were not considered when the site for the SBIA was selected in the 1960s.

Despite new data and new technologies, any understanding about flooding in Bangkok in the 1980s seems to be limited to old perspectives. In June 1987, Bangkok’s flood problems were discussed at an ‘International Workshop on Urban Flood Protection and Drainage in East and Southeast Asia’ held in Bangkok. A lot of engineering data and figures were presented. Hermann Zottl, an Austrian engineer, concluded that flooding in Bangkok was a result of three events: flood discharge from the Chao Phraya, high tides and heavy rainfalls in the city [Zottl, 1987 #36, 2.1]. The study only focused on natural phenomena, and overlooked the impact of changes in the man-made environment on flooding.

My argument is that floods were not a critical problem in Bangkok before 1952, however since 1952 floods have been a problem as a result of man-made actions. One question is what the floods before 1952 were all about? Hence, it is interesting to study how the floods became a chronic problem. This is discussed in relation to earlier solutions.
Source: UN, 1959.

Figure 7.6 Chiengrat-Khlong Dam project
7.2.1 Floods Before 1952 as a Natural Phenomenon

There are reasons for choosing 1952 as a crucial date in considering Bangkok’s flood problem. Firstly and most importantly, the report prepared by the Royal Irrigation Department in 1952 was the last official document that clearly described the flood in Bangkok as a natural phenomenon. Secondly, it was the time before most of the dams were built upstream and before the dams changed the natural conditions. Lastly, it was the time that new roads replaced the waterways in Bangkok which changed the natural drainage system as shown in Figure 7.3.

Floods can occur in almost all seasons but they are more apt to take place in some seasons than in others [Hoyt & Langbein, 1955 #57, 50]. Floods only become a hazard when they impinge unfavourably upon human activity [Ward, 1978 #59, 114]. These statements provide a general understanding about floods and apply to the case of Bangkok before 1952. Documents by some Westerners are also pertinent.

J. Homan van der Heide [Heide, 1903 #28, 26] concluded in his report, *General Report on Irrigation and Drainage in the Lower Menam Valley*, in June 1903 that:

Near the coast, as well as in the inland regions, the water has elevated the soil by depositing silt to its ordinary high tide level and so in these regions flooding only occurs rarely, at the extraordinary high tides.

In general, however, in consequence of the rapid rising of the banks, in times of ordinary high flood, [and still less in times of scanty rainfall when supply is most required] the level of the rivers does not rise above the banks for any considerable time and to any considerable height and therefore overflow of natural watercourses in Lower Siam is also of little or no avail to fill up the deficiency of the rainfall in respect to water supply for paddy cultivation.

The above conclusion is rather contradictory to a traditional opinion in respect to the flooding of the fields by the rivers, but nevertheless is as exact as it is natural [Heide, 1903 #28, 23].

In Heide’s view, floods in those days were not a problem but a natural phenomenon. James McCarthy who spent 12 years collecting material for the compilation of a map of Siam from 1881 to 1893, had the same view of the flood phenomenon as Heide [McCarthy, 1994 #71, 21]. Moreover, Heide [Heide, 1903 #28, 26] according to Thai chronicles, many great floods, which have been regarded as natural phenomena, have occurred in Bangkok: December 1785; 28 October 1819; 4 November 1931; 25 November 1859; 17 November 1879; 10 October 1917 and September 1942 [Prainoi, 1992 #70, 470-477].
31-33] concluded that flooding contributed to soil fertility as a considerable quantity of silt was carried to the fields. Consequently he stressed the advantages of adequate irrigation and also proposed the development of a large drainage system which would be the most effective way of providing water for rice cultivation. He also concluded that overflows from river banks occurred very rarely from natural causes. When it occurred, nearly all the silt carried by the overflowing water was filtered out and retained by the vegetation, for example grass or paddy or some other kind of plant.

The development of canals and irrigation systems started in Rangsit district in 1888, 40 kilometres north of Bangkok. However, the canals were unable to supply water because they were not properly developed\(^\text{17}\) [Arsawai, 1987 #21, 149]. The failure of the irrigation development was controversial and an investigation was made. In his report to the Ministry of Agriculture in 1915, Ward [Ward, 1915 #56, 2] stated that the 1913 rice harvest was very bad because of irrigation problems. In contradiction with Heide’s proposal, Ward proposed five smaller irrigation projects.

As the primary source of income for the country, rice production in the irrigation areas became so important that speculation in paddy fields was a ‘serious business’ in the 1900s [Arsawai, 1987 #21, 49-51]. As a result, the natural phenomena of drought and flood in this period became a serious issue in the politics of water management. One of the five proposed projects, Pasak South Canal in the Rangsit Area, was first developed in 1915\(^\text{18}\). Despite the very high investment, the decision on Pasak was controversial and is probably the first example of the politics of land and water management in Thailand. Some years later, C.D. Gee, an irrigation engineer who served as a civil servant during the reigns of King Rama 6 and King Rama 7, argued that the Subharn Canal project would be a more profitable development. However the government decided to develop Rangsit first because it did not want to interfere with landownership in another district [Arsawai, 1987 #21, 162]. That is why there is a concentration of irrigation networks in the Rangsit area.

The greatest flood in this period occurred in 1942, in which 6,500 c.m.s was recorded in a catastrophic flood [Camp, 1967 #31, 13]. It is worth noting that the Chao Phraya Dam had not yet been built and natural resources were still prosperous in the 1940s. The great Bangkok flood of 1942 may therefore be viewed as the last natural

---

\(^\text{17}\) The most controversial issue was corruption. Consequently, the government had to revise the contract many times [Arsawai, 1987 #21, 18-61].

\(^\text{18}\) The investment proposed for Pasak South Canal was 11.5 million baht compared with 7.5 million baht for Subharn Canal, which was a larger project. The others were about 1-1.5 million baht.
flood. Since then, as discussed in previous chapters, Bangkok’s environment has deteriorated because of human constructions. However, floods during this period were still limited to the central area of Bangkok. The flood hazard was first considered as an issue in the Litchfield report in 1960 and was seriously discussed in 1962 and 1964. The impact of man on flood problems since the 1960s will be discussed in the following section.

Our understanding of floods as a natural phenomenon in the 1990s is much more developed. Hence, it is relevant to discuss some fascinating new issues about floods and climate change. Thai scholars are now focusing on global changes such as the El Nino phenomenon. However, the flood problems in urban areas have still not attracted their interest. There is no doubt that the El Nino phenomenon has become another factor causing floods, and will increase the complexity of flood study.

### 7.2.2 Man-made problems since 1952

The discussion in this section will focus on man-made causes of flood problems. Besides deforestation and uncontrolled changes in the man-made environment as discussed in Chapter 2, poor human responses to the flood hazard in terms of adjustments and protection have also had an impact on Bangkok’s flood problems. Flood problems between 1952 and 1998 have become more complicated as a result of urban sprawl and poor infrastructure provision. Attempts have been made to solve the flood problem by increasing the discharge capacity of pumping stations. However few attempts have been made to reduce flood damage by controlling the development of Bangkok. Although a lot of money has been spent on improving flood protection systems, the flood problem remains and has become more critical in some areas.

The politics of flood control management is, in my view, the most serious factor which has caused the failure of flood protection. In fact, there have been many opportunities to solve flood problems decades ago but nothing has been done. A brief discussion of historical facts will be made to explain how politics has become involved with flood problems in Bangkok. The emphasis in this section is on the development of the drainage system in Bangkok.

---


Bangkok has a combined sewage and stormwater\(^{21}\) system, which increases flood problems during the rainy season. It has been argued for decades that Bangkok needs to have a separate sanitary sewer system [Camp, 1967 #31, 2]. This argument may explain the situation since 1952. In fact, the need for separate sewage and stormwater systems has been recommended since 1910 when sanitation became a public concern. Edwin Ault [Ault, 1910 #58, 6-7] mentioned in his report\(^{22}\) that sewerage and rainwater in a combined system would have serious results for the river. It is not clear when the drainage system for Bangkok became a combined system.

The combined system was not considered as a problem for flooding during the first half of this century. The reason Bangkok did not have a flood problem during this period was that a number of existing canals provided an excellent storm drainage system.

The importance of the existing drainage network was recognised in many studies during the 1960s. The improvement of these canals was recommended in the Litchfield Plan in 1960, in the Husband Report\(^{23}\) in 1962, in the Tholin Report\(^{24}\) in 1962 and in a World Bank Report\(^{25}\) in 1964.

In my view, the best study during this period was the study, \textit{Sewerage, Drainage and Flood Protection Systems; Bangkok and Thonburi} prepared by Camp, Dresser & McKee in 1968. The study covered an area of 370 square kilometres and included the wastewater sewerage system, the flood protection system, the storm-water drainage system, the priority of systems, construction cost estimations and operations that had been planned for a population of 5.4 million in 1999.

It is worth noting that these studies strongly recommended a separate sanitary sewer system and a separate wastewater treatment system for Bangkok. These systems are essential for any city. However, a separate sanitary sewer system has not yet been developed and the first wastewater treatment plants were only built in the 1990s. Surcharges for wastewater treatment will be imposed and enforced by law in 17 districts of Bangkok in 2001.

\(^{21}\) Excreta disposal is generally by septic tank. All other wastewaters are usually discharged into the nearest ditch or canal, or into the storm water drainage system. Overflows from septic tanks usually find their way into the drainage system which turn the canals into septic reservoirs [Camp, 1968 #61, 1].

\(^{22}\) Edwin Ault, an English engineer, submitted a \textit{Project for the Sewerage of the City of Bangkok, in the Kingdom of Siam} to the Minister for Local Government on 11 January 1910.

\(^{23}\) \textit{Report on Sewerage and Sewage Disposal for the Central Area of Bangkok}, submitted in September 1962

\(^{24}\) \textit{Drainage and Sewerage for Bangkok Municipality}, submitted on 12 October 1962

\(^{25}\) \textit{Bangkok Sewerage, Drainage and Flood Control}, submitted on 17 February 1964
The most controversial flood protection programme in the 1980s was a proposal for a diversion channel 220 metres wide and 40 kilometres long, known as Chao Phraya 2. It was to begin in the north of Bangkok at the meander in the river near Pakkret and run west of the outer ring road to the end near the mouth of the Chao Phraya. It was calculated that a discharge of about 1,700 c.m.s could be diverted to the channel which would protect 1,400 square kilometres of Bangkok. The proposal was impressive from an engineering point of view. The Asian Institute of Technology (AIT) proposed another flood routing alternative in 1985 to east Bangkok. However, these proposals were not practicable from the government's point of view. There was a problem with land acquisition for the construction of the bypass and this quickly ended the proposal. This proposal was not new as two diversion channels on the east and west of Bangkok had been proposed in the 1960 Litchfield Plan as part of land use control on the floodplains of the Chao Phraya. However that proposal was never implemented.

A failure to implement these recommendations was due to political concerns. The military government under dictatorship regimes in the 1950s and the 1960s, was not interested in Bangkok’s problems and failed to implement any of the recommendations of these studies. The 1970s and 1980s was the most dramatic period in Thai politics and as a result, fragmentation among factions in the government caused the delay of many development projects. This included the flood protection programme for Bangkok and the SBIA project.

The discussion of flood problems in this section is extensive in terms of the politics of development management in Bangkok. No matter how many studies are made, these will mean nothing for as long as the government still treats political interest as the first priority. Besides the studies being a waste of time and money, floods in Bangkok have become a chronic problem.

7.2.3 Flooding as a Chronic Problem

As discussed in previous sections, Bangkok’s flood problems cannot be solved quickly. In addition, budget cuts as a result of the economic recession in Thailand have become another constraint. Budget restrictions will have a major impact on large development programmes such as the flood protection system. The resolution of Bangkok’s flood problems is a long way away and as a result flooding in Bangkok will remain a chronic problem for years.
The authorities seem to have overlooked the possibility of permanently eliminating chronic flooding problem and no one appears to have given it much thought. There are also a number of more critical constraints which could result in flooding remaining a chronic problem forever. The discussion in this section focuses on two constraints: the physical urban structure of Bangkok and increasing demands on the water supply in Bangkok.

The fact that Bangkok was not planned is crucial. No space has been provided for new public services. As a result almost every infrastructure development project faces similar system and network problems. Roads and narrow lanes are the only places where power lines, telephone lines, water pipes and storm water drains needed for mega projects such an expressway and mass transit system can be laid together. The existing road network is the only network available for infrastructure systems.

As the city continues to grow, roads and lanes are unable to be expanded to provide more space for infrastructure improvement. Modern technology has been applied where possible to increase the capacity of some systems, for instance, the telephone network and optical fibre networks. However, the biggest concern is that the existing drainage system with old concrete pipe drains cannot be improved by new technology. In addition to 1,049 canals with a total length of 1,890 kilometres, the BMA is responsible for the concrete boxes and pipe drains along 1,497 roads with a total length of 1,082,736 kilometres and a total road area of 18,178,941.85 square metres [BMA, 1996 #44, 75]. These systems have not changed for years despite the rapid growth of Bangkok during the economic boom of the 1990s.

It is impossible to try and redevelop and rearrange the narrow streets and lanes in the high density areas of Bangkok. The city’s poor physical urban structure in terms of road networks is the main reason why the drainage systems cannot be improved properly. It is also clear that a totally new separate sewage system for the whole city of Bangkok cannot be developed in the near future. A ‘Study on Common Utility Duct System’ submitted to BMA in January 1995, also did not clearly recommend a separate sewerage system [Epsilon, 1995 #72, 2.5-2.6]. In addition to the large investment that would be required during the economic recession, the issue of land acquisition for these systems is a political concern and this may be the biggest problem for the government.

Also increasing demands on the water supply will make the flood problem more serious in Bangkok. Despite improvements to the service, the MWA can only serve piped water within an area of 710 square kilometres. From 1982 to 1991, demands on
Chapter 7 The Airport and Flood Protection

the water supply in Bangkok and some areas in Nonthaburi and Samut Prakan increased by an average of 5.7 per cent annually. Total water production has increased from 630.3 million cubic metres in 1982 to 1,109.2 million cubic metres in 1991 or more than 3 million cubic metres per day [MWA, 1991 #43, 56]. This does not include the large amount of underground water\textsuperscript{26} that is pumped to use in factories and other areas of Bangkok the MWA cannot serve. It is an important fact that about 80 per cent of the water used in Bangkok is considered as wastewater, which flows into the drainage system\textsuperscript{27}. This increasing wastewater will also affect the efficiency of drainage systems.

The Department of Mineral Resources expressed its concern in the local newspaper on 27 May 1999. Its survey shows that an amount of more than 3 million cubic metres of groundwater per day was being pumped in Bangkok. In fact, the law only allows 1.5 million cubic metres of groundwater to be pumped per day. The most serious consequence of this is rapid subsidence in some areas of Bangkok which have sunk more than 0.50 metres since 1983. This has also affected drainage networks and is causing the failure of flood protection measures.

Because of Bangkok's poor physical urban structure, most attempts during the past decades have focused on improving the capacity of the pumping system by installing a number of bigger pumps throughout the city. These pumps carry water from gutters and concrete blocks into nearby canals and from the canals into the river.

Although the pumping system network is being improved, flood control which depends on the pumping system network alone cannot protect the thousands of square kilometres of Bangkok and nearby areas. As has already been shown, flash floods caused by a tropical storm coming from the Gulf of Thailand can severely damage Bangkok. Even with a small storm, upstream dams cannot help. It is not practicable, nor possible, to carry millions of cubic metres of surplus water into the sea more than 30 kilometres away in a short time [Roachanakanan, 1997 #55, 68]. These constraints were not considered in the master plan of the SBIA.

As discussed in Chapter 4, the Governor of the BMA, Bhichit Rattakul, has concentrated on environmental issues, which he promised during the election campaign

\textsuperscript{26} In 1995 it was recorded that 307,739 cubic metres of underground water was pumped daily in Bangkok compared with 244,063 cubic metres per day in 1993 [BMA, 1996 #44, 9]. However, the use of underground water in Samut Prakan is much higher than in Bangkok, which was 470,411 cubic metres per day in 1993. [BMA, 1994 #74, 10]. As a result, the use of underground water over many decades has caused the serious problem of land subsidence [Norconsult, 1994 #38, 4-2].

\textsuperscript{27} The assumption of 80 per cent is usually applied for basic calculation and the same criterion is also used in the Master Plan of the new Bangkok airport [Norconsult, 1994 #38, volume III/6-17].
in 1996. Although he may succeed in making Bangkok cleaner, he failed to solve Bangkok’s flood problems in 1997, 1998 and 1999 because of a poor understanding of flood protection and ignorance about the need for early preparation. The question therefore is how well Bhichit understands Bangkok’s flood problems.

The BMA, under the administration of Bhichit Rattakul, has introduced a new policy for controlling the excavation of main roads by naming some roads in Bangkok as construction-free sites. This is an attempt to solve the old problem of traffic disruptions caused by public authorities. It means that no public utility construction projects can be carried out on these roads for 10 years. This includes the development of sewerage systems along the main roads.

Given that floods have become a chronic problem for Bangkok, an important question is what should be done. Is it reasonable to propose another mega project such as second international airport which is being built on a floodway? The Airports Authority and the NESDB use the SBIA master plan to argue that the new airport project will not have any negative impact on flooding in Bangkok. They argue instead that the new airport project will assist with flood protection in east Bangkok. Their arguments will be discussed in the following section.

7.3 Review of Flood Protection for the SBIA

As discussed in Chapter 6, a number of facts in the SBIA master plan have been misrepresented and most of the proposed projects are unrealistic. In this section I study what the SBIA master plan has proposed for flood control and drainage and how reasonable the recommendations are. The impact of the new Bangkok airport on Bangkok’s flood problems will be evaluated by analysing the master plan. An attempt is made to assess whether the study of flood protection and the proposed measures are reasonable.

---

28 On 28 January 1998, BMA announced that 45 roads in Bangkok would be free from any public utility road excavation for 10 years however this was overruled by other agencies. On 17 July 1998, a ban on 30 roads was enforced by a new regulation signed by the Governor of the BMA.

29 This is supported by a local news report on 27 May 1998. It was reported that the King was worried about flood protection around the new airport and east Bangkok. The most serious concern was that calculations made by the Airports Authority consultants were not accurate and misrepresented rainfall statistics and the amount of floodwater expected in the area. On 26 May 1998, the local news reported that the King’s representative had visited the new Bangkok airport project site. The Airport Authority’s consultant made the assumption that the water level in this area would rise only four centimetres in a year. In reality, the floodwater level rises by more than one metre.
7.3.1 Flood Control and Drainage

The SBIA master plan contains a brief study of flood control and drainage covering only 18 pages. It clearly states that the new Bangkok airport will have some impact on flooding in terms of a reduction of natural flood storage and drainage water pumped from the airport and it would raise water levels in canals around the airport [Norconsult, 1994 #38, volume II/2.3-2.6]. What does this conclusion mean?

The master plan briefly examines old information and facts on Bangkok’s problems prepared by agencies during the 1980s. Most importantly, Figure 7.6 shows a map with a flood pattern and the existing drainage system for the master plan area. This map clearly shows the new airport will block existing floodways. It also indicates that three main canals, the Nong Prue, Nong Kha and Nong Traka which pass through the airport site, will permanently disappear. It also includes a proposal for a new canal running parallel to the dike to change the waterway. It is doubtful whether the planners were aware of the need to make better provisions for flood hazards. However, the more controversial point is their poor calculations and their assumptions about flood protection.

The master plan concludes that the main causes of flooding in the study area are direct rainfall, the limited drainage capacity of the canals and the limited ability to drain the floodwater to the sea during the high tide season. The amount of floodwater was calculated using a 150-year flood with an annual rainfall of 2,200 millimetres. Without using a map, an rectangular shaped area of 750 square kilometres was simply defined as the flood condition study area using the boundaries of the King’s dike to the west, Minburi to Chachoengsao road to the north, Bang Pakong River to the east and gulf shoreline to the south.

The formulae were presented but no calculation details were provided. By using the highest record of one-day rainfall of about 200 millimetres, the total volume of rainfall over the study area would be 150 million cubic metres. It was estimated that

\[ p = (i - \alpha) / (N + 1 - 2\alpha) \]

Where \( i \) is the rank in ascending order of magnitude; \( N \) is sample size; and \( \alpha \) is a parameter depending on the distribution function assumed. In this case the value of \( \alpha \) is 0.40 for all distributions (Cunnane formula), except for Gumbel distribution where \( \alpha \) equal to 0.44 (Gringoren formula) [Norconsult, 1994 #38, Part B, sectoral report, volume II].

The average rainfall in Bangkok is about 90-120 millimetres per day.
there would be flood runoff of 60 million cubic metres, based on a runoff coefficient of 0.40 for a mixed built-up and rural area. The existing canals with a total length of 150 kilometres were considered as providing a natural storage capacity of about 14 million cubic metres. The existing discharge capacity of all main canals was presented. According to the final calculation, an amount of 53 million cubic metres of floodwater must be removed within one day, however this would require a combined discharge of 613 cubic metres per second continuously. The natural drainage capacities with pumping can carry only 158 cubic metres per second of the surplus water into the sea and yet, the significance of high tides was not included in this assumption [Norconsult, 1994 #38, volume II/2.3-2.15].

Despite these serious issues, it was simply confirmed that the SBIA would have very little impact on the regional drainage system with a maximum rise of about five centimetres in water level [Norconsult, 1994 #38, volume II/2.3]. The consultant appears not to have considered flood routing, but has used elementary mass balance for these calculations. Time factors are, however, critical and should have been considered using a three-dimensional model.

Despite this, the Norconsult consortium proposed some flood protection facilities in the Second Airport master plan. The Norconsult report [Norconsult, 1994 #38, volume II/2.15] proposed that all main north-south canals which drain surplus water into the sea would be improved. A new additional canal connecting two canals, Bang Pla and Samrong, would also be developed. More new pumps would be installed at the main canals, Bang Krabue, Charoen Rat, Sao Thong and Klong Dan. A pumping system with higher discharge capacity was considered as the most effective solution. Figure 7.7 shows the proposed upgrading of existing drainage canals that would cost 3,015 million baht. Pumps and associated facilities would cost 2,062 million baht [Norconsult, 1994 #38, volume II/2.18]. It seems convincing that these measures can solve the flood problem.
Figure 7.7 Existing drainage, canals and pumps around the SBIA

The Norconsult report focused on an area of 24 square kilometres to the east of the new airport which had been proposed in the land use plan of the SBIA master plan for commercial development. Flood protection for this area was briefly discussed, see Figure 7.8. A polder system was proposed, however, it recommended that agreements must be reached with the landowners at an early stage because the land was privately
owned. The polder system was to cost 4,000 million baht excluding 3,000 million baht for the development of a storm-water drainage system [Norconsult, 1994 #38, volume II/2.18]. Apparently the commercial area east of the new Bangkok airport was a more important factor in the study. However it ignored the impact of more construction and change in the land surface which would affect runoff in years to come.


Figure 7.8 Proposed drainage, canals and pumps around the SBIA
My first argument is that the study area of 750 square kilometres was unreasonable. It is too simple to define a flood study area by merely selecting a rectangular area around the new airport when the drainage system in the wider region is very complex. As discussed in the previous section, the development of canal networks in east Bangkok were originally designed to carry flood discharges from Rangsit basin and Nakhon Nayok River into the sea. In other words, thousands of square kilometres of the Nakhon Nayok watershed should have been used as the study area. As a result, all the assumptions based on the area of 750 square kilometres are unreasonable and the calculations of floodwaters have been greatly underestimated.

Second, it is optimistic to assume that the existing canals can retain an additional 14 million cubic metres of water. Importantly, these canals are lined and therefore cut off from groundwater, and can only function as natural storage areas in May during the early part of monsoon season when the water level is still low. In reality, they cannot retain large amounts of surplus water when thunderstorms hit Bangkok almost every day from July to November.

Third, it is impossible to conclude that the SBIA would have very little influence on the existing drainage system causing only about five centimetres maximum rise in water level. The floodwater level in this area is already higher than one metre during the monsoon season without the new Bangkok airport. In fact, records of flood damage caused by flash floods from 1970 to 1983 are evidence of the rise in water levels in east Bangkok: 1.80-2.15 metres in Minburi and 1.20-1.45 in Lat Krabang. These figures are also shown in a table in the study [Norconsult, 1994 #38, volume II/2.7]. Hence, the study seems to contain contradictions.

The study only focused on flood protection for the new Bangkok airport and the new commercial areas. Larger areas in east Bangkok which would be affected if the floodway is blocked by the new Bangkok airport, were not considered in the master plan.

In brief, the study of flood control and drainage in the SBIA master plan reflects a poor understanding of flood conditions. It is not surprising that King Bhumiphol has expressed his concern about the project many times. Despite this the development of the new Bangkok airport is continuing.
Chapter 7 The Airport and Flood Protection

7.3.2 Response to Flooding: Choice of Adjustment?

It is interesting to study how reasonable the flood control and protection plans recommended in the SBIA master plan are, for instance, in protecting the airport site from floods. Besides costly landfill for the site, a polder system around the site of the new Bangkok airport was proposed as the best choice for flood protection of the large 32 square kilometres floodplain, regardless of how the airport siting affected the rest of the city. The discussion in this section, therefore, is on the rationale of the development of the polder system around the new Bangkok airport. Is this the best choice?

After completing the embankment on the north side, the NBIA signed a 458.686 million baht contract on 30 June 1998 to build an earth embankment on the other three sides, east, west and south of the new Bangkok airport site, which is scheduled to be completed within two years. A substantial pumping system is also being installed. It is expected that the 3.5 metres high embankment will prevent floods by carrying water from the airport into the nearby canals. However, the NBIA has not mentioned anything about flood protection for areas outside the embankment.

In fact, there was an attempt to propose another alternative after the SBIA master plan was completed in August 1994. The AAT opened a bid to select a private firm to design and provide technical details for the construction of the new airport. Using the north-south direction of the runway, a consulting company (as a competing candidate) rejected the costly polder system and proposed another cheaper choice for flood protection that could save a lot of money. Its two options are interesting. Firstly it proposed developing one or two new large canals parallel with the runways. Secondly, there would be no need for enormous landfill if the runways were elevated and sat on concrete piles, leaving space in the form of large utility ducts beneath the runways which could function as the main drainage system. However these alternatives were not considered and the AAT simply argued that the company had not followed its master plan.

It should be noted that all cheaper alternatives were rejected by the AAT. Besides the costly polder system, controversies have occurred everywhere, from the architectural design with the clear glass roof for the passenger terminal which is unsuitable for Thailand’s tropical climate, through the use of expensive materials that must be imported from other countries. Despite strong arguments from the Association of Siamese Architects, however, the AAT does not care and the use of the costly

\[33\] A senior engineer of this company gave an interview at his house in Bangkok on 12 May 1996.
alternative is continuing. Consequently, the cost of the new Bangkok airport has increased from 68,000 million baht to over 100,000 million baht in December 1996. As argued in Chapter 6, bidding for reclamation for the runways on 30 November 1996, at a cost of 11,650 million baht, is a good example. Why were cheaper solutions not considered? What were the reasons behind the decisions on costly alternatives?

Despite these controversies, the AAT and the NESDB seem to have ignored the basic human response to the flood hazard. In the view of Roy Ward, man's response to flood hazards involves a choice between adjustment, abatement or protection. Through the work of Gilbert F. White, however, the 'adjustment' choice has become a more widely canvassed and a more imaginative alternative to the engineering approach [Ward, 1978 #59, 116]. In other words, the adjustment choice should be considered as first priority as it is more appropriate in terms of socio-economic benefit and environmental conservation.

In the SBIA master plan, the adjustment choice was never considered or even mentioned. It is very clear that maximum use of the entire 32 square kilometres for airport development was the preferred policy. Polders and dikes were proposed for flood protection around the airport site. Recommendations for blocking three existing canals and proposals for an embankment around the airport site reflect a poor understanding of flood control management. The impact of blocking three canals was not studied carefully especially as this will result in changing flooding patterns and the regional drainage systems.

More importantly, achieving flood protection by pumping water from the airport into nearby canals and nearby urban areas is viewed as a selfish solution. Even though the BMA and Department of Royal Irrigation (DRI), who are responsible for flood protection in the Bangkok Metropolis have expressed their serious concerns about the new Bangkok airport's flood protection system, development of the polder system continues.

7.3.3 Ignorance of the Flood Hazard and the Economic Response

Why the government continues to ignore the flood hazard in east Bangkok is a serious question. A simple answer is that the government has given importance to the new Bangkok airport as a regional aviation hub to stimulate the Thai economy. The economic imperative has always been stated leaving aside the shortcomings of the new Bangkok airport project. The economic aspects of the flood problem, however, are
complex requiring detailed and comprehensive analysis. This section, therefore, discusses the balance between public interest and the socio-economic damage caused by flooding and the economic benefits to be gained from the SBIA.

The balance of public interest is a broad term that has been used by all political factions in Thailand. Its meaning is controversial within the factions and outcomes have depended on who has been able to convince the largest number of people. In other words, the definition of public interest has become a political issue which has been raised in every debate including the debate on the new Bangkok airport project.

The first public interest debate on the project took place in December 1973 after the collapse of the military dictatorship regime. The second debate took place in July 1983. During these periods, most arguments focused on the corruption scandal however the complicated issue of increased damage from flooding which would be caused by the new Bangkok airport, has not been settled. There are a number of reasons why no comprehensive study has been carried out on this serious issue.

Firstly, a better data collection system for flood damage has yet to be developed and a more comprehensive approach to calculating flood damages has not been possible. Damage reports are not usually made by local authorities until after the flood season. The assessment of flood damages are simply made by summing up flood protection expenditures made by public agencies during that fiscal year. There is also conclusive evidence that budget provisions for flood protection are increasing every year

Secondly, government departments are responsible for collecting the data. As discussed in previous sections, there are two basic problems in using this data, that is their availability and accuracy. In addition, as a result of corruption, some data and information is made up. As a result most research reports and studies which include data prepared by the government departments misrepresent the data and the results of these studies are not reliable. This includes the case of the SBIA master plan.

Most importantly, the results of this study are concerned with the current political environment. Almost every government during the past few decades has gained political support from big projects. The publication of any negative results from a study which may influence the reputation and credit of the government is therefore forbidden.

34 For instance, the budget for Department of Drainage and Sewerage of BMA has increased sharply from 940 million baht in 1992 to 2,875 million baht in 1996 [BMA, 1996 #44, 155].
Chapter 7 The Airport and Flood Protection

This may explain why the government has never mentioned any of the shortcomings of the new Bangkok airport project.

Admittedly the consequences of the development of the SBIA are both positive and negative. The economic benefits of the new Bangkok airport include an increase in passengers and airfreight which will stimulate the growth of tourism, industry and overseas trade. The damages caused by flooding should be evaluated in terms of physical damage through casualties such as death, injury and sickness. Besides flood damage, there will also be a number of unseen and long-term impacts. These consequences should be considered as a part of the decision-making framework. This simple approach seems to have been ignored.

Cost-benefit analysis is a technique for evaluating and comparing the benefits and costs of a scheme, which is appropriate in considering the economic aspects of a response to the flood hazard. Despite some difficulties in comparing the benefits and costs of a scheme, the application of this technique is generally used to determine which particular response to a flood hazard should be adopted [Ward, 1978 #59, 180-181]. This technique has become a basic principle which has been in relation to every public investment including the mass-transit system in Bangkok and the high-speed train project. However, no cost-benefit analysis has been made of flood damages resulting from the new Bangkok airport.

The issue of cost-benefit analysis seems to be not important. The authorities involved concentrated on infrastructure development in and around the new airport.

An overview of investments and funding requirements proposed in the SBIA master plan included a long list of infrastructure development proposals with a total investment of 158,390 million baht, excluding the construction cost of the new airport. However, the study did not compare this with the amount of revenue which would be gained from the airport project. As discussed in Chapter 5, there has been no clear policy on how Don Muang airport and the new Bangkok airport would operate and be managed and which airlines will use the new airport. In other words, there has been no cost-benefit analysis of the new Bangkok airport project in terms of investment. The question is how a decision was made on this project without early financial planning. Another serious question is how a big Japanese financial firm such the OECF has approved a loan of 75 billion baht to develop the new Bangkok airport.

In the view of the Thai government, flood damage in east Bangkok may be of little significance compared with the enormous investment involved in the SBIA. This
may explain why the flood hazard in east Bangkok is ignored and the impact of noise pollution has not been considered seriously. In fact, the new Bangkok airport will have a significant influence on Bangkok’s flood protection system, which will be discussed in the following section.

7.4 Impact of the SBIA on Flood Protection
On 4 May 1998, the local news reported that two districts in east Bangkok, Lat Krabang and Nong Chok, had been listed as a flash-flood sensitive zone since the dry season in 1997 because of the construction of the new Bangkok airport, in which the marshland and three canals were being filled. The Director of the Department of Drainage and Sewerage of the BMA, Nikhom Prajnakorn, also stated that two development projects north and south of the new Bangkok airport, the Bangkok-Chon Buri expressway and the Bang Na-Trat highway, had blocked major flood drainage systems which would result in serious inundation in east Bangkok. These events give a picture of how chaotic the situation in Bangkok is as a result of the new Bangkok airport.

The major controversy, which is a critical issue in this section, is the flood protection management, which reflects the unstable politics of administration and authority in the Thai government.

7.4.1 Changing Patterns of Flooding
As discussed earlier, the flood flow depends on the physical characteristics of drainage basins and stream channels [Victor R. Baker, 1988 #63, 10]. It is very clear that the SBIA will change the existing flood patterns in east Bangkok. This means the old flood protection plans will need major revision. The DRI and the BMA are working hard to cope with the altered hydrological system and likely patterns of flooding. Neither of them is following the SBIA master plan. New alternatives have been proposed based on different assumptions.

As discussed, all north-south canals carry surplus water directly into the sea and function in association with the east-west canals as a system. The blockage of three north-south canals will influence the pattern of drainage systems and also change flooding patterns. Discharges from the north and the north-east flowing into east Bangkok already cause flash floods every monsoon season. The flood protection plan
therefore needs to cover the large area of about 3,000 square kilometres from Rangsit plain down to the Gulf of Thailand.

Two east-west direction canals, Phra Khanong and Saen Saep, pass through the centre of Bangkok. They act as the primary drainage system for the most important districts of Bangkok, Bang Kapi, Phra Khanong, Dusit, Pathum Wan, Phaya Thai, Huai Khwang, where a number of economic activities are located. These areas are considered as the heart of Thai economy. They have the potential to move the flood waters into the centre of Bangkok. This is why a large pumping station with the biggest discharge capacity is located at the mouth of the Phra Khanong canal.

A serious concern is that these two canals cannot carry more surplus water from east Bangkok. If the floodwater flowing into these two canals from east Bangkok is more than the discharge capacity of the pumping stations, then flood problems in the city core become critical. In short, flooding will have an impact not only on the suburbs east of Bangkok but also on the central business district of Bangkok.

As a result, the DRI is revising its flood protection plan to drain more surplus water from Rangsit plain into Rangsit canal, another east-west direction canal some kilometres north of Bangkok. Other main canals such as Bang Sue and Bang Khen in the north are also expected to carry more surplus water from the northeast areas of Bangkok. However, these east-west canals have to drain water into the Chao Phraya River and this may cause floods on the both banks of the river for about 30 kilometres down to the mouth. The DRI concentrates on the other north-south direction canals in east Bangkok, which are being dredged to increase the discharge capacity.

The Director of DRI has concluded that the fate of Bangkok depends on the tropical storms in August and September\textsuperscript{35}, in other words, a number of tropical storms would be a disaster. His argument is reasonable. Some days after he gave this statement, the first heavy rain in Bangkok\textsuperscript{36} occurred on 1 August 1998, starting the monsoon season. A rainfall of 155 millimetres within two hours caused flash floods in 15 districts of the inner and outer areas of Bangkok. The central business districts of Bang Rak, Phaya Thai and Ratchathewi were 40 centimetres under water which caused traffic congestion on the day. It took two days to drain the water out of the city core.

\textsuperscript{35} Local newspapers reported his statement on 22 July 1998.

\textsuperscript{36} Within the 24 hour-period from 1.00pm on 31 July to 1.00pm on 1 August 1998, the rainfall by district was recorded as follows: 286 mm in Taling Chan; 215.4 mm in Dusit; 200.8 mm in Dindang; 183 mm in Pom Papi; and 176 mm in Pathum Wan.
Chapter 7 The Airport and Flood Protection

Obviously, flooding patterns in Bangkok have changed and the flood protection systems and networks are not working.

Despite these problems, the AAT and the NBIA have remained silent while the people of Bangkok have blamed the Governor of BMA, Bhichit Rattakul. The popular term ‘public interest’ seems to have been forgotten for the time being. A question is whether the flood damages on 1 August 1998 are related to the new Bangkok airport? This question needs to be answered by the relevant authorities.

7.4.2 Floods as a Planning Issue

Land use regulation is necessary to obtain the best use out of floodplains with a minimum of flood damage and a minimum expenditure on flood protection [Ward, 1978 #59, 122]. In the case of flood protection for Bangkok, it seems that the method of land use regulation applied in the Bangkok Plan 1992 has not been successful. In this section, the concept of land use zoning will be discussed, focusing on the context of planning and flood problems.

Since the first modern plan for Bangkok, the Litchfield Plan, was introduced in 1960, flooding has become a planning concern for Bangkok. The Litchfield Plan clearly considered the flood prone areas in east Bangkok as floodways and this fact has long been accepted since the 1900s. Unfortunately, the use of laws to enforce preventive measures in terms of land use control only began in 1992.

As discussed in Chapter 4, cheaper land prices on the floodplains east of Bangkok were attractive to speculators during the boom in Thai economy in the early 1990s. As a result, private investors developed a number of housing projects on floodways in Min Buri and Lat Krabang because of loopholes in the planning law. However, legal loopholes were not necessary when the government decided to develop the new Bangkok airport on the floodways. This controversy reflects an unpleasant aspect of Thai politics.

In Roy Ward’s view, most action on floodplain regulation is taken within the context of the Town and Country Planning Act. Land use regulation is one of the main ways of managing the flood hazard and its potential role as the most important adjustment mechanism is only just being realised. In a democratic society, land use regulation is inextricably linked with the politically biased process of planning. By definition, it means that regulations which impose restrictions on choice must be seen to be fair and soundly based if they are to stand up in court [Ward, 1978 #59, 126-128].
This basic principle has been applied in Bangkok but some important things are missing.

Firstly, as argued in Chapter 3, the role of land use regulation is not clear and its application remains relatively ineffective. Because of a poor history of planning development, the planning system in Thailand does not work well and the concept of land use zoning by dividing the city into different functions is not applicable. The advantages of land use control have not been recognised. As a result, the green belts and the floodpaths have not been successful.

Secondly, land use control is concerned with the politics of speculation. The speculators, who view floodplain regulation as a disaster for their business, do not consider that there needs to be a balance between land use and flood risk. This is more controversial when the speculators become politicians who can issue floodplain regulations. Political bias becomes evident in these cases.

Thirdly, no compensation has been provided when the government has refused permission to develop land on floodpaths. Limited finances are often cited as a reason for not offering compensation. In addition no improvements have been made to floodplain regulations to enable them to be better implemented. Despite the yearly experience of flood hazards, these concerns have never been addressed in the government’s agenda.

Hence the case of the SBIA provides a good example of how these things have been overlooked. It may also explain why areas on the west and east of the airport have been proposed for commercial development. What can be done under these circumstances may be argued extensively. However, a key solution to these problems may be found somewhere and this will be discussed in the following section.

7.4.3 Beyond the Boundary of Administration and Responsibility

The impact of the SBIA on changes in flooding patterns and flood protection planning reflect several failures in the legal, planning and administrative systems in Thailand. As argued in Chapter 3, the new Bangkok airport project is one of many problem cases which have resulted from the disintegration of the legal system, planning and administrative systems. These complicated systems have become chaotic when dealing with any problem which crosses the boundary of administration and legal concerns. The discussion in this section focuses on the issue of boundary in terms of the administrative system.
Despite early warnings about a serious flood hazard because of the construction of the new Bangkok airport, the AAT and the NBIA did not express much concern about flood protection for Bangkok. The economic crisis in 1997 had a strong impact on the project. Despite this the development of a polder system around the airport began on schedule, starting with the blockage of three canals on the north side.

Meanwhile, the BMA and the DRI also expressed serious concerns and more flood protection facilities were prepared. The Deputy of BMA, Somchai Nilsidthanukoh, stated that there would be no flooding if the rainfall was less than 60 millimetres. If rainfall was more than 60 millimetres but less than 100 millimetres, BMA could drain the water out within two hours\(^{37}\). However, this capacity was very low given the floods on 1 August 1998 when the rainfall was over 200 millimetres.

In August 1997, the Governor of BMA, Bhichit Rattakul, visited the site of the SBIA project and called for urgent action by the AAT, the NBIA and the Ministry of Transportation to solve the drainage problem caused by the airport project. He visited the site again and again to follow progress on this. In March 1998, Bhichit Rattakul returned to the site of the SBIA and expressed his strong concern about the completion of the earth embankment on the north side, which has blocked three canals passing through the airport site. However, the Airports Authority and the NBIA did nothing during the past year and flood protection became a political issue.

In June 1998, after more political pressure to work on flood protection, the NBIA started to dredge two nearby canals around the site of the new Bangkok airport. Nong Ngu Hao on the east and Lat Krabang on the west would be 2.50 metres deeper through the length of 12 kilometres. Why was there no cooperation among government agencies on flood protection? There are a number of reasons why the AAT and the NBIA did not care about flood protection and why the BMA failed to cope with the flood problem.

Firstly, as discussed in Chapter 4, the SBIA is located some hundreds of metres outside the administrative boundary of the BMA. That means that the Governor of BMA has no legal authority to do anything outside his territory.

Secondly, in terms of the balance of power, the administration of the BMA is a special form of local government in which the administrative structure is considered to be a political ministry. Despite being given autonomy, every bureaucratic action has to

\(^{37}\) The statement was reported on the local newspaper on 13 July 1998.
pass through the Minister of Interior and the Cabinet. In contrast, the administration of the AAT is in the form of a state enterprise and the NBIA is a new private company. Consequently, these different administrative systems, as a result of a different political status, has caused a number of difficulties in achieving cooperation. The structure of government and the structure of authorities in association with flood protection in Bangkok are shown in Appendix 7.3.

Thirdly, the boundary of administration and responsibility is so complicated that flood control and management has become chaotic under a number of authorities. The DRI, under the administration of the Ministry of Agriculture, is responsible for the rivers and canals as the primary drainage system. The Department of Highways, under the Ministry of Transportation, is responsible for ditches and gutters along the highways, roads and expressways. The RTAT, which is another state enterprise under the Ministry of Interior, is responsible drainage systems in some areas. Each is responsible to a different minister and therefore coordination is lacking. The poor physical structure and the urban complexity of Bangkok, in particular the drainage systems, make for even less effective planning and management under these authorities.

Most importantly, there is no unity among these authorities because they are under the administration of numerous factions in the coalition government. As discussed, a significant feature of Thai politics is the lack of stability and the existence of a coalition government that depends on sharing interests. In the view of political factions, Bangkok’s flood problems are not profitable; moreover they are sensitive issues which may have a negative influence on their reputations. Therefore the approach has been to simply stress that Bangkok’s flood problems are a local government concern.

Consequently, most people think that only the BMA is concerned with flood problems. This may explain why people blame the BMA and why the ministers involved never have any serious discussions about Bangkok’s flood protection. As argued in Chapter 4, Bangkok’s problems are complex and should be considered at the national level. In fact, Bangkok’s flood control problems could be solved quickly if the Prime Minister as the head of government did something. It cannot be denied that every problem in the country should be a concern of the Prime Minister. The question is why the head of government, during the past few decades, has never played a vital role in solving Bangkok’s flood problems.
Despite the powers written in the constitution, the Prime Minister cannot do everything. All Prime Ministers have been concerned with and preoccupied by the power struggles in the coalition government. The politics of planning and development management has become a game of making a fortune, which is reflected in the big development projects. Under these circumstances, and given the economic crisis, a campaign calling for ‘a good governance’ seems to be the last hope for Thai society.

Beyond the boundary of administration and responsibility, arguments on the politics of Bangkok’s flood problems and the SBIA are extensive and have been difficult to resolve. However, theoretical arguments can be concluded within the narrower context of politics of planning and development, which will be discussed in the last chapter.
Chapter 8 The Politics of Planning and Development

City planning has been regarded as an important development tool in Thailand since the first *Town and Country Planning Act* was implemented in 1952. Its importance was stressed in a letter from the Bangkok Municipality to the MoI asking for American technical experts to help with city planning in 1955. The government also expressed its concern in a statement by the Minister of Interior in 1959:

> We cannot let Bangkok grow up the way it has grown. Proper city planning is essential and should have been made a long time ago. We are pleased to learn that the present government has realized the importance of city planning and has started to work on it [Pore, 1959 #83, 2].

Coupled with this, the government adopted a national policy to maintain Bangkok airport as the aviation hub of the region [Consultants, 1959 #15, 97; Pore, 1959 #83, 2]. Similar statements were repeated over and over through the next few decades. However, politics has influenced city planning and airport planning and there has been little progress with the two projects. Environmental issues have also become involved in planning after the *Promotion and Conservation of Environment Act* was adopted in 1975. Environmental planning has become a political tool which factions have used to intervene in project planning. As discussed in Chapters 6 and 7, master plans have been developed to meet the mutual interests of different factions and impact assessments have been conducted to cover up the consequences. Planning has been subject to political pressure.

The government's decisions on planning for Bangkok and the SBIA ought to be transparent, reasonable and understandable. On many occasions, however, the government has not given any clear explanation of why policies have changed so frequently, creating chaos between the two projects. In my view development projects in Thailand have never been free from political interference. The bigger the project, the more political interference is evident. Bangkok is the biggest city in Thailand and the new airport is the most expensive infrastructure to be developed, so the planning and development management of the projects has become the subject of a series of conflicts among factions.
Chapter 8 The Politics of Planning and Development

As discussed in previous chapters, it is clear that political factions have served their individual needs instead of public interest needs and the factions do not care about the consequences of policy changes. The individual interests at stake are so huge that environmental aspects and the negative impact of the new airport have been ignored.

The consequences of political interference are therefore extensive and complex. The formal, technical process of development planning known as ‘rational planning’ does not accurately portray how development decisions are made in Thailand. Reliance on this process alone is far from effective in this turbulent decision-making context. The task in this chapter is to consider the role of political considerations in planning and development and to discuss this in theoretical terms.

The style of politics in Thailand can be defined as ‘pluralist’ because of the large number of parties and factions. The struggle for power and money, using any means, is the primary concern of these factions. In some cases, factions may make an agreement or establish temporary relationships, connections and networks after negotiating how their mutual interests can be met. Historically, the factions have never been truly united and a high degree of fragmentation has become a unique feature of Thai politics.

The planning history discussed in Part I points out that the political reforms of 1932 dispersed the single power elite of the absolute monarchy into a pluralist political power elite. Despite many radical changes, with bloody violence in 1973, 1976 and 1992, the struggle for power among various factions remains and has become a fundamental aspect of Thai politics.

Under the pluralist bureaucratic structure in Thailand discussed in Part II, the administrative, legal and planning systems are manipulated by political factions to extend their roles in the planning and development of multi-million baht projects. The development of these factions, with their similar ways of thinking and decision-making, can be understood in terms of the ‘political paradigm’ [Sinsawasdi, 1996 #103, 293-344] which reflects on changes in development policy and planning.

The growth and decline of factions is beyond the concern of this thesis. However, what has really happened in the planning of Bangkok and the SBIA project reflects the evolution of political manipulation in planning from 1959 to 1999. These two projects provide good cases for learning from the planning and environmental assessment failures caused by political interference.
This chapter discusses why technical knowledge and skills in planning were not effective in dealing with local and national interest-based politics. The task is to understand the interaction of interests in three planning domains: city planning, airport planning and environmental planning. Bangkok city planning is viewed by the national government as a matter of local politics (the BMA) while airport planning is viewed by the national government as a concern of national politics. Environmental planning should focus on a rational assessment which is supposed to determine which proposed policies and actions are reasonable. Since there has been no attempt to integrate or even improve the coordination of these three planning domains, the first question is how the government deals with conflicts over these different planning domains. The discussion here is on how politics has influenced planning. This is based on assessing the impact of the SBIA on flood protection as discussed in Chapter 7.

The focus is on key influences and relationships among the three planning domains to understand how political interests during the past few decades have operated to produce a series of conflicts. Based on an assumption that 'political power' is the domain of politicians and 'rationality' is a requirement for planners, these conflicts will continue for a long time because Thai politicians have a different understanding of rationality and planners do not have sufficient political power. Attempts are made to point out that political influences on the three planning domains are related to power arrangements between factions in the coalition government.

Theory provides a basis for the evaluation and assessment of what has happened; linking all contexts and arguments in the previous chapters together. The discussion focuses on planning theory, urban politics theory and the concept of integrating environmental impact assessment and planning. There is a need for an understanding of these theories in order to comprehend complex cases such as Bangkok city planning and the development of the new airport. It is clear that Thai authorities have not considered these theories, and practices founded on them, as guides. This chapter concentrates on theoretical arguments to explain the ongoing failures of planning practice in Thailand.

8.1 The Political Paradigm of Planning in Operation

Narong Sinsawasdi studies Thai politics in terms of psychology. He tries to answer why there are so many factions, constitutions and violent conflicts in Thailand. He points out three co-factors: political behaviour, national characteristics and social characteristics [Sinsawasdi, 1996 #103, 1-72]. These three factors are unique and create
a relationship between leaders and followers. Political leadership relies on beliefs, values and personalities [Sinsawasdi, 1996 #103, 15-19], which differ from place to place in Thai society. Each politician has his own style of personality depending upon his social background. However, all politicians have the same interest in increasing their power.

It is believed that a political party is created as a base for a power elite [Sinsawasdi, 1996 #103, 336]. As a politician increases his power, he establishes his own party, even if it is a small one with only one member. This explains why there are many political parties in Thailand. With different political bases and backgrounds, each political party has many factions which can be distinguished in terms of locality\(^1\), religion and personal connection. In reality, these independent factions have more bargaining power and are able to challenge political affairs within and between parties. One shortcoming is that the political factions have been able to influence the Thai bureaucratic system with their different ways of thinking.

Besides the problems of the administrative, legal and planning systems discussed in Part II; there are also a number of key influences which act as driving forces on the political factions. In some cases these influences are subject to the use of power of one person as we shall see later. This discussion focuses on how these influences relate to Bangkok city planning and the SBIA project.

The relationship between city planning and airport planning can be distinguished in terms of local and national politics. Based on the analysis of the Bangkok Plan 1992 discussed in Chapter 4, and a review of the SBIA master plan discussed in Chapter 6, the two planning domains reflect a lack of coordination. This discussion focuses on the interaction between the two planning domains and the consequences of different planning philosophies on the areas around the new Bangkok airport.

8.1.1 Key Influences on Political Dynamics in Planning

Many factors influence the political dynamics underlying planning in Thailand. This includes the conflict between factions through changes in the political economy at the regional and local level. According to the discussion in Part II, there are three key factors which factions consider as serious concerns which may change, postpone or

\(^1\) The New Aspiration Party (NAP), for example, proclaims itself as the political party for the northeast people. However, some members of the NAP in the south who are Muslims have proclaimed themselves as another faction in the NAP, namely the ‘Wada’ group.
cancel a project. This section discusses how these factors influence planning and development management.

The arrangement and distribution of power in the coalition government is the first factor that influences planning. This occurs soon after a coalition government is formed. In Thailand about 10 political parties are represented in the national parliament after an election with four or five of those parties forming a coalition government. Naturally, the factions in each party forming a government have to accommodate their mutual interests so that political power can be distributed satisfactorily. The factions in each party aim to acquire control over departments and authorities to enable them to promote their own interests. The political manipulation of planning starts here.

Having gained a portfolio, a Minister uses his authority to recruit his most trusted men as the heads of departments responsible for major projects. The connection between politician and bureaucrat develops immediately: this extends to the entire Thai bureaucratic system. This explains why each reshuffle of a coalition government is followed promptly by the appointment of a new head of department. Consequently, plans, reports and budgets which have already been prepared may be changed to fulfil each new Minister’s policy. This is a main reason why the Managing Director of the NBIA is dismissed and another appointed in association with each change of government.

Absolute command and control within a certain timeframe is the second factor required by factions, because political interference is most effective when they gain absolute command and control. The longer the factions hold power the more money they can make. This key factor was evident during the dictatorship regime of Sarit in the early 1960s. However, the current political situation does not allow any faction to have absolute command and control.

Political circumstances changed after the collapse of the military government in 1973 to be replaced by a plurality of new factions who no longer rely on the military. As discussed in Chapter 5, the struggle for absolute command and control has become a serious problem in coalition governments because of parties being composed of a number of factions from different backgrounds with complex connections. It is also easy for any party to de-stabilise a coalition. That is a reason why no government has been able to complete a four-year term since 1973. It is interesting to study how the government can work under these circumstances.
It has become established practice for the Prime Minister, as the head of the coalition government, to appoint the best men from his party to chair the Ministries of the Interior and Finance so that he can control their budget allocations. This is understandable, as the Prime Minister needs to control the budget.

This phenomenon reflects David Harvey's idea [Harvey, 1989 #87, 165] about the forces that influence the urban process and the urban experience under capitalism. Harvey turned to Marxist meta-theory and considered how urbanisation is framed by the intersecting abstractions of money, space and time, shaped directly by the circulation of capital in time and space. Hence, command over money, command over space and command over time form independent but interlocking sources of power. He referred to Marx's statement that 'The extent of the power of money is the extent of my power' which generally explains the politics of class struggle in the city. That is his reason why confusion, conflict, and struggle are a normal condition [Harvey, 1989 #87, 165-199].

In the case of Thailand under the capitalist system, in my view, these sources of power are concentrated in the group of political factions that struggle to gain control over money (budget allocation), space (department and ministry) and time (period of administration). This is concerned with individual interests. I agree with Harvey that Bangkok is following this same urban experience in the shaping of the city. However, command and the use of power that is shaping Bangkok is dispersed in the hands of political factions rather than in the hands of the public through the democratic control delegated to the bureaucracy.

Hence, the term 'command' becomes a theoretically specific element. Despite many clear descriptions and interpretations by law, it is clear that the Prime Minister does not have absolute command and control in dealing with the factions. In practice, the factions have so much bargaining power that the Prime Minister has to concentrate on the most important issues. This explains why the Prime Minister does not pay attention to city planning or the SBIA project.

The third and most powerful influence is King Bhumibol Adulyadej.

---

2 The Ministry of Interior is the most powerful ministry with plenty of legal power. The Ministry of Finance controls the public budget. When the Prime Minister has more bargaining power, the Ministry of Transportation, the Ministry of Agriculture and the Ministry of Industry are second priorities. The distribution of power in the coalition government depends on the proportion of a faction's seats in the parliament. This current pattern of arrangement is totally different from the period of military government in the 1960s, when the Ministry of Defence was the most important. The dictator considered the Ministry of Defence as his political base against coup attempts.
Despite many political changes over the past decades, King Bhumibol is a remarkable and stable political icon in Thailand who has been on the political stage since his coronation in 1946. In theory, the King is the ‘personification of the Thai nationhood’ [Baker, 1996 #5, 198]. It is very important to note that any criticism of the King and the royal family is illegal in Thailand under Article 8 of the constitution. This thesis limits itself to his moderating influence over the politics of planning and development management. While the King, as constitutional monarch, is aloof from day to day politics and must appear impartial, he is the one person with power and respect who can solve a crisis.

The political relationship between King Bhumibol and Field Marshal Sarit during the military regime in the 1960s was not clear. The King’s role became significant in ending political conflicts in 1973, 1976 and 1992 with a personal use of power, which is not written in the constitution.

King Bhumibol is interested in agricultural development and enjoys spending time in rural areas. He is also concerned about critical problems in Thailand and offers model technical solutions through the ‘King’s projects’. One of these projects is the flood protection project in east Bangkok.

Every faction has responded to his initiatives immediately without question. Compared with other projects, the King’s projects never have any problems with the administrative, legal and planning systems.

It is clear that King Bhumibol has absolute command and control in his position as constitutional monarch. However, His Majesty selectively uses this power to solve critical problems and to end political conflict among factions when necessary. Furthermore, factions try to avoid attracting his attention as it can affect their individual interests.

Pasuk Phongpaichit and Chris Baker have studied the evolution of political pluralism in Thailand discussing how factions with provincial business interests rushed to the political theatre in the late 1980s. Their study pointed out that these factions quickly spent money made from investing in illegal business with large profit margins, thus paving the way to the parliament [Baker and Phongpaichit, 1996 #5, 176-177].

3 A good example is a local election for Municipality of Samut Prakan in 1999. It is known openly that this is a dirty election. A faction in the coalition government is behind this dirty election, however, the Prime Minister seems to see nothing and know nothing.
4 Article 8 of the 16th constitution: The King is the country’s reserved institution. Nobody can sue, accuse or show contempt for the King.
Hence, 'money politics' began with vote buying in Thailand. Their study extends an understanding of how and why these factions exploited individual interests and struggled against each other in making money. Beyond these facts, the next task of this section is to understand how the factions have used their different approaches to planning under the constraints of the key influences discussed above.

Every political faction has connections with bankers, developers and the landed elite who support them during each election campaign. The shortcomings of 'money politics' are evident when these politicians form a coalition government. Some of their supporters, in the name of 'experts', become advisors to ministers and some are appointed to chair the executive boards of state enterprises so they can direct them to their own advantage\(^5\). Hence, some government officials are forced to follow a new faction's policy otherwise they may be transferred to non-effective positions.

Another shortcoming is that plans and budgets that have already been prepared are revised to meet the individual interests of factions. Ignorance of the Bangkok City Plan 1995 prepared by the MIT team discussed in Chapter 4, the politics of landfill for the SBIA discussed in Chapter 6 and the flood protection assessment study discussed in Chapter 7 are examples of planning politics. This explains why technical knowledge in planning has not been applied effectively and how chaotic the development of multi-million baht projects in Thailand has been.

Naturally, factions may express their interests openly while a coalition is being formed. For example, the Social Action Party (SAP) expressed an interest in taking responsibility for the development of the SBIA in 1996 and 1997. Control over the Ministry of Transportation was also important to the SAP. However, the distribution of power in the coalition government did not give the SAP absolute power over the Ministry of Transportation. Hence, a strategy of delay was applied. Many committees were set up by the Prime Minister to evaluate the progress of the new Bangkok airport project. As happened with another project, environmental issues also became a political concern because the Ministry of Science and Technology, which was under the control of another faction, conducted an environmental impact assessment. So far as I can find

\(^5\) The government appointed Nukul Prachuapmor, the former Governor of the Bank of Thailand (BOT), to investigate what caused the failure of the BOT following the currency crisis in June 1997. Nukul's report identified the failure of the BOT as a result of the most serious case of intervention in the (BOT), which had previously been free from political interference for decades. The interference occurred when factions within the coalition government re-organised the administration of the BOT and applied pressure so that financial policy and plans were only profitable for their supporters. This political interference caused an economic disaster when the decision to devalue the Thai currency failed in July 1997, ending the economic boom.
out, this EIA has never been publicly released. This type of political situation also occurred with the BMA in 1998 when the Ministry of Science and Technology opposed a proposal for a tram project because of an unclear environmental impact study. In the broad context of environmental issues, it may take months or years to satisfy the Ministry of Science and Technology before getting final approval. Environmental impact studies are a government concern and are not applied to the King’s projects. The governments never view the King’s projects negatively.

As the democratically elected government in Thailand comprises multi-faction parties which aim to satisfy their individual interests, conflicts between factions and political interference in project planning are hardly avoidable. Despite professional planners having the skills and experience, planning practice in Thailand is not functional. The domains of city planning, airport planning and environmental planning are easily used as political tools in the hands of factions.

This pattern of political interference has occurred in almost every government agency during the few past decades. Many such cases have resulted in corruption allegations. However the corrupt politicians have not been charged because of loopholes in the legal system. People are tired of the corruption problem. Coupled with the collapse of the Thai economy in 1997, it has become one of the most powerful driving forces behind the adoption of the 16th constitution which includes many articles to create measures to terminate political interference. However, it may be too soon to expect an optimistic outcome following this political reform.

In my view, these measures have had little impact on the key influences mentioned above. They can only slow down the process of political interference as factions will not give up and will look for other ways to intervene in multi-million baht projects.

8.1.2 Lack of Connection between City and Airport Planning

An airport is an urban element however few cities can have an airport. The bigger the airport the more important the role and functions the city can play. In

---

6 Article 79: The state must promote and accept public participation in planning and implementing environmental and natural resource conservation and management, as well as controlling and eradicating pollution that threatens people's lives, welfare and quality of life. Article 111: Members of Parliament shall not use their status or position as a House Representative to interfere or intervene in an appointment, transfer, reshuffle or promotion, in an increase of salary for government officials, employees of government agencies, state enterprises or local administrations, and Members of Parliament may not dismiss the officials mentioned above.
developed countries, a busy airport located close to the city is unwelcome because of the noise pollution problem. City planning and airport planning are hardly integrated in Thailand. However, the new Bangkok airport may be different in relation to the noise pollution problem. As far as I am aware, the Thai people never have taken action against the airport project and do not complain about aircraft noise.

I agree with Richard De Neufville that there is no universal methodology for ensuring that airport planning is appropriate to all needs. Countries have distinct philosophical orientations, traditions of government and education heritages. These lead them to differ in their interpretation of facts, the formulation of problems and processes of decision-making in all-important aspects of planning [Neufville, 1976 #91, 35]. The case of Bangkok airport reflects this statement well.

The government regards the international airport as the gateway to the world which will contribute to rapid economic development in the country. This may explain why there are many international airports in Thailand. Besides the basic functions of air transportation, the international airport has become a symbol of sovereignty and prestige for many countries including Thailand. This is the main reason why the terminals and facilities at Don Muang airport and the SBIA are designed for luxury and spaciousness. Hence, the concern for economical development is ignored.

Airport planning in Thailand is part of national planning practice. The government draws up policies and develops airports through the central planning agencies. The planning process is authoritarian with no public participation. Local communities are informed after decisions have been made. These activities are completely different from the process of city planning.

Bangkok city planning became a truly local practice after the first legal plan prepared by DTCP was implemented in 1992. The BMA is responsible for the preparation of new plans and their implementation and enforcement by law. The DTCP plays the role of a technical advisor as the secretary of the Board of City Planning. In principle, people can participate in city planning because a ‘public hearing’ is a compulsory procedure as a crucial part of the planning process. However, there are some practical problems, which I will discuss later.

As discussed in Chapters 4 and 5, political factions with their own individual interests have intervened in airport planning and city planning in both national and local

---

7 These international airports are in Chiangmai, Chiangrai, Khonkaen, Nakhon Ratchasima, Ubon Ratchathani, Phuket, Haad yai, U-Tapao, and Phitsanulok has just been proposed in 1998.
politics. Consequently, the two planning domains are distinguished in terms of actors, institutions, administrations and policies through budget allocations and legal controls.

This explains why the Bangkok Plan 1992 and the new city plan prepared in 1998 did not consider the new Bangkok airport. The SBIA, with a capacity of 100 million passengers per year, was not examined and its impact was not studied. Meanwhile, the SBIA master plan does not relate to the Bangkok area despite the fact that the new airport is only some hundreds of metres outside the administrative boundary of the BMA. This is also a reason why the new Bangkok airport master plan fabricated the environmental assessment studies and covered up its negative impact on Bangkok, particularly noise pollution and flood protection. It is clear that authorities involved try to avoid any conflict between local and national politics regarding the making of the two plans.

As discussed in Chapter 6, the new Bangkok airport master plan recommended that a rubbish-dump site be developed on the coast even though the largest waste disposal plant run by the BMA is located only a few kilometres from the new Bangkok airport. This reflects the lack of coordination between city planning and airport planning.

It is worth noting that consecutive Thai governments have been nervous about the new Bangkok airport development since the 1970s. The government regards Singapore as its biggest competitor in the region. When Changi airport in Singapore was opened in 1981, its impact on Bangkok became a nightmare for the Thai government. While the Thai government was arguing and revising its policy on the development of the SBIA project, the second terminal of Changi airport was opened in 1990 and its third terminal will be opened early in the 21st century. These circumstances forced the Thai cabinet to approve the development of the SBIA project in May 1991. Hence, it is clear that Changi was a key factor influencing the Thai government.

During the past few decades the government has used this point to revise the master plan and speed up the implementation of the SBIA project. The new airport project became a focal point in the arrangement and distribution of power in the coalition government as factions struggled to have absolute command and control over the project. In contrast, the government overlooked the importance of city planning for Bangkok. In fact, city planning and airport planning should not be considered in isolation because millions of airport passengers have to stay and use facilities in the
city. This crucial factor is not included in the *Bangkok Plan 1992* and the new plan of 1998.

Aviation authorities in Thailand seem to believe that a well planned airport with the longest runways, luxury terminals and the best airport facilities are the most important factors that can make the SBIA the aviation hub of the region. In fact, aviation agreements between countries, the global airline networks and the economic linkages between regions through the urban infrastructure and the transportation network between the airport and the city are co-factors which determine whether it can be the regional aviation hub. Through the massive investment in airport infrastructure, the NESDB expects that Bangkok will be a pivotal member of the Asia Pacific’s ‘string of world cities’ [Leman, 1995 #10, 42].

However John Friedmann insists that ‘development planning is not just a matter of economics and that economic infrastructure, building the world’s biggest 24 hour airport, tallest office tower or what ever, is by no means all that is needed, or even always the most important thing, to succeed in the process of world city formation’ [Friedmann, 1998 #92, 38]. The development policies proposed by the NESDB for Bangkok and the new airport discussed in Chapters 5 and 6, reflect how little the national planning authority understands about the planning philosophy of aviation, urban and regional development. The Governor of Bangkok also seems to ignore these policies and concentrates on other projects he has promised during the election campaign.

It is not clear whether the government considers the separation of city and airport planning as a problem however the need for better coordination between authorities is always being discussed. But as far as I am concerned, there has been no attempt to integrate or even talk about the two planning domains as a single concern. It is difficult to know when the problem of the lack of coordination between city planning and airport planning will be resolved.

As Bangkok remains a primate city with a number of chronic problems, Bangkok is what Friedmann calls ‘a city whose unchallenged range of control is the entire national territory’ [Friedmann, 1998 #92, 31]. In my view, the best-planned airport might well be located in the worst planned city, that is in Bangkok. The task of this section is to understand the ongoing failures of planning practice as the result of the lack of coordination between city and airport planning.
8.2 Planning under Political Pressure

Planning theory and practice as Peter Hall describes in his article ‘The City of Theory’, is the key focus of the discussion in this chapter. I agree with Hall that there is a need for an improved, reciprocal relationship between the two: theory that is formed by and relevant to actual planning practice and planning practice informed and improved by theory [Hall, 1996 #86, 383]. This idea is reasonable and should be responded to broadly. The planning experience in Thailand discussed in the previous chapters reflects the fact that this improvement would require a number of radical changes to overcome a number of constraints. This section attempts to identify these constraints to this improvement in the case of Bangkok.

The section discusses some contemporary ideas, concepts and theories in three planning domains (city planning, airport planning and environmental planning) in relation to the ongoing failure of planning practice in Thailand. It focuses on planning theories, the concept of integrating environmental impact assessment with planning, and theories of urban politics. Based on the hypothesis that planning practice is under political pressure, the task is to theoretically synchronise the rationale of the three planning domains using the case of Bangkok and the SBIA project.

8.2.1 Reconsideration of the Definition of Planning

Planning is a broad term which has been discussed and defined in association with many fields. I agree with Yehezkel Dror (1973) in his article, ‘The Planning Process: A Facet Design’, published in a classical book A Reader in Planning Theory edited by Andreas Faludi. Dror gave a definition of planning in the 1970s that ‘planning is the process of preparing a set of decisions for action in the future, directed at achieving goals by preferable means’. This definition includes seven different elements which introduce some of the concepts which make up planning [Dror, 1973 #128, 330-332].

Patsy Healey made a contribution to theoretical debates on planning in the 1980s by identifying planning as a concrete activity undertaken by identifiable actors and institutions leading to outcomes which can be evaluated against objective criteria [Healey, 1982 #90, 19]. Hence, actors and institutions are concerned with politics and evaluation has become a key word in the field of environmental planning.

Healey [1995] concentrated on the relationship between planning and politics in the 1990s in relation to the British planning experience. In Healey’s view, a plan is a
store of policy principles and criteria, goals and objectives. It is intended to guide but not determine regulatory decisions. The objective is to provide sufficient flexibility to allow a ‘reasonable’ balance of individual and collective interests in specific decisions. These traditional models assume a unitary ‘public interest’. Plan-making could proceed dominated by experts and officials, realising political goals, which are assumed to be widely understood and shared [Healey, 1995 #88, 253].

This section discusses the failures of planning practice in Thailand based on these two definitions of planning and the relationship between planning and politics. A starting question is ‘what are implications of the seven different elements in Dror’s view’.

1. Planning is a process which must be distinguished from a ‘plan’. A plan can be defined as ‘a set of decisions for action in the future’ and can be arrived at either through planning or through some other rational or irrational, method of decision-making [Dror, 1973 #128, 330]. As a Thai planner, I have a somewhat different view of this element.

Planning in Thailand is essentially a political process which may or may be not distinguished from a plan. Politicians are decision-makers who are not interested in how a plan is made or what plan looks like. Planners are forced to follow decisions which have already been made. For planners, any question about rational and irrational decision-making is forbidden.

2. Of preparing. Planning is essentially a process of preparing a set of decisions to be approved and executed by some other organs formally and legally [Dror, 1973 #128, 330]. This element reflects a political tradition in Thailand. Selected advisors in the name of ‘experts’ prepare recommendations and sometimes decisions for the Minister. This is not a ‘rational’ process of preparing a set of decisions. In some cases it does not require any investigation process because of lobbying among factions. As a result the decision is made informally to meet the mutual interests of factions. Any ‘preparing’ for decisions is only done to ensure that lobbying by factions is successful and there will not be any problems with the formal and legal approval.

3. A set. A set of decisions is a matrix of interdependent and sequential series of systematically related decisions [Dror, 1973 #128, 331]. This element may frustrate the Thai planner because related decisions are not arranged systematically. A set of decisions cannot be made in the Thai system because the pluralist structure of the administration is under the control of factions.
4. Of decisions for action. Planning is primarily directed at action and not other objectives [Dror, 1973 #128, 331]. The meaning of this element is completely different in the Thai context. In practice, political factions identify their objectives and express their individual interests before the planning begins.

5. In the future. Planning is directed toward the future. This is the most important characteristic of planning as it introduces the elements of prediction and uncertainty and conditioning to all aspects, problems, and features of planning [Dror, 1973 #128, 331]. Time, in association with the other key element space, is an abstract element, the importance of which has been stressed in every planning school as a basic principle of planning philosophy.

Basically, Thai planners apply the five-year term as the time frame for planning however, the term in the future may cover a much longer period of probably 10 years or 20 years to cover complex issues such as population projections and environmental impacts. The meaning of this element is totally different in the view of political factions in Thailand. In their view, the meaning of the term ‘in the future’ depends on how long they can have power to control the project. It could be weeks or months but seldom more. This explains why political factions cut short the planning time frame and rush into implementing a project without completing an investigation.

6. Directed at achieving goals. The planning process cannot operate unless it has more or less defined goals to the achievement of which its recommendations for action in the future are directed [Dror, 1973 #128, 331]. This element is likely to be out of the control of the Thai planners. In practice, political factions define their goals, sometimes as part of a policy package, and planners only get orders to make or reshape a plan to fulfil the politician’s individual interest.

7. By preferable means. The very nature of planning, as a process for the rational shaping of the future according to our desires, depends on the means-ends relationship which is basic to the planning process. The planning process is directed at suggesting the preferable means for achieving our goals [Dror, 1973 #128, 332]. The last element is directly concerned with politics and clearly reflects the political culture in Thailand. Planners may propose rational alternatives to the government, but none are usually selected. In some cases, political factions express their own preferences which they have had in mind before joining the coalition government. More importantly, their preferred means may never be set out in a planning document. The politics of landfill discussed in
Chapter 8 The Politics of Planning and Development

Chapter 6 is a good example of this. City planning, airport planning and environmental planning are particularly subject to political pressure.

In terms of the planning definition given by Healey, the identifiable actors and institutions in the planning process in Thailand are the political factions and the coalition government and not the well-trained planners and planning authorities. A Plan has become 'a store of political objectives' aiming at 'individual interests'. An evaluation against objective criteria is ignored and attempts are made by the government to cover up the consequences in cases where negative impacts are foreseen. It is clear that the political factions dominate the planning process in Thailand and that professional planners are unable to use their knowledge and play an active role in rational planning. As planners do not have sufficient political power and political factions do not have rationality, the failure of planning practices in Thailand remains unsolved.

The definitions of planning given by Dror and Healey combine to provide a theoretical understanding about what a good planning process should be. These definitions seem to be ideal for Thai planners because the experience of planning practice in Thailand has shown that good planning processes cannot be applied because of strong, open and unavoidable political influences. Planners in Thailand are unable to make rational plans with clear objectives based on public interest. In my view, what Thai society requires most may not be a better planning process but a less self-serving political system.

8.2.2 Reflections of John Friedmann’s Ideas and Theories on Planning

Theories and concepts in the past few decades have changed vastly and have extended from the traditional doctrines to a number of new fields of study. Many new technical terms and new subjects have been created as a consequence of the evolution of these theories and concepts. Arguments on these theories and concepts are extensive. This includes 'planning theory', however, a theoretical delimitation of planning can be made.

This thesis considers John Friedmann’s theories and ideas for discussion because he has made one of the largest contributions to the fields of regional planning, economics, geography, and development studies since the 1950s. His theories and ideas on development reflect the changing perspective of planning in the 20th century. The
Chapter 8 The Politics of Planning and Development

discussion focuses on his recent planning ideas and concepts which have become more involved with the political arena and social learning [Friedmann, 1998 #89, 1-2, 9-10]. Importantly, he is the first scholar who has argued that the *Town and Country Planning Act 1975* is unsuitable for Thai conditions. His recommendations reflect the problems of planning practice in Thailand in 1975. An interesting discussion is possible on the theoretical contradiction of planning practice in Thailand from his perspective.

John Friedmann visited Thailand during 17-28 March 1975 and submitted a report to the NESDB on 3 April 1975 with a number of specific recommendations within the rural-urban context. His ideas moved beyond ‘perspective planning’ to the meaningful implementation of rural-urban development programmes. His focus was on new institutional arrangements, for example, the creation of regional development banks and a set of viable ‘planning regions’. He introduced the concept of an urban pre-investment study. The application of ‘growth centre’ theory was discussed in association with his core/periphery model. However, he found that there were a number of serious difficulties in the case of Thailand.

The theoretical and ideological difficulties were discussed by Friedman in his report. For example, the theory of ‘optimum city size’ was discredited by him and the development of urbanisation in Thailand was ‘extremely slow’ under conditions of rapid population growth overall which did not suit these theoretical approaches. He regarded political pressures as practical difficulties. In Friedmann’s view what needed to be done was to reorient developmental thinking and to shift the pattern of investment allocation from urban to rural areas [Friedmann, 1975 #39, 3-4].

Friedmann’s recommendations to Thailand in 1975 were useful to people who were involved in spatial planning. These recommendations reflected his theories and ideas in the 1970s. He regarded Thailand as an agrarian society and the core-periphery distinction and agropolitan approach were introduced to the Thai government. He viewed development as ‘self-reliance’ which was not merely economic expansion but provided employment opportunities and equity. Unfortunately, his recommendations were largely ignored and development decentralisation progressed only slowly in subsequent decades. However, the same recommendations of ‘self-reliance’ and rural development were reintroduced in December 1997 through the King’s projects and the government responded to these recommendations immediately.

---

8 Friedmann used this term to express his concentration on implementation rather than planning activity.
9 See Appendix 8.1
Chapter 8 The Politics of Planning and Development

Compared with his longer experience in South America, in my view, the experience in Thailand did not influence Friedmann’s ideas on regional development planning theory. However, his concept of ‘bottom-up approach’ showed his political focus for the next decade. His book, Planning in the Public Domain published in 1987, discusses planning problems in which he tries to escape from the three common routes of high technology, deregulation and propaganda and repression to a fourth route which aimed to ‘re-centre political power in civil society’ [Friedmann, 1987 #93, 13]. The term civil society is stressed in his book Cities for Citizens published in 1998, in which Friedmann uses the concept of civil society to discuss the changing doctrine of planning towards the new political economy of planning. In his view, ‘civil society is ultimately for itself’ [Friedmann, 1998 #89, 28].

Friedmann explains that civil society was used in its modern sense by Hegel in his Philosophy of Rights in 1821. Despite decades of debates the core meaning of civil society has remained constant. Civil society designates those social organisations, associations and institutions that exist beyond the sphere of direct supervision and control by the state [Friedmann, 1998 #89, 21]. ‘Citizen rights’ has becomes a key word in this concept.

As a holistic approach to citizenship, which is the right to have rights, it stresses active participation in a political economy that is just and mutually supportive and embraces all sorts of rights and responsibilities, including cultural and environmental [Friedmann, 1998 #89, 26-27]. Planning in a transactive style, is discussed and Friedmann’s views that planners working for and with civil society must be ‘organically’ connected [Friedmann, 1998 #89,31]. In other words, planners should adapt themselves in harmony with the working environment by learning how the local people live and what they think about their environment.

In terms of transactive planning, Friedmann states that local autonomy is important and must first of all be strong at the local level. This would require a more perfect form of democracy. It also involves creating opportunities for self-development that aims at the removal of artificial obstacles that limit each person’s chances to develop her or his innate abilities to the fullest possible extent. His discussion on ‘social justice’ as a part of planning is based on the work of Iris Marion Young. This powerful argument is that different groups have different needs, that universal remedies have unequal results and that the politics of justice must create a heterogeneous public ‘where participants discuss together the issues before them and come to a decision according to
principles of justice [Friedmann, 1998 #89, 33-34]. Social justice is another key word in the planning process with a positive meaning.

In David Harvey’s view, however, the concept of social justice is not an all-inclusive one which encapsulates our vision of the good society. It is rather more limited. Justice is essentially thought of as a principle (or set of principles) for resolving conflicting claims. These conflicts may arise in many ways. ‘Social justice is a particular application of just principles to conflicts, which arise out of the necessity for social cooperation in seeking individual advancement’ [Harvey, 1973 #94, 97]. The aim of social justice is to provide reasonable and rational resolutions as a means of avoiding social conflicts in the planning process. However, the term social justice is seldom mentioned and seems to be less important in the formal planning process in Thailand.

It is important to note that the ‘bottom-up’ approach to planning based on public-participation, has been addressed in the Town and Country Planning Act 1975 in Articles 33, 34 and 35. In fact, the Act is considered to be the most flexible and democratic civil law in that in principle the local people can participate in the planning process and determine the direction of development in their communities [Roachanakanan, 1990 #20, 79]. In principle, planning law provides opportunities for self-development and social justice to the local people. However in practice, Friedmann’s concept of transactive planning is rarely applied in Thailand because of numerous problems and difficulties.

First, as discussed in Chapter 4, very few local people participate in the planning process even though the schedules of proceedings are announced via public media such as local newspapers, radio and television for weeks beforehand. Moreover, most participants are actually local politicians and community leaders who participate in the public debates on planning but do not truly seek benefits for their communities. In some cases, the community leaders are speculators who are only interested in making money, and as a result their planning objectives are misleading and do not focus on public interests.

Second, most local people have poor reading skills and cannot understand two-dimensional maps or plans. This therefore becomes an obstacle which limits their understanding about their built environment.

Third, in my view, Thai society cannot yet be regarded as a ‘civil society’ because only a very small number of groups, associations and institutions exist to represent the public interest against state control. Some of these include non-
government organisations (NGOs). Moreover, it is too soon to conclude whether democracy in Thailand has improved following the adoption of the new Constitution in 1997. My argument is that a perfect democracy itself does not create a good plan, but the people who understand democracy can make a good plan based on the public interest. Despite many political changes, nobody knows how much Thai people understand about the true meaning of democracy as ‘money politics’ through vote buying still exists.

Last and most importantly, as discussed earlier, development projects in Thailand have never been free from political interference because political factions are always intervening in the planning process using any means. As a result the local people feel powerless. Under these circumstances, ‘social justice’ seems to be a theoretical term which is rarely found in Thai society.

These problems and difficulties are evident in the case of Bangkok. If ‘planning’ in Friedmann’s view is a part of social learning, the task of planning in Thailand is to understand the complexity of its political culture and traditions - from the national legislative chamber to the meeting room of the small community. Another task is to improve the participation process in order to achieve a genuine and comprehensive expression of public interest and to permit greater public influence over planning decisions.

8.2.3 Environmental Impact Assessment

An environmental impact assessment (EIA) is a process of identifying and evaluating the possible effects of proposed activities so that serious environmental damage can be avoided or minimized. The effectiveness of an environmental impact assessment, as a strategy for environmental protection, ultimately depends on its point of intersection with the planning and decision-making process. The timing of an environmental impact assessment determines its purpose, scope and outcome [Armour, 1990 #95, 5].

As discussed in Chapters 6 and 7, the impact assessment studies for the SBIA were deficient as some data was made up. This section discusses the practice of environmental impact assessments in Thailand in the light of selected EIA literature and the need for a more effective integration of impact assessments into the planning process.
Chapter 8 The Politics of Planning and Development

Thailand first imported the idea of EIA in 1975 by incorporating it in the 1975 Promotion and Conservation Act. But it was systematically and legally enforced in 1991. By now, the term is a familiar part of any large-scale development project. While some people have hoped that it would play an important role in protecting Thailand’s environment, other critics see it as ‘a rubber stamp’ (Thai Development Newsletter No. 25, 1994, 25).

This statement reflects the slow development of environmental impact assessments in Thailand. Environmental planning has followed the same experience of city planning and airport planning. The question is how the environmental impact assessment procedures operates in Thailand and how this diverges from accepted international practice.

In an interview with a local English-language newspaper, The Nation, on 5 August 1994, a senior environmental expert at the Office of Environmental Policy and Planning (OEPP), Suphawit Piamphongsarn, explained that EIA was introduced as part of the planning process in order to reduce the environmental impact of development as much as possible. The objective of an EIA is not to stop or disagree with a project. It is supposed to provide a plan which will cause the least environmental impact. If any negative impact is to occur, the EIA should state how this would be managed (Thai Development Newsletter No. 25, 1994, 25). However this has become a problem for planning practice in Thailand because few environmental impact studies are carried out before a project is approved. In most cases, the monitoring process is only undertaken after a project has been implemented; perhaps years later. Some projects have a critical impact on the environment and the situation becomes so complex that the government runs out of ideas on how to deal with the never-ending consequences. The EIA studies on hydroelectric projects in the north and the northeast are good examples.

In my view, the EIA has become a political issue and as a result, few EIA studies of government projects are conducted properly. The systematic bias of an environmental impact assessment starts immediately after factions gains power as part of a coalition government and aim to ensure that their mutual interests can be met. This systematic bias has also extended to private projects. In an interview with The Nation on 5 August 1994, Suphawit Piamphongsarn of OEPP admitted that:

---

10 International practice generally encourages proof of the need for the project with an examination of alternatives and a real possibility that a project may be stopped if negative impacts are unacceptable.
The EIA studies of big development projects are usually distorted by some of the consultant companies who carry them out. They try to over-estimate the project's benefits, but usually under-estimate the project's costs especially its environmental costs.

In the case of government projects, political factions play a role in selecting a consultant company, which is supposed to be a third party, to carry out the EIA study. Government officials are then forced to write the Terms of Reference in a way which will facilitate bidding by a company preferred by the political faction. Political factions can thus control an EIA study. In addition, data and information in the EIA is sometimes fabricated and the results of the EIA study are presented to cover up any negative environmental impacts. This is the reason why some critics see the EIA in Thailand as a mere rubber stamp.

The politics of EIA in Thailand are complex. The task of carrying out an EIA is limited to a small group of experts who have a licence from the OEPP. Social impact assessments (SIA) which allow people to know in advance the consequences for the human population and the community of a proposed action or policy change [Burdge, 1988 #97, 15] are not carried out in Thailand. In reality, government decisions on projects are not based on either EIA or SIA studies but on agreements between factions within the coalition government. In some cases, the government may postpone but not cancel a project, if a local community with strong 'leadership' demonstrates against the project. In terms of my concern, however, there is yet to be public information or debate on the EIA conducted on the SBIA.

8.2.4 Integrating Impact Assessments into the Planning Process

Audrey Armour views 'planning' as a problem-solving process with several discernible stages in which parts or all of the planning process may be repeated until an appropriate solution is found. It is generally acknowledged that if built into the early phases of planning processes, the impact assessment offers considerable potential for ensuring that resource management and land use decisions are environmentally sound. It is standard practice internationally for impact assessments to be conducted as a separate process and apart from the planning process as a means of justifying planning decisions rather than contributing in any meaningful way to them [Armour, 1990 #95, 5]. Hence,

---

12 Thai Development Newsletter, No.25, 1994, p25
it is important to study this concept of environmental impact assessment in theoretical terms.

In Armour's view, 'integrating EIA into planning' means reformulating the planning process so that environmental impact considerations are integral to it from the start to the finish. The process of EIA merges with the process of planning and they become one [Armour, 1990 #95, 5-7]. However, Armour highlights a number of barriers to a more effective integration of EIA and planning in that the economy, the environment and social equity become problematic. The need for technical or disciplinary integration, the need for consultative integration and the need for organisational integration are discussed by Armour. There is a recognition that integration does not come easily in a world characterized more by competition than cooperation, where mastery of means has not been coupled with clear ends and where a shared environmental ethic or consensus on principles of 'social justice' are still woefully lacking [Armour, 1990 #95, 7-11]. These factors seem to exist in every society.

In my view, 'integrating impact assessments into the planning process' is an approach based on optimistic assumptions which requires a high degree of discipline in a society and social justice principles. My argument is that integrating impact assessment into planning is an ideal approach but a long way from being applied in Thailand.

The biggest barrier is the pluralist structure of the administrative, legal and planning systems in association with the political style of pluralism in Thailand. The term 'to integrate' in the context of planning and decision-making has never existed in the mind of any Thai politician because of individual interests. The major problem with this approach in Thailand is that it is time consuming as it means that all or part of the planning process may need to be repeated until an appropriate solution is found. As discussed earlier, political factions in Thailand try to cut the planning process short and rush to the implementation process. The 'integrated' approach is a waste of time in the view of political factions because a more effective integration of the EIA and planning may have a negative influence on their individual interests. This is the reason why environmental impact assessments in some areas of Thailand are poorly conducted and biased, including the case of the SBIA\textsuperscript{13}.

\textsuperscript{13} Based on the observation of my fieldwork, the people who live around the new airport site know very little about the impact of the airport development. They have probably never experienced noisy aircraft
Roy E. Rickson, Rabel J. Burdge and Audrey Armour state that the ‘impact assessment is most successful when fully integrated with planning at the appropriate jurisdiction level where project development occurs’. When this integration is accomplished, environmental and socio-economic factors become central to planning decisions rather than being treated as ‘external’ or peripheral to the planning process [Roy E. Rickson et al, 1989 #99, 347].

I agree with this statement. However, more and more development projects in Bangkok continue to develop along the lines of the SBIA. Hence, the question is what should be done under these circumstances given that the current style of city planning is not effective and EIA is poorly conducted. Despite the number of barriers and constraints, the need for a more effective way of integrating EIA into the planning process should be regarded as a considerable challenge for planning practice. This approach challenges the professional planners and the environmental activists in Thailand and their first task is ‘to overcome the political barriers’.

8.3 Pluralism, Regime and Leadership

The analysis and discussions in previous chapters lead to the conclusion that Bangkok city planning and the development of the SBIA are all about politics. A delimitation of the theoretical field is difficult in this section because there are a number of political theories. Despite some similar elements and situations, the Thai experience is difficult to compare with western cases. However, my empirical study has observed that what really happened to the Bangkok Plan 1992 and the new Bangkok Airport project between 1959 and 1999 involved three significant political elements, pluralism, regime and leadership. This section discusses pluralism theory, regime theory and the concept of leadership.

Pluralism has been remarkably influential in the study of urban politics [Judge, 1995 #98, 13]. In 1961, R.A. Dahl used the term ‘pluralism’ throughout his work to theorize the concept of ‘polyarchy’\(^{14}\), as a normative benchmark, as an idealized institutional arrangement against which the actual performance of existing political systems could be assessed. Dahl argued that the existence of a significant number of

\(^{14}\) The existence of a significant number of relatively autonomous social groups and organisations.
relatively autonomous social groups and organisations 'is what has come to be called pluralism' [Judge, 1995 #98, 16].

G. Jordan identifies the main characteristics of a general pluralist model. First, power is seen to be fragmented and decentralised. Second, there are dispersed inequalities in so far as all groups have some resources to articulate their case, even if their demands are not necessarily or successfully acted upon. Third, this dispersion of power is a 'desirable feature in any system approaching the status of democracy'. Fourth, political outcomes in different policy sectors will reflect different distributions of power within those sectors. Fifth, the exercise of political sector extends beyond the formal institutional structure of elections and representative institutions in liberal democracy. Sixth, the interaction of interests would supply a practical alternative to the 'general will' as the source of legitimate authority. Finally, the disaggregated nature of decision-making, and the very uncertainty of outcomes of the bargaining process, helps bind participants to the process itself [Judge, 1995 #98, 14].

This conceptual framework provides a general understanding of pluralist theories. In the views of David Judge, Gerry Stoker and Harold Wolman, there is no single, homogenous theory of 'pluralism' or 'elites' or 'regimes' or for that matter, 'Marxism' or 'feminism': they are only theories. However, pluralism rapidly fragments into a series of models or types of theory, where different 'pluralisms' are apparent in different cities at different times [David Judge, 1995 #100, 4-5]. Urban politics in Thailand reflects a similar model of pluralism.

In fact, 'pluralism' has existed as a significant feature of Thai politics since it became an independent state in 1247. Pluralism is evident in terms of the struggle for power between a number of factions in association with strong conflicts such as assassinations, coups and the termination of whole dynasties, which have been recorded in Thai history through the past centuries. Pluralism has changed from a few groups in the royal family to the military factions after the political reform in 1932 and to new factions with different backgrounds after the collapse of the military regime in 1973. The political system remains pluralist.

Pluralism theory provides a 'realistic evaluation of the actual disposal of resources of actors', focusing on the 'process of bargaining, negotiation, salesmanship and brokerage and on leadership in mobilizing' those resources [David Judge, 1995 #100, 20]. In this approach, planning for Bangkok and the development planning of the SB1A are regarded as the resources of political interests and factions are regarded as
actors. This implies that delays in the two projects during the past few decades was a result of political factions failing to arrange and complete the process of bargaining and negotiation.

In my view, the successful process of bargaining and negotiation relies greatly on ‘regime’ and ‘leadership’. The best example of this is the development of the SBIA under the dictatorship of Field Marshal Sarit from 1960 to 1965.

A regime can be defined as ‘an informal yet relatively stable group with access to institutional resources that enables it to have a sustained role in making governing decisions’. Participants are likely to have an institution base, that is they are likely to have a domain of power. The regime, however, is formed as an informal basis for coordination and without an all-encompassing structure of command [Stoker, 1996 #96, 272]. In Thailand, this definition may extend to the military, the coalition government, the city council, the local Mafia and small villages. The conceptual perspectives are the same.

Complexity is central to the regime perspective. Institutions and actors are involved in an extremely complex web of relationships. Diverse and extensive patterns of interdependence characterize the modern urban system. Lines of causation cannot be easily traced and the policy world is full of unpredicted spillover effects and unintended consequences. Fragmentation and lack of consensus also characterize the system [Stoker, 1996 #96, 272].

Regime theory is concerned more with the process of government-interest group mediation than with the wider relationship between government and its citizens. Regime theory views power as structured to gain certain kinds of outcomes within particular fields of governmental endeavour. The key driving force is ‘the internal politics of coalition building’. If a capacity to govern is achieved, if things get done then power has been successfully exercised and to a degree, it is irrelevant whether the mass of the public agreed with, or even knew about, the policy initiative [Stoker, 1996 #96, 273].

In my view, the application of regime theory in the case of Thailand requires a deeper and wider understanding of the political system because most factions have complex webs and connections. Their structure and connections are involved with illegal business, preventing a comprehensive analysis and investigation. Since city planning is the domain of local politics and airport planning is the domain of national politics, the overlapping regimes of local and national politics become problematic for studying the meaning of regime theory in Thailand.
Besides the military regimes in the 1960s and 1970s, it is difficult to distinguish the periods of political regimes in Thailand because of the number of political changes. After the collapse of the military regime in 1973, no government has been able to complete a four-year term of administration. Some governments have lasted less than a month\(^{15}\). These short-lived governments are not regarded as regimes.

Despite these constraints, the purpose of regime analysis is to understand the conditions under which such effective long-term coalitions emerge in order to accomplish public purposes [Stoker, 1995 #101, 55]. This explains why all coalition governments in Thailand have been willing to compromise and rearrange power among the factions in order to achieve the longest possible term of administration. However, an effective long-term coalition requires political leadership which is the most important element in my view.

Clarence N. Stone believes that governmental authority at the local level can command only modest resources. Energetic governance requires more than office-holding alone can provide. The weakness of formal authority gives added importance to the ‘personal leadership’ of the prominent urban actor [Stone, 1995 #102, 96]. This viewpoint is interesting in studying urban politics. However, most recent studies on the leadership concept are comparative and their discussions concentrate on the American and British experience which cannot be compared with the Thai experience because of their different political systems.

I agree with James MacGregor Burns who sees leadership as a form of power [Stone, 1995 #102, 97]. In my view, political leadership in the Thai context is unique. In Thai society, this form of power is unique. The person who becomes leader has to make ongoing contributions in terms of money, resources and manpower. As a result it may take years or decades before Thai society accepts him or her as a true leader.

In Stone’s view, it is acknowledged that ‘leaders are constrained by social, political, and economic structures in which they and their followers are embedded’. The personality is both a strength and a weakness [Stone, 1995 #102, 109]. This explains why Thai leaders have to adapt themselves to the mainstream of the locality [Sinsawasdi, 1996 #103, 67] and why they try to cover up any weaknesses such as a poor educational background. At the same time, they learn how to use their power to manipulate the society.

\(^{15}\) The 35th government from 15 February 1975 to 14 March 1975 and the 38th government from 25 September 1976 to 6 October 1976 are examples.
I agree with Stone that leadership differs from individual to individual and that the personal factor is important [Stone, 1995 #102, 105]. In the Thai context, the military leader, the bureaucratic leader, the religious leader, the community leader, the Mafia leader and the political leader all have different types of interactions with their followers, however, they also have something in common. Leaders and followers are tied up with the 'patronage system' which is regarded as the key element of leadership in Thailand [Sinsawasdi, 1996 #103, 53-55]. The consequences of this have been discussed in other literature [Baker, 1996 #5, 1-264]. In my view, any further study of leadership in Thailand should focus on the complexity of political webs among leaders.

Regime theory and the concept of leadership indicate that 'the end of leadership means the end of regime'. This is the crucial reason why factions do everything they can to destroy the leadership of their political enemy. Conspiracies have been widely used to get rid of every leader in the Thai political theatre, with the exception of King Bhumibol Adulyadej whose leadership is the most powerful and stable in Thailand. King Bhumibol has become a political icon with the highest respect in Thai society.

In urban politics, pluralism, regime and leadership remain key political elements. This thesis has explained how they have influenced every development project in Thailand. The longer a regime and leadership lasts, the more stable a project is. What happened to Bangkok city planning and the development of the SBIA between 1959 to 1999 are therefore good cases for studying the politics of different regimes and leadership.

8.4 Future Prospects for Planning Practice under Political Direction

The discussions in previous chapters lead to many remarkable conclusions. The development of poor planning practice in Thailand is strongly related to political interference. The administrative, legal and planning systems are not effective in enabling rational plan-making to take place and moreover, the systems are open to political intervention. City planning, airport planning and environmental planning have become political tools used by factions for individual interests. The formal planning process which should be based on public interests is under political pressure. There are loopholes everywhere. Technical knowledge in planning and the application of good theories and concepts are ignored by the factions. Politicians do not have rationality and planners do not have sufficient power. Politicians are decision-makers and become
stakeholders in multi-million baht projects. Plans and budgets which have been prepared are rearranged shortly after each new government is formed. Political factions do not care about the consequences of changing policies or plans.

Under these circumstances, it is extremely difficult to apply planning theories, the concept of social justice and the concept of integrating environmental impact assessment into the planning process because of the number of constraints and barriers. Future prospects for coordinating planning practice with political direction will require radical changes both in Thai society and in the approach to planning and politics.

People expect that the 16th constitution adopted in 1997 will bring positive changes to Thai society. In my view, the new constitution does not guarantee anything. As the style of politics in Thailand remains pluralist in association with the patronage system, it may be too soon and too optimistic to expect major improvements in planning practice. Some people believe the leadership of King Bhumibol will be able to solve every crisis. However, he cannot intervene in every instance, especially in long-term endeavours such as city planning.

Fundamentally, what the cases of Bangkok city planning and the SBIA project show is that development projects in Thailand occur under a system of strong and open political interference, which is understandable but unpredictable.
Conclusion

This evidence presented shows how much politics influenced Bangkok city planning and the development of the SBIA through the past four decades. Power struggles among the political factions in association with corruption have become a common phenomenon of Thai politics. Policy and development decisions are made in a framework of financial and political constraints and opportunities. Both Bangkok city planning and the SBIA Project progressed very slowly because of frequent changes of government and ministers. The factions used all means possible to make money from the two activities. That includes many attempts to cover up important facts about the new airport project.

After studying all the available evidence carefully, this thesis concludes that the SBIA is not necessary. The existing airport could be expanded greatly if the government could move the headquarters of the Air Force out of Don Muang to nearby airbases. Studies on two other existing airports, U-Tapao and Kamphaeng Saen, have been conducted as alternatives for the SBIA. However, the government has consistently ignored this option despite the fact that it is costly to develop a new airport on swamp at the Nong Ngu Hao site and that the new airport is blocking the natural floodways and will affect flood protection on the east Bangkok. The reasons why the government decided to develop the new airport at Nong Ngu Hao are concerned with complex politics which date back to 1960.

Through the past four decades the governments and other authorities involved have repeated statements of the need for the new Bangkok airport, and argued that the Litchfield Plan recommended the separation of civil and commercial aviation out of Don Muang airport. After checking carefully, I found that the main report of the Litchfield Plan did not say anything about the separation of civil and commercial aviation out of Don Muang airport. Despite the most important section that recommended development of a deep seaport at Sriracha which has become Laem Chabang project in the 1980s, no mention of the new Bangkok airport was found. It might be written somewhere in a letter or might have been discussed among some of the people involved but it is not part of the official
record. If it were, this idea could not have been studied carefully because the consultants did not have time to work on this subject.

In the same period, on the contrary, Transport Consultants, Inc. [1959], another American consultant company made a thorough study of the whole transport system in Thailand. The consortium's report *A Comprehensive Evaluation of Thailand's Transport System Requirements to Ministry of Communication* [June 1959] recommended an integrated military and civil air transport system. The consortium argued that Thailand was not ready at that time to engage on her own in the very costly, highly competitive field of international air transport. However, the Thai governments over the past four decades have never mentioned this recommendation.

The main reason why the airport initiative was welcome immediately was the politics of Field Marshal Sarit, the dictator from 1958 to 1963. Nong Ngu Hao was selected for the SBIA because of Sarit's needs and individual interests.

The new airport project has been a opportunity for money making since 1962. In the 1950s and 1960s the United States Operations Mission to Thailand (USOM) intervened in the process of granting contracts for large construction projects in order to prevent Thai extracting bribes and rents. The best way for technocrats to insulate a project from corrupt practices was to engage USOM in every step of the process from the feasibility studies to finished product. The main reason why Sarit wanted the new airport was to make money in his own way so that the American government could not interfere. The Land Acquisition Act was issued in 1962 to make this possible. Any attempt to amend this Act requires a majority of the National Assembly. Every faction understands this troublesome procedure well. This is one reason explains why the airport project at Nong Ngu Hao has survived for three decades. Meanwhile, the Litchfield Plan was ignored and there was very little implementation.

The Litchfield Plan in 1960 considered urban primacy as a basic problem of Bangkok, and recommended population control and development decentralisation to other cities as early measures for solving urban problems. These recommendations were repeated again in 1963 [Nims, 1963 #122], however, the government ignored this advice.

Bangkok city planning and the SBIA Project again did not progress in the 1970s and 1980s because of power struggles among the political factions. Despite the adoption of
a new planning law, the *Town and Country Planning Act 1975*, and a new form of local government, the Bangkok Metropolitan Administration (BMA) since 1975, Bangkok city planning was not implemented legally until 1992. The delay of city planning caused a number of urban problems due to the lack of development control for decades. However, the *Bangkok General Plan 1992* did not solve the problems of Bangkok because it relied on the old style of planning practice focusing on land use control only. The plan attempted to preserve the large area on the east of Bangkok as natural floodways. Large developments in this area were forbidden. However, the plan had no effect over the area where the new airport site, four kilometres wide and eight kilometres long, was blocking the floodways.

Bangkok city planning and the new airport project remained interrelated in the 1990s. Cabinet approved the development of the SBIA at Nong Ngu Hao in May 1991. A master plan of the new airport was completed in 1994. It is clear that the master plan of the new airport was deficient, covered up a number of key facts, and some important issues of environmental impacts were not included. The impacts of the aircraft noise and the permanent disappearance of the three main existing canals on the nearby communities were not considered. The master plan recommended large-scale commercial and property development around the airport where the city plan did not allow such developments.

Density control in terms of floor area ratio was introduced in *The Bangkok Plan 1995* prepared by a MIT planning team. However, this plan was ignored due to political change in 1996. Bangkok city planning in the 1990s has become a matter local practice following the delegation of this responsibility, while the airport planning remains a national practice. The progress of each reflects local and national politics respectively and the separation of responsibilities exacerbates the risk of inconsistencies.

A pattern of separate development in accordance with political influence does not only happen to the Bangkok city planning and the new airport project, but also other projects in Thailand. That includes a small irrigation project in a small village through a large industrial development programme in the south of Thailand. In some provinces where the local Mafia are powerful such as Chon Buri and Samut Prakan, political influences are evident and the national government seldom keeps an eye on them because the local Mafia run factions in the coalition government.
This thesis argues that the whole system of governance is a radical problem. The poor system is open to money politics in association with the patronage system in Thailand. As this radical problem remains, professional planning is ineffective. The implication of this for planning theory is that there is no point in relying on rational approaches to planning in such politically changed contents. We need theoretical perspectives which recognise and describe complex possibilities for interaction between politics and planning.

The need for transparency and accountability has been discussed as crucial measure to wipe corruption out of the governance system in Thailand. Despite the Constitution of 1997 with a number of more powerful measures, the factions continue to influence both local and national politics. Three dirty elections within six months in 1999 in Samut Prakan province, and a number of corruption allegations over development projects in Bangkok and in other municipalities throughout the country between 1998 and 1999 show that the old style of Thai politics remains unsolved and the political interferences continue.

Hence I believe that the problems of planning practice can be solved if the authorities involved have open minds and a clear understanding what city planning is all about and what it can achieve. However the first and greatest task is to reduce the influence of personal interest in the governance system. The public and press have important roles here in demanding accountability for major development decisions and planning steps thorough EIA of plans and project proposals would assist to this accountability.

City planning is a tiny part of the whole system of governance. The Thai government expresses very little concern about its importance and ignores its problems. This thesis does not expect any big change in the near future. Any attempt to improve the whole system of governance in Thailand takes time, and requires wisdom and a strong unity of good people who really understand which development directions the country should take, how fast it should be, and what Thai society should gain from it.
Appendices

Appendix 1 Litchfield’s problems: 1957 to 1960

Litchfield, Whiting Bowne & Associate [1960] stated in their main report submitted to the Ministry of Interior in March 1960 that:

Maps and aerial photography are one of the basic tools in the development of any planning programme. Planning maps must provide sufficient accuracy to plot engineering, social and economic data so that proposals and plans may be drafted for the future development of an area...

Based on the inventory of existing map materials, the 1:10,000, 1957 map prepared by the Department of Metropolitan Police, Ministry of Interior, was selected as the most accurate and the best available. This map also met the requirement of covering all existing urbanised areas in the Bangkok-Thonburi Metropolitan Area. At the same time this map was adopted, an order was placed with the Royal Thai Survey Department, Ministry of Defence, for 1:10,000 aerial coverage to check the accuracy of the map’s details. When the aerial coverage and field inspection was carried out in connection with the Land Use Study, it was discovered that the map was ‘faulty’ and in several areas including the Metropolitan Area, was unable to be used for planning purposes.

The review of existing aerial coverage had fortunately revealed that a controlled photo-mosaic had been prepared by the 29th U.S. Army Engineer Battalion, stationed in Tokyo, Japan from U.S. Navy aerial coverage taken in 1957. Utilizing the control in the photo-mosaic, the 1:10,000 aerial coverage mentioned above and field checks, a base map at 1:10,000 covering the Metropolitan Area was prepared. This map has been used as the base map in plotting all engineering, social and economic data gathered by the project.

The map was prepared in December 1958, however it does not have the accuracy required for a base map for the Bangkok-Thonburi Metropolitan Area. The map met certain requirements of the planning project but did not provide the topographic
information necessary to prepare storm drainage and sanitary sewer plans [Litchfield, 1959 #81, 1-2].

Appendix 2.1 Reports and master plans prepared in the 1960s and 1970s

During the 1960s and 1970s, many reports and master plans were prepared to try and solve Bangkok’s problems. American consultants prepared the first master plan for the city in 1960, known as the Litchfield Plan. This pioneering effort was unofficially refashioned in 1969, unofficially transformed in 1970 and officially revised in 1971 [Sternstein, 1982 #3, 117]. A study, Sewage, Drainage and Flood Protection System for Bangkok and Thon Buri, was submitted to the Bangkok Municipality by other American consultants in July 1967. In February 1970, Camp, Dresser & McKee submitted a master plan, Water Supply and Distribution in Bangkok to the Metropolitan Water Works Authority. In December 1971, another report, Bangkok Transportation Study, was prepared by a German consultant company and submitted to the Office of Metropolitan Traffic Planning.

Appendix 2.2 Planning conflict

The issue of administration is a good example and was pointed out by Sternstein in his research work, Planning the Developing Primate City, Bangkok 2000. The DTCP was established in 1961 following recommendations by American consultants in response to the number of uncoordinated and separate developments in the metropolitan area by a host of agencies with equal and frequently overlapping and conflicting mandates.

The city planning sections in the Bangkok and Thon Buri municipalities were established in 1956. The Town and Country Planning Division in the Department of Public Works was established in 1953 and became the DTCP in 1961. The DTCP assumed responsibility for overall planning in the metropolitan area and in up-country centres as well. There was intense conflict between the DTCP and the city planning section of the Bangkok municipality when the Litchfield Plan was revised by the City Planning Division of the Bangkok Municipality in 1969 and by the DTCP in 1971. The advisors who proposed the creation of the DTCP argued that ‘There cannot be two offices promoting two separate plans for the same city [Sternstein, 1971 #18, 1-2]. The conflict remained for years but improved when the new Bangkok city plan was prepared in 1997.
Appendix 2.3 Mass transit development in Bangkok

From 1990 to 1992 two mass transit projects were developed in Bangkok by the BMA and the SRT.

On 21 July 1992, Cabinet gave approval to the NESDB to hire Dr Tony M. Ridley as a consultant. His task was to modify the operational plans for the different mass transit projects in Bangkok.

On 28 July 1992, Cabinet approved the establishment of the MRTA, a new state enterprise under the Office of Prime Minister.

In 1993 the government approved a mass transit master plan which coordinated the three different mass transit systems in Bangkok. The BMA ‘Sky Train Project’ is shown as the green route and the MRTA Project is shown as the blue route. The third system is shown as the red route and was developed by the SRT but the developer became bankrupt in 1997 before the project could begin. A new attempt has been made to revise the SRT route by a German company which has expressed an interest and will submit a proposal to SRT by the end of 1999.

Appendix 3.1 Local revenue and tax collection in communities around Bangkok

The Department of Local Administration (DOLA) reported that in 1997, nine of the 10 top-ranking Tambon Administrations (the administration of local community) with the highest revenues in Thailand under provincial administrations, were in the nearby provinces of Bangkok. Their net revenues, excluding government subsidies in 1997, were 169.17 million baht for Bang Phi Yai in Samut Prakan, 125.58 million baht for Bang Kaeo in Samut Prakan, 113.80 million baht for Bang Chalong in Samut Prakan, 105.62 million baht for Kukot in Pathum Thani, 91.84 million baht for Bang Saothong in Samut Prakan, 71.30 million baht for Bang Pla in Samut Prakan, 70.88 million baht for Racha Thewa in Samut Prakan, 54.82 million baht for Bang Muang in Samut Prakan and 52.31 million baht for Sai Ma in Nonthaburi. (Matichon Weekly, vol. 891, 16 September 1997, p32). Additionally, DOLA has divided 6,397 Tambon Administrations in Thailand into five categories based on their annual revenues. There are 78 communities in the first category with revenues of 20 million baht, 65 communities in the second category with revenues of 12-20 million baht, 168 communities in the third category with revenues of 6-12 million baht, 298 communities in the fourth category with revenues of 3-6 million baht and 5,788...
communities in the last category with revenues less than 3 million baht (*Matichon Weekly*, vol. 944, 22 September 1998).

Appendix 3.2 Income distribution survey of the richest and poorest provinces in 1991 and 1993 in Thailand

**Income Distribution per capita in the 10 poorest provinces**

<table>
<thead>
<tr>
<th>Provinces</th>
<th>Income per Capita</th>
<th>Provinces</th>
<th>Income per Capita</th>
<th>Percentage of Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Si Sa Ket</td>
<td>11,574</td>
<td>Si Sa Ket</td>
<td>12,969</td>
<td>4.8</td>
</tr>
<tr>
<td>2 Surin</td>
<td>12,155</td>
<td>Surin</td>
<td>14,051</td>
<td>7.8</td>
</tr>
<tr>
<td>3 Yasothon</td>
<td>12,608</td>
<td>Buriram</td>
<td>14,343</td>
<td>6.9</td>
</tr>
<tr>
<td>4 Roi Et</td>
<td>12,763</td>
<td>Nakhon Phanom</td>
<td>14,706</td>
<td>7.6</td>
</tr>
<tr>
<td>5 Buriram</td>
<td>12,926</td>
<td>Sakon Nakhon</td>
<td>14,826</td>
<td>7.3</td>
</tr>
<tr>
<td>6 Kalasin</td>
<td>13,040</td>
<td>Yasothon</td>
<td>14,921</td>
<td>7.2</td>
</tr>
<tr>
<td>7 Ubon Ratchathani</td>
<td>13,221</td>
<td>Mukdaharn</td>
<td>15,033</td>
<td>6.8</td>
</tr>
<tr>
<td>8 Sakon Nakhon</td>
<td>13,254</td>
<td>Roi Et</td>
<td>15,150</td>
<td>6.7</td>
</tr>
<tr>
<td>9 Mukdaharn</td>
<td>13,746</td>
<td>Kalasin</td>
<td>15,326</td>
<td>5.7</td>
</tr>
<tr>
<td>10 Nakhon Phanom</td>
<td>13,822</td>
<td>Ubon Ratchathani</td>
<td>15,480</td>
<td>5.7</td>
</tr>
</tbody>
</table>

**Income Distribution per capita in the 10 richest provinces**

<table>
<thead>
<tr>
<th>Provinces</th>
<th>Income per Capita</th>
<th>Province</th>
<th>Income per Capita</th>
<th>Percentage of Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Samut Prakan</td>
<td>169,431</td>
<td>Bangkok</td>
<td>218,622</td>
<td>14.5</td>
</tr>
<tr>
<td>2 Bangkok</td>
<td>168,238</td>
<td>Samut Prakan</td>
<td>218,424</td>
<td>14.9</td>
</tr>
<tr>
<td>3 Chonburi</td>
<td>136,971</td>
<td>Chonburi</td>
<td>155,961</td>
<td>6.9</td>
</tr>
<tr>
<td>4 Pathum Thani</td>
<td>113,526</td>
<td>Pathum Thani</td>
<td>135,362</td>
<td>9.6</td>
</tr>
<tr>
<td>5 Samut Sakhon</td>
<td>93,239</td>
<td>Samut Sakhon</td>
<td>121,758</td>
<td>15.3</td>
</tr>
<tr>
<td>6 Phuket</td>
<td>92,562</td>
<td>Rayong</td>
<td>103,033</td>
<td>5.6</td>
</tr>
<tr>
<td>7 Rayong</td>
<td>84,379</td>
<td>Phuket</td>
<td>92,975</td>
<td>5.1</td>
</tr>
<tr>
<td>8 Saraburi</td>
<td>71,355</td>
<td>Saraburi</td>
<td>77,366</td>
<td>4.2</td>
</tr>
<tr>
<td>9 Ranong</td>
<td>65,381</td>
<td>Ranong</td>
<td>67,731</td>
<td>1.4</td>
</tr>
<tr>
<td>10 Nonthaburi</td>
<td>44,057</td>
<td>Nonthaburi</td>
<td>56,584</td>
<td>14.2</td>
</tr>
</tbody>
</table>

2. Income per Capita per year in Thai currency, baht
Appendix 4.1 The Bangkok Metropolitan Region

The definition of the 'Bangkok Metropolitan Region' (BMR) differs between scholars and authorities. In this chapter, it is more functional to use the definition of the BMR given by Sternstein gives in his last research work in 1995, *Bangkok Metropolitan Region: Population Projection for Small Areas; Evidence of Population Change from the Censuses of 1960, 1970, 1980 and 1990*. It is generally accepted that his study on the population of Bangkok is the finest in terms of data collection and comprehensive analysis.

Appendix 4.2 Urban population change, BMR

Sternstein was asked to prepare data from the 1960, 1970, 1980 and 1990 censuses in order to discover population trends in each of the six provinces comprising the Bangkok Metropolitan Region - the provinces of Krung Thep Maha Nakhon, Samut Prakan, Nonthaburi, Pathum Thani, Nakhon Pathom, Samut Sakhon - and for each of the districts making up the core metropolitan province. The fieldwork was carried out in late 1994 and the final report was completed in 1995. The following tables show some details of this study.

<table>
<thead>
<tr>
<th>District</th>
<th>Population in thousands</th>
</tr>
</thead>
<tbody>
<tr>
<td>1  Phra Nakhon</td>
<td>135.4 120.0 112.2 103.8</td>
</tr>
<tr>
<td>2  Samphanthawong</td>
<td>84.4 67.3 70.2 39.8</td>
</tr>
<tr>
<td>3  Pom Prab Satru Phai</td>
<td>130.6 105.4 172.0 82.4</td>
</tr>
<tr>
<td>4  Bang Rak</td>
<td>102.8 91.8 117.8 79.6</td>
</tr>
<tr>
<td>5  Pathum Wan</td>
<td>159.7 133.4 208.6 150.2</td>
</tr>
<tr>
<td>6  Klong San</td>
<td>96.8 126.7 129.4 124.5</td>
</tr>
<tr>
<td>7  Thon Buri</td>
<td>131.2 200.6 240.6 272.3</td>
</tr>
<tr>
<td>8  Bangkok Yai</td>
<td>40.5 74.5 93.0 96.2</td>
</tr>
<tr>
<td>9  Bangkok Noi</td>
<td>105.7 187.2 343.0 328.9</td>
</tr>
<tr>
<td>10  Dusit</td>
<td>384.0 619.3 1083.9 1149.7</td>
</tr>
<tr>
<td>11  Yan Nawa</td>
<td>168.0 256.9 350.7 362.8</td>
</tr>
<tr>
<td>12  Phra Khanong</td>
<td>170.8 382.5 482.3 701.9</td>
</tr>
<tr>
<td>13  Bang Kapi</td>
<td>61.2 87.9 236.1 599.3</td>
</tr>
<tr>
<td>14  Bang Khen</td>
<td>94.6 186.4 355.6 607.9</td>
</tr>
<tr>
<td>15  Min Buri</td>
<td>29.5 36.7 51.4 103.4</td>
</tr>
<tr>
<td>16  Lat Krabang</td>
<td>23.6 29.4 39.5 77.4</td>
</tr>
<tr>
<td>17  Nong Chok</td>
<td>32.4 40.4 46.6 56.5</td>
</tr>
<tr>
<td>18  Rat Burana</td>
<td>26.0 61.3 105.4 183.1</td>
</tr>
<tr>
<td>19  Bang Khun Thian-Muang Samut Sakhon</td>
<td>94.6 186.4 355.6 607.9</td>
</tr>
<tr>
<td>20  Phasi Charoen</td>
<td>58.7 110.4 171.0 256.4</td>
</tr>
<tr>
<td>21  Nong Khaem</td>
<td>11.4 22.9 39.2 84.4</td>
</tr>
<tr>
<td>22  Taling Chan</td>
<td>36.5 42.7 62.0 110.0</td>
</tr>
<tr>
<td>23  Phra Pradaeng</td>
<td>48.8 87.2 143.2 181.6</td>
</tr>
<tr>
<td>24  Muang Samut Prakan</td>
<td>84.9 137.1 227.6 376.4</td>
</tr>
<tr>
<td>25  Bang Phili</td>
<td>53.0 57.1 69.3 132.3</td>
</tr>
<tr>
<td>26  Bang Bo</td>
<td>48.0 47.9 44.7 79.6</td>
</tr>
<tr>
<td>27  Bang Kruai</td>
<td>31.6 39.1 43.3 66.2</td>
</tr>
<tr>
<td>28  Bang Yai</td>
<td>24.2 26.1 27.8 35.0</td>
</tr>
<tr>
<td>29  Sai Noi</td>
<td>20.0 23.4 24.7 29.4</td>
</tr>
<tr>
<td>30  Bang Bua Thong</td>
<td>24.9 30.6 34.5 54.1</td>
</tr>
<tr>
<td>31  Muang Nonthaburi</td>
<td>58.7 99.4 164.0 256.6</td>
</tr>
<tr>
<td>32  Pak Kret</td>
<td>36.8 50.4 75.3 133.5</td>
</tr>
<tr>
<td>33  Lat Lum Kaeo</td>
<td>20.4 23.5 27.7 50.1</td>
</tr>
<tr>
<td>34  Muang Pathum Thani</td>
<td>38.4 46.1 59.2 80.0</td>
</tr>
<tr>
<td>35  Sam Khok</td>
<td>25.8 26.2 28.9 30.8</td>
</tr>
<tr>
<td>36  Khlong Luang</td>
<td>26.6 37.3 66.8 86.4</td>
</tr>
<tr>
<td>37  Nong Sua</td>
<td>20.4 25.3 31.0 33.4</td>
</tr>
<tr>
<td>38  Thanayaburi</td>
<td>26.5 38.4 57.7 76.2</td>
</tr>
<tr>
<td>39  Lam Luk Ka</td>
<td>31.7 37.1 48.4 75.6</td>
</tr>
<tr>
<td>40  Bang Len-Kamphaeng Saen</td>
<td>139.4 152.7 179.4 214.7</td>
</tr>
<tr>
<td>41  Muang Nakhon Pathom</td>
<td>116.7 137.9 185.6 216.9</td>
</tr>
<tr>
<td>42  Nakhon Chaisi</td>
<td>60.9 67.3 79.9 94.6</td>
</tr>
<tr>
<td>43  Sam Phran</td>
<td>53.4 61.4 81.1 103.3</td>
</tr>
<tr>
<td>44  Ban Phaeo</td>
<td>51.2 60.9 69.0 67.0</td>
</tr>
<tr>
<td>45  Krathum Baen</td>
<td>32.7 40.9 56.9 98.9</td>
</tr>
<tr>
<td>46  Bang Pakong</td>
<td>49.2 50.7 56.9 70.0</td>
</tr>
<tr>
<td>47  Ban Pho</td>
<td>35.2 34.7 44.8 43.2</td>
</tr>
<tr>
<td>48  Muang Chachoengsao</td>
<td>80.8 89.6 106.5 125.7</td>
</tr>
<tr>
<td>49  Bang Nam Prieo</td>
<td>48.0 53.3 58.4 68.7</td>
</tr>
<tr>
<td>50  Bang Khla</td>
<td>56.5 60.3 73.4 88.5</td>
</tr>
<tr>
<td>51  Phanom Sarakam</td>
<td>53.0 66.0 105.4 156.1</td>
</tr>
</tbody>
</table>

Total 3576.1 4848.2 7136.5 9283.2

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Phra Nakhon</td>
<td>35.5</td>
<td>-11.4</td>
<td>-7.3</td>
<td>-6.6</td>
</tr>
<tr>
<td>2 Samphanthawong</td>
<td>30.9</td>
<td>-20.3</td>
<td>4.3</td>
<td>-43.3</td>
</tr>
<tr>
<td>3 Pom Prab Satru Phai</td>
<td>47.1</td>
<td>-19.3</td>
<td>63.2</td>
<td>-52.1</td>
</tr>
<tr>
<td>4 Bang Rak</td>
<td>28.3</td>
<td>-107.0</td>
<td>28.3</td>
<td>32.4</td>
</tr>
<tr>
<td>5 Pathum Wan</td>
<td>25.6</td>
<td>-16.5</td>
<td>56.4</td>
<td>-28.0</td>
</tr>
<tr>
<td>6 Klong San</td>
<td>58.4</td>
<td>30.9</td>
<td>2.1</td>
<td>3.8</td>
</tr>
<tr>
<td>7 Thon Buri</td>
<td>19.9</td>
<td>52.9</td>
<td>19.9</td>
<td>13.2</td>
</tr>
<tr>
<td>8 Bangkok Yai</td>
<td>24.8</td>
<td>84.0</td>
<td>24.8</td>
<td>3.4</td>
</tr>
<tr>
<td>9 Bangkok Noi</td>
<td>83.2</td>
<td>77.1</td>
<td>83.2</td>
<td>4.1</td>
</tr>
<tr>
<td>10 Dusit</td>
<td>75.0</td>
<td>61.3</td>
<td>75.0</td>
<td>6.1</td>
</tr>
<tr>
<td>11 Yan Nawa</td>
<td>36.5</td>
<td>52.9</td>
<td>36.5</td>
<td>3.4</td>
</tr>
<tr>
<td>12 Phra Khanong</td>
<td>26.1</td>
<td>123.9</td>
<td>26.1</td>
<td>45.5</td>
</tr>
<tr>
<td>13 Bang Kapi</td>
<td>168.6</td>
<td>43.6</td>
<td>168.6</td>
<td>153.8</td>
</tr>
<tr>
<td>14 Bang Khen</td>
<td>90.8</td>
<td>97.0</td>
<td>90.8</td>
<td>71.0</td>
</tr>
<tr>
<td>15 Min Buri</td>
<td>40.0</td>
<td>24.4</td>
<td>40.0</td>
<td>101.2</td>
</tr>
<tr>
<td>16 Lat Krabang</td>
<td>34.4</td>
<td>24.6</td>
<td>34.4</td>
<td>95.9</td>
</tr>
<tr>
<td>17 Nong Chok</td>
<td>15.3</td>
<td>24.7</td>
<td>15.3</td>
<td>21.2</td>
</tr>
<tr>
<td>18 Rat Burana</td>
<td>71.9</td>
<td>135.8</td>
<td>71.9</td>
<td>73.7</td>
</tr>
<tr>
<td>19 Bang Khun Thian-Muang Samut Sakhon</td>
<td>90.8</td>
<td>97.0</td>
<td>90.8</td>
<td>71.0</td>
</tr>
<tr>
<td>20 Phasi Charoen</td>
<td>54.9</td>
<td>88.1</td>
<td>54.9</td>
<td>49.9</td>
</tr>
<tr>
<td>21 Nong Khaem</td>
<td>72.5</td>
<td>100.9</td>
<td>72.5</td>
<td>115.3</td>
</tr>
<tr>
<td>22 Taling Chan</td>
<td>45.2</td>
<td>17.0</td>
<td>45.2</td>
<td>77.4</td>
</tr>
<tr>
<td>23 Phra Pradaeng</td>
<td>64.2</td>
<td>78.7</td>
<td>64.2</td>
<td>26.8</td>
</tr>
<tr>
<td>24 Muang Samut Prakan</td>
<td>66.0</td>
<td>61.5</td>
<td>66.0</td>
<td>65.4</td>
</tr>
<tr>
<td>25 Bang Phi</td>
<td>21.3</td>
<td>7.7</td>
<td>21.3</td>
<td>90.9</td>
</tr>
<tr>
<td>26 Bang Bo</td>
<td>-6.7</td>
<td>-0.2</td>
<td>-6.7</td>
<td>78.1</td>
</tr>
<tr>
<td>27 Bang Kruai</td>
<td>10.7</td>
<td>23.7</td>
<td>10.7</td>
<td>52.9</td>
</tr>
<tr>
<td>28 Bang Yai</td>
<td>6.5</td>
<td>7.8</td>
<td>6.5</td>
<td>25.9</td>
</tr>
<tr>
<td>29 Sai Noi</td>
<td>5.6</td>
<td>17.0</td>
<td>5.6</td>
<td>19.0</td>
</tr>
<tr>
<td>30 Bang Bua Thong</td>
<td>12.7</td>
<td>22.9</td>
<td>12.7</td>
<td>56.8</td>
</tr>
<tr>
<td>31 Muang Nonthaburi</td>
<td>65.0</td>
<td>69.3</td>
<td>65.0</td>
<td>56.5</td>
</tr>
<tr>
<td>32 Pak Kret</td>
<td>48.8</td>
<td>37.5</td>
<td>48.8</td>
<td>77.3</td>
</tr>
<tr>
<td>33 Lat Lum Kaoeo</td>
<td>17.9</td>
<td>15.2</td>
<td>17.9</td>
<td>8.7</td>
</tr>
<tr>
<td>34 Muang Pathum Thani</td>
<td>28.4</td>
<td>20.0</td>
<td>28.4</td>
<td>35.1</td>
</tr>
<tr>
<td>35 Sam Khok</td>
<td>10.3</td>
<td>1.6</td>
<td>10.3</td>
<td>6.6</td>
</tr>
<tr>
<td>36 Klong Luang</td>
<td>79.1</td>
<td>40.2</td>
<td>79.1</td>
<td>29.3</td>
</tr>
<tr>
<td>37 Nong Sua</td>
<td>22.5</td>
<td>24.0</td>
<td>22.5</td>
<td>7.7</td>
</tr>
<tr>
<td>38 Thanyaburi</td>
<td>50.3</td>
<td>44.9</td>
<td>50.3</td>
<td>32.1</td>
</tr>
<tr>
<td>39 Lam Luk Ka</td>
<td>30.2</td>
<td>17.0</td>
<td>30.2</td>
<td>56.2</td>
</tr>
<tr>
<td>40 Bang Len-Kamphaeng Saen</td>
<td>17.5</td>
<td>9.5</td>
<td>17.5</td>
<td>19.7</td>
</tr>
<tr>
<td>41 Muang Nakhon Pathom</td>
<td>34.6</td>
<td>18.2</td>
<td>34.6</td>
<td>16.9</td>
</tr>
<tr>
<td>42 Nakhon Chaisi</td>
<td>18.7</td>
<td>10.5</td>
<td>18.7</td>
<td>18.4</td>
</tr>
<tr>
<td>43 Sam Phran</td>
<td>32.1</td>
<td>15.0</td>
<td>32.1</td>
<td>27.4</td>
</tr>
<tr>
<td>44 Ban Phaeo</td>
<td>13.3</td>
<td>18.9</td>
<td>13.3</td>
<td>-2.9</td>
</tr>
<tr>
<td>45 Kratham Baen</td>
<td>39.1</td>
<td>25.1</td>
<td>39.1</td>
<td>73.8</td>
</tr>
<tr>
<td>46 Bang Pakong</td>
<td>12.2</td>
<td>3.0</td>
<td>12.2</td>
<td>23.0</td>
</tr>
<tr>
<td>47 Ban Pho</td>
<td>29.1</td>
<td>-1.4</td>
<td>29.1</td>
<td>-3.6</td>
</tr>
<tr>
<td>48 Muang Chachoengsa</td>
<td>18.9</td>
<td>10.9</td>
<td>18.9</td>
<td>18.0</td>
</tr>
<tr>
<td>49 Bang Nam Prico</td>
<td>9.6</td>
<td>11.0</td>
<td>9.6</td>
<td>17.6</td>
</tr>
<tr>
<td>50 Bang Khla</td>
<td>21.7</td>
<td>6.7</td>
<td>21.7</td>
<td>20.6</td>
</tr>
<tr>
<td>51 Phanom Sarakam</td>
<td>59.7</td>
<td>24.5</td>
<td>59.7</td>
<td>48.1</td>
</tr>
</tbody>
</table>

Total 35.5 47.2 30.1

Note: 1. Source: Larry Sternstein [Sternstein, 1995 #41, 25-27]
Appendix 5.1 U.S economic aid to Thailand

United States’ economic aid to Thailand started after an agreement was signed between the Thai government and the US government in September 1950. In the early years, it mostly concentrated on small-scale projects in agriculture, health, education and communication developments. In 1954 the US assistance programme jumped nearly sixfold to US$ 46.1 million compared with an average level in the first four fiscal years of aid from 1951-1954. Transportation quickly became the largest sector of the programme, receiving nearly half of the funds between 1954-1960.

Appendix 5.2 Classification of airports in Thailand (1995)

<table>
<thead>
<tr>
<th>Classification</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>With paved runways over 3,047 metres</td>
<td>6</td>
</tr>
<tr>
<td>With paved runways over 2,438 to 3,047 metres</td>
<td>9</td>
</tr>
<tr>
<td>With paved runways over 1,524 to 2,437 metres</td>
<td>10</td>
</tr>
<tr>
<td>With paved runways 914 to 1,523 metres</td>
<td>23</td>
</tr>
<tr>
<td>With paved runways under 914 metres</td>
<td>42</td>
</tr>
<tr>
<td>With unpaved runways 1,524 to 2,438 metres</td>
<td>1</td>
</tr>
<tr>
<td>With unpaved runways 914 to 1,523 metres</td>
<td>14</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>105</strong></td>
</tr>
</tbody>
</table>


Note: This does not include the upgrading of Pitsanuloke airport with a paved runway of 3,000 metres and three new airports with paved runways of 2,400 metres, Roi Et, Buriram and Chumporn which will be completed by 2000.
Appendices

Appendix 5.3 Aircraft movements at Bangkok International Airport [Don Muang]

The following tables show aircraft movements at Don Muang airport, based on primary data from the Aerothai; Aeronautical Radio of Thailand Ltd.

<table>
<thead>
<tr>
<th>1991/1992</th>
<th>Commercial</th>
<th></th>
<th>Military</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>International</td>
<td>Domestic</td>
<td></td>
</tr>
<tr>
<td>October</td>
<td>7,850</td>
<td>7,700</td>
<td>730</td>
</tr>
<tr>
<td>November</td>
<td>8,038</td>
<td>7,906</td>
<td>883</td>
</tr>
<tr>
<td>December</td>
<td>8,358</td>
<td>8,406</td>
<td>871</td>
</tr>
<tr>
<td>January</td>
<td>8,354</td>
<td>8,848</td>
<td>1,105</td>
</tr>
<tr>
<td>February</td>
<td>7,938</td>
<td>8,248</td>
<td>1,037</td>
</tr>
<tr>
<td>March</td>
<td>8,408</td>
<td>8,580</td>
<td>1,198</td>
</tr>
<tr>
<td>April</td>
<td>8,090</td>
<td>8,594</td>
<td>979</td>
</tr>
<tr>
<td>May</td>
<td>8,206</td>
<td>8,496</td>
<td>1,009</td>
</tr>
<tr>
<td>June</td>
<td>8,112</td>
<td>7,712</td>
<td>1,014</td>
</tr>
<tr>
<td>July</td>
<td>8,682</td>
<td>8,808</td>
<td>957</td>
</tr>
<tr>
<td>August</td>
<td>8,350</td>
<td>8,646</td>
<td>918</td>
</tr>
<tr>
<td>September</td>
<td>8,098</td>
<td>7,852</td>
<td>951</td>
</tr>
<tr>
<td>Total</td>
<td>98,484</td>
<td>99,796</td>
<td>11,652</td>
</tr>
</tbody>
</table>

Total all movements 209,905

Table 1 Aircraft Movements in Fiscal Year 1992

<table>
<thead>
<tr>
<th>1992/1993</th>
<th>Commercial</th>
<th></th>
<th>Military</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>International</td>
<td>Domestic</td>
<td></td>
</tr>
<tr>
<td>October</td>
<td>8,628</td>
<td>8,766</td>
<td>837</td>
</tr>
<tr>
<td>November</td>
<td>8,368</td>
<td>8,780</td>
<td>1,102</td>
</tr>
<tr>
<td>December</td>
<td>8,704</td>
<td>9,526</td>
<td>1,098</td>
</tr>
<tr>
<td>January</td>
<td>8,708</td>
<td>10,132</td>
<td>1,209</td>
</tr>
<tr>
<td>February</td>
<td>7,682</td>
<td>8,470</td>
<td>1,171</td>
</tr>
<tr>
<td>March</td>
<td>8,536</td>
<td>9,490</td>
<td>1,312</td>
</tr>
<tr>
<td>April</td>
<td>8,406</td>
<td>9,206</td>
<td>1,122</td>
</tr>
<tr>
<td>May</td>
<td>8,562</td>
<td>8,744</td>
<td>1,666</td>
</tr>
<tr>
<td>June</td>
<td>8,306</td>
<td>8,176</td>
<td>1,342</td>
</tr>
<tr>
<td>July</td>
<td>8,774</td>
<td>8,614</td>
<td>1,211</td>
</tr>
<tr>
<td>August</td>
<td>8,902</td>
<td>9,324</td>
<td>1,181</td>
</tr>
<tr>
<td>September</td>
<td>8,564</td>
<td>8,378</td>
<td>1,229</td>
</tr>
<tr>
<td>Total</td>
<td>102,140</td>
<td>107,606</td>
<td>14,480</td>
</tr>
</tbody>
</table>

Total all movements 224,226

Table 2 Aircraft Movement in Fiscal Year 1993
### Table 3 Aircraft Movements in Fiscal Year 1994

<table>
<thead>
<tr>
<th>Month</th>
<th>Commercial International</th>
<th>Commercial Domestic</th>
<th>Military</th>
</tr>
</thead>
<tbody>
<tr>
<td>October</td>
<td>8,990</td>
<td>8,938</td>
<td>1,335</td>
</tr>
<tr>
<td>November</td>
<td>8,704</td>
<td>8,592</td>
<td>1,264</td>
</tr>
<tr>
<td>December</td>
<td>9,080</td>
<td>8,980</td>
<td>1,242</td>
</tr>
<tr>
<td>January</td>
<td>9,072</td>
<td>9,320</td>
<td>1,482</td>
</tr>
<tr>
<td>February</td>
<td>8,464</td>
<td>8,444</td>
<td>1,344</td>
</tr>
<tr>
<td>March</td>
<td>9,184</td>
<td>9,166</td>
<td>1,240</td>
</tr>
<tr>
<td>April</td>
<td>9,262</td>
<td>9,046</td>
<td>1,108</td>
</tr>
<tr>
<td>May</td>
<td>9,140</td>
<td>8,460</td>
<td>1,486</td>
</tr>
<tr>
<td>June</td>
<td>8,704</td>
<td>8,248</td>
<td>1,183</td>
</tr>
<tr>
<td>July</td>
<td>9,074</td>
<td>8,658</td>
<td>1,321</td>
</tr>
<tr>
<td>August</td>
<td>9,196</td>
<td>9,012</td>
<td>1,075</td>
</tr>
<tr>
<td>September</td>
<td>8,960</td>
<td>8,032</td>
<td>1,012</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>107,830</strong></td>
<td><strong>104,896</strong></td>
<td><strong>14,903</strong></td>
</tr>
</tbody>
</table>

Total all movements: 227,629

### Table 4 Aircraft Movements in Fiscal Year 1995

<table>
<thead>
<tr>
<th>Month</th>
<th>Commercial International</th>
<th>Commercial Domestic</th>
<th>Military</th>
</tr>
</thead>
<tbody>
<tr>
<td>October</td>
<td>9,422</td>
<td>8,692</td>
<td>936</td>
</tr>
<tr>
<td>November</td>
<td>9,348</td>
<td>9,244</td>
<td>1,206</td>
</tr>
<tr>
<td>December</td>
<td>9,662</td>
<td>10,166</td>
<td>1,150</td>
</tr>
<tr>
<td>January</td>
<td>9,696</td>
<td>10,234</td>
<td>1,199</td>
</tr>
<tr>
<td>February</td>
<td>8,832</td>
<td>9,230</td>
<td>1,000</td>
</tr>
<tr>
<td>March</td>
<td>9,836</td>
<td>9,972</td>
<td>1,080</td>
</tr>
<tr>
<td>April</td>
<td>9,730</td>
<td>10,120</td>
<td>1,056</td>
</tr>
<tr>
<td>May</td>
<td>9,810</td>
<td>9,398</td>
<td>1,223</td>
</tr>
<tr>
<td>June</td>
<td>9,244</td>
<td>8,524</td>
<td>1,066</td>
</tr>
<tr>
<td>July</td>
<td>9,640</td>
<td>9,006</td>
<td>858</td>
</tr>
<tr>
<td>August</td>
<td>9,706</td>
<td>9,756</td>
<td>986</td>
</tr>
<tr>
<td>September</td>
<td>9,326</td>
<td>8,728</td>
<td>961</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>114,252</strong></td>
<td><strong>113,070</strong></td>
<td><strong>12,726</strong></td>
</tr>
</tbody>
</table>

Total all movements: 240,048
<table>
<thead>
<tr>
<th></th>
<th>Commercial</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>International</td>
<td>Domestic</td>
<td>Military</td>
</tr>
<tr>
<td>October</td>
<td>9,804</td>
<td>10,188</td>
<td>925</td>
</tr>
<tr>
<td>November</td>
<td>9,442</td>
<td>10,568</td>
<td>1,063</td>
</tr>
<tr>
<td>December</td>
<td>10,028</td>
<td>11,338</td>
<td>1,192</td>
</tr>
<tr>
<td>January</td>
<td>9,894</td>
<td>11,310</td>
<td>1,229</td>
</tr>
<tr>
<td>February</td>
<td>9,660</td>
<td>10,694</td>
<td>1,123</td>
</tr>
<tr>
<td>March</td>
<td>10,024</td>
<td>11,118</td>
<td>1,154</td>
</tr>
<tr>
<td>April</td>
<td>9,760</td>
<td>11,122</td>
<td>1,236</td>
</tr>
<tr>
<td>May</td>
<td>9,990</td>
<td>10,570</td>
<td>1,444</td>
</tr>
<tr>
<td>June</td>
<td>9,388</td>
<td>9,654</td>
<td>922</td>
</tr>
<tr>
<td>July</td>
<td>9,748</td>
<td>10,210</td>
<td>1,107</td>
</tr>
<tr>
<td>August</td>
<td>9,892</td>
<td>10,890</td>
<td>1,109</td>
</tr>
<tr>
<td>September</td>
<td>9,536</td>
<td>10,036</td>
<td>1,062</td>
</tr>
<tr>
<td>Total</td>
<td>117,166</td>
<td>127,698</td>
<td>13,566</td>
</tr>
<tr>
<td>Total all movements</td>
<td>258,430</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 5 Aircraft Movements in Fiscal Year 1996
Appendix 7.1 Area of new buildings authorised in Bangkok by district from 1990 to 1994

Figures in thousand square metres

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Phra Nakhon</td>
<td>26.30</td>
<td>44.52</td>
<td>28.23</td>
<td>19.71</td>
<td>11.43</td>
<td>130.21</td>
</tr>
<tr>
<td>2. Pom Prab</td>
<td>1.78</td>
<td>69.47</td>
<td>115.93</td>
<td>4.28</td>
<td>12.25</td>
<td>203.72</td>
</tr>
<tr>
<td>3. Samphanthawong</td>
<td>98.56</td>
<td>17.64</td>
<td>1.19</td>
<td>6.02</td>
<td>16.05</td>
<td>139.47</td>
</tr>
<tr>
<td>4. Pathum Wan</td>
<td>214.05</td>
<td>919.19</td>
<td>273.02</td>
<td>864.64</td>
<td>1,210.21</td>
<td>3,481.13</td>
</tr>
<tr>
<td>5. Bang Rak</td>
<td>646.89</td>
<td>680.65</td>
<td>789.02</td>
<td>328.86</td>
<td>216.82</td>
<td>2,662.26</td>
</tr>
<tr>
<td>6. Yan Nawa</td>
<td>291.93</td>
<td>365.36</td>
<td>1,138.73</td>
<td>794.63</td>
<td>688.83</td>
<td>3,277.51</td>
</tr>
<tr>
<td>7. Sathon</td>
<td>829.34</td>
<td>221.26</td>
<td>317.39</td>
<td>242.39</td>
<td>30.59</td>
<td>1,640.99</td>
</tr>
<tr>
<td>8. Bang Kho Laem</td>
<td>56.90</td>
<td>316.89</td>
<td>275.85</td>
<td>132.20</td>
<td>347.00</td>
<td>1,128.86</td>
</tr>
<tr>
<td>9. Dusit</td>
<td>14.02</td>
<td>18.08</td>
<td>6.79</td>
<td>9.03</td>
<td>24.82</td>
<td>72.76</td>
</tr>
<tr>
<td>10. Bang Sue</td>
<td>26.58</td>
<td>139.89</td>
<td>180.02</td>
<td>196.72</td>
<td>109.63</td>
<td>652.86</td>
</tr>
<tr>
<td>11. Phaya Thai</td>
<td>251.04</td>
<td>380.48</td>
<td>313.08</td>
<td>248.62</td>
<td>273.41</td>
<td>1,466.64</td>
</tr>
<tr>
<td>12. Ratchathewi</td>
<td>508.77</td>
<td>633.65</td>
<td>229.16</td>
<td>394.78</td>
<td>531.47</td>
<td>2,297.95</td>
</tr>
<tr>
<td>13. Huai Khwang</td>
<td>1,381.82</td>
<td>1,291.66</td>
<td>1,343.11</td>
<td>1,262.28</td>
<td>1,157.31</td>
<td>5,698.34</td>
</tr>
<tr>
<td>14. Din Daeng</td>
<td>89.43</td>
<td>126.12</td>
<td>117.39</td>
<td>105.34</td>
<td>106.47</td>
<td>544.76</td>
</tr>
<tr>
<td>15. Phra Khanong</td>
<td>701.11</td>
<td>1,151.11</td>
<td>540.24</td>
<td>846.25</td>
<td>503.15</td>
<td>3,741.88</td>
</tr>
<tr>
<td>16. Klong Toei</td>
<td>2,037.34</td>
<td>3,727.39</td>
<td>2,547.57</td>
<td>1,976.70</td>
<td>1,157.31</td>
<td>11,091.34</td>
</tr>
<tr>
<td>17. Prawet</td>
<td>163.19</td>
<td>938.47</td>
<td>384.73</td>
<td>656.90</td>
<td>393.52</td>
<td>2,536.82</td>
</tr>
<tr>
<td>18. Suan Luang</td>
<td>513.46</td>
<td>650.70</td>
<td>367.13</td>
<td>682.69</td>
<td>313.38</td>
<td>2,527.38</td>
</tr>
<tr>
<td>19. Bang Khen</td>
<td>96.19</td>
<td>141.79</td>
<td>216.08</td>
<td>306.89</td>
<td>501.35</td>
<td>1,262.30</td>
</tr>
<tr>
<td>20. Don Muang</td>
<td>292.42</td>
<td>253.47</td>
<td>211.52</td>
<td>1,903.49</td>
<td>2,021.28</td>
<td>4,686.19</td>
</tr>
<tr>
<td>21. Chatuchak</td>
<td>338.73</td>
<td>1,325.94</td>
<td>1,656.90</td>
<td>1,700.33</td>
<td>487.50</td>
<td>5,509.42</td>
</tr>
<tr>
<td>22. Bang Kapi</td>
<td>733.48</td>
<td>788.90</td>
<td>897.70</td>
<td>1,669.14</td>
<td>953.08</td>
<td>5,042.32</td>
</tr>
<tr>
<td>23. Lat Phrao</td>
<td>48.47</td>
<td>186.90</td>
<td>168.44</td>
<td>435.25</td>
<td>225.59</td>
<td>1,064.67</td>
</tr>
<tr>
<td>24. Bung Kum</td>
<td>182.31</td>
<td>217.28</td>
<td>250.13</td>
<td>487.60</td>
<td>452.13</td>
<td>1,589.46</td>
</tr>
<tr>
<td>25. Nong Chok</td>
<td>26.30</td>
<td>3.97</td>
<td>32.02</td>
<td>12.40</td>
<td>58.46</td>
<td>493.46</td>
</tr>
<tr>
<td>26. Min Buri</td>
<td>20.78</td>
<td>28.38</td>
<td>97.04</td>
<td>119.84</td>
<td>163.46</td>
<td>429.52</td>
</tr>
<tr>
<td>27. Lat Krabang</td>
<td>17.73</td>
<td>58.90</td>
<td>51.74</td>
<td>51.79</td>
<td>296.34</td>
<td>476.18</td>
</tr>
<tr>
<td>28. Thon Buri</td>
<td>106.45</td>
<td>116.64</td>
<td>43.86</td>
<td>72.24</td>
<td>65.52</td>
<td>404.73</td>
</tr>
<tr>
<td>29. Klong San</td>
<td>215.89</td>
<td>226.70</td>
<td>356.15</td>
<td>218.72</td>
<td>187.45</td>
<td>1,204.93</td>
</tr>
<tr>
<td>30. Bangkok Noi</td>
<td>32.49</td>
<td>1.62</td>
<td>267.93</td>
<td>54.35</td>
<td>273.28</td>
<td>629.69</td>
</tr>
<tr>
<td>31. Bang Phlat</td>
<td>131.48</td>
<td>459.67</td>
<td>737.87</td>
<td>206.24</td>
<td>625.30</td>
<td>2,160.58</td>
</tr>
<tr>
<td>32. Bangkok Yai</td>
<td>23.98</td>
<td>69.48</td>
<td>10.37</td>
<td>46.88</td>
<td>47.19</td>
<td>197.92</td>
</tr>
<tr>
<td>33. Phasi Charoen</td>
<td>13.47</td>
<td>210.57</td>
<td>378.55</td>
<td>414.69</td>
<td>666.12</td>
<td>1,683.43</td>
</tr>
<tr>
<td>34. Bang Khun Thian</td>
<td>77.88</td>
<td>186.31</td>
<td>178.75</td>
<td>307.58</td>
<td>175.21</td>
<td>925.75</td>
</tr>
<tr>
<td>35. Chom Thong</td>
<td>87.82</td>
<td>35.22</td>
<td>108.20</td>
<td>92.95</td>
<td>192.23</td>
<td>516.44</td>
</tr>
<tr>
<td>36. Taling Chan</td>
<td>44.50</td>
<td>80.77</td>
<td>58.69</td>
<td>60.27</td>
<td>174.20</td>
<td>418.46</td>
</tr>
<tr>
<td>37. Rat Burana</td>
<td>146.95</td>
<td>223.60</td>
<td>1,202.46</td>
<td>416.98</td>
<td>513.43</td>
<td>2,503.44</td>
</tr>
<tr>
<td>38. Nong Khaem</td>
<td>119.00</td>
<td>40.82</td>
<td>220.21</td>
<td>130.14</td>
<td>134.91</td>
<td>645.10</td>
</tr>
</tbody>
</table>

Total: 10,609.01 15,998.63 16,473.39 17,480.00 14,578.01 75,139.06

Note: Source: Report on building permission in Bangkok 1994, City Planning Dept., BMA
Appendix 7.2 Studies of flood protection for Bangkok

Flood protection studies are as follows:

(1) Bangkok Flood Control and Drainage Project (City Core) in 1984;
(2) Master Plan for Flood protection and Drainage in Eastern Suburban Area Bangkok in 1985;
(3) Master Plan for Flood Protection and Drainage of Thonburi and Samut Prakan West in 1986;
(4) Flood Routing and Control Alternatives of Chao Phraya River of Bangkok in 1986;
(5) Improvement of Canals Connecting Klong Taweewattana and Klong Khun Ratpinidjai to Alleviate Flood Damage (West Bank of the Chao Phraya River) in 1985;
(6) Integrated Flood Relief Plan of the West Bank or 'Chao Phraya 2 Project' in 1984;
(7) Bangkok Flood Alleviation Study of Model Feasibility in 1985;
(8) Bangkok Flood Control Management Project in 1985; and
(9) Management Consulting Services for Flood Control of Bangkok and Vicinity in 1986.

Appendix 7.3 Bangkok flood protection and administrative duplication

Cabinet established the National Committee on Flood Protection for Bangkok and its vicinity on 10 October 1983. The responsibilities of government departments and public agencies for flood protection in Bangkok are based on geography and administrative boundaries and cover three separate physical areas: (1) the Chao Phraya river, (2) the agricultural areas outside Bangkok and (3) urbanised areas in Bangkok and vicinity [Sodsathit, 1987 #126, B 1.12].

The Royal Irrigation Department (RID) within the Ministry of Agriculture and the Electricity Generating Authority of Thailand, a state enterprise within the Office of the Prime Minister, are responsible for controlling water in the Chao Phraya river which includes the upstream dams.

The RID is also responsible for the Chao Phraya river, the agricultural areas outside Bangkok and the vicinity of Bangkok. The Flood Relief Centre of the Bangkok Metropolitan Administration (BMA) is responsible for the vicinity of Bangkok.

All District Offices, the Department of Drainage and Sewerage, the Department of Public Cleansing of the BMA are responsible for BMA urbanised areas. However, other BMA departments also have responsibility for flood protection, for example, the Department of Public Works and the Department of Traffic and Transportation.

In practice, other departments and public agencies are responsible for their drainage systems and networks, for example, the Department of Highways within the Ministry of Transportation and the Expressway and Rapid Transit Authority of Thailand, a state enterprise within Ministry of Interior.
The National Committee on Flood Protection includes three sub-committees: the Sub-Committee on Project Designation, the Sub-Committee on Supervisions and the Sub-Committee on Supporting Activities. The members of these sub-committees are from the Bureau of Budget, the National Economic and Social Development Board, the Department of Technical and Economic Cooperation, the State Railway of Thailand, the Department of Highways, the Department of Public Works of the Ministry of Interior and the BMA [Sodsathit, 1987 #126, B 1.20].

Appendix 8.1 H.M. King Bhumipol Adulyadet’s speech on 4 December 1997

"Being a tiger is not important. What is important is to have enough to eat and to live; and to have an economy which provides enough to eat and live. Having enough to eat and to live means supporting oneself to have enough for oneself.

I used to say that this efficiency does not mean that each household has to produce its own food, weave its own cloth. That is too much. But within a village or district, there must be a certain amount of self-sufficiency. Anything, which can be produced beyond local need can be sold, but maybe not sold too far away, to minimise transport costs.

If we can change back to a self-sufficient economy, not completely, even not much as half, perhaps just a quarter, we can survive.

But people who like the modern economy may not agree. It is like walking backwards into a klong. We have to live carefully and we have to go back to do things which are not complicated and which do not use elaborate, expensive equipment. We need to move backwards in order to move forwards. If we do not do like this, the solution to this crisis will be difficult."
Chronology of Bangkok Airport Development, 1911 to 1991

<table>
<thead>
<tr>
<th>Year</th>
<th>Month</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1911</td>
<td>January</td>
<td>Thai aviation begins with first landing on the field of Sra Prathum, the first airfield in Bangkok now the Royal Bangkok Sports Club at Prathumwan.</td>
</tr>
<tr>
<td>1914</td>
<td>March</td>
<td>New airport built at Don Muang, 29 kilometres north of the Royal Palace.</td>
</tr>
<tr>
<td>1920</td>
<td>23 June</td>
<td>First commercial flight serves the route Bangkok-Nakhon Ratchasima.</td>
</tr>
<tr>
<td>1928</td>
<td>8 November</td>
<td>The Royal Dutch Airline, KLM is the first international carrier to land at Don Muang airport.</td>
</tr>
<tr>
<td>1937</td>
<td>9 April</td>
<td>The Royal Thai Air Force established and located at Don Muang airport.</td>
</tr>
<tr>
<td>1948-</td>
<td></td>
<td>Improvement of Don Muang airport undertaken by the Air Force.</td>
</tr>
<tr>
<td>1952</td>
<td></td>
<td>Beginning of the United States’ construction programme after the French collapse at Dien Bien Phu; seven airbases upgraded and constructed including Don Muang airport.</td>
</tr>
<tr>
<td>1959</td>
<td>June</td>
<td>A report titled ‘A Comprehensive Evaluation of Thailand’s Transportation System Requirements’ recommends an integrated military and civilian air transport system.</td>
</tr>
<tr>
<td>1960</td>
<td>August</td>
<td>Litchfield Whitning Bowne &amp; Associates provides first modern urban plan for Bangkok. Recommends the separation of civil and commercial aviation away from Don Muang. A site 17 kilometres east of Bangkok is proposed for a new airport.</td>
</tr>
<tr>
<td>1962</td>
<td></td>
<td>A committee is set up to progress the development of the new airport. The US Federal Aviation Administration proposes a site approximately 25 kilometres east of Bangkok named ‘Nong Ngu Hao’. Thai government proclaims intention to purchase 19,000 rai (30.4 square kilometres) at Nong Ngu Hao for a new international airport.</td>
</tr>
<tr>
<td>1962</td>
<td>September</td>
<td>Land Acquisition Act for airport development at Nong Ngu Hao is approved.</td>
</tr>
<tr>
<td>1963-</td>
<td></td>
<td>Nong Ngu Hao land acquisition with a budget of 129 million baht for an area of 19,241 rai.</td>
</tr>
<tr>
<td>1968</td>
<td>January</td>
<td>The US Federal Aviation Administration reconfirms the best site is Nong Ngu Hao.</td>
</tr>
<tr>
<td>1967</td>
<td></td>
<td>U-Tapao airbase finished at a cost of US$ 105.9 million and becomes base for B-52 for military operations in Indochina. Infrastructure and services developed to accommodate all types of aircraft.</td>
</tr>
<tr>
<td>1968</td>
<td></td>
<td>USOM refuses the Thai government proposal to survey and design the Second Bangkok International Airport at Nong Ngu Hao.</td>
</tr>
<tr>
<td>1969</td>
<td>January</td>
<td>The governments of France, Japan, Canada, Italy and Israel submit their proposals to design and develop the Second Bangkok International Airport. Cabinet approves the Canadian proposal.</td>
</tr>
<tr>
<td>1970-</td>
<td></td>
<td>Development and extension of Don Muang airport for the first generation of wide-body aircraft.</td>
</tr>
<tr>
<td>1973</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1971</td>
<td>June</td>
<td>The Thai aviation committee refuses the first proposal of Northrop Airport Development Corporation to develop the Second Bangkok</td>
</tr>
<tr>
<td>Year</td>
<td>Month</td>
<td>Event Description</td>
</tr>
<tr>
<td>-------</td>
<td>----------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>1971</td>
<td>September</td>
<td>International Airport at Nong Ngu Hao. The budget for the Canadian proposal is cut and the government does not explain why.</td>
</tr>
<tr>
<td>1971</td>
<td>11 October</td>
<td>Northrop Airport Development Corporation proposes the development of Second Bangkok International Airport again but public opposes it.</td>
</tr>
<tr>
<td>1971</td>
<td>17 November</td>
<td>Thamom's coup early morning. The military government sets up a committee to study the Northrop's proposal.</td>
</tr>
<tr>
<td>1972</td>
<td>March</td>
<td>The committee refuses the Northrop's proposal.</td>
</tr>
<tr>
<td>1972</td>
<td>10 May</td>
<td>The military government approves the Northrop's proposal.</td>
</tr>
<tr>
<td>1973</td>
<td>1 February</td>
<td>The military government signs a contract with the Northrop.</td>
</tr>
<tr>
<td>1973</td>
<td>14 October</td>
<td>Collapse of military regime.</td>
</tr>
<tr>
<td>1974</td>
<td>15 January</td>
<td>Northrop Airport Development Corporation cancels the signed contract without any compensation.</td>
</tr>
<tr>
<td>1976</td>
<td>6 October</td>
<td>Return of military regime.</td>
</tr>
<tr>
<td>1978</td>
<td>20 February</td>
<td>Tippets-Abbett-McCarty-Stratton (TAMS) submits a proposal to develop the Second Bangkok International Airport.</td>
</tr>
<tr>
<td>1978</td>
<td>2 May</td>
<td>Cabinet approves the 10-year development programme for Don Muang airport.</td>
</tr>
<tr>
<td>1979</td>
<td>20 September</td>
<td>Cabinet approves the improvement of U-Tapao airport, 175 km. Southeast of Bangkok for commercial and suspends the TAMS's proposal.</td>
</tr>
<tr>
<td>1979</td>
<td>21 December</td>
<td>Cabinet revises its approval and continues the study of the Second Bangkok International Airport.</td>
</tr>
<tr>
<td>1980-</td>
<td></td>
<td>Development of Don Muang airport to accommodate 16 million passengers per annum.</td>
</tr>
<tr>
<td>1981</td>
<td>3 February</td>
<td>Cabinet approves a budget of 50 million baht to purchase another 51 rai at Nong Ngu Hao.</td>
</tr>
<tr>
<td>1981</td>
<td>19 May</td>
<td>Cabinet approves a budget of 60 million to prepare a master plan for the Second Bangkok International Airport.</td>
</tr>
<tr>
<td>1982</td>
<td>October</td>
<td>Netherlands Airport Consultants (NACO) wins bidding to prepare the master plan for the new Bangkok airport.</td>
</tr>
<tr>
<td>1983</td>
<td>18 April</td>
<td>Mr. Somak Sundaravej, Minister of Transportation, refuses to develop the new airport at Nong Ngu Hao and proposes a new site at Sai Noi in Nontaburi province for the Second Bangkok International Airport.</td>
</tr>
<tr>
<td>1983</td>
<td>22 November</td>
<td>Somak submits a proposal to expand Don Muang airport within the budget of 80-90 million baht.</td>
</tr>
<tr>
<td>1984</td>
<td></td>
<td>NACO submits 'The Second Bangkok International Master Plan'.</td>
</tr>
<tr>
<td>1985</td>
<td></td>
<td>TAMS submits 'The Expansion Feasibility Study for the Bangkok International Airport'.</td>
</tr>
<tr>
<td>1985</td>
<td>27 August</td>
<td>Cabinet approves the development of a commercial airport at U-Tapao.</td>
</tr>
<tr>
<td>1991</td>
<td>23 April</td>
<td>Cabinet approves the development of Don Muang airport increasing the capacity to 25 million passengers per annum.</td>
</tr>
<tr>
<td>1991</td>
<td>7 May</td>
<td>Cabinet approves the development of the Second Bangkok International Airport at Nong Ngu Hao.</td>
</tr>
</tbody>
</table>
Bibliography


Berger, L. (1991c). Second Bangkok International Airport; Site Confirmation Study. Bangkok, AAT.


Bibliography


324