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# **A Study on Contract Administration in the Construction Industry of a Developing Country: a Case of Nepal**

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## **Abstract:**

Contract administration involves the activities that a party to a contract has to perform in order to meet the contract objective and to cope with the daily contractual matters until the formal closure of the contract. It incorporates all dealings between the contracting parties and concerned stakeholders if required by the contract from the time the contract is awarded until the work has been completed, entire payment has been made, and disputes have been settled. This study investigated that most of the employers in Nepal are not aware of the contract administration function demanded by the contract. A questionnaire survey followed by interviews revealed that most of the project engineers in Nepal are not familiar with the knowledge and skills required for the contract administration. As a consequence time and cost control is not properly done. Simple bar charts have been the norms in the industry due to which it has been adhoc in determining the additional time if required to complete a project. Critical Path Method (CPM) has not been introduced in the construction industry. Thus, adhoc contract administration has been prevailing in the Nepalese construction industry. International contractors may face difficulties in the execution of a project due to the employer's lack of appropriate knowledge and skills on contract administration. This paper highlights practice of contract administration in Nepal from which international contractors may benefit and take necessary measures before actually executing a project in Nepal.

**Keywords:** *contract administration, delay, claim, dispute, construction industry*

## **1. Introduction**

Contract administration involves the activities that a party to a contract has to perform in order to meet the contract objective and to cope with the daily contractual matters until the formal closure of the contract. It incorporates all dealings between the contracting parties and concerned stakeholders if required by the contract from the time the contract is awarded until the work has been completed, entire payment has been made, and disputes have been settled. Thus, factors affecting the contract administration include the nature of the work, the type of contract, and etc. A construction contract in a traditional project delivery system requires, at the minimum, the contractor to execute the construction work within agreed time and cost with specified quality, and the employer to cooperate/facilitate the execution of the project and make the necessary payment to the contractor.

Majority of the infrastructure development projects in Nepal are executed following the traditional project delivery, Design-Bid-Build, system. The owner/employer usually designs and supervises the contracts. A consultant may be hired for large and

complex projects to assist the employer in the design, supervision of the work and in contract administration.

This study investigated that most of the Owners/Employers in Nepal are not aware of the contract administration function demanded by the contract. A questionnaire survey followed by interviews revealed that most of the project engineers in Nepal are not familiar with the knowledge and skills required for the contract administration. As a consequence time and cost control is not properly done. Simple bar charts have been the norms in the industry due to which it has been adhoc in determining the additional time if required to complete a project. Critical Path Method (CPM) has not been introduced in the construction industry. Thus, adhoc contract administration has been prevailing in the Nepalese construction industry. International contractors may face difficulties in the execution of a project due to the employer's lack of appropriate knowledge and skills on contract administration. This paper highlights practice of contract administration in Nepal with reference of standard bidding document issued for use in NCB (National Competitive Bidding)/ICB (International Competitive Bidding) for works up to

NRs.500.00 Million (approx. 6.4 million US\$) from which international contractors may benefit and take necessary measures before actually executing a project in Nepal.

## **2. Form of Contract and the Engineer's Role**

Unless required by donor agencies, the construction projects in Nepal are supposed to be executed under two-party (Owner-Contractor) system in which the owner himself supervises and administers the project. Like in international construction, conditions of contract prepared by FIDIC (International Federation of Consulting Engineers) were used for the execution of large project following three-party (Owner-Contractor-Engineer) system. However conditions of contract developed on the basis of contract for small works recommended by the World Bank were being used in two-party execution system which do not incorporate the function of the Engineer but requires the owner/employer to designate the project manager. It is interesting to note that the Public Procurement Monitoring Office (PPMO), which is responsible for monitoring the procurement system in Nepal has recently (in January 2009) issued a common standard bidding documents for the use of the project under National Competitive Bidding (NCB) and International Competitive Bidding (ICB) up to value approx. 6.4 million US\$ which do not include the role of the Engineer and is supposed to execute under two-party system. The project manager (owner's/employer's employee) is supposed to play some of the functions of the Engineer. So, an international contractor who intends to work or working in Nepal with these conditions of contract may face difficulty in getting fair and impartial decision/determination from the project manager who is in fact the owner's/employer's employee.

The project manager, the owner/employer's employee is usually appointed to a project through political influence and/or bureaucratic process. The project manager may get transferred from a project at any time of the project execution. Unlike to the employment of the consultants/engineer for supervision and administration of a project an employee of the Owner/employer may not the project manager from the beginning to the completion of a project. A new project manager may not give the decision on behalf of the previous one and the contractor may not get consistent fairness/impartiality from different project managers. In order to get all the decision on time, the contractor therefore should in place up to date

documentation of the contract administration so that the contractor could get the project manager's decision/determination on time.

## **3. Dispute Resolution**

Dispute resolution procedure consists of 5 steps:

- i) Decision by the Project manager
- ii) Amicable settlement within 15 days of the project manager's decision
- iii) Refer the dispute to the Adjudicator or DRB (Dispute Resolution Board) within 30 days of project manager's decision
- iv) Adjudicator's/DRB's decision within 30 days of receipt of a reference of dispute
- v) Refer to arbitration within 30 days of decision of the Adjudicator/DRB

Like in the FIDIC there must be a dispute not just a claim under the contract. Amicable settlement shall be attempted within 15 days of the project manager's decision if the Contractor is dissatisfied with the project manager's decision. If amicable settlement could not be reached the dispute is then referred to Adjudicator or DRB within 30 days of the project manager's decision. The adjudicator or DRB is required to give the decision in writing within 30 days of the receipt of a reference of a dispute. Either party may refer the decision of the Adjudicator or DRB to an arbitrator within 30 days of the adjudicator's or DRB's decision. If neither party refers the dispute to arbitration within such 30 days the adjudicator's/DRB's decision will be final and binding on the parties.

The procedures looks fair, however a major drawback in this procedure is that it does not stipulate the deadline within which the project manager should give his/her decision over an issue once the contractor referred to him/her. Unless the project manager gives his/her decision there would be no start of settlement process. There were many cases in which the project manager did not give decision on time and was transferred to other project leaving the issues undecided. Therefore it may take longer period to complete the whole process and in a worst case the project manager may ask direct/indirect incentive from the contractor to give his/her decision to expedite the contractor's progress.

## **4. Time Control and Delay**

The contract requires the contractor to submit to the project manager for approval of a schedule showing the general methods, arrangements, order and timing for all the activities of the works. And, updated schedule is required to submit in certain interval, normally 30 days, showing the achieved progress on each activity, remaining duration including any changes in the sequence of the activities.

However, it has been found in practice that majority of the contracts were executed using a simple bar chart schedule without showing interdependency among the activities. A typical schedule used for irrigation infrastructure development project under two-party execution system in Nepal is shown in figure 4.1.

In effect such schedule did not show interrelation among the activities and there was no updated/revised schedule except just stretching the line increasing the duration of an activity. The contractor could not show the impact of delays on an activity to others delaying the whole project. Thus, neither the owner/employer nor contractor used to do delay analysis such as Time Impact Analysis, Window Analysis while calculating the additional time required for completing the project. Contractors were used to depend on the mercy of the owner/employer for determining the additional time because the master-servant assumption still prevails in the Nepalese construction industry. The project manager use their authority stipulated in concerned laws/regulation to decide the extension of time without detailed analysis of delays in the construction project.

Thus, an international contractor needs to be aware of the master-servant relationship in the construction industry and be strategically prepared to resist the master behavior of the owner/employer. In order to make the project manager to give his/her decision on

time it is necessary to include owner's/employer's responsibility such as approval of drawings, inspection of work, etc. on the schedule. Unlike the domestic contractor's practice of submitting a simple bar chart, international contractor should prepare detailed CPM network diagram incorporating also the owner's/employer's responsibilities on the schedule so that the deviation from the original plan, causes of the deviation and impact of the deviation could be measured, and accordingly the contractor can establish own bargain for the owner/employer caused delay and other force majeure events.

### 5. Price Adjustment

The public procurement act has allowed to adjust the contract price accordingly to the changes of labor, material and equipment price for the project whose construction period is more than 15 months. The formula recommended to use for adjusting the contract price is:

$$P_c = A_c + B_c * I_{mc}/I_{oc}$$

Where,

$P_c$  is the adjustment factor for the portion of the contract price payable in a specified currency "c".

$A_c$  and  $B_c$  are adjustment factor for the portion of the contract price specified in the special conditions of contract representing the nonadjustable and adjustable portions, respectively, of the contract price payable in that specific currency "c", and

$I_{mc}$  is the index prevailing at the end of the month being invoiced and

$I_{oc}$  is the index prevailing 30 days before bid opening for inputs payable; both in the specific currency "c"

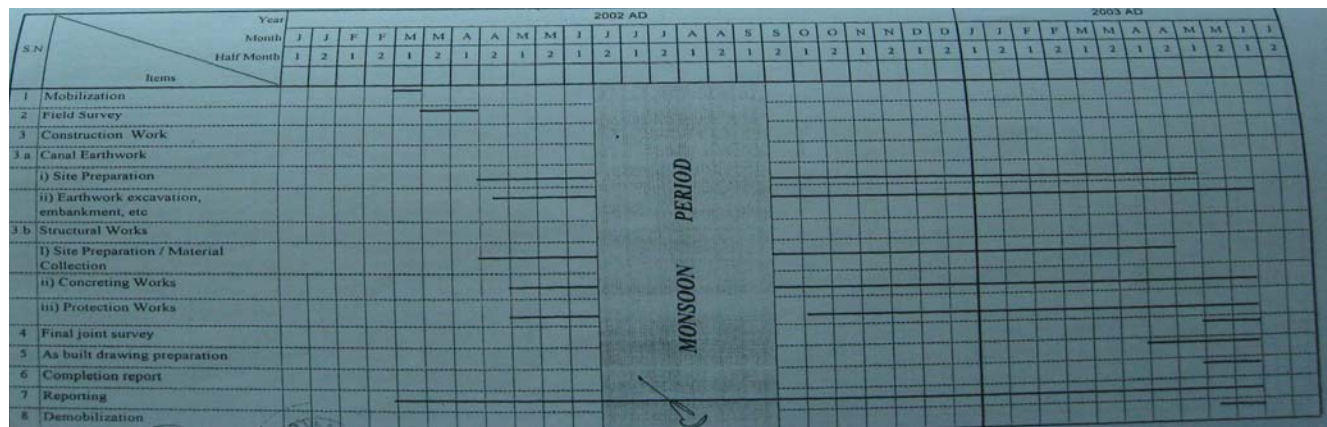


Fig 4.1: Typical schedule used for irrigation infrastructure construction project in Nepal

However, if a contract agreement has been concluded following the invitation for national level bidding and if the above price adjustment provision is not included in the contract, in such case price adjustment will be allowed for the construction materials stated in the special conditions of contract in excess of 10% in comparison to the base price. The changes on price of the construction materials beyond 10% shall be made by applying the formulas:

For unexpected increase in price

$$P = [R_1 - (R_0 * 1.10)] * Q$$

For unexpected decrease in price

$$P = [R_1 - (R_0 * 1.10)] * Q$$

Where,

“P” is price adjustment amount

“R<sub>1</sub>” is the present price of the construction material

“R<sub>0</sub>” is the base price of the construction material

“Q” is quantity of the construction material consumed in construction during the period of price adjustment consideration

In any case, the price adjustment amount shall be limited to a maximum of 25% of the initial contract amount. However, the price adjustment provision shall not be applicable if the contract is not completed in time due to the delay caused by the contractor or the contract is a Lump Sum Contract or Fixed Budget Contract.

The contractor should be careful in identifying the construction materials to be included in the list for price adjustment while concluding a contract agreement.

## 6. Survey Results

A questionnaire survey followed by interview on contract administration practice in Nepal was conducted in January 2009. Thirty sets questionnaire were sent to owners/employers and contractors. However, only 10 filled questionnaires were received. Then interview with the respondents was conducted. The respondents experience in the construction industry ranged from 11 to 23 years. Among those respondents only one person had experience of working with international contractor. Some of the

results of the questionnaire survey and interviews are summarized below.

Regarding the schedule preparation:

- All respondents reported that schedule is a contractually binding and a simple bar chart was enough for making a contract and execution of the project.
- No respondent had experience of using CPM in construction though they reported that they have knowledge of CPM.

Regarding the extension of time (EOT) determination:

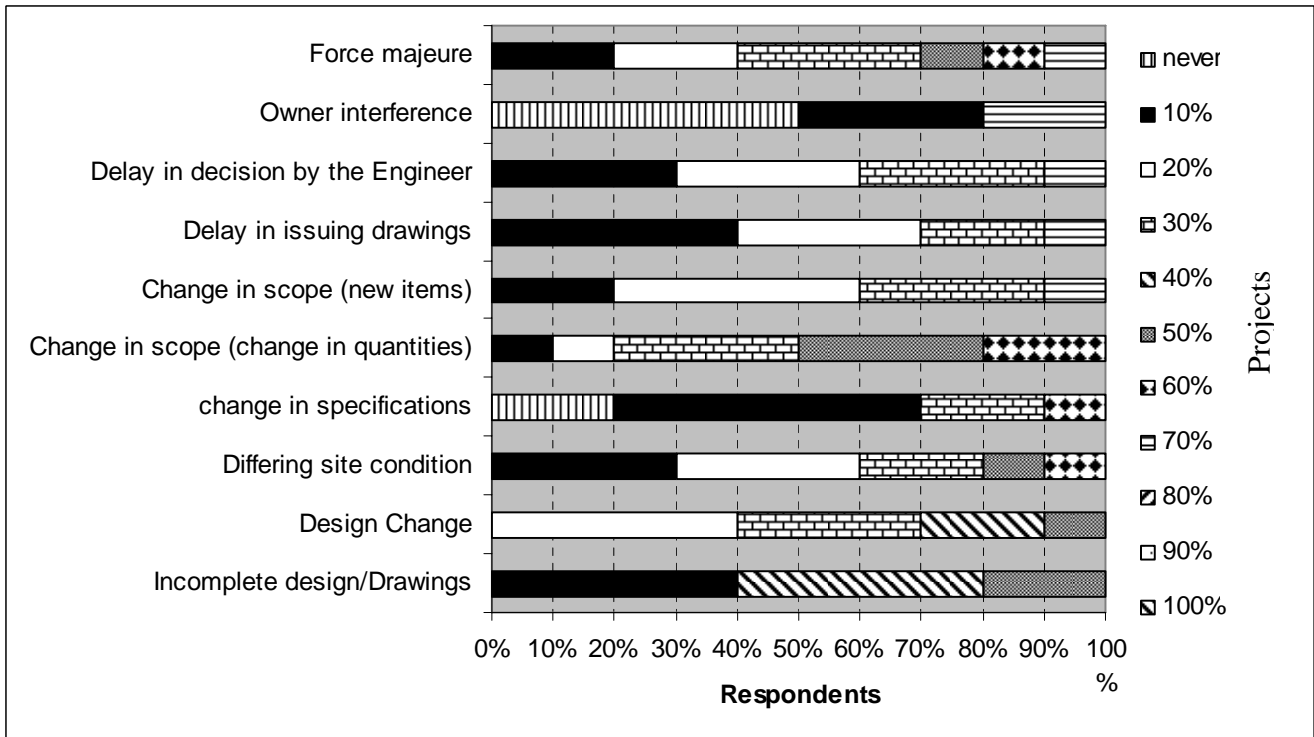
- 4 out of 10 respondents reported that they did delay analysis in less than 40 percent of the projects they involved. However, all the respondents were unaware of the delay analysis techniques such as Time Impact Analysis and Window Analysis.

Regarding the occurrence of activities which may give rise to claims, the responses from the subjects are shown in figure 6.1 and summarized as below.

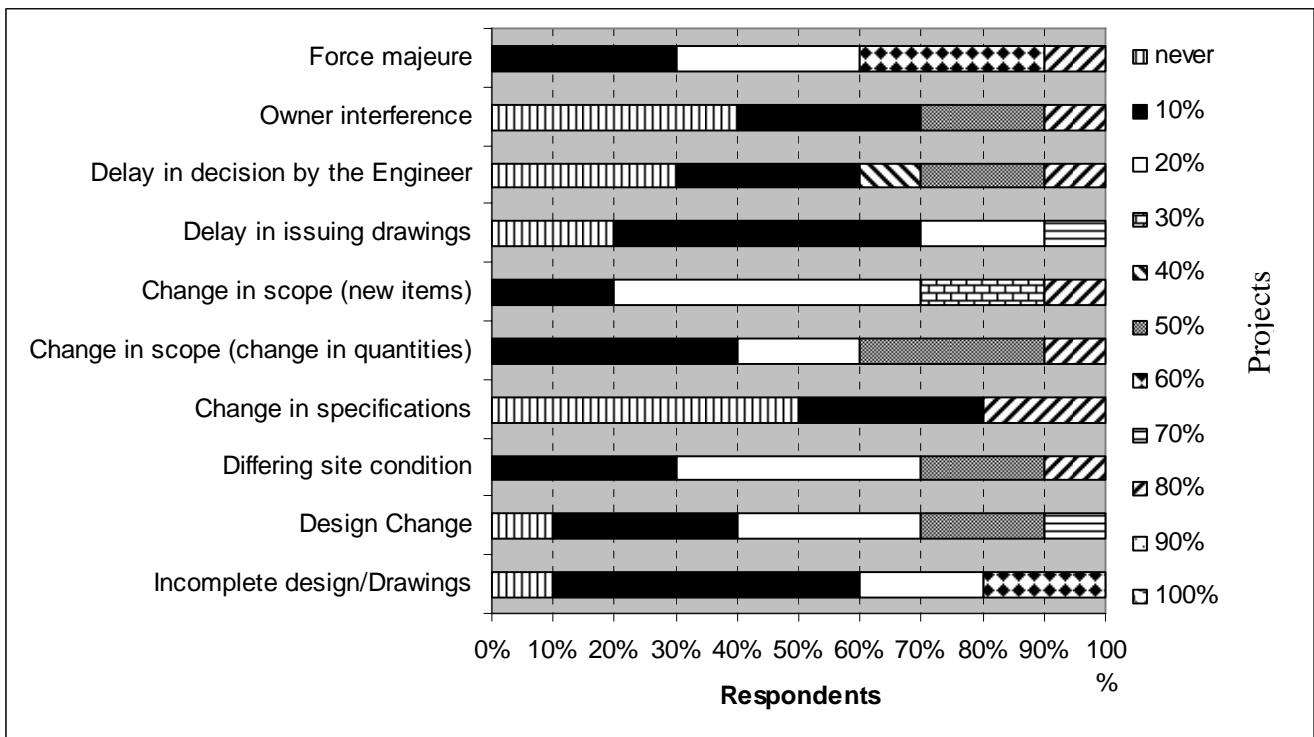
- 50% of the total respondents, the largest group reported that owner interference never occurred and changes in specifications were occurred in 10% projects.
- The second largest group, 40% of the respondents reported that incomplete design/drawings was found in 40% projects, design change in 20% projects, change in scope (new items) in 20% projects and delay in issuing drawings in 10 % projects.
- Similarly, 30% of the respondents informed that there was differing site conditions, delay in decision by the engineer and owner interference in 10% projects; and design change, changes in scope (change in quantities), change in scope (new items) and delay in decision by the engineer in 30% projects.

However there was no correspondence between reported occurrence and the filing of claims as seen from figure 6.2. Regarding the submission/receipt of claims:

- The majority of the respondents, 50% of the total, reported that they never submitted/received claims on changes in specifications.
- Similarly 50% respondents informed that they received/submitted claims against incomplete design/drawings and delays in issuing



**Fig 6.1: Occurrence of events in Nepalese construction industry**



**Fig 6.2: Claim submission in Nepalese construction industry**

drawings in 10% projects, changes in scope (new items) in 20% projects.

- Likewise, 40% respondents reported that they received/submitted claims on differing site conditions in 20% projects, changes in scope (changes in quantities) in 10% projects.
- 30% respondents informed that they received/submitted claims on design change, differing site conditions, changes in specifications, delays in decision by the engineer, owner interference and force majeure in 10% projects.

The average satisfaction of the respondents on the decision on claims was 58.5% in the scale of 1 - 100%. Similarly, the average satisfaction of the respondents on owner/employer performance and contractor performance were 72.5% and 69% respectively on 1-100% scale.

## 7. Concluding Remarks

It is found that the public owner/employer has been heading for execution of the project value up to US\$ 6.4 million (approx.) following two-party system irrespective of the procurement methods- NCB or ICB. The contract document does not incorporate the function of the Engineer and there is not stipulated deadline within which the project manager should give his/her decision on a claim. Unlike the employment of the engineer/consultants for a contract supervision and administration for the contract execution period, the project manager is not designated as the project manager from the start of the construction till the completion of the project. (S)he may get transferred even after signing the contract or during execution before completion of the project. This issue seriously affects the contract administration and dispute resolution procedures and time required to resolve the disputes. Like in FIDIC MDB Harmonised edition 2006 sub-clause 3.5 and 20.1 a deadline for the project manager to give his/her decision should clearly be included in the contract.

As investigated in this study the construction industry was not using CPM scheduling and the engineers were not familiar with the application of the CPM in contract administration. In such environment, contract administration by the owner/employer without hiring the engineer/consultants of the project procured

through ICB would be difficult and more claims may arise due to inefficiency of the owner/employer.

Since there was no construction material price index and the (urban) consumer price index has been in use even for price adjustment in construction project. The consumer price index may not actually represent the changes in the price of construction materials. So, the construction industry should initiate to establish the construction materials price indices.

The prevailing of the master – servant kind of thinking in the Nepalese construction industry is one of the reasons for filing fewer claims than the actual occurrence of the events that give rise to a claim. The contractors were surviving from the mercy of the owner/employer which often facilitates malpractice in the construction industry. There were abundant cases of owner caused delays and interferences however the contractor were directly or indirectly influenced by the owner/employer not to highlight the issues. In order to improve the fairness and transparency in the Nepalese construction industry in the contractor should strive for their technical and managerial capacity improvement rather than seeking mercy from the owner/employer. Since there was no institution with appropriate course/program which can provide opportunities for the construction engineer and administrator to improve contract administration skills and knowledge, an appropriate education/training program like JICA contract administration training program should be developed in Nepal.

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