

CHAPTER 6: CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusions

The content of this research is intended to identify the general view of the cost overrun due to risk factors which contribute to the contingency allocation consumption, exist in small bridge contracts of Road Development Authority.

Contingency allocation is introduced as an active acceptance strategy, under the risk responding planning to absorb the risk cost without making a burden to the project. However, it is only to spend when taking place the unexpected events inside the project and not for the non risk events like scope and design changes.

The key risk factors which contribute to the contingency budget expenses are price escalation, legal issues, interest claims, unexpected weather, change of construction sequence and unexpected ground conditions.

Road Development Authority practising to allocate two contingency budgets as physical contingency budget and price contingency budget. Price contingency budget is to absorb the price escalation cost and physical contingency budget is to absorb risk costs other than the price escalation.

This research reveals that there is no physical contingency overrun in small-scale bridge projects of Sri Lanka and allocated contingency percentage, which is 10% from initial contract amount, is well adequate to manage the physical risk costs.

However it exhibits a huge variation in price escalation cost and it needs further research studies to conclude on this price contingency budget.

Adopting more attentive contract management procedures, enhancing continuous coordination and direct communication among the investigation, design and construction teams and following strict rules in granting extension to schedules, the Road Development Authority will be able to arrive at saving the contingency amounts allocated.

In addition, this research will provide an opportunity to the RDA to forecast possible scenarios of claims and thereby avoid common pitfalls so as to eliminate the avoidable claims and highlight them to enable the management to avoid a recurrent of

such phenomena. Further, the management and staff allocated to settling and dealing with such situations will be reduced.

The production of this research will be taken in to account when preparing contract documents as well as during the administration of contracts.

6.2 Recommendations

According to the result of the research study recommendations for the contingency cost management are as listed follows.

6.2.1 Recommendations for the non contingency cost

Even though it is not emphasized directly, it is fairly noticeable that most variation orders and extra works have been covered through the contingency allocation available for the corresponding projects. Instead of that practice it is recommended to introduce separate estimates to scope and design changes, in order to minimize the conflicts on project cost overrun.

Also attention should be paid to allocating adequate time period for site investigations and estimate preparation. This will not only enhance estimation accuracy, but also reduce the errors of taking off and work descriptions in the bidding documents and drawings.

Further it should be emphasized the importance of production of monthly cost reports and progress reports to indicate the cost performance indices and schedule performance indices using contract management packages of MS Project / Primavera packages and this will motivate the managers to come back to the track when project is out.

6.2.2 Recommendations for the price contingency cost

Adequate time period should allocate for correct analysis of input percentages and emphasize should be given on the accuracy.

Even though it is difficult to predict exact price escalation amounts, considering the main input percentage and the time duration allocated, the RDA will be able to predict a fairly reasonable figure for price escalation in order to minimize the contract price overrun. Therefore rather than putting a percentage figure, it is recommended to predict price escalation amount considering the allocated contract duration and keep an allowance on that.

It is necessary to control the time extensions, since it builds up more and more escalation amounts.

Further if site abandoned by the contractor due to payment delays only interest payment should be done on it and, memorandum of understanding's should be produced to omit price escalation claims.

6.2.3 Recommendations for the physical contingency cost

Realistic time frames should be allocated for contracts based on nature of work involved, weather patterns, terrain and traffic intensity. This will eliminate the unnecessary extension of times and resource idling of the projects. Also strategies should be established to complete the project within the initial contract schedule.

Adequate time period should be provided for site investigation and this will avoid uncertain ground conditions.

More specific conditions should be included in the qualification criteria in bidding documents, to select the most appropriate contractor for the work, since the risk handling strategies and capabilities get different from contractor to contractor.

Land acquisition should be completed before the commencement of work. This will avoid resource idling and price escalation risk cost for the projects.

Interest payments should be granted only on payment delays and extension of time should be strictly avoided. This will reduce the financial pressure on the client through the minimization of price escalation and preliminary overheads.

Works should not commence until land acquisition is completed, since this leads to extension of time and price escalations.

If a contractor abandons a site, a memorandum of understanding should be signed to avoid EOT and compensate only for the relevant issue.

6.3 Recommendations for Future Research

The writer recommends carrying out further researches on the following subjects in order to improve the contract management practices of road and bridge contracts in Sri Lanka.

- The effective number of bore holes for the bridge projects, which maintains the balance between costs incurred for site investigation and estimation accuracy.
- An appropriate price escalation forecasting model for bridge contracts in Sri Lanka.
- Factors to be considered in improving the estimation accuracy.
- Estimation accuracy improving system for bridge projects.
- Strategies to timely complete bridge and highway projects.
- Develop a model for an optimum time frame for bridge contracts in Sri Lanka.

