

IV-394 AN INTEGRATED RISK DECISION APPROACH DURING BIDDING
FOR JAPANESE AND GHANAIAN CONTRACTORS

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1. INTRODUCTION

In the construction industry, the contractor is always faced with the initial problem of bidding for a job which contains quite a number of uncertainties and in addition in competition, with bids from other contractors, based usually on the lowest bid. Risks associated with construction include inclement weather, accidents, acts of God, political uprisings, social unrests, nationwide strikes, tax-rate changes, inflation, etc.

In this paper, a comparison is made between the Japanese and the Ghanaian conditions of contracts with respect to responsibility for losses due to uncertainties in the construction process. In the end, a rationalized approach for risk evaluation and management for construction projects is suggested.

2. DIFFERENCES IN CONTRACT FORMATION

An important difference between the Japanese and the Ghanaian construction lies in the contract formation. In most Japanese contracts, the contractor agrees to execute and complete a project for a fixed price and any difficulties encountered in the course of the construction are always subject to negotiation. The long-term relationships which are established between the client and the contractor forms the basis of such negotiations.

In Ghanaian contracts, the long-term relationship idea is virtually non-existence and the Ghana Government conditions of contract spell out clearly that "the contractor will be paid in accordance with the agreed price, unless the client or its representative issues a written variation order or the contractor encounters an obstruction or physical conditions which could not have been reasonably foreseen by an experienced contractor".

The flexibility of Japanese contracts and the rigidity of the Ghanaian contracts with respect to responsibilities of losses due to risks form the basis of the different risk management approaches in their respective contracts.

3. INTEGRATED RISK DECISION APPROACH

Presently, many Japanese contractors are looking forward to actively involve themselves in international contracts, which would mean having to work under more rigid international condition of contracts and also being exposed to complex situations and many uncertainties in the construction process in different countries. Similarly, some Ghanaian contractors are hoping to bid for international contracts and also engage in strong competition with foreign contractors on domestic contracts financed by international bodies.

The integrated risk decision approach proposed under this study is a systematic process involving the contractor understanding the contract, identifying the various risks, estimating the probability of occurrence and possible losses, and taking the best decision during tender.

The integrated risk decision approach as shown in Figure 1 can be viewed as a five step process:

1) Knowing the contract

The conditions of contract are prepared for a purpose and there is a stronger tendency for them to lean in favor of the client.

This step involves a careful scrutiny of each clause and line of the conditions of contract.

2) Identifying the risk factors

Risk identification involves using experience and existing data relating to specific project to produce a list of risk exposures.

3) Determine the impact of those risks over the project's life

Impact assessment is specific to a particular project. It involves assessing the effect of those risks identified in step 2 on the quantity or amount of the various work sections.

4) Assessing the risks

It include assessing the probability of occurrence and estimating the possible losses due to the identified risks. Figure 2 is a risk assessment worksheet which can be used in the assessment. For example, if the amount of substructure is ¥1 million and the risk impact is assessed to be high and a percentage of 40 is assigned to it, the impact assessment figure will be ¥400,000. Assuming the probability of occurrence is 20%, then the expected value of the risk for substructure will be ¥80,000.

5) Specifying an effective management strategy.

This step is very important because based on the assessment of the risks and the project sensitivities to those risks the contractor can examine responsive strategies. The following specifies alternative management strategies suggested in the study: Building risk into the mark up, complete risk avoidance, risk transfer, risk reduction or prevention and taking an effective insurance policy.

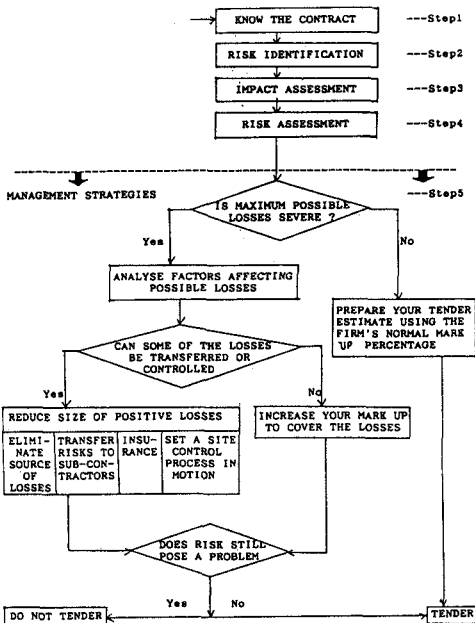


FIG.1 Flow chart for risk decision making

4. CONCLUSION

Since both the individual factors and the policy making climate vary so widely from situation to situation and from country to country, very strict guidelines are difficult to set. The suggested integrated approach simply represents a logical step but it covers the contents of a feasibility studies needed for a good decision making by both Japanese and Ghanaian contractors.

RISK ASSESSMENT WORKSHEET No.					
PROJECT.....			DATE.....		
POSSIBLE RISK TARGETS	QUANTITY OR AMOUNT EXPOSED(S) (A)	ASSESSMENT OF IMPACT High Medium Low	PERCENTAGE OF IMPACT (B)	PROBABILITY OF RISK OCCURRENCE (C)	EXPECTED VALUE OF RISK (D)
SUBSTRUCTURE					
SUPERSTRUCTURE					
1.		High Medium Low			
2.		High Medium Low			
3.		High Medium Low			
4.		High Medium Low			
OTHER RISKS NOT ASSOCIATED WITH ANY WORK SECTION					
1.		High Medium Low			
2.		High Medium Low			
3.		High Medium Low			
4.		High Medium Low			
TOTAL EXPECTED VALUE OF RISK = $\sum (A \times B \times C) = \sum (D)$					

FIG. 2 Risk assessment worksheet