

**THE PROFILE OF DISPUTES IN WATER RESOURCES  
PROJECTS**

**MUHAMMAD LUCKMANUL CHAKIM**

**UNIVERSITI TEKNOLOGI MALAYSIA**

THE PROFILE OF DISPUTES IN WATER RESOURCES  
PROJECTS

MUHAMMAD LUCKMANUL CHAKIM

A Thesis submitted in fulfillment  
of the requirements for the award of the degree of  
Master of Science (Construction Contract Management)

Faculty of Built Environment  
Universiti Teknologi Malaysia

AUGUST 2015

*how can we not talk about family when family's all that we got...  
...everything I went through you were standing there by my side*

*To my beloved wife, daughter and son  
To my mother and sister  
and who never forgetting...my late father  
Thank you for being wonderful to me*

## ACKNOWLEDGEMENT

Alhamdulillah I prayed to Allah SWT, because only upon His mercy and grace, this thesis can be completed. Greetings and Shalawat, I wish upon the Prophet Muhammad SAW, may his Shafa'at help us.

During preparing this thesis, I was in contact with many people, academicians and practitioners. They have contributed towards my understanding and opinion. In particular, I am sincerely grateful to my thesis supervisor, Associate Professor Dr. Maizon Hashim, for the encouragement, critics and guidance throughout my thesis writing. I am also very thankful to all lecturers for their support and advice.

I am truly indebted and thankful to the Ministry of Public Works and Perusahaan Umum Jasa Tirta I for giving me the opportunity to enhance my knowledge in Universiti Teknologi Malaysia. In particular, I would like to show my gratitude to all officers in BP Konstruksi Kemen. PU, Board of Directors of Perum Jasa Tirta I, Wahyu Dutonoto, SH.,MH., Drs. Zainal Arifin and Tri Hardjono, SE.,MAB., for supporting me during my study in UTM. It is a great pleasure to thank everyone, however, it is not possible to list all of them in this limited space.

I am also thankful to my fellow postgraduate friends, especially the eleven students from Indonesia, for the support and encouragement during this year. Last but not least, I am grateful to Keluarga Kepanjen for supporting me directly and indirectly. THANK YOU ALL.

## ABSTRACT

Disputes can give serious implication to the projects. It can lead to cost and time over-run even project termination. The practitioners always try to avoid the disputes and the legal disputes resolutions due to its lengthy process. Some sources of the disputes are design errors, defects, failure of cost estimation and different site conditions. However, these sources are exhaustive. There are still other elements of the disputes that have to be determined especially for specific construction projects such as water resources projects. Disputes have been one of the factors which give negative effect on the completion of the projects, it is necessary to figure the nature, the background or the profile of these disputes. Thus, the aim of this study is to identify the types of disputes that occur in water resources projects. Using descriptive frequency analysis method, this study has developed the profile of the disputes based on experts opinion who are involved in several water resources projects in Indonesia which include Hydraulic Dredging of Sediment in Sengguruh and Sutami Dam, Hauling of Sediment in Sengguruh Spoil Banks, Construction of Check Dam in Konto River and Construction of Revetment in Parit Agung River. These experts have been certified by the Indonesia Association Committee on Large Dams (INACOLD) and Indonesia Hydraulic Engineers Association (HATHI). Based upon literature reviews and previous studies, the profile of the disputes in water resources projects were categorized into fourteen types of disputes. The analysis identified that among fourteen types of the disputes, the types of disputes that often occur in water resources projects are environmental disputes due to adverse weather and inclement weather, unforeseen problem below the surface and dust pollution. This study also showed that environmental disputes often occur in water resources projects due to the nature of the projects, as the projects are usually carried out above or below the water surfaces and in open area. By establishing this profile, it will assist the owner and project manager to predict and anticipate problems at an early stage of the water resources project.

## TABLE OF CONTENTS

CHAPTER	TITLE	PAGE
	<b>DECLARATION OF THESIS</b>	<b>ii</b>
	<b>DEDICATION</b>	<b>v</b>
	<b>ACKNOWLEDGEMENT</b>	<b>vi</b>
	<b>ABSTRACT</b>	<b>vii</b>
	<b>TABLE OF CONTENTS</b>	<b>viii</b>
	<b>LIST OF TABLES</b>	<b>xii</b>
	<b>LIST FIGURES</b>	<b>xiii</b>
	<b>LIST OF APPENDICES</b>	<b>xiv</b>
<b>1</b>	<b>INTRODUCTION</b>	<b>1</b>
	1.1 Background of the Study	1
	1.2 Problem Statement	2
	1.3 Previous Study	3
	1.4 Objective of Study	3
	1.5 Scope of Study	4
	1.6 Significant of Study	4
	1.7 Research Methodology	5
	1.8 Organization of Thesis Chapter	9
	1.9 Conclusion	10
<b>2</b>	<b>DISPUTES IN CONSTRUCTION PROJECTS</b>	<b>11</b>
	2.1 Introduction	11
	2.2 Definition of Construction Projects	11
	2.3 Definition of Dispute	13

<b>CHAPTER</b>	<b>TITLE</b>	<b>PAGE</b>
	2.4 Construction Disputes and Its Nature	14
	2.4.1 Enforceable Promises	17
	2.4.2 Technical Matters	17
	2.4.3 Legal Matters	17
	2.4.4 Entitlement and Magnitude	18
	2.5 The Origin of Disputes in Construction Projects	18
	2.5.1 Coordination	19
	2.5.2 Culture	19
	2.5.3 Differences in Goal	20
	2.5.4 Delay of Works	20
	2.5.5 Inaccurate Design	20
	2.5.6 Complexity of the Project	21
	2.5.7 Quality and Workmanship	22
	2.5.8 Site Condition	22
	2.5.9 Variation	22
	2.6 The Effects of the Disputes	24
	2.6.1 Quality	25
	2.6.2 Time	26
	2.6.3 Money	26
	2.7 Conclusion	27
<b>3</b>	<b>THE NATURE AND CHARACTERISTIC OF WATER RESOURCES PROJECTS</b>	<b>28</b>
	3.1 Introduction	28
	3.2 Definition	29
	3.2.1 Definition of Water Resources	29
	3.2.2 Definition of Water Resources Management	30
	3.2.3 Definition of Water Resources Projects	32
	3.3 Characteristic of Water Resources Projects	32
	3.3.1 Comprise of Basis in Design and Procedures	33
	3.3.2 Organizations and Supervision Involved	37
	3.4. Description of Water Resources Projects	38
	3.4.1 Sediment Control	38

<b>CHAPTER</b>	<b>TITLE</b>	<b>PAGE</b>
	3.4.2 Hydraulic Dredging Project	40
	3.4.3 Hauling of Sediment in Spoil Bank	45
	3.4.4 Construction of Check Dam	47
	3.4.5 Construction of River Banks Revetment	50
	3.5 The Types of Disputes in Water Resources Projects	52
	3.6 Conclusion	57
<b>4</b>	<b>RESEARCH METHODOLOGY</b>	<b>58</b>
	4.1 Introduction	58
	4.2 Research Methodology	58
	4.3 Literature Review	59
	4.4 Data Collection	60
	4.4.1 Research Questionnaires	61
	4.4.1.1 Respondent Identity	61
	4.4.1.2 Types of the Disputes	61
	4.5 Data Analysis	62
	4.5.1 The Example of Frequency Analysis Method	63
	4.6 Conclusion	64
<b>5</b>	<b>ANALYSIS OF DISPUTES IN WATER RESOURCES PROJECTS</b>	<b>65</b>
	5.1 Introduction	65
	5.2 Facts of the Respondents	65
	5.2.1 Level of Education	66
	5.2.2 Professional Membership	67
	5.2.3 Working Experience of the Respondents	68
	5.2.4 Role of the Respondents	69
	5.3 The Types of Disputes	70
	5.3.1 Types of Legal Disputes	70
	5.3.2 Types of Technical Disputes	71
	5.3.3 Types of Property Disputes	73
	5.3.4 Types of Professional Negligence Disputes	74
	5.3.5 Types of Financial Disputes	76



<b>CHAPTER</b>	<b>TITLE</b>	<b>PAGE</b>
	5.3.6 Types of Environmental Disputes	77
	5.3.7 Types of Contract Documentation Disputes	79
	5.3.8 Types of Contractor, Sub-contractor and Supplier Disputes	80
	5.3.9 Types of Payment Disputes	82
	5.3.10 Types of Variation Disputes	83
	5.3.11 Types of Changes and Delay Disputes	85
	5.3.12 Types of Performance Disputes	86
	5.3.13 Types of Communication Disputes	88
	5.3.14 Types of Other Miscellaneous Disputes	89
	5.4 Overall Disputes related to Water Resources Projects	91
	5.5 Conclusion	94
<b>6</b>	<b>CONCLUSION AND RECOMMENDATION</b>	<b>95</b>
	6.1 Introduction	95
	6.2 Research's Findings	95
	6.3 Research's Constraint	98
	6.4 Suggestion for Further Research	98
	6.5 Conclusion	98
	<b>REFERENCES</b>	<b>99</b>
	Appendix - A Research Questionnaire	
	Appendix - B List of the Respondents	

## LIST OF TABLES

<b>TABLE NO.</b>	<b>TITLE</b>	<b>PAGE</b>
4.1	The Types of Disputes	62
5.1	Level of Education of the Respondents	66
5.2	Professional Membership of the Respondents	67
5.3	Working Experience of the Respondents	68
5.4	Job Position of the Respondents	69
5.5	Types of Legal Disputes	70
5.6	Types of Technical Disputes	72
5.7	Types of Property Disputes	73
5.8	Types of Professional Negligence Disputes	75
5.9	Types of Financial Disputes	76
5.10	Types of Environmental Disputes	78
5.11	Types of Contract Documentation Disputes	79
5.12	Types of Contractor, Sub-contractor and Supplier Disputes	81
5.13	Types of Payment Disputes	82
5.14	Types of Variation Disputes	84
5.15	Types of Changes and Delay Disputes	85
5.16	Types of Performance Disputes	87
5.17	Types of Communication Disputes	88
5.18	Types of Other Miscellaneous Disputes	90
5.19	Overall Types of Disputes Related to Water Resources Projects	91

## LIST OF FIGURES

<b>FIGURE NO.</b>	<b>TITLE</b>	<b>PAGE</b>
3.1	Sediment Control Strategies	39
3.2	Hydraulic Dredging Project of Sutami Reservoir	43
3.3	Hydraulic Dredging Project of Sengguruh Reservoir	44
3.4	Processing of Sediment from Dredger	44
3.5	Dredged Sediment from Reservoir	45
3.6	Process of Hauling of Spoil Bank	46
3.7	Process of Dried Sediment Dumping	47
3.8	River Diversion Process	49
3.9	Process of Construction of Konto River Check Dam	49
3.10	Process of Construction of Riverbanks Revetment	51
4.1	Example Chart of Frequency Analysis Method	64
5.1	The Distribution of Education Level of the Respondents	66
5.2	The Distribution of Professional Membership of the Respondents	67
5.3	The Distribution of Working Experience of the Respondents	68
5.4	The Distribution of Respondents' Role in the Company	69
5.5	The Ranking of Legal Disputes Types	71
5.6	The Ranking of Technical Disputes Types	72
5.7	The Ranking of Property Disputes Types	74
5.8	The Ranking of Professional Negligence Disputes Types	75
5.9	The Ranking of Financial Disputes Types	77
5.10	The Ranking of Environmental Disputes Types	78
5.11	The Ranking of Contract Documentation Disputes Types	80
5.12	The Ranking of Contractor, Sub-contractor and Supplier Disputes Types	81
5.13	The Ranking of Payment Disputes Types	83

<b>FIGURE NO.</b>	<b>TITLE</b>	<b>PAGE</b>
5.14	The Ranking of Variation Disputes Types	84
5.15	The Ranking of Changes and Delay Disputes Types	86
5.16	The Ranking of Performance Disputes Types	87
5.17	The Ranking of Communication Disputes Types	89
5.18	The Ranking of Other Miscellaneous Disputes Types	90
5.19	The Ranking of Overall Types of Disputes Related to Water Resources Projects	93

**LIST OF  
APPENDICES**

<b>APPENDIX</b>	<b>TITLE</b>	<b>PAGE</b>
A	Research Questionnaire	106
B	List of Respondents	112

# **CHAPTER 1**

## **INTRODUCTION**

### **1.1 Background of the Study**

One of the factors that hinder the completion of work in construction projects is related to disputes. Therefore, it is important to be aware of the possibilities of disputes that may occur so that the work can be completed properly in accordance with time, quality and budget that have been established.

According to Cheung & Suen (2002), if disputes are not properly managed, they can lead to delays in the completion of the work, cost overruns, declining of team spirit and finally decrease the quality. Therefore it is not surprising that many parties involved in construction project assume the dispute as an element to be avoided as much as possible in the early stages of the project.

According to Shin (2000), dispute management is an important part of construction project because disputes in construction project are commonly occurs and it required resolution as early as possible in the project stage.

According to Kumaraswamy (1997), the type of construction disputes are highly related to site conditions, client changes, design failures, unpredictable and unforeseen ground conditions, contract documents ambiguities, variations caused by external events, utility lines interferences, adverse weather condition, delays in design information and delays in site possession. While Yates (1998) described types of disputes which are variations, contract documents ambiguities, inclement of weather, late in issuance of design information/drawings, site possession delays, other contractors delay (e.g. utility companies) and suspension of part of the project. In other research by Kathleen (2003), she stressed on development of conflicts as a result of insufficient resources such as lack of time, budget, man power or labor also materials and/or equipment.

## **1.2 Problem Statement**

Disputes related to water resources management usually occur in several projects such as a) reservoir hydraulic dredging project; b) hauling of spoil bank project; c) check dam construction project; and d) riverbanks revetment construction project.

These disputes can give serious implication to the projects. It can lead to cost and time over-run even project termination. The practitioners always try to avoid the disputes and the legal disputes resolutions due to its lengthy process. Some sources of the disputes are design errors, defects, failure of cost estimation and different site conditions. However, these sources are exhaustive. There are still other elements of the disputes that have to determine especially for specific construction projects such as water resources projects. This brings to the issue what is the common subject matter of the disputes, who are the parties involved and what is the nature of the disputes.

Disputes have been one of the factors which give negative effect on the completion of the projects, it is necessary to figure the nature, the background or the profile of these disputes. An experienced and knowledgeable project manager will be able to predict and anticipate problems at an early stage of the project. For this reason, profile is significant to describe the common features of construction disputes.

### **1.3 Previous Study**

There are previous studies that have been done relating to profiling of disputes as follows;

- Asniah (2007), *Profile of Construction Disputes*.

This study highlight that most disputes are related to non-payment of certified sums and misleads in payment procedure according to term of standard of contract.

- I. Mona (2013), *Profile of Common Construction Disputes Occurring in Practice*

The conclusion of this research is most disputes in construction industry related to quality of the construction works.

### **1.4 Objective of Study**

The objective of the study is to identify the types of disputes that occur in water resources projects.



## **1.5 Scope of Study**

- a. The data of this research is limited to the following projects in water resources management;
  - Hydraulic Dredging Reservoir Projects in Sengguruh and Sutami Dam, East Java Indonesia
  - Construction of Check Dam in Konto River, East Java Indonesia
  - Hauling of Sediment in Sengguruh Spoilbank, East Java Indonesia
  - Construction of Riverbanks Revetment in Parit Agung River, East Java Indonesia
  
- b. The types of the disputes that occur in several projects as stated above based on the experts opinion that have experiences to undertake the projects. The experts are the people who have experiences in water resources projects and able to be trusted as being accurate or true with the recognition of professional organization which are Indonesia National Committee on Large Dams (INACOLD) and Indonesia Association Hydraulic Engineer (HATHI).

## **1.6 Significant of Study**

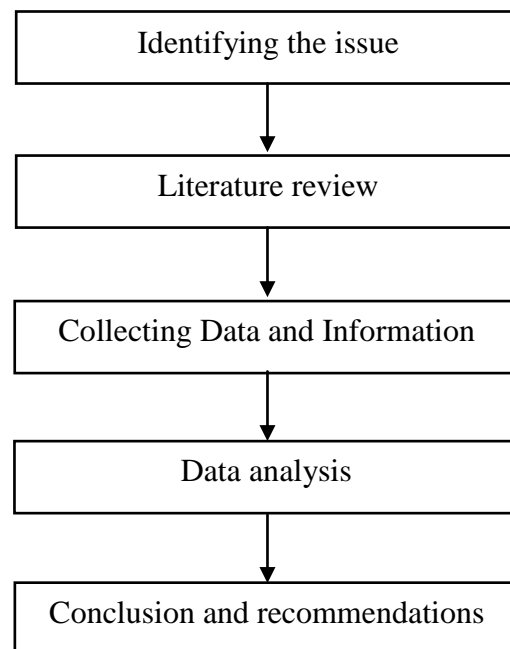
This study can be used to identify the types of the dispute so that the professionals will have good knowledge to minimize the disputes in the future especially in similar projects on the water resources management.

Based on this profile, the professionals who involve in water resources projects can analyze the background of the disputes, and influenced them to be more aware before they involved in the project.

The parties involved will be more confident in carrying out their duties regularly and diligently without making the same errors from the earlier disputes.

## 1.7 Research Methodology

In short, the research process will be divided into five phases:



### 1.7.1 Phase 1: Identifying the Issue

Identifying the issue is the first phase of the research. Consultation and discussion with lecturer is the first step to determine the issue. Besides that, reading on reported materials, such as international journals, articles, seminar papers, previous research papers or other related research papers also important. These materials are available in the library and World Wide Web.

### **1.7.2 Phase 2: Literature Review**

Literature review is the next phase of the research. This phase include acquiring secondary data such as books, journals, articles and final report of the projects. Obviously, these published materials are most contributive in this literature review phase.

### **1.7.3 Phase 3: Collecting Data and Information**

This is a crucial phase for attaining the objective of this research. In this phase, the further action is to compile the relevant information based on primary data from questionnaires and to get information from the personal associated with the water resources projects.

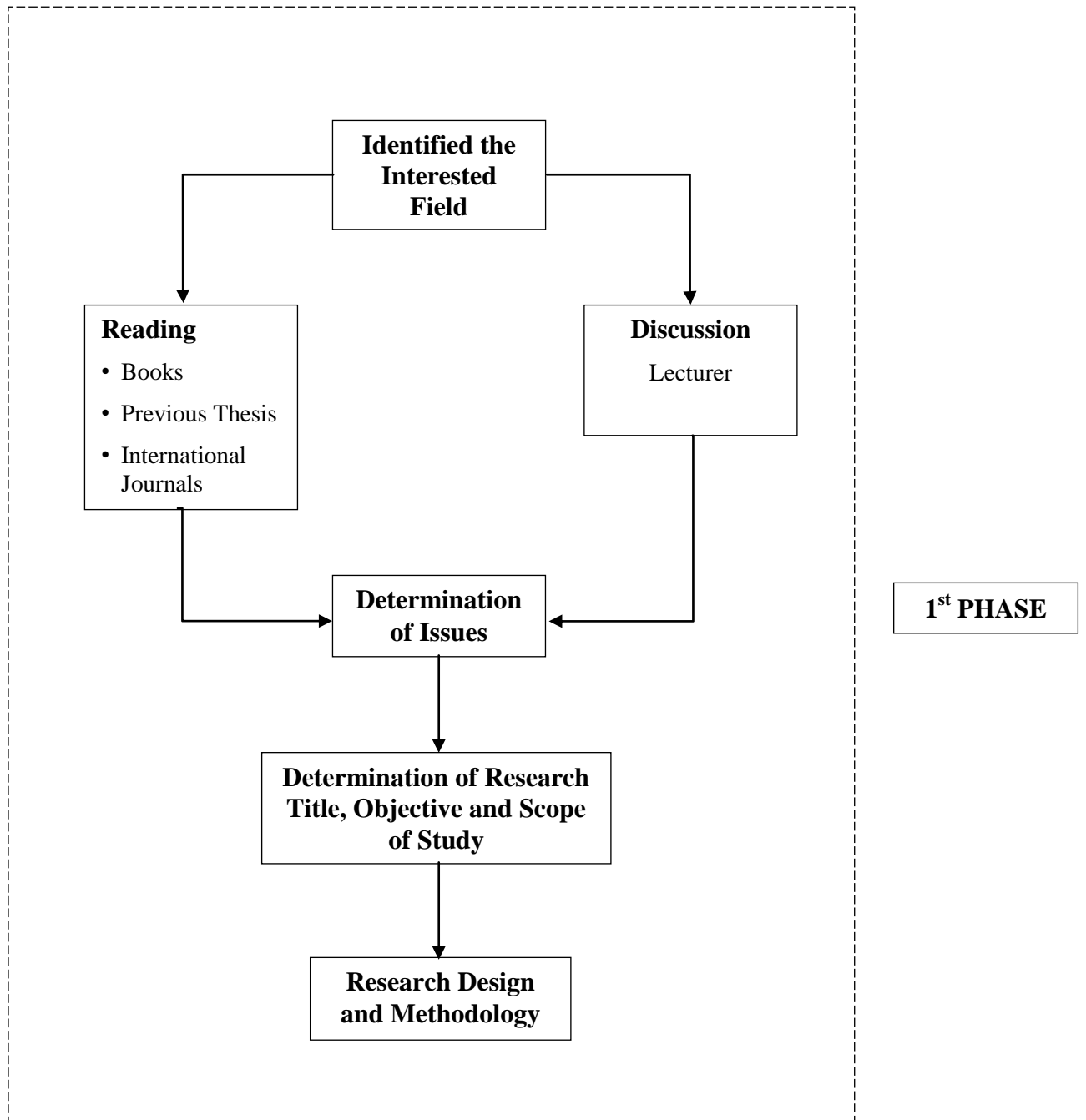
### **1.7.4 Phase 4: Data Analysis**

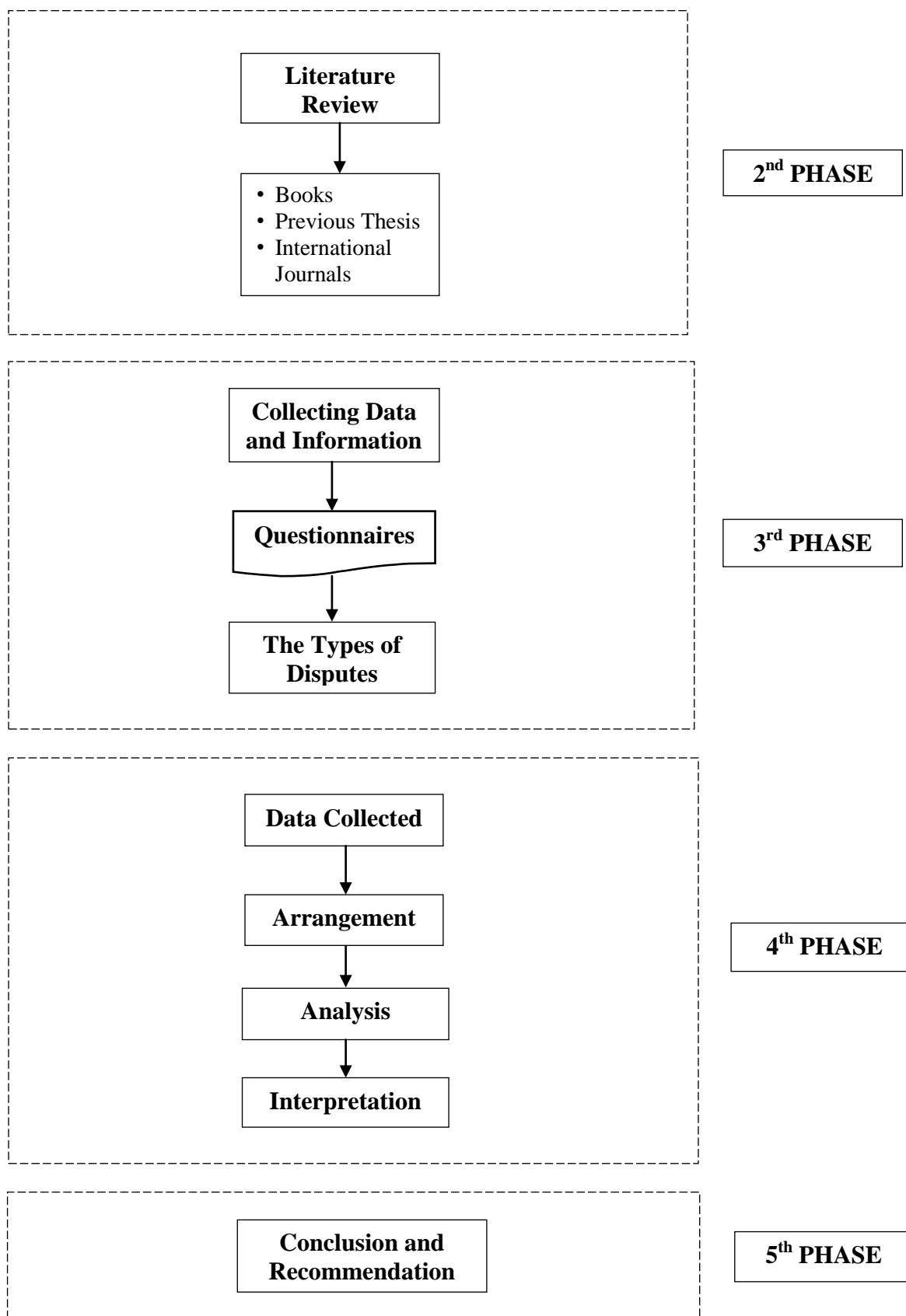
This phase is consists of arrangement of the data analysis and interpretation. This phase is to achieve the objectives that have been stated before.

### **1.7.5 Phase 5: Conclusion and Recommendations**

Conclusion and recommendations is the final phase of the research. This phase will be presents the conclusion of the analysis discussed in earlier phase and will also presents suggestions drawn from the whole study.

### 1.7.6 Research Flowchart





## **1.8 Organization of Thesis Chapter**

### **1.8.1 Chapter 1: Introduction**

Introduction chapter comprise of the background of study, statement of problem, research's objectives, scope of study, significant of study, methodology and the organization of thesis chapter

### **1.8.2 Chapter 2: Disputes in Construction Projects**

This chapter will present the nature of construction projects, such as the technical aspects where include parties and activities involved in construction. It will also discuss disputes in construction industry include the causes of the disputes and the effects.

### **1.8.3 Chapter 3: The Nature and Characteristic of Water Resources Projects**

This chapter will discuss the nature and characteristic of water resources projects and also brief description of the water resources projects which focus on reservoir hydraulic dredging project, check dam construction project, hauling of spoil bank project and riverbank revetment project. It will also discuss managing water resources in technical approach that applied in river basin area.

#### **1.8.4 Chapter 4: Research Methodology**

This chapter will discuss the research methodology to be used in this study. This chapter also described the basis of the steps in quantitative research and data collection system.

#### **1.8.5 Chapter 5: Analysis of Common Disputes in Water Resources Projects**

This chapter will present the analysis of the data to obtain the aim of the study that have been formulated. This analysis will drive to the types of the disputes occur in water resources projects.

#### **1.8.6 Chapter 6: Conclusion and Recommendation**

This chapter will present the conclusion and recommendations in the profile of water resources projects disputes. This chapter also suggests further research that is needed in the profile of water resources projects disputes. It also addresses some implications of the research recommendations to the construction industry.

### **1.9 Conclusion**

This chapter has highlighted the disputes that often occur in construction industries especially in water resources projects. The disputes can give serious implication such as cost and time over-run even project termination. Therefore, the aim of this study is to identify the types of disputes that often occur in water resources projects. Based on this profile, the professionals can analyze the background of the disputes, and influenced them to be more aware before they involved in the project.

## REFERENCES

- Allen, Richard K. (1993). *Dispute Avoidance and Resolution for Consulting Engineers*, ASCE Press, New York.
- Afshari H, Khosravi S, Ghorbanali A, Borzabadi M, Valipour M (2011). *Identification of Causes of Non-excusable Delays of Construction Projects*, International Conference on E-business, Management and Economics, IPEDR vol.3 (2011) IACSIT Press, Hong Kong.
- Asniah (2007). *Profile of Construction Dispute*, Master Thesis, Universiti Teknologi Malaysia.
- Aprisal (2004). *Perencanaan Pengelolaan Sumber Daya Air*, Universitas Diponegoro: Semarang.
- Brown and Marriot (1993). *ADR Principles and Practice*, Sweet and Maxwell, London.
- Barrie, Paulson, Sudinarto (1993). *Professional Construction Management*, Kanisius, Jakarta, Indonesia.
- Bristow, D., and Vasilopoulos, R. (1995). *The new CCDC 2: Facilitating dispute resolution of construction projects*, Construction Law Journal, 11(2), pp.95-117.
- Carmichael, D. G. (2002). *Dispute and International Projects*. Netherlands: A. A. Balkema Publishers.



- Chan, H. W. (1997). *Amicable Dispute Resolution in the People's Republic of China and Its Implications for Foreign-Related Construction Disputes*, Journal of Construction Management and Economics. 15(60): 539 -548.
- Cheung, S. O. and Suen, C. H. (2002). *A Multi-attribute Utility Model for Dispute Resolution Strategy Selection*. Journal of Construction Management and Economics. 20(7): 557-568.
- Cheung, S. O., Yiu, T. W. Y. and Yeung, S. F. (2006). *A Study of Styles and Outcomes in Construction Dispute Negotiation*. Journal of Construction Engineering and Management. 132(8): 805-814.
- Clough, R.H, Sans, G.A and Sears S.K (2005). *Construction Contracting: A Practical Guide to Company Management*, John Wiley and Sons Ltd, New Jersey, pp:44-48
- Colin, J., Langford, D., and Kennedy, P. (1996). *The relationship between construction procurement strategies and construction contract conflicts*. Proceedings of the CIB W-92 Procurement Symposium, North Meets West, 14-16th January, Durban, South Africa.
- De Bono, E (1985). *Conflicts: A Better Way to Resolve Them*. London: Harrap Limited.
- D. Waldron, Blake (2006). *Scope for Improvement: A Survey of Pressure Points in Australian Construction and Infrastructure Projects*, Blake Dawson Waldron Publisher, ISBN 0-646-45998-8
- Diekmann, J.E., Girard, M.J., and Abdul Hadi, N. (1994). *Dispute Potential Index: A Study into the Predictability of Contract Disputes*, Construction Industry Institute, Boulder, Colo.
- Dipohusodo, I. (1996). *Manajemen Proyek dan Konstruksi*, Kanisius, Jakarta.

- Fenn, P. (1991). *Managing Corporate Conflict and Resolving Disputes on Construction Project*.
- Fenn, P., Lowe, D., & Speck, C. (1997). *Conflict and dispute in construction. Construction Management and Economics*.
- Fadhlin Abdullah (2004). *Construction Industry and Economic Development: The Malaysia Scene*. Skudai : Universiti Teknologi Malaysia, pp:2
- Forster, G. (2000). *Building Organisation and Procedures*, Longman Group UK Limited, England, pp: 97-103
- Fadli, S. (2008). *Perkuatan Lereng dan Tujuannya*. Erlangga: Jakarta, Indonesia
- FAO (1996): The Dublin Statement and Report of the Conference. International Conference on Water and the Environment: Development issues for the 21st century, 26-31 January 1996, Dublin, Ireland. United Nations Administrative Committee on Co-ordination Inter-Secretariat Group for Water Resources: Geneva.
- Gidado, K. I. (1996). *Projects Complexity, the focal point of construction planning: Construction Management and Economics*.
- Hibberd, P. and Newman, P. (1999). *ADR and Adjudication in Construction Disputes*, Blackwell Science.
- Hall, J. M. (2002). *Ineffective communication: Common Causes of Construction Disputes*, Alliances Advisory Council Legal Notes. Vol. 13, No.2.
- Harmon, K. M. J. (2003). *Resolution of Construction Disputes: A Review of Current Methodologies*. Leadership and Management in Engineering. 3(4): 187-201.

- Heath, B., Hills, B., and Berry, M. (1994). *The origin of conflict within the construction process*, CIB Publication 171, First Plenary Meeting of TG-15, Netherlands.
- Hewitt, J. (1991). *Winning Construction Disputes: Strategic Planning for Major Litigation*, Ernst. and Young, London
- Hearn, Katherine., Flander, Jon., and Phillips, Tamzin. (2002). *Sediment Management and Dredging in Lakes*. Cirencester: The National Trust.
- Hasan, I. (2006). *Analisis Data Penelitian dengan Statistik*. Bumi Aksara: Jakarta, Indonesia
- Indonesia (2004). Standar Nasional Indonesia 03-2851-2004, *Tata Cara Perencanaan Teknik Bendung Penahan Sedimen*.
- Jones, D. (2006). *Construction Project Dispute Resolution: Options for Effective Dispute Avoidance and Management*. Journal of Professional Issues in Engineering Education and Practice. 132(3): 225-235.
- Jeff Whitfield (1994). *Conflict in Construction Avoiding, Managing, Resolving*: The Machillan Press Ltd, London, UK, pp: 6-30
- John Murdoch and Will Hughes (2000). *Construction Contract, Law and Management*-Third Edition: E & FN Spon Publisher, London, UK, pp:179-186, 197-208
- Kumaraswamy, M. H. (1997). *Conflicts, claims and disputes in construction*. Engineering, Construction and Architectural Management.
- Kathleen, M. J. H. (2003). *Conflicts between Owner and Contractors: Proposed Intervention Process*. Journal of Management in Engineering, ASCE (July 2003).

- Kementerian Pekerjaan Umum Republik Indonesia (2008). *Pola Pengelolaan Sumber Daya Air Wilayah Sungai Kali Brantas*, Jakarta, Indonesia
- Latham, M (1994). *Constructing the Team: Final Report of the Government/Industry Review of Procurement and Contractual Arrangements in UK Construction Industry*, HMSO, ISBN 011752994 X
- Mona, I. (2013). *Profile of Common Construction Disputes Occurring in Practice*, Master Thesis, Universiti Teknologi Malaysia.
- Morris, Gregory L., and Fan, Jiahua (1998). *Reservoir Sedimentation Handbook*. New York: McGraw-Hill.
- Mostert, E. (1998). "River Basin Management in the European Union; How it is done and how it should be done." *European Water Management*. Vol. 1, No. 3, 26-35.
- Mostert, E. (1999). *River Basin Management and Planning; Institutional structures, approaches and results in five European countries and six international basins*. RBA Series on River Basin Administration, research report no. 10. RBA Centre: Delft.
- Molden, D. (2007). *Water for food, Water for life: A Comprehensive Assessment of Water Management in Agriculture*. Earthscan/IWMI.
- Nippon Koei Co. Ltd. (2005). *Engineering Studies for The Brantas River and Bengawan Solo River Basins*. Jakarta: Nippon Koei.
- Newson, M. (1992). *Land, water and development; River basin systems and their sustainable development*. Routledge: London and New York.

- Project Management Institute (2008). *A Guide to the Project Management Body of Knowledge (PMBOK® Guide) - Fourth Edition*. Atlanta, GA: Project Management Institute Inc.
- Robb, G. G. G., Brookes, John P (2001). *An Outline of the Law of Contract and Tort*, Estates Gazette Limited, London
- Rhys Jones, S. (1994). *How constructive is construction law?* *Construction Law Journal*, 10(1): pp 28-38.
- Smith, G A (1996). *Beyond ADR-Dispute Reduction in the Construction Industry Through Realistic Contract Risk Allocation*. In Langford, D A & Retik, A (Ed). London: E&FN Spoon
- Shin, K.-C. K. (2000). *Identification of critical disputes characteristic during construction project operations*. Georgia Institute of Technology, Georgia.
- Schmidt, Warren H. and Tannenbaum Robert (2000). *Management of Differences*, Harvard Business Review on Negotiation and Conflict Resolution, Boston, Harvard Business School Press.
- Soekirno, P., et al, (2007). *The disputes in the Construction Project in Indonesia*, Reference Books, Construction, Industrial, Management, and Engineering, ITB Publisher, ISBN 979-3507-98-5
- Semple, C., Hartman, F.I. and Jergeas, G. (1994). *Construction claims and disputes: causes and cost/time overruns*, *Journal of Construction Engineering and Management*, 120(4): pp 785-795
- Sykes, J. (1996). *Claims and disputes in construction*. *Construction Law Journal*, 12(1), pp.3-13.
- Soeharto, I. (1997). *Manajemen Proyek dari Konseptual sampai Operasional*, Erlangga, Jakarta, Indonesia.

- Susanto, M.H. (2006). *Penanggulangan Sedimentasi Waduk dengan Teknologi Sabo*. Kanisius, Jakarta.
- Treacy, T. B. (1995). *Use of Alternative of Dispute Resolution in the Construction Industry*. *Journal of Management in Engineering*. 11(1): 58-63.
- Yates, D. J. (1998). *Conflict and dispute in the development process: A transaction cost economic perspective*.
- Yeoh, J. S., Loveless, J. H., and Siyam, A. M. (2004). *New Approach in Determining Useful Life of Reservoirs*. In Yazdaandoost and Attari (Eds). *Hydraulics of Dams and River Structures*. London: Taylor & Francis Group.